



Nasdaq Calypso

Northern Trust Interface

Version 5.0.3

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Approved

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Document History

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1.0	Sep 2016	New Document
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3.0	Nov 2016	Service Pack 3.1.0 Nov 2016
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17.0	May 2021	Changes for version 4.4.2, 4.5.0

Revision	Published	Summary of Changes
18.0	October 2021	Release Notes are now provided in the PBFA Module Release Notes, and Core Calypso Monthly Release Notes.
19.0	November 2021	Changes for version 4.10.0 - Added Port attribute to INTERFACE_FEED_NT scheduled task
20.0	February 2022	Updated for version 5.0.0, 5.0.1, 5.0.2, 5.0.3 - - Technical release only – Version 17.0 compatibility

This document the interface between Northern Trust and Calypso.

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Introduction

The Calypso NT Interface runs as a Scheduled Task in Calypso. This can be configured to run as an End of Day (EOD) process or as an Intraday process. The interface uses the NT (Northern Trust) XML specification and transfers files to NT using FTP.

The following sections in this document will help the users to configure NT & trades will be reported in the manner as specified by the client.

Interface Design

2.1 Scope

Products supported by the interface include the following:

- FX Option [Vanilla & Barrier] (FXO & FXOBAR)
- OTC Equity Option [Index & ETF] (IXO & ISO)
- OTC Commodity Option [Index & ETF] (IXO & ISO)
- OTC Fixed Income Option (ISO)
- CDS (CDS_SN)
- CDX [CCP] (CDS_IX)
- IR Swap (IRS)
- IR Swap [CCP] (IRS_CCP)
- IR Swaption (SWO)
- Equity TRS [Index & ETF] (EQIX)
- Commodity TRS [Index & ETF] (COMS_IX & COMS_IXER)
- Listed Futures (ETD)

2.2 Functional Analysis

The Calypso NT Interface consists of just one scheduled task (INTERFACE_FEED_NT), which exports trade data to NT.

2.2.1 Assumptions

User has the valid credentials to update data to NT. This information must be provided in the appropriate fields in the scheduled task configuration.

All data uploaded to NT is in XML format.

All communication with NT is done over FTP.

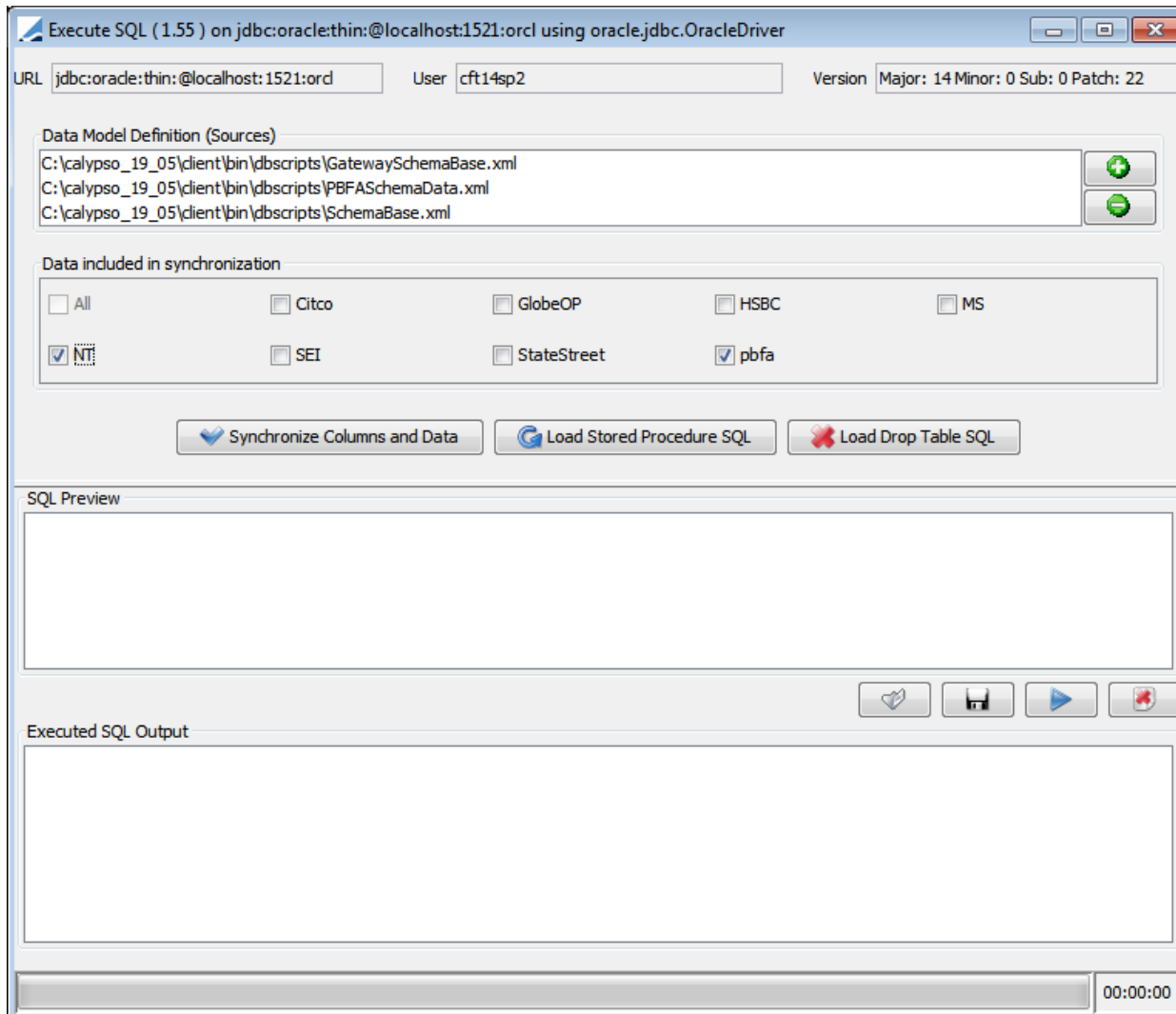
User has datauploader - jar in CLASSPATH. This should already be present in the package delivered. **Note** that if Uploader is used for some other purpose (other than NT), it needs to be licensed separately.

