

# Interest Accrual

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# Introduction



This document describes interest accrual methods used in WAY4™. It contains interest accrual formulas and examples of interest schemes.

This document is intended for bank specialists responsible for registration of Accounting Schemes, Customer Support specialists, and accountants who work with WAY4.

While working with this document, it is recommended that users refer to the following reference material from OpenWay's documentation series:

- WAY4™ Global Parameters
- WAY4™ Accounting Schemes
- Events
- Standing Payment Orders
- Balance Types
- WAY4™ Advanced Tariff Management

The following conventions are used throughout this document:

- Field labels in screen forms are typed in *italics*.
- Button labels used in screen forms are placed in square brackets, such as [Approve].
- Menu selection sequences are shown with the use of arrows, such as Full → Configuration Setup → Contract Types.
- Warnings of possible erroneous actions are marked with the  sign.
- Messages marked with the  sign contain information about important features, additional facilities, or the optimal use of certain functions of the system.

# Chapter 1. Setup of Interest Accrual Parameters

This section describes setup of interest accrual parameters and parameters of interest accrual transaction posting.

## Main Interest Accrual Parameters

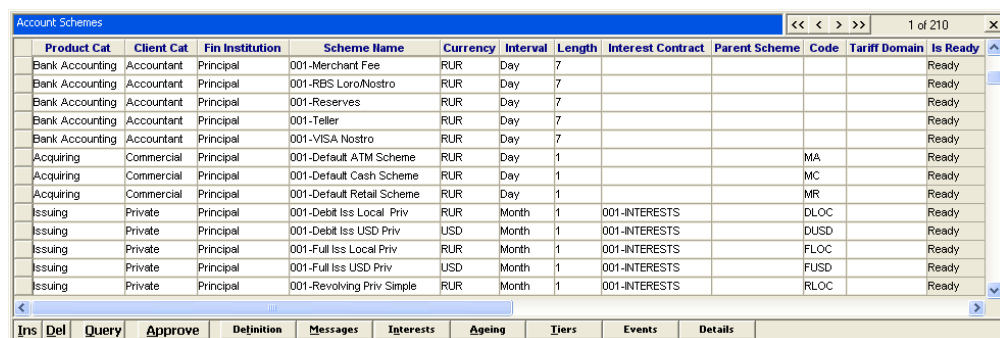
In WAY4, there are three main parameters that are used to set up the basic interest accrual process:

- Annual interest rate
- Interest account
- Bank account(s) used for interest accrual (interest accumulation account or interest expense account)

The parameters are specified in an account template.

## Setup of Parameters in Account Templates

To specify main parameters in an account template, open the "Account Schemes" grid form (see Fig. 1), e.g. by selecting "Full → Configuration Setup → Products → Account Schemes" from the user menu.

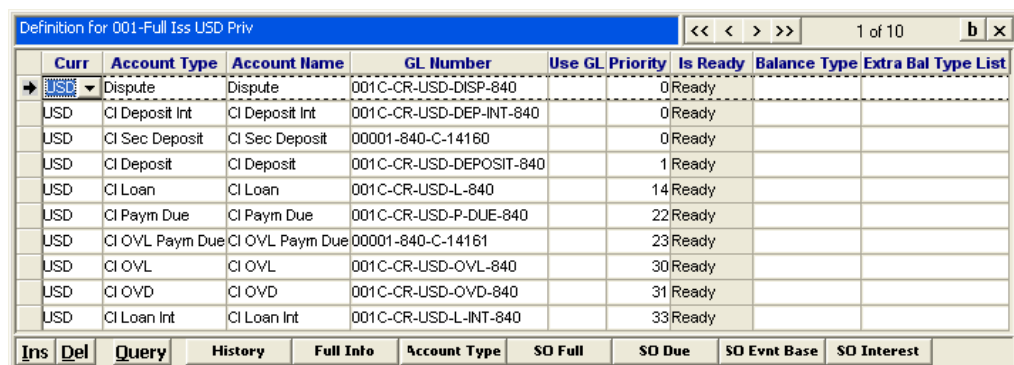


Product Cat	Client Cat	Fin Institution	Scheme Name	Currency	Interval	Length	Interest Contract	Parent Scheme	Code	Tariff Domain	Is Ready
Bank Accounting	Accountant	Principal	001-Merchant Fee	RUR	Day	7					Ready
Bank Accounting	Accountant	Principal	001-RBS LoroNostro	RUR	Day	7					Ready
Bank Accounting	Accountant	Principal	001-Reserves	RUR	Day	7					Ready
Bank Accounting	Accountant	Principal	001-Teller	RUR	Day	7					Ready
Bank Accounting	Accountant	Principal	001-VISA Nostro	RUR	Day	7					Ready
Acquiring	Commercial	Principal	001-Default ATM Scheme	RUR	Day	1			MA		Ready
Acquiring	Commercial	Principal	001-Default Cash Scheme	RUR	Day	1			MC		Ready
Acquiring	Commercial	Principal	001-Default Retail Scheme	RUR	Day	1			MR		Ready
Issuing	Private	Principal	001-Debit Iss Local Priv	RUR	Month	1	001-INTERESTS		DLOC		Ready
Issuing	Private	Principal	001-Debit Iss USD Priv	USD	Month	1	001-INTERESTS		DUSD		Ready
Issuing	Private	Principal	001-Full Iss Local Priv	RUR	Month	1	001-INTERESTS		FLOC		Ready
Issuing	Private	Principal	001-Full Iss USD Priv	USD	Month	1	001-INTERESTS		FUSD		Ready
Issuing	Private	Principal	001-Revolving Priv Simple	RUR	Month	1	001-INTERESTS		RLOC		Ready

Fig. 1. Grid form containing a list of Accounting Schemes

In the "Account Schemes" grid form, select the necessary Accounting Scheme and click the [Definition] button.

As a result, the "Definition for <name of Accounting Scheme>" form (see Fig. 2) will be displayed. It contains information about the Scheme's templates.



Curr	Account Type	Account Name	GL Number	Use GL	Priority	Is Ready	Balance Type	Extra Bal Type List
USD	Dispute	Dispute	001C-CR-USD-DISP-840			0 Ready		
USD	CI Deposit Int	CI Deposit Int	001C-CR-USD-DEP-INT-840			0 Ready		
USD	CI Sec Deposit	CI Sec Deposit	00001-840-C-14160			0 Ready		
USD	CI Deposit	CI Deposit	001C-CR-USD-DEPOSIT-840			1 Ready		
USD	CI Loan	CI Loan	001C-CR-USD-L-840			14 Ready		
USD	CI Paym Due	CI Paym Due	001C-CR-USD-P-DUE-840			22 Ready		
USD	CI OVL Paym Due	CI OVL Paym Due	00001-840-C-14161			23 Ready		
USD	CI OVL	CI OVL	001C-CR-USD-OVL-840			30 Ready		
USD	CI OVD	CI OVD	001C-CR-USD-OVD-840			31 Ready		
USD	CI Loan Int	CI Loan Int	001C-CR-USD-L-INT-840			33 Ready		


Fig. 2. Form containing information about an Accounting Scheme's templates

To access the form containing full information about a template, select the necessary template in the "Definition for <name of Accounting Scheme>" grid form and click the [Full Info] button.

As a result, the "Full Info for <name of template>" form will be displayed. Basic parameters of interest accrual are specified in the *Interest Properties* group of fields in the form (see Fig. 3).

Fig. 3. Group of fields "Interest Properties" in the "Full Info for <name of template>" form

- An annual interest rate value (in percents) is specified in the *Interest Rate* field. If "Daily Rate" is specified in the *Days In Year* field, the daily interest rate is set in the *Interest Rate* field.
- The name of an account template to which interest will be accrued is specified in the *Interest Template* field.
- Specifying a bank contract and bank accounts:
  - A bank contract from whose accounts funds are transferred to pay interest accrued for a deposit account (or whose accounts are used to account future loan interest) is specified in the *Interest Contract* field.
  - Accounts are specified in fields *Interest Accrual Account* and *Interest Exp/Rev Account* (for more details, see "Accumulation of Accrued Interest").

 Main parameters are fields *Supplementary Credit Acc* and *Supplementary Debit Acc* in the *GL Properties* group of fields of an account template: when an account using this template is credited, the system automatically generates an entry for the same amount between accounts specified in fields *Supplementary Credit Acc* and *Supplementary Debit Acc*

(see Fig. 4). The parallel entries are used to repay interest accrued for a credit (see an example of the use of the parameters in section "Accumulation of Accrued Interest").

