WAY4™ Statistical Report Data Preparation

Contents

Introduction

Statistical reports are used to analyse a financial institution's transaction activity over a specified reporting period.

This document describes preparation of data for statistical reports in WAY4™.

This document is intended for WAY4 users, bank or processing centre employees responsible for generation of statistical reports.

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

- "DB Manager Manual"
- "Documents"
- "WAY4™ Dictionaries"

The following notation is used in the document:

- Field labels in screen forms are shown in *italics*.
- Button labels used in screen forms are placed in square brackets, such as [Approve].
- Menu selection sequences are shown with arrows, for example Issuing → Contracts Input & Update.
- Sequences for selecting system menu items are shown with a different type of arrow, as in Database => Change password.
- The names of directories and/or files that vary for each local instance of the program are encased in angular brackets, like <OWS_HOME>.
- 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. Preparing Data for Gathering Statistics

According to the WAY4 concept, a financial institution's transaction activity is reflected by documents of various types (see the section "Document Links" in the Documents Administrator Manual).

Only financial documents with the "Posted" status are considered when preparing data for generating statistical reports.

To generate statistics:

- Configure classifiers and statistic attributes for mapping data (see the section "Classifiers and Statistic Attributes").
- Prepare transaction data for the reporting period (see "Preparing Transaction Data").
- When necessary, execute automatic data grouping according to the requirements for the report type (see "Automatic Data Grouping in the "Contract Groups" Dictionary").
- When necessary, execute custom data grouping (see "Manual Data Grouping in the "Contract Groups" Dictionary").

List of the database's main tables used in preparing and collecting statistics:

- STAT_ATTR – list of statistic attributes.
- STAT_ATTR_VAL – values of statistic attributes.
- STAT_ATTR_REF – references of attribute values, contract groups, and transaction groups.
- CONTR_GROUP – contract groups (see the section "Subtypes of Contracts for which Statistics are Generated").
- TRANS_GROUP – transaction groups (see the section "Transaction Types for which Statistics are Generated").
- DOC_STATISTICS – document groups, data are grouped according to contract groups (source, target) and transaction groups (see the section "Consolidated Data").
- STAT_CONTRACT_GR – inclusion a contract into a certain group.
- STAT_CONTRACT_ACT – information about each recorded contract:
  - Contract group identifier.
  - Transaction group identifier.
  - Document group identifier.
  - Identifier of the macrotransaction for which the document was created.

Classifiers and Statistic Attributes

Classifier configuration data is imported from the DWH_SY_CONF_GROUP_ENG.txt (\opt\stat_reporting\db\datam) file. Values of statistic attributes are imported from the IPS_STAT_ATTR_ENG.txt (\opt\ips_statistic\db\datam) file. For more information about importing data, see the section "Data Import" of the document "Importing Configurations Using the Configuration Inspector Module".

The list of classifiers and static attributes used for a certain statistic report and rules for mapping data are provided in the documentation for the relevant report.

Preparing Transaction Data

To optimise system performance during report generation, a financial institution's transaction data is selected from an intermediate table, not from the general table of documents. The intermediate table contains consolidated data, where data on transactions of one type involving counterparties of the same type executed during one banking day is shown as one table record.

It is recommended to regularly execute a special procedure to prepare intermediate table data. To execute the procedure, select the "Full → Statistics → Collect Doc Statistics" menu item. As a result, the "Date From - To" form (see Fig. 1) will be displayed. The *Date From* and *Date To* fields in the form are used to specify the period for which intermediate data for reports must be created.

