Operation Manual

Currency Conversion

03.52.30

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Contents

Multicurrency support can be considered as one of the most important functions needed for the accounting and processing of card transactions through Way4.

This document is intended for Way4 system administrators (bank or processing center employees) and describes the specifics of setting up and working with a multicurrency system.

When working with this document, it is recommended to use the following resources from the OpenWay documentation series:

- DB Manager Manual
- Interchange Routing
- Daily Procedures
- Way4 Account Schemes
- Way4 Service Packages
- Usage Limiters
- Standing Payment Orders
- Documents
- Scheduler
- Menu Editor
- FX Rates
- Financial Institutions
- Housekeeping

The following notation can be used in the document:

- Field labels in screen forms are shown in *italics.*
- Key combinations are shown in angular brackets, for example, <Ctrl>+<F3>.
- Names of screen form buttons and tabs are shown in square brackets, for example, [Approve].
- Sequences for selecting user menu items or context menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: Database => Change password.
- Variables that differ for each local instance, such as directory and file names, as well as file paths are shown in angular brackets, as in <OWS_HOME>.

Warnings and information are marked as follows:

Warnings about potentially hazardous situations or actions.

Messages with information about important features, additional options, or the best use of certain system functions.

1 Currency conversion. Overview

Currency conversion occurs in the Way4 system in the following situations:

- When determining the amount available in an issuing contract having accounts in different currencies.
- During authorization when the currency of the authorization request differs from the currency of the contract.
- When determining the balance of a contract having accounts in various currencies.
- When determining a contract's usage limiter parameters (see the document "Usage Limiters Manual") during authorization when the currency of the authorization request differs from the currency specified by the usage limiter.
- When posting macrotransactions that include contractor accounts in differing currencies.
- When calculating a fee if the account currency differs from the fee currency specified in the corresponding service (see the document "Way4 Service Packages").
- When processing outward clearing files and comparing transaction amounts with the floor limit, if the transaction currency differs from the currency in which the limit is set.
- When creating reports, for example, client statements.

For currency conversion the Way4 system uses the following tools and procedures:

- FX Schemes
- FX Types
- FX contract of a financial institution (FI), used by default for posting currency conversion operations and containing a set of conversion accounts
- Additional global parameters that define currency conversion rules
- A currency system dictionary that can be refreshed partly by loading data from the payment system
- Entering FIs and types of local to foreign currency rates during daily procedures (entering of the bank date); different rate types may be entered, such as FX buy rates, FX sell rates, and FX middle rates. The system will convert currency based on the middle rate, excluding these cases where the service sets another buy/sell rate for the transaction (see the document "Way4 Service Packages").
- Loading of currency rates from the payment system

> Note that in most cases Way4 converts currency using the rate of the local to foreign currency and a conversion account pair, one account in the local and the other in the foreign currency. The local currency is defined when configuring the FI (see the document "Financial Institutions"). A foreign currency may be converted to another foreign currency without using accounts in the local currency (see the description of the USE_CROSS_FX global parameter in the document "Way4 Global Parameters").

2 Determining the currency and FX rate in Way4

Currencies are accounted in the system using forms "Currency Table", used to keep a dictionary of currencies, and "FX Rates", used to enter rates of currencies to a local currency used for conversion.

The system allows for importing payment systems daily currency conversion rates in clearing files.

2.1 Currency table

The table of currencies can be accessed through the user menu path "Full → Configuration Setup → Main Tables → Currency Table".

Currency Table

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Full Name	Name	Code	Exponent	FX Range	Use in Bank
ALGERIAN DINAR	DZD	012	2	For 1	No
ANGOLA KWANZA	AON	024	2	For 1	No
ANGOLA KWANZA	AOA	973	2	For 1	No
ARGENTINE AUSTRAL	ARS	032	2	For 1	No
ARUBAN GUILDER	AWG	533	2	For 1	No
AUSTRALIAN DOLLAR	AUD	036	2	For 1	No
AZERBAIJANIAN MANAT	AZN	944	2	For 1	No
AZERBAIJANIAN MANAT (old)	AZM	031	2	For 1	No
BAHAMIAN DOLLAR	BSD	044	2	For 1	No
BAHRAINI DINAR	BHD	048	3	For 1	No
BAHT	THB	764	2	For 1	No
BALBOA	PAB	590	2	For 1	No
BARBADOS DOLLAR	BBD	052	2	For 1	No
BELARUSSIAN RUBLE	BYR	974	0	For 1	No

Ins Del Query Add Redef Redefinition

System currency table

Users must manually enter in data from payment system directories and load data from Mastercard files (Full → Daily Procedures → Load BIN Tables and Handbooks → MC. Load BIN Table and Handbooks → MC. Full Replacement → Load MPE Replacement Files). When loading file data, currency entries that have the *Use in Bank* field set to value "Yes" will not be refreshed. If a conflicting situation arises, for example, if a discrepancy is found in parameter values for the same currency in different payment systems, consult with the OpenWay representatives.

The currency table contains the following fields:

- *Full Name* – currency name.
- *Name* – alphabet currency code in ISO.
- *Code* – currency code number in ISO.
- *Exponent* – number of decimal places used in the currency.

- *FX Range* – the amount of currency units used when setting the rate value; for example, when entering the value " For 100" for the Japanese yen, a rate of 0,77EUR/JPY means that the rate is 0,77 euros to 100 Japanese yen.
- *Use in Bank* – when this parameter is set to "Yes", conversion and entry of currency rates in the FI's local currency can take place in daily procedures in Way4.

2.1.1 Redefining currency parameters

In the "Currency Table" dictionary, it is possible to redefine a currency – its code and/or number of decimal places used in the currency (the exponent) according to IPS requirements. For example, according to an IPS requirement, from a certain point in time the exponent in a certain currency must have a null value.

A currency can be redefined when processing authorization documents (Online) or when processing clearing documents (Clearing).

For one currency, several redefinition variants can be specified, that are effective at different times. Redefinition effective periods must not overlap.

For online processing, a currency is redefined through the user interface, if Transaction Switch is used for data exchange with external systems. If NetServer is used, settings to redefine currencies for online processing are made by the OpenWay.

If a currency must be redefined for settlements (Clearing, Settlement), this is done through the user interface.

If the number of decimal places is changed, users (bank or processing center employees), can only edit the "Currency Table" dictionary in the initial stage of system configuration, or before starting to work with a new currency. If transactions in a certain currency are already registered in Way4, changes should not be made to the "Currency Table" dictionary.

In this case, the following actions are taken:

- If settlements in the currency are not made in Way4, amounts in this currency are used only for display purposes (for example, in statements). In this case, when a payment system changes the number of decimal places, OpenWay employees make the appropriate changes in the settings of the interface with this payment system. By default, changes in the number of decimal places are not made in the Way4 DB. I.e. as concerns showing the fee with consideration of the exponent, the amount received from the payment system will not correspond to the amount that is registered in the Way4 DB.
  For example, Visa changes the number of decimal places for the VND currency from "2" to "0", and OpenWay employees make the appropriate setting for the interface with Visa. When the Way4 DB receives a transaction through the Visa interface (i.e. when an amount is received in the VND

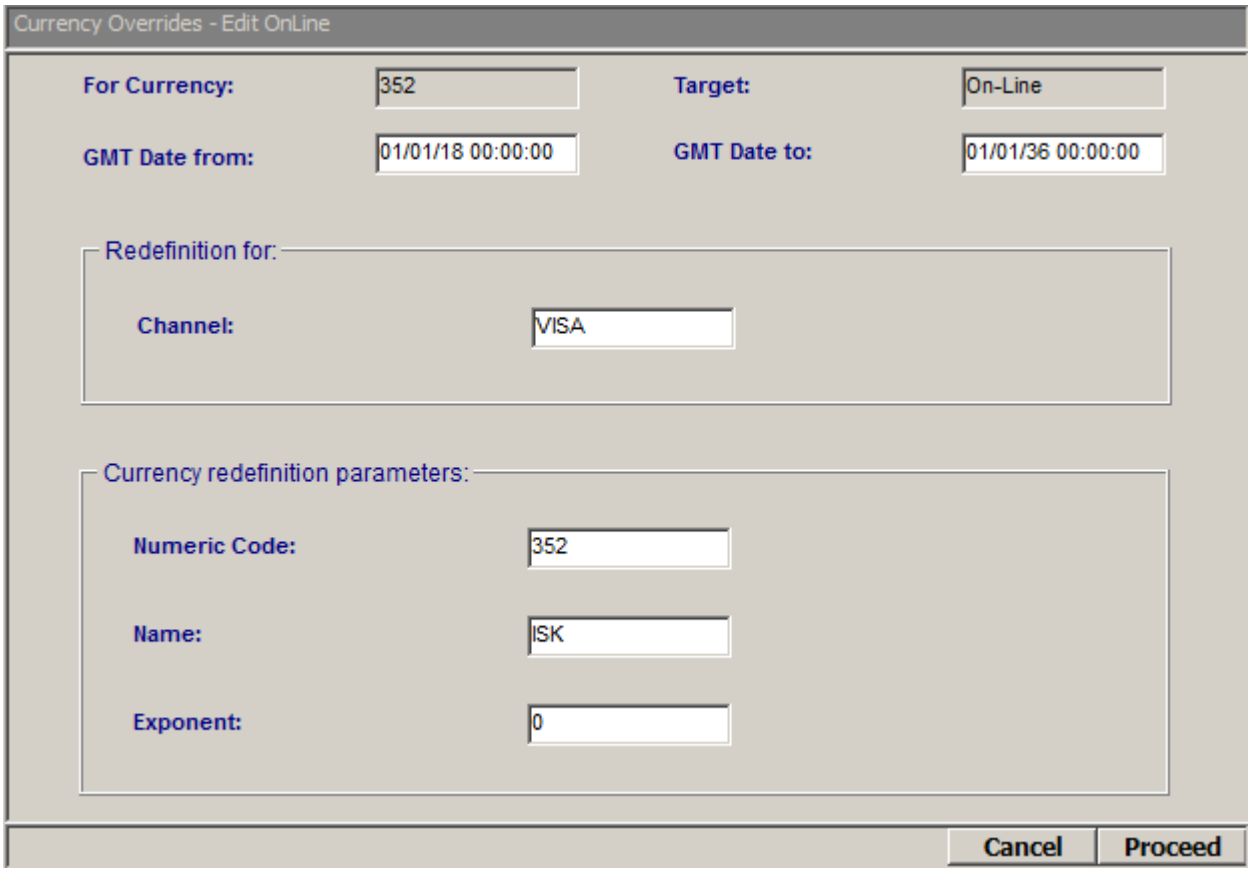
currency with "0" decimal places), in Way4 the number of decimal places will automatically be changed from "0" to "2". For example, when the amount of 100 VND is received from the payment system, the amount of 100.00 VND will be registered in Way4. The number "2" will be used by default for all internal interfaces (H2H, UFX, web services, web banking, etc).
The bank must analyze the need and ability to save this change for internal interfaces. For example, if a certain financial institution must get transactions through H2H in the VND currency with "0" decimal places, bank employees must make the appropriate settings for the H2H interface.

- If settlements in the currency are made by the bank in Way4:
  - See the actions taken when changing interface settings for the currency's number of decimal places in the previous item.
  - To change the number of decimal places in the Way4 DB, a separate request must be made to the OpenWay.

2.1.1.1 Redefining currency for online

If the number of decimal places is changed, users (bank or processing center employees), can only edit the "Currency Table" dictionary in the initial stage of system configuration, or before starting to work with a new currency.

To redefine the currency used for online processing, click on the [Add Redef] button in the "Currency Table" form and select the "OnLine" context menu item to open the "Currency Overrides – Edit OnLine" form.



Creating a redefinition for Icelandic Krona, used for online processing

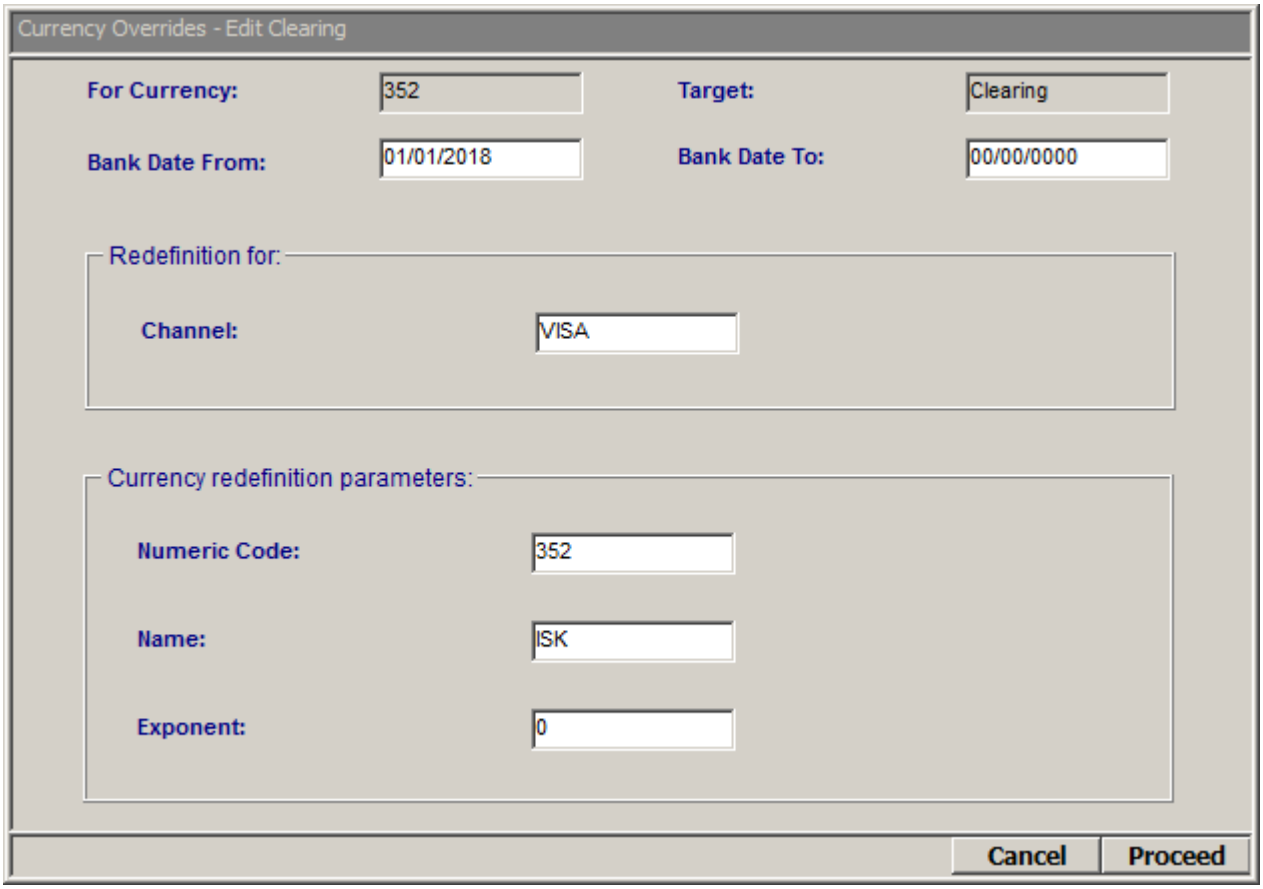
Fill in the following fields:

- *GMT Date From* – date and time (GMT) from which the currency redefinition used for processing online is effective.
- *GMT Date To* – date and time (GMT) until which the currency redefinition used for processing online is effective. If the field is empty, the redefinition is effective indefinitely.
- *Channel* – name of the transaction channel. The value is selected from a list registered in the "Message Channels" dictionary (menu item "Full → Configuration Setup → Main Tables → Message Channels"). Transaction Switch must be set up to provide an interface with external systems (see the section "Transaction Switch settings").
- *Numeric Code* – the currency's numeric code after redefinition.
- *Name* – the currency's name after redefinition.
- *Exponent* – number of decimal places for amounts in this currency after the currency has been redefined.

