

Nasdaq Calypso MarkitWire Integration Guide

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Document History

Revision	Published	Summary of Changes	
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16.0	October 2020	Updates for version 8.4.0.	
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Revision	Published	Summary of Changes	
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26.0	March 2023	Added support for MarkitWire API version 20.0.1	
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37.0	June 2024	Added CCP interest	
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39.0	August 2024	Added support for Calypso mapping for MW holiday USGS would be FRBNY.	





Revision	Published	Summary of Changes	
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44.0	January 2025	Added support for MarkitWire API version 21.2.2	

This document guides you through the setup required for importing Interest Rate Derivatives-related data from MarkitWire into Calypso with the MarkitWire interface.

Calypso supports the keywords and features found in this document. Undocumented keywords and features are subject to removal without notice.

(1) 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.



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Introduction

1.1 Overview

MarkitWire is an electronic deal confirmation platform used by financial counterparties to enter, receive and affirm trades and other lifecycle trade events. These trades and trade events can be imported into Calypso with the MarkitWire interface described in this document.

A MarkitWire bidirectional module can also be used to submit trades and lifecycle events from Calypso to MarkitWire. Please contact your account manager for information on this feature, which is separately licensed and is covered in a separate document.

MarkitWire automates several business processes:

- Trade Capture
- Broker Confirmation
- ISDA Confirmation
- Clearing through LCH SwapClear
- Clearing to CCPs such as LCH and CME
- Trade division and Netting synchronization where supported by CCPs

1 Note: All functionality is not supported on all Calypso versions.

MarkitWire can be used when both parties to the trade are on MarkitWire, or when only one party is on (in this case, for broker confirmation and/or trade capture only). When only one side of the trade is on MarkitWire, this is called a single-sided deal.

The trade lifecycle within MarkitWire is modeled on current industry practice: traders have authority over the financial structure of deals in their books; they negotiate and strike deals with other market Participants directly, or via Brokers, and complete the tickets detailing the terms of the transactions. The Middle Office or Operations monitor the flow of transaction records from the trading desk. Operations maintain the institution's official books and records.

With MarkitWire, the bilateral trade confirmations traditionally exchanged between documentation teams are not required (except for single sided deals).

Please contact your account manager for information about licensing the clearing functionality available in the MarkitWire interface.



1.2 Software Requirements

1.2.1 Supported JDK Versions

The MarkitWire module was developed based on the core Calypso Java version. Please check the core version for JDK compatibility.

1.2.2 Microsoft Visual Studio Runtime Version

Clients need to install the Microsoft Visual Studio 2010 Runtime package.

Please refer to the MarkitWire website for further information.

1.2.3 Supported MarkitWire API Version

Please refer to the MarkitWire Release Notes for latest supported versions.



MarkitWire Calypso Interface

The MarkitWire-Calypso Interface enables trades from MarkitWire to automatically flow to Calypso via the Data Uploader and performs the following tasks:

- Converts incoming messages into BO Messages, where they are validated before being processed into Trades and uploaded to the database.
- The Calypso MarkitWire Trade Engine listens for and processes MarkitWire Dealsink notifications.
- The **SWValidateUpdate** TradeRule and **SWErrorUpdate** TradeRule workflow rules notify the Calypso MarkitWire Trade Engine to update MarkitWire whether trades have been validated or not.
- A workflow rule such as "CheckAmend" can be used to disallow modification of Calypso trades imported from MarkitWire.
- The UpdateTermination trade workflow rule should be added to your Terminate action (usually located between your Verified and Terminated status) to handle the rolling of External Reference IDs from the parent trade to the child trade.
- Each Calypso trade imported from MarkitWire is saved with a set of trade keywords containing information such as the trade's MarkitWire **Deal ID**, etc.
- The Calypso Mapping table provides the infrastructure to map MarkitWire values to the equivalent internal representation.

The Calypso interface supports importing the following products from MarkitWire:

- Basis Swap
- Cross Currency Swap
- Equity Index Options, Equity Index Swap, Equity Share Options, Equity Share Swap They are created as EquityLinkedSwap in Calypso
- Fixed-Fixed Cross Currency Swap
- Fixed-Fixed Single Currency Swap
- FRA
- Interest Rate Cancellable Swap
- Interest Rate Cap/Floors
- Interest Rate FRAs
- Interest Rate Swaps
- Interest Rate Swaps for Non-deliverable currencies (NDS)
- Interest Rate Swaps with Amortization
- Interest Rate Swaptions
- Non Deliverable OIS
- OIS



- OIS Basis Swap
- Zero Coupon Inflation Swap

Calypso supports the following trade lifecycle events from MarkitWire:

- Support Clearing Lifecycle states with LCH SwapClear Clear and Declear
- Released trade capture
- Trade amendment unilateral and bilateral
- Cancellation (Termination in Calypso terminology)
- Novation (Termination via Novation in Calypso terminology)
- Swaption exercise
- Partials (Termination or Novation)
- Exit Exit reasons (SWExitReason) are stored as a trade attribute
- Allocation Imports the MarkitWire allocated trades into Calypso
- Trade Division Division of trades into alpha and beta trades post clearing
- Netting Synchronization Synchronizing the netting results from MarkitWire
- Cancellable Exercise Exercising Cancellable Swaps in MarkitWire

Calypso's MarkitWire integration provides limited supported for Allocations at this time. Block trades are not imported. Also, allocations done subsequent to a trade release are not captured. Additional support for Allocations is forthcoming.

The interface also supports the following:

- PrimeBrokered deals
- Single-sided deals
- Dealer deals
- Hedge fund/Dealer scenario
- Broker Confirmation
- SEF executed deals

2.1 Known Issues

Users should also refer to the "Known Issues" section of the Calypso Data Uploader Integration Guide for additional information.

- Backloading via Deal matcher and Backloading report is deprecated.
- The scheduled task MW_RECON_REPORT is deprecated.



- For the trades which are part of Trade division, Unilateral Amends on the Alpha trade post clearing are not supported.
- For any trade we do not support Unilateral Amends on the prior version of trade in MarkitWire if the current version in Calypso is higher than the incoming message.
- Because core Calypso does not support **Compounding Method Spread Exclusive**, neither does the Calypso MarkitWire Module. Spread Exclusive trades are mapped to Spread with a warning in the Task Station.
- In the event of an incorrect Book mapping, SWML messages are rejected outright without creating a BO Message. For other cases, the application creates BO Messages with ability to correct the setup and reprocess the failed SWML messages. Also we do not send out acknowledgements in case of such cases. Once the book is mapped and messages are correctly reprocessed then we send out the acknowledgements.
- If this occurs, release the Trade from MarkitWire once more to fetch the rejected trade. Note, using the Scheduled Task to fetch rejected trades may create duplicate BO Messages. To avoid duplicates, ensure that you use the attribute, MARKITWIRE_DEAL_IDS, on the SW_DO_RECOVERY. The attribute should contain a comma separate list of Deal IDs to retrieve from MarkitWire. If this attribute is empty, then Schedule Task will fetch all error trades (possibly resulting in duplicates), as in earlier releases. See related details.
- For amends and exercises action to function, you must either define AMEND or EXERCISE trade workflow actions or define custom actions. Please refer to the **UploadAmendAction** and **UploadExerciseAction** domain values in the Data Uploader.
- When a Basis Swap is Partially Terminated in Calypso, the first **Rate** for the newly-created residual trade (i.e., the child trade) is cleared. This is a core Calypso issue and not a problem specific to the MarkitWire interface.
- When reprocessing multiple blocked messages for the same trade, the status is sometimes updated incorrectly against the wrong version of the trade. This is apparently a bug in the MarkitWire API.
- During reprocessing of messages with Validation Workflow rules enabled, the trade status is sometimes shown as Saved even though the workflow is executed and **SWValidated** keyword is set to True. This occurs because the Validate status message is updated before the Saved message is sent to MarkitWire.
- Because MarkitWire treats a Partial Termination as an amend, when a Swaption/CapFloor is partially terminated multiple times in MarkitWire, the Premium is not propagated to a child trade because the premium date occurs before the Termination Effective Date. Thus, Premium Fees as applicable to the terminated amount are applied to terminated trade.

Calypso uses a common termination API to process all terminations and novations. The API expects origination fees on the parent trade and it will propagate partial amounts as per configuration.

Workaround for Partial Termination

Calypso suggests bringing both the partially terminated MarkitWire trade and the Calypso verified trade into sync by bilaterally amending the trade and removing/modifying fees in MarkitWire as per business functionality.



2.2 Installation Instructions

2.2.1 Upgrading from the Swapswire Module

When upgrading to the MarkitWire module from the Swapswire module, please note the following:

() Note: MarkitWire requires the Calypso Data Uploader module. Please install the Data Uploader with the MarkitWire Module.

- Every trade stored in Calypso is now assigned a unique **External Key** based on the MarkitWire ID and is unique for every MarkitWire trade across Positions.
- Previously, the Swapswire Additional Field was used to store Calypso Trade IDs. A Swapswire Additional Field now stores the External Key as assigned by the MW_EXT_REF_FLD environment property. Please note that the default for MW_EXT_REF_FLD is AdditionalField4. If you currently map this field to a Keyword, please set the value of MW_EXT_REF_FLD to a different Additional Field.
- During migration, you can use the MW_MIGRATE Scheduled Task (which can be used once) to convert existing Verified trades to the new format. Only Verified trades are modified. Calypso provides SQL migration scripts for Oracle (sw oracle migration.sql) and Sybase (sw sybase migration.sql) to move mappings:
 - From OptionExerciseTimeZone to TimeZone.
 - From OptionExerciseLocation to Location.
 - From Index Tenor to RateIndex. If there are no Tenor-specific mappings, there will be no change.

The migration script will also delete unused Keywords and Exception Types:

- Delete SWLoginHandle and SWDealHld, provided they are not used in any trades.
- Delete the EX_SWAPSWIRE_EXCEPTION and EX_SWAPSWIRE_INFORMATION exception types.
- Delete SWNovationAction.

2.2.2 MW_MIGRATE Scheduled Task

Note: Prior to running the MW_MIGRATE task, ensure that the SwapswireTradeEngine is *not* running. During the migration, there can only be one connection to MarkitWire.

The MW_MIGRATE scheduled task provides a method to import custom trade statuses. To enable this feature, you must specify in the **MWMigrateTradeStatus** domain, all trade statuses that you wish to import. MW_MIGRATE also provides support for multiple login configurations.

() Note: For multiple login configuration migration, please retain the sequence of user name and password during the migration as was used in the previous execution. Otherwise, this may result in exceptions.



During migration, the application examines every trade for which the **SWDealID** trade keyword is not null (i.e., all trades from MarkitWire). In addition, if AUTO_FEED_EXTERNAL_REF is true, trades with existing External Reference IDs are not migrated.

The migration status of each trade is logged in the Task Station (via the EX_GATEWAY event).

Do not specify the TERMINATED status in this domain name to avoid identical external references on multiple trades. If no values are specified in MWMigrateTradeStatus, VERIFIED trades are migrated.

Configuring MW_MIGRATE scheduled task does not actually require MarkitWire DLLs or *nix libraries. Therefore, any user with sufficient permissions can configure the task using **Configure > Scheduled Task** from the Calypso Navigator. However, to run the MW_MIGRATE scheduled task, the *nix libraries must be added to LD_LIBRARY_PATH or the Windows DLLs must be in the Windows PATH.

Please note that the MW_MIGRATE scheduled task has no attributes.

Task Type	MW_MIGRATE
External Reference	
Comments	
Description	
Attempts	1
Retry After, In Minutes	0
JVM Settings	-Xms512m -Xmx1024m -XX:MaxPermSize=256m
Allow Task To	Skip Execute Send Emails Publish Business
🗄 Common Attributes	5

General Notes on MW_MIGRATE

- Stop the SwapswireTradeEngine prior to running MW_MIGRATE.
- MW_MIGRATE considers all Calypso trades whose SWDealld keyword value is not null.
- MW_MIGRATE overwrites existing external reference IDs on migrated trades.
- The Task Station logs the migration status of all trades if the EX_GATEWAY event type is configured.
- If you are using single login through engine, the **SWLoginHandle** keyword on existing trade must be 1901. If the **SWLoginHandle** keyword is different, please update it to 1901.
- If MW_MIGRATE is unsuccessful, for example because of a configuration issue which has been addressed, then the Calypso Navigator and the Calypso Scheduler should be restarted prior to running the MW_MIGRATE scheduled task again to avoid caching issues.

2.2.3 Data Uploader Installation

Refer to the Calypso Data Uploader Integration Guide for installation and configuration information.

You must install and configure the Calypso Data Uploader prior to configuring the MarkitWire Integration. The use of the Calypso MarkitWire Module **requires** the Data Uploader.



2.2.4 MarkitWire Components

Step 1 - Obtain the MarkitWire client and the Swapswire API from MarkitWire. The client file contains a number of Windows .DLL files, a Unix.lib file, and example files. The API contains numerous example and header files.

Step 2 - Uncompress the SW*.zip files to separate directories on the machine where you will run the Swapswire Engine.

- If the machine running the Swapswire Engine is a 32-bit Windows platform, add the PATH\TO\SW_X_X_XXXX_api_win_32\lib directory to the Windows PATH.
- If the machine running the Swapswire Engine is a 64-bit Windows platform, add the PATH\TO\SW X X XXXXX api win 64\lib directory to the Windows PATH.
- If the Swapswire Engine machine is a *nix platform, add the appropriate libraries (*.so) the LD_LIBRARY_PATH.
- If the Swapswire Engine machine is on the Windows platform, ensure that the Swapswire DLLs are in the Path.

Step 3 - The DLL/so file versions must be equal to or less than MarkitWire server versions.

Step 4 - Obtain and install the Visual Studio 2010 redistributable package from the Microsoft website as described in MarkitWire's documentation.

2.2.5 Calypso Components

MarkitWire is installed as part of the Calypso Installer when you select the interface "Markitwire Interface":



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



If you are installing a Calypso Upgrade package instead, the instructions are also in the Calypso Installation Guide.

2.2.6 Firewall Requirements

Ensure that any firewall is configured to allow connections between your site and http://*.swapswire.com, ports 9009 and 443. If you require specific IP addresses, refer to http://www.markitserv.com/assets/jsp/mw-status.jsp. You will need your MarkitWire website login credentials to access the page.

2.2.7 Setup and Data Configuration Checklist

Integration Setup Checklist

- Environment Properties Provide basic login information and configuration for single or multiple Dealsink users/listeners.
 - See the "Environment Properties" section.
- Data Model Synchronization Use ExecuteSQL to populate the following domains: tradeKeyword, eventClass, dsInit, engineName, exceptionType, leAttributeType, UploadMessageFormatTypes, and workflowRuleTrade.
 - See the "Data Model Synchronization" section.
- Access Permissions Set the required Access Permissions for the Calypso Mapping window.
 - See the "Access Permissions" section.
- Trade Keywords Use the Domain Values application to add any additional Trade Keywords required by your implementation.
 - See the "Trade Keywords" section.
- Engine Configuration Configure the SwapswireTradeEngine.
 - See the "Engine Configuration" section.
- Legal Entities Set the SwapswireParticipant LE Attribute for each MarkitWire counterparty.
 - See the "Legal Entities" section.
- Books Map the MarkitWire Book to the Calypso Book.

The SwapswireTradeEngine only traps messages for mapped books.

- See the "Books" section.
- Broker
 - See the "Broker" section.
- Reference Bank
 - See the "Reference Bank" section.
- Workflow Configuration Setup the **SWValidateUpdate** TradeRule and **SWErrorUpdate** TradeRule in the PSEventTrade Event Class.
 - See the "Workflow Configuration" section.



MarkitWire to Calypso Mapping Checklist

Mappings using the Calypso Mapping Application:

- Fee Types Cancellation, Cash Exercise, Premium, swBrokerageAmount, swSalesCredit, and PartialTermination.
- Holiday Codes Two-letter Country/City codes to Calypso Holiday code.
- Exercise and Cash Settlement Settlement Location and Time Zone.
- Reference (Rate) Indices Note the difference between the Calypso separator (~) and the MarkitWire separator (-).
- Trader Swapswire Trader name to the Calypso Trader name.
- Workflow Actions Workflow actions are performed by the Data Uploader. Refer to the "Installation and Configuration" section of the Calypso Data Uploader Integration Guide.

2.3 MarkitWire API version

This section will describe the enhancements that are added in the API version for Markitwire.

MarkitWire API version 21.2.2

• Added support for the keyword for capturing the value for "Cancellation with Forward Premium" flag: <swForwardPremium>true</swForwardPremium>

MarkitWire API version 21.2.1

 Added support for Initial and Variation margin collateral portfolio code as trade keyword in incoming and outgoing mode

MarkitWire API version 21.2.0

- Added support for CZK CZEONIA (transition from PRIBOR to CZEONIA)
- Addition of ICESWAP Rate to EUR RFR Swaption template

MarkitWire API version 21.1.1

- Added support for the SAR (Saudi Arabian Riyal) currency on the IRS product.
- Added support for the FRO 'ZAR-ZARONIA-OIS Compound' on RFR swaption and RFR Cap Floor products.
- Added support for new 'AMV' (Australian Market Venue) Execution Venue type.



MarkitWire API version 21.1.0

- Added support for the AED (United Arab Emirates Dirham) currency on IRS and FRA products
- Added support for the FRO 'MXN-TILE ON-OIS Compound' on RFR Swaption and RFR CapFloor products.

MarkitWire API version 21.0.2

- Added support 'Front and Back' Stubs on Fixed Fixed Cross Currency Swap
- Cross Currency Swap product enhancements.

MarkitWire API version 20.2.1 and 21.0

- Added support for Novation workflow on CapFloor.
- Added support for new MarkitWire API zip.

MarkitWire API version 20.2.1 and 21.0

- Added support for Amortizing/Accreting functionality on CapFloor: The CapFloor template will be enhanced with an 'Amortizing/Accreting' tab in order to support variable notional and strike rate (i.e. cap/floor rate) schedules.
- Added support for the following unilateral Counterparty Data fields which are required to be included in the trade state reports to ESMA:
 - Nature of Counterparty
 - Corporate Sector
 - Clearing Threshold
 - Reporting Obligation
 - Added support for implementing a new optional unilateral field to capture the Custom Basket Code.
 - The Custom Basket Code submitted on the trade will be carried through the lifecycle of the trade.
 - Where a Custom Basket has been provided for the trade, it will be included in the trade state reports submitted for ESMA where applicable.

MarkitWire API version 20.2

- Added support for sending value of ClearedTradeUPI for CCP mode as part of accept acknowledgements.
- Added support for capturing the keyword value ClearedTradeUPI on cleared Swaps with value provided by CCP as part of Clearing.
- Added support for capturing Underlying Swap UPI as a keyword and also able to allege for Swaption trade.
- Added support of Discrepancy Clause Details on Cancellable IRS and OIS in incoming and outgoing mode.



- Nasdaq
 - MarkitWire has enhanced the Cancellable IRS and OIS template to capture two additional fields on the MarkitWire GUI.

Discrepancy Clause Title - It refers to bespoke Discrepancy Clause language which both parties have previously established and agreed upon in the DMS portal on a LE to LE basis. It can then be incorporated by reference on a per transaction basis in MarkitWire. This language needs to be approved by both parties in DMS. The MarkitWire transaction screen field would refer to a title/name given to the clause itself.

Agreement Date – It refers to the date on which the Discrepancy Clause language was agreed to by both parties. This field would be static driven and read only on the transaction screen.

 Additionally, users will be able to view the Discrepancy Clause Language in the GUI by selecting the "View Clause" button. Please note the full clause language itself will not be output in the SWML or Deal Ticket.

MarkitWire API version 20.1

- Addition of 'ILS-SHIR-OIS Compound' and 'ILS-SHIR' FROs
- Addition of 'MYR-MYOR-OIS Compound' and 'MYR-MYOR' FROs
- EMTA-ISDA Market Practice on Incorporation of SOFR as a Risk-Free Rate into Latin American Currency Non-Deliverable Cross Currency Swap Transactions – GUI Improvement.

MarkitWire API version 20.0.2

- Addition of "RUB-RUONIA-OIS Compound" and "RUB-RUONIA" FRO support to OIS, Cross Currency IRS and
 Cross Currency Basis Swap
- Support for different initial notional on the fixed and floating legs on OIS and IRS.

MarkitWire API version 20.0.1

- Addition of "USD-SOFR CME Term" FRO to USD Cap Floor & Swaption Handled via Calypso Mapping.
- Addition of PLN-WIRON and PLN-WIRON-OIS Compound FROs Handled via Calypso Mapping.
- Updates to certain DKK transaction defaults and availability of DESTR as a specified discount rate MW GUI change.
- OIS trades with an invalid IMM End Date will be restricted MW GUI change.
- CCP Libor Transition Added TransitionFrom keyword to link original trade id on new migrated trade.

MarkitWire API version 20.0

- Swaption Physical Exercise: Ability to elect to exercise USD LIBOR Swaption into SOFR OIS.
- Swaption Physical Exercise: Change in how Underlying Swap Trade Date is calculated.



• Support Negative Fixed Amount on ZC IRS, ZC OIS and ZC Inflation Swap

MarkitWire API version 19.2.1

- MarkitWire has increased the decimal place precision support for the following fields: Fixed Rate, Spread over floating, Init 1st Fixing Rate, Strike (cap/floor), Reportable Price keyword.
- Added support for ReportingToTV keyword in incoming and outgoing mode.
- Added support for separate UTI for Cap / Floor leg of CapFloor Straddle and Payer/Receiver leg for Swaption
 Straddle

MarkitWire API version 19.2

• Extended support for overnight RFR averaging/compounding to Cross-Currency Basis Swap and Cross-Currency IRS product templates.

MarkitWire API version 19.1.1

- Ability to set Break defaults for Cash Settlement method and Prescribed Documentation adjustment.
- Deprecation of 2m and 9m DKK CIBOR tenors.
- Allow Auto Send for Clearing on a Swaption Exercise.

MarkitWire API version 19.1

- Compounding and Averaging Provisions on Overnight FRO
- Danish Krone IBOR Transition (Upcoming changes to CIBOR, Tom/Next, DESTR)
- Norwegian Krone (NOK) CapFloor support expansion

MarkitWire API version 19.0.

• MarkitWire will be enhancing the Cancellable Option tab for IRS and OIS. The proposed changes are the following:

Change GUI naming convention for First Cancellation to Optional Early Termination Date - No change in Calypso.

Change GUI naming convention for Exercise Lag to Expiration Date - No change in Calypso.

Allow users to edit holiday centers related to the Cancellable/Callable provision - No change in Calypso

This field is currently not editable and linked to float roll holiday centers

Add support for Calculation Agent field - We need to add support for this in our interface



For D2D, the default will be "As Specified in Master Agreement"

For D2C the dealer role in the transaction will default as the Calc Agent (i.e., Buyer or Seller based on Dealer Buy/Sell of the IRS/OIS)

• The values "MYOR" and "SWESTR" are being added as available choices in the Cash Collateral Interest Rate and Agreed Discount Rate fields on the Break(2) tab for OETs and METs. Additionally, as available choices in the Swaption Agreed Discount Rate field. We would not need any changes for these, and these will be stored in Calypso as received.

MarkitWire API version 18.2.2

- SOFR First Phase 3 Holiday defaults to change in MarkitWire UI from Option Exercise tab.
- Changes to USD SOFR Swaptions ICE Swap Rate to be supported for Collateralized Cash Price and Cleared Physical Settlement.
- Changes to JPY TONA Swaptions Tokyo Swap Reference Rate to be renamed as Tokyo Swap Rate (MarkitWire UI only change and has no impact on the incoming or outgoing messages).
- Fallbacks Mechanism Unilateral Field: New unilateral Fallback field is introduced to MarkitWire to allow firms to capture which distinct Fallback mechanism each non-cleared MarkitWire trade is reliant upon in the processing tab having values ISDA/Bespoke. We will be adding a trade keyword for this field.

MarkitWire API version 18.0.

- Added support for Risk-Free Rates on Swaptions incoming and outgoing mode.
- Added support for different Payment Lags for Cross-Currency Basis Swaps (e.g. SONIA vs SOFR, EuroSTR vs SOFR).
- Added support for "ICESWAP Rate" as Settlement rate source for Swaptions.
- Fixed issues with Bidirectional Allege for Cash Settled Swaptions for settlement methods "Collateralized Cash Price" and "Par Yield Curve Unadj".

2.4 Integration Setup

2.4.1 Environment Properties

Swapswire Dealsink Password

When the SwapswireTradeEngine starts, it checks the user and system properties file for plain text passwords (40 characters, max.), and if found, it then encrypts the password(s). The **AutoEncryptPassword** flag in the calypso_SW_config.properties controls the operation of the auto-encryption feature. When set to true, the system auto-encrypts plain text passwords. If the properties file is not read-only and if the user who launched the SwapswireTradeEngine also has write permissions to the user/system properties file, then Calypso will store the password in the encrypted form. If the user who launched the SwapswireReferenceServer does not have write access to the user/system properties file, a warning is logged, and the process continues without encryption.



When AutoEncryptPassword is set to false, the password is left as plain text.

Clients can, if desired, encrypt the Dealsink password held in the properties file using a client-written utility that makes use of Calypso's encryption module. Refer to the Security User Guide and to the Calypso Developer's Guide for further information on working with the Calypso Encryption API.

Single Dealsink User

Start the Edit User Env or System Env application and add the following Environment Properties:

- SWAPSWIRE_CONCURRENT_LOGIN_NO= <Number of dealsink logins>
- SWAPSWIRE_LOGIN_ATTEMPTS = 1 (suggested)
- SWAPSWIRE_LOGIN_INTERVAL = 10000 (suggested)
- SWAPSWIRE_PASSWORD = <your dealsink login password>
- SWAPSWIRE_SERVER = <IP address of Swapswire server>
- SWAPSWIRE_TIMEOUT = 60000 (suggested)
- SWAPSWIRE_USER = <your dealsink login>

Multiple Dealsink Users

Certain implementations may necessitate the organization listening to the output of more than a single Swapswire Dealsink. In this situation, you can define additional Swapswire Users to capture trade output from more than a single book.

You can use a text editor to manually create the additional user/password pairs and to modify the value of **SWAPSWIRE_CONCURRENT_LOGIN_NO** in your Calypso User Properties file or use the User Env application. The following example uses the User Env application.

Step 1 - Open User Env and double click **Add**:



Step 2 - Enter SWAPSWIRE_USER1:



Property name to be	e added:	×	
Property name to be added:			
SWAPSWIRE_USER1			
	OK Cancel		

Step 3 - Repeat Steps 1 and 2 to add SWAPSWIRE_PASSWORD1.

Repeat this procedure to add the required number of user/password properties, incrementing the trailing number for each pair.

When you have added the number of additional users required for your implementation, then update **SWAPSWIRE_CONCURRENT_LOGIN_NO** to the total number of concurrent users.

The image below shows the Edit User Env application with six concurrent Dealsink listeners.

- 🥥 SWAPSWIRE_CONCURRENT_LOGIN_NO	▶ 6
- 🥥 SWAPSWIRE_LOGIN_ATTEMPTS	F 1
- 🥥 SWAPSWIRE_LOGIN_INTERVAL	▶ 10000
- 🥥 SWAPSWIRE_PASSWORD	SoMePaSsWoRd
- 🝛 SWAPSWIRE_PASSWORD1	▶ aPaSsWoRd
- 🝛 SWAPSWIRE_PASSWORD2	▶ Xy620jjl
- 🥥 SWAPSWIRE_PASSWORD3	▶ 89yufg23
- 🥥 SWAPSWIRE_PASSWORD4	▶ thx1138
- 🥥 SWAPSWIRE_PASSWORD5	▶ 42
- 🝛 SWAPSWIRE_SERVER	► UAT.SWAPSWIRE.COM
- 🥥 SWAPSWIRE_TIMEOUT	▶ 60000
- 🝛 SWAPSWIRE_USER	▶ dealsink_0
- 🝛 SWAPSWIRE_USER1	b dealsink_1
- 🥥 SWAPSWIRE_USER2	▶ dealsink_2
- 🥥 SWAPSWIRE_USER3	▶ dealsink_3
- 🥥 SWAPSWIRE_USER4	▶ dealsink_4
- 🥥 SWAPSWIRE_USER5	▶ dealsink_5

Remember that each **SWAPSWIRE_USER** listens to a single Dealsink. In the Book Window, set the **Swapswirebook** attribute for the Calypso book that should receive the trades. That procedure is covered in the "Books" section. You must not create multiple mappings to a single Swapswire book.

Dealsink Users' pool

The SwapswireTradeEngine can be configured such that multiple dealsink users can be used simultaneously, but each active dealsink user may have a specific role. For instance, certain master dealsink users can be configured to only listen to deal notification callbacks and do-recovery (Master dealsink user), and some other dealsink users will be used to send requests to fetch deal XMLs and sending acknowledgements (Pooled dealsink user). There can be



one-to-many relationship between Master dealsink users and Pooled dealsink users; there is no limit to how many pooled dealsink users can be configured for a given master dealsink user. Given that a dealsink user can be used to send only one request at a time, having multiple pooled dealsink users will enable the SwapswireTradeEngine to send multiple requests to the swapswire server in parallel.

The SwapswireTradeEngine will be configured in dealsink users' pooling mode (hereafter referred to as pooling mode) if and only if the file calypso_sw_dealsink_config.xml is found in the Engine Server's classpath. If the SwapswireTradeEngine is configured in pooling mode it will ignore all Swapswire-related properties in Environment Properties (mentioned in 'Single Dealsink User' and 'Multiple Dealsink Users above.) For further details on the pooling mode refer to section 'calypso_sw_dealsink_config.xml Settings'.

Applicable to All Configurations: Importing Additional Fields from MarkitWire

Users can import additional trade keywords from MarkitWire using **AdditionalFld**x. To configure this feature, ensure that the tradeKeywords domain contains AdditionalFld1 through AdditionalFldx (default is 1-5):

Z Domain Values Window (User: cal	ypso_user)	
Search: additional	Find Value	
tradeKeyword	A	Name: tradeKeyword
		Value: AdditionalFld1
AFMAPricingSwapRate		
		Comment:
AdditionalFld2		<< Add Save Above

Next, using the Calypso Mapping window, ensure that the fields 1–x are included under the MW interface as FieldKeywords:

🔀 Calypso Mapping Window		
Calipso Mapping Window AgreedDiscountRate CounterpartyTraders CounterpartyTradersGroup DateRoll DateRoll DayCount DefaultIndexTenor DiscountingMethod ExternalReference FCMAction FXReset Fees FieldKeywords 1 2 1 2 2 2 2 2 2 2 2 2 2	Name: Interface Value: Calypso Value: Reverse Default: << Add >> Remove Configure Interf Configure Types	MW/FieldKeywords 10 AdditionalFld10

The Calypso Value should be the name of the trade keyword.



The MarkitWire interface passes Additional Fields to Calypso as fields 1–x. This mapping assigns them to the AdditionalFld1–x trade keywords.

These trade keywords contain the values imported from the **Additional Fields** on the **Internal** tab of the MarkitWire MarkitSERV application.

🗾 Swap/02/11/2018/P:USD 3.00000 /R:USD/LIBOR/3M -PO is Clearing Member Fir 🚺 (47442) - 🕽 rision : 2 Mod User :(calypso_user) [130003SP1/CFDDEVL 💷 🗙			
Trade Back Office Swap Cashflows Analytics Pricing Env Market Data View Utilities Help			
Trade Details Cashflows Resets Fees CSA			<u> </u>
CounterParty T EB	autina Broker	Ext Ref	2
Book CALYP7	Status VERIFIED	Template NONE	
Subtype Standard Troker			
+ Not Cancellable			
+ Not Credit Contingent			
+ No Principal Adjustments			
Ex	Eloat		0.00
	Bullet		
	Duilet	- 	
Actual	Actual		
Start 02/11/2013 End 02/11/2018	Start	02/11/2013 End 02/11/2018	
3.000000 %	1.000	ooo *luso -luteon	+ Obp LIBO
Cmp 🗖	Trade Attributes window		
	Domain	• • • • • • • • • • • • • • • • • • •	NONE
			- HONE
	Name	Value	
	AdditionalFld1	Test 1	
	roaitionairiaz	Test 2	
PMT SA	CounterpartyTrader	aaa calypsotrader5	
MOD_FOLLOW V DAY 11	VegotiatedCurrency	USD	Lag 0

To obtain specific data from MarkitWire and apply them to the trade imported into Calypso, you need to set environment properties for each MarkitWire field and set their value to the Interface Value of the FieldKeywords.

Example:

MW_EXT_REF_FLD	▶ 4
MW_STATUS_FLD	⊁ 3
MW_TRADE_ID_FLD	▶ 5

- MW_EXT_REF_FLD External Reference in Calypso. Controls which of the five MarkitWire Additional Fields will store the Calypso External Trade Reference. If this environment property is not defined, the application uses AdditionalField4.
 - If there is a conflict, i.e., if an Additional Field mapped to a trade keyword and the same field is also used to store the ExternalKey, then the application ignores that keyword mapping. An Additional Field used to store the ExternalKey always takes precedence over a keyword mapping.
 - In the event that you currently map AdditionalField4 to a trade keyword, please set MW_EXT_REF_FLD environment property to a different Additional Field value.
- MW_STATUS_FLD Trade Status in Calypso (populated when SWStatusUpdate rule is present in the prior trade workflow transition), stored in AdditionalField3 in this example.
- MW_TRADE_ID_FLD Trade ID in Calypso, stored in AdditionalField5 in this example.



2.4.2 "calypso_SW_config.properties" Settings

Copy the file "<calypso home>/client/resources/calypso_SW_config.properties.sample" to "<calypso home>/tools/calypso-templates/resources", and remove the ".sample" extension.

You will then need to deploy the files to your applications servers.

Please refer to the Calypso Installation Guide for details.

Session Timeout

The MarkitWire API requires a session timeout parameter while establishing connection with MarkitWire. This timeout is configurable via a setting in the calypso_SW_config.properties file.

#Timeout for MW connection

session timeout=360

If not specified, the application defaults to 360.

Upload mode

The MarkitWire interface supports the Local upload mode and the BOMessage* upload mode (*for CPP Clearing only). The following properties need to be configured:

uploadMode= [<Blank>, Local, BOMessage*.
persistMessages= [<Blank>, Failure, All.

If the properties are not configured, the default upload mode is Local.

Please refer the Calypso Data Uploader documentation for more information on the Local upload mode.

The MarkitWire interface allows to delay the notification callback event creation. The following properties need to be configured:

#value in milliseconds.
EventCreationLag=100

The MarkitWire interface allows to delay the clearing notification callback event creation. The following properties need to be configured:

#value in milliseconds.

NewClearingEventCreationLag=100

The MarkitWire interface allows to delay the reconnect post disconnection of session. The following properties need to be configured:

#value in milliseconds.



delayFromDisconnectToReconnect=200

Custom SWML Debug File Location

You can customize the location of the SWML debug file using the following properties.

- logMessages = true/false. If set to true (default), debug files are generated, else no file is generated.
- **messageFileDir** = <user defined location>. If messageFileDir is not provided then the debug files are generated in <user home>/Calypso/markitwire/ by default.

Message Processing Delay

There is a default delay of 1 second when processing messages coming from MW. You can configure the delay using the property EventCreationLag.

2.4.3 "calypso_sw_dealsink_config.xml" Settings

Copy the file "<calypso home>/client/resources/calypso_sw_dealsink_config.xml.sample" to "<calypso home>/tools/calypso-templates/resources", and remove the ".sample" extension.

You will then need to deploy the files to your applications servers.

Please refer to the Calypso Installation Guide for details.

Following is a sample of what a "calypso_sw_dealsink_config.xml" could look like. All values shown here are only for the purposes of illustration:



```
<?xml version="1.0" encoding="UTF-8"?>
<calypso-sw-dealsink-pool-config xmlns:xsi="http://www.w3.org/2001/XMLSchena-instance">
    <sw-server>https://mw.uat.api.markit.com</sw-server>
    <sw-login-attempts>1</sw-login-attempts>
    <sw-login-interval>10000</sw-login-interval>
    <sw-reconnect-attempts>1</sw-reconnect-attempts>
    <sw-reconnect-interval>10000</sw-reconnect-interval>
    <sw-api-init-file></sw-api-init-file>
    <calypso-sw-dealsink-pool>
        <master-dealsink-user bidir="true">master_dealsink1</master-dealsink-user>
        <master-dealsink-password>password</master-dealsink-password>
        <dealsink>
            <user>pool dealsink1</user>
            <password>password</password>
        </dealsink>
        <dealsink>
            <user>pool dealsink2</user>
            <password>password</password>
        </dealsink>
        <dealsink>
            <user>pool dealsink3</user>
            <password>password</password>
        </dealsink>
    </calypso-sw-dealsink-pool>
    <calypso-sw-dealsink-pool>
        <master-dealsink-user bidir="false">master_dealsink2</master-dealsink-user>
        <master-dealsink-password>password</master-dealsink-password>
        <dealsink>
            <user>pool dealsink4</user>
            <password>password</password>
        </dealsink>
        <dealsink>
            <user>pool dealsink5</user>
            <password>password</password>
        </dealsink>
        <dealsink>
            <user>pool dealsink6</user>
            <password>password</password>
        </dealsink>
        <dealsink>
            <user>pool_dealsink7</user>
            <password>password</password>
        </dealsink>
    </calypso-sw-dealsink-pool>
</calypso-sw-dealsink-pool-config>
```



Following is a description of all tags and attributes and tags in "calypso_sw_dealsink_config.xml":

Sr. No.	Tag name	Description	Recommended value
1	calypso-sw-dealsink-pool- config	Indicates the start and end of the XML document.	NA
2	sw-server	IP address of the Swapswire server.	NA
3	sw-login-attempts	The number of re-attempts the SwapswireTradeEngine will make to login for any given login credential after a failed first attempt to login. (The value shown in tag is the recommended value.)	1
4	sw-login-interval	The time interval in milliseconds after which the SwapswireTradeEngine will attempt to login, for any given login credential, after a failed previous attempt. (The value shown in tag is the recommended value.)	10000
5	sw-reconnect-attempts	The number of re-attempts the SwapswireTradeEngine will make to connect after a failed first attempt to connect to the Swapswire server. (The value shown in tag is the recommended value.)	1
6	sw-reconnect-interval	The time interval in milliseconds after which the SwapswireTradeEngine will attempt to connect after a failed previous attempt to connect to the Swapswire server. (The value shown in tag is the recommended value.)	10000
7	sw-api-init-file	The location of the sw_client_api.ini	NA
8	calypso-sw-dealsink-pool	These tags can be used to specify a pool of dealsink users. There can be multiple such pools; each pool can have exactly one master dealsink user and multiple dealsink users.	NA
9	master-dealsink-user (attribute: bidir="true" / "false")	The Swapswire login id for master dealsink user. The 'bidir' attribute can be used to specify whether do-recovery is to be carried out for the master dealsink user(true) or not(false). The attribute is not mandatory and defaults to false is not specified.	NA
10	master-dealsink-password	The password for the master dealsink user.	NA



Sr. No.	Tag name	Description	Recommended value
11	dealsink	These tags are used to specify the pooled dealsink user.	NA
12	user	The Swapswire login id for pooled dealsink user.	NA

2.4.4 Data Model Synchronization

When you run Execute SQL as part of your installation, the Markitwire files will be already loaded. You just need to check the "markitwire" checkbox.