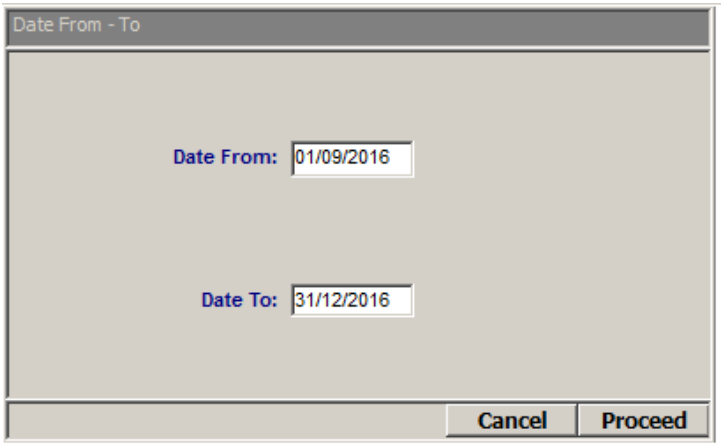

Fig. 1. Form for specifying a data generation period

Note that regular execution of this procedure decreases the system workload. It is recommended that the procedure be executed as frequently as once a day during the banking day, depending on the bank's issuing and acquiring volumes. To increase speed, it is recommended to generate statistics in several parallel threads (see the section "Parallel Generation of Consolidated Data"). In addition, it is recommended to delete obsolete consolidated data (see the section "Deleting Obsolete Data").

When generating consolidated transaction data, the the "Contract Groups" (see Fig. 2) and "Transaction Groups" (see Fig. 3) dictionaries are also generated.

Subtypes of Contracts for which Statistics are Generated

Information on the subtype of every contract that participated in a transaction is added to the "Contract Groups" dictionary. To access the dictionary, select the "Full → Statistics → Dictionaries → Contract Groups" menu item.

Fig. 2. "Contract Groups" dictionary

The [Mark] button is used to manually mark contracts if data in reports should be shown in another logging level (see the section "Manual Data Grouping in the "Contract Groups" Dictionary").

The [As Target] button is used to access the list of transactions where the contracts acted as the transaction data target. The list contains transactions made during the period for which statistical information is stored in the system.

The [As Source] button in this form is used to access the list of transactions where the contracts acted as the transaction data source. The list contains transactions made during the period for which statistical information is stored in the system.

Transaction Types for which Statistics are Generated

Information on all transaction types to which transactions that were made belong is entered in the "Transaction Groups" dictionary. The menu item "Full → Statistics → Dictionaries → Transaction Groups" is used to access this dictionary.

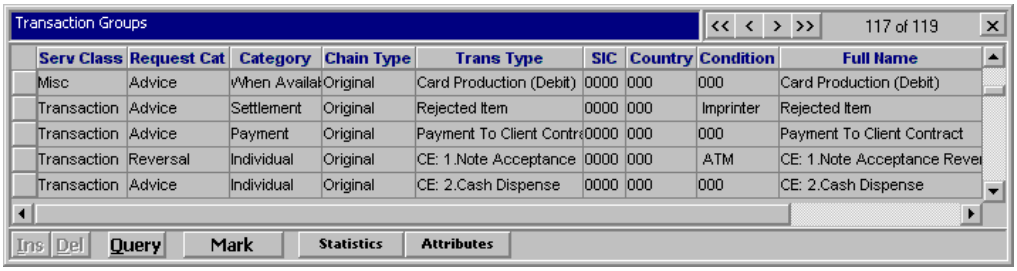

Fig. 3. "Transaction Groups" dictionary

The [Mark] button is used to manually mark transactions.

The [Statistics] button in this form is used to access the list of transactions of this type that were made during the period for which statistical information is stored in the system.

Consolidated Data

To access the intermediate table data, open the "Doc Statistics" form (see Fig. 4) by selecting the "Full → Statistics → Doc Statistics" menu item.

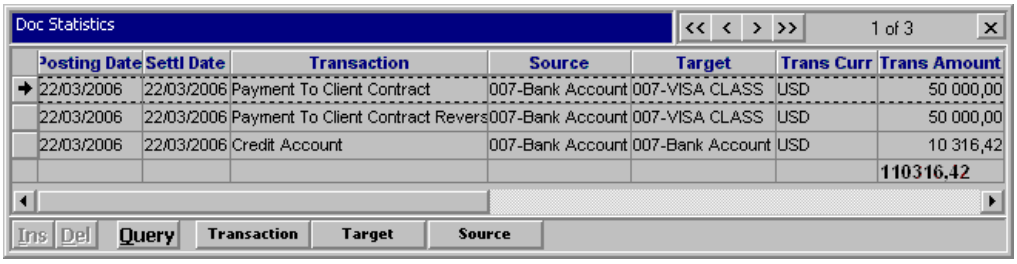

Fig. 4. Form containing intermediate data on transaction activity

The intermediate table contains consolidated transaction data, where data on transactions of one type involving counterparties of the same type executed during one banking day is shown as one table record.