2.1.1.2 Redefining currency for clearing documents

If the number of decimal places is changed, users (bank or processing center employees), can only edit the "Currency Table" dictionary in the initial stage of system configuration, or before starting to work with a new currency.

To redefine the currency used when processing clearing documents , click on the [Add Redef] button in the "Currency Table" form and select the "Clearing" context menu item to open the "Currency Overrides – Edit Clearing" form.



Creating a redefinition for Icelandic Krona used when processing clearing documents

Fill in the following fields:

- *Bank Date From* – bank date and time the currency redefinition for processing clearing documents is effective.
- *Bank Date To* – bank date and time until which the currency redefinition for processing clearing documents is effective. If the field is empty, the redefinition is effective indefinitely.

The remaining fields in the "Currency Overrides – Edit Clearing" form are the same as those in the "Currency Overrides – Edit OnLine" form (see the section "Redefining currency for online").

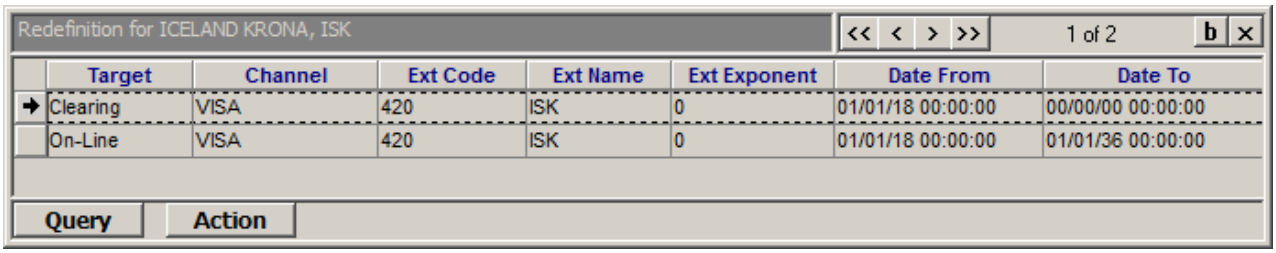
> If the "CHANGE_CURR", "CHANGE_CURR_OUT", "CHANGE_CURR_IN", "EXT_CURR_EXP" parameters are set in document import/export pipes, they have a higher priority than the settings made in the user interface.

2.1.1.3 Viewing and editing currency redefinitions

> ⚠ If the number of decimal places is changed, users (bank or processing center employees), can only edit the "Currency Table" dictionary in the initial stage of system configuration, or before starting to work with a new currency.

To view and edit currency redefinitions that were created earlier:

- Click on the [Redefinition] button in the "Currency Table" form to open the "Redefinition for < >" form.
- Select the redefinition that must be changed.
- Using the [Action] button and the "Edit" context menu item, open the edit form. The edit form is the same as the form for creating a redefinition; all fields are editable.



List of redefinitions for Icelandic Krona

Use the [Action] button and the "Delete" context menu to delete a redefinition.

2.1.1.4 Transaction Switch settings

Set up services for interacting with payment systems:

```
<appComponent xsi:type="ISOH2HAdapter">
…
<special_processing_options>
  <currencyOverrides channel= Channel Code/>
</special_processing_options>
</appComponent>
```

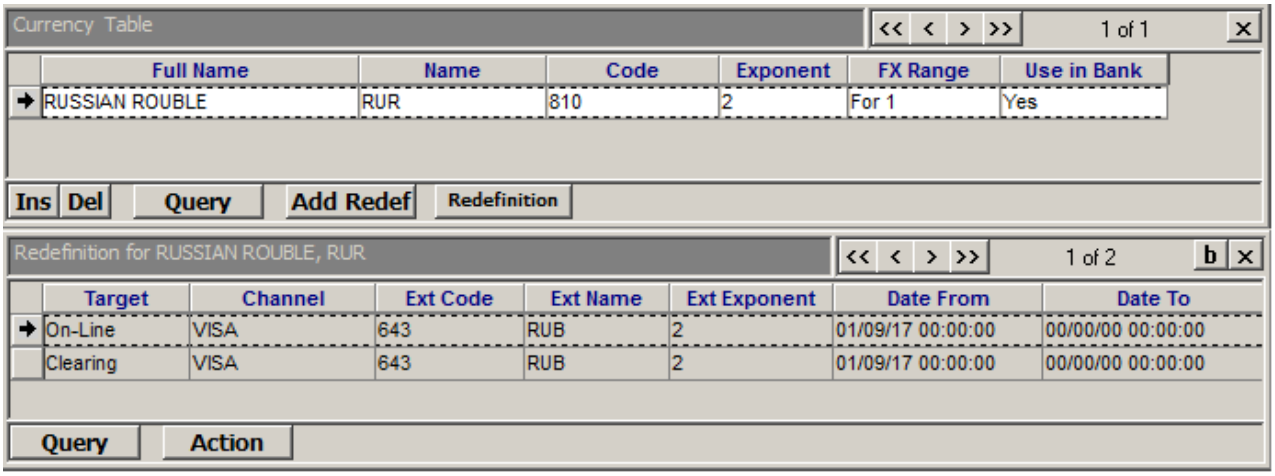
For example:

```
<appComponent xsi:type="VISAAdapter">
…
<special_processing_options>
  <currencyOverrides channel="V"/>
</special_processing_options>
</appComponent>
```

Where the *currencyOverrides channel* parameter is a channel code from the *Code* field of the "Message Channels" dictionary (menu item "Full → Configuration Setup → Main Tables → Message Channels").

2.1.1.5 Example of redefining the code for the Russian ruble

According to the Russian currency classification system, the code 810 is used to number accounts in the national currency. This code in the ISO 4217 standard corresponds to the Russian ruble before it was devalued in 1998. The current ISO code for the Russian ruble is 643. An example of redefinition of the code for the Russian ruble is shown below: for external systems, the Russian ruble will have the code 643, and in Way4, the code 810 will be used.



Redefinition of the numeric code and code for the Russian ruble

> Redefinition of the codes 643 and 810 should not be reversed. This may lead to errors in system behavior.

2.2 Entering local to foreign currency rates

Local to foreign currency rates can be entered in the following ways:

- Manually when opening the banking day. This is done in the "FX Rates" form that opens automatically after the banking date has been entered during daily start of day procedures ("Full → Daily Procedures → Default Start of Day" or "Full → Daily Procedures → Start of Day Step By Step → Set Banking Date"). The rate is applied for conversion and calculations after the start of day procedure has been completed. See the section "Entering currency rate values during the start of day procedure".
- Manually using the menu items "Full → DB Administrator Utilities → Special OpenWay Utilities → Set FX→ Set FX Rates <>". When rates are entered this way (not when opening the day) the rate is applied for conversion and calculations after running the menu item "Apply FX Rates" (Full → DB Administrator Utilities → Special OpenWay Utilities → Set FX → Apply FX Rates) or when the next banking day opens (after procedures for opening the next banking date have been completed).

Menu items "Set FX Rates <>" should only be run when necessary. When the Set FX Rates <> menu items are run, rates are cleared in the FX_SCHEME table from which rates are later moved to the FX_RATES table (i.e. rates are applied), and then the "FX Rates" form opens for entering new rates. If this menu item is run accidentally, it is not possible to cancel the resetting of rates in the FX_SCHEME table by clicking the [Cancel] button in the "FX Rates" form.

- Manually several times a day with immediate application. This is done using the menu item "Reset FX Rates" (Full → Daily Procedures → Start of Day Step By Step → Reset FX Rates).
- Loading rates from files using the "FX Rates Import" pipe with the "N" value of the global parameter FUTURE_RATES_LOADING – a loaded rate is shown in the "FX Rates" form when the next banking day is opened. FX rates are applied automatically after the next banking date has been opened or if immediate application is necessary, using the menu item "Apply FX Rates" (Full → DB Administrator Utilities → Special OpenWay Utilities → Set FX → Apply FX Rates).

After the pipe has loaded FX rates, they appear in the "FX Rates" form and can be edited and applied when the next banking date opens. Note that FX rates are not applied automatically when they are loaded (that is rates will not be applied automatically for conversion and calculations immediately after the pipe has loaded them).

- Loading rates for future dates using the "FX Rates Import" pipe with the "Y" value of the global parameter FUTURE_RATES_LOADING:
- If there is one FX rate for one banking date this rate will be shown in the "FX Rates" form when the corresponding banking date opens. The rate is applied for conversion and calculations after the start of day procedure has been completed.
- When several rates for one banking day are loaded with the "FX Rates Import" pipe these rates should be applied using the menu item "Apply FX Rates" (Full → DB Administrator Utilities → Special OpenWay Utilities → Set FX → Apply FX Rates) according to the time that is specified for these rates to become effective. It is recommended to schedule running this menu item (see the document "Working with Scheduler").

2.2.1 Entering currency rate values during the start of day procedure

The rate of a certain currency to a local currency used in conversion can be entered as part of the daily procedures for opening a new banking day (see the section "Setting banking date" in the document "Daily Procedures") when a new banking date is set.

Depending on how the user menu item "Full → Daily Procedures → Default Start of Day" and "Full → Daily Procedures → Start of Day Step By Step → Set Banking Date" is configured, users can be invited to enter the currency rate according to one of the following ways:

- "Set FX Rates (Full)" – Enter the buy, sell, and middle rate values for each FI registered in the system.

- "Set FX Rates (Middle Rates)" – Enter the middle currency rate for each FI registered in the system; entered values will automatically be copied to the buy/sell rate value fields.
- "Set FX Rates (HeadOffice)" – Enter all currency rates for the FI's head office; entered values are automatically copied to rate fields for all remaining FIs.
- "Set FX Rates (HeadOffice, Middle Rates)" – Enter the middle currency rate for the FI's head office; entered values are automatically copied to the buy/sell rate of the head FI, and to the rate value fields for all remaining FIs.

To enter the currency rate value, use the "FX Rates..." grid form.

FX Rates

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Currency	Institution	FX Type	Base Curr	Is Cross Rate	Range	FX Middle	FX Buy	FX Sell	CB Rate	Auth Sell Mult	Auth Buy Mult
USD	Principal				For 1	33,0000	31,0000	34,0000	35,0000	1,000	1,000
USD	Principal	My convert			For 1	38,0000	34,0000	40,0000	1,0000	1,000	1,000
IDR	Principal				For 1	28,0000	26,0000	30,0000	28,0000	1,000	1,000
IDR	Principal	My convert			For 1	35,0000	32,0000	38,0000	1,0000	1,000	1,000
JOD	Principal				For 1	28,0000	26,0000	30,0000	28,0000	1,000	1,000
JOD	Principal	My convert			For 1	35,0000	32,0000	38,0000	1,0000	1,000	1,000
EUR	Principal				For 1	45,0000	42,0000	48,0000	45,0000	1,000	1,000
USD	Principal		EUR	Yes	For 1	0,6500	0,5500	0,6600	28,0000	1,000	1,000

Cancel Proceed

Table for entering FX rates

This table contains the following fields:

- *Currency* – name of currency
- *Institution* – name of FI, for which the rate is indicated
- *FX Type* – field that shows (if filled) that this particular rate is associated with an FX Type (see the section "FX Types")

> It should be kept in mind that a new rate can only be entered for independent FX Types; for dependent FX Types the rate value is the basic rate value used by default (see the section "FX Types").

- *Range* – quantity of currency units used when determining the rate
- *FX Middle* – middle rate value
- *FX Buy* – buy rate; this value is used when the *FX Rate Type* field of the service according to which a document is processed contains the "Buy/Sell" value, the contract has no account in the transaction currency with the type specified in the Service, and either of the following conditions is met:
  - An account with a foreign currency is credited
  - An account with the local currency is debited
- *FX Sell* – sell rate; this value is used when the *FX Rate Type* field of the service according to which a document is processed contains the "Buy/Sell" value, the contract has no account in the transaction currency with the type specified in the Service, and either of the following conditions is met:
  - An account with a foreign currency is debited
  - An account with the local currency is credited

- *CB Rate* – rate set by the Central Bank (the national bank) of the country; by default this field is set to the middle rate. For example, the rate value set in this field can be used for report generation.
- *Auth Sell Mult* – sell rate multiplier used during authorization to calculate the blocked amount converted from a local currency. This value may be used to compensate the difference between the blocked amount and the amount posted to contract accounts, which arises because of the difference in the conversion rates on the authorisation date and the financial document processing date. In this case, blocked amounts are calculated according to the following formula:

$$Блокируемая\ сумма\ (ИВ) = \frac{Сумма\ транзакции\ (ЛВ)}{Курс\ локальной\ валюты \cdot Auth\ Sell\ mult}$$

  For example, to increase blocked amounts by 2%, specify value "0.98" in this field; the default value is "1" (blocked amounts are not changed).
- *Auth Buy Mult* – buy rate multiplier used during authorization to calculate the blocked amount converted to a local currency. This value may be used to compensate the difference between the blocked amount and the amount posted to contract accounts, which arises because of the difference in the conversion rates on the authorisation date and the financial document processing date. In this case, blocked amounts are calculated according to the following formula:

$$Блокируемая\ сумма\ (ЛВ) = Сумма\ транзакции\ (ИВ) \cdot Курс\ локальной\ валюты \cdot Auth\ Buy\ mult$$

  For example, to increase blocked amounts by 2%, specify value "1.02" in this field; the default value is "1" (blocked amounts are not changed).