The screenshot shows a form titled "GL Properties" with the following fields:

- GL #**: 001C-CR-USD-L-INT-840
- Numeration Type**: First Transfer
- Use GL #**: (empty)
- Supplementary Credit Acc**: Loan Int Revenue USD
- Supplementary Debit Acc**: Loan Int Fut Revenue USD
- Off-balance XF Account**: (empty)
- FX Type**: (empty)

Fig. 4. "GL Properties" group of fields in a loan interest account template

## Setup of Parameters in the "Interests for..." Form

To specify basic parameters in the "Interests for <name of Accounting Scheme>" form, select the necessary Accounting Scheme in the "Account Schemes" form (see Fig. 1 in section "Setup of Parameters in Account Templates") and click the [Interests] button.

Curr	Account Name	Rate	Interest Template	Accrual Account	Rev/Exp Account	Is Ready	Fee Rate	Fee Account	Interest Tariff	Calc Int Mode	Int Alg	Priority
USD	CI OVD	40,00	CI Loan Int	Loan Interest Accrual USD	Loan Int Fut Revenue USD	Ready	0,00					31
USD	CI OVL	30,00	CI Loan Int	Loan Interest Accrual USD	Loan Int Fut Revenue USD	Ready	0,00					30
USD	CI OVL Paym Due	30,00	CI Loan Int	Loan Interest Accrual USD	Loan Int Fut Revenue USD	Ready	0,00					23
USD	CI Paym Due	20,00	CI Loan Int	Loan Interest Accrual USD	Loan Int Fut Revenue USD	Ready	0,00					22
USD	CI Loan	20,00	CI Loan Int	Loan Interest Accrual USD	Loan Int Fut Revenue USD	Ready	0,00					14
USD	CI Deposit	10,00	CI Deposit Int	Deposit Int Accrual USD	Deposit Int Exp USD	Ready	0,00					1
USD	CI Deposit Int	5,00	CI Deposit Int	Deposit Int Accrual USD	Deposit Int Exp USD	Ready	0,00					0
USD	CI Sec Deposit	10,00	CI Deposit Int	Deposit Int Accrual USD	Deposit Int Exp USD	Ready	0,00					0

Fig. 5. Form for specifying interest accrual parameters for Accounting Scheme templates

The "Interests for <name of Accounting Scheme>" form (see Fig. 5) is used to specify interest accrual parameters for all templates of an Accounting Scheme.

## Additional Parameters of Interest Accrual


Additional parameters are used to set up the basic interest accrual process in more detail.

### Interest Algorithm


This parameter is specified by selecting a value from a drop-down list in an account template or in the "Interests for <name of Accounting Scheme>" form (see "Setup of Parameters in the "Interests for..." Form").

The value of the *Interest Algorithm* parameter determines the algorithm of interest calculation for a billing cycle:

- "Transaction" or empty value (by default) – interest is calculated considering transaction activity (the "Interest Factor" value is used (see "Interest Factor")).


 When the *Interest Algorithm* parameter is set to values "Quarterly" or "On Request Only", interest is also calculated considering transaction activity, but interest accrual does not depend on billing cycles:

- "Quarterly" – interest is calculated quarterly at the end of a quarter.

 The "Quarterly" value should only be used for configurations in which the end of a billing cycle corresponds to the end of a quarter. For example, if a billing cycle corresponds to a calendar month, or to a quarter (the billing cycle is equal to three months), and the billing cycle is not shifted (see the description of the *Date Type* field for account templates in the document "WAY4 Accounting Schemes").

If a billing cycle is measured in different units or if it is shifted, when the value is "Quarterly", interest will be accrued when the first billing cycle in the new quarter is opened. This means that when a billing cycle is shifted, interest can be accrued on any day of January/April/July/October (according to settings for shifting the billing cycle).


- "On Request Only" – account interest is not accrued at the end of a cycle; interest is accrued using an Event that contains this account in the CALC\_INT tag (see section "Event Types" in the Events Administrator Manual) or when the account balance is repaid if the "Yes" value is specified in the *Calc Int Mode* field of the account template (see section "Interest Properties" in the WAY4™ Accounting Schemes Administrator Manual).
- "Begin Balance", "End Balance" – interest is calculated using the account balance on the date determined by adding the value of the *Grace Period* parameter of the account's template to the first (last) day of a billing cycle (see section "Ageing" in the WAY4™ Accounting Schemes Administrator Manual).
- "Min Amount" – interest is accrued for the minimum account balance over a billing cycle, e.g. if an account balance was EUR 5 000 at the beginning of a cycle, then went down to EUR 2 500 and was EUR 10 000 at the end of the billing cycle, the amount of EUR 2 500 will be used as a basic value for interest accrual.

 Note that the base amount "Min Amount" for the next cycle is determined when closing the previous cycle. I.e., if deposits are made in the next cycle (even on the first day of the billing cycle), these deposits will not be considered, and calculation will be made on the basis of "Min Amount" at the time the previous billing cycle closed. I.e. to get maximum revenue for a billing cycle, funds must be deposited earlier, before a cycle opens.

Example. A billing cycle (second billing cycle for example) is opened from 01.06 to 30.06:

- When the second billing cycle opens on 01.06, the account balance is 5 000 USD.
- On 01.06, another 5 000 USD are deposited.
- On 01.07, the third billing cycle opens. The base for calculating interest ("Min Amount") for the cycle from 01.06 to 30.06 is 5 000 USD.

- On 01.08, the fourth billing cycle opens. The base for calculating interest ("Min Amount") for the cycle from 01.07 to 31.07 is 10 000 USD. Interest for the first billing cycle is calculated according to separate rules, see below.

 When accruing interest according to the "Begin Balance", "End Balance" and "Min Amount" algorithms, interest is accrued once per billing cycle. Changes to an interest rate in the middle of a billing cycle are not taken into consideration when accruing interest according to these algorithms. Interest for the previous billing cycle is calculated when opening the first day of the new billing cycle – the current interest rate from account parameters is used (i.e. the interest rate on the first day of the new billing cycle).

When accruing interest according to the "Begin Balance", "End Balance" and "Min Amount" algorithms, the contract's first billing cycle for accruing interest is determined as follows: For example, if the contract was opened on March 2 and the contract's first billing cycle ends on March 31:


- If the value of the Interest Delay parameter is "Y", the billing cycle will be from March 3 to 31 (i.e. 29 days). The contract's opening day is not included; the opening balance on the morning of the following day is used.
- When the value of the Interest Delay parameter is "N", the billing cycle will be from March 2 to 31 (i.e. 30 days). The contract's opening day is included and the balance at the end of this day is used.

If interest must be accrued at an old rate (if from the first day of the cycle the interest rate changed), when setting up the change in the interest rate, specify this change from the second day, not the first, and in the corresponding tariff, set the Apply Mode parameter to "From Billing Start". Note that configuration of an Event with the CALC\_INT tag (allowing interest to be additionally accrued when an Event activates) cannot be used to solve this task for these algorithms as it will lead to incorrect generation of entries for interest accrual.

- "Next Cycle" – interest for the current billing cycle will be accrued when the next billing cycle is closed.


For example, if billing cycles correspond to calendar months, interest for September will be accrued at the end of October, and interest for October – at the end of November.

If the value of the *Interest in Cycle* parameter is "N" and the value of the *Interest Algorithm* parameter is "Next Cycle", interest for September will be accrued when closing the billing cycle for October, and the entry will be posted on the first working day of November.

 WAY4 does not support simultaneous use of the "Next Cycle" value of the *Interest Algorithm* parameter and the "Int By Credit" and "Int By Credit (Full value)" values of the *Calc Int Mode* parameter.


## Number of Days in a Year

This parameter is used to calculate the IntScheme value (number of days in a year), necessary to calculate a daily interest rate.

 A daily interest rate is a ratio of an annual interest rate and the IntScheme value. For more details, see section "Determining a Daily Interest Rate".



This parameter is specified on the financial institution level in the *Interest Scheme* field of the "Financial Institution" grid form (Full → Configuration Setup → Main Tables → Financial Institution).