The [Transaction] button in this form is used to access the "Transaction Groups" dictionary.

The [Target] button in this form is used to access the list of target contracts.

The [Source] button in this form is used to access the list of source contracts.

Deleting Obsolete Data

Consolidated transaction data should be deleted if:

- Settings for generating statistical reports change. These settings include:
  - Classifiers that mark contract subtypes (for example, a classifier for marking interest accrual transactions).
  - Statistical attributes according to which data are consolidated (for example, an attribute identifying e-commerce transactions).

  In this case, consolidated data should be deleted for the entire period during which statistics were gathered.
- Statistics for previous periods are not used. In this case, the period for which data are being deleted is determined by the user. This make it possible to speed up report generation.

Procedure for deleting obsolete data:

- Use the "Drop Statistics" procedure to delete data collected earlier, menu item "Full → Statistics → Drop Statistics". When this menu item is selected the "Date From - To" form (see Fig. 1) will be displayed. The *Date From* and *Date To* fields in the form are used to specify the period for which data must be deleted.
- Delete the "Contract Groups" dictionary (see Fig. 2) by selecting the menu item "Full → Statistics → Dictionaries → Purge Obsolete Statistical Groups".

- If statistics gathered earlier have been deleted completely, use the "Full → Statistics → Collect Doc Statistics" menu item to generate statistics data according to the new rules.

Parallel Generation of Consolidated Data

Work in several parallel threads makes it possible to significantly shorten the time it takes to prepare data.

Process parameters are set in the "Process Parameters" form, menu item "Full → Configuration Setup → Main Tables → Process Parameters". Work with the "Process Parameters" form is described in more detail in the section "Process Parameters" of the document "WAY4 Dictionaries™".

If statistics are generated once in a reporting period, for example once a month or once a quarter, it is recommended to set process parameters according to the example shown (see Fig. 5).

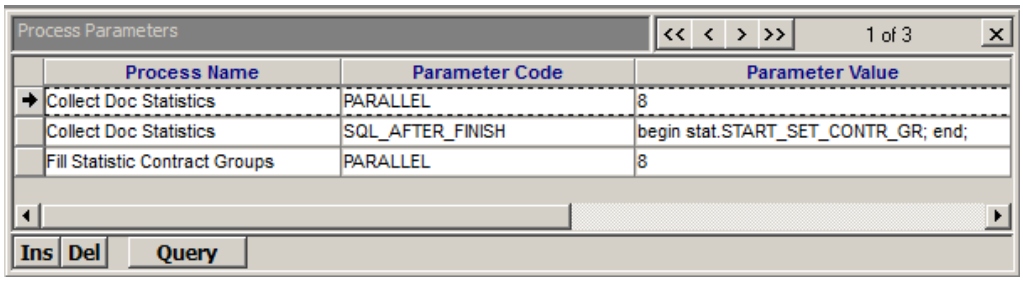

Fig. 5. Parameters for configuring statistics gathering processes

The settings shown in the example (see Fig. 5) make it possible to gather generate statistics in 8 parallel threads.

If it is planned to generate statistics more frequently, for example, every day, to avoid marking only contracts that have just been created, for which there hasn't been any activity yet (no transactions have been made), the *Parameter Code* = "SQL_AFTER_FINISH" parameter should not be set.

Processes are started using the menu item "Full → Statistics → Collect Doc Statistics".

Consolidated Data for Inactive Cards

In some statistical reports it is necessary to show data about card contracts with which no transactions were made in the reporting period.

Data for inactive cards are generated using the menu item "Full → Statistics → Quarterly Contract Groups Update".

It is recommended to run this menu item after the "Collect Doc Statistics" item.

Chapter 2. Additional Data Grouping in the "Contract Groups" Dictionary

According to custom rules for generating reports at some banks, detailed statistics are not required. In WAY4, transaction data can be presented in a less detailed form than that shown in the "Contract Groups" dictionary (see Fig. 2).

To present data in a less detailed form, assign custom codes to the "Contract Groups" dictionary. Information on transactions with the same custom code will be presented as one record during report generation.

Custom codes can be assigned either automatically (see "Automatic Data Grouping in the "Contract Groups" Dictionary") or manually (see "Manual Data Grouping in the "Contract Groups" Dictionary").