List of jars required in the CLASSPATH:

- calypso-cal-upload-xxx.jar
- calypso-datauploader-xxx.jar
- calypso-pbfa-xxx.jar
- sjsxp-xxx.jar

2.2.2 Configuration

All the domain values and mapping types are inserted in the database by running Execute SQL. In the Execute SQL window, add the “SchemaBase.xml” file (found in release), “GatewaySchemaBase.xml” (found in datauploader) and “PBFASchemaData.xml” as shown in the screenshot below:



After these pre-requisites are available, you can proceed with Calypso Configuration. This typically involves:

- Trade Filter need to be configured with appropriate product types.
- Scheduled Task INTERFACE_FEED_NT needs to be configured. Calypso Scheduler should be running for configuration and execution of ST INTERFACE_FEED_NT.

2.2.3 Trade Filter

Create a Trade Filter as shown below. Select the required Product Type/ Product Family.

Trade Filter [140022SP2/cft14sp2/calypso_user]

Name: NT-TradeFilter Time Zone: NONE

Comment: Holidays: ...

☐ Use SQL Parent: NONE

☐ Check Holidays

☐ Cache trades on load ☐ Set as default parent

Underlying Security	Post Processing	Position Spec	Counterparty	Fund	Diary Criteria
Ranges	Date / Time	Product Criteria		Trade Criteria	

Currency ☒ IN ...

Product Type ☒ IN vwap,EquityStructuredOption,FXOption,Swap,CreditDefaultSwap,Swaption ...

Product Family ☒ IN Future ...

Rate Index ☒ IN ...

Ccy Pair ☒ IN ...

Sub Type ☒ IN ...

Extended Type ☒ IN ...

Product Id ☒ IN ...

Sec Code ...

Description: Like ...

Market Place ☒ IN ... ☐ Check

Has Leg Types ☒ IN ...