 Note that a parameter value specified for a financial institution in the *Interest Scheme* field can be redefined in the Accounting Scheme's *Interest Scheme* field, or in the *Days in Year* field of an account template (see Fig. 3 in section "Setup of Parameters in Account Templates"). The *Days in Year* field contain an expanded list of values (in particular, the "Daily Rate" value can be set in the template, which is not possible on the financial institution and Accounting Scheme level). To avoid lack of correspondence between the values of the parameter for an account template and a financial institution, it is strongly recommended that the default value of the parameter ("Default") not be changed in account templates.

The *Days in Year* field of an account template contains the following values:

- "Default – when calculating interest, the value of the Account Scheme's *Interest Scheme* parameter will be used.
- "Actual 365/366" – the actual number of calendar days in a year (365 or 366) will be used to determine a daily interest rate.
- "360" – to determine a daily interest rate, the length of a year will be affected by the value of the USE\_MONTH\_WEIGHT global parameter.
  - When the parameter is set to "Y" (default value), each month is considered to have the same weight equal to a 1/12 of a year; for instance, higher interest is accrued for a day in February than is accrued for the same amount for a day in January. For example, interest for a day in April (30 days) is calculated as follows: the account balance is divided by 30 and multiplied by the annual interest rate divided by 12. Interest for a day in May (31 days) is calculated as follows: the account balance is divided by 31 and multiplied by the annual interest rate divided by 12.

If a billing cycle does not correspond to a calendar month, calculation takes place separately for the parts of the billing cycle that are in different months. For example, a billing cycle lasts from 20 March to 19 April. 100USD were debited on 20 March.

Interest for the period is calculated as follows:

$$\frac{100\text{USD} \cdot 11 \text{ days} \cdot \text{annual rate}}{31 \text{ days in March} \cdot 12} + \frac{100\text{USD} \cdot 19 \text{ days} \cdot \text{annual rate}}{30 \text{ days in April} \cdot 12}$$

For more information, see the section "Determining a Daily Interest Rate".

- When the parameter is set to "N", the annual rate is divided by 360 days to calculate the daily rate. For instance, the same interest is accrued for a day in February as is accrued for the same amount for a day in January. However, for each month (i.e. for a period), interest is calculated depending on the actual number of days in the month.

If a billing cycle does not correspond to a calendar month, calculation takes place separately for the parts of the billing cycle that are in different months. For example, a billing cycle lasts from 20 March to 19 April. 100USD were debited on 20 March. Interest for the cycle is calculated as follows:

$$\frac{100\text{USD} \cdot 11 \text{ days in March} \cdot \text{annual rate}}{360} + \frac{100\text{USD} \cdot 19 \text{ days in April} \cdot \text{annual rate}}{360}$$


For more information, see the section "Determining a Daily Interest Rate". This setup ("360" value and USE\_MONTH\_WEIGHT=N) implements the "360/365", "Actual/360" or "Bank Method" interest accrual method

- If the value is "B", when accruing interest for a billing cycle that does not correspond to a calendar month, each billing cycle is considered to have a different weight according to the number of days in the cycle. Interest for a billing cycle is calculated as follows:

$$\frac{\text{Account balance} \cdot \text{annual rate}}{31 \text{ days in a billing cycle} \cdot 12}$$

For more details on daily interest rate calculation, see section "Determining a Daily Interest Rate".

- "-360" – to determine a daily interest rate, the number of calendar days in a month is considered to be 30, and the number of calendar days in a year is considered to be 360.

 When the "-360" interest accrual scheme is used, the following rules are applied:

- An interest amount for the last day of February is calculated as follows:
  - ◆ If February consists of 28 days, interest for three days is accrued on 28 February.
  - ◆ If February consists of 29 days, interest for two days is accrued on 29 February.
- No interest is accrued for the 31<sup>st</sup> day of a month.
- "Fixed 365" – fixed value for the number of calendar days in a year (365 days).
- "Fixed 366" – fixed value for the number of calendar days in a year (366 days).
- "Daily Rate" – for this value, the daily interest rate is specified in the account template's *Interest Rate* field.

## Parameters Determining Interest Accrual Start/End Date

### ***Interest Delay***

This parameter determines the date starting with which interest is accrued and the date up to which interest is accrued. The parameter is specified in the *Interest Delay* field of an account template (see Fig. 3 in section "Setup of Parameters in Account Templates").

The parameter can take on the following values:

- Empty (null) – the value of the "Interest Delay" parameter specified in the "INTEREST\_DELAY" global parameter is used (see the WAY4™ Global Parameters Administrator Manual).
- "Yes" – interest is accrued starting with the next day after funds are transferred to the account up to the day the funds are transferred from the account, inclusive. That is, if funds were transferred on the 5<sup>th</sup> day of a month

and withdrawn on the 10<sup>th</sup> day of the month, interest will be accrued for the period from the 6<sup>th</sup> to the 10<sup>th</sup> day of the month.

- "No" – interest is accrued starting with the day funds are transferred to the account up to the day the funds are transferred from the account. That is, if funds were transferred on the 5<sup>th</sup> day of a month and withdrawn on the 10<sup>th</sup> day of the month, interest will be accrued for the period from the 5<sup>th</sup> to the 9<sup>th</sup> day of the month.



When an account is closed, an interest accrual entry is created on the closing date.

### **FROM\_TRANS\_DATE**

The FROM\_TRANS\_DATE=<N days> parameter is used when it is necessary to accrue interest starting with an authorisation date.

The difference in days between an authorisation date and a transaction date is considered in this case: if this difference is less than the value of the parameter, interest is accrued starting with the authorisation date, if it exceeds the value of the parameter, starting with the transaction date.

The parameter applies to a specific transaction type and is specified in the *Service Details* field of the Service's "Full Info..." form.

### **USE\_DATE\_OPEN**

The USE\_DATE\_OPEN; parameter (tag) is used when interest must be accrued for a contract's first billing cycle, starting from the contract's opening date, and not for the entire corresponding billing cycle (if billing cycle length is set in months). I.e., the USE\_DATE\_OPEN tag affects how the starting date of the first billing cycle is defined, if billing cycle length is set in months.

If USE\_DATE\_OPEN is set, the contract's opening date will be used as the starting date of the first billing cycle, on the condition that the contract's opening date is equal to the current banking date. If the contract's opening date is earlier than the current banking date (this situation may occur when recalculating Billing Date, see the document "Contract Functional Dates"), the current banking date will be used as the starting date of the first billing cycle.

The USE\_DATE\_OPEN; tag (parameter) is specified in the *Special Parms* field of an Accounting Scheme (see a detailed description of the tag in the document "WAY4 Accounting Schemes").



When the global parameter INTEREST\_DELAY with the "Y" value is used together with the USE\_DATE\_OPEN; tag, interest will be accrued on the account for the first billing cycle starting with the day after the contract is opened.

## **Calc Int Mode**

This parameter allows for accruing interest for a loan on the day the loan is repaid and is specified in the *Calc Int Mode* field of a loan account template (see Fig. 3 in section "Setup of Parameters in Account Templates").

The parameter can take on the following values:

- Empty (null) – the parameter is not used.

- "Int By Credit" – interest is accrued in this account on the day a loan is repaid. When this value is set, it is necessary to check that the "Activate Int By Credit" value is set in the field of the same name of the account template from which the loan is repaid. The *Calc Int Mode* field may only contain the "Int By Credit" value when the "Interest Delay" parameter is set to "Yes".

**i** Loan interest accrual at the time of its repayment is affected by the value of the "INTEREST\_BY\_CREDIT" global parameter (see the WAY4™ Global Parameters Administrator Manual). The parameter can take on the following values:

- "Y" (Yes) – interest accrued for the loan does not exceed the repaid amount.
- "N" (No) – loan interest is accrued fully regardless of the repaid amount.
- "Int By Credit (Full value)" – this value of the *Calc Int Mode* parameter allows for accruing account interest fully regardless of the repaid amount regardless of the "Y" value of the INTEREST\_BY\_CREDIT global parameter.
- "Activate Int By Credit" – this value is set when the *Calc Int Mode* parameter of the account template from which the loan is repaid is set to the "Int By Credit" value.
- "Waive After Full Payment" – this value is used to set up credit Products. For details, please contact WAY4™ system vendor's Customer Support.

Loan interest accrual on the day of its repayment is performed in various ways depending on the value of the DIRECT\_REPLEN\_TO\_INT\_REVENUE global parameter (see the WAY4™ Global Parameters Administrator Manual). Below it is shown how accrued interest will be repaid for a simple credit scheme (the *Calc Int Mode* parameter is set to "Int By Credit").

