



### 1. OVERVIEW

The accounting engine generates postings based on **accounting rules**. An accounting rule specifies for a given accounting event (triggered by trades, settlements, amortizations, accruals, margin calls, corporate actions, etc.) which accounts will be debited and credited. A set of accounting rules is associated to a book through an accounting book, and to a product type. In other words, you can have different accounting rules by accounting book, and by product type. Part of this process is to define **accounting books** and **accounts**.

The system can maintain parallel ledgers for different legal entities and different sets of accounting regulations. Postings can be in multiple currencies. Postings are automatically reversed, or canceled and rebooked, in the case of amendments.

## 2. DEFINING ACCOUNTING BOOKS

Accounting books collect postings that share the activity of one or multiple trading books. When defining a trading book, you need to associate it with an accounting book in order to generate postings.

To create an accounting book, choose [Main Entry > Configuration > Accounting > Accounting Books](#) (refdata.AccountingBookFrame).

Id	Name	Comment	Classification
51	INVEST2	Investissement	
52	PLACEM2	Placement	
47	INVEST1	Investissement	
48	PLACEM1	Placement	
53	TRADING2	Trading	
49	TRADING1	Trading	

All existing accounting books are loaded by default.

- » Click **New** to create a new accounting book, and enter the fields described below.
  - Name - Enter a name to identify the trading book.
  - Comment - Enter a free-form comment as applicable.
  - Classification - Select a classification as applicable. Classifications can be added to the accBookClassification domain.
- » Click **Save** to save your changes. Upon saving, a unique id will be given by the system.

### 3. DEFINING ACCOUNTING EVENTS

Accounting Events are a combination of triggering events (trade creation, payment, reset, trade termination, valuation, etc.), the amount to be posted, and the posting dates. In other words, for each product type, you can use a given set of predefined accounting events that can be triggered by a given set of events. You can create custom accounting events as needed.

Calypso provides a set of accounting events out-of-the-box. However, you need to configure what accounting events you want to use for which products. In some cases, you also need to adjust the list of triggering events and the list of pricer measures that you want to post.

Choose **Main Entry > Configuration > Accounting > Accounting Events** (`refdata.AccountingEventFrame`) for defining accounting events.




The hierarchy on the left-hand side of the windows allows you to browse the accounting events that you have configured by product type.

The table on the right-hand side of the window displays all accounting events provided out-of-the-box. You can double-click any column heading to sort the table accordingly.

- » Select an accounting event from either list, or from the "Accounting Event Type" field to display its definition in the center of the window. You can modify it as applicable. The fields are described below.
- » To add a new accounting event, double-click the "Accounting Event Type" label.  
You will be prompted to enter an accounting event type. For information on implementing custom accounting events, refer to the *Calypso Developer's Guide*.
- » Then click **Save** to save your changes. Upon saving, the combination accounting event / product type is given an id by the system.  
If the authorization mode is enabled, another user has to authorize your entry.
- » Click **Help** to open the Accounting Events Help window. It describes out-of-the-box accounting events.

Fields	Description
<b>Accounting Event Type</b>	Select an accounting event type. You can double-click the Accounting Event Type label to add accounting event types.
<b>Product</b>	Select a product type associated with the accounting event, or ALL.

Fields	Description
<b>Description</b>	User-created name for this Event Config. May be useful to store information for the interface program to the General Ledger.
<b>Retroactivity</b>	<p>This field defines the rules indicating the period of allowable retroactivity for postings from a particular type of accounting event.</p> <p>This setting determines whether accounting should be done when a trade is modified (or retroactively created) and if the modification affects the trade's past postings.</p> <p>For example, suppose the trade date of a trade is modified two months after the trade was entered. In such a case, the trade's off-balance-sheet entries may be reversed and rebooked.</p> <ul style="list-style-type: none"> <li>Closing Period — If the retroactivity flag has been set to Closing Period, any modification which has an impact before the last closing period on this accounting event will be simply ignored by the Accounting Engine. (You should then correct the General Ledger by entering the posting manually.) Note: The last closing period is computed according to the closing dates list defined in the Accounting Rule. This is the most common set-up for inventory events i.e. MTM or ACCRUAL events.</li> <li>None — No retroactivity.</li> <li>Full — Every modification that affects a past posting will create reversal and rebooking postings.</li> <li>AccClosingDate — Any modification which has an impact before the last Accounting Closing period (ex: end of accounting year) on this accounting event will be simply ignored by the Accounting Engine.</li> </ul> <p>Note that the last accounting closing date is set on the account definition (field Last Closing Date in the Account definition).</p> <p>Additional options are available provided they are added to the domain retroActivity:</p> <ul style="list-style-type: none"> <li>Current — No postings prior to current date.</li> <li>DATE — MM/DD/YYYY - Replace MM/DD/YYYY with any date.</li> <li>EnteredDate — If the Effective Date of the Posting is BEFORE the Entered Date of the Trade, it will be ignored.</li> </ul>
<b>Booking Type</b>	<p>The accounting method used to update existing postings with the latest value. This setting should be made for events of type INVENTORY. It is generally used for the MTM and ACCRUAL event types.</p> <ul style="list-style-type: none"> <li>Incremental — The Accounting engine will book only the difference between the previous value and the new value of the posting.</li> <li>Reversal — The Accounting engine will reverse the previous value and create a new posting with the new value.</li> <li>N/A — Not applicable for the event.</li> </ul>
<b>Event Class</b>	<p>The event class represents an aggregation level of the accounting events.</p> <ul style="list-style-type: none"> <li>INVENTORY — Used by the Accounting engine to determine whether the accounting event timing should follow the closing period dates. Allows the creation of reverse postings, based on the selected reversal method. It is used also to filter the events in order to build the BO P&amp;L report.</li> <li>BALANCE — For Balance Sheet postings - For information and reporting purposes only - There is no processing dependent on this event class.</li> <li>OFF — For Off Balance Sheet postings - For information and reporting purposes only - There is no processing dependent on this event class.</li> <li>PHYSICAL — Used by the Accounting engine to distinguish an event related to stock ledger (therefore based on a security transfer).</li> <li>REALIZED — Used to build the Back Office P&amp;L report.</li> </ul>
<b>Event Property</b>	<p>This is used for Transfer accounting. When adding or configuring an event triggered by a transfer, you need to specify the Event Property as follows:</p> <ul style="list-style-type: none"> <li>BOOK_ZERO — To indicate that the MTM event should follow the Long-Short Position accounting rule.</li> </ul>

Fields	Description
	<p> Refer to the <i>Calypso Accounting Processes User Guide</i> for details on setting up long/short accounting. – This is also used to generate CREs even if the amount is zero - Refer to the <i>Calypso CREs Generation User Guide</i> for details.</p> <ul style="list-style-type: none"> <li>• NONE — Used for events not related to transfers.</li> <li>• NET — To indicate that only netted transfers trigger this event.</li> <li>• PAYMENT — To distinguish accounting events for payment-related events from net/unnet events.</li> <li>• STOCK — To indicate the Event is related to Stock Ledger Accounting.</li> <li>• UNNET — To indicate that only Transfers (individual transfers before netting) trigger this accounting event.</li> </ul> <p><u>In which case do you use the NET and UNNET property?</u> It is used mainly in Cash Accounting in order to post NET and UNNET posting in different accounts so that the user can have details of netting payments. In this context, the user will need to configure the accounting events CST_NET and CST_UNNET, instead of CST.</p> <p>To see all cash postings belonging to one netted payment, the event filter PaymentOnlyEventFilter needs to be replaced by the event filter AllTransferEventKnownEventFilter in the Event Configuration window for the Accounting engine.</p>
<b>Fee Related Event</b>	<p>If checked, this indicates that fees should be posted. Currently, this applies only to trade events.</p> <p>For example, if you had an event PREMIUM triggered by EXERCISED_TRADE with this box checked, the related fee amount would be posted.</p> <p>This is one case where you do not need to firstly define your event in an AccountingHandler class. The fee definition will be sufficient and the Accounting engine will deduce from its definition the correct way to book this event. The only requirement is to give exactly the same name to the Accounting event as the fee name.</p> <p>Make sure that the Accounting checkbox is checked in the Fee Definition for that type of fee (<a href="#">Main Entry &gt; Configuration &gt; Fees, Haircuts, &amp; Margin Calls &gt; Fee Definition</a>).</p>
<b>Trigger Events</b>	<p>Select the events occurring on the system that will trigger this accounting event.</p> <p>All events of type INVENTORY should be set up with the value TRADE_VALUATION or POSITION_VALUATION.</p>
<b>Pricing Measures</b>	<p>Select the pricer measures that you want to post for this event.</p> <p>Generally, each calculated pricer measure would be included in the Trade Valuation event or Position Valuation event, so that the Accounting engine does not have to compute it. If a pricer measure is not present, in the Trade Valuation e or Position Valuation event, the Accounting engine will calculate it using the Pricing Environment of the Accounting Rule that initiated this posting.</p> <p>The main purpose is to allow the user to extend or override the way MTM or accrual is computed within the system, and to allow the accounting postings to include any additional pricing measure defined in the system.</p> <p>Click Help for details on which accounting events handle pricer measures.</p>

### 3.1 JAPANESE ACCOUNTING REQUIREMENTS

The following accounting events are specific to Japanese accounting requirements:

#### Bonds

- NOM\_CLEAN\_TRADE — same as NOM\_CLEAN except on trade date rather than settlement date.
- REAL\_CLEAN\_PL\_TRADE — posts realized P&L based on clean price on the trade date of the sell trade in liquidation.

#### Repos

NOMINAL\_TRADE, NOMINAL, and NOMINAL\_REV that book the collateral face value on trade date, settlement date and termination date respectively.

### Futures

- **REALIZED\_PL\_TRADE** — same as **REALIZED\_PL** event but with a different name so as to better differentiate it.
- **REALIZED\_PL\_SETTLE** — posts realized P&L as on the next business day after the date of the liquidation.