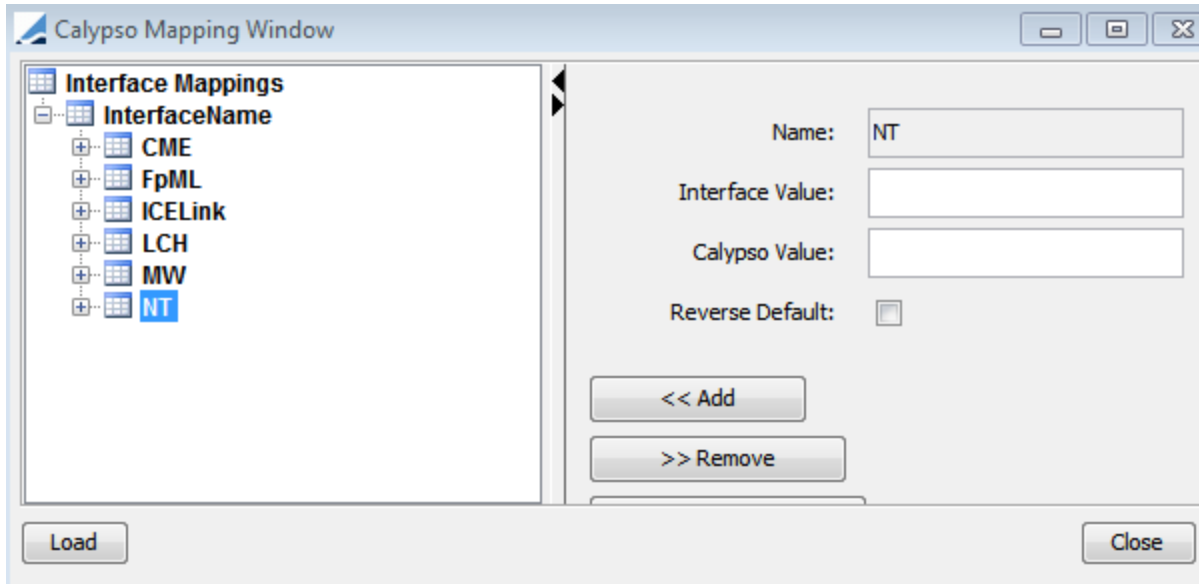
Reference Entity: ... ☒ IN

Select Product Type(s) and/or Group(s) of Product Types

Available	Selected
G.Bonds	CDSIndex
G.Credit Derivatives	EquityLinkedSwap
G.Credit Options	EquityStructuredOption
G.Equity	FXOption
G.FX (Msgs)	Swap
G.Forex	CreditDefaultSwap
G.Futures	Swaption

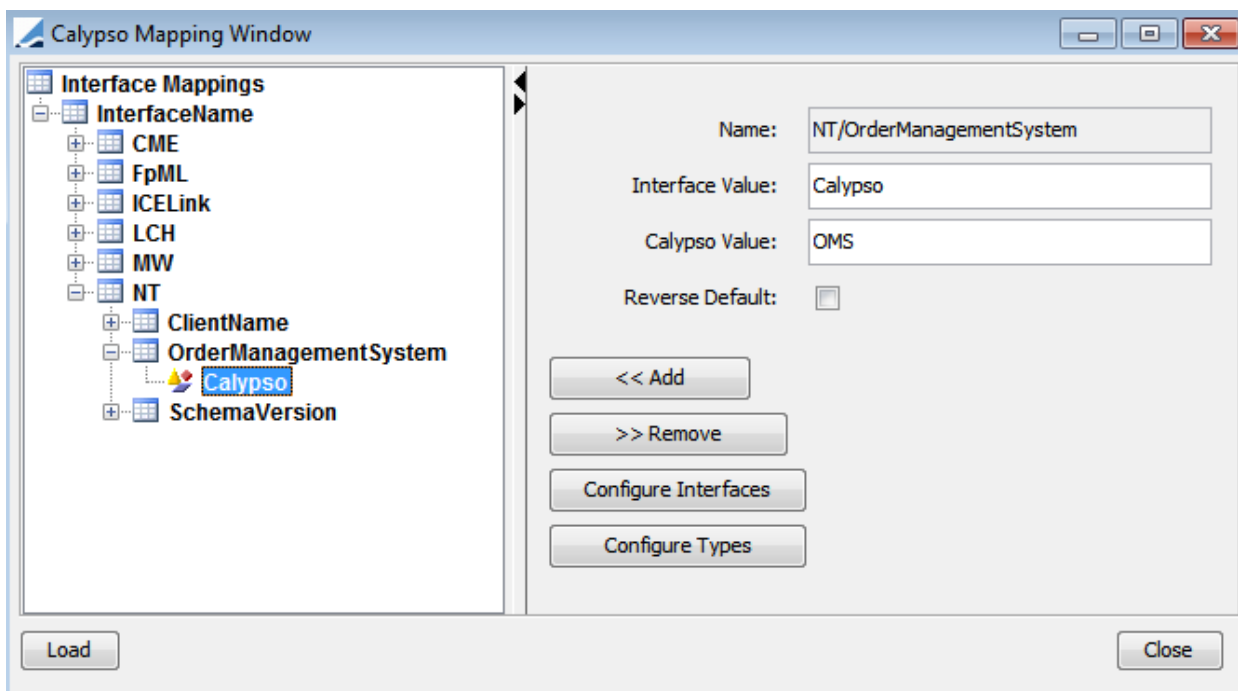
2.2.4 Calypso Mapping and Domain Value

In Calypso Mappings window, add a new InterfaceName “NT” as shown below:



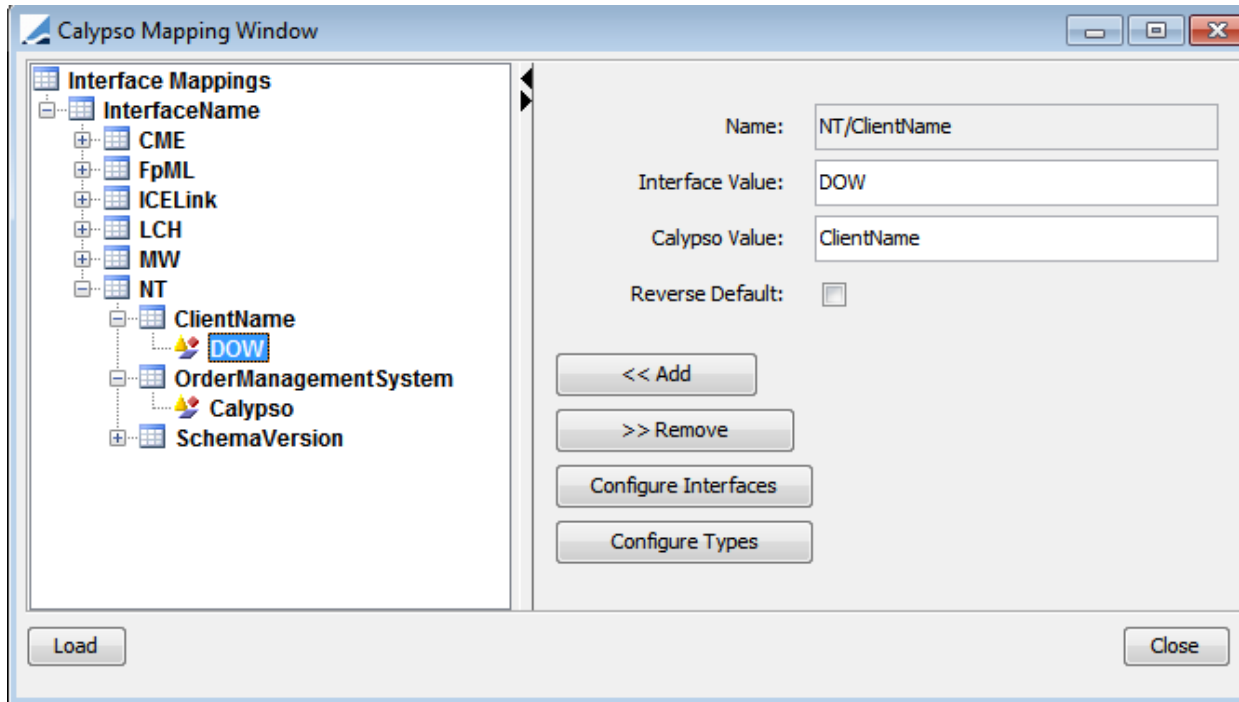
Under NT, create a new key called “OrderManagementSystem” where,

- Interface Value = Calypso
- Calypso Value = OMS



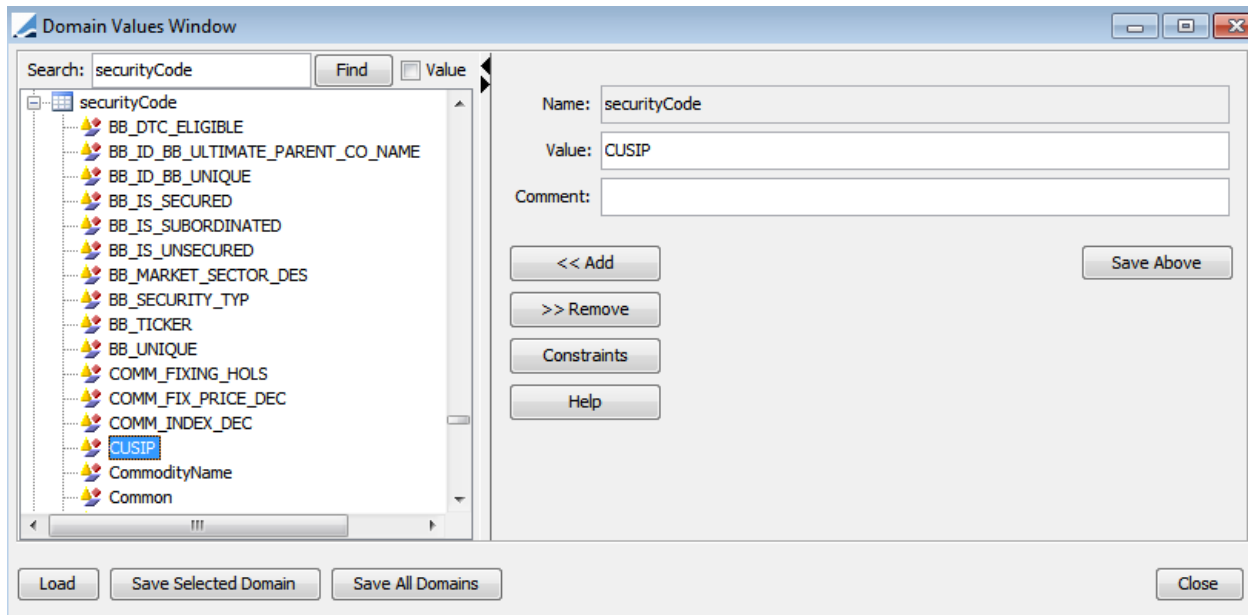
Under NT, create a new key called “ClientName” where,