This procedure creates the mapping table and provides the required mappings between MarkitWire and Calypso values. See the "Data Mapping Between MarkitWire and Calypso" section.

Populated Domains

The following domains are populated during synchronization:

Domain	Populated Values
tradeKeyword	BlockUSIPrefix, BlockUSIValue, CCP, CCPAccount, CCPClearedDate, CCPClearedVer, CCPClearingBroker, CCPClientTradeType, CCPFCM, CCPFund, CCPGroupld, CCPMessageTimeStamp, CCPOriginCode, CCPRejectReason, CCPStatus, CCPTradelD, ClientTradelD, DeliveryDate, DeliveryDateConvention, DeliveryDateHolidays, InitialMarginAmount, InitialMarginCcy, InitialMarginType, IS_CLIENT, LinkedTo, Platform, PlatformCP, PlatformPO, PlatformTradeld, PriorUSIPrefix, PriorUSIValue, ReportingBlkEventID, ReportingClearingException, ReportingClearingMandatory, ReportingCollateralized, ReportingConfirm, ReportingLocationBroker, ReportingLocationDesk, ReportingLocationSales, ReportingOffPlatform, ReportingParty, ReportingPET, ReportingPostTrade, ReportingPriceFormingVenue, ReportingRegulatoryReportable, ReportingRT, ReportingToTV, ReportingVenue, SWAmendmentType, SWAutoSendForClearing, SWBookState, SWBrokerTradeld, SWCancellationType, SWClearingStatus, SWClientClearingDeal, SWContractState, SWContractualDefinitions, SWContractVer, SWDealld, SWEligibleForClearing, SWExitReason, SWPBGiveupDeallD, SWGiveUpTradeld, SWLoginHandleIdentifier, SWMasterAgreementType, SWPBMirrorDealID, SWModificationEffectiveDate, SWModificationTradeDate, SWOriginalCounterparty, SWOriginalDealType,





Domain	Populated Values
	SWOriginalPayStartDate, SWOriginalRecStartDate, SWPrivateVer, SWProcessState, SWSendForClearing, SWSendForClearingTimestamp, SWSide, SWSingleSided, SWValidated, TradeSource, USIPrefix, USIValue
engineEventPoolPolicyAliases	SwapswireTradeEngine
eventClass	PSEventSwapswire, PSEventSwapswireScheduledTask, PSEventRepublish
eventType	EX_MWGATEWAYMSG, EX_MWGATEWAYMSG_ERROR, EX_MWGATEWAYMSG_REJECT, EX_MWGATEWAYMSG_WARNING
exceptionType	MWGATEWAYMSG, MWGATEWAYMSG_ERROR, MWGATEWAYMSG_REJECT, MWGATEWAYMSG_WARNING
function	ModifyMWMappings, ViewMWMappings
engineEventPoolPolicies	tk.util.SwapswireTradeEngineSequencePolicy
engineEventPoolPolicyAliases	SwapswireTradeEngine
engineName	SwapswireTradeEngine
eventFilter	SwapswireTradeEngineEventFilter
leAttributeType	CCPClientBook, CCPHouseBook, SwapswireParticipant, SwapswireBroker, SwapswireLongName, SwapswireParent,
MsgAttributes	CCPRejectReason, Rejected
messageType	MWGATEWAYMSG
MWUploadMessageType	MWGATEWAYMSG
scheduledTask	MW_MIGRATE, SW_DO_RECOVERY
UploadMessageFormatTypes	MW
workflowRuleTrade	ApplyLinkedTradeAction, ChangeFullCoupon, DeclearAction, MWExit, SWErrorUpdate, SWStatusUpdate, SWValidateUpdate, UpdateLinkedToKeyword, UpdateAllocationChild
workflowRuleMessage	ApplyLinkedMsgAction, ForceAmend, ForceNew, ReMap, UpdateLinkedToAttribute

Unpopulated Domains



The following Domains are created, but not populated:

Domain	Populated Values
MWEnforceEffectiveDate	For enabling MarkitWire amend validation.
MWContractState.PreRelease	Specifies the new Contract state filter for the SwapswireTradeEngine.
MWExitKeywords	
MWProcessState	Specifies the new State Filter from MarkitWire.
MWMigrateTradeStatus	Domain name for all trade statuses to migrate from the old to new version of interface.

Inserted Domain Data

The Book attribute **SwapswireBook** is inserted.

2.4.5 Access Permissions

Required Access Permissions for using the Calypso Mapping window are found in the "Calypso Mapping" section.

▶ Refer to the Security User Guide or to the **Working with Group Access Permissions** topic in the User Access section of the Calypso Help System for instructions on enabling functions

2.4.6 Trade Keywords

MarkitWire Field	Calypso Keyword Name	Description
See note, below.	ReportingJurisdiction	If flagged, keyword is set to 'CFTC'
See note, below.	ReportingParty	Calypso keyword is set to the short name of an existing Legal Entity in Calypso
See note, below.	ReportingPriceForming	True/False
See note, below.	ReportingOffPlatform	Blank/Electronic/NonElectronic
See note, below.	ReportingExecutionTime	2012-10-23T18:01:29Z
See note, below.	ReportingVenue	Blank/SEF/DCM/Off-Facility
See note, below.	ReportingRT	No/YesIfRCP
See note, below.	ReportingPET	No/Yes/YesIfDF/YesIfRCP



MarkitWire Field	Calypso Keyword Name	Description
See note, below.	ReportingConfirm	No/Yes/YesIfDF.YesIfRCP
See note, below.	ReportingPostTrade	No/Yes/YesIfDF.YesIfRCP
See note, below.	USIPrefix and USIValue	Existing keyword
See note, below.	PriorUSIPrefix, PriorUSIValue	Existing keyword
See note, below.	BlockUSIPrefix, BlockUSIValue	Existing keyword
See note, below.	ReportingLocationBroker	3-digit country code
See note, below.	ReportingLocationDesk	3-digit country code
See note, below.	ReportingLocationsTrader	3-digit country code
See note, below.	ReportingLocationsSales	3-digit country code
See note, below.	ReportingEventID	ID number
See note, below.	ReportingBlkEventID	ID number
See note, below.	ReportingCollateralized	Blank/Fully/One- Way/Partially/Uncollateralized
See note, below.	ReportingNonStandard	True/False
See note, below.	ReportingClearingMandatory	True/False
See note, below.	ReportingClearingException	True/False
See note, below.	ReportingRegulatoryReportable	True/False
See note, below.	ReportingToTV	Yes/No

Full List of MarkitWire-Related Calypso Trade Keywords

Trade Keyword	Description
BlockUSIPrefix	
BlockUSIValue	
CCP (clearing)	Short code for Clearing House Legal Entity. Populated with the Clearing House name on trade inception if



Trade Keyword	Description
	"Exclude From Clearing" on the Trader/Tracker Clearing tab.
CCPAccount (clearing)	When the trade is against the LCH House Account, CCPAccount = House. When the trade is against the LCH Client Account, CCPAccount = Client.
CCPClearedDate (clearing)	The date the trade is registered with the clearing house.
CCPClearedVer (clearing)	Populated for CCP role only to save the cleared version of the trade.
CCPClearingBroker (clearing)	The clearing broker (when available in the trade).
CCPClientTradeType (clearing)	If the cleared trade originates directly from MarkitWire, CCPClientTradeType = Primary. If the cleared trade is a clone, CCPClientTradeType = Secondary.
CCPExecutionSource	
CCPFCM (clearing)	This trade keyword defines whether or not the ClearingBroker is FCM or not (true false).
CCPFund (clearing)	Populated when acting as CCP in a client clearing trade. Stores the client fund of the trade.
CCPGroupId (clearing)	Populated for CCP role to save the group Id of the parent trade.
CCPMessageTimeStamp (clearing)	Time stamp of last clearing message.
CCPOriginCode (clearing)	Set to HOUSE for Direct trades, and CLIENT for Client Clearing trades.
CCPRejectReason (clearing)	To send MarkitWire a send Clear Reject / Declear Reject notification on trade transition, populate the rejection reason on the CCPRejectReason Trade Keyword. Calypso sends this reject reason MarkitWire in the Reject notification.
CCPStatus (clearing)	Clearing status of trade sent for clearing.
CCPTradeID (clearing)	The clearing Trade ID registered with clearing house.
ClientTradelD (clearing)	


Trade Keyword	Description
CounterpartyRejectReason	Rejection Reason entered by the counterparty in response to a new trade or trade amendment initiated by the Processing Org.
BlockUSIPrefix	
BlockUSIValue	
CCP (clearing)	Short code for Clearing House Legal Entity. Populated with the Clearing House name on trade inception if "Exclude From Clearing" on the Trader/Tracker Clearing tab.
CCPAccount (clearing)	When the trade is against the LCH House Account, CCPAccount = House. When the trade is against the LCH Client Account, CCPAccount = Client.
CCPClearedDate (clearing)	The date the trade is registered with the clearing house.
DeliveryDate	These keywords map to the MarkitWire Independent
DeliveryDateConvention	These fields may become a Fee in a future version of
DeliveryDateHolidays	Calypso's MarkitWire Integration. The fields are accessible via the Swapswire Mapping Window.
InitialMarginAmount	
InitialMarginCcy	
InitialMarginType	
IS_CLIENT (clearing)	Set to true if trade is related to client activity or false otherwise.
LinkedTo (clearing)	After applying UpdateLinkedToKeywordTradeRule in an initial trade transition, Calypso searches for other trades having same SWDealld keyword value and the same SWContractVer keyword value, then adds the Trade ID of that trade as a value of the LinkedTo keyword. Calypso also adds the LinkedTo keyword on the other trade, as well. This links two trades having same SWDealld keyword value and same SWContractVer keyword value.
MasterConfirmationDate	Date of associated master confirmation for outgoing Equity Linked Swaps – Format yyyy-mm-dd.
MasterConfirmationType	Type of associated master confirmation for outgoing Equity Linked Swaps.



Trade Keyword	Description
	Example:
	Counter Party AAA BANK
	Processing Org CALYPSO BANK Id 10401 Region ANY Product Type EquityLinkedSwap
	Currency ANY Date 10/05/2015
	Type ANY SD Filter
	Effective From Effective To Master Confirm Type ISDA2003CredtAsia Set Product Definition
Platform (clearing)	Execution Source Identifier. When trades are SEF executed, MarkitWire now passes the Execution Source in this keyword in the Clearing XML. Replaces CCPExecutionSource from previous versions.
PlatformCP	Original CounterParty in MarkitWire.
PlatformPO	Original Processing Org party in MarkitWire.
PlatformRejectReason	Rejection Reason by the Processing Org: In bidirectional mode, this keyword must be populated prior to submitting a rejection to a new trade or a trade amendment initiated by the counterparty.
PlatformTradeld	
PriorUSIPrefix	Prior Unique Swap Identifier prefix (after a USI change).
PriorUSIValue	Prior Unique Swap Identifier suffix (after a USI change).
ReportingBlkEventID	ID number
ReportingClearingException	True/False
ReportingClearingMandatory	True/False
ReportingCollateralized	Blank/Fully/One-Way/Partially/Uncollateralized
ReportingConfirm	No/Yes/YesIfDF.YesIfRCP
ReportingEventID	ID number
ReportingExecutionTime	2012-10-23T18:01:29Z
ReportingJurisdiction	If flagged, keyword is set to 'CFTC'
ReportingLocationBroker	3-digit country code



Trade Keyword	Description
ReportingLocationDesk	3-digit country code
ReportingLocationsSales	3-digit country code
ReportingLocationsTrader	3-digit country code
ReportingNonStandard	True/False
ReportingOffPlatform	Blank/Electronic/NonElectronic
ReportingParty	True or false depending on whether the Processing Org reports to the trade repository. (In 3.0.4 and below, this Trade Keyword was ReportingCounterparty.)
ReportingParty	Calypso keyword is set to the short name of an existing Legal Entity in Calypso.
ReportingPET	No/Yes/YesIfDF/YesIfRCP
ReportingPostTrade	No/Yes/YesIfDF.YesIfRCP
ReportingPriceForming	True/False
ReportingRegulatoryReportable	True/False
ReportingRT	No/YesIfRCP
ReportingVenue	Blank/SEF/DCM/Off-Facility
SWAmendmentType	Stores the provided amendment type. (Dodd-Frank Compliance)
SWAutoSendForClearing	Yes/No depending upon "Auto Send For Clearing" checkbox in MarkitWire.
SWBookState	
SWBrokerTradeld	
SWCancellationType	Stores the provided cancellation type. (Dodd-Frank Compliance)
SWClearingStatus	The reason for rejection by the clearing house.
SWClientClearingDeal	
SWContractState	Contract of trade in MarkitWire.





Trade Keyword	Description
SWContractualDefinitions	The value of the Definition field from the Processing tab in MarkitWire.
SWContractVer	Swapswire contract version
SWCorrelationID	Trade Pair Id at CCP
SWDealld	Swapswire Deal ID; the existence of this keyword can be used to determine whether this trade has been imported from Swapswire.
SWEligibleForClearing	Is the trade eligible for clearing?
SWExitReason	
SWGiveUpTradeld	
SWLoginHandlerldentifier	Stores the Deal Sink ID used to retrieve the trade. This field is used in lieu of SWLoginHandle (which is not needed).
SWMasterAgreementType	The value of the Master Agreement field.
SWModificationEffectiveDate	Stores the Modification Effective Date from MarkitWire.
SWModificationTradeDate	Stores the Modification Trade Date from MarkitWire.
SWOriginalCounterparty	Shows the original counterparty on a cleared trade.
SWOriginalDealType	Populated for the Executing Broker role when upgrading a trade from bilateral to trilateral, with values "Bilateral" or Trilateral".
SWOriginalPayStartDate	Original Paying Leg Start Date in MarkitWire. Populated when an adjustment occurs on the Paying Leg Start Date.
SWOriginalRecStartDate	Original Receiving Leg Start Date in MarkitWire. Populated when an adjustment occurs on the Receiving Leg Start Date.
SWPBGiveupDealID	
SWPBMirrorDealID	
SWPrivateVer	Swapswire private version.
SWProcessState	Stores the New State from MarkitWire



Trade Keyword	Description
SWSchedulingMethod	Must be set to ListDateEntry for outgoing Equity Linked Swaps.
SWSendForClearing	Was the trade sent for clearing?
SWSendForClearingTimeStamp	The date and time the trade was sent for clearing.
SWSide	Swapswire deal side.
SWSingleSided	Swapswire single-sided deal. (MWMigrateTradeStatus domain)
SWValidated	Swapswire trade is validated. (MWMigrateTradeStatus domain)
TradeSource	Platform Source. The domain "UploadMessageSourceTypes" should contain valid trade sources. If the trade keyword TradeSource is empty or invalid, you can use the trade workflow rule MWSource to set TradeSource = MW.
USIPrefix	Unique Swap Identifier - Namespace prefix.
USIValue	Unique Swap Identifier - Transaction Identifier suffix.
ConditionPrecedentBond	Cancellable Swap Bond availability
ConditionPrecedentBondCodeType	Cancellable Swap Bond code type (ISIN/CUSIP)
ConditionPrecedentBondCodeValue	Cancellable Swap Bond code value
ConditionPrecedentBondMaturityDate	Cancellable Swap Bond Maturity Date (yyyy-mm-dd)
DiscrepancyClause	Cancellable Swap Bond discrepancy clause
FollowUpConfirmation	Cancellable Swap Condition follow up confirmation
ESMAFrontloadingCategory	Frontloading Category values – Category1/Category2/None
ESMAClearingExemption	Indicating if exempt from ESMA mandatory clearing. Values - True/False
PricedToClearCCP	Field mapped to MW PricedToClearCCP dropdown. Contains a valid Calypso LE code mapped to MW CCP BIC code



Trade Keyword	Description
SWBulkAction	It is set in MW while Termination/Novation in processing tab. Values - True/False
PlatformBackload	Indicated whether backloading deal. Values – True/False

MIFID Keywords

Trade Keyword	Description
ReportingMIFIDCounterpartyType	Specifies the type of reporting counterparty as selected in MarkitWire. The type selected could be We/Cpty/Venue. In all cases there should be a legal entity in Calypso with the attribute SwapswireParticipant with the value of the ReportingCounterpary BIC code.
ReportingMIFIDPreferenceTransparencyReporting	The value will be as selected in MarkitWire.
ReportingMIFIDPreferenceTransactionReporting	The value will be as selected in MarkitWire.
ReportingMIFIDTransparencyReportable	The value will be as selected in MarkitWire.
ReportingMIFIDTransactionReportable	The value will be as selected in MarkitWire.
ReportingMIFIDDestinationAPA	Populated from static. APA - Approved Publication Arrangement
ReportingMIFIDDestinationARM	Populated from static. ARM - Approved Reporting Mechanism
ReportingMIFIDTransactionIdentifier	Generated or user submitted per transaction
ReportingMIFIDShortSaleIndicator	User submitted per transaction
ReportingMIFIDOTCPostTradeIndicator	Selectable flags submitted per transaction
ReportingMIFIDWaiverIndicator	Selectable flags submitted per transaction
ReportingInvestmentDecisionMaker	User submitted per transaction, can be defaulted based upon user logged in
ReportingInvestmentDecisionMakerLocation	One or more locations as selected in MarkitWire
ExecutionVenueMIC	MICs taken from static, selectable on a transaction



Trade Keyword	Description
InstrumentISIN	Derived from transaction details if possible, can be overridden on transaction
InstrumentCFI	We capture the value passed from MarkitWire.
InstrumentFullName	We capture the value passed from MarkitWire.
ReportingMIFIDJurisdiction	True if MIFID reporting is applicable
ReportingMIFIDCounterparty	Calypso Legal entity for the corresponding party selected in MarkitWire as the Reporting Party
ReportingMIFIDToTV	Set to true if selected in MarkitWire.
ReportingTradingCapacity	A default value for trading capacity, can be overridden on transaction
ReportingTraderName	Trade Name
ReportingTraderLocation	One or more locations as selected in MarkitWire
ReportingToTV	Set it to Yes if selected in MarkitWire

Order Details Keywords

Trade Keyword	Description
TypeOfOrder	As entered in MarkitWire
OrderTotalConsideration	As entered in MarkitWire
OrderRateOfExchange	As entered in MarkitWire
OrderClientCounterparty	As entered in MarkitWire
OrderTotalCommissionAndExpenses	As entered in MarkitWire
OrderClientSettlementResponsibilities	As entered in MarkitWire
OrderTransmission	Boolean. True if selected in MarkitWire
OrderBuyer	As entered in MarkitWire
OrderSeller	As entered in MarkitWire



2.4.7 Modification Effective Date and Modification Trade Date

MarkitWire V7.1 introduced two fields to support interoperability with the DSMatch system. The fields are Modification Effective Date, and Modification Trade Date, which are used for deal Amendments and Terminations. They provide a means to apply a modification to a trade that is effective from a specific date forward. For example, amending the notional amount one month into a 3-month swap. Calypso stores these fields as the trade keywords, **SWModificationEffectiveDate** and **SWModificationTradeDate**.

By default, amendments in Calypso affect the entire life of the deal. Therefore, Calypso's MarkitWire validation only allows an Amendment (or Exit) having a Modification Effective Date equal to or earlier than the Trade Start Date. The Amendment (except if caused by a Partial Termination) is then processed by the Calypso API.

In Calypso, the default behavior when receiving an amendment (not caused by a Termination or Novation) that has an Effective Date after the Start Date of the trade appears, is to log the Amendment as an error in the Task Station and cease processing.

However, by adding a domain, the user can configure Calypso to support MarkitWire's DSMatch interoperability (i.e., allow amendments whose Effective Date occurs after the Start Date). In addition, after configuring, any Amendments stuck in the exception queue can then be re-processed and will flow through without error. This also applies to the Exit action.

To enable support for DSMatch interoperability, use the Domain Value application to add **MWEnforceEffectiveDate** to the **domainName** domain. Set **MWEnforceEffectiveDate** to true. If **MWEnforceEffectiveDate** is missing or not set, the default Calypso behavior applies: The Modification Effective Dates must be on or before the trade Start Date.

2.4.8 Pre-Mapped Values

Data Synchronization adds the following values to the Calypso Mapping Table:

Columns

- Daycount
- Fees
- FieldKeywords
- FXReset
- Holidays
- IndexTenor
- Location
- MWBookingState
- RateIndex
- TimeZone
- Traders
- ProductType



Daycounts

Interface Value	Calypso Value
30E/360.ISDA	30E*/360
ACT/365.FIXED	ACT/365
ACT/365.ISDA	ACT/365
ACT/365L	ACT/365L
ACT/ACT.AFB	ACT/ACT29
ACT/ACT.ICMA	ACTB/ACTB
ACT/ACT.ISDA	ACT/ACT
BUS/252	BU/252

Fees

Interface Value	Calypso Value
AmendmentFees	FEE
Cancelation	TERMINATION_FEE
CashExercise	EXERCISE_FEE
FixedAmount	FIXED_AMOUNT
NovationStepIn	TERMINATION_FEE
NovationStepOut	TERMINATION_FEE
PartialTermination	TERMINATION_FEE
Premium	PREMIUM
swBrokerageAmount	BRK
swSalesCredit	FEE
UnclassifiedFee	FEE
UpfrontFee	UPFRONT_FEE



The FixedAmount MarkitWire fee should be mapped to a specific and distinct fee type in Calypso, such as FIXED_AMOUNT, and be used exclusively as a way to represent the ZC swap final payment.

Field Keywords

Interface Value	Calypso Value
1	AdditionalFld1
2	AdditionalFld2
3	AdditionalFld3
4	AdditionalFld4
5	AdditionalFld5

MarkitWire Booking States

Values in the MWBookingState column:

- Error
- Saved
- Validated

ProductType

The import of cross-currency Swaps and Non deliverable swaps in IRS window as SwapCrossCurrency and SwapNonDeliverable respectively can be configured in the "ProductType" mapping. The support is added in all modes the interface supports. Please note that the product old types are deprecated and the new types are recommended to be used – Swap Non Deliverable and Swap Cross Currency. The same can be mapped via following in the Calypso mapping window:

nterface Mappings		
InterfaceName	Name:	MW/ProductType
	Interface Value:	NonDeliverableSwap
MVV	Calumaa Mahusu	SwanblenDeliverable
CounterpartyTraders	Carypso value:	Swapivoribeilverable
DateRoll	Reverse Default:	(1977)
🐵 🛄 DayCount		
DefaultindexTenor		
FXReset	>>> DDA >>	
E Fees	>> Remove	
Erequency		_
Holidays	Configure Interfaces	
indexTenor		-
Location	Configure Types	
🕮 🔠 MWBooking State		
OptionExerciseTimeZone		
PO-CP Mapping		
ProductType		
CrossCurrency Swap		
Reteledex		
RateIndex Source		
BollDay		
SettlementRateIndex		
TerminationReason		
🐵 🛄 TimeZone		
Traders		



Interfaceilamo Name: MW//broductType Interface Value: CrossCurrencySwap Configure Interface Value: SwapCrossCurrency Image: MWW MW Image: MWW Calypso Value: Image: MWW SwapCrossCurrency Image: MWW Calypso Value: Image: MWW SwapCrossCurrency Image: MWW Reverse Default: Image: MWW SwapCrossCurrency Image: MW SwapCrossCurrency Image: MW SwapCrossCurrency Image: MW SwapCrossCurrency Image: MW SwapCrossCurrency </th <th>Interface Mappings</th> <th></th>	Interface Mappings	
Image: Content of the second state Name: Name	InterfaceName	
FpML Interface Value: CrossCurrencySware MWV ConterpartyTraders DateRoll DateRoll DateRoll DateRoll DefaultIndexTenor Frequency Frequency Configure Interfaces Configure Types Configure Types Configure Types	👜 🛄 CME	Name: MW/ProductType
I LCH Calipso Value: SwapCrossCurrency WW SwapCrossCurrency Calipso Value: SwapCrossCurrency DateRoll Calipso Value: SwapCrossCurrency DateRoll Reverse Default: DateRoll Calipso Value: SwapCrossCurrency DateRoll Reverse Default: DayCount Configure Interfaces >> Remove FieldKeywords Configure Interfaces Holidays Configure Interfaces Configure Types OptionExerciseTimeZone Configure Types ProductType ✓ Retelndex Source RateIndex RateIndex Source RateIndex SettlementRateIndex SettlementRateIndex	🗰 🛄 FpML	Interface Value: CrossOurrencySwan
MW CounterpartyTraders DateRoll DayCount DefaultIndexTenor DefaultIndexTenor FRess FreidKeywords Frei	🕮 🛄 LCH	crossearcheyshap
ConterpartyTraders Count Reverse Default: Configure Interfaces Configure Types		Calypso Value: SwapCrossCurrency
DateKoll Reverse Default: DefaultindexTenor DefaultindexTenor FRess Fees Holidayroards Holidayroards DefaultindexTenor Configure Interfaces Configure Types Configure Types Source Sourcestarts Retelndex Retelndex SettlementRateIndex SettlementRateIndex SettlementRateIndex	CounterpartyTraders	
DayCount DayCount DayCount DayCount DayCount DayCount Preas FieldKeywords Frequency Trequency DayCount DayCount Configure Interfaces Configure Types Configure Types Configure Types ProductType ProductType ProductType ProductType ProductType ProductType ProductType RateIndex RateIndex SettlementRateIndex SettlementRateIndex SettlementRateIndex	DateRoll	Reverse Default:
Defaultindex Lenor Defaultindex Lenor Defaultindex Lenor Defaultindex Lenor Configure Interfaces Configure Types Configure Types Configure Types Configure Types Configure Types	DayCount	
FAReset >> Remove FieldKeywords >> Remove FieldKeywords Configure Interfaces Holidays Configure Interfaces Location Configure Types OptionExerciseTimeZone Configure Types ProductType SetionentRateIndex RateIndex Source RateIndex SettlementRateIndex FerminationReason	Defaultindex Lenor	
Fees Fees Feeds Feed		< Add
Frequency Holdays	in Field Consumed a	>> Remove
Configure Interfaces Configure Types Configure	Frequency	
IndexTenor IndexTenor Location MWBooking State OptionExerciseTimeZone ProductType FroductType XerossCurrence/Swap RateIndex RateIndex RateIndex SettlementRateIndex SettlementRateIndex SettlementRateIndex SettlementRateIndex	Holidays	Configure Interfaces
Configure Types Confi		
WWBooking State WWBooking State OptionExerciseTimeZone Po-CP Mapping Po-CP Mapping NonDeliverable Swap MonDeliverable Swap RateIndex RateIndex RateIndex Source RateIndex SettlementRateIndex SettlementRateIndex	Location	Configure Types
OptionExerciseTimeZone OptionExerciseTimeZone ProductType ForoScurrencySwap StrosScurrencySwap StateIndex RateIndex Source RateIndex SetUementRateIndex SetUementRateIndex ForoScurrencySwap	MWBookingState	
PO-CP Mapping ProductType StorsSchroncySwap StorsSchroncySwap RateIndex RateIndex RollDay StlementRateIndex SettlementRateIndex TerminationReason	OptionExerciseTimeZone	
ProductType FrosScurrencySWap SonDeliverable Swap StateIndex RateIndex Source RateIndex Source RateIndex For Source TerminationReason	PO-CP Mapping	
CrossCurrencySwap SonoBeiverableSwap SonoBeiverableSwap Reteindex Rateindex Rateindex Source SetUsementRateIndex TerminationReason	ProductType	
Source	CrossCurrencySwap	
B→ II RateIndex B→ II RateIndex Source B→ II RateIndex Source B→ II SettlementRateIndex B→ II TerminationReason	🔤 🐓 NonDeliverable Swap	
□ RateIndex Source □ RateIndex Source □ SetUementRateIndex □ SetUementRateIndex □ TerminationReason	RateIndex	
e-⊡ RollDay e-⊡ SettlementRateIndex e-⊡ TerminationReason	RateIndex Source	
Setument Katelindex TerminationReason	RollDay	
	SettlementRateIndex	

For getting the trades booked with old product type calypso value should be same as the interface value.

Note: If the mappings are available, and we book a CrossCurrencySwap in MW with either leg having a non-deliverable currency, it will get saved in calypso with product type SwapNonDeliverable as per core calypso standard. In bidirectional mode, we check if the legs have different currencies, we Allege trade with the MarkitWire product as CrossCurrencySwap.

2.4.9 Engine Configuration

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

It subscribes to: PSEventTrade, PSEventRepublish, PSEventSwapswire, and PSEventSwapswireScheduleTask.

Add the **SwapswireTradeEngineEventFilter** for the SwapswireTradeEngine to the list Event Filters.

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

Please refer to Calypso Web Admin documentation for complete details.

Engine Parameters

You can set the engine parameters using the Engine Manager in Web Admin.

EVENT_POOL_POLICY - Select SwapswireTradeEngine.

2.4.10 Using Multiple SwapswireTradeEngine

You can use multiple engines in markitwire and connect to separate dealsinks for parallel processing.

To enable this, an instance of the engine must be provided with an additional argument -engineName denoting the unique name of the engine; for example, -engineName=SwapswireTradeEngineOne.

You also need to set the environment property:

SWAPSWIRE_ENGINE_MULTI_MODE=true



Multiple SwapswireTrade engines can be created as follows.

Configure the engines in "<calypso home>/tools/local-jbossdeployer/config/deployLocalConfig.properties":

Please note that numbers/digits and underscores cannot be used to name an engine (e.g. SwapswireEngine1 will not work).

Sample Engine Configuration:

SwapswireTradeEngineOne_SWAPSWIRE_USER=dealsink1 SwapswireTradeEngineOne_SWAPSWIRE_PASSWORD=pwd1 SwapswireTradeEngineOne_SWAPSWIRE_CONCURRENT_LOGIN_NO=1

SwapswireTradeEngineTwo_SWAPSWIRE_USER=dealsink2 SwapswireTradeEngineTwo_SWAPSWIRE_PASSWORD=pwd2 SwapswireTradeEngineTwo_SWAPSWIRE_CONCURRENT_LOGIN_NO=1

In the environment properties, the deal sink user id (SWAPSWIRE_USER), deal sink password (SWAPSWIRE_PASSWORD) and the concurrent login count (SWAPSWIRE_CONCURRENT_LOGIN_NO) must be modified to <engine name>_SWAPSWIRE_USER, <engine name>_SWAPSWIRE_PASSWORD and <engine name>_SWAPSWIRE_CONCURRENT_LOGIN_NO.

Similarly, in "calypso_SW_config.properties", properties related to do-recovery need to be changed; performDoRecovery, doRecoveryStartDate and doRecoveryEndDate become <engine name>_performDoRecovery, <engine name>_doRecoveryStartDate and <engine name>_doRecoveryEndDate respectively.

2.4.11 Legal Entities

Map legal entities in Calypso with attribute "SwapswireParticipant" set to participants' IDs as sent by MarkitWire, and SwapswireBroker set to brokers' participant IDs.

Clearing House Legal Entities should have roles: Clearer, CounterParty, and MarketPlace.

This is an example of the required mapping of a MarkitWire counterparty to Calypso Legal Entity. The required Participant ID is the value of the <partyld> in a trade's SWML file. For example, in the following excerpt, CALYPXXXX is how MarkitWire refers to counterparty in question:

```
<party id="partyA">
<partyId>CALYPXXXX</partyId>
<partyName>Calypso Bank</partyName>
</party>
```





📕 Legal Entity	Legal Entity Attributes Window - Version - 0						
Legal Enti	ty	CALYPSO			Role	ALL	•
Processing Org	ļ	ALL	•				R
Attribute Typ)e	SwapswirePart	icipant 💌		Value	CALYPXXXX	
Id	Pr	ocessing Org	Legal Entity	Rol	e	Attribute Type	Attribute Value
22901	ALL		CALYPSO	ALL		SwapswireParticipant	CALYPXXXX

Support for multiple broker and counterparty BIC codes of MarkitWire

If more than a single code for the broker and counterparty needs to be mapped the only option to store different settings is to use different constellations of Processing Org and/or Role. As the business is getting instantly more complex we are currently running into a situation where for the broker/counterparty has multiple codes need to be mapped. But all the codes belong to the same broker/counterparty.

Therefore we need a configuration option where we can map multiple codes for one Broker/Counterparty.

Let's take below example, in Calypso mappings, define multiple PO Swapswireparticipant required for booking a trade from MW and link to one legal entity PO in calypso. PO CALYPSO Bank Legal Entity is mapped with multiple swapswireparticipants as shown below. In calypso mappings, define multiple clearing broker bicode required for booking a trade from MW and link to one legal entity cpty in calypso.

D NOTE: The same process can be followed for the Broker as well. This is available only for incoming mode.

Here, the Interface value - Swapswireparticipant of MW cpty and Calypso Value - cpty Legal entity in Calypso.



- 💆 KeywordValue	^		
		Name:	MW/SwapswireParticipant
■ MWBookingState			
MWReportingJurisdictions		Interface Value:	MEGACALPCC
MasterConfirmationType			
		Calypso Value:	MEGA BANK LTD
PO-CP Mapping		Devene Defectiv	
P SStrategyname		Reverse Derault:	
		<< Add	
⊞ RateInde Source		>> Remove	
🗉 🔠 RateIndex_ISDA2021			
🖶 🛄 RollDay		Configure Interfaces	
🗉 🛄 SettlementRateIndex		Configure Types	
SpreadCalculationMethod		configure rypes	
SwapswireParticipant			

Interface value - Swapswirebroker of MW cpty and Calypso Value - broker Legal entity in Calypso

🔀 Calypso Mapping Window		
KeywordValue	1	
Location	Name:	MW/SwapswireBroker
MasterConfirmationType	Interface Value:	MEGA1234
OptionExerciseTimeZone	Calypso Value:	MEGA BANK LTD
⊕ PO-CP Mapping BSStratemAlama		
PSStrategywarne PlatformAgrDiscRateCashSetIInfo	Reverse Default:	\checkmark
PlatformAgreedDiscountRate		
ProductType	<< Add	
RateIndex ReteIndex	>> Remove	
BrateIndex ISDA2021		
	Configure Interfaces	
SettlementRateIndex	Configure Types	
SpreadCalculationMethod SwapswireProker		

If there is a mapping provided in Calypso mapping window for a MW BIC code against Calypso LE that will be given preference and if for a certain BIC code it is not provided then it will fallback to existing logic of checking for LE having an attribute with this BIC code.



2.4.12 Books

Set the SwapswireBook attribute (create this attribute if it is not present) for each book that will receive MarkitWire trades. The SwapswireBook attribute is the MarkitWire Book name.

Book Window - Version -0 [110000/fastrack/calypso_user]				
View Help				
Book Id 17839		Attributes		
Name Calypso_Doc		Name		
		BookBundle		
Activity Trading		CAMoneyDiff Book		
	_	CTC Compounding	*	
Accounting Book TRADING1	•	CTC Consolidator	-	
		CTC Offset	-	
Legal Entity CALYPSONYC		CTC Role	-	
Location America/Now York		DayChangeRule		
Location America/New_York	<u> </u>	Market Index	-	
End Of Day 23 Hour 59 Min		PricerKey		
		ProfitCenter		
Base Ccy USD	-	SwapswireBook	CALYP9	
		VALUATION_TIMES		
Holidays NYC		VALUATION_TIMEZONES		

In the example above, the Calypso book, "Calypso_Doc" has the SwapswireBook attribute value, "CALYP9." MarkitWire trades booked against the CALYP9 book will be entered against the Calypso Book, "Calypso_Doc." If desired, you can create Calypso book names identical to those on MarkitWire, however, the mapping must still be made.

D Note: The SwapswireBook name is always from the MarkitWire point of view.

Multiple MarkitWire Users

If your implementation uses multiple concurrent MarkitWire Users (see the "Multiple Dealsink Users" section), ensure that you have also set the SwapswireBook attribute of each Calypso book as appropriate.

BuySide Case

The domain "MWUserRole" is used to identify BUY or SellSide. It is SellSide by default. It should contain BuySide to identify BuySide.

In case of BuySide:

Incoming messages - If parent LE BIC code (SwapswireParticipant) matches with swTradingBookId field from SWML, the book is set using SwapswireBook attribute on the allocation Fund-LE instead of swTradingBookID from SWML.

Outgoing messages – Set the Fund-LE party id (LE having SwapswireParticipant = SwapswireBook attribute.



In BuySide mode, orders executed by Tradeweb in Calypso are linked to trades incoming from Markitwire following the scenario below:

- Order is created in Calypso and sent to Tradeweb.
- Tradeweb executes order and sends message to Calypso.
- Calypso executes order and creates trade (PlatformTradeld = Tradeweb Trade Id).
- Tradeweb sends message to Markitwire.
- Markitwire sends trade incoming notification message to Calypso.
- Calypso links existing trade created from Tradeweb execution with incoming Markitwire trade using SWBrokerTradeld.
- Post trade lifecycle is supported via standard Markitwire integration.

2.4.13 Broker

You must map the **SwapswireBroker** Legal Entity Attribute to Broker in MarkitWire.

2.4.14 Reference Bank

You must map the SwapswireLongName Legal Entity Attribute to the Break Clause Reference Bank in MarkitWire.

2.4.15 Workflow Configuration

Note: Ensure that you have first imported the most current version of the MWGATEWAYMSG.wf and UPLOADSOURCEMSG.wf message workflows from the <calypso home>/client/resources directory. These files were extracted from the Service Pack jar that you are installing.

Workflow rules associated with MarkitWire only affect trades uploaded from an external source, i.e., those trades with the **TradeSource** Trade Keyword.

Adding Domain Data

Use the Domain Values window to add the following actions to the indicated Domains:

Domain	Action
UploadExitAction	MWEXIT
tradeAction	MWEXIT

Note that you can use any valid TradeAction for a customized workflow action. When an Action is not provided, Calypso defaults to the MWEXIT Action.

Please remember to setup workflow rules for any custom actions used here.

Removing MarkitWire Keywords

In the event that you wish to remove MarkitWire Keywords from a trade, follow the procedure below:



Step 1 - Add the MarkitWire Keywords to remove under the MWExitKeywords domain using the Domain Values window.

Step 2 - Add a trade workflow rule for the exit action. The action name should match with the value specified in the **UploadExitAction** domain (i.e., MWEXIT).

