

Nasdaq Calypso

Trade Bundles

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Approved



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Document History

Revision	Published	Summary of Changes					
1.0	February 2024	First revision for version 18.					
2.0	October 2024	Updates for version 18 monthly release - Updated the workflow rule GenerateBundleStatement.					

This document guides you through the setup and workflow of trade bundles.



Table of Contents

1. Defining Trade Bundles	4
1.1 Bundle Mirroring	6
1.2 Trade Bundle Attributes	8
1.3 Trade Bundle Audit	8
1.4 One Bundle Confirmation Setup	9
1.5 Modifying a Bundle	11
1.6 Deleting a Bundle	11
1.7 Associating a Bundle with a Trade	11
1.8 Security Financing Allocation compliance	11
2. Trade Bundle Workflow	13
2.1 Trade Bundle Workflow Creation	13
2.1.1 KickOff / CutOff	15
2.1.2 Other Trade Amendments	17
2.2 Bundle Task Station	17
2.3 Transfer Workflow	18
3. Trade Bundle Netting	19
3.1 Bundle Workflow Netting Rules	19
3.2 Bundle Netting Methods	20



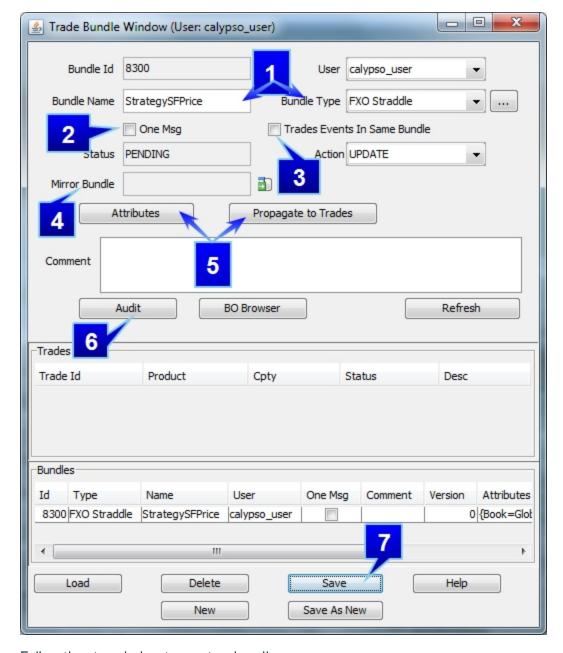
1. Defining Trade Bundles

A **bundle** allows associating trades in a medium-level relationship. A bundle is a loose link of several trades. All the trades in a bundle can be priced and analyzed together, but each trade in a bundle exists by itself.

From the Calypso Navigator, navigate to Configuration > Books & Bundles > Trade Bundle (menu action trading.TradeBundleWindow) to define bundles.

- A bundle is identified by its name throughout the system.
- The bundle name is always displayed as Bundle Type Bundle Name.
- The bundle will be associated with the trade during trade entry or on an amendment of the trade.
- A trade can belong to only one trade bundle. If there is a requirement to add a given trade to multiple groups, trade keywords should be used.
- Trade bundles should be used when there is a requirement to follow a group of trades through their entire lifecycle.
- Bundles can be used as a filtering criteria on many reports.
- The Action and Status fields are populated from the trade bundle workflow. The Status field is populated only if a trade bundle workflow has been defined. The options in the Action field are the actions available in the workflow.





Follow the steps below to create a bundle.

Step 1 - Enter a name in the Bundle Name field and select a type from the Bundle Type drop-down box. You can click next to the Bundle Type field to add new bundle types.

Step 2 - Check the "One Msg" checkbox if you would like to allow one bundle trade confirmation.

▶ See One Bundle Confirmation Setup for more information.

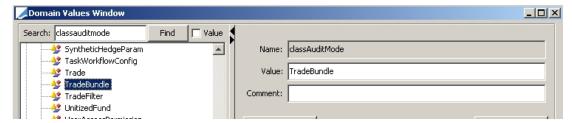


Step 3 - Select the 'Trade Events in the Same Bundle' check box to place underlying trades in the same bundle. If this option is selected, the trade resulting from physical option exercise or partial termination will be included in the trade bundle. By default, this option is not checked.

Step 4 - Click the button next to the Mirror Bundle field to designate a bundle that mirror trades in the bundle will go into. If no mirror bundle is designated and a trade in the bundle is mirrored, it will not go into any bundle.