- Interface Value = DOW
- Calypso Value = ClientName



Setup Domain Value “securityCode” with the following values:

ISIN, CUSIP, TICKER, BB_SYMBOL, SEDOL, BLOOMBERG, RIC, REUTER



2.2.5 Exporting - Scheduled Task (INTERFACE_FEED_NT)

This scheduled task uploads the Trade Report Data to NT.

It requires a trade filter to filter the trades that will be sent.

The scheduled task uses the following attributes to describe where and how the xml file is sent.

Common Attributes	Description
Trade Filter	Specifies the Trade Filter to be used for execution
Pricing Env	Specifies the Pricing environment to be used for execution

Task Attributes	Description
Interface Name	Always "NT"
Instance	A human-readable name to uniquely identify the task. This is particularly useful when you have multiple scheduled tasks to configure.
Output Folder	C:/PBFA/NorthernTrust (To generate the Output File)
Output File Name	Set the prefix for the output file name. Usually "NT_FEED_".

Task Attributes	Description
Report Type	Always "PBFATrade"
Start Date <MM/dd/yyyy>	Start Date ->Empty when Using Trade Filter (or) for trades created today.
End Date <MM/dd/yyyy>	End Date ->Empty when Using Trade Filter (or) for trades created today.
TransportType	FTP or SFTP
HostName	Host Name
UserName	Login Name
Password	Login Password
Destination	Destination url
Load Type	<Leave Blank>
Proxy Type	DIRECT
EndOfDay	Yes -> Current ST execution is EndOfDay. No -> Current ST execution is IntraDay.
Port	Port number for transport type SFTP. It defaults to 22 if not set.

As per the user requirement, two instances of scheduled Tasks can be maintained, one with EndOfDay attribute as Yes and other with No.

Accordingly, the triggers should be configured for each task.

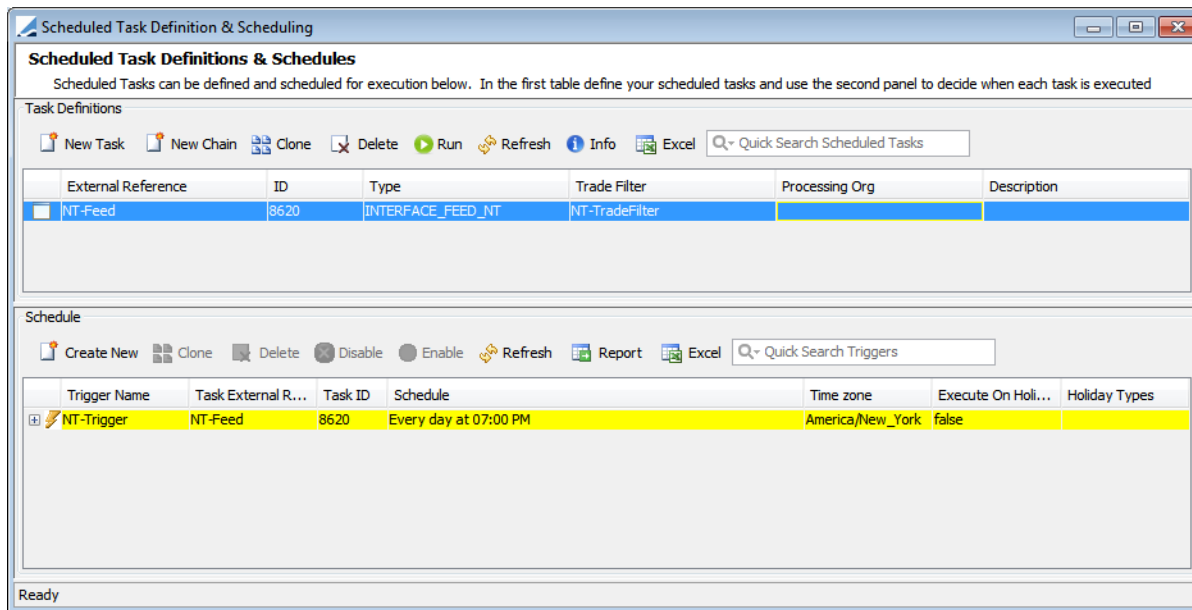
2.2.6 Output File Name

The transformed files will be saved in the output directory specified in the scheduled task attribute "Output Folder" having the file name prefix specified in the scheduled task attribute "Output File Name".