Action Details				
Id	27761		Ç	
Orig Status	VERIFIED	~	€	
Action Name	MWEXIT	~	€	
Result Status	VERIFIED	~	€	
37	Create task On Failu	re 🗸		
>>>>	Use STP			
7	Generate Interme	diary Event		
0 ₁₂ Priority 0				
👋 🗌 Need Manual Authorization				
🦪 🗌 Comment				
\land 🗌 Different User				
🚖 🔽 Preferred Action				
🛆 🗌 Update Only				
📫 Rules		∋ 📮 🗙 🕸	0	
Name	Rule Param	Task Comment		

ForceAmend

ForceAmend allows you to force an amend on a trade using the new message workflow rule for the scenario where the interface is down and the trade was entered with a manual link to an existing MarkitWire trade in Calypso. The User must add the **FORCE_AMEND** action under the **messageAction** domain:

Domain Values Window (User: calypso_user)			
Search:	Find	🗖 Value	
🕀 measuresForAdjustment			Name: messageAction
🗄 📲 MEPreload			
🗄 🖽 Message.ChaserType			Value: FORCE_AMEND
庄 🖽 MESSAGE. Templates			
🖶 📖 messageAction			Comment:
ACCEPT			1
			<< Auu



Add a New Action to the GatewayMsg Workflow

Insert the FORCE_AMEND action and ForceAmend workflow rule. The Original Status is PENDING_VALID and Result Status is PENDING_VALID:

Action Details 7			Ŧ
Id	Id 81706		
Orig Status	PENDING_VALID	\sim	€
Action Name	FORCE_AMEND	~	€
Result Status	PENDING_VALID	~	€
7	Create task On Failu	re \vee	
>>>>	Use STP		
٢.	Generate Interme	diary Event	
0 ₁₂ , Priority 0			
👋 📃 Need Manual Authorization			
🧭 🗌 Comment			
🤱 🗌 Different User			
🚖 🗌 Preferred Action			
٨	Update Only		
📫 Rules		∃ 4 ×	0
Name	Rule Param	Task Comment	
ForceAmend			





 \times



If a trade with given external reference already exists in Calypso, then a new trade from MarkitWire is not uploaded to Calypso. The SwapswireTradeEngine throws the exception task: "Trade Already exists with External Reference: MW_POName_MarkitWireDealID", where POName is the Processing Org name and MarkitWireDealId is the ID of the MarkitWire deal.

The user can replace the existing trade with the MarkitWire trade by manually applying the FORCE_AMEND action on the gateway message. Doing so will force the Calypso trade to change from NEW to the default amend action and MarkitWire trade is then uploaded to Calypso with the Amend action.

2.4.16 Task Station Configuration

You should configure the Task Station with specific reports to monitor messages and exceptions generated when processing MarkitWire trades. The image and table below provide the suggested configuration:

🔀 Report Configurations

Task Station Tabs Task Enrichment Filters		
Q,-	Name	Value
MW Messages	Tab Name	MW Messages
	Workflow Types	Message
	Books	ANY
	Book Attributes	
	Event Types	CANCELED_MWGATEWAYMSG,
	Priorities	LOW, NORMAL, HIGH, CRITICAL
	Task Statuses	NEW, UNDER_PROCESSING, CO
	Enrichment Columns Filter	
	Task Date Type	NewDatetime
	From Tenor	-1D
	To Tenor	+1D

Suggested Reports	Event
MW Messages	BACKLOAD_MWGATEWAYMSG (provided the BACKLOAD action is configured – See Backloading Support section)
	CANCELED_MWGATEWAYMSG
	PENDING_TRADE_MWGATEWAYMSG
	PENDING_VALID_MWGATEWAYMSG
MW Warnings	EX_MWGATEWAYMSG_WARNING
MW Exceptions	EX_MWGATEWAYMSG
	EX_MWGATEWAYMSG_ERROR
	EX_MWGATEWAYMSG_REJECT



Suggested Reports	Event
UploadSource Messages	UploadSource Messages
CANCELED_UPLOADSOURCEMSG	CANCELED_UPLOADSOURCEMSG
	PENDING_UPLOADSOURCEMSG
	RECEIVED_UPLOADSOURCEMSG
	TRANSLATED_UPLOADSOURCEMSG
UploadSource Warnings	EX_UPLOADSOURCEMSG_WARNING
UploadSource Exceptions	EX_UPLOADSOURCEMSG
	EX_UPLOADSOURCEMSG_ERROR
	EX_UPLOADSOURCEMSG_REJECT

2.4.17 MarkitWire Module Date Adjustments

This section describes how the Calypso MarkitWire module handles Date Adjustments.

Start Dates

A trade's **Start Date** is adjusted in the Calypso GUI if the **Adj Start** checkbox in the MarkitWire GUI is selected (checked). The **Start Date** is left unadjusted, otherwise. Any adjustment of the **Start Date** must occur in the Calypso GUI to ensure the proper calculation of coupon amounts. Calypso never changes the payment date of the first cash flow, regardless of the Coupon Accrual Type. Calypso stores the **Start Date** of each leg of the trade in **SWOriginalPayStartDate** and in **SWOriginalRecStartDate** if there is a difference in date after an adjustment occurs.

End Dates

End Dates in the Calypso GUI are always unadjusted. However, the coupon payment periods are adjusted according to the **Accrual Type** selected in Calypso's GUI.

Trade Keywords

- SWOriginalPayStartDate The original Paying Leg Start Date in MarkitWire. This Keyword is populated when an adjustment occurs on the Paying Leg Start date.
- SWOriginalRecStartDate The original Receiving Leg Start Date in MarkitWire. This Keyword is populated when an adjustment occurs on the Receiving Leg Start Date.



2.5 Data Mapping Between MarkitWire and Calypso

Note: If your system uses Access Permissions, users who require access to the Calypso Mapping Window must have the appropriate permissions. See the "Access Permissions" section.

From the Calypso Navigator, navigate to Processing > Tools > Calypso Mapping to open the Calypso Mapping window.

The mapping table provides the infrastructure to map MarkitWire values to the equivalent Calypso representation.

The essential mappings are simply Value/Name. These are the items for which mappings must be made to allow the SwapswireTradeEngine to correctly import trades. The sample data provides some basic mappings for currency, holidays, tenors, workflows, etc. As the user, you will need to create additional mappings appropriate to your implementation.

The creation of the Mapping table and the domain population was accomplished in the "Data Model Synchronization" section.

You will need to create additional mappings.

Upgraders: Prior to using the Calypso Mapping Window with MarkitWire, you must migrate any existing Swapswire mappings to the Calypso Mapping table. This is accomplished during the Execute SQL step of the MarkitWire setup of the Calypso Data Uploader.

2.6 Mapping Based on Source

When the attribute "Source" is present in the root tag of the CalypsoUploadDocument:

<CalypsoUploadDocument Source="LCH" Version="1" ClientCode="LCH" UploadDate="05/ 13/2011">

then the application calls the Mapper Component, which is an extensible API that receives an XML document in the form of JAXB and the Source name. Using this Source Name the application maps the data from its Source-specific form to a Calypso-specific form:



In LCH, the DateRoll is defined as MODIFIEDF whereas in Calypso its value is MOD_FOLLOW, once this is defined, the mapper component then changes data from Source form to Calypso form before calling the Data Uploader.



The Source Mapper Component is used before actual upload of the object and during the REPROCESS workflow action. The Source Mapper Component is product specific, which means that the user must create custom code for the components. For example:

```
SOURCEInterestRateSwapMapper.java
SOURCECreditDefaultSwapMapper.java
SOURCECalypsoLegalEntity.java
If a Source-based mapper is not found, then the uploader framework attempts to find the default mappers:
InterestRateMapper.java
CreditDefaultSwapMapper.java
CalypsoLegalEntityMapper.java
```

If neither the default, nor the Source Mapper Components are found, then the Calypso Mapper is called and the application proceeds to upload.

2.6.1 Adding a New Interface Name

Synchronizing the schema files will create the required Interface Name and Interface types in the domain for MarkitWire.

To manually add a new Interface, click **Configure Interfaces** on the Calypso Mapping Window to display the Calypso Mapping Interfaces dialog where you can add a new Interface Name to the system:

CalypsoMapping.Interfaces		×
Interface Names NewInterface	Markitwire	
>> <<		
▶ Save		Close

2.6.2 Adding a New Interface Type

Synchronizing the schema files will create the required Interface Name and Interface types in the domain for MarkitWire.

To manually add a new Interface Type, click **Configure Types** on the Calypso Mapping window to display the Calypso Mapping Types dialog where you can add a new Interface Type to the system:



🖆 CalypsoMapping. Types 🛛 🚺						
Mapping Types	DayCount FXReset Fees FieldKeywords Holidays IndexTenor Location MWBookingState RateIndex TimeZone Traders					

2.6.3 Fee Types

Calypso provides most fee mappings via the data model synchronization process. The following fees are predefined:

Swapswire Fee	Calypso Value
AmendmentFee	FEE
Cancellation	TERMINATION_FEE
CashExercise	EXERCISE_FEE
FixedAmount	FIXED_AMOUNT
NovationStepIn	TERMINATION_FEE
NovationStepOut	TERMINATION_FEE
PartialTermination	TERMINATION_FEE
Premium	PREMIUM
UnclassifiedFee	FEE
UpfrontFee	UPFRONT_FEE
swBrokerageAmount	BRK
swSalesCredit	FEE
CancellablePremium	PREMIUM

Notes on Fee Mapping and Trade Exercise

- If the user does not specify the Cash Exercise fee on MarkitWire, Swaptions are then exercised in Calypso without the fee.
- If the user specifies a fee on MarkitWire, and no corresponding mapping is found on Calypso, the trade is not exercised in Calypso and an exception is then generated on the Task Station.



• If the user specifies a fee on MarkitWire and corresponding mapping is found on Calypso, the Swaption on Calypso is exercised and the fee is added.

Manual Fees

Calypso provides users the option to manually add fees to a Calypso trade that are not amended by newer versions of the MarkitWire trade.

Users can add fees to the "UploadPreserveFee" domain to prevent their being amended. Fee types defined in this domain are considered "Manual Fees." These fees follow the same logic as that of "propagateFees". If the fee is defined in the domain and if the Fee Date is greater than the Transfer Date, then the fee propagates to the child trade.

Fee Types entered in the "**UploadPreserveFee**" domain may not be the same as any MarkitWire Fee Types defined in Calypso Mapping Window.

Fee types that should not be sent to MW while alleging trades from Calypso should be added to the domain "PlatformIgnoreFees". A fee type defined in domain "PlatformIgnoreFees" must also be defined in domain "UploadPreserveFee" so that the fee is preserved for the incoming updates coming from MW on the alleged trades.

Example:

PlatformIgnoreFees contains Value = COMMISSION

UploadPreserveFee contains Value = COMMISSION

COMMISSION fee is not sent to MW while alleging trades from Calypso and is preserved on the Calypso trade when incoming updates are coming from MW on alleged trades.

Handling of Reappearing Fees

Calypso defines a "Reappearing Fee" as a fee that has the same type, amount, and date as a previously defined fee on any of the ancestral trades.

Any Fee having the same type, amount, and date present in parent trade does not propagate to child trade if the **Transfer Date** (i.e., the **Trade Effective Date**) is greater than the **Fee Date**.

Fees from MarkitWire propagate to child trades in Calypso if:

- 1. The fee is defined in the propagateFees domain; and,
- 2. The **Fee Date** is greater than the **Transfer Date** of the trade.

2.6.4 Holiday Codes

MarkitWire holiday codes use the code convention common to ISO and FpML, which is the of 2-letter ISO country code followed by a 2-letter city code. For example, the Swapswire USNY code is the equivalent of the Calypso NYC code.

The Swapswire USGS code is the equivalent of the Calypso FRBNY code.





2.6.5 Exercise/Settlement Location

Calypso uses the Exercise/Settlement Location field populated from the value of the Location field on MarkitWire Compose Trade window's **Break** tab. Locations are mapped in the same manner as Holiday mappings. To map an exercise/settlement Location, open the Calypso Mapping, and add the Location domain to the list of ValueNames. Next, map the Cash Settlement Locations.

2.6.6 FX Reset Mapping

The Calypso FXReset mapping handles the FX rate reference for MTM XCCy swaps from MarkitWire to Calypso. When importing MTM XCCy swaps from MarkitWire to Calypso, the FX rate reference (next to the **Adj** checkbox) will be at appropriate rate at that trade level. Users can make these mappings these in Calypso Mapping Window.

For example:

MW Rate: USD-EUR-Reuters-FXFIX (Pay leg currency-receive leg currency-Rate Source-Source Page)

Calypso rate: USD.EUR LNB (name of calypso rate as defined in FX Rate Definitions Window (custom names)

FXReset is made available by executing SwapswireSchemaBase.xml. No action is required beyond adding your mappings.

2.6.7 DayCount

Users can map DayCounts using Calypso Mapping Window. Executing SwapswireSchemaBase.xml and SwapswireSchemaData.xml adds all MW DayCounts to the mapping table.

Please note that all standard DayCounts supported by MarkitWire and Calypso are present in the interface and require no action by the user. You can add additional DayCount mappings if the available set lacks a particular DayCount required in your implementation.



2.6.8 Tenors

Calypso's MarkitWire implementation supports custom tenors. For example, the pre-populated 28D MarkitWire tenor equates to 4W in Calypso. Using the Calypso Mapping Window, you can enter custom tenors as required.

All standard tenors supported by Calypso and MarkitWire are already available (via SwapswireSchemaData.xml) and require no action on your part. Only custom tenors need be entered.

2.6.9 Reference Indices

MarkitWire Rate Index codes follow ISDA conventions. Map the Rate Index codes that you will use to the equivalent Calypso currency/rate index/source names. Note that MarkitWire uses the hyphen (-) as a separator, while Calypso uses the tilde (~).

Sample mapping:

Name:	MW/RateIndex
Interface Value:	GBP-SONIA-COMPOUND
Calypso Value:	GBP~SONIA~T120
Reverse Default:	\checkmark

Rate Index Changes

Important Note: These enhancements are part of the Libor Reform package. The Libor Reform package requires a specific license agreement..

Agreed Discount Rate

The Agreed Discount Rate for swaptions can be set using field / trade keyword PlatformAgreedDiscountRate.

It can be mapped as follows:

Name = MW/PlatformAgreedDiscountRate

Interface Value = EFFR

Calypso Value = FEDFUNDS

If mapping is not provided, the trade keyword is set to the value coming from MarkitWire.

Cash Collateral Interest Rate

The Cash Collateral Interest Rate for swaptions can be set using field / trade keyword CashCollateralInterestRate.

It can be mapped as follows:

Name = MW/CashCollateralInterestRate



Interface Value = EONIA

Calypso Value = EUR/EONIA/1D/T247

USD LIBOR Trade with Short End Stub

To set the full coupon else, the SetFullCouponIfHoliday is used to map explicitly.

It can be mapped as follows:

Name = MW/Translator

Interface Value = SetFullCouponIfHoliday

Name:	MW/Translator
Interface Value:	SetFullCouponIfHoliday
Calypso Value:	
Reverse Default:	
<< Add >> Remove Configure Interf Configure Types]

Note: The mapping will be visible under FpML/Translator by default, and it would need to be manually added in MW else it will be applicable for all Interfaces which are using the FpML format like LCH/CME/Eurex.

Linking Canceled Trades with Replacement Trades

The following trade keywords have been added.

Canceled trade with old rate index:

- PlatformTransitionTradeld MW trade id of New trade (with new index)
- PlatformTransitionTradeldType MW trade id type MarkitWireld
- PlatformTransitionReason Transition reason = IndexTransitionReplacedByTrade
- TransitionTo Calypso trade id of New trade (with new index)
- TransitionReason Calypso value for index transition reason = IndexTransition

New trade with new trade index:

• PlatformTransitionTradeld - MW trade Id of Cancelled trade (with old index)



- PlatformTransitionTradeldType MW trade id type MarkitWireld
- PlatformTransitionReason Transition reason = IndexTransitionReplacedTrade
- TransitionFrom Calypso trade id of Cancelled trade (with old index)
- TransitionReason Calypso value for index transition reason = IndexTransition

Netting Sync Approach (Offsetting/Compensation trades) for Cleared Trades

For Cleared trades, MW will work with the CCPs to provide new trades - "Cash Compensation" and "Risk Compensation" trades with the new rate index, using the Netting Sync approach. The new netting type - "IBOR Compensation" and netting sub types - "Cash Compensation/Risk Compensation" are introduced for such trades. There will not be any termination messages. Once the CCP releases these messages to MarkitWire, there will be new trades also sent to dealers/end-users who are also a party on the trade.

• Cash Compensation trades – An amount that can be attributed to the change in discounting method and It will be added as an UPFRONT_FEE on the trade.

The trades will be Fix-Float Swaps with old Index and Tenor of 1D and payment frequency ZC and notional as 1.0.

These will have the CCPNettingType - IBOR Compensation, CCPNettingSubCategory - "Cash Compensation", CCPNettingId as - "NOT_APPLICABLE" and Netting_Count as 0.

The UPFRONT_FEE will be available on the trade.

• **Risk Compensation trades** - New trades booked to restore firms' positions to their original risk profiles. These will come with the Netting Sub type - "Risk Compensation".

The trades will be Float-Float Basis Swap trades with FedFunds vs SOFR index.

These will have the CCPNettingType - IBOR Compensation, CCPNettingSubCategory - "Risk Compensation", CCPNettingId as - "NOT_APPLICABLE" and Netting_Count as 0.

The following trade keywords have been added:

- SWCounterpartyCorporateSector (incoming and outgoing mode)
- Reporting<Jurisdiction>ReportForCounterparty (Incoming mode only as it is not available in outgoing mode)

Transition To OIS

() [Important Note: This enhancement is part of the Libor Reform package. The Libor Reform package requires a specific license agreement..

When you apply the "Transition To OIS" action in Markitwire, it can be processed as an AMEND or a RATEINDEX_UPDATE in Calypso based on the following mapping:

Name = MW/Translator

```
Interface Value = TransitionToOISAsRateIndexUpdate
```



Calypso Value = false/true

If false or not set, the AMEND action is applied. If true, the RATEINDEX_UPDATE action is applied.

AMEND Action

The LIBOR trades are modified with the FRF index.

RATEINDEX_UPDATE Action

When this action is applied, there is creation of replacement trades in the RFR index and termination of the initial trades in LIBOR index.

It needs to be added to the Trade workflow:

VERIFIED - RATEINDEX_UPDATE - TERMINATED with workflow rule UpdateTerminationTradeRule.

TerminationReason is set to RateIndex_Update.

It requires the additional mapping:

Name = MW/Translator

Interface Value = TransitionToOISAction

Calypso Value = RATEINDEX_UPDATE

ISDA 2021 Rate Index Config

Mapping category RateIndex_ISDA2021 to handle the index mappings from ISDA2021.

For incoming mode, the ISDA version is taken from the FpML tag:

<documentation>

<masterAgreement>

<masterAgreementType masterAgreementTypeScheme= "http://www.swapswire.com/spec/2001/master-agreement-type-1-0">ISDA</masterAgreementType>

</masterAgreement>

<contractualDefinitions>ISDA2021</contractualDefinitions>

</documentation>

In outgoing mode, you need to set the trade keyword PlatformContractualDefinition = ISDA2021.

Sample mapping:



Name:	MW/RateIndex_ISDA2021
Interface Value:	GBP-SONIA-OIS Compound
Calypso Value:	GBP~SONIA~T120
Reverse Default:	

If not available, the FpML mapping is used instead, if defined.

Name:	FpML/RateIndex_ISDA2021
Interface Value:	USD-LIBOR
Calypso Value:	USD~LIBOR~T3750
Reverse Default:	\checkmark

Interp Flag on Floating Rate Stubs

By default, the "Interp" flag on the trades is set based on the rate index "No Auto Interp" field.

If you want to clear the "Interp" flag, regardless of the rate index "No Auto Interp" field, then set the following mapping entry to true.

Name = FpML/Translator

Interface Value = UndetStubInterpolation

Calypso Value = true

2.6.10 Traders

Map Trader names from MarkitWire to their Calypso Trader names.

2.6.11 PO-CP Mapping

Calypso uses the Legal Entity Attribute window to determine the counterparty of a trade based on the processing organization. The Calypso Mapping window is not used.

Configuration and maintenance at the level of the Legal Entity is more efficient and provides more flexibility for entry and reporting.

For example, if the Processing Organization is NewYork then counterparty is Giga. If Processing Org is London then counterparty will be Giga2:



ilities Help									
Short Name	GIGA2				Status	Enabled			
Full Name					Role(s)	CounterPart ProcessingO	y rg		
Country	NONE	🔏 Legal I	Entity Attrib	utes Windo	w - Version - 0 (U	ser:)			
nactive As From		L	egal Entity	GIGA2			Role	ALL	•
	02/02/20	Proces	ssing Org	LONDON		•			
Entered Date				611					
Entered Date External Ref Holidays	NYC	Attri	bute Type	Swapswire	Participant	•	Value	GIGALE1234	
Entered Date External Ref Holidays	NYC	Attri	bute Type Processi	Swapswire	Participant Legal Entity	▼ Role	Value	GIGALE1234	Attribute Value /

2.6.12 BIC Mappings

It is possible to map multiple BIC codes for child entities to a single, parent Calypso Legal Entity, whether that parent entity is a counterparty or processing organization. Two or more child entities having different BIC codes (specified in SwapswireParticipant) can be mapped to a single legal entity in Calypso by making use of an identical SwapswireParent attribute (i.e., the BIC code of the parent entity).

The images below show the first of two child entities that will be mapped to a single legal entity:

Legal Entity-	Version - 0 [1200005P2/FT12x_Sybase/calypso_us	er] (Use	r: calypso_user)	<u>- 0 ×</u>	L						
Utilities Help											
Short Name	TULLET_NY	Status	Enabled]	P	Legal Entity Attri	ibutes Window	i - Version - 1 (Use	er: calyps	so_user)	
Full Name	TULLET_NY	Role(s)	Branch	1		Legal Entity	TULLET_NY			Role ALL	*
Parent						Processing Org	ALL	•			
Country	NONE					Attribute Type	SwapswirePa	rticipant 👻		Value TP TULL NY	
Inactive As From	User calypso_user						1 · ·			1	
Entered Date	06/18/2012 11:06:34 AM		Add	ļ		Id Pr	ocessing Org	Legal Entity	Role	Attribute Type 🔬	Attribute Value
External Ref	Disable	a Role(s)	1			49360 ALL		TULLET_NY	ALL	SwapswireParent	TULLET
Holidays	Financial					49361 ALL		TULLET_NY	ALL	SwapswireParticipant	TP_TULL_NY
T IOIOD ya	C Non Financial										
			Triparty Substitutions								

The images below show the second entity:

Legal Entity- 1	Version - 1 [120000SP2/FT12x_Sybase/calyp	oso_user] (Use	er: calypso_user)	<u>- 0 ×</u>							
Utilities Help											
Short Name	TULLET_SWAP	Status	Enabled]	📕 Legal E	ntity Attr	ibutes Windov	w - Version - 1 (Use	r: calypso_	user)	- - ×
Full Name	TULLET_SWAP	Role(s)	Branch	1		- I Takin		10		sta lau	
Parent					Lt	garchuty	TOLLET_SWI	AP .		tole ALL	
Country	NONE				Proces	sing Org	ALL	•			
Inactive As From	User calypso_user				Attrit	ute Type	SwapswirePa	articipant 👻	Va	alue TPSWAP_NY	
Entered Date	06/18/2012 11:13:21 AM		Add	ļ						,	
External Ref		Disabled Role(s)			Id	Pro	ocessing Org	Legal Entity	Role	Attribute Type 🔬	Attribute Value
Holidays	• Financial				4	364 ALL		TULLET_SWAP	ALL	SwapswireParent	TULLET
	C Non Finance	cial			4	363 ALL		TULLET_SWAP	ALL	SwapswireParticipant	TPSWAP_NY
			Triparty Substitutions								

Notice that the SwapswireParticipant BIC ID differs for each child entity, while the SwapswireParent BIC ID is the same for both.



Mapping for multiple broker and counterparty BIC codes

Both the broker and counterparty mapping for the Markitwire interface is done via the Legal Entity Attributes SwapswireBroker and SwapswireParticipants. If multiple BIC code needs to be mapped, then different constellations of Processing Org and/or Role must be used.

As the business is getting instantly more complex, we are currently running into a situation where for the broker Icap more than 4 codes need to be setup (ICAP, ICap_LN, ISWAP_LN, RSBROK, and RESET). All codes belong to the same broker Icap Europe Limited. We also have very similar constellations for counterparties who use multiple codes.

Therefore, we need a configuration option where we can map more than 4 codes for one Broker. We view an ideal solution as a coma separated configuration within the current Processing Org and Role framework in Calypso Mapping window.

Example of Multiple Mappings:

Delete all the Swapswire participant or Swapswirebroker codes from the attributes of cpty and PO legal entity as below:

CPTY



Processing Org (PO)

🔏 Legal Entity- V	ersion - 6 [16221002/MWKT161MR/calypso_user]			-	\Box \times	🟒 Legal Entity	Attributes Window							-		×
Utilities Help						Q Search										
Short Name	CALYPSO BANK	Status	Enabled ~			Legal Entity	CALYPSO BANK		Ð	Role ALL	~	Proce	ssing Org ALL		~	
Full Name	Calypso Bank	Role(s)	Calc_Agent			Attribute Group		~	Attribe	te Type 4FYES	WFR	a	Value			æ
Parent			ProcessingOrg			randare a cop										
Country	UNITED STATES V					Id	Processing Org	Legal Entity	R	ole	Attribute Group	Attribute Typ	je .	Attribute V	alue	
Inactive As From	User calvpso user					5411	ALL	CALYPSO BANK	AL	L		CCPHouseBox	ak	TRADINGA		
						6401	I ALL	CALYPSO BANK	AL	L		CCPClientBoo	k	TRADINGB		
Entered Date	01/24/2012 8:14:04 AM					6906	ALL	CALYPSO BANK	AL	L		CMEParticipar	it	CALYPX0000		_
External Ref						7313	3 ALL	CALYPSO BANK	AL	L		SwapswireBo	ak	CalypsoBoo	k2	
Exceletion room	Einancial					9268	BALL	CALYPSO BANK	AL	L		TradewebBoo	k	CalypsoBoo	k2	
Holidays						9267	7 ALL	CARLYPSO BANK	AL	L		TradewebPar	dicipant	Calypso		
	Non Financial					10374	FALL .	CALYPSO BANK	AL	L		TradewebFpN	ILP articipant	Calypso		

In Calypso mappings, define multiple cpty Swapswireparticipant required for booking a trade from MW and link to one legal entity cpty in Calypso. Here, Cpty AAA Bank Legal Entity is mapped with multiple swapswireparticipants as below:





In Calypso mappings, define multiple PO Swapswireparticipant required for booking a trade from MW and link to one legal entity PO in Calypso. Here, PO CALYPSO Bank Legal Entity is mapped with multiple swapswireparticipants as below:

ng Calypso Mapping Window			🟒 Calypso Mapping Window		
KeywordValue	1		KeywordValue Location	^	
MWBookingState	Name:	MW/SwapswireParticipant	MWBookingState	Name:	MW/SwapswireParticipant
MWReportingJurisdictions	Interface Value:	CALYPIODOX	MWReportingJurisdictions	Interface Value:	CALCOMIX
MasterConfirmationType OptionExerciseTimeZone	Calumen Values	CALVECO BANK	OptionExerciseTimeZone	Calvpso Value:	CALYPSO BANK
B-B PO-CP Mapping	Calypso value:	CALTPOU DAIW	B - E PO-CP Mapping		
	Reverse Default:			Reverse Default:	
PlatformAgrDiscRateCashSetIInfo			PlatformAgreedDiscountBate		
	<< Add		ProductType	<< Add	
B-B RateIndex				Demonstration of the second se	
RateIndexSource	>> Remove		RateIndexSource	>> Remove	
B-B RateIndex_ISDA2021	Configure Interfaces		RateIndex_ISDA2021	Configure Interfaces	
KollDay SettlementBateIndex			E-	0. C	
B- SpreadCalculationMethod	Configure Types		SpreadCalculationMethod	Configure Types	
SwapswireBroker			⊟ SwapswireBroker		
			MEGA1234		
SwapswireParticipant					
			AAATEST_TDV		N
- SALCCMXXX					6
MEGACALPCC			SWAP1234		
2 SYVAP 1234			TerminationBeasen		

In Calypso mappings, define multiple clearing broker bicode required for booking a trade from MW and link to one legal entity cpty in Calypso. The below image shows the link to one legal entity:



A Calypso Mapping Window	
Calypso Mapping Window Calypso Mapping Window Calypso Mapping Window Calypso Mapping California	Name: MW/SwapswireBroker Interface Value: MEGACALPCC Calypso Value: MEGA BANK LTD Reverse Default: Image: Configure Interfaces Configure Types
	Catypso Mapping Window

2.7 Starting the SwapswireTradeEngine

The Swapswire Trade engine can be started from the Engine Manager in Web Admin.

Please refer to Calypso Web Admin documentation for complete details.

2.8 Importing Pre-Release Trades

Using an Event filter based on states contained in the **MWProcessState** domain, you can filter and process trades according to their notification state. Processing different notification states allows your implementation to handle multiple notifications for the same contract and version.

Calypso processes the first notification for the NEW contract state as per the contract state functionality. Subsequent notifications for the same contract version are processed as a Unilateral Amend. Add the notification states that the SwapswireTradeEngine should process to the **MWProcessState** domain. For example, Cancelled, Done, Sent, Released, etc.

If MWProcessState contains no values, the application defaults the trade state to "Released".

Lifecycle events from MarkitWire on a trade only occur if the **MWProcessState** is "Released". All other states only update trade keywords.

Processing Multiple Notifications for the Same Contract/Version

For example, assume that SwapswireTradeEngine supports notifications for Sent, Done, and Released. A notification for a trade with the status NEW arrives with same Contract/Version:

- The application processes the Sent notification and saves the trade as NEW with Private Version 1 and Contract Version 1.
- A Done notification is processed as an AMEND, using Contract Version 1 and Private Version 2.
- Similarly, a Released notification is also processed as an AMEND using Contract Version 1 and Private Version 3.



Handling Counterparty Trade Rejections

Because the SwapswireTradeEngine processes notifications before the counterparty affirms the deal, deals rejected by the counterparty are processed as Withdrawn. The SwapswireTradeEngine processes notifications for the "withdrawn" booking status by changing the state of the trade to cancelled, following the logic below:

- Contract state is NEW and the new state is Cancelled The trade is cancelled in Calypso.
- Termination or novation and the new state is Cancelled Calypso applies the UNDO_TERMINATE action. The domain value **UploadRejectAction** specifies the action to execute.
- Amend and Exercise No action is taken. Calypso creates a Task Station warning entry. The user must manually process amends and exercises.

Processing Based on Contract State

Calypso uses values in the **MWProcessState** and **MWContractState.PreRelease** domains as the basis for processing Pre-Release trade notifications.

Domain Values Window (User: calypso	_user)		
Domain Values Window (User: calypso_use Search: mwp Image: MutationType Image: MutationType Image: MUTB.testlocation Image: MWColypsoMapping.Types Image: MWContractState.PreRelease Image: MWContract	_user) Find Value	Name: MWContractState.PreRe Value: New Comment:	elease
		>> Remove	
🐓 New-Match 🐓 New-PrimeBrokered		Constraints	
PrimeBrokered WEnforceEffectiveDate		Help	

The SwapswireTradeEngine processes notifications for Contract States listed in the **MWContractState.PreRelease** domain, for trades whose current Process State is listed in the **MWProcessState** domain.

Lifecycle actions, other than "New", that alter the economics of a trade (amendments, novations, terminations, clearing, etc.) are not applied until the trade is released.

Values other than "New" present in the **MWContractState.PreRelease** domain trigger an update of the Trade's keywords when needed, but the Trade's terms will only change on Trade release.



Allocation Support

It is now possible to import block and child trades from MarkitWire to Calypso using the out-of-the-box Calypso Allocation API. If you are using the bidirectional mode, it is also possible to Allocate the trade in Calypso and forward the Allocation details to MarkitWire.

Please note that in MarkitWire, the Executing Broker does not see the incoming Funds selected by the Client and sees the counterparty (Block entity) on the child trades instead.

Step 1 - Use the Domain Values window to add Allocated and New-Allocation to the domain "MWContractState.PreRelease", and Released to the domain "MWProcessState".

🛃 Domain Values			
	Setup	Name: <u>V</u> alue: <u>C</u> omment:	MWContractState.PreRelease New-Allocation id
multipleValMethodChoice MutationType MWCalypsoMapping.Types MWContractState.PreRelease New-Allocation Allocated Amended			

Step 2 - Add the UpdateAllocationChild rule between VERIFIED and ALLOCATED as shown below:

Action Details	5		무
Id	0		G
Orig Status	VERIFIED		~ 🔁
Action Name	ALLOCATE		~ 🔁
Result Status	ALLOCATED		~ 🔁
3	Create task	On Failure $ imes $	
>>>>	Use STP		
🌿 🗌 Generate Intermediary Event			
0 ₁₂₃	Priority 0		
👋 🗌 Need Manual Authorization			
🛒 🗌 Comment			
🦺 🗌 Different User			
🔶 🗌 Preferred Action			
\Lambda 🗌 Update Only			
Rules		Ð] 🖵 🔀 😵 😯
Name		Rule Param	Task Comm
UpdateAlloca	tionChild		


Step 3 - Ensure that your Calypso trade workflow is configured to handle the allocation of a block trade, along with the generic lifecycles for block and child trades.

Step 4 - Ensure that the Amend transition (as well as all actions in the UploadAmendAction domain) is available to Calypso trades having the status Verified and Allocated.

Step 5 - Using the generic interface, the block trade must be released in MarkitWire before child trades are created.

Step 6 - Populate the AllocationKeywords domain with Calypso keywords that you do not wish to propagate from the block trade to the child trades.

Academic Reproduces PlatformAllocation PlatformAllocation PlatformAllocation PlatformAllocation PlatformAllocation SWContractState SWContractState SWContractVer SWDontractVer SWDontractVer SWDontractVer SWDontractVer SWDontractVer SWDontractState SWSole AnendGroup analysisParameter asianOptionType AssetPerformanceSwap.Pricer AssetPerformanceSwap.subtype AssetPerformanceSwap.subtype	Name: AllocationKeywords Value: PlatformAllegeType Comment: << Add Save Above >>Remove Constraints Help
AssetSwap.extendedType	

Step 7 - You can add a specific trade workflow transition to the **AllegeAmendAction** domain to validate and authorize incoming allocations submitted by the counterparty prior to amending an existing Calypso trade:

_user)		
/alue		
	Name:	AllegeAmendAction
	Value:	CP_AMEND
	Comment:	
	user)	_user) /alue Name: Value: Comment:



Step 8 - Modify the CP_AMEND Workflow Action by selecting **Needs Manual Authorization**:

Action Details	Р
Id 81702	G
Orig Status VERIFIED ~	€
Action Name CP_AMEND ~	€
Result Status CP_ALLEGED ~	€
🏷 Create task Always 🗸	
>>>> Use STP	
🌿 🗌 Generate Intermediary Event	
012, Priority 0	
👋 🔽 Need Manual Authorization	

Step 9 - In bidirectional mode, a workflow transition can be created between ALLOCATED and VERIFIED to handle counterparty rejection of outgoing allocations and cancel the child trades:

Action Details									
Id	81703			G					
Orig Status	rig Status ALLOCATED V								
Action Name	ame UNDO 🗸 🗸								
Result Status	ult Status VERIFIED ~								
37	🏷 Create task On Failure 🗸								
>>>>	Use ST	ГР							
7	Genera	ate Intermediary I	Event						
0 ₁₂₃	Priority 0								
	Need I	Manual Authorizat	ion						
	Comm	ent							
2	Differe	ent User							
*	Prefer	red Action							
	Update	e Onlv							
🚼 Rules			D 📮 🕸	0					
Name		Rule Param	Task Comme	nt					
PlatformUndo)								



Step 10 - UNDO must be present in the **UploadUndoAction** domain:



Step 11 - The system sets the PlatformAllocation keyword to true if the trade is being allocated:

Domain		
Name	Value	
CCP	✓ CME	-
CounterpartyTrader	Calypso Giga EU 2	-
NegotiatedCurrency	USD	
PlatformAllegeType	CPAlleged	
PlatformAllocation	true	
ReportingClearingMandatory	false	
ReportingJurisdiction	CFTC	
ReportingParty	GIGA BLOCK	
SWAutoSendForClearing	false	
SWClientClearingDeal	true	
SWContractState	New	
SWContractualDefinitions	ISDA2006	
Apply Help	Cano	cel

Step 12 - When using bidirectional mode, if an allocation is alleged by the client, the Task Station displays a warning:

Task Id	Event Type	Status	Date & Time	Book	Task Status	Task Owner	Comment	Priority
163318 EX	UPLOADSOURCEMEG_WARNING	COMPLETED	6/6/13 3:50:05.885 PM EDT		NEW	Concernant Street	Trade will be allocated upon release. Please view the allocation details on the message : MW Contract ID - 9940036)	NORMAL IV

Step 13 – While importing the child allocation trade, if the block (parent) trade is not found then we check the domain "SkipAllocatedParentExistsValidation". If it contains Value = true, we save the allocation child trade as a new trade in Calypso. Otherwise, an error indicates that the parent trade cannot be found, and the child trade is not saved.

If the parent trade is found, the trade keyword SWBlockDealld is set on the child trade to the parent MW deal id.