It should be kept in mind that when entering a new rate value, the system checks whether the new value differs from the current value more than the permissible fluctuation value indicated for the currency in the *Max Fluctuation* field in the currency table (see the section "Setting up main FX Schemes"). If this limit is exceeded, the system will create an error message and interrupt the loading of rates. In this case, the system will use previously entered rate values (see the section "FX rate history"); therefore, if new values need to be entered, enter the rate again after making the necessary corrections.

Currency rates can entered several times a day if necessary through the user menu path "Full → Daily Procedures → Start of Day Step By Step → Reset FX Rates" without changing the current banking date.

2.2.2 Loading currency rates from files using the "FX Rates Import" pipe

To load currency rates from files, use the user menu path "Full → DB Administrator Utilities → Special OpenWay Utilities → FX Rates Import → RBS FX Rates Import". The pipe's parameters, loading modes, and the format of files for importing currency rates are described in the document "Loading FX Rates".

2.2.3 FX rate history

Users can access the history of currency rates and the current rate through the user menu path "Full → Daily Procedures → FX Rate History". After selecting the indicated menu item, the screen will display the table grid "FX Rate History".

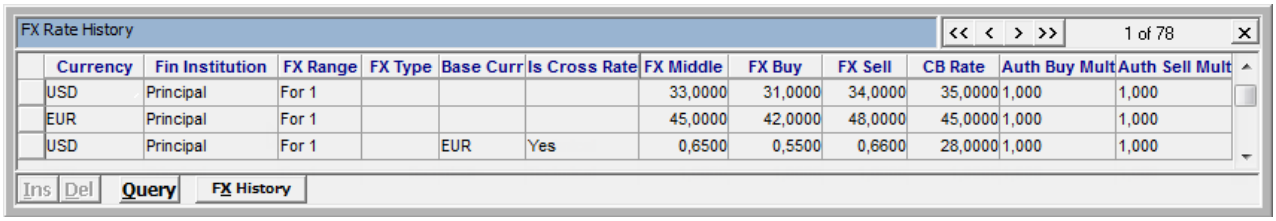


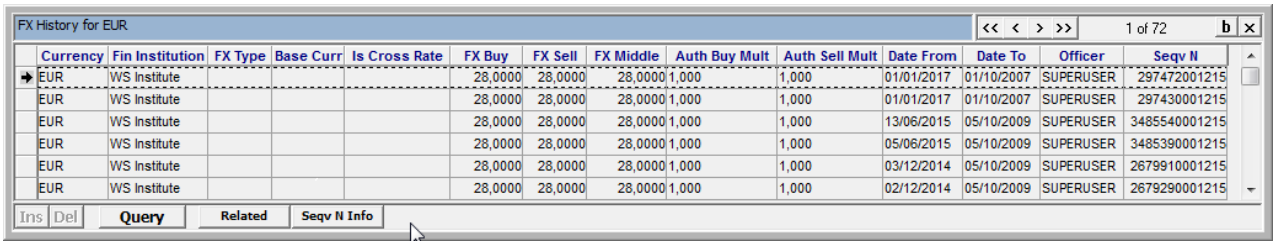
Table of rate values last entered by the user

This grid is the same type as the FX Rates table (see the section "Entering local to foreign currency rates") and contains the last currency rates entered by the user.

> It should be kept in mind that data presented in the "FX Rate History" table may not correspond to current rate values used by the system for conversion. A similar situation is possible, for example, after entering a value that differs from the current rate by an amount exceeding a set limit (see the section "Entering local to foreign currency rates").

To access current values and rate history of any currency, select the row containing the currency and conversion type in the "FX Rate History" table and click on the [FX History] button.

The screen will display the table grid "FX History for <name of currency>".



FX history for selected currency

This grid contains the rate history for a given currency with the date and the name of the user who entered the data.

> Note that the form "FX History for <name of currency>" displays the current rate in the row containing the most recent date in the *Date To* field or, if rates were entered several times over the same day, the highest value in the *Seqv N* field. The field contains a number unique within a day.

Clicking the [Seqv N Info] button opens a form containing information about the time the rate was set. This information may be useful when a rate changes several times a day.

2.3 Loading channel rates

Channel rates are loaded as follows:

- For Visa, FX rates are updated when importing clearing data using the "VISA → VISA.Daily Procedures → VISA.Inward Procedures→ VISA BASE II Inward Processing" menu item.
- For Mastercard, FX channel rates are updated using the menu item "MasterCard → MC.Daily Procedures → MC.Load Bin Table and Handbooks → Load MC Rates". Before executing this menu item, copy the file received from Mastercard with the name mask "T05? to the "<OWS_WORK>\Data\Interchange\MPE_Inc" directory.

Rates are loaded to the CHANNEL_CURRENCY table.

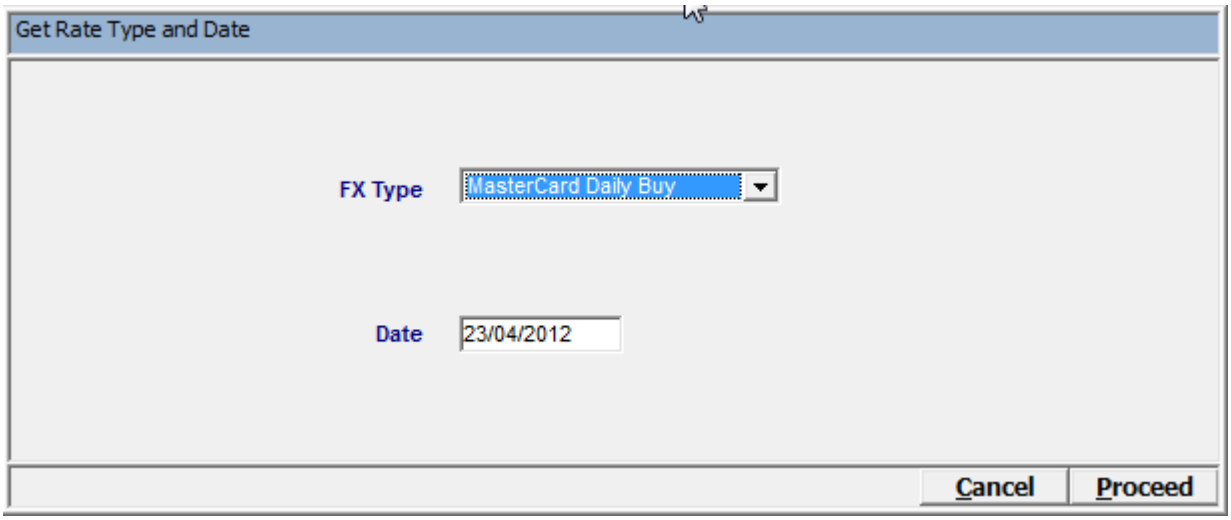
Information about loaded FX rates from a payment channel can be viewed through the user menu item path "Full →Daily Procedures →Load BIN Tables and Handbooks → FX Channel Rates".

This group contains the following menu items:

- "Channel Rates on Date" – access to channel rates for a certain date.
- "Channel Rates Last" – access to the last entered channel rates.
- "Cross Rates on Date" – access to cross rates calculated from the channel rate.

To access channel rates for a given date, select the menu item path "Full → Daily Procedures → Load BIN Tables and Handbooks → FX Channel Rates → Channel Rates on Date".

This will invoke the dialog box "Get Rate Type and Date".



Dialog box for selecting the FX Type and date

Select the desired channel rate type from the drop-down list in the *FX Type* field. Rate types are registered in the "FX Types" form (Full → Configuration Setup → Accounting Setup → FX Types). In the *Is Internal* field of the form, specify "No" for FX rate types imported from payment systems.

> For Visa, a single "Visa Daily" rate is registered (unlike, for instance, for Mastercard, for which Buy, Sell and Middle rates are registered).

The *Date* field is used to enter the date on which the channel rate was established by the payment system. After setting up the indicated fields, click on the [Proceed] button.

The "Channel Rates on Date" grid form will appear on the screen.

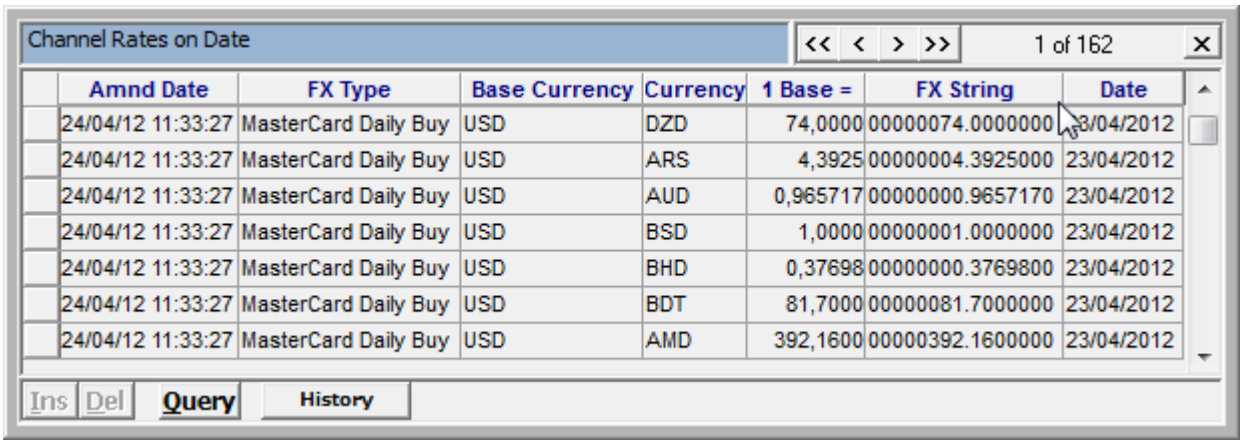


Table of channel rates

This table contains the following fields:

- *Amnd Date* – date when file was loaded from the payment system
- *FX Type* – FX Type (see the section "FX Types")
- *Base Currency* – base currency for settlement with the payment system in US dollars or euros

> Rates for currency to the payment system settlement currency and "direct" rates between different currencies can be loaded for Mastercard. When searching for FX rates, "direct" rates have a higher priority (i.e. they will be used first).

- *Currency* – currency of rate shown
- *1 Base =* – value of currency rate to Way4 settlement currency (rounded value)
- *FX String* – rate value loaded from the payment system
- *Date* – date when the channel rate was set

The [History] button will invoke a table grid containing a list of all rate values for a selected currency, set up in the Way4 system.

Channel rates are used for conversion transactions when comparing the transaction amount of inward clearing files with the payment channel's floor limit, if the transaction currency differs from the floor limit currency. Indicated rates, if set up accordingly in the Service Packages of the Interchange routing contracts, can be used for calculating fees charged by the payment system on acquirer inward clearing documents.

To access the last rate entered into the system from any channel, select the user menu item path "Full → Daily Procedures → Load BIN Tables and Handbooks → FX Channel Rates → Channel Rates Last".

After the desired channel rate is selected, the screen will display a table grid similar to the "Channel Rates on Date" table.

Way4 will determine the currency cross rate based on the channel rates and the base currency rate.

To access data on cross rates, select the following user menu path: "Full → Daily Procedures → Load BIN Tables and Handbooks → FX Channel Rates → Cross Rates on Date".

This will display the dialog box "Get Rate Type and Date" which indicates the channel rate type used for calculating the cross rate and the date on which the channel rates were set. After setting up the indicated fields, click on the [Proceed] button.

This will display the "Cross Rates" grid form.

Channel Rates Last << < > >> 1 of 3

Amnd Date	FX Type	Base Currency	Currency	1 Base =	FX String	Date	Add Info
15/05/13 10:30:38	Visa Daily	USD	USD	1,0000	1	15/05/2013	
15/05/13 10:30:38	Visa Daily	USD	PLN	3,258295	3.2582948	15/05/2013	

Ins Del Query History

Table of currency cross rates

The "Cross Rates" table is used in Way4 exclusively for user information purposes.

This table contains the following fields:

- *FX Type* – FX Type (see the section "FX Types")
- *Base Currency* – settlement currency used to determine the cross rate
- *From Currency* – currency, rate of which determines the rate of currency indicated in the *To Currency* field
- *To Currency* – currency, rate of which determines the rate of currency indicated in the *From Currency* field
- *1 From* = – rate of currency indicated in the *To Currency* field to one unit of the currency indicated in the *From Currency* field
- *Date* – date when the channel rate was set
- *Add Info* – reserved for forward compatibility.

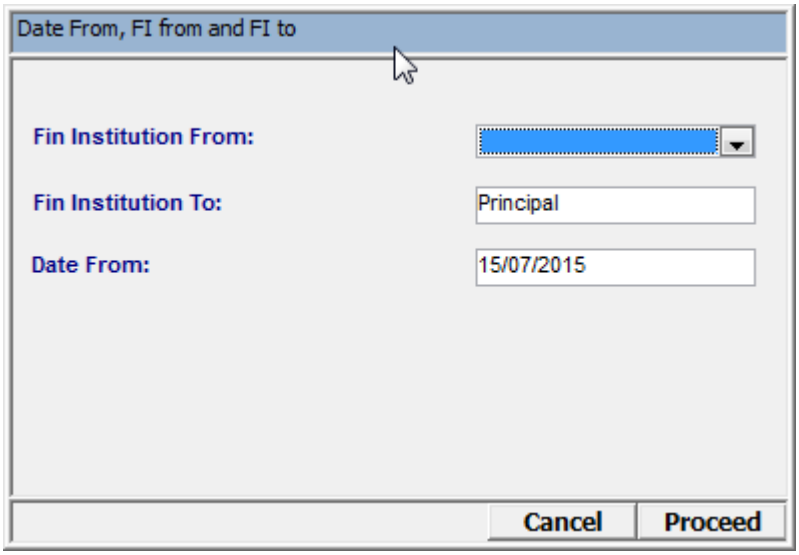
Imported rates can also be accessed from the following menu folders:

- For Mastercard – in the menu "MasterCard →MC. Daily Procedures → MC. Load Bin Table and Handbooks".
- For VISA – in the menu "VISA → VISA. Daily Procedures → VISA. Inward Procedures".

> In addition to import of channel rates Way4 supports import of arbitrary rates from other external sources. Processing centers can use this import for internal conversion for a number of operations at arbitrary rates. This is done using the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → FX Rates Import → External FX Rates Import". For more information, see the document "Importing External (Arbitrary) FX Rates".