Output Folder	C:/PBFA/NorthernTrust (To generate the Output File)
Output File Name	Set the prefix for the output file name. Usually "NT_FEED_".
Report Type	Always "PBFATrade"

The resultant file name will have the "<prefix_specified><timestamp>.xml". For example, with the above configuration, one of the files generated would look like "NT_FEED_20160915064759.xml".

Below screenshot shows the scheduled task window showing the INTERFACE_FEED_NT scheduled task.



Scheduled Task Definition & Scheduling

Scheduled Task Definitions & Schedules
Scheduled Tasks can be defined and scheduled for execution below. In the first table define your scheduled tasks and use the second panel to decide when each task is executed

Task Definitions

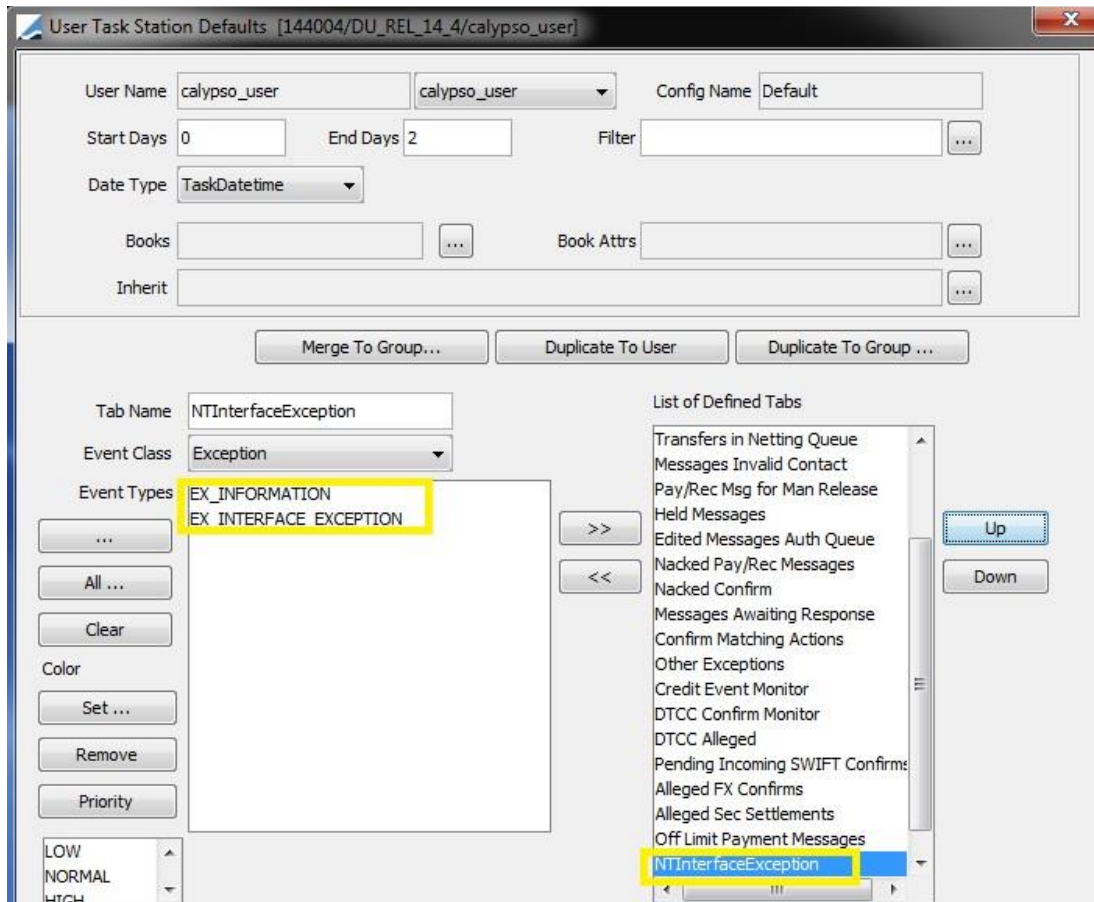
External Reference	ID	Type	Trade Filter	Processing Org	Description
NT-Feed	8620	INTERFACE_FEED_NT	NT-TradeFilter		

Schedule

Trigger Name	Task External R...	Task ID	Schedule	Time zone	Execute On Holi...	Holiday Types
NT-Trigger	NT-Feed	8620	Every day at 07:00 PM	America/New_York	false	

Ready

Any errors during execution of the INTERFACE_FEED_NT scheduled task can be viewed from the task station. The task station displays all the validation errors that occurred while sending the trades to NT.



