

# Loan Loss Reserves

# Contents

INTRODUCTION	1
CHAPTER 1. FORMS FOR CONFIGURING RESERVE SCHEMES	2
Behaviour Groups	2
Behaviour Types	3
Reserve Schemes	4
Creating Reserve Schemes	5
"Reserving for..." Form Fields	6
Forms for Configuring Reserve Amounts	7
CHAPTER 2. LOAN LOSS RESERVES BY BEHAVIOUR TYPE	9
Basic Principles of Reserving by Behaviour Type	9
System Setup for Reserving by Behaviour Type	9
CHAPTER 3. PORTFOLIO RESERVES	12
Basic Principles of Portfolio Reserves	12
System Setup for Portfolio Reserving	13
Configuring Reserving by Category	13
Configuring Schemes for Reserving by Category	13
Configuring Bank Contracts	16
Configuring Event Types	17
CHAPTER 4. RESERVES ACCRUAL	21

# Introduction

This document contains recommendations on the system setup needed for accruing loan loss reserves.

This document is intended for employees of banks or processing centres responsible for configuring WAY4™ credit products.

When working with this document, it is recommended that users refer to the following sources from the WAY4™ documentation series:



- WAY4™ Global Parameters
- Issuing Module
- WAY4™ Products. Accounting Schemes
- Events
- Daily Procedures

The document uses the following conventions:

Field names in screen forms are displayed in *italics*.

Names of screen form buttons are placed in square brackets, such as [Approve].

Sequences for selecting user menu items are shown with arrows, as in "Configuration Setup" → Contract Types".

- Warnings that there is a risk of making an incorrect action are marked with the  sign.
- Messages marked with the  sign contain information about important features, additional facilities, or the optimal use of certain system functions.

## Chapter 1. Forms for Configuring Reserve Schemes

This chapter gives a general overview of the forms available for configuring reserve schemes.

### Behaviour Groups

To configure behaviour groups, select "Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups" from the menu. The screen will display the "Behavior Groups" form, used for entering and editing behaviour groups (see Fig. 1).


Product Category	Client Category	Fin Institution	Name	Code
Issuing	Commercial	Principal	TR USD	TR1
Issuing	Private	Principal	Standard Private	STND1
Issuing	Commercial	Principal	Standard Corporate	STND

Buttons: Ins, Del, Query, Do ..., Beh Types, Reserving

Fig. 1. Form for entering and editing behaviour groups

The "Behavior Groups" form contains the following fields:

- *Product Category* – Product category where the behaviour group applies:
  - "Issuing" – Products for issuing contracts.
  - "Acquiring" – Products for acquiring contracts.
  - "Accounting" – Products for bank system contracts. This value is left for compatibility with previous system versions.
  - "Bank Accounting" – Products for bank contracts.
- *Client Category* – client category: "Private" for private individuals, "Commercial" for commercial entities, and "Accountant" for bank branches.
- *Fin Institution* – drop-down list of financial institutions registered in the system.
- *Name* – behaviour group name.
- *Code* – special code used when importing external files to the system that associates the imported data with the behaviour group.

 Behaviour groups are features of Accounting Schemes, so issuing contracts may only use behaviour groups included in their Accounting Schemes.

To create a new group, click the [Ins] button and fill in the record fields. To check group parameters, click the [Do...] button and execute the context menu's "Check" command (as a result, the parameters of child records - behaviour types and reserve schemes will be checked). When the check is completed, a message on its results will be displayed.

To copy from one behaviour group into another, click the [Do] button and execute the context menu's "Copy From" command. As a result, the "Set Beh Group" form will open (see Fig. 2). In the *Fin Institution* field of this form, select the financial institution from which copying will be performed; in the *Beh Group* field, select the behaviour group and click the [Proceed] button. The behaviour type identifiers of these groups will be compared (the *Code* field of the "Beh Types" form, see Fig. 3 in the section "Behaviour Types"). The behaviour types missing from the recipient group will be copied into it.


Fig. 2. Form for selecting a behaviour group for copying behaviour types

The [Beh Types] button of the "Behavior Groups" form is used to access the "Beh Types for <name of behaviour group>" form, used to configure behaviour types (see the section "Behaviour Types").

The [Reserving] button of the "Behavior Groups" form is used to access the "Reserving for <name of behaviour group>" form, used to configure reserve schemes for reserving by categories without binding to a behaviour type (see the section "Reserve Schemes").

## Behaviour Types

To enter and modify behaviour types included in a particular behaviour group, in the "Behavior Groups" form (see Fig. 1 In the section "Behaviour Groups") select the desired group and click the [Beh Types] button. The "Beh Types for <name of behaviour group>" form will open (see Fig. 3).

 The "Behavior Types" form (Full → Configuration Setup → Behavior Scoring Setup → Behavior Types) is used to view the list of all behaviour types registered in the system. Behaviour types are configured in the "Beh Types for <name of behaviour group>" form (see Fig. 3).

Name	Code	Condition Set	Behavior Group	Institution	Product Category	Client Category
GR 1 USD	1G		TR USD	Principal	Issuing	Private
GR 2 USD	2G		TR USD	Principal	Issuing	Private
GR 3 USD	3G		TR USD	Principal	Issuing	Private
GR 4 USD	4G		TR USD	Principal	Issuing	Private

Fig. 3. Form for entering and editing behaviour types

The form "Beh Types for <name of behaviour group>" contains the following fields:

- *Name* – name of behaviour type.
- *Code* – special code used when importing external files to the system that associates the imported data with the behaviour type.
- *Condition Set* field is used to indicate special parameters.
- *Behavior Group* – behaviour group that includes this type. This field can be used to move a behaviour type to another behaviour group.