- When the DIRECT\_REPLEN\_TO\_INT\_REVENUE parameter is set to "No", the following entries are generated (see Fig. 6):

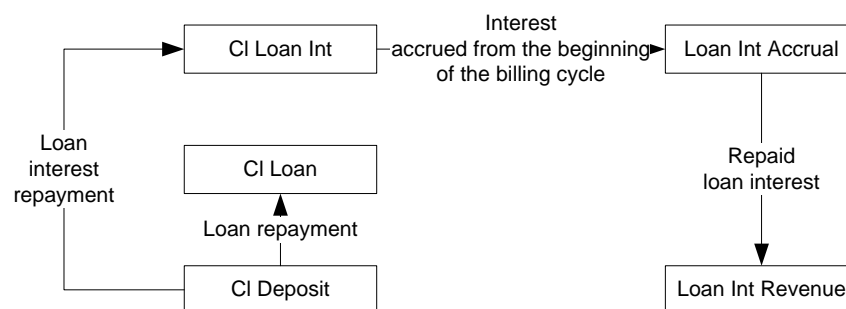



Fig. 6. Loan interest accrual scheme on its repayment day when the *DIRECT\_REPLEN\_TO\_INT\_REVENUE* parameter is set to "No"

- Interest accrued from the beginning of the current billing cycle is transferred from the loan interest account ("CI Loan Int") to the bank's interest accrual account ("Loan Int Accrual").
- The loan in the loan account ("CI Loan") is repaid from the deposit account ("CI Deposit").
- Loan interest in the loan interest account ("CI Loan Int") is repaid from the deposit account ("CI Deposit").

- An entry for the amount of repaid loan interest is made from the bank's interest accrual account ("Loan Int Accrual") to the bank's interest revenue account ("Loan Int Revenue").

 A credit entry to an account with the "Int By Credit" value of the *Calc Int Mode* parameter is made after interest is accrued in loan accounts. This allows for not "losing" interest accrued on the last day when funds remain in loan accounts.

- When the `DIRECT_REPLEN_TO_INT_REVENUE` parameter is set to "Yes":

If loan interest has not yet been accrued for previous billing cycles, the following entries are generated (see Fig. 7):

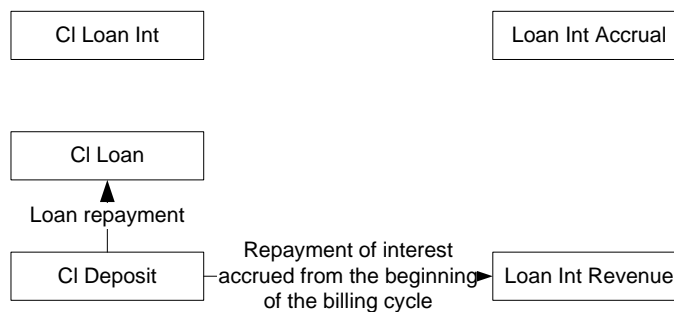


Fig. 7. Loan interest accrual scheme on its repayment day when the `DIRECT_REPLEN_TO_INT_REVENUE` parameter is set to "Yes" and loan interest has not been accrued for previous billing cycles

- Interest accrued from the beginning of the current billing cycle is repaid directly from the deposit account ("CI Deposit") to the bank's interest revenue account ("Loan Int Revenue").
- Loan in the loan account ("CI Loan") is repaid from the deposit account ("CI Deposit").



WAY4 does not support simultaneous use of the "Next Cycle" value of the *Interest Algorithm* parameter and the "Int By Credit" and "Int By Credit" (Full value)" values of the *Calc Int Mode* parameter.

## Interest Fee Rate

The *Interest Fee Rate* parameter of an account template is additional fee (in percent). Used to charge a fee for revenue in the form of interest accrued for an account (to automatically deduct the deposit interest tax) and to set up penalties.

The following algorithms of fee accrual are implemented in the system (the corresponding values are selected in the *Fee Rate Mode* field of an account template):

- Select the "Direct" value if a fee amount must be calculated as an account balance percentage. This value may be used so that interest and penalties are charged for the same account (balance).
- Additionally, the following configurations must be set up in the account template:
  - Basic parameters of interest accrual are set up: an interest accrual account is specified in the *Interests Template* field, and an interest rate is specified in the *Interest Rate* field.

- A penalty is specified as a percentage in the *Interest Fee Rate* field:
  - ◆ A value with a negative sign is specified for loans.
  - ◆ A value with a positive sign is specified for deposits.

For a loan, common interest is transferred from the client interest account to a bank account. For a deposit, common interest is transferred from a bank account to a client interest account. In both cases, *Interest Fee Rate* will be transferred from a client account specified with the INT\_FEE\_SRC\_ACC=<client penalty account code >, to the *Interest Fee Account*.

- An account for accruing penalties must be specified in the *Interest Fee Account* field.
- A special tag INT\_FEE\_SRC\_ACC=<code of client account for penalty accrual> is specified in the *Template Details* field.



If only a penalty is set up in an account template (i.e. interest is not accrued for the account), it is necessary to select the "On Request Only" value in the *Interest Algorithm* field and set up standard interest accrual configurations (fill in fields *Interests Template* and *Interest Rate*).

- When the "Standard" value is specified, a fee amount is calculated by multiplying the rate specified in the *Interest Fee Rate* field by an accrued interest amount (*Interest Fee Rate* is set with the positive sign).
- The "Difference" value is used to charge a fee from the account balance. The fee rate is calculated as the difference between the account interest rate (*Interest Rate*) and an additional interest rate (*Interest Fee Rate*) set by state regulatory bodies (if the account interest rate is more than the additional interest rate). To do so, the following settings must be made in the account template:
  - Select the "Difference" value in the *Fee Rate Mode* field of an account template.
  - Specify interest rate in the *Interest Rate* field.
  - In the *Interest Fee Rate* field, specify an additional rate set by regulating state authorities.
  - An additional fee is charged based on the difference in interest rates for the account balance (if the account interest rate is more than the interest rate of the state regulatory body).


These settings can be used, for example, when issuing a loan with a reduced interest.

Example. Account interest rate (*Interest Rate*) – 12%. *Interest Fee Rate* – 8%. At the end of the billing cycle:

- ◆ Interest at the rate of 12% is accrued on the account balance and transferred from a bank interest accrual account (specified in the *Interest Accrual Account* field) to the client interest account CI Deposit Int (specified in the *Interest Template* field).
- ◆ Also, a fee at the rate of 4% is charged on the account balance (*Interest Rate - Interest Fee Rate*). The amount is transferred from the client interest account CI Deposit Int (specified in *Interest Template*) to the



bank interest accrual account (specified in the *Interest Accrual Account* field).

 Previously, the *Interest Fee Rate* field was used as a basic functionality for setup of charging a material gain income tax. Now, it is recommended that parameters of charging this tax be set up using the WAY4 Tariffs module. The module is supplied by the WAY4™ system vendor under a separate agreement.

## Interest Rounding Parameters

By default, interest accrued for a billing cycle is rounded to fractional units (e.g. to two decimal places for dollars and roubles).

Interest rounding parameters can be additionally set up using tags specified in the *Template Details* field of an account template:

- **ROUND**=<value> – allows for rounding interest accrued for this account to the specified place.
- **ROUND\_FEE**=<value> – allows for rounding interest fees (fees charged to accrued interest) to the specified place.

Possible tag values:

- **"n"** – rounding to  $10^{-n}$  ("0" – to basic units of currency, dollars, pounds), "2" – to tens of fractional units (it is assumed in both cases that the currency exponent is 2), "1" – to tens of basic units of currency, etc.)
- **"-m"** – rounding to  $10^{-m}$  ("-1" – to tens of basic units of currency, "-2" – to hundreds of basic units of currency)
- **">k"** – rounding up to **k** fractional units
- **"<l"** – rounding down to **l** fractional units
- **"=p"** – rounding to **p** fractional units using the standard algorithm

## Parameters of Interest Accrual Transaction Posting

### Interest in Cycle

This parameter determines the billing cycle for registering an interest accrual entry (i.e. whether the entry will be included in the current or the next GL report). The parameter is specified in the *Interest in Cycle* field of the "Details for <name of financial institution>" form, opened by clicking the [Details] button in the "Financial Institutions" grid form (Full → Configuration Setup → Main Tables → Financial Institutions).

