

Nasdaq Calypso Reuters TOF Integration Guide

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Introduction

Reuters TOF is a straight through processing (STP) feed used by Reuters Deal Tracking Server (DTS). It carries trade information sending to TOF consumer applications.

The Calypso Reuters TOF Module serves as a connector component which integrates Calypso with Reuters DTS, communicating by Reuters TOF feeds, so that Calypso can capture trades sending from Reuters DTS (Only DTS Version 5.0 or above is supported.).

The Module allows capturing spot trades, outright trades (deliverable), regular FX NDF trades, FX swap trades and loan/deposit trades.

This user guide covers the installation and configuration of the Calypso Reuters TOF Module.



Installation and Setup

2.1 **Prerequisites**

Before installing the Reuters TOF module, please ensure that a Calypso instance and the Data Uploader Module are set up properly. Please refer to the Calypso installation guides and the Data Uploader user guide for setup details.

2.2 System Setup

Follow the Calypso System Guide "Installation and Upgrade" to install Calypso. Check the component Reuters Ticket Output Feed (TOF) Interface during the installation.

-	- V	📁 Ir	terfaces (Please consult with your Calypso Account Executive for licensing questions)	*
	[AcadiaSoft MarginSphere Interface	
			Bloomberg Data License	
	[Bloomberg Fit	
			Bloomberg Realtime Market Data	
	[Bloomberg TOMS/AIM Interfaces	
	··· [Citco Fund Admin Interface	
	[CLS Integration 🥥	
	··· [Data Explorer Interface	
	[DS Match Interface	
	[DTCC Interface	
	[Eurex Clearing	
	··· [Exchange Feed	Ξ
	[Globe Op Interface	
	[Icelink Interface	
	[Intex Integration	
	[Markit CDS RED & RCD Interface	
	[Markit Present Value	
			Markit Trade Manager	
	[MarkitWire Interface	
	[Omgeo CTM	
	[Quintillion Fund Administrator	
	[Reuters Data Scope Select (DSS) Interface	
	[7	Reuters Ticket Output Feed (TOF) Interface 🔹	Ŧ

Synchronize your database with the TOF data.

Migration scripts are automatically applied, the schema files are automatically uploaded, and there is no checkbox in Execute SQL.

You can now start the Data Server and Navigator.



2.3 DTS Engine Configuration

Create an engine configuration for DTS Engine through the Engine Manager in Web Admin. Please refer to Calypso Web Admin documentation for complete details.

Engine Name: 🛿 DTS Engine	Engine ID: 116
Engine Class: com.calypso.tk.tof.protocol.dts.DTSEngine	,
Display Name: 😯 DTS Engine	Application Type: EngineServer
Description: DTS Engine	
Persisted Event Configuration: PSEventAccountBilling PSEventDTSEngineRequest	00
Event Filters: AllTransfersKnownEventFilter	▼ ○ ●
Engine Manager Configuration: engineserver •	Start on Startup:

Configuration attributes

MCC_PRICING_ENV			
MCC_TRADE_FILTER_NAME			
NumberOfRetry	50		
PROJECTED_DAYS			
REVERSAL_CRE			
RetryInterval	30		
STARTUP			
TIMEOUT_RESTART			
USE_BOOK_PRICING_ENV			
VALUATION_TIMES			
VALUATION_TIMEZONES			
XFER_USE_POS_AGGREGATION_ONLY			
XFER_USE_REVERSE			
config			
tcid	SIMB,INCR		-
		Cancel	Save



DTS Engine Parameters

Set the following engine parameters as needed:

- **NumberOfRetry**: The maximum number of times that DTS Engine tries to connect to Reuters server until successful (optional, default = 10, minimum = 0, which indicates unlimited number of retry)
- **RetryInterval**: Interval (in seconds) between each retry to connect to Reuters server (optional, default = 15, minimum = 15)
- tcid: List of TCIDs (defined in Calypso) to be connected from this engine instance (optional, if absent, this engine will connect to all TCIDs defined in Calypso)
- PollingInterval Polling interval to fetch new deals from DTS server.Default is 1 (minute).
- LocalPort Originating port of the DTS engine.

2.4 Update Manager Engine Configuration

The Update Manager engine is used to link back the Conversation Text (information from Reuters System related to the trade) to the Calypso Trade.

In some cases, the translation from TOF message to Calypso Trade may fail (e.g. missing trade book), such that the Calypso Trade is not created in the first time processing.

In such a case, the Conversation Text is linked to the TOF Message (source message) temporarily.



Then, if the end-user fixes the static data (e.g. adding the trade book) and reprocesses the TOF message, the Calypso Trade is created. The Update Manager engine is notified (by PSEventTOFMessage) and links the Conversation Text to the Calypso Trade.



Create an engine configuration for UpdateManagerEngine through the Engine Manager in Web Admin. Please refer to Calypso Web Admin documentation for complete details.