2.4 Copying FX rates to a new financial institution

If contracts are being copied to a new institution, FX rates can be copied from the old institution to the new one (for example, for the appropriate rates to be used when reversing a transaction). To do so, run the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → FX Rates copy for FI". A form will open to select the date on which rates are being copied, the institution from which the rates are being copied and the target institution.



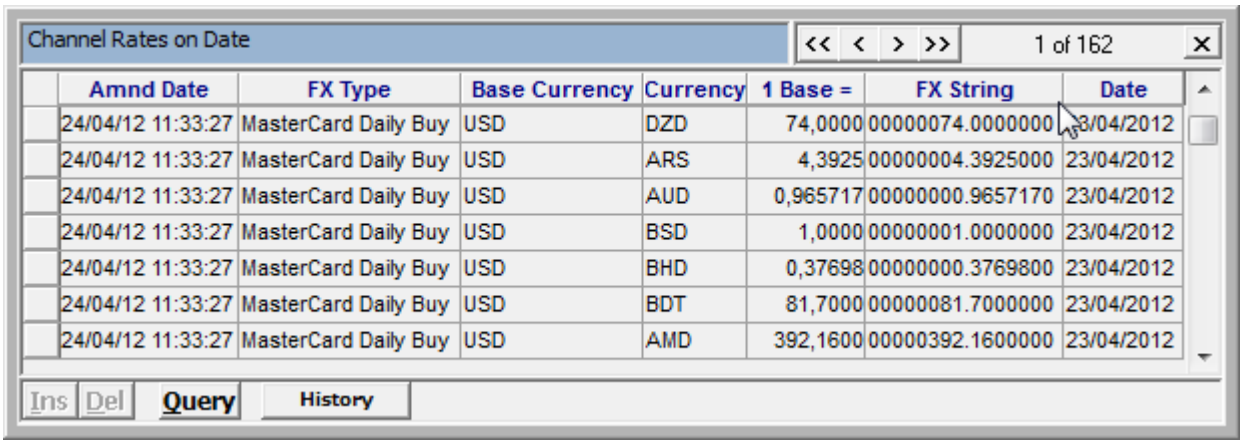
"Date From, FI from and FI to" form

Fill in this form's fields and click the [Proceed] button.

2.5 Using channel rates for internal conversion

Processing centers can use channel rates for internal conversion. This means not setting their own rates, but converting for all operations (or for a number of operations) using channel rates.To use channel rates for internal conversion, do as follows:

- Channel rates are imported in the standard way to the CHANNEL_CURRENCY table (see the section "Loading channel rates").
  Each record in the CHANNEL_CURRENCY table (as an example, see the "Channel Rates on Date" form) contains the rate of a certain currency (*Currency* field) to the payment system settlement currency (*Base Currency* field; this is usually *USD* (US dollars).



Channel rates

- In the "FX Types" form ("Full → Configuration Setup → Accounting Setup → FX Types"; for more information, see the section "FX Types"), register a specific FX Type with the following parameters.
  - Set the value of the *Is Internal* parameter to "Yes".
  - This FX Type's code (*Code* field) should have the following format:

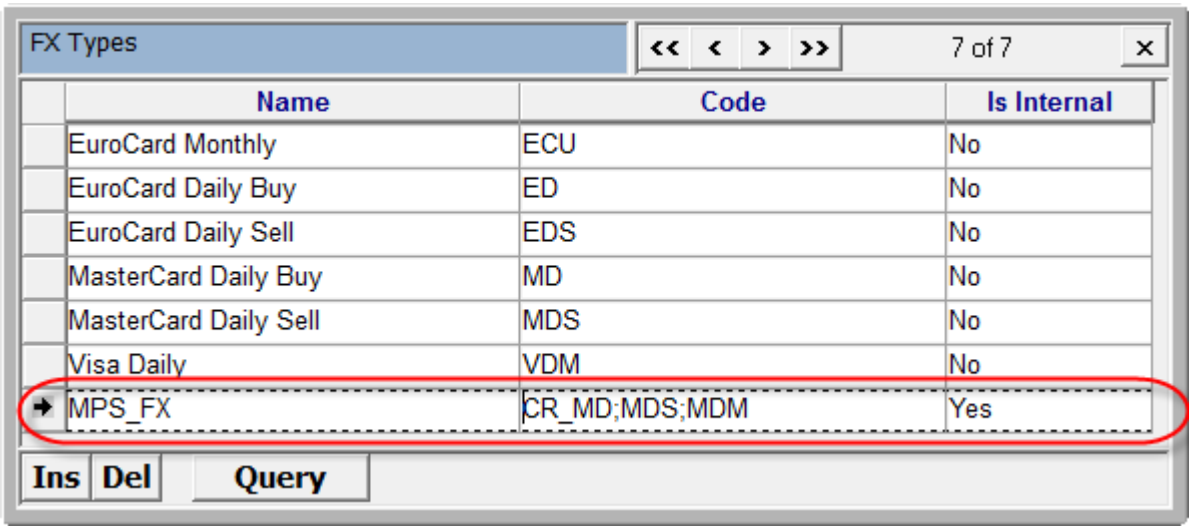
    CR_<BUY_FX_TYPE_CODE>;<SELL_FX_TYPE_CODE>;<MIDDLE_FX_TYPE_CODE>

    where

    <BUY_FX_TYPE_CODE> is the FX Type code (*Code* field in the "FX Types" form) that corresponds to the buy rate in the CHANNEL_CURRENCY table.

    <SELL_FX_TYPE_CODE> is the FX Type code (*Code* field in the "FX Types" form) that corresponds to the sell rate in the CHANNEL_CURRENCY table.

    <MIDDLE_FX_TYPE_CODE> is the FX Type code (*Code* field in the "FX Types" form) that corresponds to the middle value of the rate in the CHANNEL_CURRENCY table.

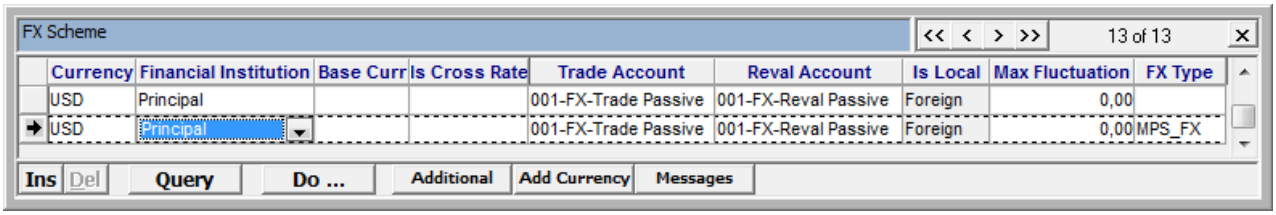


Configuring an FX Type

- Configure an FX Scheme for this FX Type (specify the configured FX Type in the *FX Type* field). The FX Scheme determines which currency is converted to the local currency.

> FX Schemes can be configured for direct conversion (conversion from/to a local currency) and for multicurrency conversion.

For more information about FX Schemes, see the sections "Main FX Schemes" and "Configuring multicurrency FX Schemes").



Configuring an FX Scheme using a configured FX Type

- Execute the menu item "RBS FX Rates Copy To Internal" (Full → DB Administrator Utilities → Special OpenWay Utilities → FX Rates Import → RBS FX Rates Copy for Internal). Based on channel rates, FX rates to the local currency will be calculated. These rates are calculated and registered with a link to FX Schemes with a specific FX Type – rates are registered in the FX_SCHEMES table. When searching for an FX Scheme, a record from the CHANNEL_CURRENCY table is analyzed as follows:
  - The currency from the *Base Currency* field in the CHANNEL_CURRENCY table is matched with the financial institution's currency. If they match, a search is made for an FX Scheme whose currency (the Scheme's *Currency* field) matches the currency in the *Currency* field of the record in the CHANNEL_CURRENCY table.
  - If the record's *Base Currency* currency does not match the financial institution's currency (or no FX Scheme was found in the previous step), the currency from the *Currency* field of the CHANNEL_CURRENCY table is matched with the financial institution's currency. If the currencies match, a search is made for an FX Scheme whose currency (the Scheme's *Currency* field) matches the currency in the *Base Currency* field of the record in the CHANNEL_CURRENCY table.
    I.e. in the aforementioned cases (conditions), one of the currencies for a record in the CHANNEL_CURRENCY table (*Base Currency* or *Currency* channel rate) must match the financial institution's local currency, and the other currency must match the FX Scheme's currency. If this condition is met, the "direct" rate from the CHANNEL_CURRENCY table is used for calculation.
  - If the search according to the previous conditions did not provide a result, a search is made for two FX Schemes with the same currency in the *Base Currency* field and currencies in the *Currency* field corresponding to the *Base Currency* and *Currency* currencies of a record from the CHANNEL_CURRENCY table. That is, the rate of the currency to the local currency is calculated as the cross rate according to the CHANNEL_CURRENCY table.
    Example.

- In the CHANNEL_CURRENCY table there is a record with Base Curr=USD, Currency=JPY, financial institution's local currency – EUR. I.e. there is no "direct" rate of JPY to EUR in the CHANNEL_CURRENCY table.
- For an FX Scheme with *Currency*=JPY (scheme for converting JPY to EUR) rates will be calculated based on two records from the CHANNEL_CURRENCY table: 1. Base Curr=USD, Currency=JPY; 2. Base Curr=USD, Currency=EUR.

> If errors occur when running the menu item "RBS FX Rates Copy To Internal", the process is not terminated. The number of records processed (registered) successfully and records with errors, as well as error messages can be viewed in the process log when the "Copy Channel Rates" process is finished.

- If an FX Scheme has "Yes" in the *Is Cross Rate* field, a check for the "explicit" cross rate is made in the CHANNEL_CURRENCY table. If nothing is found, a search is made for two FX Schemes with the same currency in the *BaseCurrency* field and currencies in the *Currency* field that correspond to the currencies of the FX Scheme for calculating this cross rate.

- To use calculated FX rates (to apply rates) for conversion and calculations, run the menu item "Full → Daily Procedures → Start of Day Step By Step → Reset FX Rates". FX rates will be moved from the FX_SCHEMES table to the FX_RATES table.
- These rates can be used, for example, in Services. The appropriate FX Type should be set in the Service's *FX Type* field. When a transaction is made using this Service, the corresponding rates will be used in conversion.

3 Currency conversion in Way4

The way currency conversion is performed is determined by main FX Scheme settings, FX Type settings, multicurrency FX Scheme settings, and global system parameters.

To convert currency in Way4, the following needs to be set up for the FI:

- An FX contract that will be used as default for conversion operations.
- Main FX Schemes, defining basic default FX Types.
- If necessary, an FX Type.
- If necessary, multicurrency FX Schemes.
- Global parameters.

3.1 Setting up main FX Schemes

3.1.1 Main FX Schemes

A main FX Scheme is a scheme registered in Way4 for converting a foreign currency into a local currency. A main FX Scheme record specifies a bank contract accounts pair used by default to record currency conversion for the corresponding FI and set currency. These accounts (or their pairs from an asset-liability pair of accounts) are used as FX accounts when converting this currency to the local currency

3.1.1.1 "FX Scheme" form

Main FX Schemes are accessed in the "FX Scheme" form ("Full → Configuration Setup → Accounting Setup → FX Scheme").

FX Scheme

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Currency	Financial Institution	Base Curr	Is Cross Rate	Trade Account	Reval Account	Is Local	Max Fluctuation	FX Type
IDR	Principal			001-FX-Trade Passive IDR	001-FX-Reval Passive	Foreign	0,00	
IDR	Principal			001-FX-Trade Passive IDR	001-FX-Reval Passive	Foreign	0,00	My convert
USD	Principal			001-FX-Trade Passive USD	001-FX-Reval Passive	Foreign	0,00	
USD	Principal			001-FX-Trade Passive USD	001-FX-Reval Passive	Foreign	0,00	My convert
EUR	Principal			001-FX-Trade Passive EUR	001-FX-Reval Passive	Foreign	0,00	

Ins Del Query Do ... Additional Add Currency

Table for configuring FX Schemes

The "FX Scheme" form contains the following fields:

- *Currency* – field contains a drop-down list of currencies; only the currencies from the system currency table for which "Yes" is set in the *Use in Bank* field are displayed (see the section "Currency table").
- *Financial Institution* – field for selecting the name of FI from a list.

- *Base Curr, Is Cross Rate* – these fields are used when configuring multicurrency FX Schemes, see the section "Configuring multicurrency FX Schemes". They are not filled in for main FX Schemes.
- *Trade Account* – field for selecting an assets or liabilities account in the currency belonging to the FX contract; this account should be of type "Incoming Active"/"Incoming Passive" and category "Other".
- *Reval Account* – field containing a drop-down list for indicating the assets or liabilities account in the local currency belonging to the FX contract; this account should be of type "Outgoing Active"/"Outgoing Passive" and category "Other" (for details on account parameters, see the section "Account Types" of the document "Way4 Account Schemes").
- *Is Local* – this field can have the following values:
  - "Local" – for local FI currency.
  - "Foreign" – for foreign currency.
  - "Invalid" – used if the FX Scheme for that currency could not be authenticated due to a setup error.
- *Max Fluctuation* – field for indicating the maximum fluctuation permissible in the currency rate; if this value is exceeded when a new rate value is entered for a currency the system will not accept the new data and create an error message (see the section "FX rate history").
- *FX Type* – for main FX Types used by default, this field is left blank; the field is filled in when independent FX Types are set up (see the section "FX Types").

An empty *FX Type* field for the main FX Type does not mean that the parameters of this main FX Type will be used for all FX Types. Each FX Type is set up separately. To set up an independent FX Type, a new record containing a specific FX Type is added to the "FX Scheme" form. To set up a dependent FX Type, a new record containing a specific FX Type is added to the "Additional for <name of currency>" form (see the section "FX Types").

- *Add Info* – reserved for forward compatibility.

3.1.1.2 Adding an FX Scheme for a new currency

In configuring the FX Scheme for a financial institution the following requirements must be met:

The FX Scheme for a local currency should not indicate the currency conversion accounts, i.e. fields *Trade Account* and *Reval Account* should not be filled.

The currency table should contain only one entry for each FI currency for each value in the *FX Type* field.

It is not recommended that users add an FX Scheme to a new currency by clicking [Ins] to add a new row to the "FX Scheme" table. This button is only used to add independent FX Types (see "FX Types").

After adding an FX Scheme, enter an FX rate value for the new currency. Otherwise, an error may occur during authorization request processing if the necessary FX rate is missing, and the request will be declined.