The drop-down list of this field shows behaviour groups registered for the financial institution specified in the *Institution* field that are related to one Product category (the *Product Category* field) and one client type (the *Client Category* field). To change a behaviour group, select it from the list in the *Behavior Group* field. The behaviour type will be moved to the selected behaviour group.

- The *Institution*, *Product Category* and *Client Category* fields are automatically filled in when the *Behavior Group* field is filled in.

To create a new behaviour type, click the [Ins] button in the "Beh Types" form (see Fig. 3) and fill in the record fields. To check record parameters, click the [Do] button and execute the "Check" command of the context menu. When the check is completed, a window will open with a message on its results.

To copy a reserve scheme from another behaviour type, click the [Do] button and execute the "Copy From" command of the context window. For more information, see the section "Reserve Schemes".

The [Reserving] button of the "Beh Types" form (see Fig. 3) is used to access the "Reserving for <name of behaviour type>" form used to configure reserve schemes for reserving by behaviour type (see the section "Reserve Schemes").

## Reserve Schemes

Behaviour type and category reserve schemes are created and configured in different forms:

- The "Reserving for <name of behaviour type>" form (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Beh Types] → [Reserving]) (see Fig. 3 in the section "Behaviour Types") is used to configure reserve schemes included in behaviour types.



Several reserve schemes can be created for one behaviour type. This functionality is used when it is necessary to reflect different portions of the reserve on different accounts, for example when the main loan loss reserve is reflected on one account and an overdraft loss reserve on another.

- The form "Reserving for <name of behaviour group>" (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Reserving]) is used to configure reserve schemes without binding to a behaviour type, for reserving by categories (see the description of the *Behaviour Type* field).

**i** It is recommended to use the "Reserving Schemes" form (Full → Configuration Setup → Behavior Scoring Setup → Reserving Schemes) for viewing the list of all reserve schemes registered in the system. It is recommended to configure schemes in the "Reserving for <name of behaviour type>" and "Reserving for <name of behaviour group>" forms.

**i** These forms contain the same fields.



	Name	Individual Accounting	Acc Curr	Risk Contract	Debit Account	Credit Account	Accrual Code	Event Group Code
1	GR USD Loan	Individual	USD	001-RESERVES_CORP	Reserving Debit USD	Reserving Accrual USD		
1	GR USD OVL	Individual	USD	001-RESERVES_CORP	Reserving Debit USD	Reserving Accrual USD		
1	GR USD Credit Line	Individual	USD	001-RESERVES_CORP	Reserving Debit USD	Reserving Accrual USD		

Fig. 4. Form for configuring reserve schemes "Reserving for <name of behaviour type>"

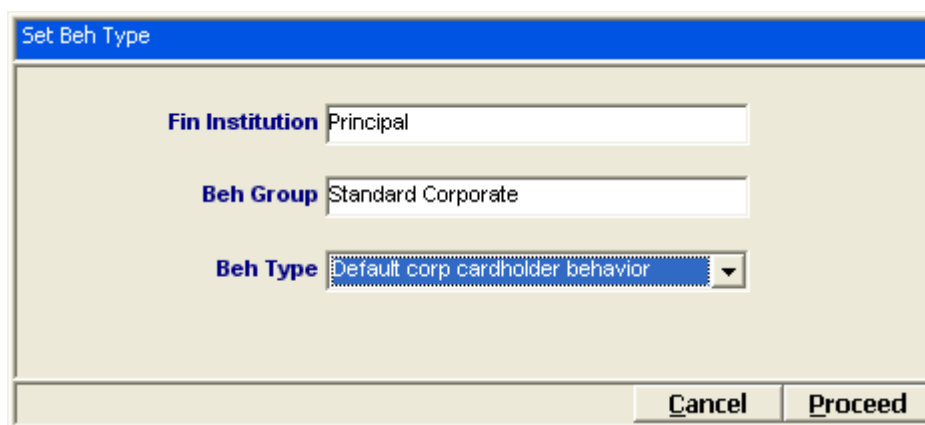
## Creating Reserve Schemes

To create a new behaviour type, click the [Ins] button in the "Reserving for" (see Fig. 4 in the section "Reserve Schemes") and fill in the record fields (see the section ""Reserving for..." Form Fields"). To check record parameters, click the [Do] button and execute the context menu's "Check" command. When the check is completed, a window will open with a message on its results.

When setting up reserving by contract behaviour type, the reserve scheme of one behaviour type can be copied into another. To do so, click the [Do] button of the "Beh Types" form (see Fig. 3 in the section "Behaviour Types") and execute the context menu's "Copy From" command. The "Set Beh Type" form will open (see Fig. 5) in which it is necessary to fill in the following fields:

- *Fin Institution* – the financial institution from which copying is to be performed.
- *Beh Group* – the behaviour group.
- *Beh Type* – the behaviour type from which the reserve schemes will be copied.

After filling in the fields, click the [Proceed] button. During copying, the list of reserve schemes in the current behaviour type will be synchronised with the list of schemes being copied. Reserve schemes in the current behaviour type that do not correspond to the schemes being copied will be deleted.



**Set Beh Type**


**Fin Institution** Principal

**Beh Group** Standard Corporate

**Beh Type** Default corp cardholder behavior

Cancel Proceed


Fig. 5. Form for selecting the behaviour type for copying reserve schemes

 When setting up reserving by contract behaviour type, several reserve schemes can be registered for one behaviour type. This functionality is used when it is necessary to reflect different portions of the reserve on different accounts; for example when the main loan loss reserve is reflected on one account and an overdraft loss reserve on another.