The parameter can take on the following values:

- Empty (null) – the system uses the value of the "Interest in Cycle" parameter specified using the "INTEREST\_IN\_CYCLE" global parameter (see the WAY4™ Global Parameters Administrator Manual).
- "End of cycle" – interest is accrued on the last day of a closing billing cycle (the date when accounting entries are reflected in the General Ledger (Local Date) is the last day of the closing billing cycle), and the corresponding entry is reflected in the account statement for this cycle.

- "First End of Day" – interest is accrued on the first day of an opening billing cycle (the date when accounting entries are reflected in the General Ledger (Local Date) is the first day of the opening billing cycle), and the corresponding entry is reflected in the account statement for this cycle.
- "Last Working Day" – interest is accrued on the last business day of a closing billing cycle (the date when accounting entries are reflected in the General Ledger (Local Date) is the last business day of the closing billing cycle), and the corresponding entry is reflected in the account statement for the closing billing cycle.
- "First Working Day" – interest is accrued on the first business day of an opening billing cycle, and the corresponding entry is reflected in the account statement for this cycle.

The INT\_IN\_CYCLE tag set in the Accounting Scheme redefines the global parameter INTEREST\_IN\_CYCLE and the financial institution's *Interest in Cycle* parameter.

If the end of a billing cycle corresponds to the end of a calendar month, the global parameter INTEREST\_IN\_CYCLE (and the INT\_IN\_CYCLE tab) can be redefined using the EOM\_INT\_MODE tag (see the section "EOM\_INT\_MODE").

## Post Due

This parameter determines the method of posting waiting macrotransactions of due account normalisation when a billing cycle is opened (determines the date a macrotransaction is reflected in the General Ledger (Local Date)). The parameter can be specified in the *Post Due* field of the "Details for <name of financial institution>" form, opened by clicking the [Details] button in the "Financial Institutions" grid form (Full → Configuration Setup → Main Tables → Financial Institutions). For information on how this parameter affects interest accrual, see section "Examples of Deferred Interest Capitalisation Setup".

The parameter can take on the following values:

- Empty (null) – the value specified using the "POST\_DUE" global parameter is used (see the WAY4™ Global Parameters Administrator Manual).
- "End of Cycle" – waiting macrotransactions with due normalisation type "End Cycle Due" or "Quarter" and a posting date that is the same as the beginning date of a new billing cycle are posted to General Ledger Accounts on the closing day of the previous billing cycle: the Local Date (GL Date) of the macrotransactions will correspond to the closing date of the previous billing cycle.
- "First End of Day" – waiting macrotransactions with a posting date that is the same as the beginning date of a new billing cycle are posted on the first business day of the new billing cycle and do not influence the balance of the closing billing cycle: the Local Date (GL Date) of the macrotransactions will correspond to the first business day of the new billing cycle.
- "Last Working Day" – waiting macrotransactions with a posting date that is the same as the beginning date of a new billing cycle are posted to General Ledger accounts on the last business day of the previous billing cycle: the Local Date (GL Date) of the macrotransactions will correspond to the last business day of the previous billing cycle.



- "Start of Cycle" – waiting macrotransactions with a posting date that is the same as the beginning date of a new billing cycle are posted on the first day of an opening billing cycle, even if it falls on a non-business day: the Local Date (GL Date) of the macrotransactions will correspond to the first day of the new billing period.

## EOM\_INT\_MODE

The EOM\_INT\_MODE tag can be used to accrue interest at the end of a calendar month if rules for recording interest accrued at the end of the month differ from rules for accruing interest at the end of a billing cycle. The EOM\_INT\_MODE tag makes it possible to use different rules for posting such entries to GL accounts.

The EOM\_INT\_MODE tag redefines the global parameter INTEREST\_IN\_CYCLE (or the INT\_IN\_CYCLE tag set in the Accounting Scheme) with regard to definition of the GL Date for macrotransactions to accrue interest at the end of the month (if the end of the billing cycle corresponds to the end of the month).

The EOM\_INT\_MODE tag is specified in the Accounting Scheme's *Special Parm*s field. Parameter values:

- "Y" – the date of recording entries in the General Ledger (Local Date) is the last calendar day of the month.
- "P" – the date of recording entries in the General Ledger (Local Date) is the last working day of the month.

The example in Fig. 8 shows a situation when the end of the billing cycle and the end of the calendar month fall on weekends, and the end of the calendar month arrives on the next day after the end of the billing cycle.

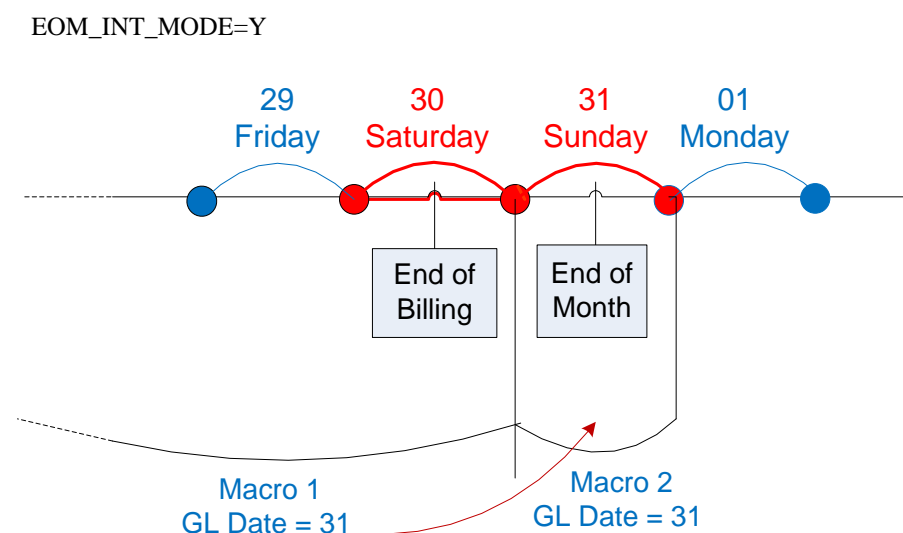


Fig. 8. Shifting a GL date using the EOM\_INT\_MODE tag

In the situation shown in Fig. 8, two macrotransactions for accruing interest are created at the end of the month. One macrotransaction includes interest accrued up to the 30<sup>th</sup> day of the month. The second macrotransaction includes interest accrued for the 31<sup>st</sup> day of the month. Dates for posting macrotransactions to GL accounts can be defined by the EOM\_INT\_MODE parameter, in particular:

- When the value is "Y", both macrotransactions will be posted to GL accounts on the 31<sup>st</sup> (i.e. the last calendar day of the month).
- When the value is "Y", both macrotransactions will be posted to GL accounts on the 29<sup>th</sup> (i.e. the last working day of the month).

The Posting Date of the first macrotransaction will be on the 30<sup>th</sup>, and that of the second will be on the 31<sup>st</sup>.

If the parameter EOM\_INT\_MODE is not set, the parameter to define GL dates for accruing interest at the end of the month will be defined by rules for accruing interest at the end of a billing cycle (INT\_IN\_CYCLE tag in the Accounting Scheme or the global parameters INTEREST\_IN\_CYCLE).

## Chapter 2. Calculating Accrued Interest

This section describes the algorithm of calculating accrued interest.

### Interest Amount

The algorithm of calculating interest amounts depends of the value of the *Interest Algorithm* field (see "Interest Algorithm").

The following algorithms are used in WAY4 to calculate accrued interest amounts:

- If the *Interest Algorithm* field contains values "Begin Balance" or "End Balance", the amount of accrued interest is calculated using the following formula:

$$IntAmount = Balance_{start\_of\_billing/end\_of\_billing} \cdot Days_{in\_billing\_period} \cdot IntRate_{daily}$$

- If the *Interest Algorithm* field contains the "Min Amount" value, the amount of accrued interest is calculated using the following formula:

$$IntAmount = Balance_{min\_billing} \cdot Days_{in\_billing\_period} \cdot IntRate_{daily}$$

- If the *Interest Algorithm* field contains the "Transaction" value or is left blank (by default), the amount of accrued interest is calculated using the following formula:

$$IntAmount = (Days_{in\_billing\_period} \cdot Balance_{end\_of\_billing} \mp \sum IntFactor) \cdot IntRate_{daily}$$

where:

*IntAmount* is an accrued interest amount

*Days<sub>in\_billing\_period</sub>* is the length of a billing cycle in days

*Balance<sub>start\_of\_billing</sub>* is an account balance at the beginning of the current billing cycle

*Balance<sub>end\_of\_billing</sub>* is an account balance at the end of the current billing cycle


*Balance<sub>min\_billing</sub>* is a minimum account balance over a billing cycle

$\sum IntFactor$  is the total Interest Factor value for the billing cycle (see "Interest Factor")

*IntRate<sub>daily</sub>* is a daily interest rate (see "Determining a Daily Interest Rate")

For an example, see the section "Example of Calculating Accrued Interest".