### Futures Options

- **REALIZED\_PL\_TRADE** and **REALIZED\_PL\_SETTLE** — same as above for Futures.
- **NOM\_FULL\_TRADE** — same as **NOM\_FULL** except on trade date rather than settlement date.

### Accrual for Japanese Government Bonds, Cash and Derivative Instruments

The accounting event **ACCRUAL** with pricing measure **ACCRUAL\_BO** should be used when accruing coupon interest on bonds. Accounting event **ACCRUAL** with pricing measure **ACCRUAL** is used for cash and derivative instruments such as MM Cash, MM Call Notice, Interest Rate Swaps, Cross Currency and Interest Rate Swaps.

## 3.2 FX AND MM TRANSACTIONS

For FX and MM transactions, one or more out of three types of end of day accounting events are generated, depending on the accounting type of the book:

- Trade Accrual events (Event **ACCRUAL**).
- Marked-to-Market Revaluation events (Event **MTM\_FULL\_FX** for FX, FX Forward, FX Swap and **FXNDF**, **MTM\_FULL** for Simple MM, Cash and Call Notice).
- Trade Amortization events (discounted loans only – **ACCRUAL** for Simple MM with Discount flag ON).

One event is generated per event type per end of day if required for the specific book. Each event contains two values, one value for Today and one for the previous business day (Today-1). In the general ledger, the booking for yesterday's value is reversed and today's value is booked.

Events	Description
<b>ACCRUAL</b>	Daily basis at end of day, from Trade Start Date to Trade Maturity Date, the end of day on Maturity Date included. In this last event, Today's value will not be populated.
<b>AMORTIZATION</b>	Daily basis at end of day, from Trade Start Date to Trade Maturity Date, excluding the end of day from Maturity Date to Maturity Date + 1 (so the last event will contain the total settlement amount for the interest period).
<b>COTFX</b>	1 event per trade containing all the amounts and currencies (FX, FX Forward, FX Swap). Effective date = Trade date Amount 1, ccy 1: Base Amount, Base Ccy Amount 2, ccy 2: Quoting Amount, Quoting Ccy Amount 3, ccy 3: Base Amount and ccy for far leg (for FX Swap) Amount 4, ccy 4: Quoting Amount and ccy for far leg (for FXSwap)
<b>MTM_FULL</b>	Daily basis at end of day, from Trade Date (the date the transaction is entered with a status 'verified' into the system) to Trade Maturity Date. The Amount is populated in Settle Currency.
<b>MTM_FULL_FX</b>	The values used in this event are Net Present Values calculated in front office system Kondor+, interfaced to and stored in Calypso. In order to populate yesterday's value, Calypso stores a minimum of one business day history.
<b>NOM_CLEANFX</b>	1 event per trade containing all the amounts and currencies (FX, FX Forward, FX Swap). Effective date = Settle Date Amount 1, ccy 1: Base Amount, Base ccy Amount 2, ccy 2: Quoting Amount, Quoting ccy
<b>NOM_CLEANFX_REV</b>	For FX Swap Effective date = Forward date of the far leg Amount 1, ccy1: Base amount, base ccy Amount 2, ccy 2: Quoting amount, quoting ccy

Accrual figures are Start-to-Date values (simple MM) or Coupon-to-date values (multi-periodic deposits & loans).

Accrual and amortization amounts for non-business dates are as follows:

The amounts for the following non-business dates are included in the amount for the preceding business date, unless the following non-business dates fall into a different month. In the latter case these are added to the first business day of the following month. So, for example, if Saturday is end of month, the accrual for Saturday is included in the end of day on Friday, and the accrual for Sunday is included in the end of day for Monday.

## 4. DEFINING ACCOUNTS

Accounts are entities where the Accounting engine applies postings. Accounts are generally maintained in a General Ledger system at your organization. As the Accounting engine saves each posting, it labels the posting with an account number. These postings will then be fed into the General Ledger system.

The link between accounting events and accounts will be specified using accounting rules.

Several accounting data are provided out-of-the-box through fast-track.

» For information on creating call accounts for client management, refer to the *Calypso Client Custody Management User Guide*.

Choose [Main Entry > Configuration > Accounting > Accounts](#) (`refdata.AccountFrame`) to define accounts.

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### 4.1 CREATING ACCOUNTS

The Account panel is selected by default, it allows creating new accounts.

» Click **New**, and enter the fields described below to create an account.

» Then click **Save** to save your changes.

If the authorization mode is enabled, another user will have to authorize your entry.

You can also click **SaveAsNew** to create the account as a new account provided you enter a new account name.

» Choose [Help > Account Configuration](#) for complete details.

### 4.2 DEFINING AUTOMATIC ACCOUNTS

The account number of automatic accounts is generated automatically from user-defined attributes. For example, an account number can be a combination of constants, trade attributes, etc.

You should create automatic accounts when you can identify a pattern in the chart of account. For example, a group of accounts start with 222, then the product type, then the currency, etc.

Once you have checked the "Auto/Template Acc" checkbox, select the Attributes panel to define the attributes.

Account	Statements	Attributes	Interests	Limits	Browse
Order	Attribute		Value		
1	Constant		222	Add	
2	ProductType			Remove	
3	PostingCcy			CopyFrom	

» Click **Add** to add a new attribute, and enter the fields described below.



- Order - Enter the order of the attribute.
- Attribute - Select an attribute name, or "Constant" to specify a constant.
- Value - Enter the value for Constant attributes.

» You can also click **CopyFrom** to copy the attributes from another account, you will be prompted to select an account.

### 4.3 DEFINING ACCOUNT ATTRIBUTES

Account attributes can be used for selection and reporting purposes. They are entirely user-defined.

» Load an account then click **Properties/Attributes (f4)** to specify account attributes as applicable.

Name	Value
Classification	MyClassification
XferAgentAccount	MyValue

Buttons: Apply, Refresh, ClearAll, ..., Cancel

You can click ... to create a new attribute.

Enter the attribute value in the Value field, and click **Apply**.

[**NOTE:** If you want to specify a list of possible values for a given attribute, create the domain "accountProperty.<attribute name>", and add the values to that domain - The name is case sensitive]

If you set the attribute PROPAGATE to true, all attributes set on a generic account will be propagated to the automatic accounts generated by the generic account.

### 4.4 DEFINING SETTLE ACCOUNTS

When a SETTLE account is defined, additional functions are available: management fees generation, statements generation, interest generation, and limit checking.

» Refer to Cash Management Documentation for additional setup details to perform these functions.

Fields: Status (dropdown), Active From (01/01/2008), Active To (empty), by Trade Date (checked).

Right side: Retroactivity (dropdown), Interest Bearing (checkbox), Billing (checkbox).

#### 4.4.1 STATUS AND ACCOUNT VALIDITY PERIOD

» Select a status as applicable. Account status codes can be added using [Utilities > Add Account Status Domain](#), [Utilities > Add Account Active Status Domain](#) for active accounts, [Utilities > Add Account Closed Status Domain](#) for closed accounts, [Utilities > Add Account Pending Status Domain](#) for pending accounts, or [Utilities > Add Account Suspended Status Domain](#) for suspended accounts.

- » Enter the Active From and Active To dates for defining the account's validity period. Postings can only be back-dated after the Active From date. When an account becomes inactive, you will be prompted to de-activate the SDIS in which the account is used, if any.
- » You can check "by Trade Date" to set the effective date to the posting's trade date. Otherwise, it is the value date.

#### 4.4.2 RETROACTIVITY

- » Click ... to select a date rule for defining the retroactivity period for Account Sweeps and Interest Scales.
  - Account Sweeps: If the Retroactivity field is empty, there is no retroactivity.
  - Interest Scales: The Scheduled Task ACCOUNT\_INTEREST has an attribute which allows managing retroactivity. If this attribute is set to 'true', the system takes into account the Retroactivity date rule on the Account, and if no rule is set-up, the limit is one year.

#### 4.4.3 INTEREST BEARING

Interests can be calculated on settle accounts.

- » Check the "Interest Bearing" checkbox to allow the calculation of interests.
  - » Then select the Interests panel to associate interest rules with the account. Interest rules are defined using [Utilities > Interest Bearing > Interest Config Window](#).
- Refer to Cash Management - Interest Bearing Documentation for complete details.

#### 4.4.4 BILLING

Management fees can be calculated on settle accounts.

Check the Billing checkbox to allow the calculation of management fees.

- Refer to Cash Management - Interest Bearing Documentation for complete details.

#### 4.4.5 STATEMENTS

Select the Statements panel to define statement generation. Statements can be generated on the Back Office position calculated by the Inventory engine.

Note that statements can be created only for accounts that have a processing organization, a currency, and an account holder (legal entity and role must be specified).

- Refer to Cash Management - Account Statement Documentation for complete details.

#### 4.4.6 LIMITS

Select the Limits panel to define limits.

Account	Statements	Attributes	Interests	Limits	Consolidation	Browse
Minimum	0		Limit Review @Daily Date Rule ...			
Overdraft Limit	150,000					
Active From						
To						
Minimum Balance		Overdraft Limit		Valid From		
0		150,000				

- » Enter a minimum credit balance, an overdraft limit, and the Active From and To dates as needed.
- » Click ... next to the Limit Review field to select a date rule for defining the frequency for generating an alert if the minimum credit balance or maximum debit balance are reached.
- » Click **Add**. Then click **Save**.

#### 4.4.7 CONSOLIDATION

The Consolidation function is only available to call accounts.

For information on creating call accounts for client management, refer to the *Calypso Client Custody Management User Guide*.

### 4.5 MODIFYING ACCOUNTS

Select the Browse panel.

- » Enter search criteria and click **Load** to load the corresponding accounts.
- » Double-click an account to bring up the Account panel for that account.  
You can modify it as applicable.
- » Then click **Save** to save your changes.

If the authorization mode is enabled, another user will have to authorize your entry.

You can also click **SaveAsNew** to create the account as a new account provided you enter a new account name.

### 4.6 DELETING ACCOUNTS

- » Load an account and click **Delete**.