Step 5 - Click Attributes to select and add attributes to the trade bundle. If you would like to propagate the bundle attributes as trade keywords on the associated trades, click Propagate to Trades. You need to add bundle attributes with the same name as trade keywords for the attributes to be seen in the Trade Keyword window.

Step 6 - Any change on the Trade Bundle window is auditable. In order to activate this option, you need to add TradeBundle into the "ClassAuditMode" domain in the Domain Values window. (From the Calypso Navigator, navigate to **Configuration > System > Domain Values**).



To view the audit report, related to the trade bundle, click Audit.

Any amend on a trade or addition, cancellation or removal from the bundle, generates an audit and the Trade Bundle version is incremented. Also generating an audit on a bundle are addition of a comment or an attribute value.

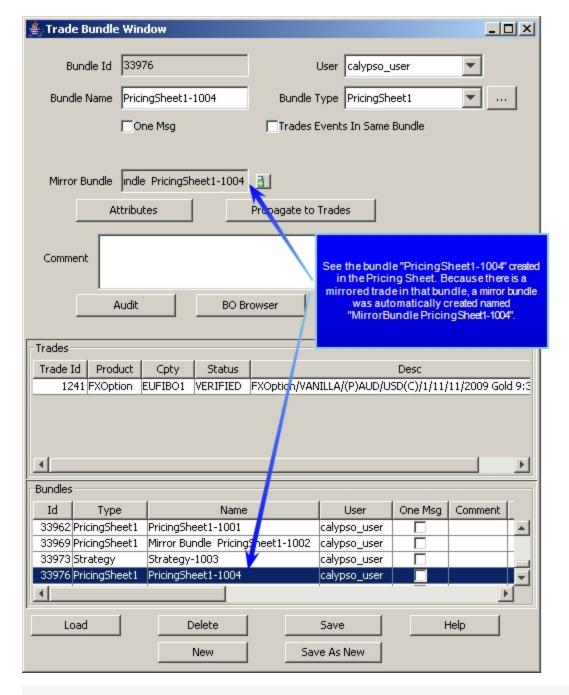
In the Trade Audit report, you are able to launch all trade audits from one bundle ld. Double-clicking on an audit row displays the old version of the bundle.

Step 7 - Click Save to save the trade bundle.

1.1 Bundle Mirroring

The Mirror Bundle field allows you to select the bundle that will contain the mirrored trades of the main bundle. If a bundle already has a mirror bundle, that bundle name is displayed in the Mirror Bundle field when the bundle is selected in Bundles section at the bottom of the window.





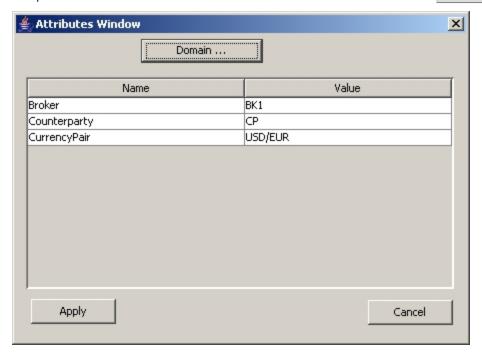
[NOTE: If a mirror bundle is not selected, mirrored trades in the specified bundle will **not** go into any bundle at all. If a trade is mirrored in the Pricing Sheet, a mirror bundle is automatically created with the same name as the first bundle but with "Mirror Bundle" prefacing it]

▶ Refer to Calypso Pricing Sheet documentation for details.



1.2 Trade Bundle Attributes

It is possible to save bundle attributes at the trade bundle level. Click Attributes to display the Attributes Window.



It is also possible to propagate those bundle attributes as trade keywords on each of the underlying trades by clicking **Propagate to Trades**. You need to add bundle attributes with the same name as trade keywords for the attributes to be seen in the Trade Keyword window.

O [NOTE: You can define the trade keywords as system keywords so that they are not editable at the trade level. This also makes the definition of trade bundle attributes the unique source of common trade keywords for the bundle]

When the bundle is saved via the Pricing Sheet, the book attribute of the bundle is set to that of the trade contained in the bundle. If there are multiple trades in the bundle, the book of the first trade in the bundle is used.