Engine Name: 🛿 UpdateManagerEngine	Engine ID: 104	Max Queue Size: 🛛 /	Max Batch Siz	e: 10 Numb	er of Threads: 📀
Engine Class:	,	Event Pool Policy: 😮	Pr	icing Environment:	0
com.calypso.tk.engine.UpdateManagerE	ngine		•	•	
Display Name: 😗	Type:	Save settle position change	s: 😮		
Update Manager Engine	EngineServer	T			
Description:		Configuration attributes			
		Attribute Name	At	ttribute Value	Â
Persisted Event Configuration:		BALANCE_MODE			
PSEventAccountBilling •		CLASS_NAME			
PSEventTOFMessage	^	DISPLAY_NAME			
		DateType			
	.	EVENT_ORDER			
Event Filter:		EXCLUDE_PRODUCTTYPE			
UpdateManagerEngineEventFilter	•	EXCLUDE_STATUS			
- F		HANDLE_FUTURE_LIQ_CASH	_FLOWS		
	_	IGNORE_ACTION			
Engine Manager Configuration	Start on Startup	INSTANCE_NAME			
engineserver T		INV_MAX_POSITION			

Name = UpdateManagerEngine

Class = com.calypso.tk.engine.UpdateManagerEngine

It subscribes to PSEventTOFMessage events.

Event filter = UpdateManagerEngineEventFilter

2.5 Navigator Configuration

Add the following new menu items:

Name: DTS Configuration Window

Action: tof.DTSConfigFrame

Name: TOF Mapping Window

Action: tof.mapping.TOFMappingWindow

Name: TOF Monitor Window

Action: tof.TOFMonitorWindow

Name: DTS Connection Monitor Window

Action: tof.DTSConnectionMonitorWindow



2.6 Installing the Reuters Deal Tracker Server

The Reuters Deal Tracker Server (DTS) takes in deals from Reuters and EBS dealing systems, and combines them into one deal feed. Please refer to the appropriate Reuters Deal Tracker Server installation and/or user guide for help with Reuters DTS.

2.7 Access Permissions

The following access permissions functions can be set in **Navigator > Configuration > User Access Control > Access Permissions > Group Access**. Refer to the Calypso Security User Guide for information on setting access permissions.

Permission	Description
ViewTOFMonitor	Permission to open the TOF Message Monitor.
AllowTOFMessageAmendments	Permission to modify TOF messages from the TOF Message Monitor.

2.8 Installing the Reuters TOF Simulator (optional, for testing purposes)

The TOF Simulator is provided by Reuters for testing the Ticket Output Feed protocol. Install TOF Simulator version 6.3.0.x and start the simulator:





тно	MSON REUTERS	Status: TCID:	Running Since 13:51:30 SIMB	Č,
De <u>f</u> ault V Customize —	alue		⊂ Customize <u>V</u> alue	
TCID: Dealer ID:			Source of Data: [Source of Data]	Ţ
First Last Count Interval: ile Mode:	Ticket Queue 19 20 2 1 Second	Time 13:51:30 13:51:30	Current Time: Database Files ✓ Data Files: Vpdate Files:	13:51:38
Communicati C Serial Baud F C TCP/IP TCP/IF	on Type Rate 9600 P Port 5003	×	TOF TCP/IP Security Options	

Please refer to the Thomson Reuters TOF Simulator User Guide for installation or usage details.

2.9 Installing Thomson Reuters FX Trading Post Trade Feed

(Optional, for MIFID testing purpose)

TOF Simulator with MIFID support is present in Thomson Reuters FX Trading Post Trade Feed version 1.5.31.0. It is provided by Reuters and can be used in simulator mode for testing MIFID support.



Post Trade Feeds Administrator ×	+					- 6 - X
(Iocalhost:8080/feedadmin/main			C ^e Q, Search		合自 🕹 合 🖸	○ 🖗 ≡
🙆 Most Visited 🔒 Imported From IE 🔒	Calypso 逼 News 🥃 Useful 🥃 Review 🧾 Temp 🔒 Technology	🕽 Physics 🔒 CS Study 逼 Read 📮 MF link 블 Java 🔒 Biology	🍯 Food ڬ Investment articles 🔛 Religious 逼 Exercise			
POST TRADE FEE	DS ADMINISTRATOR 1.5.31.0 - S	BIMULATOR			С тном	SON REUTERS
Configuration Monitoring	Upstream Simulator About				Logged in as admin	Administration
Add Remove	Configuration >> Downstream Configuration >> SIMB >> T	Export Import				
- Destream Configuration	Feed Server Settings 🛞					
Downstream Configuration	Username *	admin				
- SIMB	Password *	•••••	Generate New Password			
L- A TOF	Max Ticket Range *	1000				
	Log Location					
	Client Communication Settings (8)					
	Port *	5003	Heartbeat Interval (s) *	30		
	Disconnect on Server Disconnect *	True				
	SNMP Settings					
	Polling Port *	1024				
	Mapping Settings (8)					
	Local TCID Source	Local TCID				
	Group Names:	Check All	FIDs List:			
	Additional Fields for FDI Version	i i i i i i i i i i i i i i i i i i i				
	Additional Deal Type OIS/IRS/FXO					
	Additional Fields for Links to Clearer Version					
	Additional Fields for FXO	1				
	Additional Fields for Dealing8					
	Additional Fields for LITL and Execution Eacility					
	Additional Control for 508 and 599					
	Enable CLS Flag (Continuous Linked Settlement)					
	Addtional Fields for FXall					
	ation onfiguration Utername * Assword *: Ass			÷		
	Import a legacy TOF configuration:		Browse No file selected. Import			
	Maintenance Settings 🛞					
	Reset Server Lowest and Highest Tickets (must rest	art service)				
	Last Ticket Number:					
	h					