Step 14 - The Allocation can be performed as Executing Broker, in which case, a Legal Entity Allocation will take place to mirror an external allocation to the counterparties entities. You will need to populate the SwapswireParticipant attribute of each counterparty entity, (block and fund) with their BIC code so they appear as counterparty in the trade as in the example below:

Trade Browser / Trade Browser (User: calypso_user)									
Report Data	View Expo	rt Marke	t Data Process	Utilities	Help				
Criteria									
AGGREGATION	SWDealId	Trade Id	External F	leference		TradeStatus	Book	CounterParty	
🔠 Trade									
	9886415	102930	MW_CALYPSO HO	LDING_98	86415	ALLOCATED	CALYP7	GIGA BLOCK	
	9886478	102931	MW_CALYPSO HO	LDING_98	86478	VERIFIED	CALYP7	GIGA_CCTEST1	
102932	9886479	102932	MW_CALYPSO HO	LDING_98	86479	VERIFIED	CALYP7	GIGA_CCTEST2	
102932	9886479	102932	MW_CALYPSO HO	LDING_98	86479	VERIFIED	CALYP7	GIGA_CCTEST2	

The Allocation can also be performed with a Client role. In that case a Book allocation will be performed to mirror an internal Fund allocation. You will need to map Calypso books for each book from MarkitWire. If the MarkitWire book is the same for both the block trade and the child trades, then the book in Calypso will be chosen based on the incoming Fund BIC Code:

Thep				
Book Id	61708	Attributes		
Name	CCBOOK1	Name	Value	
	u	Drawn MM Book	Y	
Activity	Clearing	FEE_RECOGNITION_LAG		
	r	MARKITWIRE_PARTY_ID		
Accounting Link	TRADING1	Market Index	*	
Local Calific	CTCA DLOCK	ORIGIN		
Legal Entity	GIGA BLOCK	POSITION_ACCOUNT_ID		
Location	America Mew York	PositionTransferPrice	*	
Locadori	Panienca/new_ronk	PricerKey		
End Of Day	23 Hour 59 Min	ProfitCenter	CProfitA	
End of Day		SwapswireBook	CCBOOK1	
Base Ccv	USD	➡ TradeTemplates		
		VALUATION_TIMES		
Holidays		··· VALUATION TIMEZONES		
Comment ok Window - Ve Help	rsion -0 [1300075P2/CFDE	EV13_gigaCME/calypso_user] (User: calyp	io_user)	_
Comment ok Window - Ve Help	rsion -0 [1300075P2/CFDE	EV13_gigaCME/calypso_user] (User: calyps	io_user)	-
Comment ok Window - Ve Help Book Id	rsion -0 [1300075P2/CFDE	EV13_gigaCME/calypso_user] (User: calyp	io_user)	-
Comment ok Window - Ve Help Book Id Name	rsion -0 [1300075P2/CFDD 74708 CC_TEST1	EV13_gigaCME/calypso_user] (User: calyp Attributes Name	io_user) Value	_
Comment ok Window - Ve Help Book Id Name	rsion -0 [1300075P2/CFDD 74708 CC_TEST1	EV13_gigaCME/calypso_user] (User: calypso_user) (Us	io_user) Value	-
Comment ok Window - Ve Help Book Id Name Activity	rsion -0 [1300075P2/CFDD 74708 CC_TEST1 Clearing	EV13_gigaCME/calypso_user] (User: calypso_user) (User: calypso_user) Attributes Name Drawn MM Book FEE_RECOGNITION_LAG	vo_user) Value	-
Comment ok Window - Ve Help Book Id Name Activity	rsion -0 [1300075P2/CFD0 74708 CC_TEST1 Clearing TupDac	EV13_gigaCME/calypso_user] (User: calypso_user] (User: calypso_user) Attributes	v Value	-
Comment ok Window - Ve Help Book Id Name Activity Accounting Link	rsion -0 [1300075P2/CTDC 74708 CC_TEST1 Clearing TRADING1	EV13_gigaCME/calypso_user] (User: calypso_user) Attributes Drawn MM Book FEE_RECORNITION_LAG MarketTimE_PARTY_ID MarketTimE	vo_user) Value v	-
Comment ok Window - Ve Help Book Id Name Activity Accounting Link	rsion -0 [1300075P2/CEDD 74708 CC_TEST1 Clearing TRADING1 rdGa_crTEST3	EV13_gigaCME/calypso_user] (User: calyp Attributes Drawn MM Book Name FEE_RECOGNITION_LAG MARKITWIRE_PARTY_ID Market Index ORIGIN	v Value	
Comment bk Window - Ve Help Book Id Name Activity Accounting Link Legal Entity	rsion -0 [1300075P2/CFDE 74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1	EV13_gigaCME/calypso_user] (User: calypso_user) (User: calypso_user) Attributes Drawn NM Book FEE_RECOGNITION_LAG MARKTYMEE_PARTY_JD Market Index POSITION_ACCOUNT_JD	io_user) Value v	-
Comment bk Window - Ve Help Book Id Name Activity Accounting Link Legal Entity Location	rsion -0 [1300075P2/CFDD 74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1 AmericaNew York	EV13_gigaCME/calypso_user] (User: calyp Attributes Name Drawn MM Book FEE_RECOGNITION_LAG MARKITWIRE_PART_JD MARKITWIRE_PART_JD MARKITIGAEX POSITION_ACCOUNT_JD POSITION_ACCOUNT_JD PositionTransferPrice	v Value v Value v	-
Comment Help Book Id Name Activity Accounting Link Legal Entity Location	rston -0 [1300075P2/CFDE 74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1 America/New_York	EV13_gigaCME/calypso_user] (User: calyp) Attributes Drawn MM Book FEE_RECOGNTION_LAG FEE_RECOGNTION_LAG Market Index Market Index Market Index YOUTON_ACCOUNT_ID PositonTransferPrice PositonTransferPrice PricerKey	v_user)	-
Comment bk Window - Vec Help Book Id Name Activity Accounting Link Legal Entity Location End Of Day	rsion -0 [1300075P2/CFDD 74708 CC_TEST1 Clearing TRADDING1 GIGA_CCTEST1 America/New_York 23 Hour 59 Min	EV13_gigaCME/calypso_user] (User: calypso_ Attributes Name Drawn MM Book FEE_RECOGNITION_LAG Market THOR Market Index POSITION_ACCOUNT_JD PositionTransferPrice Protectey Market Center	vo_user)	-
Comment ok Window - Ve Help Book Id Name Activity Accounting Link Legal Entity Location End Of Day	74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1 America/New_York 23 Hour 59 Min	EV13_gigaCHE/calypso_user] (User: calyp) Attributes Drawn MM Book Name Drawn MM Book Market Index MARKTURE_PART_ID Market Index Market Index OSTITON_ACCOUNT_ID PositionTransferPrice Procifice ProfileCenter SwapowieBook	v Value v v CProfitA CCBOOK1	
Comment ok Window - Ve Help Book Id Name Activity Accounting Link Legal Entity Location End Of Day Base Ccy	rsion -0 [1300075P2/CTDC 74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1 America/New_York 23 Hour 59 Min USD	EV13_gigaCME/calypso_user] (User: calypso_user) Attributes Drawn MM Book FEE_RECORNTION_LAG Market Index ORIGIN PositionTransferPrice Prosition_ACCOUNT_JD PrositionTransferPrice PrositionTransferPrice PrositionTransferPrice TradeTemplates	vo_user) Value V V V V V V V V V V V CProfitA CC60OK1	
Comment bk Window - Ve Help Book Id Name Activity Accounting Link Legal Entity Location End Of Day Base Coy	rston -0 [1300075P2/CFDE 74708 CC_TEST1 Clearing TRADING1 GIGA_CCTEST1 America/New_York 23 Hour 59 Min USD	EV13_gigaCHE/calypso_user] (User: calypso_user) Attributes Drawn MM Book PEE_RECOGNITION_LAG MARKITWRE_PARTy_ID MARKITWRE_PARTy_ID PositionTransferPrice Procerkey ProfitCentee SwapawiveBook VALUATION_TIMES	v v v v v v v v v v v v v v v v v v v	

Trades will be allocated as in the example below:

🖉 Trade Browser / Trade Browser (User: calypso_user)									
Report Data	View Expo	rt Marke	t Data Process	Utilities He	elp				
🖪 🖳 🗧)								
Criteria									
AGGREGATION	SWDealId	Trade Id	External Re	ference	TradeStatus	Book	CounterParty		
Trade									
- 103430	9887807	103430	MW_GIGA BLOCK	_9887807	ALLOCATED	CCBOOK1	CALYPSO HOLDING		
- 103431	9887778	103431	MW_GIGA_CCTES	T1_9887778	VERIFIED	CC_TEST1	CALYPSO HOLDING		
103432	9887777	103432	MW_GIGA_CCTES	T2_9887777	VERIFIED	CC_TEST2	CALYPSO HOLDING		



If you are using the bidirectional mode, the allocation should be submitted from the Calypso allocation GUI. The resulting Allocated trade should then be alleged to MarkitWire by re-saving it using a transition containing the PlatformAllege rule. Once the Counterparty has affirmed the allocation, (SWProcessState is Done on the block trade), then the trade should be released using a transition containing the PlatformRelease rule for the child trades to be updated with MarkitWire trade IDs.

> Please refer to the Data Uploader documentation to get more details on the allocation feature.



BackLoading Support

() Note: The CSV format back loading using the back loading report and Deal Matcher is deprecated because it is no longer supported by MarkitWire. It will be removed in the subsequent release.

We have added support for importing New-Match trades from MarkitWire.

BackLoading is being done as follows:

Step 1 - Create a trade in Calypso manually.

Step 2 - Update the Calypso trade id in the MarkitWire trade in Internal Data Tab in field – "Internal trade ID".

Step 3 - MW sends a New-Match message and we create a separate trade in Calypso and update that until released.

Step 4 - Once released we perform the backloading action which includes:

- a. Novate the manually created trade with the incoming data.
- b. Cancel the existing trade that is created as part of Step (2).
- c. Subsequent Amends will be applied on Novation-Child trade created as part of (3). (a).

Alternatively check the "Backloading" flag in the MarkitWire "Processing" tab and set the originating event as "Backload". So the trade will be imported in Calypso and will have these values set in the trade keywords.

Please refer to MarkitWire Backloading API Cookbook.doc for installation and execution instructions. This document can be downloaded from the MarkitWire website (https://secure.swapswire.com/login.asp) using your login credentials.

4.1 Message Workflow Configuration

You must add a new Transition state for BackLoading to work as shown in the picture and workflow configuration below.

(i) Note: You must remove the CheckLink message rule from PENDING_VALID-VALIDATE-PENDING_TRADE and add a DataBackLoad rule for the BackLoading process.

The following is a sample message workflow to support BackLoading included in "<calypso home>/client/resources/GATEWAYMSG BACKLOAD.wf".





Ensure that the CheckLink, DataBackLoad message rule sequence is present:

Id Orig Status	Action	Resulting Status	Different User	Use STP	Log	Subtype	Product Type	Rules	Processing Org	Kick Off/ Cut Of
4702 BACKLOAD	BACKLOAD	PENDING_VALID				GATEWAYMSG	ALL	CheckLink,DataBackLoad	ALL	
5102 BACKLOAD	CANCEL	CANCELED			100	GATEWAYMSG	ALL	CancelCleanUp	ALL	
S101 BACKLOAD	REPROCESS	BACKLOAD	100	10	100	GATEWAYMSG	ALL	ReMap	ALL	
4701 NONE	NEW	BACKLOAD	100	~		GATEWAYMEG	ALL		ALL	
1002 PENDING_TRADE	CANCEL	CANCELED	101		100	GATEWAYMSG	ALL	CancelCleanUp	ALL	
1003 PENDING_TRADE	LOAD	COMPLETED	100		1	GATEWAYMSG	ALL	CheckLink,Loader	ALL	
1004 PENDING_TRADE	REPROCESS	PENDING_TRADE	100			GATEWAYMSG	ALL	ReMap	ALL	
1005 PENDING_VALID	CANCEL	CANCELED	101	10		GATEWAYMSG	ALL	CancelCleanUp	ALL	
5301 PENDING_VALID	FORCE_AMEND	PENDING_VALID	100	1		GATEWAYMSG	ALL	ForceAmend	ALL	
3501 PENDING VALID	FORCE_NEW	PENDING_VALID	100	1		GATEWAYMSG	ALL	ForceNew	ALL	
1006 PENDING_VALID	REPROCESS	PENDING_VALID	100			GATEWAYMSG	ALL	ReMap	ALL	
1007 PENDING_VALID	VALIDATE	PENDING_TRADE		V		GATEWAYMSG	ALL	Validate	ALL	V

Ensure that the CheckLink, DataBackload Workflow action is present:

Action Details			무				
Id 8	1708		G				
Orig Status BACKLOAD V							
Action Name BACKLOAD ~							
Result Status	Result Status PENDING_VALID ~						
Create task On Failure 🗸							
>>>>	Use STP						
ي 🛃	Generate Interme	diary Event					
0 ₁₂₃	Priority 0						
(Use Kick Off / Cut	Off					
t [Log Completed						
Rules		🔁 📮 🔽	* ?				
Name	Rule Param	Task Comment					
CheckLink							
DataBackLoad							



4.2 Task Station Configuration

You can add the BACKLOAD_GATEWAYMSG event type to the Task Station Markitwire report.

🔀 Report Configurations							\times
Task Station Tabs Task Enrichment Filters							
Q-	Name				Value		
MW Messages	Tab Na	ame	9		MW Messages		
	Workf	low	Тур	es	Message		
	Books				ANY		
	Book A	\ttri	bute	S			
	Event	Event Types			CANCELED MWGATEWA		\sim
Q~ mwga		0		Q-			
ACCEPTED_MWGATEWAYMSG	;	~	€	CANCELED_MW0	GATEWAYMSG	Ŧ	
ACKED UNMATCHED_MWGATE	WAYMSG		æ	PENDING_TRADE_MWGATEWAYMSG		A	
ACKED_MWGATEWAYMSG			•				
ALLEGED_MWGATEWAYMSG			_				
BACKLOAD_MWGATEWAYMSG			3			$(\mathbf{+})$	
CANCELACKED_MWGATEWAY	MSG		\$			٢	

4.3 Pre-Release Notification

If you listen to pre-release deals, you must add the **WithdrawnByMatch** status to the **MWProcessState** domain. Deals that are withdrawn because of matching a processState notification are known as **WithdrawnByMatch**.

Search: mwpro Find Value	
Image: MutationType Image: MutationType Imag	Name: MWProcessState Value: WithdrawnByMatch mment: << Add >Remove Constraints Help

Also, ensure that the New-Match Contract State is present in the MWContractState.PreRelease domain.

4.4 General Notes Important Points

- Users are responsible for creating all trade filters and static data filters for report data.
- All cancel transitions must have a **Cancel** message rule.



Clearing Support

Direct Clearing with LCH is supported for initial trade entry and lifecycle with client and executing broker roles.

Client Clearing with LCH is supported for client, clearing broker, and executing broker using the LCH trilateral booking model or bilateral FCM model.

Clearing with CME is supported for initial trade registration as subsequent lifecycle actions are not available in MarkitWire for CME.

Direct and client clearing processing for CCP using the bilateral model is supported.

Note: Use of the Clearing Module requires a specific Clearing License. Please contact your account representative for further information.

5.1 Scope

The following products available for LCH clearing are supported:

- IRS
- ZC IRS
- Basis Swap
- OIS
- FRA
- Adjusting Notional Swaps

In addition, all products supported by MarkitWire for CME Client clearing are supported:

Model	Products	Role			
		Client	Clearing Broker	Executing Broker	Exchange
OTC Bilateral	Imported for Rate products (IRS, NDS, Cap/Floor, FRA, Swaption, Basis Swap, OIS, ZC Swap) via the MarkitWire Interface.	Full Support	Full Support	Full Support	Not needed.
LCH Trilateral	Clearing for MarkitWire for	Full Support	Full Support	Full Support	No Support
CME Bilateral	Rate products.	Full Support	Not needed	Full Support	Full Support



Model	Products		Rc	ble	
LCH FCM Bilateral	LCH: IRS, OIS, ZC IRS, Basis swaps, Adjusting Notional Swaps, FRA CME: IRS	Full Support	Not needed	Full Support	No Support

5.2 Setup Instructions

- () Note: SchemaData synchronization is required to add keywords and additional data.
- Note: Following domain value has been removed from the SwapswireSchemaData.xml: MWProcessState|PickedUp, MWProcessState|Done, MWProcessState|Affirm, MWProcessState|Pending. Users can add these values manually in domain values, in case needed.

5.2.1 MWProcessState and MWContractState.PreRelease

For clearing to work you must add the following three process states to MWProcessState domain:

- RegisteredForClearing
- RejectedForClearing
- SentForClearing

🗾 Domain Values Window		
Search: mwpr	Find 🔽 Value	
Search: mwpr WWEnforceEffectiveDate WWExitKeywords MWProcessState MWProcessState Pending RejectedForClearing RejectedForClearing RejectedForClearing	Find Value	Name: MWProcessState Value: RejectedForClearing Comment:
NDS.Pricer	•	

Additionally, to process pre-release notification for clearing, you need to add "Clearing" value in the **MWContractState.PreRelease** domain:



🔀 Domain Values Window (User:)		
Search: mwcontract	Find 🔽 Value	
MWContractState.PreRelease		Name: MWContractState.PreRelease
		Value: New-PrimeBrokered
		Comment:
PrimeBrokered		<< Add Save Above
MWEnforceEffectiveDate	-	
۰ III	•	>> Remove

If your implementation does not require processing for Pre-Release notifications, simply add **RegisteredForClearing** in **domainName**.

5.2.2 Message Workflow Configuration

Applying a lifecycle event on a Cleared trade in MarkitWire declears the deal, making it once more a deal between the original counterparty and the processing organization. The next action is then applied on the decleared trade. Calypso's version of processing a lifecycle event on Cleared trade (i.e., declearing) is done by novating the trade from the clearing house back to the original counterparty trade, and then applying the lifecycle action on trade.

Calypso requires the **DeClear** message rule in the BACKLOAD- BACKLOAD-PENDING_VALID Transition. Use the Workflow Action window to accomplish adding the **DeClear** message rule:

Action Details					
Id 8	1708	6			
Orig Status	BACKLOAD	~ 🔁			
Action Name	BACKLOAD	~ 🔁			
Result Status	PENDING_VALID V 🕄				
3	Create task On Failure	\sim			
>>>>	✓ Use STP				
7	Generate Intermedia	ry Event			
0 ₁₂₃	01 _{2a} Priority 0				
(🌔 🗌 Use Kick Off / Cut Off				
📩 🗌 Log Completed					
📫 Rules		🔁 📮 🔽 🕸 😯			
Name	Rule Param	Task Comment			
CheckLink					
DataBackLoad					
DeClear					

Trade Keywords for Clearing

The following Calypso Trade keywords support MarkitWire clearing functionality:

- SWMasterAgreementType
- SWContractualDefinitions



- SWAutoSendForClearing
- SWEligibleForClearing
- SWSendForClearing
- SWSendForClearingTimeStamp
- SWClearingStatus
- SWOriginalCounterparty

The following Clearing-related keywords are populated by MarkitWire:

- CCP Identifies the Clearing House.SWContractualDefinitions.
- CCPAccount Identifies the account type at the CCP (CLIENT or HOUSE).
- CCPClearedDate Date of clearing registration.
- CCPClientTradeType Set to "Primary" if the first novated trade resulting from clearing or "Secondary" if a cloned trade in LCH booking model.
- CCPOriginCode Set to HOUSE for Direct trades and CLIENT for Client Clearing trades.
- CCPTradeID Trade ID at the Clearing House.
- CCPClearingBroker Clearing broker when present in CME workflow.
- IS_CLIENT Set to true is trade is related to client activity or false, otherwise.
- CCPStatus Clearing status of trade sent for clearing.
- CCPMessageTimeStamp Time stamp of last clearing message.

It is possible to track the clearing process state using the SWProcessState trade keyword:

Name	Value	
CCP	LCH	
CCPAccount	HOUSE	
CCPClearedDate	11/09/2011	
CCPClientTradeType	Primary	
CCPOriginCode	CLIENT	
CCPTradeID	calypso_clear1-6455616-2	
IS_CLIENT	false	_
PlatformTradeId	6455616	_
SWAutoSendForClearing	true	
SWClearingStatus	Auto-Register by dsc_test	
SWContractState	Clearing	
SWContractualDefinitions	ISDA2006	
SWContractVer	2	
SWDealId	6455616	
SWGiveUpTradeId	6455614	
SWLoginHandleIdentifier	calyp_dealsink8	
SWMasterAgreementType	ISDA	
SWOriginalCounterparty	GIGA_CCTEST1	
SWPBGiveupDealID	6455614	
SWPBMirrorDealID	6455615	
SWPrivateVer	3	
SWProcessState	RegisteredForClearing	
SWSide	1	
SWSingleSided	false	
SWValidated	false	
TradeSource	MW	
TransferDate	11/09/2011	
TransferFrom	3921	
TransferTradeDate	11/9/11 5:03:42 PM	
26T	v	
_Strategy1		-



5.2.3 Clearing Keyword Handling

Keywords in the **ClearingKeywords** domain are not populated on bilateral trades even after clearing and are blanked out if the bilateral trade originates from a cleared trade, after a declear, for example.



5.2.4 Configurable CCP Keywords

The interface populates the CCP keyword value based on value of the **clearingName** domain. You must map short name of the Clearing House (i.e., the Calypso legal entity) to clearing house abbreviations (LCH, CME, etc.). This is required for MarkitWire to coexist with Calypso's clearing offering - in particular the "Clearing Member Module".

If the domain value is missing, the application uses the value of the Legal Entity short name.

📈 Domain Values Window				
Search: clearing	Find	Value	1	
CFDPairTrading.subtype		^	Name:	clearingName
Gran Craproduct Type Gran CFDRiskArbitrage.Pricer			Value:	B-LCH-SWAPCLEAR
CFDRiskArbitrage.subtype			Comment:	LCH
i ⊕ ···⊞ classAuditMode				
			< A	dd
			>> Pe	
CMCDS.Pricer				<u> </u>

5.3 ChangeFullCoupon Rule

To reset the **Full Cpn** field of an OTC trade to blank after an amendment and declear of a cleared trade, you must add the ChangeFullCoupon rule to your AMEND transition as shown below:





This Workflow rule is useful when the field is populated during the clearing novation.

Cancel

Help

5.4 CCP interest

There is a specific interest settlement process for Swap trades that have been submitted for clearing to the CCP:

For T+1 currencies

Apply

- if Trade is Cleared in T and Interest is settling in T, then the interest should remain on the bilateral trade that is being terminated.
- if Trade is Cleared in T and Interest is settling in T+1 or after, then the interest should settle on the Cleared trade.

For T+2 currencies



- if Trade is Cleared in T and Interest is settling in T, then the interest should remain on the bilateral trade that is being terminated.
- if Trade is Cleared in T and Interest is settling in T+1, then the interest should remain on the bilateral trade that is being terminated.
- if Trade is Cleared in T and Interest is settling in T+2 or after, then the interest should settle on the Cleared trade.

Added a new keyword **TransferInterestToClearedTrade** that is used by the termination window. If set to true, the last interest will settle on the Cleared trade and if it is set to false the interest will settle on the bilateral trade.

5.5 Sample Trade Flow

This section describes direct clearing deal entry in MarkitWire and the corresponding trade changes that occur in Calypso. It also describes the manual process of sending deal for clearing. Selecting the **AutoSendForClearing** checkbox performs these steps automatically.

Step 1 - A trade is affirmed and released by both counterparties.

Swap/22/03/2021/P:USD 0,00000 /R:USD/LIBOR/3M (17	7703) - Version : 2 Mod User :(admin) Cur User :(admin) [111001/:
Trade Back Office Swap Cashflows Analytics Pricing Env	Market Data View Utilities Help
Trade Details Cashflows Resets Fees	
CounterParty V SWAP1234 AAA Bank	Ext MW_CALYPXXXX_455537
Book Calyp_book	Status VERIFIED Template NONE
Subtype Standard Broker	
+ Not Credit Contingent	
Fix Pay USD V 100.000,00	>> Float TRec USD T 100.000.000,00
Bullet	Bullet
Actual	Actual
Start 22/03/2011 End 22/03/2021	>> Start 22/03/2011 End 22/03/2021
0,00000 %	USD V LIBOR V 3M V + 0,00000 BBA
	Cmp
NONE	BEG_PER Lag -2 Bus, (LON) NONE
	Rst
	NONE Ist Rate 0,00000
Pmt ZC END_PER NONE	Pmt ZC END_PER NONE
MOD_FOLLOW V NONE Lag 0	MOD_FOLLOW V DAY V 22 Lag 0
ACT/360 V LON,NYC NEAREST	ACT/360 ILON,NYC NEAREST
NONE ADJUSTED	NONE ADJUSTED

Step 2 - This trade is saved in Calypso with the existing interface:

Step 3 - At this point, both counterparties submit the trade for clearing by selecting the Clearing choice from the MarkitSERV GUI.



Step 4 - Once both parties have sent the trade for clearing, the original trade is amended in Calypso with the SWProcessState keyword set to SentForClearing. At this point, a second version of the trade is created in MarkitWire against the Clearing House. However, the deal status is "Pending" and the deal has not been accepted yet by the Clearing House.

Step 5 - Once the Clearing House accepts the deal, the Booking State changes to "Released" in MarkitSERV.

Step 6 - Because the Clearing House has accepted the deal, Calypso performs a counterparty novation with the Clearing House as the new counterparty. Calypso terminates the original trade.

Step 7 - At this point, the trade keywords match the new Processing field values in the SWML file for the second version of the trade:

Keyword Window		2
Domain		
Name	Value	
CCP	CALYPSOCH	*
CCPTradeID	calypso_clear 1-4555370-2	
ClearedDate	2011-03-18T13:06:31Z	
PlatformTradeId	4555370	
SWClearingStatus	Auto-Register by dsc_test	
SWContractState	Clearing	
SWContractualDefinitions	ISDA2006	
SWContractVer	2	
SWDealId	4555370	
SWLoginHandleIdentifier	calyp_dealsink7	
SWMasterAgreementType	ISDA	
SWOriginalCounterparty	SWAP1234	
SWPrivateVer	3	
SWProcessState	RegisteredForClearing	
SWSide	1	
SWSingleSided	false	
SWValidated	true	
TradeSource	MW	
TransferDate	18/03/2011	
TransferFrom	17703	
TransferTradeDate	18.03.11 18:36:31	
26T	v	-

Step 8 - Calypso stores the Original counterparty (Novation Transferor) from the parent trade in the **SWOriginalCounterparty** keyword in the child trade.

Step 9 - Fees on the child trade are propagated from the parent trade if the fee type is in the **propagateFees** domain.

Step 10 - If the deal is rejected by the clearing house, the novation will not occur in Calypso and the booking state in MarkitWire changes to Withdrawn. In addition, the original trade is then amended and the SWProcessState keyword in Calypso now has the value Withdrawn. The **SWClearingStatus** keyword describes the reason that the clearing was rejected.



5.6 Regulatory Support

5.6.1 Support for the Reporting Jurisdictions

We support the following jurisdictions from MarkitWire for regulatory reporting perspective:

- CFTC Commodity Futures Trading Commission
- ESMA European Sales and Marketing Association
- HKMA Hong Kong Monetary Authority
- ASIC Australian Securities and Investments Commission
- MAS Monetary Authority of Singapore
- JFSA Japan Financial Services Agency
- CAN Canadian jurisdiction

For adding this new Jurisdiction in Calypso, mapping has to be provided in Calypso Mapping Window (screenshot added below). Default values get populated after running Execute SQL.

Interface Mappings	<u>^</u> \$	Name	MIN MIND
		Name:	Mvv/MvvReportingJurisalctions
		Interface Value:	DoddFrank
CounterpartyTraders		Calypso Value:	CFTC
DateRoll DayCount		Reverse Default:	
e ⊡ DefaultIndexTenor • ⊞ FXReset		<< Add	
Fees FieldKeywords	E	>> Remove	
Frequency Holidays		Configure Interfaces	٦
IndexTenor		Configure Types	
MWBooking State			
Sic			
- 🥩 ESMA			

Calypso also supports separate UTI for Cap / Floor leg of CapFloor Straddle and Payer/Receiver leg for Swaption Straddle. This UTI keyword will be based on reporting Jurisdictions. For example, if it is CFTC jurisdiction then the keywords will be ReportingCFTCLeg1UTIPrefix, ReportingCFTCLeg1UTIValue, and so on. Similarly, if it is ESMA jurisdiction then the keywords will be ReportingESMALeg1UTIPrefix, ReportingESMALeg1UTIValue, and so on.

5.6.2 MarkitWire's Cleared Trade

MarkitWire's Cleared Trade Unique Swap Identifier (USI) is used in the Trader Tracker GUI and is assigned by the CCP. In the Trader Tracker, the USI field of trade both before and after clearing does not change. The USI provides a means to track a swap transaction throughout its lifecycle.



MarkitWire's Cleared Trade Global Unique Trade Identifiers (UTI) will be populated with the Global UTI if it is sent by the CCPs.

- (1) Note: To begin populating reporting keywords/attributes such as USIPrefix and USIValue in Calypso, you must contact MarkitWire support to request that they enable "output reporting tags" for the appropriate User ID(s).
- () Also, ensure that the IncludeTRReportingInfo parameter in calypso_SW_config.properties is set to true.

#This flag is used when user needs DF Reporting in SWML. IncludeTRReportingInfo=true

Calypso will support the following Global UTI keywords:

- GlobalUTI
- GlobalBlockUTI
- GlobalPriorUTI

The above values would come from the Trades which will be received by the CCP when MarkitWire sends the trade for Clearing. As part of the CLEAR accept the CCP would need to add the value in the ClearedTradeGlobalUTI keyword, which will be sent to MarkitWire as part of the Clearing acknowledgement.

1) NOTE: The existing USI Trade keywords will also be supported along with Global UTI support.

The following Trade Keywords are imported by Calypso:

- **USIPrefix** The first component of the USI generated by the SEF for an OTC trade.
- USIValue The second component of the USI generated by the SEF for an OTC trade.
- **PriorUSIPrefix** The first component of a USI for a previously associated trade (for example after an OTC novation or compression).
- **PriorUSIValue** The second component of a USI for a previously associated trade (for example after an OTC novation or compression).

In the Trader Tracker application, the USI assigned by the CCP is located on the **DF Reporting tab** in the Report Identifiers group. The USI does not change after clearing.



5.6.3 Cleared Trade USI

Calypso always populates the "USI" Trade Keywords with the current and latest USI version of the trade. Calypso populates the "Prior USI" Trade Keywords with the trade's USI prior to novation:



The Cleared Trade Global UTI will be copied to the Cleared Trade USI and Cleared Trade UTI fields and the corresponding fields on the Trade Window. Where CCPs continue to send a Cleared Trade USI or UTI to MarkitWire.

If a CCP does not provide a Global UTI then the field will remain empty, and the existing Cleared USI and Cleared UTI fields will show any values provided by the CCP.



Counte V LYPSOBANK V CALYPSOBANK Book Global V St	ID V 14934 a LINKED Te NONE	A Trade Attributes Window	
Subtype Standard 🛛 🖗 Broker		Domain	
Not Cancellable Not Credit Contingent Not Credit Contingent No Principal Adjustments Fix	Float v v U v 12 Bullet	Name CCPRejectReason CCPReplacementTradeId CCPStatus CCPTerminationEvent CCPTerminationEffectiveDate CCPTerminationEffectiveDate	Value
5/11/2022/11/2023	S /11/2022 /11/202	ClearedTradeGlobalUTI	CLEAREDGLOBALUTITESTING1005
2.000000 NONE	00000 * U ~ LIBOR BEG Lag -2 Bus, (L NONE ~ 1st 0.00	CLSFar ConditionPrecedentBondCodeType ConditionPrecedentBondCodeType ConditionPrecedentBondMaturityDate ContractDivReD ContractDivReD CounterpartyRejectReason	CCP ClearedTradeUTI
Pmt PA END NONE MOD_FOL DAY 11 Lag 0 ACT/360 LON.NYC NEAR NONE ADJUSTED	Pmt QTR V END MOD_FOL V DAY ACT/360 V LON. NONE	CoverTrade COS Spread CREATE_REASON CreditApprovalId CreditApprover CrossChecked	
Interned	Settlem	CurrencyPair Custom828Info Custom828Info CustomSpilltafo CustomSpillSetting CustomTransferInfo CustomTransferSetting Deliver.Order	

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

5.6.4 Notes

Upon Clearing and Declearing lifecycles, the USI keywords always show the current and latest USI of the trade. Calypso's Prior USI keywords always show the USI values before novation. In other words:

- For a cleared trade, the USI keywords in Calypso are the latest USI values assigned by the CCP. The Prior USI keywords contain the USI from the original OTC trade.
- For an OTC trade (either new or subsequent to declearing or reclearing), USI keywords in Calypso are the latest USI values assigned by the SEF. Prior USI keywords contain the values present in the "prior USI" fields in MarkitWire, when present. However, if MarkitWire's prior USI field is empty. Calypso populates its own prior USI keywords with the USI value of the previously cleared version of the trade.



FCM/Clearing Broker Business Flow

6.1 FCM Pre-clearing Business Flow

6.1.1 Overview

Certain clearing houses require clearing broker acceptance prior to that same trade being submitted to them. Clearing Broker is known as FCM. Clearing take up prior to submission does exist on the trilateral client clearing workflow, it is required that this functionality is covered in the bilateral workflow.

- This specification only covers bilateral client clearing
- If trade not allocated then there can be up to 2 FCMs, but if the trade is allocated there will be up to 2 FCMs for each allocation split
- All products that are currently cleared via HKEX Rates will be eligible
- The workflow will support EB submission of the trade as well as Broker submissions
- New Contract State will be supported for Clearing Take Up flow
- FCMs should receive trades or splits id trade is allocated upon Client affirmation. The request to accept this trade will be done via the GUI
- FCM will only have the ability to 'Pickup',' Transfer', 'Accept', or 'Reject' trades via GUI
- FCM will only have the ability to 'Pickup',' Transfer', 'Accept', or 'Reject' via API
- If FCM is rejecting a trade the entry of a status (rejection) message is mandatory

Out of Scope:

- Package Clearing
- Allocation
- Netting compression

6.1.2 FCM Pre-clearing Business Flow

- 1. Bi-lateral trades done between the Bank and international bank.
- 2. Clearing request submitted by both the Bank and international bank via MarkitWire.
- 3. Clearing broker checks the credit limits before accepting the request.
- 4. Once accepted, MarkitWire sends the matched record to OTC Clear for product, margin and credit checks.

5. After the trade is accepted by registration, OTC Clear will inform Clearing Broker, Bank and International Bank about the trade clearing status through Markitwire.



6.1.3 Trade Flow

Following Lifecycle Events are supported:

- Take Up Trade
- Accept
- Reject

The Original trade between Party A and Party B will be separated into child trades in the following way: If only one FCM is specified– there will only be one new trade created. If there are 2 FCMs specified a trade will go to both FCMs and there will two new trades created.



Accept Trade Flow:

- Trade is separated into child Clearing Take Up trades
- Original trade (A) is in Clearing Pending status
- For each Clearing Take Up trade the new status will be Clearing Take Up Pending
- Once the trade is accepted by one of the FCMs the trade will stay as Clearing Take Up Pending
- Once all B and C have accepted A is sent to Clearing
- The Original Trade is updated to a new status of Clearing Released
- Once the original trade is cleared, B and C (the Clearing Take Up trades) have a new status Clearing Take Up Done

For Accept trades the following statuses are expected to be seen



Contract State	Booking State	Trigger	Trade
Clearing	Pending	Original Trade will stay in this state until a response is received from Clearing House	A
Clearing Take Up	Pending	When new trades are created	В, С
Clearing Take Up	Pending	Once one of the FCM trades has accepted	В
Clearing Take Up	Pending	Once both of the FCM trades has accepted	В, С
Clearing Take Up	Released	Once Original Trade receives a message from Clearing House	A
Clearing Take Up	Done	Once a message is received from Original Trade A	В, С
Clearing Take Up	Released	Once the FCM trade is Released	В, С

Reject Trade Flow:

- Original trade is separated into child Clearing Take Up Trades
- Original trade (A) is in Clearing Pending status
- For each Clearing Take Up trade (B, C) there will be a new trade ID and the new status will be Clearing Take Up Pending
- If the trade is accepted by one of the FCMs the trade (B, C) will stay as Clearing Take Up Pending
- If the trade is rejected by any of the FCMs the trades (B, C) will move into Withdrawn- Clearing Take Up (Message will be sent to other party's FCM)
- A is not sent to Clearing
- The Original Trade (A) is updated to new status of Clearing Withdrawn

For Reject trades the following s	statuses are expected to be seen
-----------------------------------	----------------------------------

Contract State	Booking State	Trigger	Trade
Clearing	Pending	Original Trade will stay in this state until a response is received from Clearing House	A
Clearing Take Up	Pending	When new trades are created	В, С
Clearing Take Up	Pending	Once one of the FCM trades has been accepted	В, С
Clearing Take Up	Withdrawn	Once FCM A or B rejects trade (counterparty FCM will be	В, С



Contract State	Booking State	Trigger	Trade
		notified and both will be rejected)	

6.1.4 Configuration and Setup

Step 1 – Accounts and attribute setup

1. CCP facing account:

- Processing Org: Legal Entity configured in calypso with FCM BIC code, see STEP2 -1
- External name: Must be the client BIC code for which this FCM instace receives deals
- Legal Entity: Legal Entity configured in calpso with HOUSE BIC code, see STEP2-3
- Type: SETTLE
- Role: Agent
- **Description**: Mirror account ID facing the client
- Attributes: CCPOriginCode = "CLIENT", Clearing Book = <BOOK_NAME> (more details for this attribute go to STEP4)

Accounts Definition - Authorization mode OFF MWAccount2 / 8203 - version 34		
Account Utilities Reports Process Help		
Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Clearing Browse		
Account Name MWAccount2		
Processing Org CALYPSO_FCM_PRIOR Ccy AUTO Id 8203		
Type SETTLE T SubType T Auto/Template Acc		
External Name SWAP1234 Q Interface Rule Aggregate 👻	Key	[
	CATradeDDAInternal	v
Description 8202	CCPAccountStructure	
Legal Entity (F2) YPSO BILATERAL CLEARING HOUSE Role Agent	CCPOriginCode	- CLIENT
	CFTCN-KCustDuration/	_
Creation Date 1/8/19 9:42:04 AM 🔽 Create by Acc Engine only	CETCSublement	*
	Clearing Book	Client Book
Closing Account Last closing Date	ClearingCashAccount	✓ False
Parent Account Parent Id 0	DTCPartAccountID	
External Sett		
F Balance		
Status Retroactivity		
Active From	Biling Is Proprietary	
Proprietary Account		
Active To		
by Trade Date Sub-Account Type		

2. Client facing account:

- Processing Org: Legal Entity configured in calypso with FCM BIC code, see STEP2 -1
- External name: Must be the client BIC code for which this FCM instace receives deals
- Legal Entity: Legal Entity configured in calpso with HOUSE BIC code, see STEP2-2
- Type: SETTLE



- Role: Counterparty
- **Description**: Mirror account ID facing the House
- Attributes: CCPOriginCode = "CLIENT", Clearing Book = <BOOK_NAME> (more details for this attribute go to STEP4)

Accounts Definition - Authorization mode OFF	EMW0ccount1 / 8202 - version 31						
Accounty Definition Authorization mode of							
Account Utilities Reports Process Help							
Account Statements Attributes Interests Limits	Consolidation Translation/Revaluation Clearing Browse						
Account Name MWAccount1							
Processing Org CALVESO, ECM, PRIOR	* Cox AUTO * 1d 8202						
Tune SETTLE V Out	Tuna						
Type perice Sub	Type Addo remplace Add	<u>(X)</u>					
External Name SWAP1234	Q Interface Rule Aggregate -	r Key					
		CATradeDDAInternal	v				
Description 8203		CCPAccountStructure					
Legal Entity (F2) AAA BANK	Role CounterParty	CCPOriginCode	✓ CLIENT				
		CETCNetGrossReportingFlag					
Creation Date 1/8/19 9:41:20 AM	Create by Acc Engine only	CFTCSubAccount					
Closing Account	··· Last Closing Date	Clearing Book	Clearing Book				
		ClearingCashAccount	✓ False				
Parent Account	Parent Id 0	DTCPartAccountID					
External Settl	External Cash Account						
1 Dataine							
	Retroactiv	with					
Status							
Active From	Interest Bearing	🔽 Billing 🔲 Is Proprietary					
	Proprietary Accor	unt					
Active To							
by Trade Date	Sub-Account Ty	ype v					

Step 2 – Legal Entity and attribute setup

<u>1. FCM Legal Entity</u>: This LE is used in CCP facing account.