3.1.1.2.1 Adding an FX Scheme for a main financial institution

The procedure for adding FX Schemes for a new currency contains the following steps:

- In the currency table (see the section "Currency table") add the currency (if absent in the list) and set its *Use in Bank* field to "Yes".
- In the "FX Scheme" table grid, select a template row for the FX Scheme configured for the FI for a foreign currency, and click on the [Add Currency] button. This will display the "Add Currency" form indicating the names of the FI to which the FX Scheme for the new currency will be added. In this form, click on the [Add] button and in the "Get Currency" form that opens, select the currency for the FX Scheme, and click the [Proceed] button.
- If necessary, add account templates in the new currency to the Account Schemes of the cardholder contract and merchant client contract.
- In Service Packages (if necessary) select the new currency used for calculating the fee and usage limiter parameters.
  As a result of this procedure, the system adds to the "FX Scheme" table a row including the FX Scheme of a new currency and an FX Type (see the section "FX Types") if one is configured for the FI. It also adds account templates in that currency to the FI bank contract's Account Scheme. The added account templates are of the same type as the template of the account currency being copied, or applied. The whole process of adding accounting templates for a new currency to the Account Schemes of cardholder and merchant client contracts must be accomplished manually.
- Since adding a new FX Scheme for a new currency changes the bank contract's Account Schemes, run a renew procedure afterwards by selecting the user menu item path "Full → Configuration Setup → Main Tables → Renew All For Institution" in order to verify all the changes made (see the section "Activating Basic FI Properties" of the document "Financial Institutions").

To enable the system to perform a check on changes made to the FX Scheme table, click on the [Check] button in the "FX Scheme" form. If the check is successful the *Is Local* field for FX Schemes will contain

"Foreign" for foreign currencies and "Local" for the financial institution's local currency. If errors in FX Scheme setup are found the *Is Local* field will contain the "Invalid" value.

If a new currency is added for a financial institution whose Account Scheme is used as the parent Scheme in another financial institution (for bank FX contracts), run the menu item "Full → Configuration Setup → Main Tables → Renew All For Institution" for both financial institutions.

3.1.1.2.2 Adding an FX Scheme for a subordinate financial institution

If a new currency must be added to a subordinate financial institution (i.e. to an institution created by copying settings from a parent institution; see the section "Copying Basic FI Configurations" of the document "Financial Institutions"), do as follows:

- Add a currency in the parent institution (add a new currency, add an FX Scheme for this currency, check settings by clicking on the [Check] button in the "FX Scheme" form; see the above description of steps for adding an FX Scheme for a new currency in the main financial institution).
- Synchronize settings of the subordinate institution (Refresh), see the sections "Partial Copying of Configurations for a Specific FI" and "Selective Copying of Parent FI Settings for all Child FIs" of the document "Financial Institutions". FX Schemes for child financial institutions will be created automatically.
- Run the menu item "Full → Configuration Setup → Main Tables → Renew All For Institution" for the subordinate financial institution.

3.1.1.3 Deleting FX Schemes

To delete an FX Scheme, select the record in the "FX Scheme" form, click the [Do] button and execute the "Delete with Additional" context menu command.

The scheme will be marked for deletion – the value "For Delete" is inserted in the *Is Local* field. The record is not immediately deleted, since active rates may exist for the scheme.

Schemes that are marked for deletion will automatically be deleted when the next banking day opens. If they must be deleted immediately (during the current banking day), run the menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → Set FX → Apply FX Rates".

When deleting FX Schemes for which FX Types are configured, all subordinate records (schemes) are also marked for deletion.

FX Schemes with the "Local" value in the *Is Local* field cannot be deleted.

3.1.2 FX Types

In order to widen user options around currency conversion according to bank requirements, Way4 uses additional conversion types, called FX Types, in addition to the basic types of conversion provided through the FX Scheme.

By using FX Types, foreign currency can be converted to local currency according to a special rate and/or using accounts other than the default ones for carrying out currency conversion.

The system distinguishes between two kinds of FX Types:

- Independent – allows special rate values to be set for FX from a foreign currency to a local currency (for example, different conversion rates for individuals and legal entities) and/or special FX accounts (for example, accounts for balance and off-balance accounting). For more information, see the section "Independent FX Types".
- Dependent – allows redefinition of FX accounts. For more information, see the section "Dependent FX Types".

FX Types can be used in the following situations:

- When indicating an FX Type in the Account Scheme: When processing operations affecting accounts of the same contract but in different currencies, for instance, to change parameters of multicurrency normalization accounts (see the section "Multi-currency Normalization" of the document "Standing Payment Orders").
- When indicating an FX type in the Service Package (see the section "Full information about a Service" of the document "Way4 Service Packages"): ▪ to change the parameters of transactions converting operation amounts and fees defined by a service; in this case, the FX type is defined in the service's parameters.
- When processing outward clearing files and comparing transaction amounts with the floor limit, if the transaction currency differs from the currency in which the limit is set.

3.1.2.1 "FX Types" form

FX Types are registered using the user menu item "Full → Configuration Setup → Accounting Setup → FX Types". The "FX Types" grid form will open.

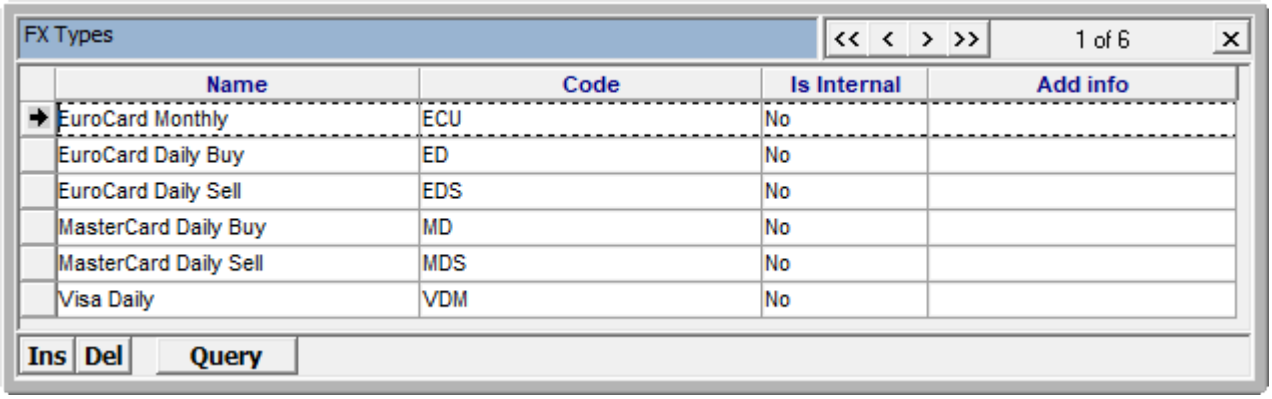


Table for registering FX Types

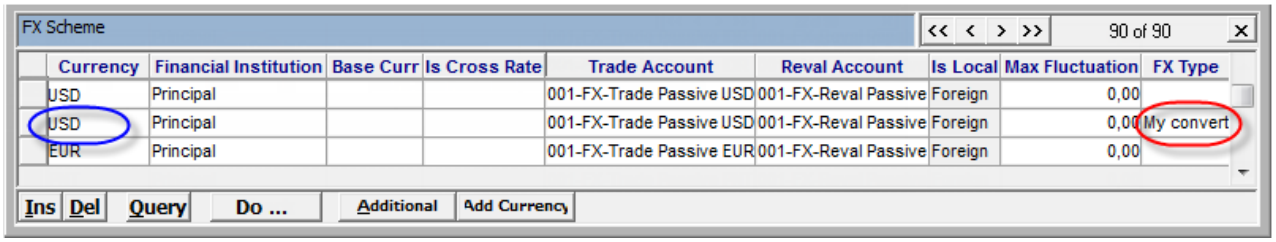
This form contains the following fields:

- *Name* – FX Type name.
- *Code* – FX Type code that is unique within the table.
- *Is Internal* – when the "Yes" value is set in this field, a currency rate for this FX Type can be entered according to the rate entry procedure (see the section "Entering local to foreign currency rates"); for FX Types with the "No" value in this field, the system uses rates imported from payment systems.
- *Add Info* – reserved for forward compatibility.

3.1.2.2 Independent FX Types

An independent FX Type for a foreign currency is set up by adding a new record to the "FX Scheme" table of FX Schemes.

- In the *FX Type* field, specify the FX Type. The value is selected from a list of FX Types configured in the "FX Type" form with the value of the parameter *Is Internal* = "Yes" (see the figure in the section "FX Types" form").
- In the *Currency* field, specify the name of the currency for which special FX rates and/or accounts must be set.
- In the *Trade Account* and *Reval Account* fields, if necessary, specify special FX accounts for the selected currency.



Configuring FX Type parameters

> If FX Schemes are used with independent FX Types, the procedure for entering currency rates includes entry of FX Type values along with entry of the main rate (see the section "Entering local to foreign currency rates").

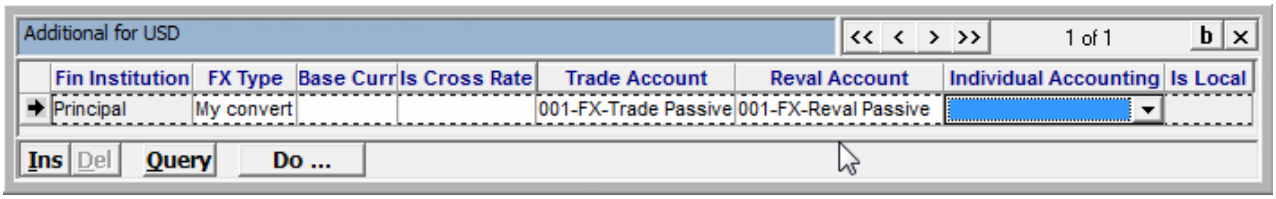
To enable the system to perform a check on changes made to the FX Scheme table, click on the [Check] button in the table (see the section "FX Scheme" form"). If the check is successful the *Is Local* field for FX Schemes will contain "Foreign" for foreign currencies and "Local" for the financial institution's local currency. If errors in FX Scheme setup are found the *Is Local* field will contain the "Invalid" value.

3.1.2.3 Dependent FX Types

Only special FX accounts can be redefined using a dependent FX Type; the currency rate for this conversion type corresponds with the value of the main rate used by default.

Dependent FX Types are configured for each main FX Scheme, with the exception of schemes belonging to the FI's local currency.

To configure dependent FX Types in the FX Scheme, select in the "FX Scheme" table (see the section "FX Scheme" form") the desired scheme and click on the [Additional] button. This will invoke the "Additional for <name of currency>" grid form to the screen.



Configuring dependent FX Types

This form is filled out as follows:

- *FX Type* – field for selecting a list of FX Types having parameter *Is Internal* = "Yes".
- *Trade Account* – field with a drop-down list for selecting an assets or liabilities account in a given foreign currency associated with the FX contract; by default this field should contain the value indicated in the field of the same name in the main FX Scheme (see the section "FX Scheme" form").
- *Reval Account* – field with a drop-down list for selecting an assets or liabilities account in a local currency associated with the FX contract; by default this field should contain the value indicated in the field of the same name in the main FX Scheme (see the section "FX Scheme" form").
- *Individual Accounting* – if value "No" or an empty value is set in this field, the bank contract accounts indicated in fields *Trade Account* and *Reval Account* are used for currency conversion. If this field is set to "Yes", the system uses the accounts of the client contract of the same type as the bank contract accounts indicated in fields *Trade Account* and *Reval Account*.
- *Base Curr* and *Is Cross Rate* fields in the "Additional for <currency name>" form are used when configuring technical schemes that are subordinate to explicit cross-rate schemes (see the section "Configuring explicit cross rate schemes").
- *Add Info* – reserved for forward compatibility.

If using several FX Types, the "Additional for <name of currency>" form should contain a corresponding number of rows.

For Way4 to validate changes made to the "Additional for..." table, click on the [Check] button. If the check is successful, the dependent FX Type's *Is Local* field will contain the "Foreign" value.

> When filling out the fields of this form, it should be kept in mind that no two entries in this table should have the same value in the *FX Type* field.

To delete a dependent FX Type, select the record in the "Additional for..." form, click the [Do] button and execute the "Delete" context menu command.

3.2 Configuring multicurrency FX Schemes

Multicurrency FX Schemes are schemes for conversion from one foreign currency into another foreign currency.

> If multicurrency FX Schemes are not set up in the system, one foreign currency will be converted to another foreign currency using the main rates of these foreign currencies to the local rate (see the section "Base cross rates").

Multicurrency FX Schemes are configured when one foreign currency must be converted to another using special rates or accounts. Ways of configuring multicurrency FX Schemes:

- Creation of special FX Schemes for converting local currency to those foreign currencies between which a special FX rate must be set. Rates of local currency to the foreign currencies specified using such FX Schemes will be used when calculating special cross rates for the given foreign currencies. For more information, see the section "Configuring FX Schemes for special cross rates".
- Setting up a special FX Scheme for converting one foreign currency into another for explicit cross rates. For more information, see the section "Configuring explicit cross rate schemes".

3.2.1 Base cross rates

If multicurrency FX Rates are not set up in the system when converting currency from one foreign currency to another, the system calculates a cross rate using the basic local currency rate to the currency in question.

For example, if the local FI currency is Danish kroner, then conversion from US dollars to euros takes place according to this rate:

$$R_{USD/EUR} = \frac{R_{DKK/EUR}}{R_{DKK/USD}}, \text{где:}$$

$R_{DKK/EUR}$ – local currency rate in euros,

$R_{DKK/USD}$ – local currency rate in US dollars.

In the same way, conversion from Japanese yen to euros will occur by this rate:

$$R_{JPY/EUR} = \frac{R_{DKK/EUR}}{R_{DKK/JPY}}, \text{где:}$$

$R_{DKK/EUR}$ – local currency rate in euros,

$R_{DKK/JPY}$ – rate of local currency to Japanese yen.

3.2.2 Configuring FX Schemes for special cross rates

If the cross rates specified in the section "Base cross rates" differ from the rates desired, such as official rates, it is necessary to use special rates of the local currency to those of the foreign currency which are to be converted to another foreign currency.

In the case cited in the section "Base cross rates", the cross rate for converting US dollars to euros will be calculated as follows:

$R^I_{USD/EUR} = \frac{R^I_{DKK/EUR}}{R^I_{DKK/USD}}$, где:

$R^I_{DKK/USD}$ и $R^I_{DKK/EUR}$ – special local currency rates to the foreign currency.

In the same way, the cross rate for converting Japanese yen to euros will be calculated as follows:

$R^I_{JPY/EUR} = \frac{R^I_{DKK/EUR}}{R^I_{DKK/JPY}}$, где:

$R^I_{DKK/JPY}$, $R^I_{DKK/EUR}$ – special local currency rates to the foreign currency.