If the authorization mode is enabled, another user will have to authorize your entry.

### 4.7 ACCOUNT MENU

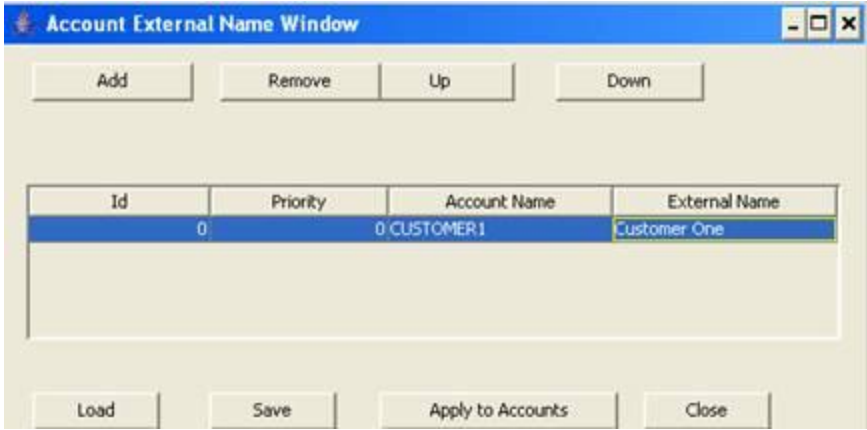
The menu items of the Account menu are described below:

Menu Items	Description
<b>New</b>	To create a new account – all fields are cleared.
<b>Save</b>	To save the current account definition.
<b>Save As New</b>	To save the current account definition as a new account. You need to change the account name.
<b>Open</b>	Brings up the Browse panel.
<b>Browse in New Window</b>	This menu item operates as a checkbox. Check to open the Browse panel in a new window when <b>Account &gt; Open</b> is selected.
<b>Save As Template</b>	To save the current account definition as a template. You will be prompted to enter a

Menu Items	Description
	template name and specify whether the template is private or public. Other users will not be able to use private templates.
<b>Load Template</b>	To load a template. You will be prompted to select a template name. You can only load public templates or private templates that you have created.
<b>Delete Template</b>	To delete a template. You will be prompted to select a template name. You can only delete templates that you have created.
<b>Default Template</b>	To save the current account definition as the default template. You will be prompted to enter a template name and to specify whether the template is public or private. Other users will not be able to use private templates. The default template will be loaded by default when open the Account window.
<b>Close</b>	Closes the Accounts window.

## 4.8 UTILITIES MENU

The Utilities Menu items are described below:

Menu Items	Description
<b>Add Account Status Domain</b>	To add status codes for Settle accounts.
<b>Add Account Active Status Domain</b>	To add specific status codes for active Settle accounts.
<b>Add Account Closed Status Domain</b>	To add specific status codes for closed Settle accounts, such as the reason why the account is closed (termination, no activity on account, etc.).
<b>Add Account Pending Status Domain</b>	To add specific status codes for pending Settle accounts.
<b>Add Account Suspended Status Domain</b>	To add specific status codes for suspended Settle accounts.
<b>Account Activity Report</b>	The Account Activity report shows the activity that occurs on a given client / nostro account including: <ul style="list-style-type: none"> <li>• The balances – positions computed by the inventory engine</li> <li>• All the transfers on behalf of a given client, or against a given nostro account</li> <li>• The interest computed on the balances</li> </ul> Refer to the Calypso Cash Management Documentation for details.
<b>External Name</b>	<p>To define external names based on priorities.</p>  <ul style="list-style-type: none"> <li>» Click Add to add an external name definition.</li> <li>» Enter an account name and an external name, then click <b>Save</b>.</li> <li>» You can click <b>Apply to Accounts</b> to set the external name on the accounts.</li> </ul>
<b>Sweeping</b>	Applies to Settle accounts. Opens the Account Sweeping Configuration to configure account sweeping rules.

Menu Items	Description
	➤ Refer to Cash Management - Account Sweeping Documentation for details.
<b>Mapping</b>	Opens the Account Mapping Configuration to store the Bank Account Relationships and map the Incoming Statement Information. ➤ Refer to the <i>Calypso Corporate Cash Management User Guide</i> for details.

## 4.9 PROCESS MENU

The Process Menu items are described below.

Menu Items	Description
<b>Dormant Process</b>	Applies to call accounts. ➤ Refer to the <i>Calypso Client Custody Management User Guide</i> for details.
<b>Interest Bearing</b>	Applies to Settle accounts. ➤ Refer to Cash Management - Interest Bearing Documentation for complete details.
<b>Limits &gt; Bulk Create Limit</b>	Applies to Settle accounts. Load or select the accounts on which you want to create a new Limit.
<b>Limits &gt; Bulk Update Limit</b>	Applies to Settle accounts. Load or select the accounts on which you want to update the current limit.
<b>Statements</b>	Applies to Settle accounts. ➤ Refer to Cash Management - Account Statement Documentation for complete details.
<b>Customer Transfer</b>	Applies to call accounts. ➤ Refer to the <i>Calypso Client Custody Management User Guide</i> for details.
<b>Full Balance Withdrawal</b>	Applies to call accounts. ➤ Refer to the <i>Calypso Client Custody Management User Guide</i> for details.

## 5. DEFINING ACCOUNTING RULES

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An accounting rule represents an accounting treatment for a particular line of business. An accounting rule defines the accounting that will be applied to a given type of activity in a given category of products, such as, for example, all bond investment trades. An accounting rule tells the Accounting engine that, if a certain type of event occurs, then it should create a particular type of posting and post it to a particular account. It specifies the link between accounting events, accounts, and accounting books.

An accounting rule consists of:

- Accounting rule attributes to define the general rule concerning the accounting behavior of the Processing Organization using the system. (For example, do I want to book my MTM on a daily basis or on specified dates?) This will be stored in the Rule directly, and you can view it in the Definition panel.
- A definition of the relationship between accounting events and accounts (for example, if an INTEREST event occurs, the system will create a CREDIT posting for the computed amount on the PROFIT account and a DEBIT posting on another account, etc.

The way Accounting Rules are defined will strongly depend on the accounting practices within your organization.

Several accounting data are provided out-of-the-box through fast-track.

Choose [Main Entry > Configuration > Accounting > Accounting Rules](#) (`refdata.AccountingRuleFrame`) to define accounting rules.

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## 5.1 DEFINITION


» Click **Load** to select an Accounting Rule, or click **New** to create a new accounting rule.

Then fill in the fields as described below and click **Save**.



» Click **Save** to save your changes.

If the authorization mode is enabled, another user will have to authorize your entries.

Fields	Description
<b>Rule Name</b>	Enter a name to identify the rule.
<b>Acc Rule Type</b>	Select the type of accounting rule: <ul style="list-style-type: none"> <li>• ACC_ENR — To generate account enrichment events (CREs).</li> <li>• CONVERSION — To generate conversion postings into the local currency.</li> <li>• NORMAL — To generate standard postings.</li> <li>• STOCK — To generate stock ledger postings booking quantities.</li> <li>• STOCK_FV — To generate stock ledger postings booking nominal amounts.</li> </ul>
<b>Processing Org</b>	Select a processing organization or ALL.
<b>Pos Agg Config</b>	You can select a position aggregation to define specific accounting rules for position aggregations. This applies to valuation events by aggregation and liquidation events by aggregation. <a href="#">See Sample Accounting by Position Aggregation</a> for setup details.
<b>Liq. Config</b>	You can select a liquidation configuration to define specific accounting rules per liquidation configuration. This is used for example in the context of JGAAP and USGAAP accounting requirements.
<b>Currency Rule</b>	Select the currency of the postings: trade currency, or a specific currency.

Fields	Description
	 For information on converting postings in local currency, refer to the <i>Calypso Accounting Processing User Guide</i> .
<b>Last Run</b>	Last date at which the accounting has run the valuation process.
<b>Calendar</b>	Click ... to select the holiday calendar to be used for inventory dates.
<b>Pricing Env</b>	Select the pricing environment that will be used to calculate pricer measures defined on the accounting events.
<b>Check Valuation PricingEnv</b>	If checked, the Pricing Env used to calculate pricing measures published with inventory events will be compared to the Pricing Env defined in the accounting rule. If the Pricing Env does not match, an exception will be raised and the postings will not be generated.
<b>Reversal Rule</b>	<p>Select the reversal rule for inventory events.</p> <p>[<b>NOTE</b>: If the book attribute AccReversalRule is set on the trading book, it overrides the reversal rule defined at the Accounting Rule level]</p> <p><b>End-Of-Adjustment Period (EAP)</b></p> <p>The reversal postings will be generated at the end of the adjustment period determined by the number of days in the "Adjust Days" field.</p> <p>What is the Adjustment Period? In the case where your Accounting Rule is not set to a Daily Closing Period for Valuation Postings, you may want to perform an adjustment between, for example, the End-Of-Month where you book the Valuation and End-Of-Month + Adjustment Days. In this case, users could have, for example, 7 days to check that all trades and figures are correct. Therefore the reversals are generated with an Effective Date equal to End-Of-Month + 7.</p> <p>The accounting engine books the reversal entries on the same day as for Valuation postings but with an effective date equal to the End-Of-Adjustment Period, computed using the Adjustment days specified in the Accounting Rule. The booking date is the same as the valuation posting.</p> <p><b>Next-Day Reversal (ND)</b></p> <p>Next Day means that you reverse the inventory postings on the next date after the inventory date. The accounting engine books the reversal entries for Valuation postings with an effective date equal to the Next calendar day. The booking date is the same as the valuation posting. Book the reversal now on the Next Calendar Day.</p> <p><b>Next Inventory Date (NID)</b></p> <p>Next Inventory Date means that you reverse the inventory postings on the next inventory date.</p> <p>Note that if the accounting rule's calendar is empty, the system uses the book's calendar to determine the next inventory date.</p> <p><b>Next Day – Next Inventory Date (NDNID)</b></p> <p>Mix of the two methods: the booking date of the reversal postings is on the next date after the inventory date and the effective date of the reversal postings is on the next inventory date.</p> <p>The accounting engine books the reversal entries on the same day as for Valuation postings but with an effective date equal to the Next Closing Period. The booking date is the same as the valuation posting. If you want to use the NDNID methodology, you need to add it to the reversalRule domain.</p> <p>It pre-allocates the seed for the NEW/REVERSAL postings in order to link the NEW and REVERSAL postings.</p> <p><b>No Next Inventory Date (NO_NID)</b></p> <p>To stop reversal postings generation for inventory events (can be useful for Accounting Enrichment Event, when the General Ledger generates the reversal itself).</p> <p>When the General Ledger of the Bank generates the reversal for valuation and accretion events for example, you may want to not generate the reversal inside the system for those events. To do so, define your rule with the NO_NID reversal flag. This function is</p>