Attributes:

• SwapswireParticipant: The FCM BIC code must be configured here

📕 Legal Entity- V	ersion - 0 [151019/markit	wiregold/calypso_use	r]					
Utilities Help								
Short Name	CALYPSO_FCM_PRIOR		Status	Enabled	•			
Full Name	CALYPSO_FCM_PRIOR		Role(s)	CCP				
Parent				Clearer CounterParty				
Country	NONE	v		ProcessingOrg				
Inactive As From	User	calypso_user						
Entered Date	01/03/2019 9:12:2	0 AM						
External Ref		C Frankl						
Holidays		 Financial Non Financial 						
Legal Entity	y Attributes Window - Vers	ion - 0						_ 🗆 ×
Q - Search								
Legal Entity	CALVPSO ECM PRIOR		F	Role ALL	T		Processing Org All	-
Athribude Cours			Alberto de T	una CuranauinaDa		-		
Attribute Group	1		ACCIDULE I	Ahe Towahemuleha		2		
Id	Processing Org	Legal Entity		Role	Attribute Group		Attribute Type	Attribute Value
800	12 ALL	CALYPSO_FCM_PRIOR		ALL			SwapswireParticipant	CALYPECMXXX



2. Account Legal Entity: This LE act as a client submitting its deal to FCM account.

Attributes:

• SwapswireParticipant: The client BIC code must be configured which comes under tag

```
<swClearingTakeup>
   <swClient>
        <partyId>SWAP1234</partyId>
        <partyName>AAA Bank</partyName>
        <tradeId>44445555</tradeId>
        </swClient>
        <swClearingHouseTradeId/>
</swClearingTakeup>
```

• SwapswireBook: MarkitWire book BIC code needs to be configured which is used when submitting deal to FCM

🔀 Legal Entity- \	Legal Entity- Version - 4 [151019/markitwiregold/calypso_user]						
Utilities Help							
Short Name	AAA BANK	Statu	Enabled	*			
Full Name	AAA BANK	Role(s	Agent				
Parent			Broker Calc Agent				
Country	UNITED STATES	▼	CounterParty				
Inactive As From	User calypso_	user	ProcessingOrg				
Entered Date	01/24/2012 7:52:58 AM						
External Ref							
Holidays		Financial Non Einancial					
Legal	Entity Attributes Window	Norrinancia				_ 🗆 🗙	
0 - 502	rch						
Joc- Jee	in in in its second sec						
Lega	Entity AAA BANK	Ð	Role ALL	•	Processing Org ALL	*	
Attribute	Group	💌 🔁 Attr	ibute Type 4EYES_V	VEB 💌	🔁 Value	€	
		,					
I	d Processing Org	Legal Entity	Role	Attribute Group	Attribute Type 🗸	Attribute Value	
	2002 ALL	AAA BANK	ALL		SwapswireParticipant	SWAP1234	
	8012 ALL	AAA BANK	ALL		SwapswireBook	CALYP501	

<u>3. House Legal Entity</u>: This LE acts as a clearing house which will perform clearing on once the deals are sent to it by FCM

Attributes:

• SwapswireParticipant: The house BIC code must be configured which comes under tag

	N/ LTAUC/
	<party id="partyA"></party>
	<partyid>CALYPSOXXXX</partyid>
	<partyname>Calypso Bilateral Clearing House</partyname>
	<party id="partyB"></party>
	<pre><partyid>CALYPFCMXXX</partyid></pre>
	<pre><partyname>Calypso FCM Prior</partyname></pre>
<	FpML>



∠Legal Entity- ¥	'ersion - 2 [151019/mark	itwiregold/calypso_user]				
Utilities Help							
Short Name	CALYPSO BILATERAL CLEAR	ING HOUSE	Status Enabled		¥		
Full Name	CALYP50 BILATERAL CLEAR	ING HOUSE	Role(s) Agent		<u> </u>		
Parent			CCP				
Country	NONE	▼	Clearer				
Inactive As From	User	calypso_user	Processing	Ora	<u> </u>		
Entered Date	01/03/2019 9:14	:30 AM					
External Ref		G Georgial					
Holidays		O Non Financial					
📈 Legal En	tity Attributes Window						
Q - Search	1						
Lenal Er			Role ALL		-	Processing Org All	_
tu tu c							
Attribute Gr	onb	<u> </u>	Attribute Type [4E1	ED_WED	<u> </u>	value	건
Id	Processing Org	Legal En	tity	Role	Attribute Group	Attribute Type	Attribute Value
80	04 ALL	CALYPSO BILATERAL CLEAF	RING HOUSE	ALL		SwapswireParticipant	CALYPSOXXXX

Step 3 – Domain setup

Acceptance, Rejection, and Release notifications to FCM/CCP are triggered by a combination of trade actions and the resulting trade status in Calypso. Configure the following domains as per the workflow followed for trades with the statues and actions to be applied during Accept/Reject/Release of trades from FCM.

Specimen values need to be added to the following domains:

• Clearing.Trade.AcceptAction: ACCEPT, CLEAR

N. I. CH_HOCCH	Name of the state that the state of the stat
Clearing.Statement.resourceLocations	Name: Julearing, Trade, AcceptAction
	Value: ACCEPT
Clearing, Trade, AcceptAction	<u>C</u> omment:
	<< <u>A</u> dd
	>> <u>R</u> emove

Clearing.Trade.AcceptStatus: LIMIT_APPROVED

Let i a Directi i		and the second second
NEW		Name: Clearing, Trade, AcceptStatus
PICK_UP	-	Value: LIMIT_APPROVED
Clearing. Trade. AcceptStatus		Comment:
- ye cleared		
		<< <u>A</u> dd
LIMIT_APPROVED Clearing.Trade.NettingAction		>> <u>R</u> emove

• Clearing.Trade.RejectAction: REJECT, REFUSE (this action can be further customized as shown in STEP5)





Clearing.Trade.RejectStatus: REJECTED

Part controcom		Nexuel Classics Touds Description
	A	Name: JClearing, Trade, Rejectstatus
🚊 🔠 Clearing. Trade. RejectStatus		Value: REJECTED
		Comment
		Zoumerici I
REJECTED		
📗 🕀 🔠 Clearing. Trade. Release Action		<< Add

• Clearing.Trade.ReleaseAction: RELEASE, CLEAR (this action can be further customized as shown in STEP5)

FCM REJECTED		Name: Clearing.Trade.ReleaseAction
	_	Value: CLEAR
Clearing. Trade. Release Action		Comment:
FCM_RELEASE		
RELEASE		

• Clearing.Trade.ReleaseStatus: VERIFIED



Step 4 – Book selection logic

Trading book selection logic is as follows:

This applies to cleared trades as they come into Calypso from the CCP, Clearing Transfer Trades generated in the EOD process, and trades related to collateral management such as Collateral Exposures and Margin Calls.

The design is based on iteration of places to check for the Book Attribute to be defined. This hierarchy is described below.



First System Checks for Clearing Account

This model allows for the grouping of trades for an account in books by CCP and Product, and includes both the client facing and CCP facing sides of all trades, so that you can check at the end of the day that this book is flat.

Create a "Clearing Book" attribute on the Clearing Account which expects a Book Name as the value. Use this book for any trades whose origin is associated with this account. **This attribute should be set on both the client facing and the CCP facing (mirror) clearing accounts.** When configured this way, it will include <u>both the client</u> <u>facing and the mirrored CCP-facing versions</u> of the cleared trades and clearing transfers as well as collateral related trades. If no attribute value is found on this account, go to next step.

Accounts Definition -	- Authorization mode OFF CPTY1@	OCME / 3402 - version 14	_			
Account Utilities Re	eports Process Help					
Account Statements At	ttributes Interests Limits Consolid	ation Translation/Revaluation	learing Browse			
Account Name	CPTY1@CME		Call Account			
	[
Processing Org	P01	▼ Ccy AUTO ▼	Id 3402			
Type	SETTLE V SubType	-	Auto/Template Acc			
1/25	out type [
External Name	CMETEST88	Q Interface Rule	Aggregate 👻	Key	Value	X
Description	3401			CCP CCROriginCode	- CLIENT	^
besciptori				CFTCAccountNumber	CLIDAT	
Legal Entity (F2)	CME	Role Age	ent 👻	CFTCNetGrossReportingFlag	v	5
Creation Date	11/14/13 12:15:42 PM	te by Acc Engine only		CFTCSubAccount		
Creation Porte				Clearing Book	PO1_CLIENT_CLEARING@CCP	
Closing Account		Last Closing Date		ClearingCashAccount	✓ False	
Parent Account		Parent Id	0	DTCPartAccountID		
i di circi i coodire						
External Settl.		External Cash A	ccount			
Balance						

Mirror Account Facing to Client can have different book defined:

Statements A	ttributes Interests Limits Consol	Gation Translation/Revaluation	Gearing Browse			
Account Name	CPTY1@PO1-CME		Call Account			
Processing Org	PO1	▼ Ccy AUTO ▼	Id 3401			
Туре	SETTLE	•	V Auto/Template Acc	××		
External Name	CMETEST88	Q Interface Rule	Aggregate	, Key	Value	2
				CCP		-
Description	3402			CCPOriginCode	✓ CLIENT	
Level Cetity (C2)	CREV. 1			CFTCAccountNumber		
Legal Enuty (F2)	0011_1	Kole Co	unterparty	CFTCNetGrossReportingFlag	v	
Creation Date	11/14/13 12:14:48 PM V Crea	ite by Acc Engine only		CFTCSubAccount		
				Clearing Book	PO1_CLIENT_CLEARING@CMF	
Closing Account		··· Last Closing Date		CrearingCasnAccount	* raise	
Parent Account		Parent Id	0	DTCPartAccountID		
External Settl.		External Cash /	Account			

Second System Checks for Legal Entity

This model groups one account's trades across all CCP's and Products into a single book. It puts all CCP facing client trades for all accounts into another book, and all CCP facing house trades in another. It reduces the number of books.



Use the existing Legal Entity Clearing Book attribute to determine the book for all client facing trades across all CCPs. Use the Client Clearing Book and House Clearing Book attributes for the Processing Org Legal Entity to determine the book for the CCP facing sides of all trades. If PO doesn't have attribute populated go to next step

Client/House LE:

Legal Entity /	Attributes window - \	Version - 1					
Q,- Search							
Legal Entity	CPTY_1		→ Role	ALL	•	Processing Org	ALL 👻
Attribute Group		•	Attribute Type	Clearing Book	•	→ Value	
d	Processing Org	Legal Entity	Role	Attribute Group	Attribute 1	Гуре	Attribute Value
168703	ALL	CPTY_1	ALL		ICELinkPart	ticipant	cyp_hf1
168704	ALL	CPTY_1	ALL		ICELinkBoo	k	CPTY_1_BOOK
3003	ALL	CPTY_1	ALL		ClearingRe	portingCurrency	USD
173103	ALL	CPTY_1	ALL		Clearing Bo	lok	PO1_CLIENT_CLEARING@CMF
4908	ALL	CPTY_1	ALL		Client_Rati	ng	Gold
6602	ALL	CPTY_1	ALL		FUNDING B	OOK	PO1_CLIENT_CLEARING@CMF
8903	ALL	CPTY_1	ALL		Counterpar	rtyType	Client
9002	ALL	CPTY_1	ALL		TradeState	mentByPO	True
9003	ALL	CPTY_1	ALL		TradeState	mentFrequency	Daily
9004	ALL	CPTY 1	ALL		ZeroTrade	Statement	True

CCP LE:

Logal Entity	CME		5	Dele	ALL	_1	Processing Ora	_
Legarchuty				Role	ALL	•	Processing Org	•
Attribute Group			▼ 3 At	ttribute Type	House Clearing Book	•	Value HC	USE_CLEARING@CCP -
d	Processing Org	Legal Entity	Role		Attribute Group	Attribute Ty	/pe	Attribute Value
14029	ALL	CME	ALL			LCHFirmId		NULL
14030	ALL	CME	ALL			CMEFirmId		NULL
14031	ALL	CME	ALL			Withhold		N
14032	ALL	CME	ALL			TEMP_CRED	IT_SUSPENSION	N
14033	ALL	CME	ALL			HSBC_GROU	P_MEMBER_BRANCH	NULL
14034	ALL	CME	ALL			HSBC_BCC_I	ID	NULL
14035	ALL	CME	ALL			HSBC_CBID_	CODE	NULL
14036	ALL	CME	ALL			HSBC_TREA	TS_CP_CODE	NULL
14037	ALL	CME	ALL			SwapswirePa	articipant	NULL
4315	ALL	CME	ALL			CFTCExchan	igeCode	NULL
14026	ALL	CME	ALL			ClearingRep	ortingCurrency	USD
3826	ALL	CME	ALL			CME_CPTY		CME
	ALL	CME					ing Book	HOUSE_CLEARING@CCP
25503	ALL	CME	ALL			VMType		MULTI
15503	ALL	CME	ALL			HSBC_GHO		FNB
15502	ALL	CME	ALL			HSBC_TREAT	TS_NAME	CHEXCME
	ALL	CME				Client Clearir	ng Book	HOUSE_CLEARING@CCP
20945	ALL	CME				Clearing Boo	k	HOUSE_CLEARING@CCP
30401	ALL	CME	ALL			BookNetting		true

Third System Should Check CCP Legal Entity

This allows the CCP facing trades in the second model to be divided by CCP.

Use the existing House Clearing Book and Client Clearing Book attributes for the CCP Legal Entity to drive the book that the CCP facing trades are put into. A different book can be set for each CCP.



Assumptions:

A user will choose a consistent model across all accounts. If they configure the book on the clearing accounts for one account, we should assume that they will do it for all. If one account attribute is missing, we will go to the second check and put the trades into a book across all CCPs and there will be inconsistency due to user configuration error.

If a book is found in step 1, we will ignore any other book configuration under any of the LE's. If a book is not found in step one, we go to step 2, and stop there if the proper configuration is found. If not found in either check, we finally go to the third step.

Step 5 – Mapping Window

Following entries are added in mapping window to which can be used to add custom trade work-flow actions when clearing notification comes from CCP to the FCM calypso instance.

1. CCP clears bilateral trades:

FCM receives clearing notification and by default **CLEAR** action is applied however if we need to apply any custom action same need to be added into Calypso value of following mapping:

Calypso Mapping Window		
Interface Mappings		
i⊡	Name:	MW/FCMAction
⊕	Interface Value:	CLEAR
	Calypso Value:	CLEAR
CounterpartyTraders	Reverse Default:	
	<< Add	
DefaultIndexTenor DiscountingMethod	>> Remove	
ExternalReference	Configure Interfaces	1
- SCLEAR	Configure Types	1

2. CCP reject bilateral trades:

FCM receives clearing withdrawn notification and by default **REFUSE** action is applied however if we need to apply any custom action same need to be added into Calypso value of following mapping:



🖉 Calypso Mapping Window		
🛄 Interface Mappings		
E-InterfaceName	Name:	MW/FCMAction
	Interface Value:	REFLISE
E FpML	Incorrace value.	
	Calypso Value:	REFUSE
CounterpartyTraders	Reverse Default:	
CounterpartyTradersGr		
DayCount	<< Add	
DefaultIndexTenor DiscountingMethod	>> Remove	
	Coofigure Interfaces	1
E]
	Configure Types	

6.1.5 FCM Trade keywords

KeywordName	KeywordValue
BusinessFlow	Taken from property BusinessFlow in "calypso_SW_config.properties", or defaults to FCM if not set.
CCP	CALYPSO BILATERAL CLEARING HOUSE
CCPAccountReference	SWAP1234
CCPClearedDate	01-11-19
CCPMessageTimestamp	11-01-19 14:04
CCPOriginatingEvent	Trade
CCPOriginCode	CLIENT
CCPStatus	Cleared
CCPTradeID	33931
CCPRejectReason	FCM rejects deal comment
ClientTradelD	44463287
IS_CLIENT	FALSE
SentBy	SWAP1234
SentTo	CALYPFCMXXX
SWContractState	Clearing-Takeup
SWContractVer	1
SWDealld	44463293
SWEligibleForClearing	FALSE
SWLoginHandleldentifier	calypso_fcm_dealsink1



KeywordName	KeywordValue
SWMasterAgreementType	ISDA
SWOriginalCounterparty	AAA BANK
SWPayLegSwapStreamId	fixedLeg
SWPrivateVer	5
SWProcessState	Released
SWRecLegSwapStreamId	floatingLeg
SWSide	2
SWSingleSided	TRUE
SWValidated	FALSE
TradeSource	MW

6.1.6 Calypso Trade for FCM Lifecycles

1 <u>Note</u>: These are specimen Calypso Trade representation with reference to FCM action performed at single side of a bilateral deal. The trade actions and status can differ based on the domain and trade work-flow setup.

FCM Incoming

Once bilateral trades are affirmed and released by their corresponding dealer MarkitWire account FCM receives clearing notification.

The Calypso instance running listening to this FCM deal-sink will receive and process this notification. Trade representation for same in Calypso is as follows:



Swap/01/10/2020/P:USD 2.00000 /R:USD/LIBOR/3M -PO is CALYP	50 F	M PRIOR (25920) - Version : 0 Mod User :(calypso_user) [15101	9/markitwiregold'i		
Trade Back Office Swap Cashflows Analytics Pricing Env Market D	ata	/iew Utilities Help			
Trade Details Cashflows Resets Fees (*) CSA					
CounterParty 💌 CLEARING HOUSE 🗾 CALYPSO BILATERAL CLEARI	NG HC	JSE ID 25920			
Book Client_Book 🔽 St	atus F	ENDING_LIMIT Template NONE	凚 Trade Attributes		×
Subtype Standard Broker			🔅 SetUp 🔹 😭 🛛 🖓		ditable
+ Not Credit Contingent			Name	Value	
- No Principal Adjustments			CCP	CALYPSO BILATERAL CLEARING HOUSE	<u> </u>
			CCPAccountReference	SWAP1234	
+ No Fwd Start Adjustment			CCPMessageTimestamp	2019-01-10 08:21:18 AM	
+ Not Resettable			ICCPOriginatingEvent	Irade	_
Fix Pay 1050 15,000,000,00	>>	Float Rec V USD V 5.000.000.00	COShiba	* CLIENT	
			CleantradeID	44420750	_
Builec		Builet	Clericitadero	44430/39	_
Actual 🗖		Actual 🥅	IS CLIENT	v Falca	_
			NegotiatedCurrency	- 1050	_
Start 01/10/2019 End 01/10/2020		Start 01/10/2019 End 01/10/2020	ReportingCETCObligatory	fake	
	>>		SentBy	SWAP1234	- 1
2.00000 % Fixed Amount		1.000000 * USD V LIBOR V 3M V + Obp BB	SentTo	CALVPECMXXX	
Con E		Cure E	SWContractState	Clearing-Takeup	
Cmpi		Cmp j	SWContractualDefinitions	ISDA2006	
NONE		BEG_PER Lag - 2D Bus, (LON)-NO_CHANGE NONE	SWContractVer	1	
		Aug 🗖	SWDealId	44438807	
		Avy j	SWLoginHandleIdentifier	3101	
		NONE Ist Rate 0.00	SWMasterAgreementType	ISDA	
			SWOriginalCounterparty	AAA BANK	
Pmt PAIEND_PERNONE		Pmt QTREND_PERNONE	SWPayLegSwapStreamId	fixedLeg	
MOD_FOLLOW T DAY T 10 Lag 0		MOD_FOLLOW V DAY V 10 Lag 0	SWPrivateVer	0	
	22		SWProcessState	Pending	
ACT/300 LON,NYC NEAREST		ACI/360 ILON,NYC NEAREST	SWRecLegSwapStreamId	floatingLeg	
NONE ADJUSTED		NONE ADJUSTED	SWSide	2	
			SWSingleSided	true	
Intermediate Ccy		Intermediate Cov	SWValidated	false	
			TradeSource	MW	
Settlement CCy		Settlement CCv	26T	×	
			ACCOMMODATION_CHARGE_ID		
			AccountNumber		
			JADR Currency	<u> </u>	
J				OK Canc	el 📘
Market Data Pricer Params Results Pricer Override Market Data Item Ow	erride				
	_				

FCM Accept

Post receiving and processing the initial notification, when FCM perform ACCEPT action a notification is sent to bilateral trades stating the trades are accepted at FCM end and trades in calypso receives an acknowledgement updating the trade as below:

餐 Swap/09/11/2018/P:USD 2.00000 /R:USD/LIBOR/3M -PO is CALYP	🖓 Trade Attributes 🛛 🛛 🔀				
Trade Back Office Swap Cashflows Analytics Pricing Env Market D	ita N	iew Utilities Help	🔅 SetUp 🕞 😭 🕢	🖵 Editable	
Trade Details Cashflows Resets Fees (*) CSA			Name	Value	
			CCP	✓ CALYPSO BILATERAL CLEARING HOUSE	
CounterParty T CLEARING HOUSE T CALYPSO BILATERAL CLEARING	IG HO	JSE ID 126001	CCPAccountReference	SWAP1234	
Book Client Book 🔽 Sta	took Client_Book 🔻 Status LIMIT_APPROVED Template NONE 💌				
	_		CCPOriginatingEvent	Trade	
Subtype Standard V Broker			CCPOriginCode	- CLIENT	
			CCPStatus	Accepted	
+ Not Credit Contingent			ClientTradeID	44457702	
+ No Principal Adjustments			ESMAClearingExemption	false	
+ No Evid Start Adjustment			ExecutionCollateralizationType	Fully	
L Not Decettable			ExecutionDateTime	2019-01-11 09:33:15 AM	
T HUL Resettable			ExecutionLifecycleEvent	Trade	
Fix V Pay V USD V 5,000,000.00	>>	Float V Rec V USD V 5,000,000.00	ExecutionTradeType	InterestRate:IRSwap:FixedFloat	
Pullet		Pollat	InstrumentCFI	SRCCSC	
			IS_CLIENT	⊤ false	
Actual 📃		Actual 📃	NegotiatedCurrency	USD	
			ReportingASICPreferenceCCPLeg	Do Not Report	
Start 09/11/2017 End 09/11/2018		Start 09/11/2017 End 09/11/2018	ReportingCFTCClearingException	false	
	>>		ReportingCFTCJurisdiction	true	
2.00000 % Fixed Amount		1.000000 * USD V LIBOR V 3M V + 0bp BBA	ReportingCFTCNonStandard	false	
Can E		Can E	ReportingCFTCObligatory	false	
cmp j		cmp [_]	ReportingCFTCPreferenceConfirm	Do Not Report	
NONE		BEG_PER Lag -2D Bus, (LON)-NO_CHANGE NONE	ReportingCFTCPreferencePET	Do Not Report	
		to E	ReportingCFTCPreferencePostTradeEvent	Do Not Report	
		AYgj	ReportingCFTCPreferenceRT	Do Not Report	
		NONE Ist Rate 0.00	ReportingCFTCPriceForming	false	
			ReportingCFTCRegulatoryReportable	false	
Pmt PA V END_PER V NONE V		Pmt QTR END_PER NONE	ReportingCommercialActivity	false	
MOD FOLLOW T DAY TILL Land		MOD FOLLOW T DAY T 11 Land	ReportingESMAPreferenceCCPLeg	Do Not Report	
	>>		ReportingHKMAPreferenceCCPLeg	Do Not Report	
ACT/360 ION,NYC NEAREST		ACT/360 ION,NYC NEAREST	ReportingJF5APreferenceCCPLeg	Do Not Report	
NONE ADJUSTED		NONE AD1USTED	ReportingMASPreferenceCCPLeg	Do Not Report	
			ReportingPrimaryAssetClass	InterestRate	
			ReportingProductID	InterestRate:IRSwap:FixedFloat	
			ReportingTradingCapacity	Principal	
			SentBy	SWAP1234	
Decrement CCA T		Decrement cox	Sentio	CALYPECMXXX	
			SWContractState	Clearing-Takeup	
			SWContractualDefinitions	15DA2006	
			SWContractVer	1	
Market Data Dourse Dourse Dourse Dourse Overside Differences they over			SWDealld	44457686	
Pricer Override Market Data Item Over	nue		SWLoginHandleIdentifier	calypso_tcm_dealsink1	
			[5WMasterAgreementType	ISDA	



FCM Reject

Post receiving and processing the initial notification, when FCM perform REJECT action a notification is sent to bilateral trades stating the trades are rejected at FCM. Provision of adding reject reason is provided by keyword **CCPRejectReason, when this keyword value is not provided default reason is Deal Rejected**. Trade representation

🐼 Swap/09/11/2018/P:USD 2.00000 /R:USD/LIBOR/3M -PO is CALYPSO_ECM_PRIOR (26203) - Version : 4 Mod User :(calypso_user) [151019/markitwiregold]										
Trade Back Office Swap Cashflows Analytics Pricing Env Market Data View Utilities Help										
Trade Details Cashflows Resets Fees (*) CSA										
		05E 10 - 26203								
Book Clent_Book 🔽 Status REJECTED Template NONE 🔽										
Subtype Standard V Broker										
I Net Credit Certificant	_		A Trade Attributes		X					
+ No Principal Adjustments			🔹 SetUp 👻 👷 🔍		litable					
+ No Fwd Start Adjustment										
+ Not Resettable			Name	Value	_					
			CCP	CALYPSO BILATERAL CLEARING HOUSE						
Fix Pay USD 5,000,000.00	>>	Float v Rec v USD v 5,000,000.00	CCPAccountReference	SWAP1234						
Bulet		Bullet	CCPMessageTimestamp	2019-01-11 02:11:43 PM	_					
And all T		Advad 🗖	CCPOriginatingEvent	Irade	_					
Accuart		Actual	CCPOriginCode	♥ CLIENI	_					
			CCPStatus	Live	_					
Start 09/11/2017 End 09/11/2018		Start 09/11/2017 End 09/11/2018	Client TradeLD	99963921	_					
	>>		ESMAClearingExemption	raise	_					
2.00000 % Fixed Amount		1.000000 * USD VILIBOR VI 3M V + Obp BBA	IS_CLIENT							
Com E		Con E	NegotiatedCurrency	USD						
Cub I			ReportingCFTCObligatory	talse						
NONE		BEG_PER Lag -2D Bus, (LON)-NO_CHANGE NONE	SentBy	5WAP1234	_					
		Aug 🗖	SentTo	CALYPECMXXX						
		Avg	SWContractState	Clearing-Takeup	_					
		NONE Ist Rate 0.00	SWContractualDefinitions	ISDA2006	_					
			SWContractVer	1						
Pmt PA END_PER NONE		Pmt QTR END_PER NONE	SWDealId	44463455	_					
MOD FOLLOW T DAY T 11 Land		MOD FOLLOW T DAY T 11 Lan 0	SWLoginHandleIdentifier	calypso_tcm_dealsink1						
	>>		SWMasterAgreementType	ISDA						
ACT/360 CON,NYC NEAREST		ACT/360 CON,NYC NEAREST	SWOriginalCounterparty	AAA BANK						
NONE		NONE ADJUSTED	SWPayLegSwapStreamId	fixedLeg						
ADJOSTED		ADJUSTED	SWPrivateVer	0						
			SWProcessState	Pending						
Intermediate Ccy		Intermediate Ccy	SWRecLegSwapStreamId	floatingLeg						
			SWSide	2						
Settlement CCy		Settlement CCy	SWSingleSided	true						
			SWValidated	false						
			TradeSource	MW						
			26T	Y						

Known issue: As of now for FCM Reject we are not receiving acknowledgement from MarkitWire and we are actively working to get it working.

FCM Accept- ClearingHouse Accept

Post FCM accept from Calypso the bilateral trades are sent to ClearingHouse for clearing through MakritWire. Once Clearing House clear these bilateral trades FCM receives clearing notification and same get updated on the Calypso side of corresponding FCM as below:



🏘 Swap/09/11/2018/P:USD 2.00000 /R:USD/LIBOR/3M -PO is CALY	PSO_FCM_PRIOR(26101) - Version : 7 Mod User :(calypso_user) [151019/marki	itwi 🏘 Trade Attributes		×
Trade Back Office Swap Cashflows Analytics Pricing Env Market	Data View Utilities Help	🔅 setup 🔹 🙀 🕢 🔍	🔅 SetLp 👻 🙀 🔍 🔍	
Trade Details Cashflows Resets Fees CSA		Name	Value	
		CCP	CALYPSO BILATERAL CLEARING HOUSE	-
Councerparty T CLEARING HOUSE T CALTPSO BILATERAL CLEAR		CCPAccountReference	SWAP1234	
Book Client_Book 💌 S	tatus VERIFIED Template NONE	CCPClearedDate	01-11-2019	
		CCPMessageTimestamp	2019-01-11 11:56:06 AM	
Subtype Standard V Broker		CCPOriginatingEvent	Trade	
		CCPOriginCode	- CLIENT	
+ Not Credit Contingent		CCPStatus	Cleared	
+ No Principal Adjustments		CCPTradeID	33433	
+ No Find Start Adjustment		ClientTradeID	44460056	
L Net Desettable		ESMAClearingExemption	false	
+ INOC RESOLUTION		ExecutionCollateralizationType	Fully	
Fix V Pay V USD V 5,000,000.00	>> Float v Rec v USD v 5,000,000.00	ExecutionDateTime	2019-01-11 11:49:56 AM	
Bilet	Bullet	ExecutionLifecycleEvent	Trade	
		ExecutionTradeType	InterestRate:IRSwap:FixedFloat	
Actual	Actual	ExecutionVenueType	OffFacility	
		InstrumentCFI	SRCCSC	
Start 09/11/2017 End 09/11/2018	Start 09/11/2017 End 09/11/2018	IS_CLIENT	✓ false	
	>>>	NegotiatedCurrency	USD	
2.00000 % Fixed Amount	1.000000 * USD TILIBOR T 3M T+ Ubp BBA	ReportingASICPreferenceCCPLeg	Do Not Report	
(mo E	Cmo T	ReportingCFTCClearingException	false	
Cub I	Citp	ReportingCFTCJurisdiction	true	
NONE	BEG_PER Lag -2D Bus, (LON)-NO_CHANGE NONE	ReportingCFTCNonStandard	false	
	Avg 🗖	ReportingCFTCObligatory	false	
	mg)	ReportingCFTCPreferenceConfirm	Do Not Report	
	NONE st Rate 0.00	ReportingCFTCPreferencePET	Do Not Report	
a class and loss and loss and		ReportingCFTCPreterencePostTradeEvent	Do Not Report	
PMC PA I IND_PER INONE	Pmt joir I jend_per I None I	ReportingCFTCPreferenceRT	Do Not Report	
MOD FOLLOW V DAY V 11 Lag 0	MOD FOLLOW V DAY V 11 Lag 0	ReportingCFTCPriceForming	raise	
		ReportingCFTCRegulatoryReportable	faise	
AC1/360 TOW,WTC WEAKEST	ACT/360	ReportingLommercialActivity	raise	
NONE ADJUSTED	NONE ADJUSTED	ReportingESMAPreferenceCCPLeg	Do Not Report	
		Reporting Roman Perence CCPLeg	Do Not Report	
Intermediate Ccy	Intermediate Cov	Reporting/FSAPreferenceCCPLeg	Do Not Report	
		ReportingMASPreferenceCCPLeg	Do Not Report	
Settlement CCv	Settlement CCv V	PepertingProductID	InteractDate ID Swan-SivedEloat	
		Reporting Trading Capacity	Principal	
		SeptBy	SWAD1234	
		SentTo	CALVECTION	
		SWContractState	Clearing, Takeup	
Market Data Pricer Params Results Pricer Override Market Data Item Ov	rerride	SWContractuaDefinitions	15DA2006	
		SWContractiver	1	
		The second met second	1*	100

The trade action to be applied when clearing house clears the deal is by default **CLEAR**. This action can be further customized by providing mapping as mentioned in section 1.1.4 STEP5. Also, the action should be part for the trade Work-Flow transition to clear trade and domain **UploadAllowedAmendActions**.

FCM Accept- ClearingHouse Reject

Post FCM accept from Calypso the bilateral trades are sent to ClearingHouse for clearing through MakritWire. If Clearing House rejects these bilateral trades FCM receives rejection notification and same get updated on the Calypso side of corresponding FCM as below:


Swap/09/11/2018/P:USD 2.00000 /R:USD/LIBOR/3M -PO is CALYP:	50_F	CM_PRIOR(26403)- Version : 4 Mod User :(calypso_user)[or Trade Attributes		×
Trade Back Office Swap Cashflows Analytics Pricing Env Market Da	ata	View Utilities Help	🍄 SetUp 🔹 🙀 🥝 🔍		🕅 Editable
Trade Details Cashflows Resets Fees CSA			Name	Value	
CounterDarty V CLEADING HOUSE V CALVESO BILATEDAL CLEADIN		15E ID - 26402	CCP	CALYPSO BILATERAL CLEARING HOUSE	
			CCPAccountReference	SWAP1234	
Book Client_Book 💌 Sta	atus F	ENDING_LIMIT_RE Template NONE	CCPMessageTimestamp	2019-01-11 05:32:01 PM	
			CCPOriginatingEvent	Trade	
Subtype Standard 💌 Broker			CCPOriginCode	- CLIENT	
	_		CCPStatus	Withdrawn	
+ Not Credit Contingent			ClientTradeID	44465811	
+ No Principal Adjustments			ESMAClearingExemption	false	
+ No Fwd Start Adjustment			ExecutionCollateralizationType	Fully	
+ Not Resettable			ExecutionDateTime	2019-01-11 05:27:15 PM	
			ExecutionLifecycleEvent	Irade	
Fix Pay USD 5,000,000.00	>>	Float Rec USD 5,000,000.00	Execution I rade lype	InterestRate:IRSwap:FixedFloat	
Bullet		Bullet	Executionvenuelype	OrrFacility	
Actual T		Actual 🗖	InstrumentCFI	SRCCSC	
Hereda I			IS_CLIENT	* raise	
Start 00/11/2017 End 00/11/2018		Start 00/11/2017 End 00/11/2018	Regoliaced Currency	USD De Nek Denerk	
Starclost 11501/ CHO 03111/2010	55	star lost 115017 cun lost 115010	ReportingASICPreferenceCCPLeg	Falco	
2 00000 % El Eixed Amount	11		ReportingCFTCCteaningException		
			ReportingCFTCJunStitution ReportingCFTCNonStandard	falce	
Cmp 🗖		Cmp 🗖	ReportingCFTCObligatory	falce	
NONE		REG DER Lag 20 Bus (LON)-NO CHANGE NONE	ReportingCFTCObligatory ReportingCFTCPreferenceConfirm	Do Not Deport	
NONE		bed_rek bag-zo bas, (con)-no_enimae none	ReportingCFTCPreferencePET	Do Not Report	
		Avg 🔽	ReportingCETCPreferencePostTradeEvent	Do Not Report	
		NONE It Bate 0.00	ReportingCETCPreferenceRT	Do Not Report	
		Inchie Inchie Inchie	ReportingCETCPriceForming	false	
Pmt PA		Pmt_OTREND_PERNONE	ReportingCETCRegulatoryReportable	false	
			ReportingCommercialActivity	false	
MOD_FOLLOW MOD_FOLLOW MOD_FOLLOW	>>	MOD_FOLLOW MOD_FOLLOW MOD_FOLLOW	ReportingESMAPreferenceCCPLeg	Do Not Report	
ACT/360 V LON,NYC NEAREST		ACT/360 V LON,NYC NEAREST	ReportingHKMAPreferenceCCPLeg	Do Not Report	
			ReportingJFSAPreferenceCCPLeg	Do Not Report	
NONE ADJUSTED		NONE ADJUSTED	ReportingMASPreferenceCCPLeg	Do Not Report	
			ReportingPrimaryAssetClass	InterestRate	
Intermediate Ccy		Intermediate Ccy	ReportingProductID	InterestRate:IRSwap:FixedFloat	
			ReportingTradingCapacity	Principal	
Settlement CCy		Settlement CCy	SentBy	SWAP1234	
			SentTo	CALYPECMXXX	
			SWContractState	Clearing-Takeup	
			SWContractualDefinitions	ISDA2006	
			SWContractVer	1	
Pricer Override Pricer Params Results Pricer Override Market Data Item Ove	erride		SWDealId	44465853	
			SWLoginHandleIdentitier	calypso_tcm_dealsink1	
			SWMasterAgreementType	ISDA	
			SworignalCounterparty	AAA DANK	
			SwrayLegswapStreamId	nxeaLeg	
			SWPrivale/er	6 1084 decum	
			SWProcessState	With uraWD Floatingling	
			cwcide cwcide	nuoungLey o	
			SWSingleSided	c brue	
			SW0/alidated	falce	
			TradeSource	naso MW	
			26T		
			ACCOMMODATION CHARGE ID	-	
			Account/Number		
			ADR Currency		
			ADR Fee		
					Cancel
					Carloo

The trade action to be applied when clearing house refuses the deal is by default **REFUSE.** This action can be further customized by providing mapping as mentioned in section 1.1.4 STEP5. Also, the action should be part for the trade Work-Flow transition to refuse trade and domain **UploadAllowedAmendActions**.



6.2 FCM Post-clearing Business Flow

6.2.1 Overview

Calypso supports the LCH FCM T2 model introduced by LCH and supported by MarkitWire for the Clearing Broker/FCM role.

Trades booked between an Executing Broker (EB) and a Client can be imported by a FCM (Futures Commission Merchant) in Calypso after CCP submission as a "Clearing Take-Up" trade.

Trade Consent/Rejection notifications from the FCM to LCH are triggered by actions performed on the trade in Calypso. No action is necessary from the MarkitWire GUI to handle the FCM role.

6.2.2 FCM Post-clearing Business flow

The business workflow follows this pattern:

- 1. A trade is initiated by an Executing Broker against a Client.
- 2. The Client affirms the trade by entering an FCM broker in the MarkitSERV Clearing tab.

3. The Executing Broker and Client submit the trade for clearing by LCH FCM.

4. LCH sends a Request Consent notification to the FCM for the trade to be accepted or rejected. The trade appears in the FCM's Clearing Takeup blotter.

- 5. Using the FCM dealsink, the trade between FCM and CCP is automatically created in Calypso.
- 6. The trade can be analyzed in Calypso for a limit check.
- 7. The trade is then accepted or rejected (withdrawn) from Calypso and the appropriate notification is sent to LCH.
- 8. After action in Calypso, the Trade status is updated in MarkitWire.



6.2.3 Configuration for FCM Clearing

After importing all jars from the Service Pack and applying the upgrade scripts.

Step1 - Acceptance, Rejection, and Release notifications to LCH are triggered by a combination of trade actions and the resulting trade status in Calypso. Add the values to the following domains:

Clearing.Trade.AcceptAction: FCM_ACCEPT



- Clearing.Trade.AcceptStatus: FCM_ACCEPTED
 - Clearing.Trade.RejectAction: FCM_REJECT
- Clearing.Trade.RejectStatus:
- Clearing.Trade.ReleaseAction:



Step 2 - Add Clearing-Takeup to the MWContractState.PreRelease domain:

FCM_REJECTED

FCM_RELEASED



Step 3 - Using the Calypso Mapping Window, map the MarkitWire FCM Trader to the Calypso trader:





Step 4 - Populate FCM (Processing Org) attributes SwapswireBook (this will be the default book for incoming trades) and Swapswire Participant:



Step 5 - Configure your MarkitWire dealsink and FCM logins to auto release trades.