WAY4 accrues account interest for a billing cycle. As a rule, a billing cycle is a month.

 If the *Interest Algorithm* field contains values "Quarterly" or "On Request Only", an accrued interest amount is calculated in the same way as for the "Transaction" value, but the *CurrLen* value is the length of a quarter for "Quarterly" and the length of the time period from the beginning of a billing cycle to the moment when the Event was activated or the account balance was repaid for "On Request Only".

## Interest Factor

An Interest Factor (IntFactor) value is calculated for each entry that resulted in the change of an account balance. Then, IntFactor values for a billing cycle are summed up. The total IntFactor value for all entries ( $\sum IntFactor$ ) is used to calculate the interest amount for the cycle.

The IntFactor value for a separator entry is calculated using the following formula (we consider the fixed interest rate option):

$$IntFactor = EntryAmount \cdot N_{days\_from\_start\_of\_billing},$$

where:

*EntryAmount* is the amount of transferred funds; the amount may be positive (for deposit transactions) or negative (for debit transactions).

*N<sub>days\_from\_start\_of\_billing</sub>* is the number of days from the beginning of the billing cycle (for *Interest Algorithm*="Transaction" or "On Request Only") or the number of days from the beginning of the quarter (for *Interest Algorithm*="Quarterly") to the entry date. The value of *N<sub>days\_from\_start\_of\_billing</sub>* may be positive or negative:

- The "-" sign is shown if the entry date is more than the billing cycle start date.
- The "+" sign is shown if the entry date is less than the billing cycle start date.

Example 1. A deposit transaction is made during the current billing cycle (the billing cycle start date is the first day of the month; the transaction for 20USD was made on the 5<sup>th</sup> day of the current month):

$$EntryAmount=20, N_{days\_from\_start\_of\_billing} = -5$$

$$IntFactor = 20 \cdot (-5) = -100$$

Example 2. A debit transaction is made during the current billing cycle (the billing cycle start date is the first day of the month; the transaction to debit 20USD was made on the 5<sup>th</sup> day of the current month):

$$EntryAmount=-20, N_{days\_from\_start\_of\_billing} = -5$$

$$IntFactor = (-20) \cdot (-5) = 100$$

The global parameter INTEREST\_DELAY affects calculation of the Interest Factor value:

Example 1. A deposit transaction is made in the current billing cycle:

- The billing cycle start date is the first day of the month.
- The transaction for 1000 USD was made on the 5<sup>th</sup> day of the current month.
- The current billing cycle is September.
- The account balance at the start of the current billing cycle was equal to "0".

When INTEREST\_DELAY=N:

- *EntryAmount*=1000
- *N<sub>days\_from\_start\_of\_billing</sub>*=01/09 - 05/09= - 4
- *IntFactor* = 1000 · (-4) = -4000

When INTEREST\_DELAY=Y:

- *EntryAmount*=1000

- $N_{days\_from\_start\_of\_billing} = 01/09 - 05/09 - 1 = -5$
- $IntFactor = 1000 \cdot (-5) = -5000$

Example 2. A deposit transaction was made in a past billing cycle:

- The billing cycle start date is the first day of the month.
- The transaction for 1000 USD was made on the 1<sup>st</sup> day of the current month, but the Posting Date is 27/08.
- The current billing cycle is September.
- The account balance at the start of the current billing cycle was equal to "0".

When INTEREST\_DELAY=N:

- EntryAmount=1000
- $N_{days\_from\_start\_of\_billing} = 01/09 - 27/08 = +5$
- $IntFactor = 1000 \cdot 5 = 5000$

When INTEREST\_DELAY=Y:

- EntryAmount=1000
- $N_{days\_from\_start\_of\_billing} = 01/09 - 27/08 - 1 = +4$
- $IntFactor = 1000 \cdot 4 = 4000$

If funds were transferred to the account (debited from the account) on the first day of the billing cycle or in earlier billing cycles, and over the course of the entire billing cycle the state of the account did not change, IntFactor will be equal to zero.

When a document is reversed, an entry is generated with an Interest Factor equal to the Interest Factor of the original entry with the opposite sign. That is, interest will not be accrued for a transaction reversed during the same billing cycle.

If a transaction is reversed during the next billing cycle, interest for the first billing cycle will be accrued using the IntFactor of the original entry, and the same interest with the opposite sign will be accrued for the next billing cycle.

## Determining a Daily Interest Rate

A daily interest rate is calculated using the following formula:

$$IntRate_{daily} = \frac{IntRate}{100 \cdot IntScheme},$$

where:

*IntRate* is an annual interest rate (in percent) specified in an account template or the "Interests for <name of Accounting Scheme>" grid form (see "Setup of Parameters in the "Interests for..." Form").

*IntScheme* is a value for specifying the number of days in a year, determined in one of the following ways:

- If the value of the *Interest Scheme* parameter of the financial institution or the value of the *Days in Year* parameter of the account template (see "Number of Days in a Year") is "365", the *IntScheme* value is considered to be 365 or 366.

- If the value of the *Interest Scheme* parameter of the financial institution or the value of the *Days in Year* parameter of the account template (see "Number of Days in a Year") is "360", the length of billing cycles is measured in months and the value of the "USE\_MONTH\_WEIGHT" global parameter is "Y" (or if this parameter is not set), the *IntScheme* value is determined using the following formula:

$$IntScheme = 12 \cdot Month\_Weight,$$

where:

*Month\_Weight* is the number of days in the month.

Therefore, daily interest rate calculation ensures that each month is considered a 1/12 of a year.

If the value of the USE\_MONTH\_WEIGHT global parameter is "N", the *IntScheme* value is taken to be 360.

- If a billing cycle does not correspond to a calendar month (see the description of the Accounting Scheme's *Billing Day* field), the "USE\_MONTH\_WEIGHT" global parameter should be set to "B". The *IntScheme* is determined using the following formula:

$$IntScheme = 12 \cdot Cycle\_Weight,$$

where:

*Cycle\_Weight* is the number of days in the billing cycle.

The "B" value can be set in an account template, Accounting Scheme or financial institution using the USE\_MONTH\_WEIGHT=B; tag.

- If the value of the *Interest Scheme* parameter of the financial institution or the value of the *Days in Year* parameter of the account template (see "Number of Days in a Year") is "-360", the *IntScheme* value is considered to be 360 (for more details, see section "Number of Days in a Year").



The USE\_MONTH\_WEIGHT global parameter does not affect the "-360" scheme.

## Example of Calculating Accrued Interest

An example of calculating accrued interest for a recurring deposit is shown in Fig. 9.