Fields	Description
	<p>mostly used for ACC_ENR rules (Accounting Enrichment).</p> <p>If you want to use the NO_NID methodology, you need to add it to the reversalRule domain.</p>
<b>Closing Rule</b>	<p>These fields apply only to INVENTORY events.</p>  <p>These fields set the schedule for updates of the inventory.</p> <ul style="list-style-type: none"> <li>» Check the Daily Closing checkbox to update the inventory daily. Or create an update schedule in the Closing Dates section.</li> </ul> <p>When the Daily Closing checkbox is unchecked, the Closing Dates section is displayed. This lets you specify Account closing dates either by using a date rule or by specifying a vector of dates.</p>  <p>Select a rule by clicking on ... and enter the closing date in the date field, then click &gt;&gt;.</p> <p>[NOTE: If the book attribute AccDateRule is set on the trading book, it overrides the rule defined at the Accounting Rule level]</p> <ul style="list-style-type: none"> <li>» Check the "Accrual First Rule" checkbox to use the Accrual First rule. The Accrual First rule is used every time accrued interest is calculated. If checked, it will use an additional day in the calculation of accrued interest.</li> </ul> <p>It is also used to adjust the booking date - When "Accrual First Rule" is checked, in case the Effective Date of the posting falls on a holiday, we set the Booking Date to the next business day, using the Modified Following convention. It means that if we are at month-end, the Booking Date would be set on the last business day of the month to which the Effective Date refers. Otherwise, the booking date is set to the current business day.</p> <ul style="list-style-type: none"> <li>» Adjust. Days — Only useful for Inventory events. This is the period during which an incorrect inventory posting may be corrected and is expressed as a number of <i>calendardays</i>, counting from the date of the posting.</li> </ul> <p>Note that if Daily Closing is checked, then this field must be set to 0.</p> <p>The VALUATION_REVERSAL event is now generated by the Liquidation engine when unliquidating a Liquidated position. The purpose is to reverse the previously booked MTM if we still are in the Adjustment Period as defined by the Adjustment Days in the Accounting Rule and if the unliquidation has an effective date BEFORE the last Valuation process date.</p> <p>The VALUATION_REVERSAL should only be set on the INVENTORY events like ACCRUAL or MTM_FULL.</p> <p>This logic only works when the Accounting Rule is set with the following reversal rule: NDNID, ND, NBD, NO_NID.</p> <p>[NOTE: If the book attribute AccAdjustmentDays is set on the trading book, it overrides the adjustment days defined at the Accounting Rule level]</p>

## 5.2 CONFIGURATION

Select the Configuration panel to define the relationship between an accounting rule, an accounting event and an account. Use this window to prescribe the set of all types of GL postings your accounting rule will produce. You will direct a rule's postings into a specific account based on each posting's accounting event type and direction ("1" relates to a negative amount, "1" relates to a positive amount).

There are no limits on the number of postings the system can generate for a single accounting event. This flexibility allows you to handle any scenario.

- » Click ... next to Accounting Event to open the Accounting Event Config window. You can select an event type from the pull down menu.

Select the direction +/- of the posting.

Click ... next to the Debit and Credit labels to open a window to select and display an Account name. Then click **Add** to add it to the hierarchy list. If you are editing an existing rule, click **Update**.

For Account Enrichment (CRE) Accounting, you need to check the "No Debit" and "No Credit" checkboxes, as the accounts are not actually debited or credited. Refer to the *Calypso CREs User guide* for details.

- » Then click **Save**.

If the authorization mode is enabled, another user will have to authorize your entry.

- » You can click **Show Table** to display the list of configurations in tabular form.

Accounting Rule Config (Full MTM - IRS)					
Id	AccountingRule	EventType	Sign	Debit Account Type	Debit Account Name
20367	Full MTM - IRS	COT	1	NORMAL	15101. Contingent on Trade Date - Interest Rate Swaps
20173	Full MTM - IRS	MTM_FULL	-1	NORMAL	4510601. Unrealized Gains/Losses - Interest Rate Swaps
20174	Full MTM - IRS	MTM_FULL	1	NORMAL	14101. Contra Assets - Interest Rate Swaps
20175	Full MTM - IRS	UPFRONT_FEE	1	NORMAL	COLLINTEREST

## 5.3 BOOK LINK

Select the Book Link panel to associate an accounting rule with a trading book. When processing a trade, the Calypso Accounting Engine consults the Accounting Book Link to find out which Accounting Rules will apply to the trade. Each

Accounting Rule will apply to all the trades of a certain product in a certain Accounting Book. If you wish to use an Accounting Rule across a number of products and/or Books, you will save a number of Book Links for that Rule. An unlimited combination is possible, giving the user a great deal of flexibility in terms of set up and configuration.



- » To add a new link, select the Accounting Book, Product Type (or ALL) and Rule Name.

The product type can be a group of products. See [Main Entry > Configuration > Product > Group](#) (refdata.ProductGroupWindow) for information on creating groups of products. Note that the environment property USE\_PRODUCT\_GROUP should be set to true in order to allow specifying accounting rule links by product group.

- » You can click ... next to the SD filter label to select a static data filter.

- » Then click **Save** to save your changes.

You are now ready to generate postings.

## 5.4 SAMPLE ACCOUNTING BY POSITION AGGREGATION

This applies to valuation events by aggregation and liquidation events by aggregation for positions computed using a liquidation configuration with a position aggregation.

### 5.4.1 AGGREGATED POSITIONS

Aggregation criteria are defined in the Position Aggregation window ([Main Entry > Configuration > Books & Bundles > Position Aggregation](#)).

Id	Name
1	CurrencyPair
10676	Strategy

The position aggregation is then associated with the liquidation configuration.

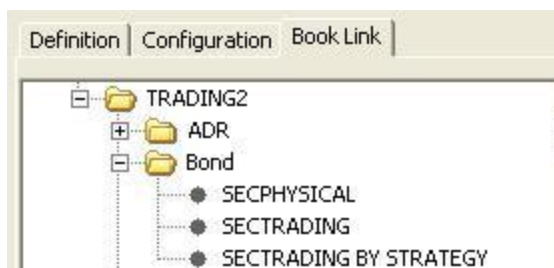
In this example, positions are computed by book, product, and strategy. You can compute multiple positions for the same product.

Refer to the *Calypso Positions Management User Guide* for complete details on generating positions.

### 5.4.2 ACCOUNTING RULE

The accounting rule can be defined by position aggregation.

The accounting rule is then configured and attached to the accounting book.



### 5.4.3 POSTINGS GENERATION

For aggregated positions, the liquidation engine generates PSEventAggLiquidatedPosition events. Make sure that the Accounting engine and the CRE engine subscribe to those events (as needed).

For EOD Position valuation, you simply need to use a trade filter based on a position specification. The position specification allows selecting which position to use.

Name	Source	Liquidation Level	Calculation Date
ALL	Liquidation Engine	Book & Product	Trade Date
CurrencyPair	Liquidation Engine	CCY_PAIR	Trade Date
by strategy	Liquidation Engine	Strategy	Trade Date

Here the Position Spec "by Strategy" loads the positions computed by the liquidation engine and "Strategy" position aggregation.

In the Portfolio Manager, columns "Pos. Agg. Id" and "Pos. Agg. Name" display position aggregation information if any. Note that "Pos. Agg. Name" is the name of the position aggregation used to compute the position (the "Liquidation Level" of the Position Spec), not the actual name of the Position Spec.

Book	Trade Id	Product Id	Pos. Agg. Id	Product	Ccy	Val.Ccy	Pos. Agg. Name	Settle Date	Open Quantity	Open Position	Realized
TRADINGC	0	11	8020	BondUST/10Y/11/15/2008/4.75%	USD	USD	Strategy	06/25/2008	570.00	10,096.92	(2,369.16)

If there is an accounting rule specified by position aggregation it will be used.

### Liquidation Postings

Trade Id	Posting Id	Event Type	Posting Description	Liq Aggregation	Rule Pos Agg Config	Amount
9670	9717	COT	Contingent on Trade Date	Strategy: Strategy1	Strategy	251,673.03
9670	9718	COT_REV	Contingent Reversal	Strategy: Strategy1	Strategy	251,673.03
9670	9719	NOM_FULL	Nominal Dirty	Strategy: Strategy1	Strategy	251,673.03
9670	9720	CON_SEC_VERIFIED	SECURITY			250.00
9670	9721	CST	PRINCIPAL	Strategy: Strategy1	Strategy	251,673.03

### EOD Valuation Postings

Posting Id	Trade Id	Event Type	Posting Description	Liq Aggregation	Rule Pos Agg Config	Amount	Posting Currency
9730	9664	POSITION_VALUATION	PLAmount	Strategy: Strategy1	Strategy	10,096.92	USD

## 5.5 IAS39 – IMPAIRMENT

Accounting rules of the inventory process can take into account that the counterparty or/and the product is impaired.

### 5.5.1 SETUP REQUIREMENTS

A legal entity can be identified as impaired using the legal entity attribute IMPAIRED.