Please refer to the Thomson Reuters FXT Post Trade Feed Adapter Installation Configuration Guide for installation and configuration to use it in Simulator mode.

2.10 Setting the DTS Configuration

DTS Configural	tion							
Reuters I	Deal T	racl	ker S	ierver Co	nfigu	ratio	n	
TCID		SIN	1B					
Host Name		loc	localhost					
Port Number Rollover Number		5003 99999						
		\dd		Remov	/e]		
	Tc	id	Ho	ostname	P	ort	Rollover	1
	SIMB		loca	lhost	500	3	99999	
	NRMI	-	loca	lhost	500	4	99999	

Each dealing server is identified by a unique TCID. Each dealing server is associated with its own configuration like host name, port number and rollover number.

- Enter the correct TCID, host name, port number and rollover number for the Reuters Deal Tracker Server.
- The TCID should be unique.



- The host name and port number should be unique for each TCID.
- The Rollover number is the number when the ticket number starts over. For example, if you enter 655535 as the Rollover number, the ticket id after 655535 is 1.
- If you are testing against the TOF Simulator, then enter the correct host name and port number for your TOF Simulator connection instead, and enter the TCID for the test data file that you are using.

2.11 Counterparty Mapping

The counterparty of the mapped Calypso trade is determined by Source of Data (field 500) and Bank 1 Dealing Code (field 508) of the incoming TOF message.

For example, the Source of Data of the following TOF message is 3 and the Bank 1 Dealing Code is TFAA.

🛓 TOF Messa	ge		
<u>F</u> ile			
ID:	9001		
Trade ID:	227465		
Tag:	AA		
TCID:	SIMB		
Ticket Num:	64		
Field List Num:	501		
Updated:	2/24/15 9:30:10 PM		
Fields Fr	rors		
		Value	
1D Name		value	
500 Source of	Data	3	^∥
501 Source R	ererence	2611_0R	=
502 Date of D		12:00:42	
504 Dealer ID	eui	SH	
505 Date Conf	firmed	5 SEP 2014	
506 Time Con	firmed	12:01:51	
507 Confirme	d-by ID	USRE	
508 • Bank 1 De	aling Code	TFAA	
509 Bank 1 Na	ame	TWENTYFOUR KS SIM A	
510 Broker De	aling Code		

Firstly, the provider is looked up from the TOF Data Source Configuration according to the TOF message source code (field 500).

The implementer can check the setting in the tof_data_source table and update the configuration through Execute SQL. This is a one-time setup.

For the message shown above, the source code is 3 and the provider will be REUTERS.





BB: jdbc:oracle:thin:@localhost:1	.521:calypso Driver: oracle	e.jdbc.OracleDriver	
Utilities			
Search:	Find SQL Select Que	ery << >>	
Tables: 2036 ABS_COLLATERAL_GROUP ACCESS_PRODUCT ACCCUINT_TRANS ACCRETION_INDEX ACCRETION_INDEX_HIST ACCRETION_SCHEDULE_HIST ACCRETION_SCHEDULE_HIST ACCRUAL_RANGE_DESCRIPTOR ACCRUAL_SCHEDULE_PARAMS Cuery Result	SELECT * FRO	M tof_data_source	Execute Total 9
SOURCE_CODE	PROVIDER	DESCRIPTION	BROKER
1 RE	UTERS	Dealing3000-OfflineDealCapture	
2 RE	UTERS	Dealing3000-2	REUTERS
3 RE	UTERS	Dealing3000-1	
4 EB	IS	SRC_4_EBS=EBS-E-EBSGeneratedTrade	EBS
5 EB	IS	EBS-F-EBSTrade	EBS
6 EB	IS	EBS-Blank-EBSTrade	EBS
12 RT	NS	RTNS-RTFX-Multi-Portal_Trade	REUTERS
32 RT	NS	RTNS-Meitan-Tradition-Broker_Trade	REUTERS
34 RT	NS	RTNS-Nittan-Broker_Trade	RTNS

Then the system will look up the counterparty having a legal entity attribute type {Provider}Participant, e.g. REUTERSParticipant in the message above, for a value list which contains Bank 1 Dealing Code (field 508) in the TOF message, for example, TFAA.

The value list is separated by a pipe (||).