Automatic Data Grouping in the "Contract Groups" Dictionary

Custom codes are automatically assigned to "Contract Groups" dictionary records by copying contract subtype custom codes.

After group codes have automatically been assigned to contract subtypes, these values must be copied to the "Contract Groups" dictionary.

Preparing Custom Codes

To assign standard codes to contract subtypes, select the "Full → Statistics → Dictionaries → Prepare Custom Codes" menu item. As a result, a special custom codes preparation procedure will be executed.

To access custom codes assigned to contract subtypes, open the "<Contract category> Contract Types" form (Full → Configuration Setup → Contract Types → <contract category> Contract Types), select the required contract type and click the [SubTypes] button. As a result, the "SubTypes for <name of contract type>" form will be displayed. The form's attributes (on working with attributes, see the section "Use of Additional Fields (Attributes)" in the document "DB Manager Manual") contain the custom codes assigned to the contract type to generate reports of various types (see Fig. 6):

- Issuer reports (the "CB Iss Stat Code" tab).
- Acquirer reports (the "CB Acq Stat Code" tab).
- Other statistical reports (the "Stat Code" tab).

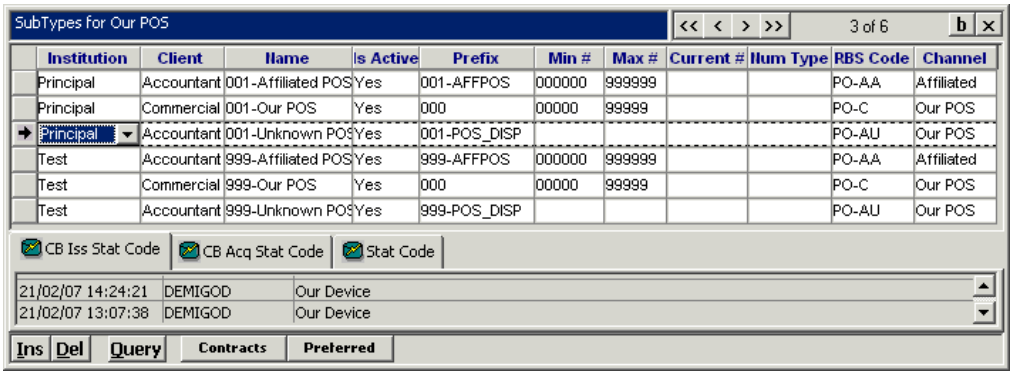

Fig. 6. DemiGod group code assigned to the "Our POS"

Copying Custom Codes to the Dictionary

For groups codes to automatically be assigned to contract subtypes, use the "Filling Contract Custom Code" procedure of the "Full → Statistics → Dictionaries → Filling Contract Custom Codes" menu item.

When this procedure is started, the "Custom Codes" form (see Fig. 7) will be displayed. In the *Custom Codes* field of the form, select the required code from the list and click the [Proceed] button.

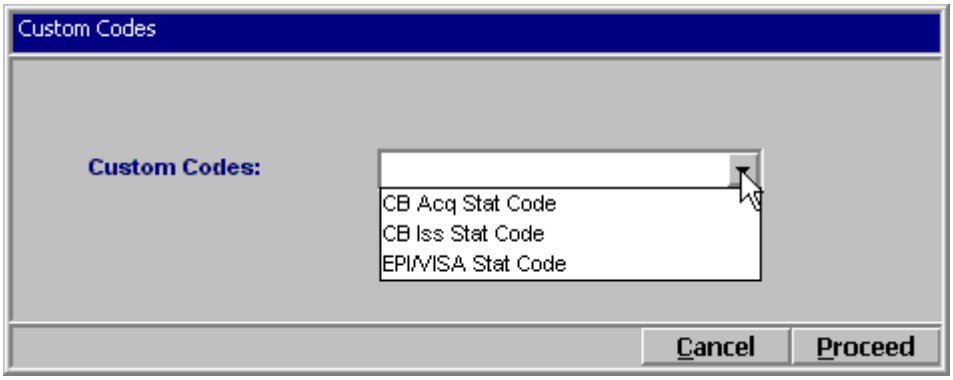

Fig. 7. Form for copying custom codes to the "Contract Groups" dictionary

Note that the procedure must be executed immediately before generating a report of the required type with the corresponding *Custom Codes* value.