Step 6 - Submit the trade to the FCM trader. The trade appears in the Clearing Takeup folder or the MarkitWire GUI. That trade is automatically imported into the Calypso database.

The Trade status in Calypso is then directed according to the trade workflow based on keyword filtering.

S MarkitSERV MarkitWire [calyp]	_trader22]	- 🗆 🗵
Eile Edit Deal View Tools Help		
🚹 New Deal 👻 🏠 Duplicate 👻	🕐 🔝 Columns 🔎 Search 🛛 😰 Refresh 🛛 🦅 Filter 🛛 🕵 Clear	
Folders	Trade ID Contract St Time 🔺 User Message Org 🛋 Transfer	
🛅 Direct Deals (1)	8150544/1< Clearing-T 2012/08/30 19:23:29 calyp_deal 1 Picked up or Withdrawn by calyp_dealsink22 CALYPSC	
Brokered Deals	8151012/1< Clearing-T 2012/08/30 20:41:54 calyp_deal U Picked up or Withdrawn by calyp_dealsink22 CALYPSC	
C Transfers	8151021/1< Clearing-T 2012/08/30 20:58:19	
Cancellations	8151070/1< Clearing-T 2012/08/30 21:05:08 Pending/Accepted LCH Post	
Exercise	Clear All	
Pre-Accepted Deals		
allocations	To: LCH CLEARING TAKE UP CALYP X	
🛅 Intermediated Deals		
Clearing Takeup (9)	Send Chat	
Drafts	Amortising/Accreting Allocation I Holidays AddT Payments 1-3 AddT Payments 4-6	
Active Deals (22)	Cancellation Fee Processing X Internal Data DF Reporting	
Blotter	X Main I Index/Bonds Roll Dates Break Break(2)	
	TESTIST SY Clearing Take in Trade, 30 Aug 2012	
	Cpty: LCH Post CCP Connector FCM Pay Broker: T	
	We: Calvase Bank	
	Manual Confirm	
	- 5	
	ienor: 5y	
	Rec - Fixed Pay Floating Start: 04 Sep 2012 -	
	5M [115D 7] [5M [115D End: 0.4 Sep 2017 7]	
	2.000000 % 30/360 3m ACT/360 Rolls: 4 Stub	
	6m Payment Freq USD-LIBOR-BBA Break: At:	
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	Trade ID Contract St Time User Message Org 🗙	
	Clearing-T 2012/08/30 21:05:06 📼 LCH Connector LCH Post C.	
	Clearing-T 2012/08/30 21:05:08 Pending/Accepted LCH Post	
		-
Ready		😼 UAT 1 🏼 //.



Swap/09/05/2017/P:USD/LIBOR/3M + 20.	00bp /R:USD 2.00000 (3632) - Version : 1 Mc	d User :(calypso_user) Cur Use	r :(calypso_user) [111	-0
rade Back Office Swap Cashflows Analytic	s Pricing Env Market Data view Utilities	Help		_
Tode Details Castillows Resets Fees Histor	y I			
CounterParty CHPOSTCONFCM	CHPOSTCONFCM	xt RefMW_FCM_8151070		
ook CALYP7 👻	Status VERIFIED	Template NONE	T	
		and the second sec		
ubtype Standard 💉 Broke	er 📔			
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tual	Kennuord Window		XI	
	Domain			
art 09/04/2012 End 09/05/2017		3		
are 05/04/2012 and 05/05/2017	Name	Value		
000 %	CCPTradeID	LCH00003174846		
	ClientTradeID	8151045-2		
Imp	Platform	SWAPSWIRE		
	PlatformTradeId	8151045		
	ReportingCounterparty	false		
	SWContractState	Clearing-Takeup		
	SWContractualDefinitions	ISDA2006		
	SWContractVer	1		
nt SA T END PER T	SWCorrelationID	LCH373580/LCH373583		
	SWDealId	8151070		
MOD_FOLLOW T DAY T 4	SWLoginHandleIdentifier	calyp_dealsink22		
30/360 V LON,NYC	SWMasterAgreementType	ISDA		
	SWOriginalCounterparty	GIGA_CCTEST1		
NE	SWOriginalTradeEndDate	2017-09-04		
	SWPrivateVer	0		
	SWProcessState	Pending		
	SWSide	2		
	SWSingleSided	true		
	SWValidated	false		
	TradeSource	MW		1000
rket Data Pricer Params Results Pricer Over	26T	T		
DIS, PAY DIS, PAY FOR USD Zero Curve/USD	Strateov1			_
			. 1	
	Apply Help	Cance	8	
Date 08/30/2012 5:24:29 PM Pricin			Price Clo	ose

Step 7 - Select action FCM_ACCEPT or FCM_REJECT and resave the trade (names provided as an example, you can use your own workflow names):

ade Detals Cashflows Resets Fees History		
Trader (calyo_dealorik22 💌 📖	Trade Date 08/30/2012 8:00:00 AM	
Sales NOVE	Current Trade DateTime	
Active FCH ACCEPT	Burdes.	
Status AMEND	Remove From Bundle Show	
Market Type URDO	["Merar	
Subsidiary TERMIDIATE	1	
Transferor TEXPECTEL	_	
Call Admit ON REJECT	<u> </u>	
Comment		
Concerning and a second s		
BackOffice		

Step 8 - Trade will be updated in MarkitWire after action performed in Calypso.



LCH Trilateral Clearing Support

() Note: This is deprecated and may be removed in a future release based on LCH support.

The Calypso MarkitWire interface supports client clearing functionality using the LCH trilateral booking model. Configuration is covered in the "Configuration for LCH Trilateral Trades" section.

7.1 LCH Booking Model as Clearing Broker

In the workflow below, a trade using the trilateral booking mode is initiated by the Executing Broker (EB) at step 1 against the client using the Clearing Broker (CB) as an intermediary:



Trades A and B are created with the status, "New-PrimeBrokered" and are imported into Calypso upon affirmation by all parties.

Upon release by the Clearing Broker, Trade A is novated as Trade E to LCH and Trade B is novated as Trade F. In addition, **CCPClientTradeType** is set to "Primary" and **CCPAccount** is set to "House" in Trade E. In Trade F, **CCP-ClientTradeType** is blank and **CCPAccount** is set to "House."

Examination of the two SWML files reveals which trade is E and which is F, based on the fact that on the Client side of Trade E, one party is not a clearing member and on the Executing Broker side of Trade F, both parties are clearing members.

Upon creation of Trade E, with External Reference **MW_PO_Swapswireld**, two additional trades are created in Calypso. Trades C and D are required by the LCH booking model. They segregate "House" account trades and Client account trades at LCH.



Trade C is a copy of Trade E, except that the counterparty from the Clearing Broker's point of view is the original client rather than LCH. All Trade Keywords in Trade E are propagated to Trade C, including **TransferDate**, **TransferTradeDate**, and **TransferFrom**. The **CCPClientTradeType** Trade keyword is set to "Secondary," and the external reference is set to **MW_PO_Swapswireld_Client** in Trade C.

The Clearing Broker is the payer (to LCH) in Trade E, and is also the payer (to the client) in Trade C. The Clearing Broker is receiver in both Trade F and Trade C.

Trade D is also a copy of Trade E, but its direction is the opposite of Trade E. The counterparty (LCH) remains unchanged. All Trade keywords in Trade E are propagated to Trade D, including **TransferDate**, **TransferTradeDate**, and **TransferFrom**.

In Trade D, the **CCPClientTradeType** trade keyword is set to "Secondary", the **CCPAccount** trade keyword is set to "Client," and the external reference is set to **MW_PO_Swapswireld_ClientAccount**.

If the Clearing Broker is the payer to LCH in Trade E, then the Clearing Broker is the receiver to LCH in Trade D. Likewise, if the Clearing Broker is the receiver (from LCH) in Trade E, then the Clearing Broker is the payer (to LCH) in Trade D.

The user's Entity Role (whether Executing Broker or Clearing Broker) is determined by examination of the swml. When the user's Entity Role is Executing Broker, Trade G is created between the Executing Broker and LCH in the same manner as a direct clearing trade.



7.2 Bilateral to Trilateral Amendment

🚺 Nasdaq

Based on the SWML content, your Entity Role is Executing Broker. The original trade was initiated in MarkitWire (through backloading, in this example) and has been imported into Calypso.



After using MarkitWire's Client Clearing Update function to change the trade to a Client Clearing PrimeBrokered trade (A1), the system will perform the following actions:

Upon receiving the PENDING notification for Trade A1, Calypso does not import the trade as it already exists in the system. The existing Trade A, which is a bilateral trade, is identified in the database via Swapswire ID and is amended.

At this point, Trade A can be redirected in the trade workflow to any desired status using a custom filter or rule based on the Trade Keywords.

When Calypso receives the Trade A1 'Released' notification (and after affirmation by all parties), Calypso attempts to TERMINATE Trade A and creates Trade C. If the TERMINATE action is not available for Trade A in the trade's workflow, Calypso then attempts to CANCEL the trade. If neither trade workflow action is possible from the current trade status, a warning message is sent to the Task Station.

If a counterparty rejects Trade A1 and Calypso receives a 'Withdrawn' notification for Trade A1, Calypso attempts to terminate Trade A and does not create Trade C. If the TERMINATE action is not available for Trade A, Calypso then





attempts to CANCEL the trade. If neither trade workflow action is possible from the current trade status, a warning message is sent to the Task Station.

If neither trade workflow action is possible from the current trade status, a warning message is sent to the Task Station.

7.3 Trilateral Trade Creation

Based on the SWML content, your Entity Role is Executing Broker. The trade was initiated in MarkitWire as a trilateral Trade A1 and has not been created in Calypso.



After entering the trade (as the Executing Broker), when Calypso receives the Pending notification for Trade A1 and after checking that a bilateral trade with this Swapswire ID does not already exist, Calypso uses the counterparty details from the SWML to create a new bilateral trade (A) between the client and the Executing Broker.

Trade A can be directed in the trade workflow to any desired status using a custom filter or rule based on the keywords of the trade.

Once all parties have Affirmed Trade A1 and Calypso receives the Released notification, Calypso Terminates Trade A and creates Trade C.

Upon trade A1 affirmation by all parties resulting in trade A1 'Released' notification being received, trade A will be terminated, and trade C will be created in Calypso. If the TERMINATE action is not available for Trade A, Calypso then attempts to CANCEL the trade. If neither trade workflow action is possible from the current trade status, a warning message is sent to the Task Station.



If a counterparty rejects Trade A1 and Calypso receives a 'Withdrawn' notification for Trade A1, Calypso attempts to terminate Trade A and does not create Trade C. If the TERMINATE action is not available for Trade A, Calypso then attempts to CANCEL the trade. If neither trade workflow action is possible from the current trade status, a warning message is sent to the Task Station.

7.4 LCH Booking Model as Executing Broker and Clearing Broker

Your organization can act as Executing Broker or Clearing Broker.

The interface handles the following case: Two organization users log in using different login IDs, one as the Executing Broker and one as the Clearing Broker. These two users will be associated with different Dealsink IDs.

The two users will also use different books and Processing Organizations having different BIC codes.

In this scenario, the Swapswire engine must be set up to listen to the two Dealsink user notifications. Refer to the "Multiple Dealsink Users" section for instructions to setup multiple dealsink users.

Calypso creates trades for the Executing Broker and Clearing Broker with different External References since they are booked in different Processing Organizations. The processing of these Clearing Broker and Executing Broker trades follows the behavior described above.

7.5 Lifecycle Actions with the Clearing Broker or Executing Broker Role

Lifecycle processing will revert the different processes described in the preceding paragraphs as follows

7.5.1 Lifecycle Handling with the Clearing Broker Role

Upon receipt of the first two New-PrimeBrokered notifications, consecutive to the declear acceptance by LCH:

- Trades D and E are terminated.
- Trades F and G are terminated subsequent to their novation to a trilateral trade comprised of two New-PrimeBrokered trades (Trades B1 and C1 created by the novation). Their external references will be changed by appending the novated Calypso Trade ID.

7.5.2 Lifecycle Handling with Executing Broker Role

Trade H is terminated subsequent to its novation to Trade C¹ upon receipt of New-PrimeBrokered child SWMLs in the new trilateral trade. Its External Reference will be changed by appending the novated Calypso Trade ID.



7.6 Configuration for LCH Trilateral Trades

The standard upgrade XML scripts that accompanied the release jar populates the CCPAccount and **CCPClientTradeType** in the **tradeKeyword** domain.

Step 1 - Using the Domain Values window, add the following contract states to the MWContractState.PreRelease:

- New-PrimeBrokered
- PrimeBrokered



Step 2 - Configure multiple logins with appropriate the Dealsink IDs and passwords if you need to listen to Clearing Broker and Executing Broker notifications. Refer to the "Multiple Dealsink Users" section for complete instructions:

— SWAPSWIRE_CONCURRENT_LOGIN_NO	▶ 1
— SWAPSWIRE_LOGIN_ATTEMPTS	▶ 3
— SWAPSWIRE_LOGIN_INTERVAL	▶ 10000
— SWAPSWIRE_PASSWORD	exampleCBpassword
— SWAPSWIRE_PASSWORD1	exampleEBpassword
SWAPSWIRE_SERVER	example_server.swapswire.com
— SWAPSWIRE_TIMEOUT	▶ 60000
SWAPSWIRE_USER	CB_dealsink1
— SWAPSWIRE_USER1	EB_dealsink1



7.7 Examples

Step 1 - Trade booked as an Executing Broker. Trade affirmed as the Client and Clearing Broker.

Step 2 - New-PrimeBrokered trades are created in Calypso as you are the Clearing Broker in this example:

	🗄 🛅 6639280							
	😟 🛅 6639281							
	😟 🚞 6639355							
	😟 🚞 6639356							
	6639577							
		MW_NEWYORK3_6639577	3777	VERIFIED	25,000,000.00	CALYP3	NEWYORK	
	ė 🗁 6639578							
		MW_NEWYORK3_6639578	3778	VERIFIED	25,000,000.00	CALYP3	GIGA_CCTEST1	
1	•							
i	_							
	🛛 🙄 Load completed	d successfully						

Step 3 - Release the New-PrimeBrokered trades in MarkitWire and send the trades to clearing.

Step 4 - Calypso creates the linked Trades:										
H 6639355										
E 6639356										
6639577										
3777	MW_NEWYORK3_6639577_3779	3777	TERMINATED	25,000,000.00	CALYP3	NEWYORK				
🗋 3779	MW_NEWYORK3_6639577	3779	VERIFIED	25,000,000.00	CALYP3	LCH				
6639578 🚞										
- 3778	MW_NEWYORK3_6639578_3780	3778	TERMINATED	25,000,000.00	CALYP3	GIGA_CCTEST1				
🗋 3780	MW_NEWYORK3_6639578	3780	VERIFIED	25,000,000.00	CALYP3	LCH				
- 🗋 3781	MW_NEWYORK3_6639578_Client	3781	VERIFIED	25,000,000.00	CALYP3	GIGA_CCTEST1				
···· 🗋 3782	MW_NEWYORK3_6639578_ClientAccount	3782	VERIFIED	(25,000,000.00)	CALYP3	LCH				
•										
Coad completed	d successfully									



Clearing for CCPs

This section describes the system and business configuration for the MarkitWire interface to be used as a Clearing House solution.

A Clearinghouse Legal Entity (hereinafter referred to as a CCP) can import SentForClearing trades sent by MarkitWire into Calypso after validation and handle incoming and outgoing notifications to MarkitWire to enable the process of trades.

The Calypso MarkitWire interface for CCP supports support IRS, Basis Swaps in the bilateral (Agency) model only.

8.1 Exchange Clearing House Configuration

8.1.1 Legal Entity Role for CCP

The MarkitWire interface supports the models where the CCP is defined as Processing Organization or Counterparty.

When using the processing organization model, trades are imported in Calypso so that the CCP is the Processing Organization and the dealers are counterparties.

When using the counterparty model, trades are imported so that the CCP is the counterparty and the dealers are Processing Organizations.

This choice can be defined using the CCP_IS_PO property in the calypso_SW_config.properties file.

The CCP_IS_PO property is ignored if EXCHANGE_CLEARING is set to false which is the default value.

EXCHANGE_CLEARING must be set to true when acting with the CCP role and false when acting with a dealer or client role.

#Mark EXCHANGE_CLEARING as true for Exchange Clearing solution EXCHANGE_CLEARING=true

#Flag indicating if CCP is Processing Org or Counterparty CCP_IS_PO=true

8.1.2 Book and Client Mapping in the Counterparty Role Model

When acting as CCP, there is no book in the SWML notification from MarkitWire as on the Dealer side.

In the CCP = counterparty model, the Calypso book will be inferred from the SwapswireBook attribute which will contain the BIC code of the dealer.



Book Id	44856	_	Attributes	
Name	MarkitWireBook	_	Name	1
1 tearine			BookBundle	
Activity	TRADING		CAMoneyDiff Book	
	,	-	CTC Consolidator	*
Accounting Book	TRADING1	-	CTC Offset	*
1. 1. 1. 1. 1.	0.00		CTC Role	*
Legal Entity	ICCP		DayChangeRule	
Location	America New York	-	Fund	
Cocurdon	Princica/incir_ronk	100	Market Index	×.
End Of Day	23 Hour 59 Min		PricerKey	
		_	ProfitCenter	DERIVATIVES
Base Ccy	USD	-	SwapswireBook	MEGA123
			VALUATION_TIMES	
Holidays	NYC		VALUATION TIMEZONES	

🔎 Legal Enti	ty Attrib	utes Window	- Version - 0 (Use	r: calyps	o_use	er)	_ D ×
Legal	Entity	DEALER			Role	ALL	_
Processing	Org	ALL	•				
Attribute	Туре	SwapswirePa	rticipant 💌		Value	MEGA123	
		,	_				
Id	Proce	ssing Org	Legal Entity	Role		Attribute Type 🛽	Attribute Value
44858	ALL		DEALER	ALL	5	SwapswireParticipant	MEGA123
Load		elete	Save			Authorization	Close
Show	Pending A	Authorizations					

8.1.3 Book and Client Mapping in the Processing Role Model

In the CCP = Processing Organization model, the book is inferred from the CCPClientBook or CCPHouseBook attribute that contains the BIC code of the dealer.

As Clearing Broker (Client Book):

🜽 Legal Entity Attri	butes Window - Ver	sion - 1 (User: o	alypso_us	er)	
Legal Entity	CMF		Role	ALL	•
Processing Org	CCP	-			
Attribute Type	CCPClientBook	-	Value	BOOK_CMF_CLIENT	
	,			,	· · · · · · · · · · · · · · · · · · ·
Id	Processing Org	Legal Entity	Role	Attribute Type 🔬	Attribute Value
45856	CCP	CMF	ALL	CCPClientBook	BOOK_CMF_CLIENT
44862	CCP	CMF	ALL	SwapswireBroker	CMF_BIC
44861	CCP	CMF	ALL	SwapswireParticipant	CMF_BIC
Load	Delete Sav	'e		Authorization	Close

As Executing Broker (House Book):



		ion - 0 (Use	r: caly	pso_user)	_ _ _ _ ×
Legal Entity	EB5			Role	ALL	•
Processing Org	ALL	•				
Attribute Type	CCPHouseBook	•		Value	BOOK_EB5_HOUSE	
Id	Processing Org	Legal Ent	ity	Role	Attribute Type 🔺	Attribute Value
44865	ALL	EB5		ALL	CCPHouseBook	BOOK_EB5_HOUSE
44864	ALL	EB5		ALL	SwapswireParticipan	t EB5_BIC

When receiving a client clearing trade code with a fund as party in the swml, the book and the client will be inferred from a combination of CMF and Fund as follows:

Step 1 - We will determine the Fund Legal Entity in Calypso based on the BIC code present in the SWML matching its SwapswireParticipant attribute:

🕖 Legal Entity Attı	ributes Windo	w - Version - 0 (Us	ser: calyps	o_use	r)		
Legal Entity	GIGA_FUND	1		Role	ALL		-
Processing Org	ALL	-	·				
Attribute Type	SwapswireP	arent		Value	GIGA_CLIENT_BIC		
TH D		Land Cattle	Dala		Attaile to Trans	(lahua (
10 PT	ocessing Org	LegarEnuty	Role	-	Attribute Type	Attribute v	alue
40356 ALL		GIGA_FUND1	ALL	Swap	swireParticipant	GIGA_CCTEST I	10
40357 ALL		GIGA_PUND1	ALL	pwap	swireParent	GIGA_CLIENT_I	SIC .
Load	Delete	Save			Authorization	(Close
Show Pendir	ng Authorizations	3					

Step 2 - We will determine the CMF Legal Entity in Calypso based on the BIC code present in the SWML matching its SwapswireParticipant attribute:



Processing	Org	ALL		1		
Attribute	Type	CCPClientBo	ok 👱	\	alue BOOK_CMF1_CLIEN	π
Id	Pr	ocessing Org	Legal Entity	Role	Attribute Type	Attribute Value
46356	ALL		CMF1	ALL	CCPClientBook	BOOK_CMF1_CLIENT
40857	ALL		CMF1	ALL	SwapswireBroker	CMF1_BIC
46357	ALL		CMF1	ALL	SwapswireParticipant	CMF1_BIC

Step 3 - The Book in the trade will be determined by the CCPHouseBook attribute (for a House trade) or CCPClientBook attribute (for a Client trade) of the CMF.

🜽 Legal En	tity- Ve	rsion - 4 [12	00005P2/FT	12xCME	E_Sybas	e/caly	pso_user] (User: calyp			2
Utilities He	elp										
Short	Name	IGA_CLIENT1					Status	Enabled		-	
Full	Name						Role(s)	CounterPart	y		
F	Parent	MF1									
Co	ountry 🖪	IONE			Ψ.						
Inactive As	s From		User	calypso_	user		J				
Entered	d Date 0	4/11/2012	11:45	:34 AM						Add	_
Extern	al Ref			6		Dis	abled Role(s)				
Ho	olidays				Non Fir	a nancial					
								Tripart		ms.	
	_										_
Con	nment										
				1		1		001			
Attribu	tes	Legal A	greement	0	ntact		Talaaaa	SDIS	Netting r	vietnoas	-
Custo	xm	Registra		Relati	ion		Tolerance		Acco	ount	
Reno	1	LE 10 38	350				rization	_	SHOV	v Autri.	
Load		New D	elete	Save	Sav	e As	Upo	late Short Na	me		Close
Legal Entil	ty Attril	outes Windo	w - Version -	1 (User	r: calyps	o_use	r)			_ 🗆 ×	1
Legal	Entity	GIGA_CLIEN	Π1			Role	ALL		•	-	
Processing	Ora	HKEX		-			,		_	_	
	Time	CurrentingD				Value		T . DIC		_	
Attribute	: Type	Swapswire	arucipant			value	GIGA_CLIE	IL_DIC			
Id	Proc	essing Org	Legal Ent	ity	Role	1	Attribute Ty	pe	Attribute Va	lue	
39361	IHKEX		GIGA_CLIENT	1 4	ALL	Swap	swireParticipa	nt GIG/	A_CLIENT_BI	IC	
ļ											
Load		Delete	Save				Authoriz		Cl	ose	
Show	Pending	Authorizations	; [



Step 4 - The Counterparty in the trade is the Client Legal Entity whose Swapswire participant BIC code matches the SwapswireClient attribute from the fund previously found, and whose parent is the CMF found above.

8.1.4 Domain Data for MarkitWire Exchange Notifications

To support Exchange Clearing, Calypso uses eight domainNames to control the logic for sending various notifications (ClearAccept, ClearReject, DeclearAccept, DeclearReject, Parked) to MarkitWire. The notification sent is based on a combination of the trade action and the trade status of the trade workflow. The domains are:

- Clearing.Trade.RejectAction
- Clearing.Trade.RejectStatus
- DeClearing.Trade.RejectStatus
- DeClearing.Trade.RejectAction
- Clearing.Trade.Accept
- Clearing.Trade.AcceptAction
- DeClearing.Trade.AcceptStatus
- DeClearing.Trade.AcceptAction

If your implementation must send Parked notifications to MarkitWire, you must manually create the Parked Action and Status. Refer to the "Support for Parked Status" section for further information.

- Clearing.Trade.ParkedAction
- Clearing.Trade.ParkedStatus

Populate each "Action" domain and each "Status" domain to create the combinations that will trigger Calypso to send the notification to MarkitWire. A combination of Trade Action and Trade Status is necessary to ensure that notifications are sent only when proper.

For example:





Refer to the image above: When a trade reaches the REJECT trade status via the COLLATERAL_FAIL, MATCH_FAIL, or TERMS_FAIL trade actions, Calypso will send the ClearReject notification to MarkitWire.

8.1.5 Legal Entity and Book Mapping

You must map dealers (traders) as Processing Organizations and the Clearing House as Counterparties. Map DealerId (e.g. MEGACALPCC) as SwapswireBook attribute in the book. The Clearing House counterparty must have an LE Attribute named **SwapswireParticipant** & SwapswireBroker and its value should be the value of the **swClearingHouseId** tag of the Clearing XML.

Note that in the Client Member Firm (CMF) and Client usage of MarkitWire, SwapswireBook contains the Book from MarkitWire. In Exchange usage, SwapswireBook contains the Swapswire Participant ID. This difference is because the Clearing XML contains no Book information.

8.1.6 SwapswireTradeEngine Configuration Changes

To enable the sending of notifications to MarkitWire based on a particular trade status and message status in a trade workflow, the SwapswireTradeEngine must listen to PSEventTrade and PSEventMessage, respectively.

8.1.7 MarkitWire Process and Contract states

In addition to the MarkitWire Process and Contract states specified in other sections of this guide, you must add the following process states to the **MWProcessState** domain:

- SentForClearing
- SentForClearingUpdate

The **MWContractState.PreRelease** domain should have all possible contract states to which the Exchange must listen. A Clearing House listens to pre-release notifications and, depending on Clearing House confirmations, the deals are released. The Clearing House should listen to combination of the above two process states and all possible Contract States:

- Clearing
- Amended
- Novated
- Novated-Partial
- Cancelled

8.1.8 Workflow Rules

The following trade rules specifically support Exchange Clearing:

UpdateLinkedToKeywordTradeRule - This rule links two trades created from single MarkitWire Deal ID, that is, two trades having same SWDealld keyword value and same SWContractVer keyword value. The value of the LinkedTo trade keyword is populated with the Trade ID of the other trade. This rule should be applied at some initial status of the workflow.





- ApplyLinkedTradeActionTradeRule Add this rule on any transition of trade workflow to cause Calypso to apply the action to the linked trade before then applying it to the original trade. This allows both trades to move to next status simultaneously. You should only apply this rule in transitions wherein the trades should transit to next status simultaneously. For example, if the trade status of a linked trade differs from that of the original trade, then both trades remain in the old trade status (i.e., neither trades changes to the next status). If there is no linked trade for the "original" trade, then the "original" trade does not change status.
- DeclearActionTradeRule This rule adds the Trade ID to the External Reference. Apply this rule on a Declear
 accept transition or Clear Reject transition to prevent an external reference conflict when the trade is again
 presented for clearing.
- Note: The following workflow rules ApplyLinkedTradeActionTradeRule, UpdateLinkedToKeywordTradeRule, ApplyLinkedMsgActionMessageRule and UpdateLinkedToAttributeMessageRule are designed to work only with the out-of-the-box modules (markitwire and dsmatch) for CCP solution. They are not supported for individual use.

8.2 Support for Parked Status

The Exchange Clearing function sends a Parked Notification to MarkitWire after the trade is saved and before the Margin/Collateral check is applied. Once a message workflow successfully finishes, Calypso creates a trade for both the parties. Based on configuration of the Status and Action as shown in the image in the "Domain Data for MarkitWire Exchange Notifications" section, the interface sends a Parked notification to MarkitWire.

Parked Notification support in the STP workflow requires the application to generate events for the SwapswireTradeEngine. To enable these events, select the **Generate Intermediary Event** checkbox:

WorkFlow Act	ion (User:)			-			
Id	3275		Action	MARGIN_CHECK			
Orig Status	LINKED		Result Status	MARGIN			
Event Class	PSEventTrade		Subtype	ALL			
Product	ALL		Processing Org	ALL			
Different U	ser	Create Task	Use STP	Use Kick	Off/Cut Off		
Log Comple	Log Completed		Update Only	Generati	Generate Intermediary Event		
				Needs m	an. Auth.		
Rules				He	lp		
Filter			Custom F	Rules Definition			
Comment							
			Save Del	lete Clo	se		

Note: Parked Notification support in STP workflows requires Initial Action and an Intermediary Action in the Clearing.Trade.ParkedAction domain.

When the SwapswireTradeEngine receives this trade event, it sends a Parked notification to MarkitWire. The Parked notification is sent for the linked trade (there are two trades) having the higher Trade ID.



8.3 **Property File Changes**

8.3.1 calypso_SW_config.properties

Add the EXCHANGE_CLEARING property as true if you are acting as a CCP. By default, this value is false.

When acting as CCP, set the CCP_IS_PO property to indicate whether the CCP is acting as PO or counterparty. By default, the value is set to false. This property is only used when acting with CCP role. By default, CCP_IS_PO is false.



8.3.2 gatewayservice.properties

Change MWPublishers from "MW" to "MWClearing" to use exchange clearing.





8.4 Trade Processing

This section describes how a trade flows from MarkitWire into the Calypso instance of a CCP.

A trade is SentToClearing by both counterparties via the MarkitWire GUI. The MarkitWire engine (in the Exchange) receives two SWML messages from MarkitWire which are translated from the Clearing XML format to Calypso's Upload XML.

If the translation to ClearingSWML format fails, an exception is generated and displayed in the User Task Station as a task to be addressed.

When the translation is completed, the two resulting Uploader XML Messages are then validated.

If the validation fails, which occurs when for example a mapping is missing, an exception is generated. The exception can be displayed in the Task Station.

When the issue is addressed, the two messages can be reprocessed, and the two corresponding trades will then be imported in the trade workflow.

The following describes a sample CCP workflow to illustrate the process.





Id	Orig Status -	Action	Resulting Status	Different User	Use STP	Log	Subtype	Product Type	Rules .	Processing O
26656	CLEARED	AMEND	CLEARED		Г	-	ALL	Smap		ALL
26647	CLEARED	REQUEST_DECLEAR	REQUEST_DECLEAR	E		Г	ALL	Swep		ALL
26657	MARGIN_OK	AMENO	MARGIN_OK	E	Г	-	ALL	Smap		ALL
26649	MARGIN_OK	DECLEAR	DECLEARED		C	Г	ALL	Swap	ApplyLinkedTradeAction	ALL
26654	MATCHED	AMEND	MATCHED	E	E	-	ALL	Sisap		ALL
26651	MATCHED	TERMS_REJECT	REJECTED	0	Г	1	ALL	Swap	ApplyLinkedTradeAction	ALL
26644	MATCHED	TERMS_VALID	VALIDATED		E	0	ALL	Śwap		ALL
26642	INONE	NEW	PENDING	E	E		ALL	Smap		ALL
26655	PENDING	AMENO	PENDING	E	Г	1	ALL	Smap	and the second second second	ALL
26643	PENDING	MATCH	MATCHED	0	1	0	ALL	Swap	LipdateLinkedToKeyword	ALL
26650	PENDING	MATCH_FAIL	REJECTED	D	Г	Г	ALL	Smap	ApplyLinkedTradeAction	ALL
26660	PRE_CLEARED	AMEND	PRE_CLEARED	E	E	C	ALL	Smap		ALL
26667	PRE_CLEARED	CLEAR	CLEARED	Г	Г		ALL	Smap	ApplyLinkedTradeAction	ALL
26648	REQUEST DECLEAR	MARGIN_CHECK	MARGIN_OK			-	ALL	Śжар		ALL
26658	REQUEST DECLEAR	REJECT_DECLEAR	CLEARED	Г	Г		ALL	Swap		ALL
26652	VALIDATED	COLLATERAL FAIL	REJECTED	0	0		ALL	Swap	ApplyLinkedTradeAction	ALL
26663	VALIDATED	COLLATERAL_OK	PRE_CLEARED	1		-	ALL	Swap		ALL
		a state of the sta	And a state of the second s					She i		1

In this example workflow, the trade could enter the workflow and go STP to PENDING status after message validation.

The two trades are matched (by Swapswire ID) and, when found, move together to the MATCHED status. The **LinkedTo** keyword for each trade is populated with the Trade ID of the other trade. The two trades are linked to each other using the **UpdateLinkedToKeywordTradeRule** and can further traverse together using **ApplyLinkedTradeActionTradeRule**.

The terms of the two trades (notional, currency, index, tenor) can be validated at this point against the CCP. Again, this is only an example workflow and not intended for direct use in production.

If terms are invalid, the two trades can move together to REJECTED status and Calypso will send a Rejected notification to MarkitWire, with the corresponding Clearing Status.

If however, the trade terms are valid, the trades can move to the VALIDATED status.

Collateral and limit checks could be performed at this point

If successful, the trades can move to the PRE-CLEARED status where internal processing can take place prior to sending the trades to the CLEARED status, otherwise the two trades both move to REJECTED status in this sample workflow.

When the trades are sent to CLEARED status, Calypso sends a **RegisteredForClearing** notification to MarkitWire. Although MarkitWire sent a notification for each trade, only one notification from Calypso is expected when both trades have cleared.

If however, at any point, the trades are moved to the REJECTED status, Calypso sends two **RejectedForClearing** notifications to MarkitWire.

Upon a Declear request, the database is queried for the two individual trades by their External Reference ID. Upon receipt of a Declear notification a custom action stored in **UploadDeClearAction** domain will be applied on the trade. If no custom action is specified in this domain then, by default, the DECLEAR action is applied. The Trade workflow should have the DECLEAR action on the Cleared trade. The **UploadDeClearAction** domain should contain a custom action name. The UploadDeClearAction domain should not have actions like terminate/cancel. These actions can be further applied on the trade.



A workflow rule can be used to validate the Declear and check the collateral before affirming the Declear, which results in Calypso terminating the two trades and sending the Declear notifications to MarkitWire.



Client Clearing Processing with the Client Role

This section describes support in Calypso's MarkitWire Integration Module for client clearing processing for rate product trades entered in MarkitWire with a client role.

9.1 CME Bilateral Model

When clearing as client, the trade initiated by the Executing Broker and affirmed by the client after populating the Clearing Broker in the Clearing tab.

At this point, the two parties can request that this trade be cleared in the MarkitWire GUI.

When the trade is Sent For Clearing, the SWProcesstrade keyword will be changed to SentForClearing.

1) Note: Declear is not available with CME through the MarkitWire interface after the trade has been cleared.

9.2 LCH Trilateral Model

When clearing as a client using the LCH Trilateral Model, a trilateral trade is being initiated by the Executing Broker and affirmed by both the client and the Clearing broker. The client initially faces the Clearing Broker.

When the trade is released, the parties then request that the trade be sent to clearing. This can be done automatically in MarkitWire.

When Sent For Clearing, the SWProcesstrade keyword is changed to SentForClearing.

When Registered for Clearing, the **SWProcesstrade** keyword is changed to RegisteredForClearing in the trade that is not novated:



de Details Cashflows Resets Fees History				
	Soc exiting	- 4080		
dal cays capital	Jecunies [10]			
okperivative_newyork	Status VERIFIED Templi	ate NONE		
ibtype Standard Broker				
Not Cancellable				
Not Credit Contingent				
	>> Float w Dec USD w 12	200,000,00		
- Pay 1030 - 12,000,000.00		500,000.00		
let	Keyword Window		x	
ual 🔽		1		
	Domain			
20/04/2011 End \$2/04/2021	Name	Value		
and retriteout and retriteout	CCP	1/CH		
000 %	CCPAccount	HOUSE		
	CCPClearedDate	12/12/2011		
Cmp	CCPClentTradeType	Primary		
NON	CCPMessageTimestamp	2011-12-12T19:36:257		
	CCPTradeID	6898578 2 0		
	IS CLIENT	false		
	PlatformTradeId	6898578		
	SWAutoSendForClearing	true		
mt SA T END_PER T NONE	SWContractState	Clearing		
	SWContractualDefinitions	ISDA2006		
MOD_FOLLOW DAY 14 La	SWContractVer	2		
30/360 - LON,NYC NEARE	SWDealId	6898578		
AD NE	SWLoginHandleIdentifier	giga_calypso_dealsink		
ADJUST	SWMasterAgreementType	ISDA		
	SWOriginalCounterparty	NEWYORK2		
	SWPrivateVer	3		
	SWProcessState	RegisteredForClearing		
	SWSide	2		
	SWSingleSided	talse		
	SWValdated	talse		
	261	÷		
	_Strategy1			
	the second second			
	Apply Help	Car	ncel	
rket Data Pricer Params Results Pricer Override Market				
DIS REC FOR PAY DIS USD Zero Curve/USD/P/CLOSE 3/1	2/09 9:55:22 000 AM EDT			
ZED CAN AL COD ZED CANE/CODC 3/ I	yes suscessor an epi			

In case of lifecycle event after the trade has been cleared, the trade facing the Clearing Broker is amended and processed by the interface according to the changes made in MarkitWire.

9.3 LCH FCM Bilateral Model

When clearing as client using the LCH FCM model, a bilateral trade is initiated against an Executing Broker or a client, and FCM details are entered. The FCM entity is extracted from the SWML file and stored as the **CCPClearingBroker** Trade Keyword in the cleared trade:

rade Details Cashflows Resets Fees History						
ounterParty T CH			TD ¥ 4081	-		
ookperivative_newyork		Status VERIFI	ED Template NONE	*		
Subtype Standard 💌 Broker		1				
Not Cancellable					_	
Not Credit Contingent						
TX X Pay USD X 11 000 000 00	>>	Eleat v	Keyword Window		×	
1x Pay 030 - 11,000,000.00		rioac	Domain			
ulet		bullet				
ctual		Actual	No	test	_	
			rsame	Value		
			CCP	LCH	-	
tart 12/14/2011 End 12/14/2021	>>	Start 12/14/2	CCPAccount	PIJUSE		
		1.000	CCPClearedDate	12/12/2011		
.000 %		USD V	CCPClearingBroker	BARCA		
		1	CCPCientTradeType	Primary		
Cmp		Cmp	CCPMessageTimestamp	2011-12-121 19:36:252		
NONE		REG. PF	CCPTradelD	6898578_2_0		
			IS_CLIENI	Talse		
		Rst	PlatformTradeId	6898578		
		Lucaur.	SWAutoSendForClearing	true		
		INONE	SWContractState	Clearing		
TA THE FUL PER Y NONE		Pmt OTP	SWContractualDefinitions	ISDA2006		
	>>	Can Gan	SWContractVer	2		
MOD_FOLLOW T DAY T 14 Lag 0		MOD_I	SWDealld	6898578		
		ACT/2	SWLoginHandleIdentifier	giga_calypso_dealsink		
		1001/3	SWMasterAgreementType	ISDA		
ADJUSTED		NONE	SWOngnalCounterparty	NEWYORK2		
			SWPrivateVer	3		
			SWProcessState	RegisteredForClearing	33	
			SWSide	2		
			SWSingleSided	false		
			SWValidated	false		
			26T	*		
			_Strategy1	1		
			Apply Help	Cancel		
		0				
or New Dovo Pricer Params Results Pricer Override Market Da	ità Itèn	overnde			_	
1 1 1 1	00 0-51	5-22 000 AM EDT				
C_DIS,REC_FOR,PAY_DIS USD Zero Curve/USD(R)CLOSE 3/12/						
C_DIS,REC_FOR,PAY_DIS_USD Zero Curve/USD(R)CLOSE 3/12/						
C_DIS,REC_FOR,PAY_DIS_USD Zero Curve/USD(R)CLOSE 3/12/		_				



If a lifecycle event occurs on a cleared LCH FCM trade, it results in a declear with a novation to the original OTC counterparty, with subsequent amendment of the trade in Calypso.