1.3 Trade Bundle Audit

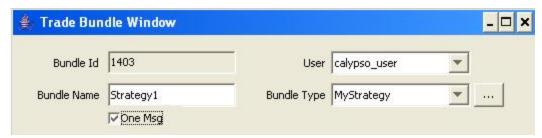
You are able to view trade bundles in the Audit Report. Any change performed from the trade bundle window will be logged in the audit table, provided that TradeBundle is added to the "ClassAuditMode" domain. in the Domain Values window. (From the Calypso Navigator, navigate to Configuration > System > Domain Values).

Any trade added to a bundle, removed from a bundle, canceled or amended will generate an audit and the version of the bundle will be incremented.



In the Trade Audit report, you are able to view all trade audits from one bundle by selecting the bundle Object Id. Click the **Audit** button to display the Trade Audit Report.

1.4 One Bundle Confirmation Setup



If you would like one confirmation message to be sent for the bundle rather than for each underlying trade in the bundle, select the One Msg check box. This checkbox is linked to the static data filter element Bundle Has One Confirm.

If you want to see the bundle attributes in the message confirmation, you may use the keyword called TRADEBUNDLE_xxx, which displays tradeBundle attribute xxx. This is to be set up in the message template.

[NOTE: The Trade Id attached to the back office message is the Trade Id on which the event is generated. So the Trade Id may change on the back office message. The BundleId is stored in the field "StatementId" of the back office message]

Bundle Message Setup

A message configuration must be established for the event types TRADE_BUNDLE and CANCELED_BUNDLE. A new message type specific to bundles may also be created, such as BUNDLE_CONFIRM. The TRADE_BUNDLE and CANCELED_BUNDLE events are generated by the PSEventBundleStatment and the message engine must subscribe to this event.

To generate this type of event, the GenerateBundleStatement workflow rule must be in the bundle workflow. You may want to write your own rule for this, if you would like to have more control over how and when you want to generate this event.

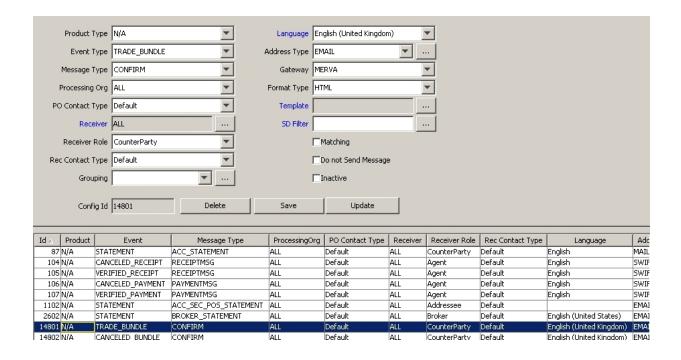
► See Bundle Workflow for more information.

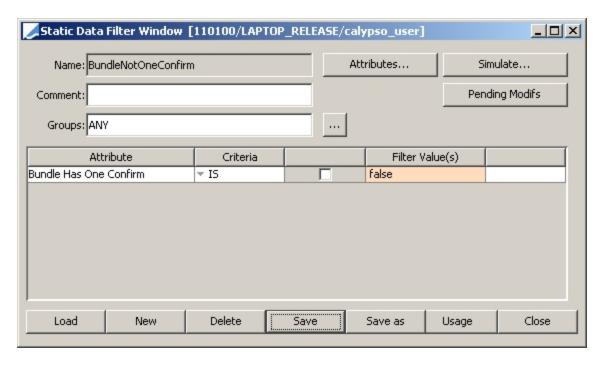
The default event type is TRADE_BUNDLE. If all trades are canceled inside the bundle, the rule generates a CANCELED_BUNDLE event.

Message generation on the underlying trade event type can be prevented by setting a static data filter that stipulates to not send a confirmation on the individual trade if the trade is in a bundle. The static data set-up is shown below. This SD filter would need to be applied to the standard message confirmation set-up for all trade types.

From the Calypso Navigator, navigate to Configuration > Messages & Matching > Message Set-up.







You can find a sample trade bundle confirmation in "<calypso

home>/client/resources/com/calypso/templates/BundleConfirmation.html".



1.5 Modifying a Bundle

Select a bundle type and click **Load** to load existing bundles. Select a bundle from the Bundles list - the trades associated with the selected bundle, if any, appear in the Trades list. Modify as needed then click **Save** to save the bundle.