## "Reserving for..." Form Fields


The "Reserving for..." form (see Fig. 4 in the section "Reserve Schemes") contains the following fields:

- *Name* – name of reserve scheme.
- *Individual Accounting* – drop-down list of individual accounting reserves; this field may contain the following values:
  - "Group" – the reserve for all contracts using this reserve scheme will be accrued to a single bank account indicated in the *Credit Account* field.
  - "Individual" – reserves will be accrued for each contract to a separate client reserve account. To do so, the Accounting Schemes of client contracts must have an active reserve account of the same type as the account indicated in the *Credit Account* field. In this case, the bank contract specified in the *Debit Account* field is the debit account used when creating a reserve.
- *Account Curr* – currency of the account used for accrual of reserves.
- *Risk Contract* – name of bank contract whose accounts are used for accrual of reserves.
- *Debit Account* – name of debit account used to create reserves; this field is filled in from a drop-down list of accounts registered for the bank contract indicated in the *Risk Contract* field.


 When setting up the account type for this account, users can set up a "pair" revenue account that will be used to reflect recovery of reserves (this substitution will be automatically made during posting). This setting is made by configuring an active-passive pair (for more information on configuring account types, see the section "Account Types" in the WAY4™ Products. Accounting Schemes User Manual).

- *Credit Account* – name of the credited account used to create reserves; this field is filled in from the drop-down list of registered accounts for the bank contract indicated in the *Risk Contract* field.
- *Accrual Code* – reserve scheme code; this value is used for portfolio reserves (see the section "Portfolio Reserves").
- *Event Group Code* – the code of the Event type group; this field is used for portfolio reserves. When filling in this field in the "Rates for..." form, only those Events that are included in the selected group will be available in the *Event Types* field.
- *Behaviour Type* – name of behaviour type.




 This field is not filled in when setting up reserve schemes for portfolio reserves in the "Reserving for <name of behaviour group>" form (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Reserving]).

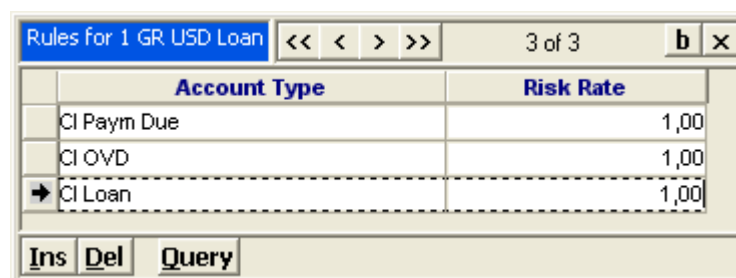
- *Behavior Group* – name of behaviour group.
- The *Institution*, *Product Category* and *Client Category* fields are automatically filled in when the *Behavior Group* field is filled in.

 All Accounting Schemes of client contracts that use a Behaviour Type containing a reserve scheme where *Individual Accounting* = "Individual" must contain a reserve account (of the type indicated in the *Credit Account* field). If there is no such account, when checking the reserve scheme, the message "Accrual account not present in scheme <name of scheme>" will be displayed.

## Forms for Configuring Reserve Amounts

To define the reserve amount, indicate the list of accounts used for creating a reserve, and the interest rate for deductions to the reserve from the balances of these accounts. Depending on the reserving rules used in the bank, either the form "Rules for <reserve scheme name>" or a combination of "Rules for <reserve scheme name>" and "Rates for <reserve scheme name>" form settings may be used.

- When configuring loan reserves by contract behaviour type, fill in the following fields of the "Rules for <reserve scheme name>" form (see Fig. 6), opened by clicking the [Rules] button in the form "Reserving for ....".
  - *Account Type* – drop-down list to select the account type used to create the reserve.
-  A set of accounts can be specified in the form.
- *Risk Rate* – the reserve interest rate that will be applied to the balance on the account with the specified account type.



Account Type	Risk Rate
CI Paym Due	1,00
CI OVD	1,00
→ CI Loan	1,00

Ins Del Query

Fig. 6. Form for configuring the amount of the reserve as a percentage of the account balance for reserving by behaviour type

- When creating portfolio reserves:
  - Account types used in reserving are configured in the "Rules for..." form (see Fig. 6). The account type that will be used for reserving is indicated in the *Account Type* field. The *Risk Rate* field of this form is not filled in.


- Interest rates on accounts specified in the "Rules for..." form are configured in the "Rates for <reserve scheme name>" (see Fig. 7) form, opened by clicking the [Rates] button in the form "Reserving for..."

Event Type	Account Type	Risk Rate
Q_C_1		1,00
Q_C_2		5,00
Q_C_3		20,00

Fig. 7. Form for setting up the reserve rate for portfolio reserves

The form "Rates for <reserve scheme name>" contains the following fields:

- Event Type* – name of the Event assigning the loan category.
- Account Type* – type of the account for which reserves are created; in general, the *Account Type* field is not filled in, account types for reserving are specified in the "Rules for..." form.
- Risk Rate* – the interest rate
  - The interest rate on loan accounts is specified in the *Risk Rate* field with a positive value. When calculating a reserve, the sign automatically changes to the opposite, making it possible to create positive reserves on accounts with negative balances.
  - In calculating a reserve for an account with an unused line of credit, when the main client account has a positive balance, a negative value is specified in the *Risk Rate* field to create a positive reserve (a reserve with the same sign as the main account).

 A reserve can be calculated for an unused credit line account based on a positive value specified in the *Risk Rate* field. To do so, in the template of the corresponding account, specify the tag OPPOSITE\_RSRV\_RATE in the *Template Details* field. When calculating the reserve on this account, the reserve rate sign specified in the *Risk Rate* field will automatically be changed to the opposite.

Event Type	Account Type	Risk Rate
Q_C_2		-20,00

Fig. 8. Form for configuring amount of the reserve as a percentage of the account balance

## Chapter 2. Loan Loss Reserves by Behaviour Type

### Basic Principles of Reserving by Behaviour Type

Behaviour types are a way of classifying loans according to a number of factors (credit risk, client status, etc.). Behaviour types both reflect the state of a contract, and define the reserve scheme.