So, for the above TOF message, In order to let the system lookup this counterparty, add an legal entity attribute REUTERSParticipant. The attribute value must contain TFAA.

L	egal Entity	CALYPSO		Role ALL		-	
Proce	ssing Org	ALL		•			
Attri	bute Type	ACCOUN	ITING	•] Value		
Id	Process	sing Org	Legal Entity	Role	Attribute Type	Attribute Value	
354	49 ALL		CALYPSO	ALL	REUTERSParticipant	TFAA TCSG	

2.12 Legal Entity Identifier

In Reuters MIFID support following TOF fields contains legal entity identifier (LEI):

- 15446 Submitting entity identification code
- 15462 Buyer identification code
- 15463 Seller identification code



The LEI value of these fields is resolved to calypso legal entity name, similarly, as seen in the previous section Counterparty Mapping.

2.13 Defining TOF Mapping

The TOF Mapping Window (menu action: tof.mapping.TOFMappingWindow) allows you to specify mapping rules between TOF and Calypso trades. As such, you can select conditions on one or more TOF fields to specify a Book, a CounterParty, a Broker, and a Trader. Please note that TOF Mapping will override all other mappings done by the TOF translator, counterparty lookup, etc. and give a final value to counterparty, trade book, trader, etc. to the Calypso trade.

The screenshot below shows the TOF Mapping Window.

TOF Mappings				
Import Mappings				
Trade Mappings	Id: 2502			
BOOK	Name: Book			•
· · · · · · · · · · · · · · · · · · ·	Priority: 1			
	Description: Book Ma	pping - Spot - USRC		
	TOF Conditions			
	Attribute	Operator	Name	Value
	TOF 504: Dealer ID	IS	504_DEALER_ID	USRC
	TOF 569: Pure Deal-type	IS	569_PURE_DEALTYPE	2
	Trade Assignments		Value	
	Book		FX LONDON	

In the screenshot above, you see the mapping named "Book". It is telling the system that when the incoming TOF message has the Pure Deal Type (Field 569) equal 2 and the Dealer ID (Field 504) equal USRC, then the trade book FX_LONDON is assigned to the Calypso trade.

Now we will go through the steps of defining a TOF mapping. Firstly, in the TOF Mapping Window, click the "New" button.



Select Name	me for Mapping
Search text:	
Please selec	ct Name for Mapping
Book	
Book	

Now let's add the TOF condition. Click on the "New condition" icon. Choose Subtype (a TOF message field), operator, value for the condition and then click OK.

Attribute Cond	lition
Type:	TOF
Subtype:	504: Dealer ID 🔹
Operator:	IS 🔹
Value:	USRC
Name:	504_DEALER_ID

The system supports the following operators for comparing values:

- IS (equal)
- IS NOT (not equal)
- IN (in the list defined in Value field, comma separated)
- NOT IN (not in the list defined in Value field, comma separated)
- LIKE (similar to the pattern in Value field, % as wildcard)
- NOT LIKE (not similar to the pattern in Value field, % as wildcard)
- ASSIGN (assign the TOF message field value to an internal variable, which could be referred by the Trade assignment in the next part)

Similarly, the TOF conditional for Pure Deal Type (field 569) could be added as well.

Then add a Trade assignment. Click on the "New Assignment" icon. Choose "Book" and then click OK.





Choose the book FX_LONDON and then click OK.

🔀 Attribute Assig	nment X
Type:	Book
Value:	FX_LONDON

Finally, click the "Save" button. The TOF mapping is then saved.

Id: 2502			
Name: Book			•
Priority: 1			
Description: Book Map	ping - Spot - USRC		
TOF Conditions			
Attribute	Operator	Name	Value
TOF 504: Dealer ID	IS	504_DEALER_ID	USRC
TOF 569: Pure Deal-type	IS	569_PURE_DEALTYPE	2
Trade Assignments		Value	
Book		FX_LONDON	
	Id: 2502 Name: Book Priority: 1 Description: Book Map TOF Conditions I I I I TOF Conditions I I I I Attribute TOF 504: Dealer ID TOF 569: Pure Deal-type Trade Assignments I I I I I I I I I I I I I I I I I I I	Id: 2502 Name: Book Priority: 1 Description: Book Mapping - Spot - USRC TOF Conditions TOF Conditions TOF Conditions TOF 504: Dealer ID TOF 504: Dealer ID TOF 504: Dealer ID IS TOF 569: Pure Deal-type IS Trade Assignments Trade Assignments Trade Assignments Attribute Book	Id: 2502 Name: Book Priority: 1 Description: Book Mapping - Spot - USRC TOF Conditions Image: Conditions Image: Conditions Image: Conditions

The mappings rules will be executed in alphabetical order of the category they belong to. In some cases, TOF Mapping could have more than 1 mapping under the same category (e.g. Book) with priorities 1, 2, 3 and so on. The



mapping with priority 1 will be attempted first. If all TOF conditions are met, that particular assignment is applied. If not all the conditions are met, then the mapping with priority 2 will be tried, and so on. If none of the mappings under the category Book could be applied, a mapping error will be attached to the TOF Message. It is a good idea to have a catch-all mapping with priority, say, 9999, that ensures that you will be setting some default BOOK if none of the other criteria match.