(INOTE: A bundle in use cannot be modified)

1.6 Deleting a Bundle

Select a bundle type and click Load to load existing bundles. Select a bundle from the Bundles list and click Delete.

(I) [NOTE: A bundle in use cannot be deleted]

1.7 Associating a Bundle with a Trade

The bundle is associated with a trade during trade capture and on trade amendment.

You can select the bundle in the Details panel of a trade worksheet.

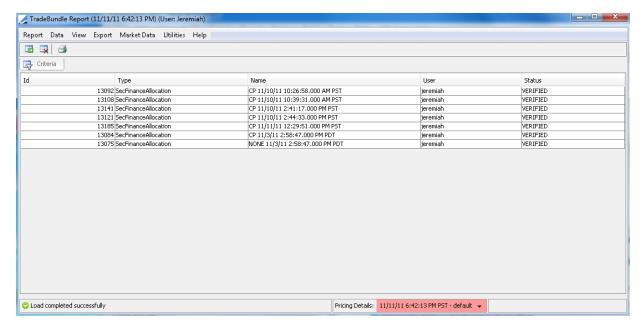


1.8 Security Financing Allocation compliance

From the Calypso Navigator, navigate to Reports > Cross Asset Reports > Trade Bundle Report to view a secfinance allocation compliance report.

If you do not see the menu item, from the Calypso Navigator, navigate to Utilities > Main Entry Customizer and add a menu item for the action reporting. ReportingWindow\$TradeBundle.





Please note the following:

- The regular reporting functionality is available.
- If you select a trade bundle, you can access:
 - The TradeBundle window. Displays trades belonging to that bundle.
 - The Trade Browser. Displays trades belonging to that bundle.

All bundles generated by the SecFinance Allocation window will have 'One Msg' set to true, so the box must be checked in order to view them. You can also enter a specific trade id to view specific criteria.

In the Pricing Sheet, you can choose to save the trades to a bundle. You only need to select a bundle type, and upon saving, a bundle containing the selected trades is automatically created. Un-saved 'Hypo trade' types will be loaded to the Trade Blotter User Workspace with the appropriate bundle description.

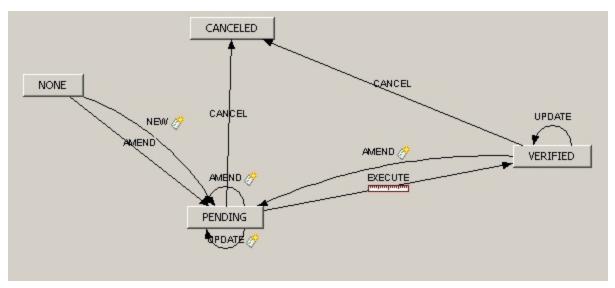
▶ Refer to Calypso Pricing Sheet documentation for details.

[NOTE: For FX trades, you can bring up the details panel in the FX Deal Station]



2. Trade Bundle Workflow

There is a workflow that is specific for Trade Bundles and the back office specifics of handling them. The Trade Bundle Workflow gives the ability to generate one unique message when certain changes are made to the trade bundle. It also allows for the generation of specific exceptions based on Underlying Trade status or Trade Bundle status.

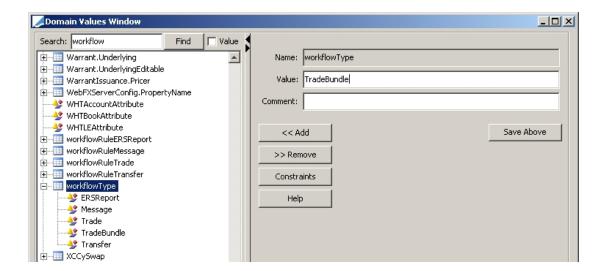


- » There is an AMEND constraint related to trades in a bundle that are added, amended or canceled. The applied action depends on the environment property APPLY_TRADE_ACTION_TO_BUNDLE.
 - If the property is false or not set (default), we apply the action AMEND on the bundle when a trade is added or removed to the bundle.
 - If the property is set to true, we apply NEW when we add a trade to a bundle, and REMOVE when we remove a trade from a bundle.
- » When the Trade Bundle workflow is implemented after having already entered a bundle, the bundle status is set to NONE. In order to modify this bundle, the transition of NONE-AMEND-PENDING is needed.
- [NOTE: Only one Trade Bundle workflow can be defined to deal with ALL trade bundles]

2.1 Trade Bundle Workflow Creation

Step 1 - Activate the Trade Bundle workflow by adding TradeBundle in the WorkflowType domain. (From the Calypso Navigator, navigate to **Configuration > System > Domain Values**.)