9.4 Client Clearing Workflow Logic





Package Clearing Keywords Support

Packages are groups of trades that are executed as a single economic transaction.

Trades bundled together by a two part identifier called the "Package Identifier" (Issuer + Package Trade ID) are classified as a package. These trades (legs) must be intended for clearing, must be held at a state of 'New / Pending' until all legs are booked, and must clear 'all or nothing', i.e. should a particular Trade (leg) contained within a package fail to clear then the package will fail to clear.

The initial implementation of support of Package transaction submission in MarkitWire will meet the following criteria:

- Clearable OTC rates products (Single CCY IRS, Single CCY Basis Swaps, FRA,OIS)
- Packages must be initiated by a Broker (IDB) or a SEF (SEF Auto Processed, SEF Affirmation)
- The trades must be Non-allocated
- Trades can only be sent to the CME
- The same Clearing House must be used for all trades in the package.
- The same parties must be used on all trades within the package.
- The same clearing broker (if applicable) must be used for all trades in the package for a given side.

In order to process Package transactions, MW is introduced new editable fields into the Broker / SEF GUI. These fields are listed below and will be contained within a 'Packages Trades' Frame. The Broker / SEF may insert package trade information when selecting a CCP that is set to receive packages through MW. When a trade is submitted containing package trade elements, the Dealer / Client GUI will display the 'Packages Trades' frame including the package trade identifiers, however, the fields will be 'read only' to the receiving parties to the trade.

- Package Identifier (Issuer + Package Trade ID)
- Size of the package
- Package level Credit Acceptance Token (Credit Issuer + Credit Token) (Not supported)

10.1 Package Clearing Process

Once submitted, the legs of a package gets held in a contract state of 'New' and booking state of 'Pending' until all of the legs of the package have been processed by the Parties to the trade. Package size determines the number of trades within the package; i.e. If there are 3 trades in a package, the broker / SEF will indicate the package size as '3'. Once the package size has been reached the trades within the package will progress to clearing.

10.2 Package Keywords

Following are the list of keywords with sample values and SWML X-path supported in incoming dealer mode from Calypso.



sr no.	Keyword names	Xpath	Comments
1	CCPPackageIdPrefix	<swml> <swstructuredtradedetails> <swtradepackageheader> <swpackageidentifier> <swissuer>SEF_CALYPSO_PKG_067</swissuer></swpackageidentifier></swtradepackageheader></swstructuredtradedetails></swml>	Supported in Incoming dealer mode
2	CCPPackageIdValue	<swml> <swstructuredtradedetails> <swtradepackageheader> <swpackageidentifier> <swtradeid>TRADE_067</swtradeid></swpackageidentifier></swtradepackageheader></swstructuredtradedetails></swml>	Supported in Incoming dealer mode
3	CCPPackageSize	<swml> <swstructuredtradedetails> <swtradepackageheader> <swsize>2</swsize></swtradepackageheader></swstructuredtradedetails></swml>	Supported in Incoming dealer mode



Trade Division Support

The MarkitWire platform needs to support Trade Netting synchronization as clearing houses are now supporting advanced lifecycles like Trade netting synchronization in-order to better manage the portfolios and reduce the number of physical trades. To support Netting Synchronization, Trade division is a prerequisite for MarkitWire Platform. Hence MarkitWire Platform has been enhanced to support Trade Division functionality which involves splitting of the Alpha trade post clearing into Beta and Gamma trade between the CCP and the respective parties in Agency model and Clearing Broker and respective parties for Principal model. This will be helpful for MarkitWire platform to support the post-clearing Netting synchronization as post clearing the Beta/Gamma will be separate physical trades which can be amended individually. The Beta and Gamma trades will have a different MarkitWire deal-Id compared to the Alpha trade.

The Calypso MarkitWire module needs to keep up to the changes introduced in the MarkitWire platform and hence we support the Trade Division functionality to be compliant with MarkitWire Platform and will eventually support Netting Synchronization as and when it is supported in MarkitWire.

11.1 Scope

Support the Trade division functionality in Calypso MarkitWire interface to be compliant with the enhancements in MarkitWire platform.

- All clearable products via Calypso MarkitWire Interface to be supported.
- Subsequent post clearing lifecycles to be supported for new trade created as part of trade division.
- Support existing customers not clearing via the Trade division enabled CCPs.

The following functionality is not in scope in current support. It may be taken up for a subsequent release based on MarkitWire releases.

- Support for FCM/Clearing Broker perspective.
- Support for CCP perspective.

11.2 Assumptions

The "UpdateTermination" trade workflow rule should be added to your TERMINATE action (usually located between your Verified and Terminated status) to handle the rolling of External Reference IDs. This is already mentioned in the MarkitWire integration document in Section 2.0.

Note: Not Supported: Unilateral Amends on the Alpha trade post clearing is not supported.

11.3 Notification Handling

The following shows how the notifications from MarkitWire will be handled in Calypso:



No	MarkitWire Action	Calypso Action
1.	Alpha Trade created in MarkitWire and released.	New Alpha Trade created in Calypso.
2.	Alpha Trade Sent For Clearing	Update keywords in Calypso.
3.	Trade cleared at CCP. MarkitWire sends (Clearing,Released)	Novate the Alpha trade in Calypso to CCP. Existing Trade – Terminated. New Trade created facing CCP.
4.	Trade division happens in MarkitWire and original trade gets divided and we receive the corresponding notifications. MarkitWire sends (Cancelled,Released) notification for Alpha trade.	Update the Terminated trade in calypso with the keywords for process state, contract state etc and a new keyword – "PlatformReplacementTradeld" to have the beta trade SWDealld. We apply the action from the domain "UploadAmendAction" or AMEND action if the domain is empty to update the trade. Please make sure the action is applicable in the trade workflow.
5.	MarkitWire sends (New-Clearing,Released) for the Beta Trade.	Update the new trade facing CCP with new external reference and all new keywords including CCP keywords and a new keyword "PlatformOriginalTradeld" to have the SWDeald off the Alpha trade to indicate the clearing process is complete. We apply the action from the domain "UploadAmendAction" or AMEND action if the domain is empty to update the trade. Please make sure the action is applicable in the trade

Until Step (3) the process remains same as non-trade division enabled clearing. Hence the trades which are sent to those CCPs which do not support trade division will work as before.

After the step (5) from above table, we will have the Beta trade which is in sync with the Beta trade in MarkitWire.

We support the further lifecycle actions on the Beta cleared trade for Unilateral and Bilateral Amends as well as cancellation. The following is the new notification which is supported for the Beta cleared trades:

• Cancelled-Released

Alpha Trade Post-clearing:

Alpha tra	de					
Trade ID		Version	Private Version	Counterparty LE	Booking State	Contract State
152762	270	3	1	Trade Division Clearing	Released	Cancelled
152762	270	2	4	Trade Division Clearing	Saved	Clearing
152762	270	1	4	Trade Division Clearing	Released	New



Beta Trade Post-Clearing and with an amendment performed:

Beta trade					
Trade ID	Version	Private Version	Counterparty LE	Booking State	Contract State
15137756	2	1	Trade Division Clearing	Released	Amended-Clearing
15137756	1	1	Trade Division Clearing	Released	New-Clearing

Important trade keywords on Alpha and Beta trades are as below:

Alpha trade					
	Keyword Name	Value			
	PlatformReplacementTradeId	15137756			
	CCP	TRADE_DIVISION_CLEARING_HOUSE			
	SWContractState	Cancelled			
	SWProcessState	Released			
	SWContractVer	3			
	SWPrivateVer	1			
	SWDealId	15276270			
Beta trade					
	Keyword Name	Value			
	PlatformOriginalTradeId	15276270			
-	CCP	TRADE_DIVISION_CLEARING_HOUSE			
	SWContractState	New-Clearing			
	SWProcessState	Saved			
	SWContractVer	1			
	SWPrivateVer	1			
	SWDealId	15137756			
	New External Reference	MW_Calypso Bank_15137756			
Amend on Beta trade					
	Keyword Name	Value			
	PlatformOriginalTradeId	15276270			
	ССР	TRADE_DIVISION_CLEARING_HOUSE			
	SWContractState	Amended-Clearing			
	SWProcessState	Released			
	SWContractVer	2			
	SWPrivateVer	1			
	SWDealId	15137756			

11.4 Do Recovery of Trade Division

At times MarkitWire query result xml has the trade division alpha and beta trades in an improper order. We have added support to re-arrange the same and process in order. This needs MarkitWire API 12.2 and higher.

11.5 Legacy Trade Migration for the Trade Division Functionality

As part of trade division MarkitWire will be dividing the legacy client trades into Beta and Gamma trades as a scheduled activity. This will enable the legacy trades to take part in netting synchronization process. Calypso MarkitWire interface supports the migration of the legacy trades to the divided trades – Alpha/Beta via the following mechanisms:



11.5.1 Updating the Legacy Trades in Calypso to Divided Trades in MarkitWire via the CSV file

MarkitServ will be performing the legacy trade migration as per scheduled time and provide a CSV file to clients which has the details of each Alpha and Beta trades that were part of migration and this CSV can be used to update the corresponding trades in Calypso.

Once updated, post clearing lifecycles will be supported on the Beta cleared trades.

To support this we have provided a Scheduled Task in Calypso which can be run by passing the MarkitWire CSV as an input to perform the migration in calypso.

11.5.2 Scheduled Task Configuration

To configure a new schedule task go to MainEntry -> Configuration -> ScheduledTasks -> Scheduled Tasks

Select the Type as MW_LEGACY_TRADE_DIVISION

Snapshot for MW_ LEGACY_TRADE_DIVISION in Scheduled Task Window

Scheduled Ta	Scheduled Task Window [1300035P1/133sp1/]								
Report Tools He	elp								
Definition Repor	t								
,									
? Type	MW_LEGACY_TR	RADE_DIVISION	Description Legacy	Trade Migatio	n task	Process O	rg		•
Trade Filter	ALL		Pricing Env default	:	T				
User	calypso_user		▼ Filter Set		•	Next	Id 0		
Measures						Ext R	ef MW_LEG	ACY_TRADE_D	IVISION_1
Time Zone	America/New_Y	ork	▼ Exec Time	н	М	Val Date Off	set 0		
From Days	0 1	то 0	Valuation Time	12 H	0 M	Date R	ule		
Holidays			Undo Time	н	м		Priva	ate 🥅 De	Activated
	Skin Exec	CutOff 0	Hour 0 Min						
Attributes	i onp exec				Execute				
A	Attribute		Value		Publish	🔲 Send Email		🔲 Exec On	Holidays
INPUT_FILE_LO	CATION	C:\\marki	twire\\tradedivision	Comm	ent				
INPUT_FILE_NA	ME	Legacy_T	rade_Migration.csv		ent				
Id 🗸	Туре		Description	Pricing Env	Trade	Filter	Filter Set	User	TimeZone
6501 MW_LEG/	ACY_TRADE_DIV	ISION	Legacy Trade Migation task	default	ALL			calypso_user	America/New_York

Enter the following mandatory attributes

- Input File Location: Directory from which the file will be picked
- Input File Name: Name of the csv file for legacy trade migration with extension

Scheduled task Assumptions:



- Trade which is getting migrated is cleared in calypso and there are two trades in Calypso, one Terminated trade and another Novated trade with the CCP as the trade counterparty.
- In MarkitWire, trade division is already performed on the corresponding trade which is being migrated and we have the Alpha and Beta trades available in MarkitWire to whom the Calypso trades will be migrated.
- The Scheduled task will update the existing trades in Calypso to Alpha and Beta trade details from CSV, so there is an action available on both these trades in Calypso to perform the update. The action can be set in the domain "UploadAmendAction" or we use the AMEND as an action to be applied on these trades.

Criteria to fetch the terminated and cleared version of Alpha trade:

- The scheduled task fetches all the trades having the keyword "SWDealld" with value same as the field "Alpha Trade Id" from the input migration CSV file. From the trades it fetches, it expects two trades to match these criteria a Terminated trade and a Verified Trade.
- The Terminated trade is considered as the Alpha Terminated Trade if it meets the following criteria:
 - Trade keyword "TransferTo" is populated.
 - Trade keyword "TerminationReason/TransferReason" is populated with value "Clearing".

The Alpha Terminated Trade keywords are updated with the new status.

The Verified trade is the Cleared Alpha trade if it meets the following criteria:

- Trade keyword "TransferFrom" is populated.
- Trade keyword "TerminationReason/TransferReason" is populated with value "Clearing".

This Cleared Alpha trade is modified to be in-line with Beta Cleared Trade in MW. The SWDeal ID is updated with the Beta trade id. The Trade External Reference is also updated to allow further lifecycle on this trade.

• For amending trades, the action configured in "UploadAmendAction" domain is used. If domain is not configured, then AMEND action is applied.

Screenshots of Calypso trade keywords pre and post migration:

Snapshot of trade keywords compare of Terminated trade which got updated to Alpha trade.



Terminated Trade		Alpha Trade		
Before Running Schedule Task		After Running Schedule Task		
Keyword Name	Value	Keyword Name	Value	
SWContractState	Clearing	SWContractState	Cancelled	
SWContractualDefinitions	ISDA2006	SWContractualDefinitions	ISDA2006	
SWContractVer	2	SWContractVer	3	
SWDealId	15273041	SWDealId	15273041	
SWLoginHandleIdentifier	calyp_dealsink7	SWLoginHandleIdentifier	calyp_dealsink7	
SWMasterAgreementType	ISDA	SWMasterAgreementType	ISDA	
SWOriginalCounterparty	AAA BANK TDV	SWOriginalCounterparty	AAA BANK TDV	
SWPrivateVer	3	SWPrivateVer	1	
SWProcessState	RegisteredForClearing	SWProcessState	Released	
SWSendForClearingTimestamp	01-09-2014 10:38	SWSendForClearingTimestamp	01-09-2014 10:38	
SWSide	1	SWSide	1	
SWSingleSided	FALSE	SWSingleSided	FALSE	
SWValidated	FALSE	SWValidated	TRUE	
TerminationDate	09-01-2014	TerminationDate	09-01-2014	
TerminationFullFirstCalculationPeriod	Y	TerminationFullFirstCalculationPeriod	Y	
TerminationPayIntFlow	Y	TerminationPayIntFlow	Y	
TerminationReason	Clearing	TerminationReason	Clearing	
TerminationTradeDate	09-01-2014 16:11	TerminationTradeDate	09-01-2014 16:11	
TerminationType	Novation	TerminationType	Novation	
TradeSource	MW	TradeSource	MW	
TransferTo	42804	TransferTo	42804	
		PlatformReplacementTradeId	15273043	
		CCPTradeID	ABC00012345867	
	Keywords which changed			
	Keywords which added			

Snapshot of trade keywords compare of Cleared trade which got updated to Beta trade.

New Novated Trade		Beta Trade		
Before Running Schedule Task		After Runn	ning Schedule Task	
keyword Name	Value	Keyword Name	Value	
SwContractState	Clearing	Swcontractstate	New-Clearing	
SWContractualDefinitions	ISDA2006	SWContractualDefinitions	ISDA2006	
SWContractVer	2	SWContractVer	1	
SWDealld	15273041	SWDealld	15273043	
SWLoginHandleldentifier	calyp_dealsink7	SWLoginHandleIdentifier	calyp_dealsink7	
SWMasterAgreementType	ISDA	SWMasterAgreementType	ISDA	
SWOriginalCounterparty	AAA BANK TDV	SWOriginalCounterparty	AAA BANK TDV	
SWPrivateVer	3	SWPrivateVer	1	
SWProcessState	RegisteredForClearing	SWProcessState	Saved	
		PlatformOriginalTradeTradeId	15273041	
		NewExternalRef	MW_CALYPSO BANK_15273041	
		PriorUSIPrefix	1010000236	
		PriorUSIValue	MARKITWIRE00000000000001234567	
		ReportingCFTCPriorUSIPrefix	1010000236	
		ReportingCFTCPriorUSIValue	MARKITWIRE00000000000001234567	
		ReportingCFTCUSIPrefix	101000051	
		ReportingCFTCUSIValue	AB10000000ABC000123487560284929	
		USIPrefix	101000051	
		USIValue	AB10000000ABC000123487560284929	
	Keywords which changed			
	Keywords which added			



11.5.3 Running the Do-Recovery Post Migration

We can run the Do-Recovery at the engine startup or as a scheduled task to migrate the existing legacy trades to Alpha and Beta trades post Trade Division. The do-recovery will query the deals and update the corresponding Calypso trades with Alpha and Beta trades for the divided trades. The subsequent post clearing lifecycles can be performed on these migrated Beta trades once the migration is complete via recovery process.

If the trades are already migrated using the scheduled task then the do-recovery will not impact the trades in Calypso.



Netting Synchronization Support

The Calypso MarkitWire interface supports the Netting and Compression functionality.

Trade division is a pre-requisite to Netting and the trades that follow the trade division process of clearing can only be part of the Netting compression cycle.

Please ensure that "NettingGrid" is present in the domain values for the domain "UploadMessageSourceTypes". It will be added for the new installation via the Execute SQL process. For upgrader, please ensure this is added as per the below screenshot for the NettingGrid format to be supported by the interface.

🛃 Domain Values Window			
Search: upload Find Va	lue		
🚽 UploadDefaultRoundingMethod	<u>.</u>	Name:	UploadMessageSourceTypes
UploadExerciseAction			
🚽 🚽 UploadExitAction		Value:	MW
🖶 🔠 UploadMessageFormatTypes			
UploadMessageSourceTypes		Comment:	SWML,ClearingSWML <mark>,NettingGrid</mark>
MW MW			
→ UploadNovationAction		<< A	dd

CCPs perform the unilateral compression of the trades post clearing and MarkitWire will be synchronizing the corresponding trades in MW with the netting process.

To automatically terminate the off-markitwire trades in Calypso post trade compression activity. Although Off-Markitwire trades do not have the "usual" MarkitWire details (e.g. trade keywords, external reference, etc.) the netting grid message contains the CCP Trade ID identifier. On the other hand, the 'CCPTradeld' keyword is populated for all off-markitwire cleared swaps in Calypso and matches the 'ClearingHouseTradeld' included in the netting grid.

Therefore, Off-MarkitWire trades could be potentially identified in Calypso based on the 'ClearingHouseTradeld = CCPTradeld' argument and automatically terminated when 'TypeOfNettingEvent = Termination', whilst populating the usual netting keywords on the terminated trades. We have added a mapping called 'ProcessOffMarkitWireTrades' in the mapping window.




The Netting is of the following two types:

12.1 Full Netting

The full netting is the process where all the trades that are part of the netting run will be terminated and there would not be any residual position so no new trade will be created.

We will receive Cancelled/Released notifications for all the trades that are terminated as part of the netting run from MarkitWire.

We will perform termination of the corresponding Beta trades in Calypso and populate the netting keywords on the trade.

12.2 Partial Netting

The partial netting is a process where all the trades that are part of the netting run will be terminated, and a new trade will be created for the residual position.

We will receive the Cancelled/Released notifications for the terminated positions and New-Clearing/Released notifications for the new position as part of the netting run when there is a residual position.

The handling of Cancelled/Released notifications will be same as full netting case.



We will create a new trade in Calypso for such New-Clearing notifications with the data from the incoming SWML with the netting keywords.

We need to make the event creation lag/delay for the New-Clearing message configurable. Currently it adds delay of 2 secs prior to every event creation for the New-Clearing messages. This was done to overcome issues of out of order processing in case of bulk message processing.

The following new property added:

```
#delay for new clearing deal notify call back event creation. value in milliseconds.
```

#NewClearingEventCreationLag=200

Apart from this there is a change done to add delay only for notifications for which we would create event and process them and not for the regulatory reporting notifications which we just skip.

12.3 Netting Grid

MarkitWire platform updates the Netting Grid as and when there are updates on the trades due to netting process.

We will receive the notification for the Netting Grid same as we get a trade notification. We will process a netting grid notification only if it has Complete or Complete with error status.

We update keywords on the netted trades as part of the netting grid processing.

Calypso added support for Off-MarkitWire trades as part of Netting Grid notification from MW. It is introduced as a mapping category and if it is enabled then it would apply termination on the off-markitwire trades for which we find corresponding trade in Calypso based on the CCP trade ld.

It also includes the ids of the Off-MarkitWire trades which we ignore in Calypso and create a warning message in task station to indicate it is ignored along with the CCP id of the same.

If there is any error in MarkitWire while performing the netting synchronization we get the status as Error in the netting grid with the error reason. We save the same as trade keywords on Calypso trade – PlatformTradeNettingStatus and PlatformTradeNettingErrorReason.

12.4 Error Handling

As part of the netting grid update we do keyword updates on Calypso trades. When the notifications come from MW out of order the Netting Grid update might fail in validations if the underlying trade is not terminated when applying the netting grid update.

In such cases if the Netting grid keyword update messages are the only ones pending then reprocess the messages to get the trades updated with netting keywords.

If the trade termination messages are also pending status along with the netting grid messages, then:

- We need to move the netting grid message to PARKED status by applying PARK action.
- Reprocess the termination message.



- Move the Netting message back to PENDING status by applying the ACTIVATE action.
- Reprocess the netting grid message.
- Workflow screenshot for reference:



12.5 Do Recovery of Netting Trades

We can run the do-recovery to recover the trades that were netted when the SwapswireTradeEngine was not connected to MarkitWire server. The currently supported Do Recovery process will work for the netting which is initiated as part of the engine startup. Please ensure you have the latest MarkitWire API to be able to recover the netting messages. We have enhanced the Do Recovery Scheduled task to accept the Netting batch ids in a comma separated format to allow recover the netting messages for the trades related to the provided Netting batch id. The scheduled task will not recover the original trade messages, it will only recover the netting-terminate / netting-new and netting grid messages. Please note that there can be ordering issues when running the Do Recovery of netting messages and this is a known limitation from MarkitWire platform. In case of such issues the messages will be stuck in the pending status with proper validation error messages. Please follow the Error Handling mechanisms mentioned in above section of the document.

The below is the screenshot of the Do Recovery Scheduled task:



Report Tools Help			
Definition Report			
? Type SW_DO_RECOVERY	 Description MV 	V	Process Org
Trade Filter	▼ Pricing Env de	fault 🗸	
User	▼ Filter Set	-	Next Id 0
Measures			Ext Ref SW_DO_RECOVERY_2
Time Zone US/Eastern	▼ Exec Tim	e H M	Val Date Offset 0
From Days 0 To	0 Valuation Tin	ne 12 H 0 M	Date Rule
Holidays	Undo Tim	e H M	Private DeActivated
Skip E CutOff	0 Hour 0 Min		
Attributes		Execute	
Attribute	Value	Publish	Send Email Exec On Holidays
Trade Start Date(YYYYMMDD)	20150824	Comment	
Trade End Date(YYYYMMDD)	20150829		
MarkitWire Deal IDs			
Reaking State	NI_1020242,NI_1020904		

12.6 Netting Trade Keywords

12.6.1 Common Keywords on both Terminated and new-remnant Trade

No	Keyword Name	Description
1	CCPNettingString	This is populated on all trades that are needed to be part of particular netting run. This will be updated as unilateral amends and will be sent to CCP by MarkitWire platform. This will be present on the Beta trades prior to netting.
2	CCPNettingId	A common netting Id assigned by the CCP. It will be common for all trades that are part of the netting. It will be unilateral read-only field for dealers. To be stored on all trades part of netting.
3	CCPNettingEventType	It will be assigned by CCP to indicate the type of netting event. It will have the value – "Netting" for Netting/Compression and the value "Other" for any other post clearing event such as transfers or default management. It will be a unilateral read-only field for dealers. To be stored on all trades part of netting.
4	PlatformNettingStatus	We will add a new keyword on each trade to indicate the status of the overall netting process. It can have one of the following values:



No	Keyword Name	Description
		 Complete – Netting completed successfully. Complete with error – Netting process had errors at MW.
5	PlatformTradeNettingStatus	We will add a new keyword on each trade to indicate the status of the trade in MW netting process, As per the Netting Grid SWML, there can be errors in the netting process for a particular trade. It can have one of the following values:
		 Created – If the trade has been successfully created Cancelled – If the trade has successfully been cancelled Error – If the trade failed to be cancelled or created.
6	PlatformTradeNettingErrorReason	This keyword will have an error reason for any trade in an error status while processing the netting for a particular trade in MarkitWire.

12.6.2 Keywords on Terminated Trade

No	Keyword Name	Description
1	CCPReplacementTradeld	CCP Id of the remnant trade on all terminated trades. Will get populated only in case of partial-netting. It can have multiple values in case of coupon blending. And the values will be separated by space.
2	CCPTerminatingEvent	This is to be stored on TERMINATED trades with value – PARTIAL_NETTING or FULL_NETTING based on the netting type.
3	TerminationReason	The trades that are terminated as part of netting have the termination reason as - "Netting".
4	PlatformReplacementTradeld	SW deal id of remnant trade on all terminated trades. Will get populated only in case of partial-netting. It can have multiple values in case of coupon blending. And the values will be separated by space.



12.6.3 Keywords on Remnant Trade

No	Keyword Name	Description
1	CCPOriginalClearedDate	It will have the earliest cleared trade's cleared date on the netting remnant trade.
2	CCPHistory	List of CCP Ids of TERMINATED trades to be stored in this keyword on the NEW trade. The CCP Ids will be separated by space. If the number of trades netted exceeds 50 then we will create another keyword – CCPHistory1, CCPHistory2 and so on. We will use the Netting grid to populate this.
4	CCPOriginatingEvent	This will be stored on the NEW trade with the value – NETTING_REMNANT.
5	PlatformOriginalTradeld	SW deal ids of the netted trades on the remnant trade. The CCP Ids will be separated by space. If the number of trades netted exceeds 50 then we will create another keyword – PlatformOriginalTradeId1, PlatformOriginalTradeId2 and so on.

12.7 Automatic Swap Terminations

To handle automatic swap terminations, Calypso required the ability to suppress the incoming termination messages from MarkitWire. To do so, Calypso has provided the ability to skip/ignore incoming MarkitWire compression events while raising an exception to be viewed. You can also turn on/off this via setting the **IgnoreNettingTermination** domain value.





Say, if the contract state is Cancelled and the process state is Released, then Calypso check for netting details being available and presence of swNettingBatchld. If found and IgnoreNettingTermination value is set to "true".

Then the message processing is ignored, and BO Message is moved to COMPLETED status. Following error message is displayed.

				ESSAGE_TITE			mag atotua	
1	EX_UPLOADSOURC	EMSG	U	PLOADSOURCE	MSG		COMPLETED	
🔀 Message Viewer							_	C
Message								
Main Audit Grouping Trans	fers Tasks Advice Documents							
General		Workflow		Contact			Format	
Message: 27576	/ 0	Type:	UPLOADSOURCEMSG	Addres	s Method: UI		Format:	GATE
C Trade Id: 0	/ 0	Status:	COMPLETED		Receiver	Sender	Template:	
🔍 Transfer Id: 0		Action:	NEW	Entity:	CALYPSO	CLIENT	Gateway:	UI
🕰 Linked Id: 0		SubAction:	NONE	Role:			Language:	
Creation Date: 3/17/24 2:0	03:05 AM			Type:				
Is Edited Latest Do	cument							
Is Edited Latest Do	ocument							
Is Edited Latest Do	ocument							
Is Edited Latest Do Attributes Name	Value							
Is Edited Latest Do Attributes Name UploadObject	Value MWWessage							
Is Edited Latest Do Attributes Name UploadObject TotalMessage	Value MWMessage 0							
Is Edited Latest Do Attributes Name UploadObject TotalMessage GroupId	Value MWMessage 0							
Is Edited Latest Do Attributes Name UploadObject TotalMessage GroupId UploadObjectExternalRef	Value Value Value 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							
Attributes Attributes Name UploadObject TotalMessage Groupid UploadObjectExternalRef UploadObjectExtus	Value Value MWMessage 0 0 MW_Swap_1 Janored							
Attributes Attributes Name UploadObject GroupId UploadObjectStatus UploadObjectStatus UploadObjectStatus UploadObjectStatus UploadObjectStatus UploadObjectStatus UploadObjectStatus	Value MWMessage 0 0 0 MW_Swap_1 Jignored Local							
Is Edited Latest Do Attributes Name UploadObject TotalMessage GroupId UploadObjectStatus UploadObjectStatus UploadMode UploadObjectStatus	Value MWMessage 0 MW_Swap_1 Ignored Local Message Ignored Deal - 20387578	725 (Cancelled,Re	leased,2) - Janoring Neti	ing Terminable	n message proces	ising for netting bate	h Id - CME 2024-01-08-EO	D-4440
Is Edited Latest bo Attributes Name UploadObject TotalMessage Groupid UploadObjectExternalRef UploadObjectExternalRef UploadObjectExternalRef UploadObjectExternalRef UploadObjectExternalRef UploadObjectExternalRef	Value MWWessage 0 0 MW_Swap_1 Ignored Local Message Ignored Deal - 20387578 SWML	725 (Cancelled,Re	leased,2) – Ignoring Nett	ing Terminatic	n message proces	sing for netting bate	ት Id - CME_2024-01-08-EO	D-444(
Is Edited Latest Do Attributes Name UploadObject TotalMessage Groupid UploadObjectExternalRef UploadObjectExtatus UploadMode UploadObjectStatus UploadMode MessageFormat MessageFormat	Value Value Value Value Value 0 0 MW_Swap_1 Ignored Local Message Ignored Deal - 203875761 SWML MW	725 (Cancelled, Rd	leased,2) – Ignoring Nett	ing Terminabo	n message proces	sing for netting bate	h Id - CME_2024-01-08-EO	D-444(

Calypso enhanced the UploadPreserveFee logic for cases where the existing fee type and incoming fee type are the same. Currently, when the fee type is added to the UploadPreserveFee domain, the incoming fee is booked on top of the existing one. So, Calypso has added **MWNettingFeesIgnoreList** domain value, which provides the ability to preserve the fee amount in Calypso and skip/ignore the MartkitWire incoming fee, potentially by setting a flag on the existing fee in Calypso.

🥖 Domain Values			
🔗 Reload 📰 Save 🦏 Save All	🕸 Constraints Setup		
Q~ MWNett MWEnforceEffectiveDate MWExitKeywords MWMigrateTradeStatus MWNettingFeesIgnoreList WPFRONT_FEE MWProcessState MWRejectAction MWUploadAmendAction MWUploadMessageType	1 of 1 i value	Name: Value: Comment: << Ac	MWNettingFeesIgnoreList UPFRONT_FEE dd

Manual Amount flag on the fee added on underlying trade manually:



Trade Details	Cashflows R	esets	Fees	(*)	CSA
Туре	UPFRONT_FEE	2	~	REC	~
Amount		500	,000	USD	~
Manual A	Amount	Wit	h Ove	erride	
Method	NONE		~		?

Let's say if the fees in the current notification are not empty then check if it is for Netting Termination. Then, Calypso looks up for the domain "MWNettingFeesIgnoreList" and check if it is not empty and the fee type in netting notification is part of this domain to ignore.

By fetching underlying Calypso trade and check if it has fees present. For each underlying Calypso trade fee, we check the following conditions:

- If the underlying trade fee type matches the fee type from netting notification.
- If the underlying trade fee type has the "Manual Amount" flag set to true.

Then ignore the fee from the Netting notification.



CCP Mode - Trade Division and Netting Support

The section provides details on the design and implementation of the support for Trade division and Netting synchronization from the CCP (Exchange Clearing) perspective.

13.1 Overview

Support for Trade division

- Incoming trade external reference to have beta id and Storing alpha id as keyword.
- Message and trade linking change as id changes.
- Acknowledgements to have alpha id.
- Clear accept/reject scenarios.
- Do-Recovery.
- Legacy trade migration.

Support for Netting Synchronization

- Support for full netting.
- Support for partial netting which requires sending new positions to MW.
- For new positions support for all cleared products, stubs, fees etc.
- Ability to reprocess the outgoing netting message in case of failures.
- Do-Recovery.
- Ability to send one trade per netting API call to MarkitWire.
- Ability to process response of one trade coming from MarkitWire.

Support for Portfolio Transfer

- Similar support as partial netting with following differences:
 - There are only two trades. One transferred which is sent as Terminated position and one new cleared trade which is sent as New position.
 - CCP Netting Id is different on the transferred and new trade.
 - Counterparty is different on the transferred and new trade.
 - We send one Netting Instruction message per trade with different Netting Instruction XML message.

Support for Default Management

Same as portfolio transfer.



13.1.1 Assumptions

The following are the assumptions:

- Calypso creates the trades with external reference having Beta/Gamma ids if it is present in the incoming Clearing XML.
- The alpha id is stored in the trade keyword PlatformOriginalTradeld on Calypso trades.
- We skip the extra notification to update beta/gamma ids. So the new versions are not updated on the trades.
- We use the alpha id from the keyword "PlatformOriginalTradeld" while sending out the acknowledgements.
- Trade linking rules are not applied post clearing as trades need to be netted separately for each side.
- De-clears are not supported as Client can book an offsetting trades and then do netting. It is not supported in MW post clearing.
- We assume the trades are netted correctly in Calypso once the trades move to a corresponding status in trade workflow. This can be configured in domain Clearing.Trade.NettingAction and Clearing.Trade.NettingStatus.
- New positions need to have the MW keywords pre-populated before sending the netting details to MW.
- We create the BOMessage PlatformMsg to send the outgoing message and provide re-processing ability on the same in case of data validation errors.
- For Legacy migration, we update the Calypso trades as per the MW CSV for keywords by applying the action configured in domain "UploadAmendAction" or "UploadUpdateAction" and if not configured, use the action AMEND by default. The details are logged as we update the trades.
- We handle the message and trade linking using the keyword "PlatformOriginalTradeld" which has the alpha id as the trades are created with external reference having the beta ids.
- We send separate NettingInstructionXML messages for the transferred trade and the new cleared trade in case of Portfolio transfer and Default management as Terminated and New positions have different CCPNettingId.

13.2 Trade Division Use Case

- Trade counterparties send trade to Clearing.
- CCP receives a notification trade is Pending Clearing.
- CCP retrieves Clearing XML.
- Clearing XML contains both the reserved BetaCleared trade IDs for the counterparties, as well as the original Alpha MarkitWire ID.
- CCP creates trades with external ref having BetaCleared ids and save alpha id in keyword "PlatformOriginalTradeld".
- CCP accepts trade for Clearing and sends the ack having the Alpha MarkitWire ID.
- Trade division process begins on MarkitWire:
 - Trade moves to Clearing Registered (AlphaCleared trade)
 - Divided (BetaCleared) trades are created for both counterparties and AlphaCleared trade is cancelled.
- CCP elects to not receive a notification of the creation of the BetaCleared trades.



• We do not update the contract-process state to New-Clearing and we do not update the contract-private version in Calypso.

13.3 Netting Synchronization Use Case

Full Netting

- CCP updates the netting keywords on the selected trades and move them to NET_TERMINATED.
- MW engine listens to trade events when the trade moves to the Clearing.Trade.NettingAction and Clearing.Trade.NettingStatus. It fetches the netting-participant trades using the CCPNettingId and looks at the count – CCPNettingCount and if the trades fetched match the count. It starts the process of generating the netting message.
- We have a sequence policy set to CCPNettingId so that the trades for the same netting run are processed by the same Engine thread.
- MW engine receives the trade event.
- MW engine creates and saves the PLATFORM_MSG.
- MW engine calls the platform translator which generates the NettingInstructionXML.
- MW engine sends the NettingInstructionXML to MW via the MW API and receives a correlationId.
- Using CorrelationId, MW engine retrieves the NettingInstructionRespXML.
- MW engine updates the Calypso trades with PlatformNettingStatus.

Partial Netting

- CCP updates the netting keywords on the selected trades, moves them to NET_TERMINATED status, and creates the remnant trade by novating one of the participant trades (oldest in time) and moves it to CLEARED status.
- The remnant trade is expected to get all keywords from the trade from which it is novated, and CCP updates the Cleared USI Prefix and Cleared USI Value on the trade keywords.
- MW engine receives the trade event.
- MW engine creates and saves the PLATFORM_MSG having the details.
- MW engine calls the platform translator which generates the NettingInstructionXML having terminated position as well as the new position.
- MW engine sends the NettingInstructionXML to MW via the dealsink API and receives a correlationId.
- Using CorrelationId, MW engine retrieves the NettingInstructionRespXML.
- MW engine updates the Calypso trades with PlatformNettingStatus.



Partial Netting with Validation at Calypso

- CCP updates the netting keywords on the selected trades, moves them to NET_TERMINATED status, and creates the remnant trade by novating one of the participant trades (oldest in time) and moves it to CLEARED status.
- The remnant trade is expected to get all keywords from the trade from which it is novated and CCP updates the Cleared USI Prefix and Cleared USI Value on the trade keywords.
- MW engine creates and saves the PLATFORM_MSG having the details.
- MW engine calls the platform translator which generates the NettingInstructionXML, and calls the product specific translator for the new trade.
- If there are any errors in translation like missing mapping etc., the Platform message remains in pending status, and trade keywords and logs are updated to indicate the status.
- The errors need to be rectified and trade needs to be re-saved to do the translation again. If successful, the message is sent to MW.
- MW engine sends the NettingInstructionXML to MW via the dealsink API and receives a correlationId.
- Using CorrelationId, MW engine retrieves the NettingInstructionRespXML.
- MW engine updates the Calypso trades with PlatformNettingStatus.

Partial Netting with Validation at MarkitWire

- CCP updates the netting keywords on the selected trades, moves them to NET_TERMINATED status, and creates the remnant trade by novating one of the participant trades (oldest in time) and moves it to CLEARED status.
- The remnant trade is expected to get all keywords from the trade from which it is novated and CCP updates the Cleared USI Prefix and Cleared USI Value on the trade keywords.
- MW engine creates and saves the PLATFORM_MSG having the details.
- MW engine calls the platform translator which generates the NettingInstructionXML.
- MW engine sends the NettingInstructionXML to MW via the dealsink API and receives a correlationId.
- Using the CorrelationId, MW engine retrievee the NettingInstructionRespXML.
- If there are errors in the NettingInstructionRespXML like <ErrorText>Error: *** fixedLeg
 calculationPeriodDates/calculationPeriodDatesAdjustments/businessDayConvention for a ZC IRS must be set to
 'NONE'. Value = MODFOLLOWING</ErrorText>, then the Platform message remains in pending status, and
 trade keywords and logs are updated to indicate the status.
- MW engine updates the Calypso trades with PlatformNettingStatus.
- The errors need to be rectified and trade needs to be re-saved to do the translation again. If successful, the message is sent to MW.