The criteria for assigning a contract an initial behaviour type, rules and conditions for changing a contract from one behaviour type to another are defined by federal regulations applicable in the issuing bank's country and the bank's accounting rules. Usually this depends on such factors as loan security, if the cardholder belongs to an "insider" group, client credit history, etc.

For example, changes may be regulated by different rules for secured and for unsecured loans. When configuring conditions for changing behaviour types, the term of the loan (long term or short term) can be specified. Thereby, one behaviour type can be assigned to contracts differing in state.

Reserve schemes are configured within each behaviour type. Assignment of a particular behaviour type to a contract sets the reserve schemes for this contract; specifies the account types used in reserving and the interest rate on these accounts, as well as the bank contract for the reserve account.

The behaviour group and behaviour type are specified when configuring Accounting Schemes for cardholder client contracts.

When a contract is created, an initial behaviour type is assigned to it. Behaviour type values are inherited from the Accounting Schemes (see the section "Main Accounting Scheme Parameters" in the WAY4™ Accounting Schemes User Manual).

The contract may be changed from one behaviour type to another only when an Event is opened (see the section "Configuring Events" in the WAY4™ Accounting Schemes User Manual). Changes in behaviour type for a contract will be limited by the behaviour group specified in the Accounting Scheme (behaviour group is specified in the Accounting Scheme's *Behavior Group* field, see the section "Main Accounting Scheme Parameters" in the WAY4™ Accounting Schemes User Manual).

Reserve accrual is a regular procedure according to the requirements of the National Bank and the bank's internal accounting rules.

### System Setup for Reserving by Behaviour Type

For reserving by behaviour type, users must configure the system as follows:

1. When reserving by behaviour type, the global parameter `MULTIPLE_RESERVE_SCHEME` must be set to "N" (default value).
2. Configure the reserve schemes for all possible behaviour types:

- In the system, behaviour types are created which can then be combined in behaviour groups. Reserve schemes are configured within behaviour types in the form "Reserving for <name of behaviour type>" (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Beh Types] → [Reserving]) (see the section "Forms for Configuring Reserve Schemes").
- When setting up reserving by behaviour types, account types for reserves and interest rates are set in the "Rules for..." form (see the section "Reserve Schemes").
- Several different account types can be set in one reserve scheme. Account types may not be duplicated within one scheme and within reserve schemes configured for one behaviour type.



Note that for all accounts configured for a reserve scheme, one credit account and one interest rate will be used.



As a rule, the reserve schemes of various behaviour types can differ only by the interest rate applied to one set of accounts.

3. Configure bank contracts. In the reserve scheme, the number of the bank contract is specified (the *Risk Contract* field) that contains reserve accounts and revenue/expense accounts used to create/recover reserves:
  - To support group reserves, create a bank contract whose accounts will reflect accrued reserves and revenue/expense accounts used in loan loss reserving (for an example of configuration, see Fig. 14 in the section "Configuring Bank Contracts").
  - To support individual reserves, create a separate reserve contract. Within this contract, revenue/expense accounts are configured that are used to create/recover reserves. In this case, accrued reserves will be reflected on the client accounts of the loan contract.
4. Configure Accounting Schemes. The behaviour group and behaviour type is specified in Accounting Scheme properties (see Fig. 10). When a contract is created, it is assigned the behaviour type specified in the Accounting Scheme.
5. Configure Events for changing the behaviour type.

Contracts are changed from one behaviour type to another only by opening an Event. To configure Events used to change contract behaviour types, it is necessary to do the following:

- Register the Event in the form "Full → Configuration Setup → Products → Issuing Private Products → Issuing Event Types". An example of Event registration is shown in Fig. 9.

Contract	Name	Code	Duration Type	Duration	Due To Work Day	Next Event
Card	Moving to Group 1	GR 1	Single	0		
Card	Moving to Group 2	GR 2	Day	25		Moving to Group 3
Card	Moving to Group 3	GR 3	Single	0		
Card	Moving to Group 1 Manually	GR_MAN_1	Single	0		
Card	Moving to Group 2 Manually	GR_MAN_2	Single	0		
Card	Moving to Group 3 Manual	GR_MAN_3	Single	0		

Buttons: Ins, Del, Query, Check, Messages, Full Info, Event Chain, Used By, Classifiers

Fig. 9. Example of Event setup for changing behaviour types

- Indicate the list of available Events for the Accounting Scheme used by the contract. To do so, click the [Event] button in the "Private Issuing Account Scheme" form to open the "Events for <Accounting Scheme name>" form (see Fig. 10).

Private Issuing Account Schemes

Scheme Name	Currency	Interval	Length	Interest	Contract	Parent Scheme	Code	Is Ready	Behav Group	Behav Type
001-Credit USD 14%	USD	Month	1	001-INTERESTS			CR	Ready	TR USD	GR 1 USD

Buttons: Ins, Del, Query, Approve, Definition, Messages, Interests, Ageing, Tiers, Events

Events for 001-Credit USD 14%

Event Type	New Scheme	Replen Tag	Old Beh Type	New Beh Type	Parameters	Is Ready
Moving to Group 2				GR 2 USD		Ready
Moving to Group 3				GR 3 USD		Ready
Moving to Group 4				GR 4 USD		Ready

Buttons: Ins, Del, Query, Broadcast

Fig. 10. Form for indicating Events available to the contract

In the "Events for <Accounting Scheme name>" form, fill in the following fields:

- Event Type** – drop-down list of Event names registered earlier in the system.
- Old Beh Type** – field indicating the current behaviour type; if this field is left empty when configuring the Event, the Event will change the behaviour type regardless of the current type; if this field contains a value, the Event will change behavior types only if the current type is the same as the one indicated in this field.
- New Beh Type** – the new behaviour type.