The screenshot shows the 'Legal Entity Attributes Window - Version 6'. The 'Legal Entity' is set to 'EFIBANCA', 'Processing Org' is 'ALL', and 'Attribute Type' is 'IMPAIRED'. The 'Value' is set to 'NO'. Below the form is a table listing attributes for two legal entities.

Id	Processing Org	Legal Entity	Role	Attribute Type	Attribute Value
5631	ALL	EFIBANCA	ALL	RESIDENT	NO
8133	ALL	EFIBANCA	ALL	IMPAIRED	NO

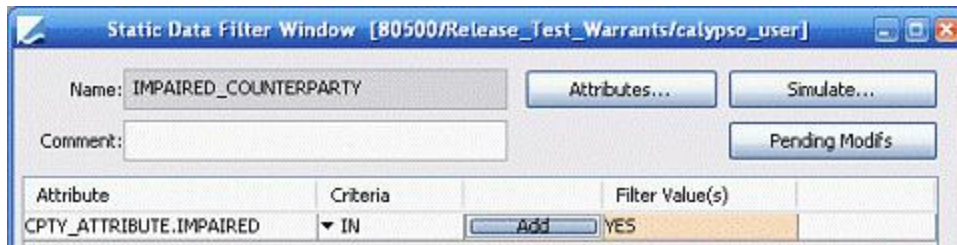
A product can be identified as impaired using the product code Impaired.

The screenshot shows the 'Code Window' with a table of product codes. The 'Impaired' code is highlighted with a value of 'Yes'.

Product Code Name	Value
CUSIP	
Common	
DebtSeniority	▼
GCFcusip	
ISIN	
Impaired	▼ Yes
Local	
RGA	

You can then setup a static data filter based on these attributes, for example IMPAIRED\_COUNTERPARTY.





Static Data Filter Window [80500/Release\_Test\_Warrants/calypso\_user]

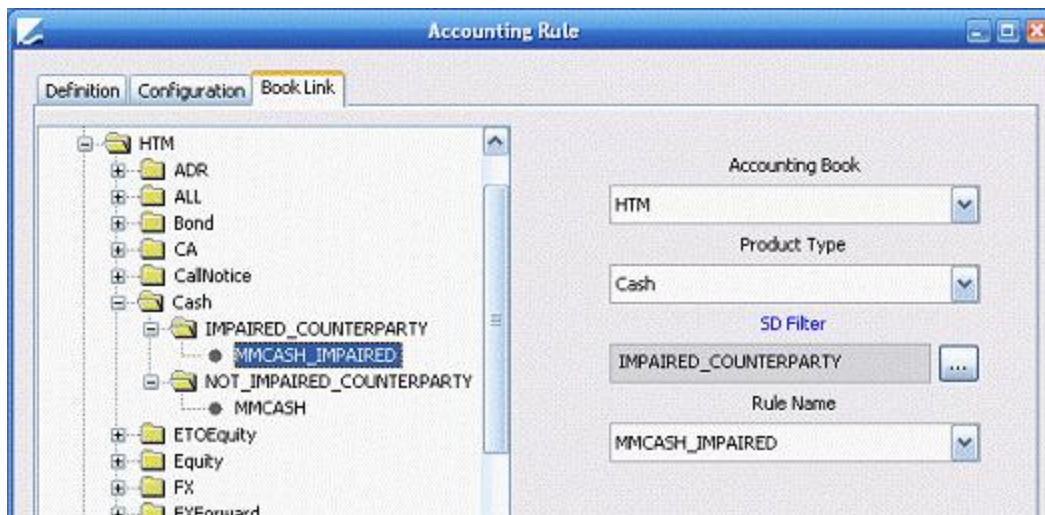
Name: IMPAIRED\_COUNTERPARTY    Attributes...    Simulate...

Comment:    Pending Modifs

Attribute	Criteria	Filter Value(s)
CPTY_ATTRIBUTE.IMPAIRED	IN	YES

### 5.5.2 ACCOUNTING RULES

For each Accounting Book, the SD Filters allows choosing the proper accounting rule:



Accounting Rule

Definition    Configuration    Book Link

Accounting Book: HTM

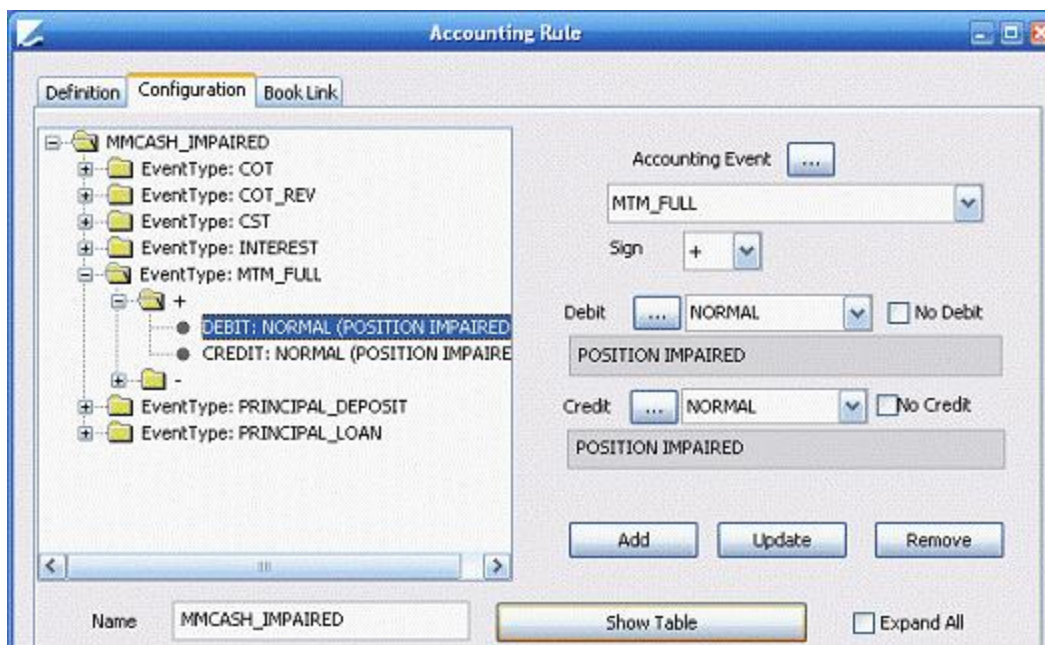
Product Type: Cash

SD Filter: IMPAIRED\_COUNTERPARTY

Rule Name: MMCASH\_IMPAIRED

Tree view:

- HTM
  - ADR
  - ALL
  - Bond
  - CA
  - CallNotice
  - Cash
    - IMPAIRED\_COUNTERPARTY
      - MMCASH\_IMPAIRED
    - NOT\_IMPAIRED\_COUNTERPARTY
      - MMCASH
  - ETOEquity
  - Equity
  - FX
  - FXForward



Accounting Rule

Definition    Configuration    Book Link

Accounting Event: MTM\_FULL

Sign: +

Debit: NORMAL    No Debit

Credit: NORMAL    No Credit

POSITION IMPAIRED

POSITION IMPAIRED

Add    Update    Remove

Name: MMCASH\_IMPAIRED    Show Table    Expand All

Tree view:

- MMCASH\_IMPAIRED
  - EventType: COT
  - EventType: COT\_REV
  - EventType: CST
  - EventType: INTEREST
  - EventType: MTM\_FULL
    - DEBIT: NORMAL (POSITION IMPAIRED)
    - CREDIT: NORMAL (POSITION IMPAIRED)
  - PRINCIPAL\_DEPOSIT
  - PRINCIPAL\_LOAN

Id	Event Type	Product Type	Description
8233	EXERCISE_FEE	ALL	Performance / Warrant
35	FX_VALUATION	ALL	Realized FX Reval
7	INTEREST	ALL	Interest
56	INTEREST	Bond	Interest Bond
57	INTEREST	MoneyMarket	Interest Bond
24	INTEREST_YIELD	ALL	Interest Yield
40	INT_REAL	ALL	INTEREST REALIZED
5	NTM_FULL	ALL	Full Mark-to-Market
8154	NTM_FULL	Cash	Full Mark-to-Market
8155	NTM_FULL	Bond	Full Mark-to-Market
26	NOM_CLEAN	ALL	Nominal Clean
7045	NOM_CLEAN_LONG	ALL	Nominal Clean Long
7046	NOM_CLEAN_LONG_REV	ALL	Nominal Clean Long Rev
32	NOM_CLEAN_REV	ALL	Nominal Clean
7048	NOM_CLEAN_SHORT	ALL	Nominal Clean Short
7049	NOM_CLEAN_SHORT_REV	ALL	Nominal Clean Short Rev
3	NOM_FULL	ALL	Nominal Dirty

### 5.5.3 ACCOUNTING

When the booking type is "Incremental", once the counterparty or the product is Impaired, the whole amounts booked previously are reversed.

In the following example, the counterparty of a Money Market trade was flagged "Impaired" on 13/03/2006. Then, all incremental amounts booked every day are automatically reversed and the accounting process applies the new accounting rule.