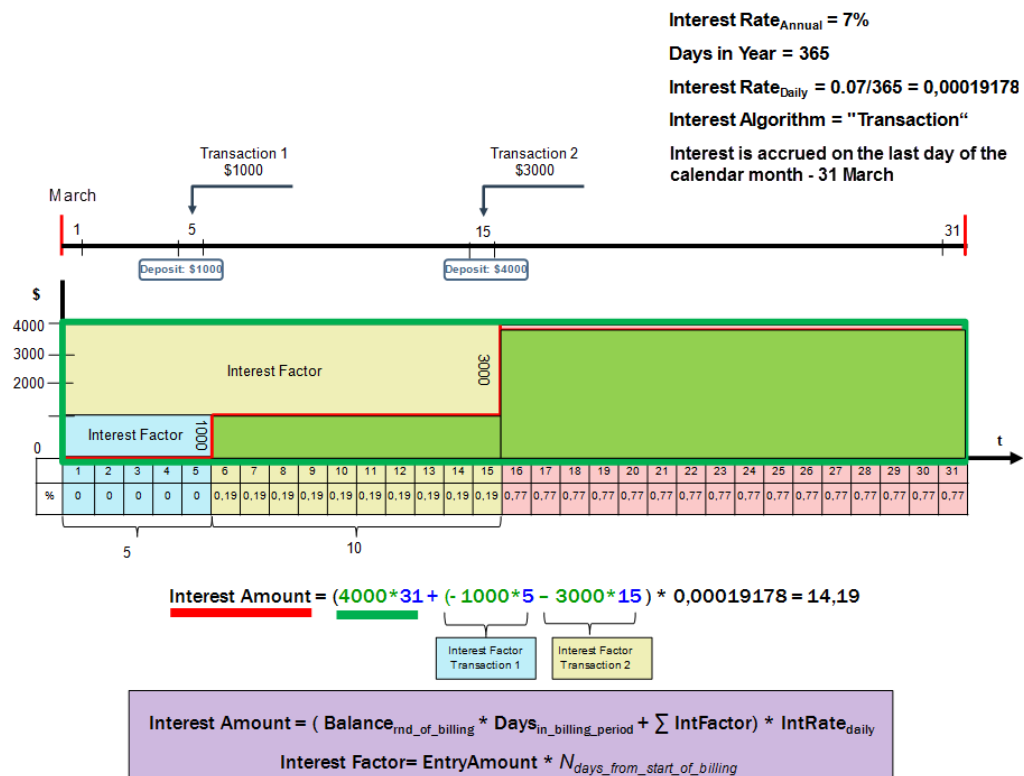


Fig. 9. Calculating interest for a recurring deposit

The interest amount is obtained by multiplying the daily interest rate by the area of the figure coloured in green, see Fig. 9. The area of this figure is calculated in the following way: from the area of the large rectangle outlined in bright green ( $\text{Days}_{\text{in\_billing\_period}} \cdot \text{Balance}_{\text{end\_of\_billing}}$ ), the area of the yellow and blue rectangles is subtracted (Interest Factor Transaction 1 and Interest Factor Transaction 2).

## Chapter 3. Features of Interest Accrual

This section describes the features of the interest accrual process, various schemes of interest accumulation and capitalisation, and the way of accessing information about accrued interest.

### Accumulation of Accrued Interest

Accumulation of accrued interest is set up using the *Interest Properties* group of fields in an account template (see Fig. 10):

- If daily interest accumulation is not used, it is only necessary to fill in the *Interest Accrual Account* field in the account template. This field must contain a bank account: for a deposit account, an interest expense account, for a loan account, a future revenue account. At the end of a billing cycle, an entry is made between the specified bank contract and the client's interest account (for a deposit, funds from the bank's interest expense account are transferred to the client's interest account, for a loan, funds from the client's loan interest account are transferred to the bank's future revenue account).
- WAY4 allows for daily accumulation of interest to be accrued.
  - To switch on daily interest accumulation mode, fill in fields *Interest Accrual Account* and *Interest Exp/Rev Account*.
    - ◆ For a deposit, specify the bank's interest expense account in the *Interest Exp/Rev Account* field and the bank's interest accumulation account in the *Interest Accrual Account* field.
    - ◆ For a loan, specify the loan interest accumulation account in the *Interest Accrual Account* field and the future revenue account in the *Interest Exp/Rev Account* field.
  - When daily interest accumulation mode is on, an amount roughly equal to the amount of interest accrued for the day is daily transferred between the specified bank accounts:
    - ◆ For deposits, the amount is transferred from the bank's interest expense account to the bank's interest accumulation account.
    - ◆ For loans, the amount is transferred from the bank's loan interest accumulation account to the bank's future revenue account.
  - At the end of the billing cycle, an entry between the bank's interest accumulation account and the client's interest account is made. The difference between the estimated interest amount and the amount actually accrued at the end of the billing cycle is then reflected in the interest accumulation account.



When loan interest is repaid, the system generates a parallel entry from the bank's future revenue account to the bank's revenue account for an amount equal to the payment amount (see descriptions of fields *Supplementary Credit Acc* and *Supplementary Debit Acc* in section "Setup of Parameters in Account Templates").



Interest Properties	
Interest Rate	12,00
Interest Algorithm	
Interest Template	CI Loan Int
Interest Fee Rate	0,00
Fee Rate Mode	Standard
Interest Fee Account	
Interest Fee Type	
Interest Delay	
Days In Year	0
Calc Int Mode	
Interest Contract	001-INTERESTS
Interest Accrual Account	Loan Interest Accrual USD
Interest Exp/Rev Account	Loan Int Fut Revenue USD
Supplementary Credit Acc	
Supplementary Debit Acc	
Interest Tariff	

Fig. 10. "Interest Properties" group of fields of a loan account, configurations for daily interest accrual

## Capitalisation of Accrued Interest

WAY4 supports both direct capitalisation of accrued interest and deferred interest capitalisation.

### Direct Interest Capitalisation

In this case, interest accrued for an account is transferred to the same account.

To use this scheme, specify in the *Interest Template* field of an account template (see Fig. 3 in section "Setup of Parameters in Account Templates") the name of the same template. As a result, interest accrued for the account over a billing cycle will be immediately transferred to the account, i.e. the compound interest accrual scheme will be implemented.

### Deferred Interest Capitalisation

In this case, interest accrued for an account is transferred to a temporary account, and the due normalisation mechanism is used to transfer it to the main account, i.e. funds are transferred from an account (in this case, the temporary account) on the date determined by the parameters of the account's template (see section "Ageing" in the WAY4™ Accounting Schemes Administrator Manual).

The name of a temporary account template is specified in the *Interest Template* field (see Fig. 3 in section "Setup of Parameters in Account Templates") of the account template for which interest is accrued.

There exist a simple and a complex scheme of deferred interest capitalisation – see examples of their setup in section "Examples of Deferred Interest Capitalisation Setup".

## Executing the "Calculation of Estimated Interest" Procedure

This procedure is included in start-of-day procedures.

In case of step-by-step execution of start-of-day procedures, select "Full → Daily Procedures → Start of Day Step by Step → Interest Accrual" from the user menu to execute this procedure.

The procedure is used when the bank estimates client account interest for future billing cycles. During procedure execution, the system selects account templates for which daily interest accrual is set up and the last interest accrual date is less than the current banking date. As a result, macrotransactions used to transfer funds from the bank's expense account to the bank's interest accumulation account are generated and posted for accounts for which daily interest accrual is performed.

## Loan Interest Accrual During Repayment

Loan interest is accrued during its repayment:

- In case of due account normalisation when funds are transferred to the overdue loan account.

When due account normalisation entries are generated, interest is accrued for a debited account balance. This applies to entries of "Payment Due", "Value Date Due", "Long Payment Due", "Sliding", and "Sliding + Clear" types. See the rules for specifying due normalisation parameters in section "Ageing" of the WAY4™ Accounting Schemes Administrator Manual.

Example:

An Accounting Scheme contains templates of a due loan account ("Cl Paym Due"), an overdue loan account ("OVD"), and a loan interest account ("Cl Loan Int"). The balance of the "Cl Paym Due" account is EUR 100. On the 10<sup>th</sup> day of the current month, the funds must be transferred to the "OVD" account by an entry of the "Payment Due" type.

Interest for the balance of the "Cl Paym Due" account is accrued at the moment the above entry is created. Due to this, an amount credit to the account after the "Payment Due" entry but during the current billing cycle will immediately repay the interest accrued for funds that remained in the due loan account.

- When a due amount is paid in an account with the *Calc Int Mode* parameter (see "Calc Int Mode").

## Interest Accrual in Case of a Zero Interest Rate


If a link to an interest accrual account (*Interest Template*) is deleted, interest will not be accrued for accounts using this template at the end of a billing cycle.

If an interest rate is set to zero, but a link to an interest accrual account is not deleted, at the end of the billing cycle interest will be accrued up to the date when the interest rate was set to zero.

## Redirecting Interest Accrual (Instead Orders)


Interest accrual is redirected by configuring a standing payment order (an instead order). This payment order is set up for an account from which interest is accrued in a special form opened by clicking the [SO Interest] button in the "Definition for <name of Accounting Scheme>" form.

For example, it may be necessary to redirect interest accrual when a contract is moved from the first behaviour group to the second, a higher one. In this case, it is necessary to accrue loan interest to an off-balance interest account (until the contract goes back to the first behaviour group). For more details, see the "Standing Payment Orders" Administrator Manual.

 Interest accrual can be redirected using the WAY4 Tariffs module. The WAY4 Tariffs module is not included in the basic WAY4 configuration and is supplied by the WAY4 system vendor under a separate agreement.