Please add TOF Mapping for Fixing Rate Name, if the module is expected to process TOF FX NDF trade messages. A sample setup is shown in the screenshot below. Please note that the value of FixingResetName should be one of those defined in Calypso via **Navigator > Configuration > Foreign Exchange > FX Rate Definitions Window**.

Z TOF Mappings				
Import Mappings				
Irade Mappings	Id: 2	507		
🕀 🚂 Book Mapping 1	Name: F	X Reset Name]
FX Reset Name	Priority: 1			
E Local DTS TCID	Description: F	X Reset USD/BRL		
±™ Trade Keyword Mapping	TOF Conditions -			
	📑 🖉 😒			
	Attribute	Operator	Name	Value
	TOF 517: Current	y 1 IS	517_CURRENCY_1	USD
	TOF 518: Current	:y 2 IS	518_CURRENCY_2	BRL
	Attribute		Value	
	FixingResetName		BRLUI	

2.14 FX Swap Mapping

For FX Swaps with inverse rate direction (negotiated currency is Quoting currency instead of Primary currency), the far rate is the inverse far rate. To obtain the proper far rate, you can set FlipOnInverse = true in the Calypso Mapping window (menu action mapping.CalypsoMappingWindow) for the TOF config.

Zalypso Mapping Window		
Interface Mappings	\$	
	Name:	
	Interface Value:	FlipOnInverse
	Calypso Value:	true
Entropolities Config	Reverse Default:	



2.15 Flexi Forward Support

For TOF Spot and TOF Outright messages, if the mapped counterparty is non-financial, the messages will be converted to Calypso Flexi Forward trades with subtype Merchant FX.

The screenshot below shows the setup of a non-financial counterparty legal entity.

🟒 Legal Entity	- Version - 1 [14	2007/LOCAL_V14200	0/calypso_us	er]	
Utilities Help	ρ				
Short Name	CALYPSO		Status	Enabled	•
Full Name	CALYPSO		Role	CounterParty	
Parent				ProcessingOrg	
Country	NONE	▼]			
Inactive As Fr		User calypso_user			
Entered Date	06/06/2012	8:15:47 PM			
External Ref			isabled Role(s)	1	
Holidays	NYC	Financia Non Fin	ancial		
				Triparty Substitu	utions

If you want to book these trades as FX Spot and FX Forward respectively, you can set the desired result product type using TradeType in the Calypso Mapping window (menu action mapping.CalypsoMappingWindow).

Interface Mappings		
InterfaceName	Name:	TOF/TradeType
	Interface Value:	FXSpot
TOF	Calypso Value:	FXSpot
TradeType	Reverse Default:	
Street Spot	<< Add	
 MapForwardTradeOnNonSpotDateAs MapForwardTradeOnSpotDateAs 	>> Remove	
Map SpotTradeOnNon SpotDateAs Map SpotTradeOn SpotDateAs	Configure Interf	1
	Configure Types	1

2.16 Structured Flows Support

Reuters TOF can be configured to save Money Market (Deposit) TOF message as Structured Flows trade or Cash trade in Calypso.

Configuration is provided in the Calypso Mapping window (menu action mapping.CalypsoMappingWindow) as shown below. Default support is enabled for Structured Flows, to enable Cash trade support mapping value should be kept empty.





You also need to use the following mapping to determine the direction type:

Name = TOF/Config

Interface Value = StructuredFlowsDirectionType

Calypso Value = Interest or Principal

2.17 Log Categories

For debug purpose, if necessary, add the following log categories to the Calypso logger.

- Messaging
- Detail
- DTSConnection
- TOFMessage
- ReutersTOF
- ReutersTOF.FILE

2.18 Customizing TOF Import

You can create custom TOF import classes in tk.tof.domain.importing that implement com.calypso.tk.tof.domain.importing.TOFImportMapper. The fully qualified class names must be registered in the domain "TOFImportTask".



Execution

3.1 Starting the Reuters TOF Simulator (Optional, for testing purposes)

Only the TCP/IP mode is supported by the Calypso Reuters TOF Module

Start the Reuters TOF Simulator (see section 2.5 for installation) only if you are on testing purposes.

Please refer to the Thomson Reuters TOF Simulator User Guide for installation or usage details.

3.2 Starting the Reuters Deal Tracker Server (Live feed)

Follow the instructions from Reuters. Note that you do not need to start the Reuters TOF Simulator when using the Reuters DTS Server live feed.

3.3 Starting the DTS Engine

You can start the DTS Engine through the Engine Server Web Admin.