Posting Id	Trade Id	Event Type	Description	Amount	Currency	Posting Type	DebitAccount	CreditAccount	Linked Id	Original Event	Effective Date	Booking Date	Accounting Rule
2372	2705	NTM_FULL	NPV	20,011,200.50	EUR	NEW	MMPOSITION	MMPOSITION	0	TRACE_VALUATION	08/03/2006	08/03/2006	MMCASH
2374	2705	NTM_FULL	NPV	1,394.37	EUR	NEW	MMPOSITION	MMPOSITION	2372	TRACE_VALUATION	09/03/2006	09/03/2006	MMCASH
2376	2705	NTM_FULL	NPV	1,392.52	EUR	NEW	MMPOSITION	MMPOSITION	2374	TRACE_VALUATION	10/03/2006	10/03/2006	MMCASH
2378	2705	NTM_FULL	NPV	20,013,987.19	EUR	REVERSAL	MMPOSITION	MMPOSITION	2372	TRACE_VALUATION	13/03/2006	13/03/2006	MMCASH
2390	2705	NTM_FULL	NPV	20,018,154.78	EUR	NEW	POSITION IMPAIRED	POSITION IMPAIRED	0	TRACE_VALUATION	13/03/2006	13/03/2006	MMCASH_IMPAIRED
2392	2705	NTM_FULL	NPV	1,395.89	EUR	NEW	POSITION IMPAIRED	POSITION IMPAIRED	2390	TRACE_VALUATION	14/03/2006	14/03/2006	MMCASH_IMPAIRED
2393	2705	NTM_FULL	NPV	1,394.22	EUR	NEW	POSITION IMPAIRED	POSITION IMPAIRED	2392	TRACE_VALUATION	15/03/2006	15/03/2006	MMCASH_IMPAIRED
2395	2705	NTM_FULL	NPV	20,020,924.89	EUR	REVERSAL	POSITION IMPAIRED	POSITION IMPAIRED	2390	TRACE_VALUATION	16/03/2006	16/03/2006	MMCASH_IMPAIRED
2396	2705	NTM_FULL	NPV	20,022,307.45	EUR	NEW	MMPOSITION	MMPOSITION	0	TRACE_VALUATION	16/03/2006	16/03/2006	MMCASH
2399	2705	NTM_FULL	NPV	1,390.91	EUR	NEW	MMPOSITION	MMPOSITION	2396	TRACE_VALUATION	17/03/2006	17/03/2006	MMCASH

In that example, the counterparty is no longer Impaired as of 16/03/2006.

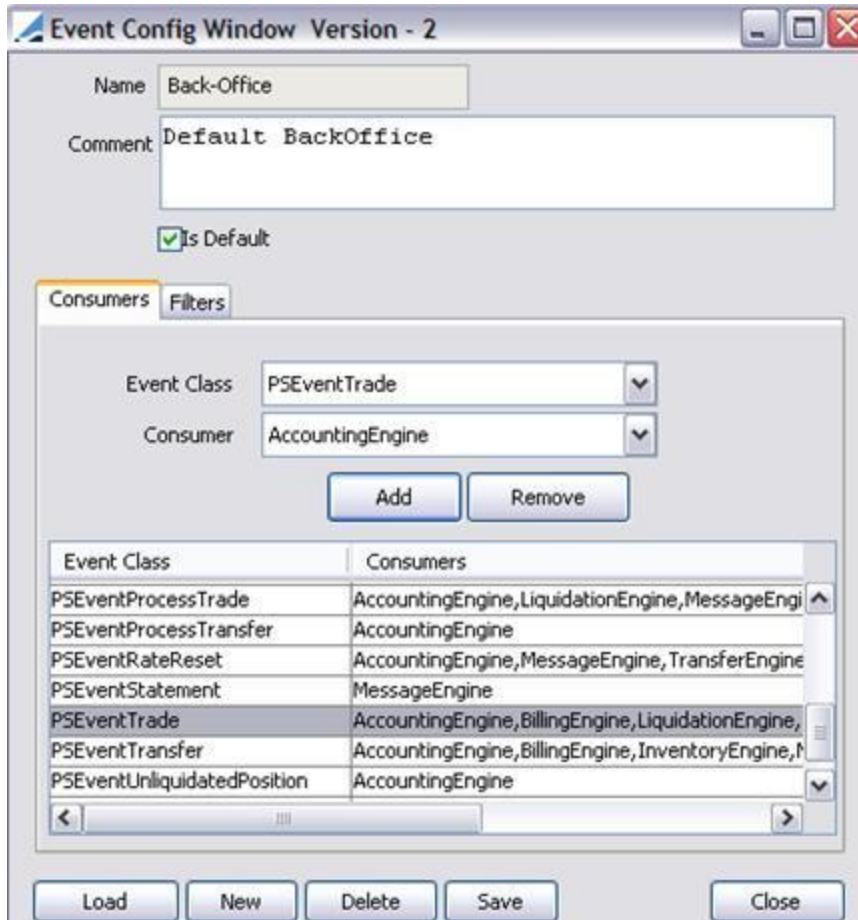


## 6. GENERATING POSTINGS

The Accounting engine produces accounting postings.

### 6.1 EVENT CONFIGURATION

Choose **Main Entry > Configuration > System > Event Configuration** (`util.EventConfigWindow`) to review event subscription requirements for the accounting engine.



» In the Consumers panel, you can select the events to which the accounting engine subscribes to.

The accounting engine can subscribe to the following events:

- Trade Events
- Rate Reset and Price Fixing Events
- Valuation Events (PSEventValuation, PSEventPositionValuation, PSEventFXPositionValuation)
- Liquidated/Unliquidated Position Events
- Transfer Events
- ProcessTrade Events

» In the Filters panel, review the filters associated with the accounting engine.

The accounting engine can use the following filters:

- PaymentOnlyEventFilter - For transfer events, processes known transfers only.
- SecurityClaimTransferEventFilter - Filters "claim" transfers on repos.

Engine Name	Filter Name
AccountingEngine	PaymentOnlyEventFilter, SecurityClaimTransferEventFilter

## 6.2 ACCOUNTING ENGINE PARAMETERS

The behavior of the accounting engine may be modified with the following engine parameters and environment properties.

Engine parameters are specified using Admin > Engine Thread. If a parameter is not available for setup, you can register it in the engineParam domain.

Environment properties are specified using User Env.

Parameters and Properties	Description
<b>ACC_FXACTIVE_DATE</b>	<p><b><i>Property specified under Env &gt; Properties.</i></b></p> <p>If true, the following logic is implemented. Default is false. For FX products accounting event published on Trade Date, we have implemented the notion of Trade ActiveDate, i.e. the accounting Effective Date depends of Trade Date AND Book EOD. If the Trade Date Time is after the EOD Book, the Effective Date will be Trade Date + 1 day. Otherwise, Effective Date = Trade Date.</p>
<b>ACCENGINE_BKHOLIDAYS</b>	<p><b><i>Specified in Admin &gt; Engine Thread.</i></b></p> <p>If true, the posting will be generated with booking date = next business day. If false, the posting will be generated with booking date = previous business day. Default is true.</p>
<b>ACCENGINE_CDREVERSAL</b>	<p><b><i>Specified in Admin &gt; Engine Thread.</i></b></p> <p>If true, when a Posting has a BookingDate in the future, the Booking Date of the REVERSAL posting is still in the future. Default is False.</p>
<b>ACCENGINE_CHECKACCTYPE</b>	<p><b><i>Specified in Admin &gt; Engine Thread.</i></b></p> <p>If true, the system checks that the same account number does not exist with two different account types. If false, the check is not performed. Default is true.</p>
<b>ACCENGINE_FULLCANCEL</b>	<p><b><i>Specified in Admin &gt; Engine Thread.</i></b></p> <p>If true, all postings related to a canceled trade will be reversed (MTM, etc.). Default is False.</p>
<b>ACCENGINE_INVALID_LOGIC</b>	<p><b><i>Specified in Admin &gt; Engine Thread.</i></b></p> <p>Y or N. Y to activate the invalid posting logic, or N otherwise. The invalid posting logic generates a posting with INVALID status if data are missing to generate the complete posting. A task exception INVALID_POSTING is raised. The RETRY action can be applied from the task station to attempt to regenerate the posting after the missing data has been populated. You can also retry INVALID postings using the SUSPENSE_POSTINGS scheduled task. If the posting is still INVALID, you can use the scheduled task to move it to a suspense account. The suspense account can be set in the account property "Suspense Account" on the generic account.</p>

Parameters and Properties	Description
	When the system generates an INVALID posting, it appends to the Account Name the Id of the Original Account to make sure it is unique. Default is N.
<b>ACCENGINE_REVERSESEND</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Applies to reversal valuation events with reversal methods ND and NBD. The Booking Date is set to the Next Date if ACCENGINE_REVERSESEND is set to true, else it is set to the Current Business Date.
<b>MAX_BATCH_EVENT</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Maximum number of persistent events loaded at one time by an engine in batch mode. The engine will load events in MAX_BATCH_EVENT chunks until all events are processed. Persistent events received after MAX_QUEUE_SIZE is reached will be processed in batch mode. Allows controlling engine memory usage, therefore improving the performance.
<b>MAX_QUEUE_SIZE</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Maximum number of events buffered on an engine event queue. When this number is exceeded, real time events are discarded and the engine restarts based on the restart timer (TIMEOUT_RESTART), in order to process the unprocessed persistent events using batch mode. This parameter can be useful for controlling the engine's memory usage. If not set, the default value for this parameter is no limit on queue size. Allows controlling engine memory usage, therefore improving the performance.
<b>PricingEnv</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Pricing environment used by the engine. If not set, the default Pricing Environment of the user running the engine will be used.
<b>THREAD_COUNT</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Number of concurrent threads used in an engine for processing. Increase the thread count for better performance.
<b>TIMEOUT_RESTART</b>	<b><i>Specified in Admin &gt; Engine Thread.</i></b> Number of seconds to wait before an engine restarts after MAX_QUEUE_SIZE has been reached. The default value is 3600 seconds (1 hour).

## 6.3 STARTING THE ACCOUNTING ENGINE

It can be started using the application `com.calypso.apps.startup.StartAccountingEngine`.

The accounting engine publishes posting events (PSEventAccounting) and saves the postings to the database (BOPosting objects). It also publishes task events.

Whenever the accounting engine is started, it processes all outstanding events to which it subscribes that were published while it was inactive.

The following sections detail the logic of the Accounting engine with a step-by-step explanation of the process.

### 6.3.1 NOTION OF BUSINESS DATE

The booking date is not set depending on the system date, but depending on the notion of "Business Date".

The notion of "Business Date" is defined for each Processing Org. It allows the Accounting engine to know when the postings should be closed. For example, in case you receive a posting with an effective date in the past, the system uses this "Business Date" to know how to set the booking date.

To activate the notion of "Business Date", you need to set the legal entity attributes "ACC\_USE\_BUSINESS" to Yes and "ACC\_BUSINESS\_DATE" to the "Business Date" on the processing org.