It is not necessary to rerun the "Collect Doc Statistics" procedure before generating a report with another *Custom Code* value. It is sufficient to select another report type in the *Custom Codes* field (see Fig. 7) and execute the procedure of copying custom codes again.

Manual Data Grouping in the "Contract Groups" Dictionary

To manually assign a custom code, in the "Contract Groups" dictionary select the records to which the same code must be assigned, click the [Mark] button and choose "Set Custom Code" from the context menu. As a result, the "Update Value" form (see Fig. 8) will be displayed. In the form, specify a custom code value and click the [Proceed] button. As a result, the code specified in the "Update Value" form will be assigned to every selected record.

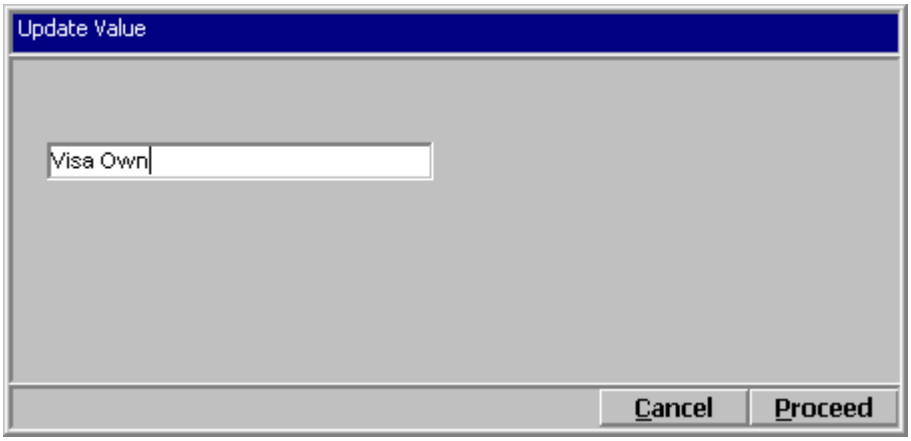

Fig. 8. Form for manually assigning custom codes

Chapter 3. Troubleshooting

This chapter covers possible problems related to incorrect collection of statistics and describes actions for discovering and eliminating these problems.

No Data in a Report File

Troubleshooting procedure:

1. Check that there are data in the STAT_ATTR_REF and STAT_ATTR_VAL, STAT_ATTR tables.
2. Check that there are statistics (records in DOC_STATISTICS) for the reporting period (P_DATE_FROM and P_DATE_TO) for the member (P_MEMBER_ID).
3. Run the report in debugging mode. Debugging mode is configured using the process parameter *Process Name* = "Report" *Parameter Code*="TRACE" *Parameter Value*="Y". For more information, see the document "Running WAY4™ Processes in Parallel".

Statistics Collection Process is Slow

To save time, it is recommended to collect statistics in parallel.

To do so, configure the process parameter: *Process Name* = "Collect Doc Statistics", *Parameter_Code* = "PARALLEL". It is recommended to approve the value of *Parameter Value* – the number of parallel processes – with the database administrator. For more information, see the document "Running WAY4™ Processes in Parallel".

Section in the Report File is Missing or Duplicated

Troubleshooting procedure:

1. In the report template, determine the query used to generate the section.
2. Determine classifiers, statistic attributes and parameters that affect the presentation of data in the section. Check their values.
3. Check that data have been mapped correctly with the query (for the query text, see the section "No Data in a Report File").
4. If necessary, remap data and run the statistics collection procedure.

Data for a Certain Contract or Document are Missing from a Report Section

Troubleshooting procedure:

1. In the report template, determine the query used to generate the section.

2. Determine classifiers, statistic attributes and parameters that affect presentation of data in the section.
3. Check the values of attributes based on which data that were not included in the section are generated in the CONTR_GROUP and TRANS_GROUP tables.
4. Correct attribute values if they do not meet the conditions for generating the section.
5. Remap data and run the statistics collection procedure.

Report Generation is Slow

Troubleshooting procedure:

1. Run the report in debugging mode (see the section "No Data in a Report File"). Give the results of debugging to the WAY4 vendor.
2. If parameters (P_FILTER, P_FILTER_1, etc.) are used to configure additional filters, it is recommended to set the value "1=2" for these parameters. This makes it possible to establish which query requires more time for execution.