To enter these special rates of local currency to the foreign currency ($R^I_{DKK/USD}$ и $R^I_{DKK/EUR}$), special FX Schemes are used.

The rates ($R^I_{DKK/USD}$ и $R^I_{DKK/EUR}$) are independently calculated by the user to obtain correct FX cross rate values ($R^I_{USD/EUR}$) according to the formulae specified above.

To configure special FX Schemes:

- Add special FX Schemes to the "FX Scheme" table for the foreign currencies being converted into another foreign currency; this, for the examples cited above, is US dollars, euros, and Japanese yen.
- When adding these FX Schemes, the names of the foreign currencies between which conversion is being performed are selected in the *Currency* and *Base Currency* fields of the "FX Scheme" form.
  - *Base Currency* – the foreign currency into which the other currency is being converted.
  - *Currency* – the foreign currency that is being converted into the currency in the *Base Currency*.

If two foreign currencies are specified in the FX Scheme, during daily rate entry, rates of the local currency to the currency in the *Currency* field will be set for this scheme. These rates will be used during conversion from the *Currency* field currency to the *Base Currency* currency.

- The *Is Cross Rate* field should be left empty.

Configuring FX Schemes for special cross rates

After this setup is confirmed, the system will allow users to enter special local currency rates during daily rate entry. Special rates may be used in calculating a cross rate for converting from these foreign currencies to another foreign currency.

> If a special cross rate scheme was created for only one foreign currency, the rate of the other foreign currency participating in conversion will be determined by the system through main rates of the local currency to the corresponding foreign currency.
>
> When setting up a special cross rate scheme, FX Types can be used in the same way as with main FX Schemes (see the section "FX Types").

Beginning with version 03.35.00, special cross rates are configured without the participation of independent FX Types. In upgrading to this version, special cross rates scheme parameters change automatically:

- The *FX Type* field is cleared (the corresponding FX Type becomes history).
- The *Base Currency* field is filled in. The name of the currency corresponding to the code of the currency from the FX Type *Code* field is automatically filled in (from the "FX Types" form).
- An empty value is automatically specified in the *Is Cross Rate* field.
  Cross rates are calculated as in earlier versions.

3.2.3 Configuring explicit cross rate schemes

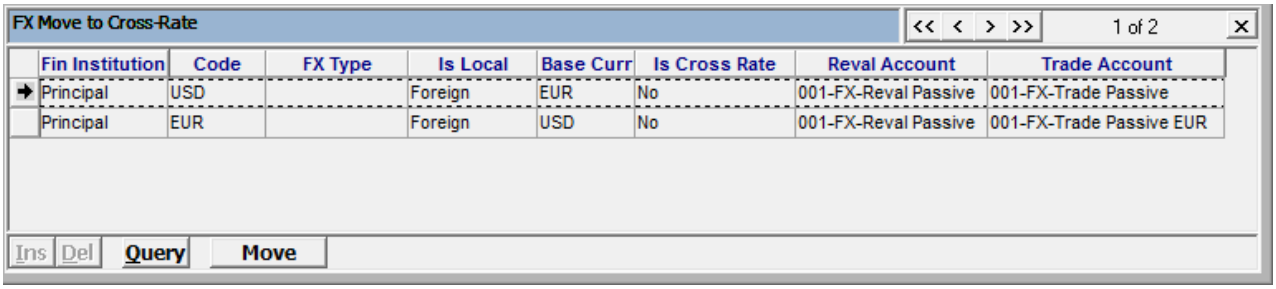
Beginning with version 03.35.00 it is possible to explicitly set cross rates. Explicit cross rate schemes can be configured in one of the following ways:

- Migrate FX Schemes set up using independent FX Types for calculating special cross rates. In migration, schemes are reconfigured and are further used for setting explicit cross rates (see the section "Migrating FX Schemes").
- Create special FX Schemes manually for setting explicit cross rates. See the section "Manually configuring explicit cross rate schemes".

3.2.3.1 Migrating FX Schemes

To migrate FX Schemes, do as follows:

- Execute the menu command "Full → Configuration Setup → Accounting Setup → FX Move to Cross Rate". The "FX Move to Cross-Rate" form will open.



Updating FX Schemes

If before installing version 03.35.00, special cross rates were used, this form shows additional FX Schemes used earlier to calculate special cross rates.

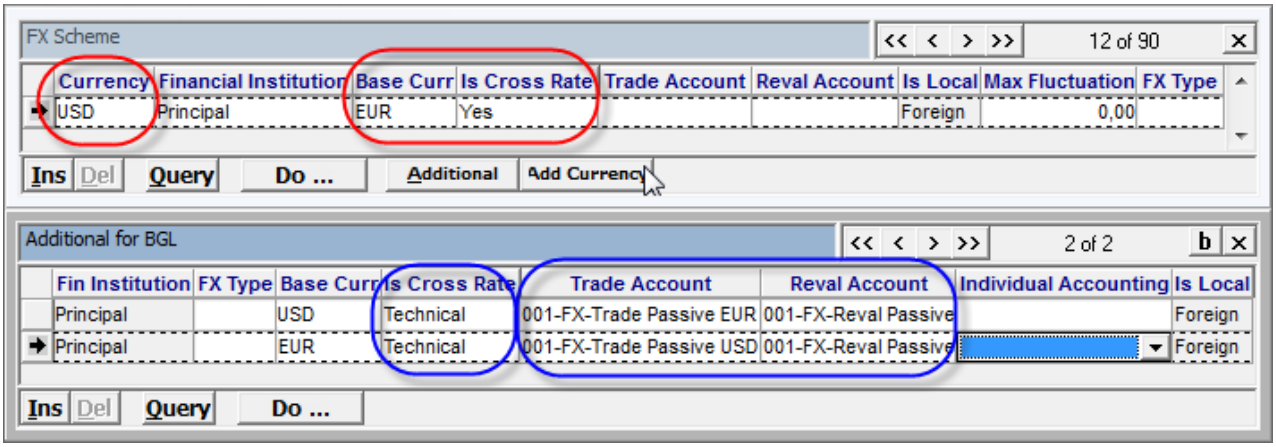
> If special cross rates were not used before installation of version 03.35.00, this form does not contain records. In this case, FX Schemes for working with explicit cross rates should be configured manually. See the section "Manually configuring explicit cross rate schemes".

- To reconfigure an FX Scheme for it to set explicit cross rates, specify its main foreign currency (*Code* field) and base foreign currency (*Base Curr* field). The cross rate will be set as the rate of conversion from the main foreign currency to the base one. In the example shown in the figure above, if USD is selected as the main currency (this is a scheme with the "USD" value in the *Code* field), cross rates will be specified for conversion of US dollars to euro (for example, USD/EUR middle rate – 0,6750). The inverse cross rate (EUR/USD) will be automatically calculated based on the USD to EUR rate entered.
- To start the migration process for a selected scheme, click the [Move] button. Note that:
  - In the "FX Scheme" form a new special FX Scheme is generated, for which:
    - The "Yes" value is specified in the *Is Cross Rate* field. This means that during daily entry of rates, explicit cross rates will be set for the currency from the *Currency*field to the *Base Curr* field (and not the rate of the local currency to the *Currency* field currency, see the section "Configuring FX Schemes for special cross rates").
    - In the *Currency* field, the main foreign currency for the cross rate is specified: the foreign currency that is being converted into the foreign currency in the *Base Curr* field.
    - In the *Base Curr* field, the base foreign currency is specified. This is the foreign currency to which conversion is being made.
    - The *Trade Account* and *Reval Account* fields in the "FX Scheme" form remain empty. FX accounts for explicit cross rate schemes are specified in the form "Additional for <name of main currency>" (see below).
  - The "Additional for <name of currency>" form is automatically filled in, see figure. In this form, two additional technical schemes (with the "Technical" value in the *Is Cross Rate* field) are created that specify FX accounts:
    - One technical scheme is created on the basis of the original FX Scheme for which migration is being performed.
    - The second scheme is generated in the following way: the system automatically searches for a paired FX Scheme for calculating a special cross rate (the inverse of the scheme for which migration is being performed). In the example in the figure above, migration is performed for a scheme to convert USD to Euros (a scheme with the "USD" value in the *Code* field). The paired scheme is that to convert Euros to USD (a scheme

with the "EUR" value in the *Code* field). On its basis" an additional technical FX Scheme is generated in the form "Additional for <name of main currency>", see figure.

- Original FX Schemes for calculating special cross rates based on which technical schemes are created become history.

> If a paired FX Scheme for calculating a special cross rate does not exist, the second technical FX Scheme is created using FX accounts from the main FX Scheme for the corresponding currency.



Explicit cross rate scheme generated during migration

> Changes to FX Schemes enter into force during the next entry of rates when daily opening procedures are executed.

3.2.3.2 Manually configuring explicit cross rate schemes

Explicit cross rate schemes are manually configured in the "FX Scheme" form (Full → Configuration Setup → Accounting Setup → FX Scheme).

See the section "Migrating FX Schemes" for information on filling in "FX Scheme" form fields.

After filling in "FX Scheme" form fields, click the [Check] button. In the "Additional for <name of main currency>" form, two technical FX Schemes used to specify FX settlement accounts are generated automatically.

Accounts from main FX Schemes for the corresponding currencies are used as FX accounts. If necessary, the accounts in the *Reval Account* and *Trade Account* fields can be changed.

FX Types can be used when configuring explicit cross rate schemes, in the same way as with main FX Schemes (see the section "FX Types").

To delete a technical FX Scheme, the parent FX Scheme must be specified. Deletion of a technical scheme without the parent scheme is not accessible.

3.3 Configuring the FX rate difference (exchange rate margin)

3.3.1 Exchange rate margin standard technology

> This section describes basic configuration of the FX rate difference. For questions on configuring complex schemes for recording the FX rate difference, contact OpenWay.

The FX rate difference is revenue and expenses from transactions to buy and sell foreign currency (for the local currency) or from FX transactions (buying and selling foreign currency for another foreign currency).

The FX rate difference (FeeAmount) is calculated as the difference between a country's Central Bank (National Bank) rate (CB Rate) for the date the transaction is made and the actual transaction rate expressed in a local currency.

Calculation of the FX rate difference depends on the transaction's direction – purchase or sale of currency (i.e. on whether the bank is buying or selling currency).

If the bank is selling currency (for example, if the client withdraws an amount in a foreign currency from his account in a local currency):

$$FeeAmount = TransactionAmount\left(\frac{LocalAmount}{TransactionAmount} - CBRate\right)$$

If the bank is buying currency (for example, when depositing an amount in a foreign currency to a client account in a local currency):

$$FeeAmount = TransactionAmount\left(CBRate - \frac{LocalAmount}{TransactionAmount}\right)$$

The actual transaction rate is calculated as the relation of the amount in the financial institution's local currency (LocalAmount) to the amount in the foreign currency (TransactionAmount).

When the mode for recording (withholding) the FX rate difference is enabled (see the section "Configuring the FX rate difference") macrotransactions are analyzed whose source contract account currency and target contract account currency differ. The FX rate difference is withheld if the FX rate according to which the amount was calculated in the financial institution's local currency (Local Amount/Transaction Amount) differs from the *CB Rate* rate. It follows that if the amount in the local currency (LocalAmount) differs from the amount in the foreign currency (TransactionAmount) converted at the *CB Rate* rate, the FX rate difference will be withheld.

> If conversion was made according to a rate equal to the *CB Rate* rate, the FX rate difference will not be withheld, even if there was a rounding error.

The FX rate difference is recorded as a separate entry (GL_TRACE) under the main (parent) macrotransaction generated when processing the transaction.

Example.

Deposit of 100 USD to an account in the local currency (Czech koruna (CZK)) according to the FX middle rate, equal to 1 USD=29 CZK, which differs from the *CB Rate* rate (1 USD=30 CZK).

The FX rate difference of 100 CZK will be withheld:

$$100\left(\frac{3000}{100}-29\right)$$

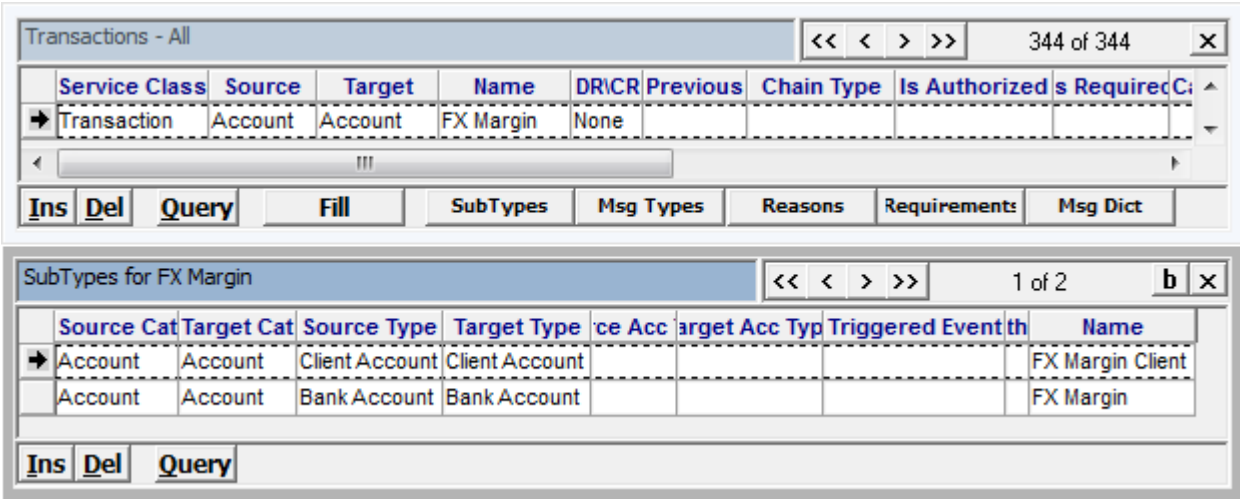
3.3.1.1 Configuring the FX rate difference

To configure the FX rate difference, do as follows:

- Set the value of the FX_MARGIN_MODE global parameter to "Y".
- For the FX rate difference, set up a new transaction type (Full → Configuration Setup → Transaction Types) with the "None" value in the *DR/CR* field and transaction subtype (Full → Configuration Setup → Transaction Types → [Sub Types]). Usually, it is sufficient to set up one transaction type and one transaction subtype.