There are two types of Event that change the behaviour type of a contract. These are:

- Events that open automatically. These Events are used to change behaviour type when a certain condition is met in the system, such as an overdue loan.
- Events opened by the user. These Events are used to change behaviour type when a condition external to the system arises, for example, when an order is received to transfer a contract to another behaviour type.

## Chapter 3. Portfolio Reserves

### Basic Principles of Portfolio Reserves

A portfolio is a group of similar loans (contracts). Portfolios are created (contracts are included in portfolios) according to the principle of homogeneity. Loans with similar credit risk characteristics (with homogeneous states) are included in a portfolio. For example, a portfolio of non-delinquent loans, a portfolio of loans with 1-30 days delinquency.

A set of reserve schemes is configured for each portfolio. Including a contract in a particular portfolio establishes a set of reserve schemes for this contract, specifies account types used in reserving, and the bank contract for reserve accounting. In this way, the portfolio unites similar account types of similar loans.


At any given time a contract can be included in only one portfolio.

Loans are classified into categories depending on credit risk factors (risk of default on the main debt and on loan interest).

Possible categories are configured for each portfolio (in the portfolio's reserve scheme properties) and determine interest rates on contract account balances. Classification of loans into categories allows the reserve amount to be calculated according to credit risk factors.

At any given time one category is in effect for a portfolio. A change in category takes place for the portfolio as a whole. Changes in category for each portfolio take place independently of one another. A category is assigned to a portfolio (assignment of a category to contracts in the portfolio) by an Event. Therefore, reserves are calculated depending on Events opened and not depending on the contract's behaviour type.

Portfolios are created and contracts are assigned categories according to National Bank requirements and internal regulations of the credit organisation. In particular, the bank determines when to change a category depending on the results of monitoring portfolio contract states or the existence of other factors specified by the bank.

 Within one portfolio, contracts can have different states. For example, if a portfolio includes non-delinquent loans and delinquency up to 30 days, for some of the contracts in this portfolio the loan may be current (not delinquent) and for other contracts, the loan may be delinquent. Therefore, the occurrence of delinquency may not bring about an automatic change in category.

Reserve accrual is a regular procedure according to the requirements of the National Bank and the bank's internal accounting rules.

## System Setup for Portfolio Reserving

### Configuring Reserving by Category

To support reserving by category, the following must be configured in the system:

1. The value of the global parameter `MULTIPLE_RESERVE_SCHEME` must be set to "Y".
2. Configure reserve schemes for each portfolio. There are two ways to configure reserve schemes in the system:

- Configure reserve schemes without binding to behaviour type.
- Configure reserve schemes with binding to behaviour type.

For more information, see the section "Configuring Schemes for Reserving by Category".


3. Configure bank contracts for portfolios; see the section "Configuring Bank Contracts".
4. Create portfolios. Contracts are included in portfolios by Events:
  - Configure Event types.
  - Configure available Events for Accounting Schemes.

For more information, see the section "Configuring Event Types".

5. Assign a category to the portfolio. Events are used to assign categories to portfolio contracts.
  - Configure Event types.
  - Configure available Events for Accounting Schemes.

For more information, see the section "Configuring Event Types".

### Configuring Schemes for Reserving by Category

 For a detailed description of form fields used to configure reserve schemes, see the section "Forms for Configuring Reserve Schemes". This section describes features of configuring reserve schemes for reserving by category.

#### **General Configurations of Reserve Schemes**

There are two ways of configuring reserve schemes:

- Configuration of reserve schemes without binding to behaviour type.

In this standard approach, behaviour groups are registered in the system. In the form "Reserving for <name of behaviour group>" (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Reserving]) reserve schemes are created without binding to behaviour type (the *Behavior Type* field is left empty).

- Configuration of reserve schemes with binding to behaviour type.

Reserve schemes are configured using behaviour types when it is necessary to accrue reserves either in the balance accounting subsystem or in the off-





balance accounting subsystem. In this case, the behaviour type represents an accounting subsystem.

Reserve schemes configured for one portfolio must have the same value in the *Accrual Code* field and use one bank contract for reserve accounting in the *Risk Contract* field.

When configuring reserving by category, account types for reserves are set in the *Account Types* field of the "Rules for..." form (see Fig. 6 in the section "Reserve Schemes"). In this case, the *Risk Rates* field of this form is not filled in.

Several different account types can be set in one reserve scheme. Account types cannot be duplicated within one scheme and within the reserve schemes configured for one portfolio.

 Note that one general reserve account (*Credit Account*) and one interest rate is used for all accounts configured for a reserve scheme.

 Schemes used for individual reserving (the "Individual" value in the *Individual Accounting* field) and schemes for group reserving (the "Group" value in the *Individual Accounting* field) can be configured for one portfolio. Separate portfolios can be created from schemes used for individual reserving.

Possible portfolio categories and corresponding interest rates are configured for each reserve scheme of a portfolio in the "Rates for..." form (see Fig. 7 in the section "Reserve Schemes"). In general, the *Account Type* field in the "Rates for..." form is not filled in. Account types for reserving are set in the "Rules for..." form. In the *Event Type* field of the "Rates for..." form, select the Event type registered in the system for assignment of the required category.

When assigning a particular category to a portfolio, the interest rate set for this category in the portfolio's reserve schemes will be applied to all account types specified in the "Rules for..." form of the corresponding reserve schemes.