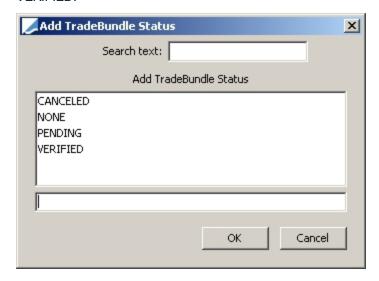




Step 2 - Configure the Trade Bundle workflow by opening the Workflow Configuration window to create a new workflow. (From the Calypso Navigator, navigate to **Configuration > Workflow > Workflow**).

Select the Event Class TradeBundle.

Step 3 - Choose **Domain > Entity > Add Status**, and add the status: codes NONE, PENDING, CANCELED and VERIFIED.



Then, choose **Domain > Entity > Add Action**, and add the actions AMEND, CANCEL and EXECUTE.

Step 4 - The Trade Bundle rule GenerateBundleStatement is required to trigger a message to the Message Engine. To add this rule, choose **Domain > Entity > Add Rule**.

Then add this rule to the PENDING EXECUTE VERIFIED transition.



Id	Orig Status	Action	Resulting Status	Different User	Use STP	Log	Subtype	Product Type	Rules	Processing Org	Kick Off/ Cut Off	Create Task	Comment	Filter	Prefered	KO/C
23156	NONE	NEW	PENDING				ALL	ALL		ALL		V				
23157	NONE	AMEND	PENDING				ALL	ALL		ALL						
23158	PENDING	UPDATE	PENDING				ALL	ALL		ALL		✓				
23159	PENDING	AMEND	PENDING				ALL	ALL		ALL		✓				
23161	PENDING	CANCEL	CANCELED				ALL	ALL		ALL						
23162	PENDING	EXECUTE	VERIFIED				ALL	ALL	GenerateBundleStatement	ALL						
23163	VERIFIED	AMEND	PENDING				ALL	ALL		ALL		✓				
23164	VERIFIED	CANCEL	CANCELED				ALL	ALL		ALL						
23165	VERIFIED	UPDATE	VERIFIED				ALL	ALL		ALL						

① [NOTE: A trade bundle event is produced only if a trade bundle is defined with the "One Confirmation Message" checkbox selected and if all trades are in the same status.

In order to avoid the generation of unwanted bundle statements when all trades in a bundle are in the same status, there is a domain called "TradeStatusForBundleStatement". This domain allows you to designate a trade status required for statement generation. From the Calypso Navigator, navigate to **Configuration > System > Domain Values** to create this domain and add the desired status.



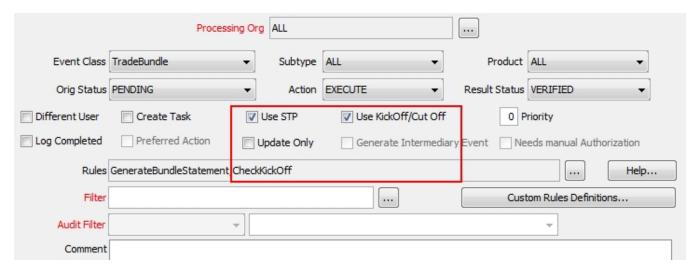
In the workflow rule GenerateBundleStatement, if the parameter 'UnderlierTradesSameStatus' is specified i.e, set to true or empty, it generates the BundleStatement if all trades have the same status (Default is true);

When set to False, the system generates the BundleStatement event without checking all the trades' same status.