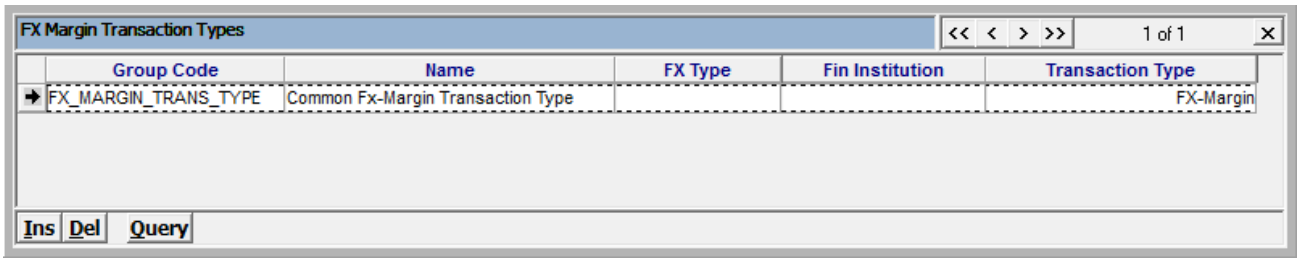
  > Several transaction types are set up if the FX rate difference must be configured differently for different FX Types.

- Usually, the FX rate difference is recorded in the bank FX contract account (the conversion account where the *Trade* and *Revaluation* accounts specified in FX Schemes are maintained). In this case, on the transaction subtype level in the *Source Cat* and *Target Cat* fields, the "Account" values is selected, in the *Source Type* and *Target Type* fields, the "Bank Account" value is selected. If in FX Schemes *Trade* and *Revaluation* accounts are maintained in a client contract, it is necessary to create a separate transaction subtype. In this subtype's properties, in the *Source Cat* and *Target Cat* fields select the "Account" value, and in the *Source Type* and *Target Type* fields, select the "Client Account" value.



Configuring transaction types and subtypes for the FX rate difference

- In the "FX Margin Transaction Types" form (Full → Configuration Setup → Transaction Types → FX Margin Transaction Types):
  - Configure a record specifying a common transaction type used for the FX rate difference (see figure).
  - If necessary, configure the relation of transaction types with FX Types and the financial institution. That is, if in the previous step several transaction types were set up for separate recording of the FX rate difference for different FX Types, they should be specified in this form. The financial institution is specified if one financial institution shows FX rate differences differently depending on the FX Type while other financial institutions use one common transaction type.



"FX Margin Transaction Types" form

- Services must be configured for the FX rate difference.
  - Services are configured in those Service Packages that are used for the financial institution's FX contracts (usually, for the bank FX contract; if the *Trade* and *Revaluation* accounts are maintained in a client contract, the Service for the FX rate difference must be configured in the client Service Package).
  - Usually one main Service is configured for the FX rate difference, under which Custom Fees are configured that specify the main parameters for recording the FX rate difference. On the Custom Fee level correspondence of accounts, separation according to the director of the FX rate difference – buy or sell currency, separation according to currency, etc. is set.
    Several main Services can be created if the FX rate difference is recorded separately for different FX Types. In this case, Services are created for transaction subtypes corresponding to the given FX Types.
    This section describes basic setup (see figure): creation of one main Service and one Custom Fee, without separation by currency, FX rate difference direction, etc.

    > If complex schemes are required for recording the FX rate difference with separation according to currency, it is recommended to contact OpenWay.

  - One main Service is configured for the FX rate difference – this is arbitrarily a Source Service or a Target Service. It is recommended to configure a Source Service.
  - When configuring the main Service for the FX rate difference:

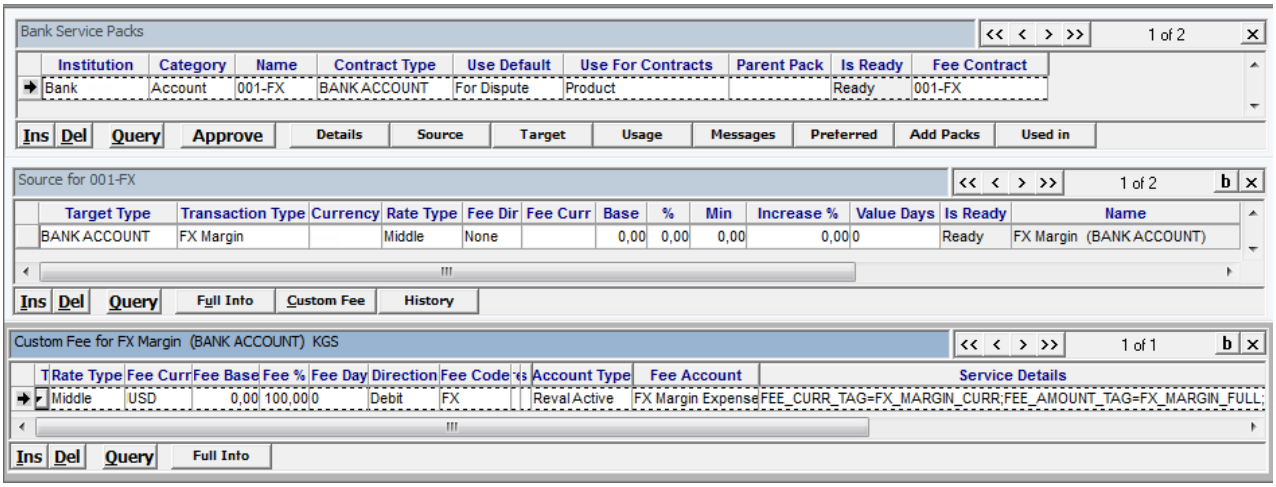
- In the *Source Type* field, the corresponding FX contract type for the FX rate difference is specified ("Bank Account" or "Client Account".)
- In the *Transaction Type* field, the transaction subtype is selected that is configured for the FX rate difference for the specified contract type.
- The "None" value is set in the *Fee Dir* field.

- When configuring a Custom Fee:
  - Set the "Debit" value in the *Direction* field.
  - In the *Fee Code* field, specify a code that does not correspond to the code of the main Service.
  - In the *FEE %* field specify the value "100"; this allows the entire amount of the FX rate difference to be transferred to the specified account.
  - In the *Fee Curr* field, set the FI's local currency in explicit form (in addition to the tag FEE_CURR_TAG=FX_MARGIN_CURR;).
  - In the *Account Type* field, specify the type of account from which the FX rate difference will be charged. If the *Account Type* field is not filled in, the Revaluation Account will be used that was used during conversion (the account from the FX Scheme's *Reval Account* field).
  - In the *Fee Contract* and *Fee Account* fields, the contract is specified to which the FX rate difference will be transferred and the contract account (account from the Expenses/Revenue asset-liability pair for the FX rate difference). If these fields are not filled in, the FX rate difference will not be considered.

    > The FX rate difference is always recorded in the local currency, therefore, when selecting the account in which the FX rate difference will be recorded and the account from which the FX rate difference is withheld, an account in a local currency must be specified.

  - In the *Service Details* field, specify the tag FEE_CURR_TAG=FX_MARGIN_CURR; - this tag sets calculation of the FX rate difference in the local currency, other settings are not supported).
  - In the *Service Details* field, specify the tag FEE_AMOUNT_TAG=<value>; to specify the amount of the FX rate difference. Possible values for the tag:
    - FX_MARGIN_FULL – full FX rate difference of a macrotransaction. This value is used if it is not necessary to separately consider the FX rate difference for currency buying and selling transactions (including when converting from one foreign currency into another foreign currency).
    - FX_MARGIN_BUY – FX rate difference from buying currency (may be equal to "0" if this was a sale). In the case of conversion between two foreign currencies, only that part of the FX rate difference will be charged that relates to the purchase).

- FX_MARGIN_SELL – the FX rate difference from selling currency (may be equal to "0" if this was a purchase). In the case of conversion between two foreign currencies, only that part of the FX rate difference will be charged that relates to the sale).



Configuring Services for recording the FX rate difference on a bank account (basic settings), the local currency is USD (US dollars)

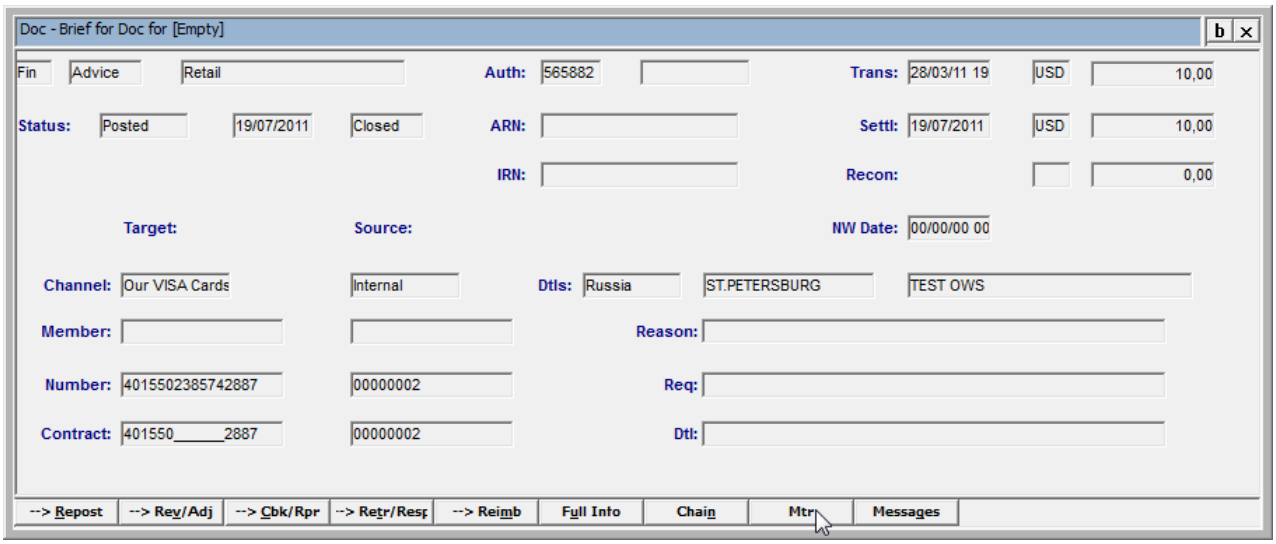
If an FX rate difference was generated for a macrotransaction, a Service is searched for with consideration of the FX rate difference in the Service Package of the contract on which conversion was made (the search is made by transaction type, FX Type, etc.).

> When entering FX rates (in execution of the daily opening procedure), it is necessary to correctly specify the country's Central Bank (National Bank) rate (CB Rate).

3.3.1.2 Showing the FX rate difference in Way4

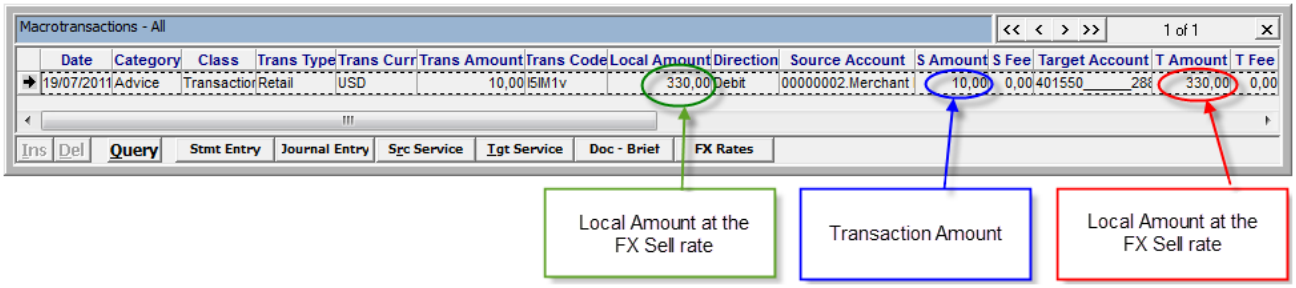
Example: a transaction in US dollars with a card in the local currency (Czech koruna (CZK)) is shown in Way4:

- The document contains the following data: transaction amount – 10 USD, settlement amount – 10 USD.



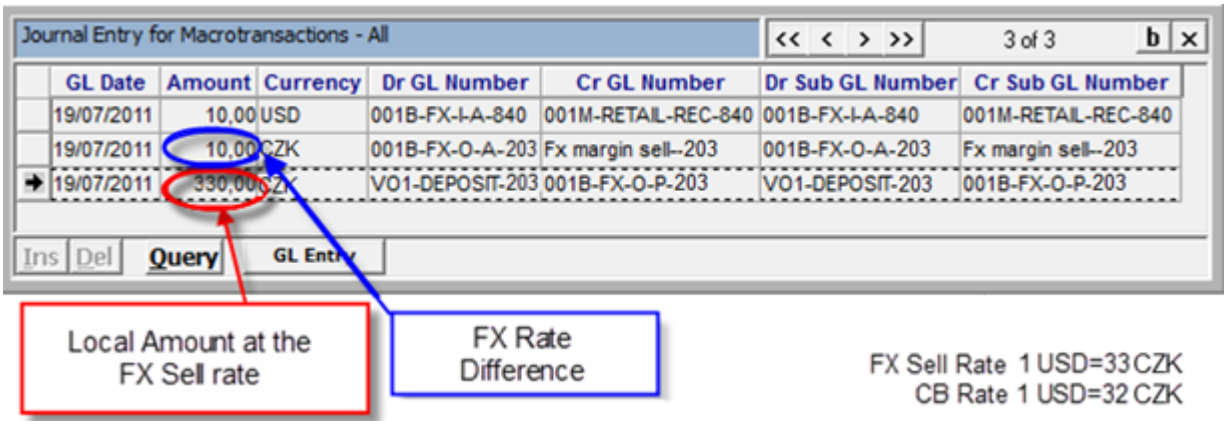
Document

- Macrotransaction generated according to the document.



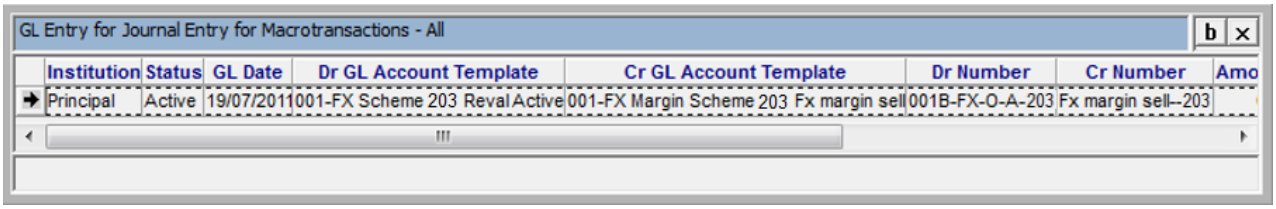
Macrotransaction generated according to the document

Journal entries generated when posting the macrotransaction.