13.4 Portfolio Transfer Use Case

• CCP moves the original cleared trade to the status TRANSFERRED.



- CCP creates a new position trade in the CLEARED status.
- The trades are linked via CCPTransferFrom and CCPTransferTo keywords.
- MW engine listens to the CLEARED trade event and checks if it has the TransferFrom keyword. If so, it then checks if the linked trade is in TRANSFERRED status.
- MW engine also listens to trade events for status Clearing.Trade.TransferAction and Clearing.Trade.TransferStatus which are Transferred status. It checks for the new trade to be available in a cleared status.
- MW engine creates two NettingInstructionXML messages, one of them having the termination for the transferred trade and another one having the New position for the cleared trade while processing the corresponding event.
- MW engine sends the NettingInstructionXMLs to MW via the API and receives a correlationId.
- Using CorrelationId, MW engine retrieves the NettingInstructionRespXML.
- MW engine updates the Calypso trades with PlatformNettingStatus and in case of failure, it moves the corresponding message to FAILED status which can be reprocessed.



13.5 Approach





13.6 Trade keywords

Keyword Name	Description
CCPNettingCount	Count of trades involved in Netting process.
TerminationDate	Date when netting is performed. Equivalent to Trade Termination date. Only needed for terminated positions.
TerminationTradeDate	Date when netting is effective. Equivalent to Termination effective date. Only needed for terminated positions.
CCPNettingId	Netting batch id.
CCPNettingEventType	For full and partial netting – "Netting" for other lifecycles like default management and Portfolio Transfer – "Other". This needs to be sent to MW.
CCPNettingString	Populated by dealers as unilateral field.
GlobalUTI	Captures and displays the Namespace (LEI) + Value in a single field as a concatenated value
TransferTo	The id of the cleared trade to which the current trade is transferred to. This is saved on the trade in status TRANSFEERED.
TransferFrom	The id of the transferred trade for which the current trade is created. This is saved on the cleared.
TerminationReason	Trades that are terminated as part of netting have the termination reason as - "Netting".
PlatformNettingStatus	Status of the overall netting process:
	 Complete – Netting completed successfully. Complete with error – Netting process had errors at MW.
PlatformTradeNettingStatus	 Status of the trade in MW netting process: Cancelled – If the trade has successfully been cancelled Pending – If the trade is still to be cancelled or created Error – If the trade failed to be cancelled or created. Created – If the trade has been successfully created
PlatformTradeNettingErrorReason	Error reason for any trade in an error status while processing the netting for a particular trade in MarkitWire.
PlatformOriginalTradeld	Alpha ld to be stored on Beta trades in MW. This is used for Linking of trades as well as in sending clearing acknowledgements.
SWDealld	Beta id of MW trade. We store it in Calypso trade as SWDealld as we get this pre-allocated Beta id in the first message from MW.

Swaps Engine should now process the net trade and create a new remnant trade in Markitwire with New GlobalUTI value under the regulatory reporting Tab of Markitwire.



For sending acknowledgements Calypso has added a new functionality where they can now add these retry count interval. We have added entries in Calypso Mapping Window in source - MW under - Translator:

AckRetryCount -> (Numeric value e.x. 3)

AckRetryInterval -> (Numeric value e.x. 5000 (in milliseconds))

If these are set, then it would do a retry for the ack sending.

🥖 Calypso Mapping Window

Interface Mannings	14		
interface Mappings	IN.		
	1	Name:	MW/Translator
ATEO			
Bloomberg		Interface Value:	AckRetryCount
Bloomberg.TS			
BloombergFIT		Calypso Value:	3
🕀 🛄 CME			-
		Reverse Default:	
DSMatch			
🕀 🛄 ETD			
ELIREX		<< Add	
Eurex			
		>> Remove	
Europero CME			
		Configure Interfaces	
Exchangereed.LCH			
		Configure Types	
E EXAIIRFQ			
FpML			
ICELink			
⊞- 💷 LCH			
E LCHSA			
🖶 🛄 MS			
⊨ III MW			
CashCollateralInterestRate			
CounterpartyTradersGroup			
B DayCount			
Defaultindex l'enor			
DiscountingMethod			
FCMAction			
E FXReset			
🖶 🛄 Fees			
E FieldKeywords			
🕀 🛄 Frequency			
🕀 🛄 Holidays			
🕀 🛄 IndexTenor			
- 🤡 KeywordName			
Location			
MWBooking State			
MWReportingJurisdictions			
MasterConfirmationType			
PSStrategyName			
PlatformAgrDiscRateCashSetIInfo			
PlatformAgreedDiscountRate			
ProductType			
- RateIndex			
Bateladex Source			
Pateledex JSDA2024			
RateIndex_ISDA2021			
Rate Source			
RollDay			
settlementkateindex			
SpreadCalculationMethod			
SwapswireParticipant_Incoming			
SwapswireParticipant_Outgoing			
TerminationReason			
⊡ TimeZone			
Traders			
🖃 🛄 Translator			
DoRecoveryl anMins			



There are some cases where when MW connection goes down the engine keeps waiting for reconnection. If the trade clearing is going on during this duration and as MW connection is down the ACK could not get sent and the events get marked as unconsumed. So, when the connection comes back from MW then then engine reconnects and is able to process new trades/events. However, the existing unconsumed events is not processed automatically.

To overcome this, Calypso has workaround that when the connection is back again and engine is connected to MW. It creates and publishes event PSEventSwapswire of type - PROCESS_UNCONSUMED_EVENTS and does Dorecovery runs to fetch any new activities in MW. The SwapswireTradeEngine receives the event PSeventSwapswire.PROCESS_UNCONSUMED_EVENTS and as part of its processing queries the PSEvent table for pending events of type PSEventTrade and PSEventMessage and PSEventSwapswire (type - PROCESS_UNCONSUMED_EVENTS). Once it finds events pending to be processed, it will call the event processing which we have currently for such events. After these pending events are processed, this current event will be marked as processed.

NOTE: This feature will only be applicable if the EXCHANGE_CLEARING=true in Calypso_SW_config.properties.

The mapping window entry "SkipAutoReprocessOfUnconsumedEvents" is not set to true:



A Calypso Mapping Window





MarkitWire Message Workflow

MarkitWire uses the MWGATEWAYMSG message workflow. MWGATEWAYMSG.wf is included under <calypso home>\client\resources.

The message type is stored in the **MWUploadMessageTyp**e domain, which is populated when you synchronize the database with SwapswireSchemaData.xml. If you do not need the MWGATEWAYMSG workflow, you can simply delete MWGATEWAYMSG from the **MWUploadMessageType** domain and the application will instead use the GATEWAYMSG workflow as the default.

🗾 Domain Values Window	
Search: MWUp Find Value MutationType MWContractState.PreRelease MWContractState.PreRelease MWContractState.PreRelease MWCProcesState MWCProcesState MWUploadMessageType ModelProcesState MWUploadMessageType ModelProcesState MWUploadMessageType ModelProcesState MWUploadMessageType ModelProcesState MutploadMessageType ModelProcesState ModelPr	Name: MWUploadMessageType Value: MWGATEWAYMSG Comment:

Gateway MarkitWire exceptions can be monitored using the EX_MWGATEWAYMSG_ERROR, EX_MWGATEWAYMSG_REJECT and EX_MWGATEWAYMSG_WARNING.

To use MWGATEWAYMSG, you must first add it to a report in the Task Station. Select all messages ending with "_MWGATEWAYMSG" and create a new tab.

Note that the message type is based on the MWUploadMessageType domain. By default, MWUploadMessageType is populated when you synchronize SwapswireSchemaData.xml. If you don't intend to use this workflow, you can remove the MWUploadMessageType domain and the application will instead use the default GATEWAYMSG workflow.



Error Recovery

🚺 Nasdaq

15.1 Trade Recovery

When MarkitWire trades are booked and the Calypso Swapswire Trade Engine is not running, those trades are not automatically captured when the engine restarts.

To capture trade events from the missing period, you can use the DoRecovery process. It pulls in all activity since the date provided in the calypso_SW_config.properties that has not yet been applied in Calypso. If you are using the Bidirectional Mode and must also process non-picked up trades in the FCM role, then you must set SWAPSWIRE_BIDIR_MODE=true in the ENV file before running the DoRecovery Scheduled Task.

We have added the following mapping window entries under Name = MW/Translator with respective value as interface value:

SkipEventsOnDisconnect: If true, event creation is skipped when there is an empty/null SWML due to connection issue. The log messages have been improved.

SkipAutoRecoveryOnReconnect: Currently when there is a disconnect and reconnect the DoRecovery is performed automatically. If true, DoRecovery is skipped on reconnect.

DoRecoveryLagMins: Number of minutes prior to the last notification time to fetch the deals for DoRecovery.

NOTE: The mapping will be visible under FpML/Translator by default, and it would need to be manually added in MW else it will be applicable for all Interfaces which are using the FpML format like LCH/CME/Eurex.

Step 1 - Edit calypso_SW_config.properties. The pertinent lines are highlighted in yellow below.

Note: doRecoveryStartDate and doRecoveryEndDate are trade activity dates. Neither date is related to a specific start or end Trade Date.

Modify **doRecoveryStartDate** to the date from which you must recover trades. If you only need **Today's** trade, then you can leave **doRecoveryStartDate** empty. The date format is yyyyMMDD. For example:

doRecoveryStartDate=20091113

Modify **doRecoveryEndDate** to ending date for the range of dates you wish to recover. The date format is yyyyMMDD. For example:

doRecoveryEndDate=20120829



Alternaltively, you can set the number of minutes prior to the last notification time to fetch the deals for DoRecovery using the mapping DoRecoveryLagMins.

Name = MW/Translator

Interface Value = DoRecoveryLagMins

Calypso Value = <number of minutes>

Set performDoRecovery to true:

performDoRecovery=true

When there is a disconnect and reconnect the DoRecovery is performed automatically. If you set the mapping SkipAutoRecoveryOnReconnect to true, DoRecovery is skipped on reconnect.

Name = MW/Translator

Interface Value = SkipAutoRecoveryOnReconnect

Calypso Value = true

Also, if you set the mapping SkipEventsOnDisconnect to true, event creation is skipped when there is an empty/null SWML due to connection issue.

Name = MW/Translator Interface Value = SkipEventsOnDisconnect Calypso Value = true

Map Markitwire products to Calypso Identifers.

DO NOT MODIFY.

IRS=Swap FRA=FRA

Swaption=Swaption CapFloor=CapFloor Basis\u0020Swap=BasisSwap OIS=OIS

ZC\u0020Inflation\u0020Swap=ZCInflationSwap Cross\u0020Currency\u0020Basis\u0020Swap=Xccy Cross\u0020Currency\u0020IRS=Xccy

These are used to load the appropriate translators in Calypso

DO NOT MODIFY

ZCInflationSwapParser=ZCInflationSwap XccyParser=Xccy

FRAParser=FRA

SwaptionParser=Swaption CapFloorParser=CapFloor SwapParser=Swap BasisSwapParser=BasisSwap OISParser=OIS



Indicate the version of SWML used for every product # DO NOT MODIFY FRAVer=4.2 CapFloorVer=4.2 SwaptionVer=4.2 ZCInflationSwapVer=4.2 SwapVer=4.2 ClearingSwapVer=4.2 XccyVer=4.2 BasisSwapVer=4.2 ClearingBasisSwapVer=4.2 OISVer=4.2 ClearingOISVer=4.2 # doRecovery is used to fetch trades released from Markitwire but not yet imported in Calypso # Only perfrom the doRecovery if the flag below is set to true performDoRecovery=true # Do Recovery Start Date (Must be in yyyyMMDD format for actual date or xD/xW/xM # format for relative date). This requests trades from Markitwire from this date. # For normal operations, it must be kept blank. # You can specify the relative dates in below format. # If you specify 2d deals from two business days back will be recovered # If you specify 2w, deals from 2 week will be recovered. If it is non business # day deals from it's prior business day will be recovered. #doRecoveryStartDate=20091113 #doRecoveryStartDate=2D #doRecoveryStartDate=1W # **Do Recovery End Date** should be in yyyyMMDD format. If End Date is not specified it # will consider as current date. # End Date should be after Start Date. #doRecoveryEndDate=20120829 #doRecoveryEndDate=1W #doRecoveryEndDate=1D # This flag is used to generate XML files from the SWML Messages. Two XML files # are generated for every SWML message. One file is the SWML message itself, # the other is Calypso Data Upload XML (which is the Calypso representation # of the SWML. Please refer to documentation for more details.

The files are generated in USER_HOME\Calypso\markitwire DEBUG_MW_XML=true



```
# Password Encryption flag
# Set this mandatorily otherwise engine will not startup AutoEncryptPassword=false
#Timeout for MW connection
session_timeout=360
#Mark EXCHANGE_CLEARING as true for Exchange Clearing solution EXCHANGE_CLEARING =false
#In exchange clearing, this flag is used for CCP as a PO model if set to true CCP_IS_PO =false
#This flag is used to start engine in Test mode
#TEST_MODE = true
#This flag is used when user needs DF Reporting in SWML. IncludeTRReportingInfo=false
```

Step 2 - Save the file and copy it to the appropriate location.

Step 3 - Launch the Swapswire Trade Engine to begin recovery. One day is the minimum period for recovery.

D Note: Caution! DoRecovery imports all data and actions that have not yet been applied to the Database.

15.2 Reprocessing Failed Trade Imports

I Note: For Error Handling, please refer to the *Calypso Data Uploader Integration Guide*.

For errors related to Mapping, please correct the mapping via the Calypso Mapping Window and then apply the ReMap action in the BO Message workflow.

15.2.1 Error Masking

Because the actual error message created by Calypso is not relevant to MarkitWire, there is a facility to prevent such an error message from being transmitted as a Comment to MarkitWire.

To enable "error masking":

Step 1 - Add the MASK_ERROR_MESSAGE domain using the Domain Values window.



Domain Values Window	_	
Search: Find 🔽 Value	e .	
DividendType	Name: domainName	
	Value: MASK ERROR MESSAGE	-
ADR.Pricer		_
ADR.subtype	Comment: Mask Calypso errors from MarkitWire	
AccountCalculationType		
AccountSettleMethod	<< Add Save Above	
AccountTransferKeywords	>> Remove	
AssetSwap.Pricer		
AssetSwapPrincipalStructures		
BONYComparisonThresholdAmount	Help	
BOPositionFilter		
Load Save Selected Domain Save All Doma	ains	æ

Step 2 - Add the value true, to the MASK_ERROR_MESSAGE domain:

🔎 Domain Values Window			
Search: mask_error_message	Find 🔽 Value		
🕒 🖽 MarginCall.subtype		Name: MASK_ERROR_MESSAGE	
🗄 🔠 markAdjustmentReasonOTC		,	
🗄 🔤 markAdjustmentReasonPosition		Value: true	
🗄 🔤 marketDataType			
🗄 🛄 marketDataUsage		Comment:	
🗄 🔤 marketDisruptionEvents			
🗄 🔤 marketDisruptionEventsAll		<< Add	Save Above
🗄 📖 marketType			
MASK_ERROR_MESSAGE		>> Remove	
true			
🗄 🔠 masterConfirmAdditionalField		Constraints	
🗄 🛄 masterConfirmationType			
🗄 🛄 measuresForAdjustment		Help	
MESSAGE.Templates			
•	•		
Load Save Selected Domain	Save All Domains		Close

Step 3 - The Error Status (Swapswire Booking State) can be controlled using the Mapping Window.

After correcting the reported issue, you can reprocess the Trade Import using the SW_DO_RECOVERY Scheduled Task.

Note that this is normally not required when using the Data Uploader-based MarkitWire. The SW_DO_RECOVERY Scheduled Task is now needed only to fetch trades rejected due to BOOK Mapping. All other rejections are stored in Calypso as BOMessages and can be corrected in Calypso.



15.2.2 SW_DO_RECOVERY Scheduled Task

To use the SW_DO_RECOVERY task:

Step 1 - Set up the SW_DO_RECOVERY Scheduled Task as shown:

-	Task Attributes	
	Trade Start Date(yyyyMMddHHmmss)	20200730100505
	Trade End Date(yyyyMMddHHmmss)	20200730125800
	MarkitWire Deal IDs	
	Netting IDs	
	Booking State	ALL
	DealSink user	calyp_dealsink8

Step 2 - Ensure that the SwapswireTradeEngine is running.

Step 3 - Set Trade Start Date, Trade End Date, Booking State, and DealSink user attributes as needed.

() Note: Trade Start Date and Trade End Date are trade activity dates and have no relation to a trade's start and end date.

The datetimes need to be specified in the GMT timezone.

Step 4 - Add the list of Deal IDs to fetch to the **Markitwire Deal IDs** attribute, separating each ID with a comma.

Using **Markitwire Deal IDs** is not mandatory, however, if not used, then all error trades are retrieved and this may result in duplicates.

Step 5 - Set the Exec Time.

When the task executes, the system will display the Processing Task dialog.



When the task runs, the Swapswire Trade engine will query the MarkitWire system for trades that meet the attribute condition.

The task station will show the incoming trades as they are being retrieved from MarkitWire.

The process is identical, whether the recovery is done for a dealer/client or CCP role.

However, if you have cleared and decleared trades with a CCP role and trades have been lost in a database event, you will need to run the Recovery task to recover all the transitions and reprocess all messages sequentially.



15.2.3 Manual Trade Entry

When a trade with incorrect data is imported into Calypso, the trade is blocked (e.g., Tenor is not created in Calypso and will never be). Such a trade cannot be saved in Calypso. If the trade is subsequently amended in MarkitWire (to correct the Tenor), it flows through to Calypso as an AMEND. But since the trade has not been created in Calypso, the amend is rejected. To correct this situation, manually create the trade in Calypso with the correct Contract Version and Private Version while entering a Trade.

- **ExternalReference** It should have the right format MW_POName_MarkitwireDealID, where POName is the Processing Org name and MarkitWireDealId is the ID of the MarkitWire deal that did not import correctly.
- Keyword SWPrivateVersion This should be set to 0.
- Keyword SWContractVersion This should be set to 1.

After manually creating the trade, Calypso can properly apply subsequent AMENDs from MarkitWire.

Note: You can perform this process while SwapswireTradeEngine is down. This allows subsequent actions from MarkitWire to flow through to Calypso.



Connecting to MarkitWire HTTPS Server

Clients have the option to connect to MarkitWire using an encrypted https connection rather than a clear-text http connection.

To make use of https:

Step 1 - Create a sw_client_api.ini file based on the provided sample (calypso home/client/resources/sw_client_api.ini), or modify the sample.

The content of ini file should be similar to the provided sample:

[/Transport. host=https://uat.ia.swapswire.com port=443 cert=UATCert.cer Timeout=300

Where:

host - The complete https hostname. port - 443, the standard https port.

cert - The name of the security certificate provided by MarkitWire in the MarkitWire client package. The filename is UATCert.cer. If the certificate resides in a location different from your sw_client_api.ini, then you must also include the path to the file. For example:

c:\path\to\UATCert.cer.

Timeout - The number of seconds of idle time until the connection is terminated.

Step 2 - The SwapswireTradeEngine has two methods to locate the sw_client_api.ini file using the SWAPSWIRE_API_INIT_FILE environment property:

- Define the SWAPSWIRE_API_INIT_FILE environment property and leave it blank, or define it as "sw_client_api". The SwapswireTradeEngine will then attempt to use the sw_client_api.ini in its own current working directory. Note that specifying the file extension is not necessary for this method. You can locate the current working directory of the SwapswireTradeEngine by examining its log file for the comment, "Current Working Directory:".
- The second method is to define SWAPSWIRE_API_INIT_FILE environment property using a complete filespec (drive:\path\to\sw_client_api.ini). You must specify the file extension when using this method. Use this method if placing the sw_client_api.ini and UATCert.cer files in the SwapswireTradeEngine's current working directory is not possible.
- Note: If you have not defined the SWAPSWIRE_API_INIT_FILE environment property, then you must place the sw_client_api.ini and UATCert.cer files in the SwapswireTradeEngine's current working directory.
- () Also note that if UATCert.cer file is placed directly in current working folder, you may not require .ini file.



Regression Testing

For regression testing, you can cause the Data Uploader to create XML files from SWML Messages. To enable this function, set DEBUG_MW_XML to "true" in the calypso SW config.properties file.

The application will create the XML files in <code>%USERPROFILE%\Calypso\markitwire</code> directory. Each SWML message results in two files:

• The first file is the SWML Message itself. The filename has the following format:

SWML <product mapped in properties file> <sw deal id> <contract ver>.xml

Where:

product mapped in properties file - The product as identified by mapping.

sw deal id - The SwapswireDealld.

contract ver - The version of this contract. Therefore a sample filename will be similar to:

SWML swap42 3310303 2.xml

• The second file is the Calypso Data Uploader XML file. This is the SWML message converted into the Upload XML. The filename has the following format:

The MW < ExternalKey> action.xml

Where:

ExternalKey - The External Key (i.e., the SwapswireDealld).

Action - The action that generated this message. Therefore a sample filename will appear similar to:

MW BRANCHE1 3310303 PARTIAL NOVATE.xml

These files should be sent to Calypso as HelpDesk attachments to simplify reproducing the issue. The files can also be used for regression testing in an offline fashion without running the Swapswire Trade engine.

To import SWML files into Calypso:

Step 1 - Clear the MWPublishers entry in gatewayservice.properties:MWPublishers=

() Note: Caution! Failure to clear the MWPublishers entry will cause your implementation to send Offline Trade Notifications to MarkitWire.

Step 2 - Copy the SWML files to a separate directory for regression testing.



Step 3 - Ensure that you have modified the mwuploader.properties file to the folder created above.

Step 4 - Launch the FileWatcher (refer to the Data Uploader module) using the MWuploader.properties file. The command will appear similar to the following:

java -Xmx256m -D com.calypso.apps.startup.StartFileWatcher

-propertyFile mwuploader.properties
-env YourEnv
-user user_name
-password xxxxxxx

Note that the above is a one-line command.

Once the SWML XML file is dropped into the regression testing directory specified by in mwuploader.properties, the Data Uploader reads and converts the message into a BO Message, and Calypso executes the Action.

This regression test does not test connectivity or error reporting but does speed up the lifecycle testing for all trade types supported by Calypso's MarkitWire module. Also, before reusing the SWML files, cancel (or delete) all trades to External Ref key for the regression tests.



Test Tool

18.1 Setup

The Test Tool allows you to test the event-based processing of the Swapswire Trade engine. To begin using the Test Tool, you must modify calypso_SW_config.properties and mwuploader.properties. Both files are located in calypso home/client/resources.

Step 1 - The TEST_MODE property controls the on/off state of the Test Tool. Add the TEST_MODE property to calypso_SW_config.properties:

TEST MODE = true

Step 2 - The TestResultLocation specifies the location for Test Tool output files.

Add the TestResultLocation property to mwuploader.properties. Note the use of doubled slashes for the output path spec:

TestResultLocation =C:\\Desktop\\MWUploader 12\\Output\\

Step 3 - fileDir specifies the location for SWML files. fileDir is located in mwuploader.properties. Note the use of doubled slashes in the path spec:

```
fileDir=C:\\Desktop\\MWUploader 12\\Input\\
```

18.2 Usage

Launch the Swapswire Trade engine in "Test" mode by setting TEST_MODE to On. When the Engine is in Test mode, all the code that handles events is tested and there are no communications with MarkitWire Servers. Calls are not made to MarkitWire, nor are notifications accepted, instead, the Engine starts the File Watcher (which monitors the input folder defined in mwuploader.properties). When the filewatcher processes a file, it creates an event similar to that in the "live" mode so that all event handling code is tested.

At the end of event processing, the Test Tool saves an updated XML file in the output folder defined in mwuploader.properties.

When running the engine in Test mode, the Acknowledgment publisher should remain MW or MWClearing. Ensure that all contract states and process states are present in domains.

The filenames have the following formats:

• For Trader interface files:

SWML_(product type)_(contract id)_(contract ver)_(private ver)_(contract state)_(login handle)_(side).xml. E.g.:

SWML_Swap_7643196_1_1_New_1901_1.xml



• For Exchange Clearing interface:

ClearingSWML _(product type)_(contract id)_(contract ver)_(private ver)_(contract state)_(login handle)_(side).xml. E.g.:

ClearingSWML Swap 7653728 2 0 Clearing 1901 4.xml



Support for Compounding and Averaging Parameters

MarkitWire will support compounding and averaging provisions on OIS and Single Currency Basis Swap as part of the MarkitWire 19.1 API release. These compounding and averaging provisions will be applicable to overnight rate FROs which ISDA has published as part of the 2021 Interest Rate Derivatives Definitions (and a subset were published in Supplement 74 to the 2006 ISDA Definitions). This support is available for Dealer and Buyside MarkitWire.

When a Trade is booked correctly in Calypso with Averaging/Compounding DLY box ticked. The CutOff Lag as is set value and Cutoff lag box with Cal/Bus label being Bus in Product Details Window. The offset holiday is set in the Product Details Window.

Trade Back Office Swap Cashflows Analytics Pricing Env Ma	Aarket Data View Utilities Help			
Trade Details Cashflows Resets Fees CSA Inv Attributes				
CounterParty V AAA BANK V AAA BANK ID V 50709				
Book CalypsoBook2 V Sta	Status VERIFIED Template NONE V			
Subtype Arrear V Broker		Date Dides Devention Enhadded Online Read Linderhood		
+ Not Cancellable		Amortization and Accrual Index and Resets Stub Periods		
+ Not Credit Contingent + No Principal Adjustments + None + Not Resettable	۲	Idv Source COMPOUND CMPOUND Reset Lag -1 D Bus		
Fix v Pay VISD v 12,000,000.00	>> Float v Rec v USD v 12,000,000.00	CutOff Lag -5 Bus		
Bullet	Bullet	Convert Basis CutOff Hol TOK		
	Actual	Reset Roll PRECEDING V Monthly Resets On This Day 0		
Start 07/07/2022 End 07/07/2023	Start 07/07/2022 End 07/07/2023	Different Reset Dates Per Coupon		
2.00000 % Fixed Amount	1.000000 * USD v SOFR v 1D v + 0bp COM	Apply Reset Dates beginning at First Coupon		
Cmp		Lies Reset Period Dates for Compound Crust_days		
INCOME.		Use Payment Holiday For Sample Periods		
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NONE ADJUSTED	NONE ADJUSTED	Apply Help Cancel		
Intermediate Ccy	Intermediate Ccy			
Settlement CCy	Settlement CCy V			

When a Trade is booked correctly in Calypso with Averaging/Compounding DLY box ticked in the main trade window. The reset Lag should be ticked with set value in Product Details Window. In the 'Index and Resets' tab, tick 'Reset Lag' with Cal/Bus label being Bus. The offset holiday can be set in the Product Details Window.



Trade Back Office Swap Cashflows Analytics Pricing Env Mar	rket Data View Utilities Help		
Trade Details Cashflows Resets Fees CSA Inv Attributes	Rec/Swap/07/07/2023/P:USD 2.00000 /R:USD/SOFR/1D -PO is Calv		
CounterParty V AAA BANK V AAA BANK	Date Rules Rounding Embedded Option Bond Underlying		
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+ Not Credit Contingent			
+ No Principal Adjustments + Name			
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Actual	Actual	Apply Reset Dates beginning at First Coupon	
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NONE ADJUSTED	NUNE ADJUSTED		
Intermediate Ccy V	Intermediate Ccy		
Settlement CCy V	Settlement CCy		

When a trade is booked in Calypso with Averaging/Compounding DLY box ticked in the main trade window. The reset Lag should be ticked with set value in Product Details Window. In the 'Index and Resets' tab, tick 'Reset Lag' with Cal/Bus label being Bus. Then, set the offset holiday and 'Reset Hol' box in Product Details Window. The Sample period shift flag should be ticked. In the main trade window Reset Timing Property should be set to END_PER.

Trade Back Office Swap Cashflows Analytics Pricing Env	Market Data View Utilities Help	Reg /Swap (07/07/2022/PUISD 2 00000 /PUISD/SOEP/1D -PO is Caly		
Trade Details Cashflows Resets Fees CSA Inv Attributes				
CounterParty V AAA BANK V AAA BANK	Date Rules Rounding Embedded Option Bond Underlying Amortization and Accrual Index and Resets Stub Periods			
Book CalypsoBook2 V	Status VERIFIED Template NONE V	Idx Source COMPOUND ∨ Reset Lag -5 D ∨ Bus		
Subtype Arrear V Broker		Idx Factor 1.000000 Spread Schedule Reset Hol TOK,AUK,LON		
Not Cancellable Not Credit Contingent Not Principal Adjustments Not Principal Adjustments Not Presettable	CutOff Lag 0 Cal Convert Basis CutOff Hol LON.NYC Reset Roll PRECEDING Monthly Resets On This Day 0			
Fix > Pay > USD > 12,000,000.00 Bullet Actual	>> Float v Rec v USD v 12,000,000.00 Bullet Actual	Different Reset Dates Per Coupon		
Start 07/07/2022 End 07/07/2023	Start 07/07/2022 End 07/07/2023 1.000000 USD SOFR 1D + 0bp COM	Use Payment Holday For Sample Periods Use Sample Periods Use Sample Period Shift		
Cmp NONE	Cmp Cmp Cmp Cmp Cmp Cmp Cmp Cmp			
	Avg DLY Weighted NONE 1st Rate 0.00 Match , 0	Apply Help Cancel		
Pmt PA END_PER NONE MOD_FOLLOW DAY 7 Lag 2 B ACT/360 NYC NEAREST NONE ADJUSTED	Pint PA END_PER NONE MOD_FOLLOW DAY 7 Lag 2 B ACT/360 NYC NEAREST NONE ADJUSTED			



MarkitWire Allocation performance Enhancement

The Allocation packages received from SEF platforms – Tradeweb and Bloomberg. These packages consist of 50+ trades wherein it includes one block trade and 50 child allocations and these allocation childs are marked for clearing so these get cleared at a CCP and we receive the clearing notifications which is translated to Novation lifecycle in Calypso for each child trade. Post clearing we receive the child trades of clearing from MarkitWire and we update the corresponding novation child trades in Calypso. For every update on the child trades in Calypso, there is an update made on the Block trade as per the Calypso Allocation design.

So, the following updates has been made:

- Reduce the delay for new event creation by setting the property "EventCreationLag" with value in milliseconds in calypso_SW_config.properties. Default value is 1000 milliseconds.
- Reduce the delay for new clearing event (clearing child trade) by setting the property "NewClearingEventCreationLag" with value in milliseconds in calypso_SW_config.properties. Default value is 2000 milliseconds.
- Switch to the following mode: uploadMode=Local, persistMessages=Failure in calypso_SW_config.properties.
- Set the property DEBUG_MW_XML=false in calypso_SW_config.properties.
- Remove all other events from SwapswireTradeEngine event list from engine server web admin page other than

 PSEventSwapswire.
- Remove unwanted process states from the domain "MWProcessState" this will reduce time for processing these extra notifications.
- Not having allocation performed in Calypso and saving allocation child trades as individual trades in Calypso.

The last point from the above update is explained as follows:

Handle not saving the Block trade in Calypso

We have to configure Domain values:

- BooksTolgnoreAllocationBlock: To have list of MW Book BIC codes for which we want to apply the ignore of block save. This would be taken from the tag <swTradingBookId>
- VenueTypesTolgnoreAllocationBlock: To have list of Venue types for which we should apply the ignore of block save for ex. SEF. This would be taken from tag <swExecutionVenueType>.

If above are setup, then in MarkitWire translator we would check if the contract state is either NEW or ALLOCATED and if the incoming SWML message has the "SWAllocations" element then we ignore all those message processing.

This will handle to ignore save of the Block trade.

Handling child trades

For child allocation trades we would need to apply the lifecycle NEW instead of REKEY which we currently perform and to achieve that we already support by setting the domain value - "SkipAllocatedParentExistsValidation". This domain should be set to true.



Handling Sequence policy for child trades

We handle the SwapswireTradeEngineSequencePolicy for child trades, that even if there is a keyword <swBlockDealId> we should not use that for sequencing. For this there is a code change done to identify the scenario where the Block trade is ignored which is checking the BIC code of the incoming book against the domain and also the venue name against the domain.

Dorecovery handling

As part of the dorecovery process, it should be taken care that the block is not saved and child allocations are saved as NEW trades.



Support for UPI code from MarkitWire

UPI (Unique Product Identifier) is a code that uniquely identifies the product that is the subject of the OTC derivatives transaction. A UPI will be assigned to each product, and regulators would be able to aggregate OTC derivatives transactions by product (using the UPI Code) or by individual reference data elements that comprise the product (such as the underlier). The UPI will work in conjunction with unique transaction identifiers (UTIs) and critical data elements (CDEs), which are also expected to be reportable to global regulatory authorities.

Calypso supports following keywords for:

InstrumentUPI (Incoming – New trades)

This keyword will come from the Alpha trade which will be received by the CCP (ASX) when MarkitWire sends the trade for Clearing.

• InstrumentUPI (Outgoing - Netting New trades)

The value available in this keyword will be sent to MW as part of the Netting Instruction XML message which is sent when Netting is alleged.

ClearedTradeUPI (Outgoing – Clearing Accept ACKs)

As part of the CLEAR accept the CCP would need to add the value in the above keyword. This will be sent to MarkitWire as part of the Clearing acknowledgement.

MarkitWire will display the value sent as part of the acknowledgement on their UI in Clearing tab.

CCP Trade ID:	2147529247	CCP UPI:	QZCKWTMCWLPC)	
Cleared Trade USI:	549300FSLUWD8ETI2P24	MARKITWIRE92191261		Input By:	
Cleared Trade UTI:	549300FSLUWD8ETI2P24	MARKITWIRE92191261		Input By:	User
· · · · · · · · · · · · · · · · · · ·				1	

Sample ACK message:

O stratety in the state of the state

<ClearingHouseProductID productIdScheme="http://www.fpml.org/coding-scheme/external/iso4914">QZCKWTMCWLPC</ClearingHouseProductID>

To define MarkitWire Product Code entry in the Calypso:




Product Id	dentifier
Product ID:	ISDA InterestRate:IRSwap:FixedFloat
UPI:	
ISIN:	
CFI:	SRCCSP
Full Name:	

Configuring the Product code with support for OTC checkbox:

🥖 Prod	uct Code Window				-			<
Name	UPI	×	. Type	string		~]	
	Unique (Securities O	nly)	[Mandator	y (Securities	Only)		
	Searchable		Ŀ	🗸 отс				
Product	ALL							
Name		Type	Unique	Searchable	Mandatory	OTC	Product List	t.
TW_OTC_E	LIGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL	^
UPI		string	false	true	false	true	ALL	
ISIN		string	false	true	false	true	ALL	¥
<							>	
Load	New Delete	Sav	/e				Close	

The following is the Product code window with the details tab on Trade window:

ኞ Product Code Window				
Product Code Name FallBackType ISIN UPI	Value			
Apply	Refresh	ClearAll	Cancel	

The alternate option: Trade keywords



🐳 Trade Attributes					
🔅 SetUp 🔹 🚖 🤪	Q instrument		🖸 🗌 Editable		
Name		Value			
InstrumentCFI					
InstrumentISIN					
InstrumentUPI					

NOTE: Calypso added support to populate product code UNDERLYINGSWAP_UPI if the keyword InstrumentUnderlyingSwapUPI is populated on the trade. Along with it, Calypso also provides support for ClearedTradeUPI in CCP mode as well as in dealer mode, where this keyword would get set post clearing. Also in FCM mode if the UPI comes in the we will store it in keyword InstrumentUPI.

Complex Trade UPIs

MarkitWire has added support for Leg 1 and Leg 2 specific UPI/CFI/ISIN/FullName product codes for Swaption and Cap Floor Straddle products in Incoming mode and outgoing bidirectional mode.

Product codes:

UPI / UPI Leg2

CFI / CFI Leg2

ISIN / ISIN Leg2

Z Product	Code Window						
Name	UPI	~	√ ² Ту	rpe string			~
	Unique (Securities (Only)		Mandat	ory (Securitie	es Only)
	Searchable			🗹 ОТС			
Product	ALL						
Name		Туре	Unique	Searchable	Mandatory	отс	Product List
EU_OTC_EL	IGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL
US_OTC_EL	IGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL
JP_OTC_EL	IGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL
CA_OTC_EL	IGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL
CH OTC ELIGIBLE COLLATERAL TYP		string	false	true	false	false	ALL
AU_OTC_ELIGIBLE_COLLATERAL_TYP		string	false	true	false	false	ALL
HK_OTC_ELIGIBLE_COLLATERAL_TYP		string	false	true	false	false	ALL
SG_OTC_ELIGIBLE_COLLATERAL_TYP		string	false	true	false	false	ALL
ZA_OTC_ELIGIBLE_COLLATERAL_TYP		string	false	true	false	false	ALL
TW_OTC_E	LIGIBLE_COLLATERAL_TYP	string	false	true	false	false	ALL
UPI		string	false	true	false	true	ALL
ISIN		string	false	true	false	true	ALL
CFI		string	false	true	false	true	ALL
CFI Leg2		string	false	true	false	true	ALL
ISIN Leg2		string	false	true	false	true	ALL
UPI Leg2		string	false	true	false	true	ALL
UPI Leg2 Load	New Delete	string	false Save	true	false	true	ALL



ī.

Calypso supports Report Tracking Number on submissions along with Additional PTRR Data on submissions including via API (Private Data), PTRR ID, PTRR, PTRR Technique, and PTRR Service Provider via Trade Attribute window.

Trade Attributes	\searrow ×
🔹 SetUp = 🖕 🛞 🔍 ptrr	🛞 🔲 Editable
Name	Value
ReportingPTRR	true
ReportingPTRRIdIdentifier	TESTING
ReportingPTRRIdStructurer	I2345678901234567890
ReportingPTRRServiceProviderLEI	PTRR2345678901234560
ReportingPTRRTechnique	PRBM
ReportTrackingNumber	REPORTPTRR2345678901234560
CCPPtrrId	
CCPPtrrId2	

21.1 Keywords List

No	Calypso Keyword	Datatype / Value
1	InstrumentUPI	String (Alphanumeric). E.g. QZCKWTMCWLBP
2	ClearedTradeUPI	Same as above

21.2 InstrumentUPI value requirement from MW documentation

UPI can take 12 alphanumeric characters and MarkitWire will validate the ISO 4914 format as follows:

- First two characters (prefix) must be 'QZ'.
- Nine characters after the prefix must be alphanumeric (upper case A-Z and 0-9 excluding the vowels A, E, I, O, U, and the character 'Y').
- Last character must be alphanumeric check character.