User Task Station Defaults [144004/DU_REL_14_4/calypso_user]

User Name: calypso_user | calypso_user | Config Name: Default

Start Days: 0 | End Days: 2 | Filter: | ...

Date Type: TaskDatetime

Books: | ... | Book Attrs: | ...

Inherit: | ...

Merge To Group... | Duplicate To User | Duplicate To Group ...

Tab Name: NTInterfaceException

Event Class: Exception

Event Types: EX_INFORMATION, EX_INTERFACE_EXCEPTION

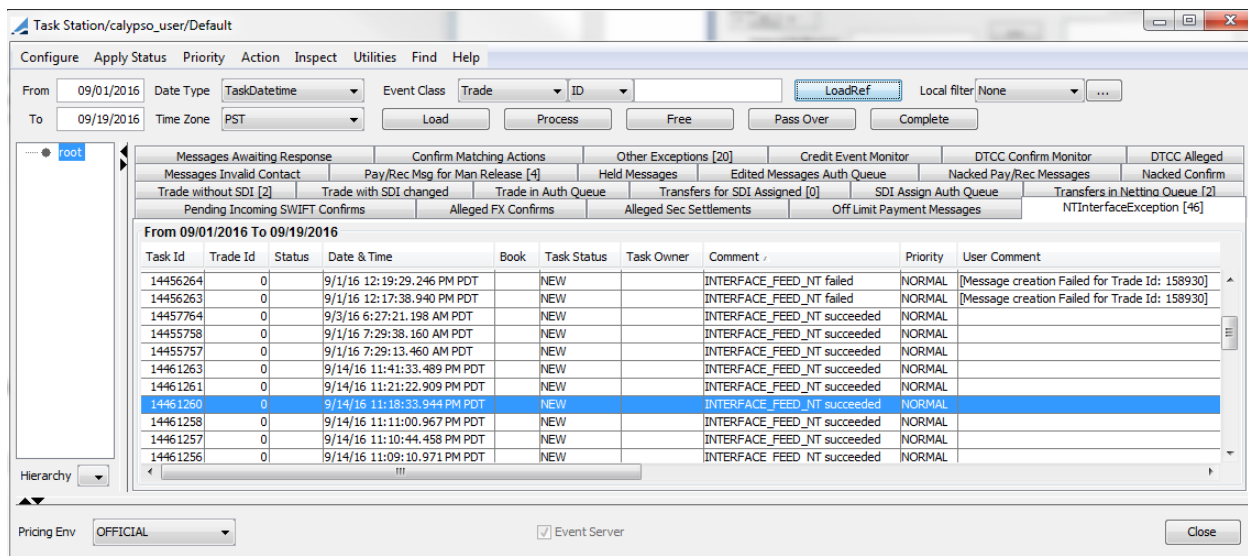
Color: LOW, NORMAL, HIGH

List of Defined Tabs:

- Transfers in Netting Queue
- Messages Invalid Contact
- Pay/Rec Msg for Man Release
- Held Messages
- Edited Messages Auth Queue
- Nacked Pay/Rec Messages
- Nacked Confirm
- Messages Awaiting Response
- Confirm Matching Actions
- Other Exceptions
- Credit Event Monitor
- DTCC Confirm Monitor
- DTCC Alleged
- Pending Incoming SWIFT Confirms
- Alleged FX Confirms
- Alleged Sec Settlements
- Off Limit Payment Messages
- NTInterfaceException

Up | Down

The below is the screenshot of task station displaying the errors:



Task Station/calypso_user/Default

Configure | Apply Status | Priority | Action | Inspect | Utilities | Find | Help

From: 09/01/2016 | Date Type: TaskDatetime | Event Class: Trade | ID: | LoadRef | Local filter: None | ...

To: 09/19/2016 | Time Zone: PST | Load | Process | Free | Pass Over | Complete

Messages Awaiting Response | Confirm Matching Actions | Other Exceptions [20] | Credit Event Monitor | DTCC Confirm Monitor | DTCC Alleged

Messages Invalid Contact | Pay/Rec Msg for Man Release [4] | Held Messages | Edited Messages Auth Queue | Nacked Pay/Rec Messages | Nacked Confirm

Trade without SDI [2] | Trade with SDI changed | Trade in Auth Queue | Transfers for SDI Assigned [0] | SDI Assign Auth Queue | Transfers in Netting Queue [2]

Pending Incoming SWIFT Confirms | Alleged FX Confirms | Alleged Sec Settlements | Off Limit Payment Messages | NTInterfaceException [46]