Journal entries generated when posting the macrotransaction

GL entry in which the FX rate difference is recorded.



GL entry

3.3.2 Exchange rate margin with generation of an entry for a null amount

This is an alternative setting and is used instead of the settings described in the section "Exchange rate margin standard technology" if according to legal requirements, entries for recording the exchange rate margin must be exported to an external system as conversion entries. A conversion entry is shown as one entry in which the debit and credit amounts and currencies differ. To do this, two technical entries must be generated for the exchange rate margin:

- One entry for the amount of the exchange rate margin between the bank FX account in the local currency and the bank revenue/expense account in the local currency.
- A second entry for a null amount between the foreign currency account participating in the original transaction and the bank revenue/expense account in the foreign currency.

> When standard technology is used (see the section "Exchange rate margin standard technology"), an entry for the exchange rate margin is generated and exported as one entry for the amount of the exchange rate margin between the bank FX account in the local currency and the bank revenue/expense account in the local currency.

To enable this functionality, change the parameters of the custom fee that is set up for standard recording of exchange rate margins (see the section "Exchange rate margin standard technology") as follows:

- Set "Credit" in the *Direction* field.
- In the *Account Type* field, specify the account type for exchange rate margin revenue.
- Specify the tag FX_MARGIN_ACC=<FULL/BUY/SELL>; in the *Service Details* field depending on the value of FEE_AMOUNT_TAG (FX_MARGIN_FULL/FX_MARGIN_BUY/FX_MARGIN_SELL respectively). The FEE_AMOUNT_TAG is described in the section "Exchange rate margin standard technology".

> When this system is used to record exchange rate margins, it is recommended to create separate custom fees for recording the exchange rate margin of revenue from buying currency and from selling currency. Even if the same revenue account is used for these custom fees.

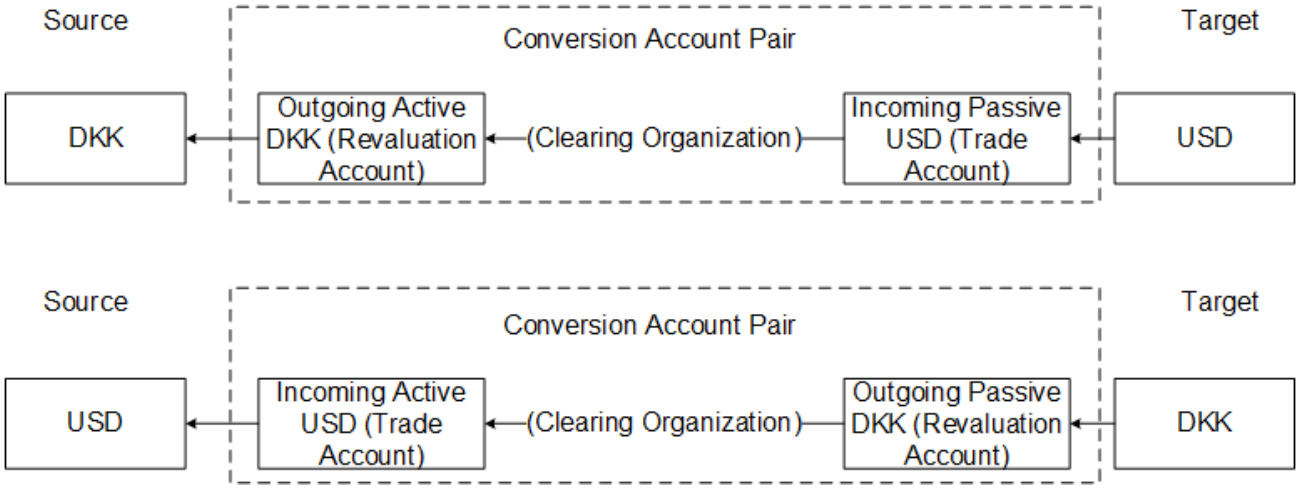
3.4 Currency Conversion

The actual currency conversion in the Way4 system takes place in conversion accounts. Indicated accounts and their contracts are defined in the FX Scheme configuration (see the section "Setting up

main FX Schemes") or their definitions may depend on additional global parameters (see the section "Global parameters").

Currency conversion with conversion accounts takes place when the system processes macrotransactions created as a result of posting financial documents to transactions and non-transaction fees, during those cases when the contractor account currencies differ from one another.

In a simple scenario, currency conversion takes place according to the following transaction scheme.



Accounting transactions when converting currency

As a rule, the FI's FX contract accounts are used as currency conversion accounts. It is possible to redefine these accounts through FX Types (see the section "FX Types") and additional global parameters (see the section "Global parameters").

3.5 Global parameters

When converting currency in the Way4 system, the following global parameters are used:

- FX_RATE_INVERSE
- CHANGE_CURRENCY
- AUTH_USE_DOMESTIC
- USE_AUTH_FX
- USE_CROSS_FX
- MULTICURRENCY_NORMALIZATION
- FX_MARGIN_CURRENT_RATE

See the description of the global parameters in the document "Way4 Global Parameters".

3.6 Additional parameters

When converting currency in the Way4 system, the following additional parameters are used:

- Tag USE_TRANS_AMOUNT=Y/N; that can be set at the financial institution, Product or Service Package level. For more information, see the section "Additional FI Parameters" of the document "Financial Institutions".
- The *FX in HO* field in the financial institution form. For more information, see the section "Additional FI Parameters" of the document "Financial Institutions".

4 Solving typical problems in currency conversion

To solve problems that arise during currency conversion setup and implementation, it is recommended that users analyze messages generated by the system while these processes are being executed. To access these messages, users may access the system process log (Full → Process Log → Process Log). To analyze messages created by the system during document processing, find the desired document in the list of registered documents (Full → Documents Input & Update → Docs – General Form → Doc – General") and click on the [Message] button.

4.1 Messages created during Account Scheme approval

4.1.1 CDB.CHECK_SCHEME:E001

Message text

"Invalid template currency detected"

Message description

When checking the Account Scheme, the system found that the account template does not contain a currency, or that there is no FX Scheme indicated for the FI in the account template for the currency.

Recommended actions

Specify the account template currency or configure the FX Scheme for the FI (see the section "Setting up main FX Schemes").

4.1.2 CDB.CHECK_SCHEME:E034

Message text

"Invalid scheme currency"

Message description

While checking the Account Scheme, the system either discovered that the Account Scheme has no specified currency, or found that no FX Scheme is specified for the FI in the Account Scheme's currency.

Recommended actions

Specify the Account Scheme currency or configure an FX Scheme for the FI (see the section "Setting up main FX Schemes").

4.2 Messages created while checking the financial institution

4.2.1 CDBC.CHECK_FI_SPC:E002

Message text

"Entry of FX Schemes is not allowed for this institution"

Message description

This message is created for a financial institution with a reference to another FI in the *Clearing In* field of the table ("Full → Configuration Setup → Main Tables → Financial Institutions"). For this FI FX Schemes are set up, despite the fact that this FI does not have its own General Ledger.

Recommended actions

FX Schemes for this FI must be deleted.

4.2.2 CDBC.CHECK_FI_SPC:E003

Message text

"Entry of FX Scheme is required for this institution"

Message description

While checking the FI, the system did not find any entries pertaining to it in the FX Scheme table.

Recommended actions

Configure the FI's FX Scheme (see the section "Setting up main FX Schemes"). In the FX Scheme table, a minimum of one entry for the FI should be present, created for the FI's local currency.

4.2.3 CDBC.CHECK_FI_SPC:E009

Message text

"Local Currency not found in FX Scheme"

Message description

When checking the FI, the system did not find an FX Scheme for the financial institution's local currency.

Recommended actions

Set up an FX Scheme for the FI's local currency (see the section "Setting up main FX Schemes").

4.3 Messages created while checking the FX Scheme

4.3.1 FX.CHECK_FX:E001

Message text

"Currency FX Scheme already defined"

Message description

While checking the FX Scheme, the system found more than one entry for the same currency for one FI.

Recommended actions

Delete duplicate entries from the FX Scheme table (see the section "Setting up main FX Schemes").

4.3.2 FX.CHECK_FX:E005

Message text

"Invalid FX revaluation account"

Message description

While checking the FX Scheme, the system found a reference in the *Reval Account* field to a bank contract account that does not exist, or the *Reval Account* field is not filled in.

Recommended actions

Correct the reference to the appropriate bank contract account in the FX Scheme (see the section "Setting up main FX Schemes").

4.3.3 FX.CHECK_FX:E006

Message text

"Invalid FX trade account"

Message description

While checking the FX Scheme, the system found a reference in the *Trade Account* field to a bank contract account that does not exist.

Recommended actions

Correct the reference to the appropriate bank contract account in the FX Scheme (see the section "Setting up main FX Schemes").

4.3.4 FX.CHECK_FX:E010

Message text

"Base currency is not defined for Cross-rate scheme"

Message description

While checking, the system discovered that in the "FX Scheme" form for an additional FX scheme used for explicit cross rates, the *Base Curr* field is not filled in.

Recommended actions

Correct FX Scheme settings (see the section "Configuring explicit cross rate schemes").

4.3.5 FX.CHECK_FX:E011

Message text

"Base currency is equal to FI Local Currency for Cross-rate scheme"

Message description

While checking, it is discovered that in the "FX Scheme" form for an additional FX Scheme used for explicit cross rates, the FI's local currency is specified in the *Base Curr* field.

Recommended actions

Correct FX Scheme settings. The FI's local currency is not used when configuring explicit cross rate schemes (see the section "Configuring explicit cross rate schemes").

4.3.6 FX.CHECK_FX:E012

Message text

"Base currency is equal to Scheme Currency for Cross-rate scheme"

Message description

While checking, it is discovered that for a cross rate scheme, a currency corresponding to the scheme's main foreign currency is specified in the *Base Curr* field of the "FX Scheme" form.

Recommended actions

Correct FX Scheme settings (see the section "FX Types").

4.3.7 FX.CHECK_FX:E013

Message text

"Wrong number of additional technical cross-rate schemes"

Message description

While checking, it is discovered that an incorrect set of technical schemes was generated for an explicit cross rate scheme. An incorrect value is set in the *Base Curr* field for one or both technical schemes.

Recommended actions

Correct the technical scheme configuration in the form "Additional for <name of main currency>" (see the section "Configuring explicit cross rate schemes").

4.3.8 FX.CHECK_FX:E014

Message text

"Old and New Cross-rate definitions are present in FX Schemes"

Message description

While checking, it was discovered that in the "FX Scheme" form, more than one cross rate scheme was created for one currency. This situation arises if after migration of schemes to explicit cross rates a user creates cross rate schemes the old way (using an FX Type setting a base currency).

Recommended actions

Correct FX Scheme settings; delete duplicate records of cross rate schemes created using FX Types (see the section "Configuring multicurrency FX Schemes").

4.3.9 FX.CHECK_FX:E017

Message text

"Is Cross Rate must be Yes or No for parent scheme"

Message description

When checking a record in the "Additional for <name of main currency>" it was discovered that for the parent FX Scheme, the value "Technical" is specified in the *Is Cross Rate* field of the "FX Scheme" field.

Recommended actions

Correct the FX Scheme settings in the "FX Scheme" form, specifying the "Yes" value in the *Is Cross Rate* field (if the scheme is being configured for explicit cross rates), or "No".

4.3.10 FX.CHECK_FX:E018

Message text

"Parent and child schemes have different Is Cross Rate attributes"

Message description

When checking, a discrepancy in the values in the *Is Cross Rate* field of the FX Scheme in the "FX Scheme" form and child FX Schemes in the "Additional for <name of main currency>" form is discovered.

> This error does not occur when checking an explicit cross rate scheme and its child technical explicit cross rate schemes.

Recommended actions

Correct FX Scheme settings.

4.3.11 FX.CHECK_FX:E020

Message text

"Technical Cross-rate scheme have wrong Base Currency"

Message description

When checking the technical FX Scheme in the form "Additional for <name of main currency>" it was discovered that in this scheme's *Base Curr* field, an incorrect value is specified that does not correspond to the main or base currency of the parent explicit cross rate scheme.

Recommended actions

Correct FX Scheme settings. For a explicit cross rate scheme, two child technical schemes are created: for one, the value of the *Base Curr* field of the parent scheme is specified in the *Base Curr* field, and for the other technical scheme, the value of the parent scheme's *Currency* (main currency) field.

4.3.12 FX.CHECK_FX:E022

Message text

"Parent Scheme is missing for the Technical Cross-rate scheme"

Message description

When checking, it was discovered that the parent cross rate scheme is missing for a technical scheme.

This situation may occur when the value "Technical" is specified in the *Is Cross Rate* field of the "FX Scheme" form. This value may be set only in the "Additional for <name of main currency>" form when configuring technical schemes for explicit cross rate schemes.

Recommended actions

Correct FX Scheme settings in the "FX Scheme" form, correct the value of the *Is Cross Rate* field.

4.3.13 FX.CHECK_FX:W001

Message text

"FX Rates history missing for currency"

Message description

This is a warning that FX rate history is missing for the configured FX Scheme.

Recommended actions

Enter in the rate of local to foreign currency (see the section "Entering local to foreign currency rates").

4.4 Messages created while processing documents

4.4.1 CHCK.BASE:E02

Message text

"Invalid Settlement Currency"

Response code

96

Message description

The settlement currency is not indicated in the document or is not specified in the FX Scheme for the source contract FI.

Upon processing the document was declined.

Recommended actions

Check the settlement currency and/or the fee currency in the document. If this currency is absent from the FX Scheme of the source contract FI, it should be added.

4.4.2 CHCK.BASE:E03

Message text

"Invalid Fee currency"

Response code

96

Message description

The fee currency value is not indicated in the document or undefined in the FX Scheme for the FI of the source contract and/or target contract.

Upon processing the document was declined.

Recommended actions

Check the fee currencies in the document (Source Fee Currency, Target Fee Currency). If the fee currency is absent from the FX Scheme, add it.

4.4.3 CHCK.ROUTING:E10

Message text

"Invalid Settlement Currency"

Response code

96

Message description

The settlement currency is not indicated in the interbranch transaction document or is not specified in the FX Scheme for the FI associated with the macrotransaction. The currency is selected according to the document currency and interbranch routing properties. Upon processing the document was declined.

Recommended actions

Check the settlement currency and if needed make corrections to the FX Scheme.

4.4.4 CHCK.TRANSF:E004

Message text

"Invalid Settlement Currency"

Response code

12

Message description

The settlement currency is not indicated in the transfer amount document or in the FX Scheme for the source contract and target contract FI. Upon processing the document was declined.

Recommended actions

Check the settlement currency in the document and if necessary, make corrections to the FX Scheme.