There are two approaches to configuring categories:

- In general, one category corresponds to the portfolio – for all reserve schemes configured for one portfolio, a single possible interest rate is set (one possible category), see Fig. 11. This approach results from the fact that when changing category, it is often necessary to accrue reserves on another bank contract, which implies a change of portfolio. In this case, the composition of accounts in the reserve schemes of these portfolios is duplicated; only the interest rate changes.
- If it is not necessary to accrue reserves on another bank contract when a category is changed, several possible interest rates (categories) can be set for one portfolio (see Fig. 12).



Product Category	Client Category	Fin Institution	Name	Code
Issuing	Private	Principal	TR USD	TR1

Name	Individual Accounting	Acc Curr	Risk Contract	Debit Account	Credit Account	Accrual Code
PORTF 1 Loan	Group	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Loan	PORTF1
PORTF 1 OVL	Group	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Overlimit	PORTF1
PORTF 1 Credit Line	Group	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Unused Cred	PORTF1

Account Type	Risk Rate
CI Loan	0,00
CI OVD	0,00
CI Paym Due	0,00

Event Type	Account Type	Risk Rate
Q_C_1		1,00

Fig. 11. Configuring bank contract account reserve schemes (one portfolio – one possible category)

Product Category	Client Category	Fin Institution	Name	Code
Issuing	Private	Principal	TR USD	TR1

Name	Individual Accounting	Acc Curr	Risk Contract	Debit Account	Credit Account	Accrual Co
PORTF 1 OVL	Group	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Overlimit	PORTF1
PORTF 1 Credit Line	Group	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Unused Credit	PORTF1
PORTF 1 Loan	Individual	USD	001-RESREVES PORTF	Expenses for reserve	Reserve for Loan	PORTF1

Account Type	Risk Rate
CI Loan	0,00
CI OVD	0,00
CI Paym Due	0,00

Event Type	Account Type	Risk Rate
Q_C_1		1,00
Q_C_2		5,00
Q_C_3		10,00


Fig. 12. Configuring bank contract account reserve schemes (one portfolio – several possible categories)

### Features of Configuring Reserve Schemes

Schemes for reserving by category with binding to a behaviour type are configured in the form "Reserving for <name of behaviour type>" (Full → Configuration Setup → Behavior Scoring Setup → Behavior Groups → [Beh Types] → [Reserving]) (see Fig. 4 in the section "Reserve Schemes").

For loans of one type in a single currency, two behaviour types must be configured. One behaviour type corresponds to the balance accounting subsystem and the other to the off-balance accounting subsystem.

Two accounting subsystems (behaviour types) are used to accrue interest on portfolio contract accounts when this portfolio's category is changed. For example, when changing from category 3 to category 4, it becomes necessary to transfer reserve accounting from the balance accounting subsystem to the off-balance accounting subsystem.

 The behaviour group and behaviour type are specified when configuring the Accounting Scheme. When a contract is created, it is initially assigned the behaviour type (accounting subsystem) specified in the Accounting Scheme. Subsequently the subsystem in use depends on the category assigned to the portfolio. Events are used to switch between accounting subsystems (for more information, see the section "Switching between Accounting Subsystems").

## Configuring Bank Contracts

A portfolio uses one bank contract (*Risk Contract*) containing reserve accounts and revenue/expense accounts used to create/recover reserves:

- For group reserves by portfolio, create a bank contract whose accounts will reflect accrued reserves and revenue/expense accounts used in loan reserves included in one portfolio (see Fig. 13, Fig. 14). In this case, such a bank contract is considered to be the portfolio itself.
- For individual loan reserves in one portfolio, create a separate reserve bank contract. Revenue/expense accounts used to create/recover reserves are configured for this contract. In this case, accrued reserves will be reflected on the client accounts of the loan contract.

Bank Account Schemes							<< < > >>		7 of 35		x
Institution	Scheme Name	Parent Scheme	Currency	Interval	Length	FX Type	Is Ready				
Principal	001-Reserves Cred		USD	Month	7		Ready				
Ins Del Query Approve		Contracts		Definition		Duplicate		Ageing		Messages	
Definition for 001-Reserves Cred							<< < > >>		1 of 7		b x
Currency	GL #	HeadOffice GL	Account Type		Account Name		Is Ready	Fin Institution			
USD	-DEP-P-E-DEP-P-840		Bank Passive		Renewal Reserve		Ready	Principal			
USD	-DEP-INT-DEP-INT-A-840		Deposit Interest Accrual		Reserve for Loan		Ready	Principal			
USD	-DEP-INT-DEP-INT-840		Deposit Interest Expense		Reserve for Overlimit		Ready	Principal			
USD	-L-INT-F-L-INT-F-840		Loan Interest Future Revenue		Reserve for OVL OVD		Ready	Principal			
USD	-L-INT-84-L-INT-840		Loan Interest Revenue		Reserve for OVD		Ready	Principal			
USD	-DEP-A-E-DEP-A-840		Bank Active		Expenses for reserve		Ready	Principal			
USD	-LOAN-INT-LOAN-INT-A-840		Loan Interest Accrual		Reserve for Unused Credit Line		Ready	Principal			
Ins Del Query		Full Info		Acc Type		St. Orders		SO Due		SO Evnt Base SO Interest SO Norm	

Fig. 13. Configuring the bank contract Accounting Scheme

**Bank Accounting Contracts** 42 of 42

**Base Info**

Contract # 001-RESREVES PORTF

Category Account

Institution Principal

Bank division 001-RBS

Open / expire 12/10/2010 00/00/0000

Contract status Account OK

**Contract Type**

Contract name 001-RESREVES PORTF

Accounting scheme 001-Reserves Cred

Contract type 001-Bank Account

Service pack 001-Bank Account

Keep Entries Group

Next billing date 30/10/2010 Ready

Ins Del Query Approve Client Accounts Subs Pers.Usage Swch Usage Jn/OH Usage Balance - Full