If "ACC\_USE\_BUSINESS" is not set, the "Business Date" defaults to the "current Date", that is, the "Business Date" changes automatically using the system date.

If "ACC\_USE\_BUSINESS" is set to Yes but you do not set "ACC\_BUSINESS\_DATE", the system considers that the posting is NEVER closed, which means that a Back-Value entry will always have a Booking Date equal to the Effective Date.

If "ACC\_BUSINESS\_DATE" is set, the postings will be driven by the following logic:

- If the Effective Date of the Posting is in the Future compared to the current Business Date, the Booking Date of the Posting will be set to the Effective Date.
- If the Effective Date of the Posting is in the Past compared to the current Business Date, the Booking Date of the Posting will be set to the Current Business Date.
- If no current Business Date is defined, then the Booking Date will always be set to the Effective Date of the Posting, as it means that the GL "never closes".
- Exceptions to this rule.
  - First of all, the value of the Booking Date may be overridden in the code by setting it directly in the AccountingHandler (e.g the various Java classes which are in charge of creating the Accounting Events, like the NOM\_FULL for example). This happens very rarely. But it will OVERRIDE any logic described.  
It happens for the following events: Bond / ACCRUAL\_INC\_REAL, and FX / REALIZED\_PL event where the Booking Date is set to the Settle Date.
  - As well there is an API "fillPostingDates" that allows overriding any logic coded in the Accounting Engine. This would be the ultimate place to modify the Booking Date to be sure there is absolutely no override by the Accounting Engine logic.
- Effective Date and Booking Dates on a Valuation Event
  - When we receive a Valuation Event in the Past, we always consider the Business Date to be the ValDate of the Valuation Event. And the Booking Date as well. Because if you can rerun a Valuation in the Past, it means that you have not closed your GL for this date.
  - The Reversal is set in the following way.
    - If we are in ND or NBD, the Effective Date is set to the Next Date.
    - The Booking Date is set to the Next Date if ACCENGINE\_REVERSEEND is set to true, else it is set to the Current Business Date.
    - If we are in NID, then the Effective Date is set to the Current Valuation Date. The Booking Date is set to the Current Business Date.

You can also set "ACC\_USE\_BUSINESS".and "ACC\_BUSINESS\_DATE" at the book level - In this case, they override the value set at the processing org level.

You need to run the scheduled task ROLL\_ACCENGINE DAY to move the Business Date of the Accounting Engine to the "valDate" specified in the Scheduled Task for the specified Processing Org. It adds 1 day to the current business date using the Holidays specified in the Scheduled Task. The "Business Date" is stored on the legal entity attribute "ACC\_BUSINESS\_DATE" on the processing org.

### 6.3.2 TRADE RETRIEVAL

Retrieve the Trade according to the type of Event. Where the event is related to a Netted transfer, a Trade involved in the netting is selected.

If the Event is not related to a Trade as, for example, an event linked to a Position Valuation, a dummy Trade is created.

If the Trade cannot be retrieved, an exception is generated in the Task Station.

Once retrieved, the Trade is locked into the Accounting Engine to be multi-thread safe.

### 6.3.3 ACCOUNTING RULE RETRIEVAL

Then, based on the Accounting Book of the Trade, the Accounting Book Rule Links find the Accounting Rules to be processed. It searches first by Product Type and then by Product Family in the case where no accounting rule is found.

Please note that the Accounting Engine will first look for a Holiday Calendar on the Accounting Rule – if it finds one, it will use it. If not, it will use the calendar on the Book.

For each of the Rules, the system checks the following:

- If the Event is related to a PSEventValuation or PSEventPositionValuation, the system checks if the Pricing Env specified in the valuation events match with the Pricing Env specified in the rules. An exception is generated in case it does not match.
- If no rules are found, an exception is generated.

### 6.3.4 ACCOUNTING RULE PROCESSING

For each rule, a list of requested accounting events is built based on the Accounting Rule Account configuration and the Accounting Event configuration. It checks that the incoming event triggers the generation of the Accounting Event.

For example, if you have set up the MTM Accounting Event to be triggered by the "TRADE\_VALUATION" event, it would add the requested event to the list.

### 6.3.5 EVENTS GENERATION

For the list of requested events, the system generates the Accounting Events for each of the rules. It fills in the BOPosting records by calling the handler related to each Product.

The Accounting Handler is called Accounts Generation.

### 6.3.6 FILTERING EVENTS

Then, all events are filtered to determine if they should be created based on the business rules specified. An event is filtered (e.g. dropped) if the following conditions occur:

- The flag Matching Process is set up to false.
- The Amount is equal to 0.
- If the retro-activity rule specified in the Accounting Event is before the Accounting Generation date (today's date).

### 6.3.7 MATCHING EVENTS

Once all the Postings have been generated, a matching process occurs to compare the new postings and the old postings.

The logic for matching is the following:

- If the triggering event is of class "PSEventUnliquidatePosition", no matching is performed as the Liquidation Engine has already performed a matching. If the event is generated, it means a reversal event needs to be created anyway.
- Load the existing posting related to the Trade or the Transfer from the database.
- Filter the existing postings by removing the one that should be excluded from the matching processing (events not triggered by the Events or for which retro-activity is set up).

It then compares the new list and the old list on the following criteria. If any of these criteria has changed, a reversal posting is generated.

Event Type	Product Id	Sub Id	Currency
Posting Type	Account Id	Accounting Rule Id	Debit/Credit Type
Amount	Effective Date		

### 6.3.8 SPECIAL HANDLING FOR INCREMENTAL PROCESSING

In the case where an event is set up as incremental, no reversal processing occurs. In fact, the amount booked is equal to the difference between the previous posting and the new one.

### 6.3.9 CREATING A REVERSAL POSTING

A Reversal Posting is created by cloning the Posting to be reversed, inverting the Debit/Credit. The Posting Type is set to "REVERSAL".

The Linked Id is set to the original posting id that is to be reversed.

The matching Process is set up to "false" to exclude it from the matching process next time accounting is generated for the trade.

If the reversal is triggered by a Valuation Event, the Effective Date is set up to the Valuation Date of the new event.

## 7. VIEWING POSTINGS

The Posting report displays postings (accounting entries) that have been generated by the Accounting engine.

Choose [Main Entry > Reports > Accounting Reports > Posting Report](#) (reporting.ReportWindow\$Posting) to view postings.

[**NOTE:** The columns of this picture have been configured. Sort columns, subheadings and subtotals have to be explicitly specified. See [Help > Menu Items](#) for details]

- » You can change the pricing details at the bottom of the window - By default, the pricing environment comes from the User Defaults, and the valuation date is the current date and time.
  - » Specify search criteria as applicable and click to load the corresponding postings.  
You can double-click the Account label, Debit label and Credit label to include or exclude general accounts. (G) appears when the general accounts are included.
- Account(G)
- You can click **Credit Attributes** and **Debit Attributes** as applicable to specify search criteria on automatic account attributes. Note that these buttons will only work for generated accounts that have the PROPAGATE property set to true.
  - » You can uncheck the menu item [View > Criteria](#) to hide the search criteria (this menu item operates as a checkbox).
  - » Click to print the report results.

### 7.1 POSTING REPORT RESULTS

You can click any column heading to sort the results based on that column.

You can right-click any row to invoke the functions of the report menus. See [Help > Menu Items](#) for details.

The default columns of the report are the following.

Columns	Description
<b>Posting Id</b>	Unique id number of this posting in the Calypso system.
<b>Trade Id</b>	Id number of the trade associated with this posting.
<b>Product Description</b>	Description of the traded product that initiated this posting.
<b>Event Code</b>	Accounting event type of this posting. Refer to the <i>Calypso Accounting User Guide</i> for details.
<b>Description</b>	Description of the accounting event type of this posting.
<b>Amount</b>	Amount of this posting.
<b>Currency</b>	Currency of this posting.
<b>Posting Type</b>	Posting Type keyword indicating whether this posting is a new or reversing posting.
<b>Type</b>	Keyword indicating that this is a debit or credit.
<b>Account</b>	GL account to which this posting will post.
<b>Linked Id</b>	If this is a reversal posting, this field shows the id of the reversed posting; otherwise it will be set to 0.
<b>Original Event</b>	Event that kicked off this posting.
<b>Effective Date</b>	See <a href="#">Posting Dates Explained</a> for details.
<b>Booking Date</b>	See <a href="#">Posting Dates Explained</a> for details.
<b>Account Type</b>	Type of account. Refer to the <i>Calypso Accounting User Guide</i> for details.
<b>Accounting Rule</b>	Name of the accounting rule that generated this posting.
<b>Sent Date</b>	Date on which this posting was sent to the main General Ledger. This date must be set by your GL interface application when it exports the posting to the main GL.
<b>Status</b>	Status code indicating where this posting is in its lifecycle. Typically it will be NEW or SENT.
<b>Matching</b>	Matching Process flag indicating whether this posting will be compared with a new posting in order to determine if it should be reversed. If the box is checked ON, then this posting is eligible for reversal.
<b>Creation Date</b>	See <a href="#">Posting Dates Explained</a> for details.
<b>Other Amount</b>	Initial signed amount of this posting; used to store the total accrual amount to manage incremental accounting of accrual.

### 7.1.1 POSTING DATES EXPLAINED

- **Booking Date** — The accounting date to which this posting belongs. Generally this will be the same as the Effective Date of this posting unless:
  - This posting was generated with back-valuation,
  - This posting is a mark-to-market reversal, or
  - This posting is a reversal posting.
 The rules for setting this value are as follows:
  - If the Effective Date is in the future or is today, the Booking Date will be the Effective Date.
  - If the Effective Date is in the past, the Booking Date will be today.
  - If this posting is a Reversal, the Booking Date is the same as to the original Booking Date.
- **Creation Date** — When creating the posting, the Accounting engine sets the Creation Date to the current system date.
- **Effective Date** — The date at which this posting should modify a balance account in your General Ledger. This date is often referred to as the Value Date.