When the DTS Engine starts, it does the following:

- Connect to the Calypso Data Server.
- Find all Reuters DTS deals that have been retrieved from the DTS server and stored into the Calypso database with only mapping errors are reprocessed and mapped to Calypso Trades.
- Retrieves all the configured DTS Connections and tries to connect to the respective Reuters DTS servers.
- Restores the state of the previous DTS Engine session. That is, the DTS Engine remembers the last deals that it
 retrieved from the DTS server for each TCID, and starts retrieving deals from the DTS server after those deals.
 The DTS Engine also requests that the DTS server alert the DTS Engine whenever there is a new deal added to
 the DTS server.
- After a deal has been retrieved from the DTS server, the DTS Engine checks the deal for validity (that is, for correct formatting and to make sure all expected data fields have been sent by the DTS server). If the deal is not valid, DTS Engine reconstructs the last deal and requests it again from DTS Server.
- If the DTS deal is valid, the DTS Engine submits the deal to the Data Uploader for translation and persisting as a Calypso trade. If the DTS deal is not valid, the DTS Engine flags that it could not be mapped. The user must then check the deal in DTS Monitor window directly and fix any problems before the DTS Engine can retrieve it and try to map it again.
- The product of the trade is determined by the pure deal type (field 569) and the fixing date (field 554) of the DTS deal. (For the value of pure deal type (field 569), 2: Spot, 4: Outright (deliverable) or regular FX NDF, 8: FX Swap, 16: Loan/Deposit. Fixing date (field 554) is only present for regular FX NDF.)

INOTE: Run only ONE instance of the DTS Engine at a time



3.4 Starting the DTS Connection Monitor Window

Open the DTS Connection Monitor window (Navigator Menu is configured in section 2.3).

DTS E	ingine Monito	r Windo	w		_ 🗆 🗙
Deal T	racker Servers:				
Tcid	Hostname	Port	Last Ticket Num	Last Processing Time	Status
CIMD	localhost	5003	70		Not Connected

The window displays all the possible DTS connections based on the DTS configurations. By default all the connections are in status "Not Connected".

The following information is displayed on then monitor window:

- Tcid of the DTS Server
- Host name of the DTS Server
- Port number of the DTS Server
- Last Ticket Number processed by the DTS Engine
- "Last Processing time" is the time at which the last message from the DTS Server was processed
- Status "Connected" Indicated the DTS Connection is live. "Not Connected" indicates that the connection was terminated or never started.

3.5 Starting the TOF Message Monitor Window

Open the TOF Monitor window (Navigator Menu is configured in section 2.5).

3.5.1 Loading TOF Messages

The Messages tab shows the TOF message information. Note that information for all TOF messages are displayed, whether the deal was mapped to a Calypso trade or not.

TOF messages that have a trade id > 0 are deals that have been mapped to a Calypso trade.

A TOF message with trade id = -1 is a contra deal, and thus does not need to be mapped to a Calypso trade. Instead, the original deal for which this deal is a contra will be cancelled.

A TOF Message that with no trade Id is a deal that either has not been mapped yet or the mapping was attempted but either there was not enough information to do so or there was an error in the data transmission from DTS for that deal.



A TOF Messa	age Monitor (User: cal	ypso_user)					
<u>File</u> <u>T</u> ools							
Start: /03/2015 End: /03/2015 📝 Include Mapped Messages							
Messages Errors							
TOF ID	Ticket Number	Trade ID	Entered Datetime	Is Contra Deal?	Has Errors?		
					Hub Errora:		
13502	2 SIMB#22	224465	25/03/15 16:35:27.537 o'clock HKT				
13502 13501	2 SIMB#22 1 SIMB#21	224465 224466	25/03/15 16:35:27.537 o'clock HKT 25/03/15 16:35:27.537 o'clock HKT				
13502 13501 13502	SIMB#22 1 SIMB#21 2 SIMB#20	224465 224466 223965	25/03/15 16:35:27.537 o'clock HKT 25/03/15 16:35:27.537 o'clock HKT 25/03/15 13:04:09.769 o'clock HKT				
13502 13501 13002 13001	2 SIMB#22 1 SIMB#21 2 SIMB#20 1 SIMB#19	224465 224466 223965 223966	25/03/15 16:35:27.537 o'clock HKT 25/03/15 16:35:27.537 o'clock HKT 25/03/15 13:04:09.769 o'clock HKT 25/03/15 13:04:09.769 o'clock HKT				
13502 13502 13002 13002 13001 12002	2 SIMB#22 1 SIMB#21 2 SIMB#20 1 SIMB#19 2 SIMB#16	224465 224466 223965 223966 222966	25/03/15 16:35:27.537 o'clock HKT 25/03/15 16:35:27.537 o'clock HKT 25/03/15 13:04:09.769 o'clock HKT 25/03/15 13:04:09.769 o'clock HKT 25/03/15 13:54:02.142 o'clock HKT				

Select start and end dates and click **Load** to load DTS deal info.

You can double-click on a TOF message to get the full details.