2.1.1 KickOff / CutOff

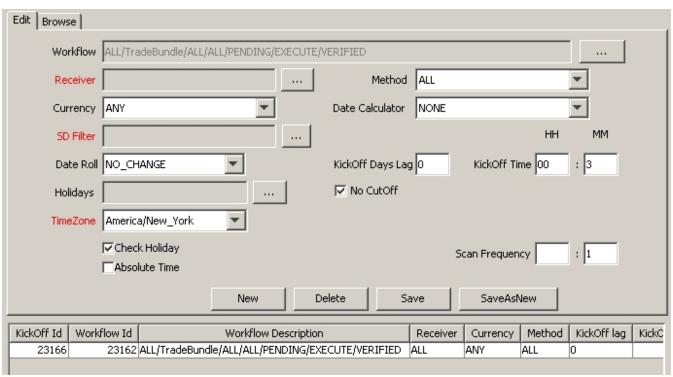
There is an unlimited number of trades that could be saved to a bundle. A user may decide to sequentially save several trades. In this case, the GenerateBundleStatement rule could trigger an event to the Message Engine for each of the saved trades. To prevent this from happening, the KickOff/CutOff configuration can be implemented on the Trade Bundle workflow.





» Check "Use KickOff/Cut Off" and add the CheckKickOff workflow rule.

To configure the KickOff/CutOff, choose **Domains > KickOffCutOff Config** from the Workflow Configuration window.



① [NOTE: If one trade is canceled, the PSEventBundleStatement contains a sub-action, Cancel. This logic allows the generation of Amend or Cancel/New confirmations when one of the trades is canceled or removed, or added to the bundle. You need to configure the message workflow to make use of the CANCELNEW action]



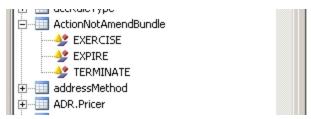
Make sure that the Message engine subscribes to PSEventBundleStatement in the Event Manager of Web Admin.

2.1.2 Other Trade Amendments

In order to handle trade amendments other than cancellation or adding or removing a trade bundle, the Save Trades function accommodates an AMEND action on the trade bundle when certain conditions are met:

- The trade belongs to a bundle
- A trade is canceled and it belonged to a bundle or a trade bundle that is attached to a trade has been amended with another bundle
- The trade bundle did not change but the amended trade is eligible for a confirmation regeneration (If the trade fields amended do not belong to the fields listed in the domain "TradeFieldsNotAmendment")

There is also a domain called "ActionNotAmendBundle" that when used, does not apply the AMEND action even if the above conditions are met. Generally, most people do not want to regenerate a confirmation on a final transition like Exercise, Expire or Terminate.



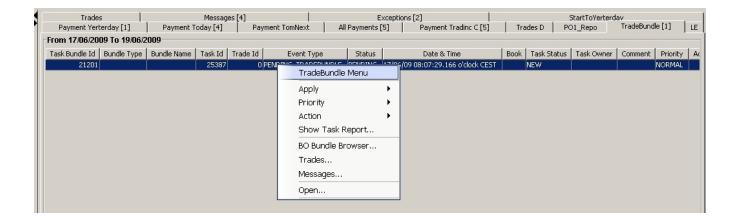
2.2 Bundle Task Station

You only have the ability to see one task per bundle in the Task Station. Trade Bundle tasks are created with a default book attached to the Trade Bundle. By default, this trade bundle book is set automatically as the book of the fist trade linked into the Bundle. The default book can be overwritten from the Trade Bundle window.

From the Task Station you are able to:

- Open a Trade Bundle window
- Open the BO Bundle Browser
- Open a message report to see messages triggered by the TradeBundle Event type for the selected Bundle Id.





2.3 Transfer Workflow

You can use the transfer rule CheckPendingTradeEventByBundle to make sure that all trade events of a given trade bundle have been consumed by the Transfer engine.



3. Trade Bundle Netting

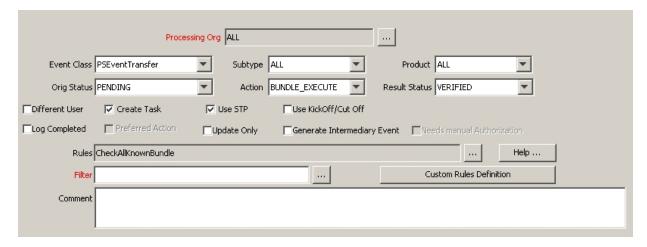
Calypso provides the ability to perform a netting per Bundle Id. Netting keys for bundle netting should be identical to netting by Counterparty, but with an additional Bundle Id netting key. The Netting Configuration window can be accessed from the Calypso Navigator using **Configuration > Settlements > Netting**.