## 7.2 EDIT MENU

The menu items of the Edit menu are described below.

Menu Items	Description
<b>New</b>	To create a new posting using the Manual Posting window. See <a href="#">Manual Postings</a> for details.
<b>Edit</b>	To edit the selected posting using the Manual Posting window. See <a href="#">Manual Postings</a> for details.
<b>Retry</b>	To apply the RETRY action.



## 8. BO POSTING ACCRUAL REPORT

The accrual posting report loads all the trades of a given trade filter, and reports all interest and P&L postings related to the trade, including interest and P&L postings from the EOD\_TRADE\_VALUATION scheduled task.

Choose [Main Entry > Report > Accounting Reports > Accrual Posting Report](#) (reporting.ReportWindow\$BOPostingAccrual) to view interest and P&L postings.

Processing Org	Book	Currency	Total Interest Rec/Payable	
Processing Org: EUFIBO1	Book: BookEUFIBO1	Currency: USD		
EUFIBO1	BookEUFIBO1	USD	3,416.67	Swap/01/09/2010/P:USD/LIBOR/3M /R:USD 3.00000
EUFIBO1	BookEUFIBO1	USD	0.00	Swap/01/09/2010/P:USD/LIBOR/3M /R:USD 0.00000
EUFIBO1	BookEUFIBO1	USD	3,416.67	Swap/01/09/2010/P:USD/LIBOR/3M /R:USD 3.00000
			6,833.34	


» You can change the pricing details at the bottom of the window - By default, the pricing environment comes from the User Defaults, and the valuation date is the current date and time.

» Select a trade filter and click  to load all interest and P&L postings related to the selected trades.

The Month To Date and Year To Date values are computed by the EOD\_TRADE\_VALUATION scheduled task for the ACCRUAL event – Make sure that the ACCRUAL\_BO pricer measure is specified on the ACCRUAL event.

Also, in order for this report to reflect the proper accruals, the EOD\_TRADE\_VALUATION must be run on a daily basis.

» You can uncheck the menu item [View > Criteria](#) to hide the search criteria (this menu item operates as a checkbox).

» Click  to print the report results.

## 9. CAPTURING MANUAL POSTINGS

Note that the Accounting Engine should be running.

To enter a manual posting, choose [Main Entry > Processing > Manual Postings](#). You can also capture manual postings from the postings report.

This window allows you to capture manual postings related to existing trades or existing postings, or independent postings.

**Manual Posting Window**

Posting Id: 1209      Description:

Product: BondGilt/20Y/03/03/2000/9%      9

Book: BONDS\_FRANKFURT      Processing Org: FRANKFURT

Event Type: COMMISSION      Currency: EUR

Posting Type: MANUAL      Amount: 7,667

Eff Date: 04/09/2004      Link Id: 1208

Booking Date: 04/08/2004      Rule:

Status: NEW      ☐ Matching      Orig Event:

Transfer Id:      Other Amount: -7,667

Sent Date:      Creation Date: 3/16/05 12:33:24 PM

Version: 0      Update Time: 3/16/05 12:33:24 PM

Auto. Debit Account: Repoed Security      Generate

Debit Account: ICHE1US91282274V18CEDELACCOUNT1      Acc. Id: 1903

Auto. Credit Account:      Generate

Credit Account: ACCRUAL      Acc. Id: 30

New    Save    Save as New    Save as Reversal    ☐ Authorization    Close

- » Click **New** to create a new posting, and then enter your criteria in the fields described below as applicable.
- » To generate a manual posting with automatic accounts, click **Generate**. The account is automatically created and displayed in the Debit/Credit Account field.
- » Then click **Save** to save your changes.
- » Click **Save as New** to amend the various fields as appropriate without having to re-enter all the original data. If the figure in the Amount field is amended, the figure in the Other Amount field will be updated automatically to reflect the change. For example, if the Amount was 7,667 and the Other Amount was -7,667, and the Amount was changed to 17,667, the Other Amount must change to -17,667 without the need for manual intervention. The Creation Date and Update Time will display system generated dates and times. It will save it under a new Posting Id as shown below.



**Manual Posting Window**

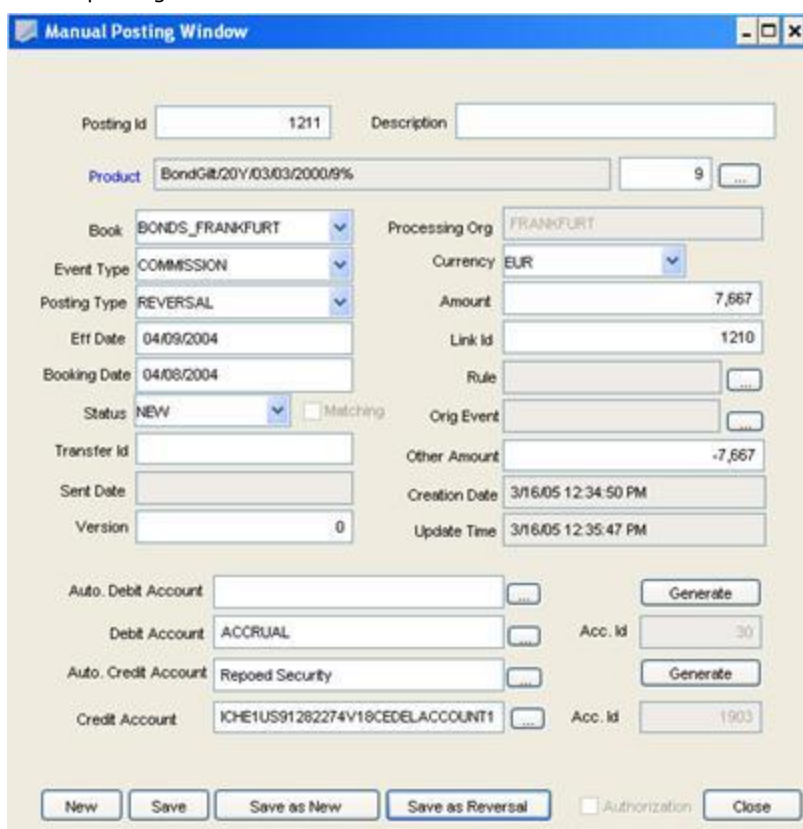
Posting Id: 1210      Description:

Product: BondGilt/20Y/03/03/2000/9%

Book: BONDS\_FRANKFURT      Processing Org:

Event Type: COMMISSION

- » The **Save as Reversal** buttons allow you to reverse an erroneous entry. As shown below, the repoed security details has been reversed given a new posting Id and has a linked Id corresponding to initial posting reversed by the current posting.



**Manual Posting Window**

Posting Id: 1211      Description:

Product: BondGilt/20Y/03/03/2000/9%      9

Book: BONDS\_FRANKFURT      Processing Org: FRANKFURT

Event Type: COMMISSION      Currency: EUR

Posting Type: REVERSAL      Amount: 7,667

Eff Date: 04/09/2004      Link Id: 1210

Booking Date: 04/08/2004      Rule:

Status: NEW      Matching: ☐      Orig Event:

Transfer Id:      Other Amount: -7,667

Sent Date:      Creation Date: 3/16/05 12:34:50 PM

Version: 0      Update Time: 3/16/05 12:35:47 PM

Auto. Debit Account:      Generate

Debit Account: ACCRUAL      Acc. Id: 30

Auto. Credit Account: Repoed Security      Generate

Credit Account: ICHE1US91262274V18CEDELACCOUNT1      Acc. Id: 1903

New    Save    Save as New    **Save as Reversal**    Authorization    Close

Fields	Description
<b>PostingId</b>	Id of manual posting. This Id is automatically attributed to the manual posting when the action is Saved.
<b>Description</b>	Free field – can be used for explanation of the manual posting
<b>Product</b>	Manual posting can be related to one specific product. This field is not mandatory Click ... to bring up the Product Chooser window. Note: Double-click on the Product label to switch it to Trade.
<b>Book</b>	Select the book which is related to this manual posting from the drop down menu
<b>ProcessingOrg</b>	Automatically displayed after choosing a book

Fields	Description
<b>Event Type</b>	Accounting Event type of the manual posting. This should have been previously created in the Accounting event window.
<b>PostingType</b>	Select between CLOSING, DELETED, MANUAL, NEW and REVERSAL.
<b>Eff date</b>	Effective date of the accounting entry: i.e. the actual date when the posting is taken into account
<b>Booking Date</b>	Date on which posting is entered in the BackOffice system, or date when posting should be recognized by the General Ledger.
<b>Status</b>	NEW: posting is new DELETED: posting has been deleted SENT: posting has been sent to the General Ledger
<b>Matching checkbox</b>	Select this check box to see if this posting have been reversed.
<b>TransferId</b>	If the manual posting is related to a transfer, store the Id of the transfer
<b>Sent date</b>	Date on which the posting has been sent to the general ledger
<b>Version</b>	Version of posting
<b>Currency</b>	Currency of the posting
<b>Amount</b>	Amount
<b>LinkId</b>	Id corresponding to initial posting reversed by current posting. To be used if user creates reverse posting.
<b>Rule</b>	Rule linked with the posting: not a mandatory field
<b>Orig Event</b>	Triggered event, not a mandatory field
<b>Other Amount</b>	Cash amount in case of posting linked to a transfer
<b>Creation Date</b>	Automatically displayed by the system, useful for the audit trail
<b>Update Time</b>	Displays time when last updated.
<b>Auto Debit Account</b>	Indicate here the name of the automatic account used for the debit
<b>Generate</b>	Automatically generates an account name
<b>Debit Account</b>	Indicate the name of the debit account here
<b>Acc Id</b>	Displays the account Id
<b>Auto Credit Account</b>	Indicate the name of the automatic account used for the credit here
<b>Credit Account</b>	Indicate here the name of the credit account
<b>Acc Id</b>	Displays the account Id
<b>Authorization checkbox</b>	Select this to list any postings pending authorization.