1 🛃	FOF Messa	ge (User: calypso_user)		X			
<u>F</u> ile	e						
	ID: 13002						
	Trade ID:	223965					
	Trude 10.	225505					
	Tag:	AA					
	TCID:	SIMB					
1	Ticket Num:	20					
Fiel	d Liet Num	501		_			
Fiel	u List Num;	301					
	Updated:	25/03/15 13:04:09					
	Fields Erro	ors					
ID	Name		Value				
500	Source of D)ata	3				
501	Source Ref	erence	OR_1012				
502	Date of Dea	al	5 SEP 2001				
503	Time of De	al	12:00:43				
504	Dealer ID		SH				
505	Date Confir	med	5 SEP 2014				
506	Time Confi	rmed	12:01:51				
507	Confirmed-	by ID	USRE				
508	Bank 1 Dea	ling Code	BNP				
509	Bank 1 Nan	ne	TWENTYFOUR KS SIM A				
510	Broker Dea	ling Code					
511	Broker Nam	1e					
513	513 Bank 2 Name						
514	Deal Type		1				
515	5 Period 1		23				
517	17 Currency 1		EUR				
518	Currency 2		USD				
519	Deal Volum	e Currency 1	3000000.00				
522	Exchange R	Rate Period 1	1.0033				
524	Rate Direct	ion	1				
525	Value Date	Period 1 Currency 1	7 DEC 2014				
526	Value Date	Period 1 Currency 2	7 DEC 2014	-			



If the TOF Message has been mapped to a Calypso Trade, you can double-click on the "Trade ID" label or from the TOF Message Monitor Window via the popup menu "Trade Details" to open the trade. (In order to open a trade from the DTS Mapper Monitor window by double clicking a row, you need to have the proper Trade Window Configuration. Refer to Trade Window Configuration in the Appendix for details.) The popup menu could be brought up by right clicking a specific message entry in the Messages tab.

The trade will be shown in a corresponding Trade Window.

Z -	Buy or Sell				Trade 1	id: <u>223</u>	965	Status: PR	LICING		10:03:2	21	- 🛛
	Deliverable	Туре		Buy/Sell		Co	y Pair		Book			Counter	party
	Deliverable	Outright		Buy		EL	R/USD	CMF_D	TS_TRADE_BO	ЮК		CALYPSO	- I
Ссу	EUR Amount 1	30,000,000	00 Date	07/12/2014 Spc	ot		1.0033	Margin		0.00	\$	EUR	USD
	Amount 2	-30,099,000	00	Poi	nts		0.00	Final		1.003300	Near	0.63981	0.63981
				Tra	der		1.003300				Near 29	EUR ,952,622.22	USD -30,051,465.8
Com	ments	* *	Final Margin:	0.	.00 De	elivery	Unknown	Non-Strip	Option?	Limit	ts SA	VE(F5)	NEW(F6)
×	Back to Back 🛛 💢 🤇	Currency Split 🛛 💢 Sp	ot Risk Transfer	· 🗙 Fwd R	isk Trai	nsfer	Details			Keywor	ds		
Def	ault		Iser Override				Trade Date	05/0	9/2014	Q- Filte	er Keywo	ords	
5	Split Currency		Base Split Boo	ok			Alternate Se	ttl		Strat	tegy		
F	rimary Book		Quoting Split	Book			Far leg Alter	n		Brok	er		
0	Juoting Book	Ψ.					Trader Mirror Trade	TR/	DER1	CLS		false	
							Saloc		IE	CLS	ELIGIBLE	E	
Prev	viewed Trades Act	ual Trades					Broker	NUI		SPO	T_MAR		
Rou	ited Trades Positio	ne					Role	Cou	nterParty	Late	TradeD		=
	ited frades rositio	115					Action	CAN	ICEL	Late	I radeD	•	
Boo	k	Currency Pair Prin	nary Qu	oting	ID	Тур	Internal Ref.			тит	T DDEA		
CMF	DTS TRADE BOOK	(EUR/USD 30,0	00,000.00 (30,	099,000.00)	223965	Origi	External Ref.	. DTS	_OR_1	LIMI			
							Bundle Type			Sale	sB2B		
							Bundle Name	e	1000	Sale	sB2BFr		
							CLS Deine a Declaration	-		Sale	sB2BTo		
•		III				•	Prime Broke	r		Save	dSales		
11	Routing 🖂 Report	ing Currency Split Rate								Save	dTrans.		-
<u> </u>		5 ·····/ ····											

3.5.2 Viewing Mapping Errors

You can view mapping errors in the Errors tab.