Accounts for 001-RESREVES PORTF 1 of 7 b x

	Account Name	Code	Curr	Balance	Int Rate	Account Number	Due Type	Category	Is Am Av	Priority	Contract	N Of Cycle
→	Renewal Reserve			0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Reserve for Loan	1	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Reserve for Overlimit	0	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Reserve for OVL OVD	2	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Reserve for OVD	3	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Expenses for reserve	p	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	
	Reserve for Unused Cri4	4	USD	0,00	0,00		None	Other	No		0001-RESREVES POR0	

Ins Del Query Calc Int Billing Cmn Orders Pers Orders Stmt Entry Template Ac.Turnover

Fig. 14. Example of bank contract setup for individual loan reserves

## Configuring Event Types

To include a contract in a portfolio, assign a category to a portfolio and switch between accounting subsystems, special Events must be registered in the "Issuing Event Types" form.

Registered Events must be included in the list of available Events in the corresponding Accounting Scheme used by the contract. To do so, open the "Events for <Accounting Scheme>" by clicking the [Event] button in the "Private Issuing Account Schemes" form (Full → Configuration Setup → Products → Issuing Private Products → Private Issuing Account Schemes).


### Including Loans in a Portfolio

To include loans (contracts) in a portfolio, special Events must be registered in the "Issuing Event Types" form (see Fig. 15).

- Correspondence between a given Event and the set of reserve schemes configured for the portfolio is set in the *Code* field. In this field, the *Accrual Code* field value of the portfolio's reserve schemes (reserve schemes configured for one portfolio have the same value in the *Accrual Code* field) is specified.
- Since including a loan in one portfolio will exclude it from another, opening one of these Events must close the other. To assure this, the *Special Parm*s field of the "Issuing Event Types" form must contain the parameter `CLOSE_EVENT=<code of the closed event>`. To indicate the code of the closed Event, users may use a substitute character: %. For example, entering `CLOSE_EVENT=PORTF%` in the *Special Parm*s field will close all events whose codes begin with PORTF when the current Event is opened (see Fig. 15).

Issuing Event Types										<< < > >>			5 of 16		X	
Contract	Name	Code	Duration Type	Duration	To Work	Ext Event	Custom	Group Code	Post Immediate	Special Parms						
Account	Move to Portfolio 1	PORTF_1	Single	0				PORTFOLIO		CLOSE_EVENT=PORTF%;						
Account	Move to Portfolio 2	PORTF_2	Single	0				PORTFOLIO		CLOSE_EVENT=PORTF%;						
Account	Move to Portfolio 3	PORTF_3	Single	0				PORTFOLIO		CLOSE_EVENT=PORTF%;						
Account	Move to Portfolio Ind	PORTF_IND	Single	0				PORTFIND		CLOSE_EVENT=PORTF_IND						
Ins	Del	Query	Check	Messages	Full Info	Event Chain	Used By	Classifiers								

*Fig. 15. Events setup for including a loan in a portfolio*

 When including a loan in a portfolio, the reserve can be created for a separate loan (for individual reserves) or for a group of loans (for group reserves). A separate portfolio of reserve schemes can be configured for individual reserves.

## Assigning a Category to a Portfolio

The Event to assign a category to a portfolio must be:

- Registered in the "Issuing Event Types" form.
- Selected in the "Rates for..." form for the portfolio reserve schemes, with specification of the interest rate.
- Included in the list of available Events in the corresponding Accounting Scheme used by the contract.

To assign a loan category to the portfolio, users must register Events with the following attributes:

- Events assigning a loan category to one account group (one set of accounts specified in the "Rules for..." form of the reserve scheme) must have the same value in the *Group Code* field.

This code is specified in the *Event Group Code* field of the reserve scheme; only those Events included in this group will be available in the *Event Type* field of the "Rates for..." form of this scheme.

- Opening an Event that assigns a category to a portfolio should close other similar events; for this, the *Special Parm*s field of the "Issuing Event Type" form must contain the parameter CLOSE\_EVENT=<closed event code>. When indicating the code of the closed Event, users may substitute the character: %, for example, CLOSE\_EVENT=Q\_C\_% in the *Special Parm*s field will close all events beginning with Q\_C\_ when the current event is opened (see Fig. 16).

Issuing Event Types											<< < > >>				16 of 16		X
	Contract	Name	Code	Duration Type	Duration	To Work	Ext Event	Custom	Group Code	Post Immediate	Special Parms					▲	
	Account	Q_C_2	Q_C_2	Single	0				PORTF		CLOSE_EVENT=Q_C_%;						
	Account	Q_C_3	Q_C_3	Single	0				PORTF		CLOSE_EVENT=Q_C_%;						
	Account	Q_C_4	Q_C_4	Single	0				PORTF		CLOSE_EVENT=Q_C_%;						
➔	Account	Q_C_5	Q_C_5	Single	0				PORTF		CLOSE_EVENT=Q_C_%;					▼	

Ins	Del	Query	Check	Messages	Full Info	Event Chain	Used By	Classifiers
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Fig. 16. Configuring events to assign categories to portfolios or loans

**i** WAY4 allows several events to be opened at the same time, which can optimise user actions. For example, when including loans in a portfolio, users can assign them categories simultaneously. This configuration is applied if one possible category is set for a portfolio. To open many events at the same time, configure the Event Chain for <name of Event> table (see Fig. 17).

The screenshot shows the 'Issuing Event Types' form with a table of event types. The selected event is 'Move to Portfolio 3' (PORTF\_3). Below the table, the 'Event Chain for Move to Portfolio 3' is displayed, showing a single event 'C-2' for 'For Self'.