From 09/01/2016 To 09/19/2016

Task Id	Trade Id	Status	Date & Time	Book	Task Status	Task Owner	Comment	Priority	User Comment
14456264	0		9/1/16 12:19:29.246 PM PDT		NEW		INTERFACE_FEED_NT failed	NORMAL	[Message creation Failed for Trade Id: 158930]
14456263	0		9/1/16 12:17:38.940 PM PDT		NEW		INTERFACE_FEED_NT failed	NORMAL	[Message creation Failed for Trade Id: 158930]
14457764	0		9/3/16 6:27:21.198 AM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14455758	0		9/1/16 7:29:38.160 AM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14455757	0		9/1/16 7:29:13.460 AM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461263	0		9/14/16 11:41:33.489 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461261	0		9/14/16 11:21:22.909 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461260	0		9/14/16 11:18:33.944 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461258	0		9/14/16 11:11:00.967 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461257	0		9/14/16 11:10:44.458 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	
14461256	0		9/14/16 11:09:10.971 PM PDT		NEW		INTERFACE_FEED_NT succeeded	NORMAL	

Hierarchy | Pricing Env: OFFICIAL | Event Server | Close

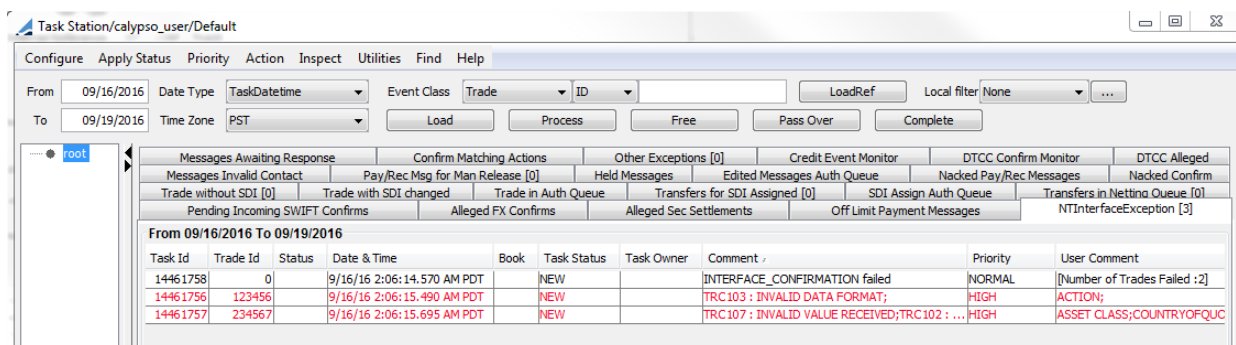
2.2.7 ACK/NACK Scheduled Task (INTERFACE_CONFIRMATION)

This scheduled task reads the acknowledgement messages received from NT and create a task station entry for any NACK message.

The scheduled task will use the following attributes to describe where to get the files and for which valuation date.

Attribute	Description
Interface Name	NT
Type	Confirmation
TransportType	LOCAL
HostName	Not used
UserName	Not used
Password	Not used
Destination	Not used
Working Folder	<User defined>
LocalValuationsFile	C:/PBFA/NorthernTrust/NTFileAcknowledgement_Trade.xml When transportType = 'LOCAL', specify local file location and file name
TradeAction	Not used
TradeFieldName	Not used
KeywordName	Not used
Proxy Type	DIRECT or PROXY (Please set this flag to proxy in case of proxy connection)

In case of NACK, task station entry will get created for the record



The screenshot shows the Task Station/Calypso User/Default interface. The main window displays a list of task station entries for the period from 09/16/2016 to 09/19/2016. The entries are filtered by 'Task Status' and 'Task Owner'. The table below represents the data shown in the screenshot.

Task Id	Trade Id	Status	Date & Time	Book	Task Status	Task Owner	Comment	Priority	User Comment
14461758	0		9/16/16 2:06:14.570 AM PDT		NEW		INTERFACE_CONFIRMATION failed	NORMAL	[Number of Trades Failed :2]
14461756	123456		9/16/16 2:06:15.490 AM PDT		NEW		TRC103 : INVALID DATA FORMAT;	HIGH	ACTION;
14461757	234567		9/16/16 2:06:15.695 AM PDT		NEW		TRC107 : INVALID VALUE RECEIVED;TRC102 : ...	HIGH	ASSET CLASS;COUNTRYOFQUC

2.3 Configure NT Interface properties file

Please configure interface.properties (available under resources directory). The sample file supplied should already be preconfigured for NT, but you may need to copy the configuration if you already have a setup for some other interface.

Note that you can leave the ENCRYPTION parameters blank if you want to test without encryption.

Also note that the text in bold **NT** has to match the "Interface Name" attribute in the Scheduled Task setup (section 2.2.4 above).

NT_ENCRYPTION_TYPE=

NT_ENCRYPTION_KEY=

NT_FILE_FORMAT=XML