TOF Message Monitor (User: calypso_user)	
File Tools	
Start: 27/03/2015 End: 27/03/2015 📝 Include Mapped Messages	Load
Messages Errors	
TOF Message ID Error Type Field ID Description	
7501 Mapping [InvalidData] Item: Trade Action, Message: Trade Already exists with External Reference, Value: DTS_SPOT_2573	
7001 Mapping [InvalidData] Item: Counterparty, Message: Invalid Counterparty, Value: Chicago Mercentile Exchange	
6504 Mapping [InvalidData] Item: IsValid has returned an error, Message: Trade isValid Method Failed. Not a Valid Deal., Value: Settle Date [2	014/ 12/ 07]
6503 Mapping [InvalidData] Item: IsValid has returned an error, Message: Trade isValid Method Failed. Not a Valid Deal., Value: Settle Date [2	014/ 12/ 07] 📟
6502 Mapping [InvalidData] Item: IsValid has returned an error, Message: Trade isValid Method Failed. Not a Valid Deal., Value: Settle Date [2	014/ 12/ 07] 🔻
< III III III III III III III III III I	4
	Close



Appendix

4.1 Trade Window Configuration

In order to open a trade from the DTS Mapper Monitor window by double clicking a row, you need to have the proper Trade Window Configuration (**Navigator > Configuration > User Access Control > Trade Window**).

A Trade Window Config (User: calypso_user)							
Config Name	DealStation]				
Product Type	Product Sub Type	Complete	Class Name				
▼ FXSwap	✓ ALL	dealStation	n.DealStation\$FX				
▼ FXForward	⊤ ALL	dealStation	n.DealStation\$FX				
▼ FX	▼ ALL	dealStation	n.DealStation\$FX				

The Trade Window Config must be set in the User Defaults.

Vser Defaults	s (User: calypso_u	ser)					X
User	calypso_user	•	User Type	System		•	
E-Mail							
Default Directory							
Currency	USD	•	Language	English		•][
Trade Filter	ALL	•	Time Zone	PST		•]	
Book	Global	•	Holidays	HKG			
Trader Name	NONE	•	Book Hierarchy	NONE		•]	
Marketplace	NONE	•	Sales Person	NONE		•]	
Security Code	NONE	•	Market Type	NONE		•]	
Default Index	NONE	•	Bond Type	NONE		•	
Rate Decimals	5		Pricing Env	INTRADAY	1	•	
Country	UNITED STATES	•	Trade Reference	ID		•]	
Event Filter				Att	ributes		
Оре	n CWS on startup	Tra	ade Window Config	DealStatio	n	•	
Clea	ar Trade After Save			Те	mplate		

4.2 Trade Keywords

The following trade keywords will be added by the Reuters TOF Module:



- DealOrigin: Field 500
- DealOriginType: Field 500
- DTS_Id: The ID assigned by the DTS Engine to the raw DTS deal after it has been read by the DTS Engine and before it has been mapped
- DTS_LOCAL_TCID: Local TCID (field 551)
- DTS_TicketNum: The TCID and ticket number of the DTS deal from the originating dealing system, such as from the Reuters or EBS dealing system
- EBS_ReferenceNum: Field 562
- ElectronicBrokerage: Field 540
- ContraDeal_DTS_Id: Field 567
- DTS_NegotiatedPrice: Field 522
- DTS_RateDirection: Field 524

MIFID Keywords

Trade Keyword	Description	TOF FID
ReportingMIFIDTransactionIdentifier	Generated or user submitted per transaction	15458
ReportingMIFIDTransactionIdentifier Leg2	Generated or user submitted per transaction	15459
ReportingMIFIDOTCPostTradeIndicator	Selectable flags submitted per transaction	15438 15439 15440 15441
ReportingMIFIDWaiverIndicator	Selectable flags submitted per transaction	15453 15460
ReportingMIFIDSecuritiesFinancingTxnIndicator	Securities financing transaction identifier	15454
ReportingInvestmentDecisionMaker	User submitted per transaction, can be defaulted based upon user logged in	15455
ExecutionVenueMIC	MICs taken from static, selectable on a transaction	15435
ExecutionVenue	Venue type	15303





Trade Keyword	Description	TOF FID
InstrumentISIN	Instrument identification code	15431
InstrumentISIN Leg2	Instrument identification code Leg2	15432
InstrumentFullName	Instrument full name	15433
InstrumentFullName Leg2	Instrument full name Leg2	15434
ReportingMIFIDCounterparty	Calypso Legal entity for the corresponding party selected in ReutersTOF as the Reporting Party	15446
ReportingTradingCapacity	Trading capacity Refer section. Legal entity identifier for further detail.	15448
ExecutionDateTime	Trading date and time microseconds	15427
ReportingMIFIDTransactionReferenceNumber	Transaction reference number	15443
ReportingMIFIDTransactionReferenceNumber Leg2	Transaction reference number leg2	15449
ReportingMIFIDSecuritiesFinancingTxnIndicator	Securities financing transaction indicator	15454

Order Details Keywords

Keyword	Description	TOF FID
TypeOfOrder	Execution Type	15442
OrderTransmission	Transmission of order indicator	15447
OrderBuyer	Calypso Legal entity for the corresponding party selected in ReutersTOF as buyer identification code.	15462
	Refer section. Legal entity identifier for further detail.	



Keyword	Description	TOF FID
OrderSeller	Calypso Legal entity for the corresponding party selected in ReutersTOF as seller identification code Refer section. Legal entity identifier for further detail.	15463