Contract	Name	Code	Duration Type	Duration	To Work	Ext Event	Custom	Group Code	Post Immediate	Special Parms
Account	Move to Portfolio 1	PORTF_1	Single	0				PORTFOLIO		CLOSE_EVENT=PORT
Account	Move to Portfolio 2	PORTF_2	Single	0				PORTFOLIO		CLOSE_EVENT=PORT
Account	Move to Portfolio 3	PORTF_3	Single	0				PORTFOLIO		CLOSE_EVENT=PORT

Next Event Type	For Contract	Active If State	Active If State Status	Chain Details
C-2	For Self			

Fig. 17. Forms for configuring Event chains

## Switching between Accounting Subsystems

Events to switch between balance and off-balance accounting subsystems can be configured in the following ways:

- By Events used to assign behaviour types to contracts. To do so, two Events are registered, which must have the following characteristics.
  - Such an Event must open simultaneously when the Event assigning category opens; for this to happen, the necessary configurations must be made in the "Event Chain for <name of Event>" form (for an example of the form, see Fig. 17 in the section "Assigning a Category to a Portfolio").
  - Opening of one Event must lead to the closing of the other. The *Special Parms* field of the "Issuing Event Types" form must contain the parameter CLOSE\_EVENT=<code of closing event> (see Fig. 18).

The screenshot shows the 'Issuing Event Types' form with a table of event types. The selected event is 'Move to Balance' (BAL). The 'Special Parms' field contains 'CLOSE\_EVENT=OFFBAL'.

Contract	Name	Code	Duration Type	Duration	To Work	Ext Event	Custom	Group Code	Post Immediate	Special Parms
Account	Move to OffBalance	OFFBAL	Single	0						CLOSE_EVENT=BAL;
Account	Move to Balance	BAL	Single	0						CLOSE_EVENT=OFFBAL;

Fig. 18. Example of configuration of Events to change from one behaviour type to another

- Switching between accounting subsystems can be configured on the level of the Event including the contract in the portfolio (if one category corresponds to the portfolio). To do so, when configuring Events available to the contract, in the "Events for <Accounting Scheme>" form (in the *New Beh Type* field), it is necessary to specify the corresponding behaviour types (accounting subsystems) for these Events (see Fig. 19).


The screenshot shows the 'Private Issuing Account Schemes' form with a table of account schemes. The selected scheme is '001-Credit USD 14%USD'. Below the table, the 'Events for 001-Credit USD 14%' are displayed, showing two events: 'Move to Portfolio 2' and 'Move to Portfolio 3'.

Scheme Name	Currency	Interval	Length	Interest Contract	rent SchenCode	Is Ready	Behav Group	Behav Type
001-Credit USD 14%USD	USD	Month	1	001-INTERESTS	CR	Not Ready	TR USD	Interest Balance

Event Type	New Scheme	Replen Tag	Old Beh Type	New Beh Type	Parameters	Is Ready
Move to Portfolio 2		Yes		Interest Balance		Ready
Move to Portfolio 3				Interest OffBalance	CALC_INT=PE1,PE2,PE3	Not Ready

Fig. 19. Example of configuration of Events to change from one behaviour type to another

 For Events that switch the accounting subsystem, the special tag CALC\_INT=<list of account codes> is used in the *Parameters* field of the "Events for <Accounting Scheme>" form. In this case, if the opening of an Event causes a change from the balance accounting subsystem to the off-balance accounting subsystem, with this configuration, opening the Event will also lead to additional accrual of interest on contract accounts.

## Chapter 4. Reserves Accrual

The menu item for reserves accrual may be accessed through the path "Full → Daily Procedures → Reserves Accrual":


- For individual reserves, follow these procedures:
  - When the "Full → Daily Procedures → Reserves Accrual → Reserves Accrual for Contracts" item is selected, the system will perform many accounting entries between the accounts indicated in the *Debit Account* field in the reserve scheme setup and the client accounts (indicated in the *Credit Account* in the reserve scheme setup); the posting date will be listed as the current banking date.
  - Selecting the menu path "Full → Daily Procedures → Reserves Accrual → Reserves Accrual for Contracts in Prev Day" will result in the same actions, with the difference that the posting date will be one day previous to the current banking date.
- For non-individual reserve accrual, follow these procedures:
  - When the "Full → Daily Procedures → Reserves Accrual → Reserves Accrual for Bank" item is selected, the system will make one entry in the general reserve amount between the accounts indicated in the reserve scheme setup.
  - Selecting the menu path "Full → Daily Procedures → Reserves Accrual → Reserves Accrual for Bank in Prev Day" will result in the same actions, with the difference that the posting date will be one day previous to the current banking date.

As a result of the reserve procedure, a macrotransaction with the value "Reserve for Bad Debts" in the *Service Class* field will be created in the database (see Fig. 20).



Date	Category	Class	Trans Type	Trans Curr	Trans Amount	Trans Code	Local Amount	Direction	Source Account	S Amount
16/10/2009	Advice	Reserve for Bad Debts		USD	250,00	r0	250,00	Credit	Reserving Debit Local	250,00

Fig. 20. Reserve accrual macrotransaction

 When accruing reserves for the second time or more, the following rule takes effect: if the calculated reserve amount differs from the actual amount, a financial document for the difference will be posted to create or recreate the reserve. For contracts whose behaviour type and reserve scheme have changed so that the reserve is accrued for another account, two entries are made: an entry returning the reserve accrued earlier to the profit account and an entry to create a new reserve.

When accruing reserves for foreign currency accounts, the system will consider the value of the global parameter RESERVE\_IN\_LOCAL\_CURR (see the document WAY4™ Global Parameters):

- "Y" (Yes) – currency conversion for accrued reserves will take place for each account separately.
- "N" (No) – currency conversion for accrued reserve will take place for the total reserve amount from all foreign currency accounts, this is the default value.