3.1 Bundle Workflow Netting Rules

CheckAllKnownBundle: This is a rule that can be set on a new STP transition such as PENDING -BUNDLE_EXECUTE-VERIFIED. This rule returns true when all underlying transfers are linked to all trades belonging to the same bundle, and the transfers are sent directly to VERIFIED status. In other words, all trades in the bundle which have at least one transfer created, will be linked to the netted bundle transfer. This rule operates like the CheckNettingTransfer rule for a bundle netted transfer.

The CheckAllKnownBundle rule also returns true for cases where there are trades in the bundle that generate transfers and ones that will never generate transfers, such as FX Options. In this case, the rule lets the netted bundle transfer move to VERIFIED status.

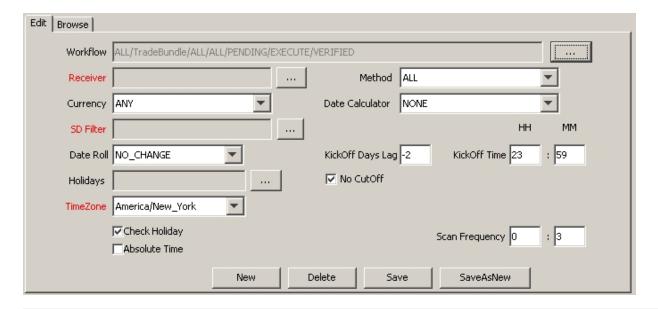
CheckAllKnownBundle transfer rule returns false when at least one underlying transfer, linked to any trade belonging to the same bundle, is not created. In this case, the netted transfers stay in PENDING status up to the moment when the transfer is created. Once the transfer is created, all of the transfers are netted and will then pass to VERIFIED status.



When one of the trades is amended, such as for a change in value date, and a transfer is created that no longer belongs to an existing bundle netted transfer, then a kickoff configuration is mandatory so that the outstanding bundle netted transfer will execute automatically with the other trades in the same bundle.

For example, a kickoff could be triggered every three minutes, two days before the settlement date to allow an automatic netting execution.





[NOTE: In order to avoid a performance issue due to the introduction of a new kickoff configuration, it is strongly advised to set the projected days to 2 in the Task Engine]

CheckBundleNetting: This rule should be set on either the VERIFIED - AMEND - VERIFIED transition or the VERIFIED - AMEND - PENDING transition. This rule acts like the CheckTradeNetting rule, which allows amendment of a bundle netted transfer when one of the existing transfers is amended.

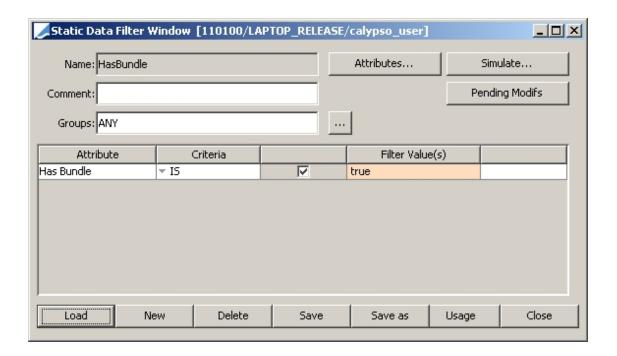
3.2 Bundle Netting Methods

If a default netting type is required for all trades belonging to a bundle, it should be constructed as follows.

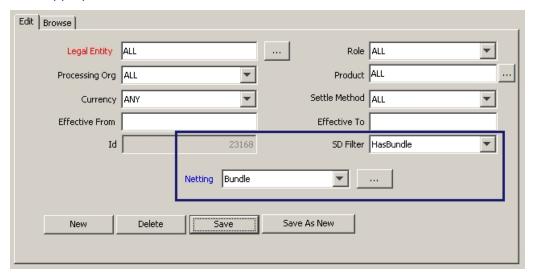
Step 1 - In the Static Data Filter window (from the Calypso Navigator, navigate to **Configuration > Filters > Static Data Filter**), select the Attribute name: Has Bundle.

Step 2 - In the Static Data filter window, set this attribute to true and save it as HasBundle. Then, set the same attribute to false and save it as HasNotBundle.





Step 3 - In the Netting Method window (from the Calypso Navigator, navigate to **Configuration > Settlements > Netting Method**), select Bundle in the Netting drop-down box and HasBundle in the SD Filter drop-down box. Enter other appropriate information and save.



Step 4 - Combine this with another netting method with None selected in the Netting field and HasNotBundle in the SD Filter box and save.