## User of Tariffs for Interest Accrual

The WAY4 Tariffs module is used in WAY4 to enhance the way interest accrual is set up and to optimise this process.

 The WAY4 Tariffs module is not included in the basic WAY4 configuration and is supplied by the WAY4 system vendor under a separate agreement.

## Interest Accrual Data

Users can access information about interest accrued for each contract account. This information is available in the "Accounts for <...>" form containing a list of contracts' accounts. To open the form, click the [Accounts] button in a contract's form (see Fig. 11).

Accounts for TEST CARDHOLDER											<< < > >>			1 of 6	b x
Account Name	Code	Curr	Balance	Int Rate	Account Number	GL Number	Due Type	Category	Is Am Av	Priority	Cycle Date From	N Of Cycle			
CI Deposit	P	USD	692.94	10,00/001C-CR-USD-DEPOSIT-840			None	Other	Yes		10/01/04/2010	4			
CI Loan	L	USD	0.00	20,00/001C-CR-USD-L-840			End Cycle Due	Pers Limit	Yes		14/01/04/2010	4			
CI Loan Int	-	USD	0.00	0,00/001C-CR-USD-L-INT-840			None	Pay Immediate	Yes		33/01/04/2010	4			
CI OVD	?	USD	0.00	40,00/001C-CR-USD-OVD-840			None	Pay Immediate	Yes		31/01/04/2010	4			
CI OVL	<	USD	0.00	30,00/001C-CR-USD-OVL-840			End Cycle Due	Pay Immediate	Yes		30/01/04/2010	4			
CI Deposit Int	+	USD	0.00	5,00/001C-CR-USD-DEP-INT-840			End Cycle Due	Other	No		01/04/2010	4			
Ins	Del	Query	Calc Int	Billing	Comm Orders	Pers Orders	Stmt Entry	Template	Ac.Turnover						

Fig. 11. Form containing a contract's accounts

- Clicking the [Calc Int] button and then selecting the "Calc Interest" item from the context menu will open a window containing the current interest amount for the account and the Interest Fee.
- Clicking the [Ac.Turnover] button (until version 03.35.30, the [Item] button) will open the "Contract Account Turnover for < name of account >" form (until version 03.35.30, the "Item for < name of account>" form), containing technical data used to calculate interest and generate account statements.

## Generating Interest Accrual Reports

The system allows for generating account statements – reports of transaction activity in client accounts.

For instance, the "Balances and Interests" report can be generated for a contract's account. It contains estimated balances and interest of a contract's accounts on a specified date. The report is used to inform clients who are going to close their contract what amount is necessary to make all outstanding payments at the time the contract is closed. The report allows for calculating all outstanding payments on a future date.

To create a client account statement:

- Select "Customer Support → Customer Reports → Cardholder Reports" from the user menu. As a result, the "Cardholder Reports" form will be displayed on the screen. It contains a list of issuing contracts.
- To generate a statement, select the necessary card contract and click the [Report] button. A context menu containing report types available in the system will be displayed on the screen. Select the necessary report type and proceed as specified in the Cardholder Statements User Manual for each report type.

## Appendix 1. Examples of Deferred Interest Capitalisation Setup

### Example of a simple scheme

When a simple scheme is used, it is necessary to set up the following configurations:

- Specify the name of a temporary interest account template in the *Interest Template* field of the template of an account for which interest is accrued. For instance, specify "CI Deposit Int" as a temporary account for the "CI Deposit" account template.
- In the "Full Info for <name of template>" form or in the "Ageing for <name of Accounting Scheme>" form (see Fig. 12), specify due normalisation parameters for the temporary account template:
  - *Due Template* – "CI Deposit", name of the account template to which a transfer will be made during normalisation
  - *Due Type* – "End Cycle Due" (normalisation at the end of a billing cycle according to the value of the *Due Period* parameter)
  - *Due Period* – "0" (normalisation at the end of each billing cycle)

Cur	Account Name	Int Rate	Due Type	Period	Due Template	Repaym %	Min Repaym	Min Rq Repaym	Is Ready	Ageing Tariff	Open/Close Event	Type	Priority
USD	CI Deposit Int	0,00	End Cycle Due	0	CI Deposit	0,00	0,00	0,00	Ready				0
USD	CI Deposit	8,00	None	0		0,00	0,00	0,00	Ready				1

Fig. 12. Form for specifying due normalisation parameters for templates of an Accounting Scheme

- The *Is Amount Available* parameter (field *Is Am Av*) of the type of the temporary account (Full → Configuration Setup → Accounting Setup → Account Types) and the template of the temporary account must be set to "No".
- Necessary configurations of global parameters and corresponding parameters on the financial institution level:
  - The INTEREST\_IN\_CYCLE global parameter must be set to "No" or "B" (or the corresponding parameter *Interest in Cycle* of a financial institution must be set to "Begin of cycle" or "Next Working Day" (see "Interest in Cycle")).
  - The POST\_DUE global parameter must be set to "Yes" or "P" (or the corresponding parameter *Post Due* of a financial institution must be set to "End of Cycle" or "Last Working Day").

If the above parameters are set to other values, the deferred capitalisation scheme will not be implemented. For example:

- When the INTEREST\_IN\_CYCLE global parameter is set to "Yes" and the POST\_DUE global parameter is set to "Yes", this scheme turns into the direct interest capitalisation scheme described above.

- When the INTEREST\_IN\_CYCLE global parameter is set to "No" and the POST\_DUE global parameter is set to "No", this scheme turns into the direct interest capitalisation scheme described above.
- When the INTEREST\_IN\_CYCLE global parameter is set to "Yes" and the POST\_DUE global parameter is set to "No", interest accrued for an account is transferred to the temporary account on the last day of a closing billing cycle and transferred to the main account on the next day (the first day of a new billing cycle).

After this configuration is set up, interest from the "CI Deposit" account is accrued to the temporary account "CI Deposit Int", where it is stored for one billing cycle. Interest calculation for the current cycle does not consider interest for the previous cycle.

Since the *Is Amount Available* property of the "CI Deposit Int" account type is set to "No" (Full → Configuration Setup → Accounting Setup → Account Types), interest accrued during the current month will only be available to the card contract's owner next month, when it is transferred to the "CI Deposit" account.

### Example of a complex scheme

When a compound scheme is used, it is necessary to set up the following configurations:

- Specify the name of a temporary interest account template in the *Interest Template* field of the template of an account for which interest is accrued. For instance, specify "CI Deposit Int" as a temporary account for the "CI Deposit" account template.
- In the "Full Info for <name of template>" form or in the "Ageing for <name of Accounting Scheme>" form (see Fig. 13), specify due normalisation parameters for the temporary account template:
  - *Due Template* – "CI Deposit", name of the account template to which a transfer will be made during normalisation
  - *Due Type* – "Quarter", the date of normalisation is determined by the number of quarters specified in the *Due Period* parameter
  - *Due Period* – normalisation period, e.g. "1" (normalisation is performed quarterly on the calendar date starting a quarter)

Cur	Account Name	Int Rate	Due Type	Period	Due Template	Repaym %	Min Rq Repaym	Is Ready	Ageing Tariff	Open/Close Event Type	Priority
USD	CI Deposit Int	3,00	Quarter	1	CI Deposit	0,00	0,00	0,00	Ready		0
USD	CI Deposit	8,00	None	0		0,00	0,00	0,00	Ready		1

Fig. 13. Form for specifying due normalisation parameters for templates of an Accounting Scheme

- The *Is Amount Available* parameter (field *Is Am Av*) of the type of the temporary account (Full → Configuration Setup → Accounting Setup → Account Types) and the template of the temporary account must be set to "No".

In this case, interest for the balance of the "CI Deposit" account is accrued to a special interest capitalisation account "CI Deposit Int". In its turn, interest can be accrued for the balance of the "CI Deposit Int" account and transferred to the same account.

Funds are transferred from the "CI Deposit Int" account every quarter, to the account, every month; if interest is accrued for the balance of this account, funds are transferred to it from two different accounts ("CI Deposit" and "CI Deposit Int") and probably at different interest rates.

Since the *Is Amount Available* property of the "CI Deposit Int" account type is set to "No" (Full → Configuration Setup → Accounting Setup → Account Types), interest accrued during the current quarter will only be available to the card contract's owner next quarter, when it is transferred to the "CI Deposit" account.