Operation Manual

JCB Interface

03.52.30

16.03.2021

Contents

One of the most important functions of Way4™ is interaction with payment systems that is necessary for settlements between issuers and acquirers. Interaction is also required to provide and get auxiliary information required for settlements.

This document examines general mechanisms for interaction with JCB and rules for working with the interface to this payment system.

The document is intended for Way4 users (bank or processing center employees) who are responsible for interaction with JCB.

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

- "Documents"
- "DB Manager Manual"
- "Interchange Routing"
- "Daily Procedures"
- "Way4™ Dispute Management"
- "Way4™ Stop Lists".

The following notation is used in the document:

- Screen form field labels are shown in *italics*.
- Screen form button labels are shown in square brackets; for example [Approve].
- Sequences for selecting user menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: "Database => Change password".
- Key combinations in DB Manager are shown in angular brackets, for example <Ctrl>+<F3>.
- Variables that differ for each local instance, for example, directory and file names, as well as file paths, are shown in angular brackets; for example, <OWS_HOME>.

> ⚠ Warnings about potentially hazardous situations or actions.

> ⓘ Information about important features, additional options, or the best use of certain system functions is marked with a special icon and highlighted.

1 Interaction between Way4 and JCB

Way4 and JCB can interact as follows:

- By exchanging special-format files containing bankcard transaction data, interbank settlement data, reference information, information about suspicious transactions, etc.
- By exchanging online messages containing authorization data and information about placing cards in payment system exception lists and stop lists.

Information of various types is exchanged though payment system specialized channels.

> ⓘ This document examines interaction with JCB in file exchange mode.

1.1 JCB interface functionality

Way4 and JCB exchange information through the JCB interface. This interface is used to do the following:

- Exchange information about completed transactions:

- Exchange clearing information – outgoing and incoming presentments.
- Exchange information about dispute transactions that occur when resolving disputes between payment system members.
- Get settlement information from JCB.
- Exchange information about interbank transactions.

- Get additional information from JCB, for example, stop lists.
- Register merchants in JCB.
- Prepare reports: statistics that are regularly provided to JCB, as well as reports used in a financial institution for reconciliation.
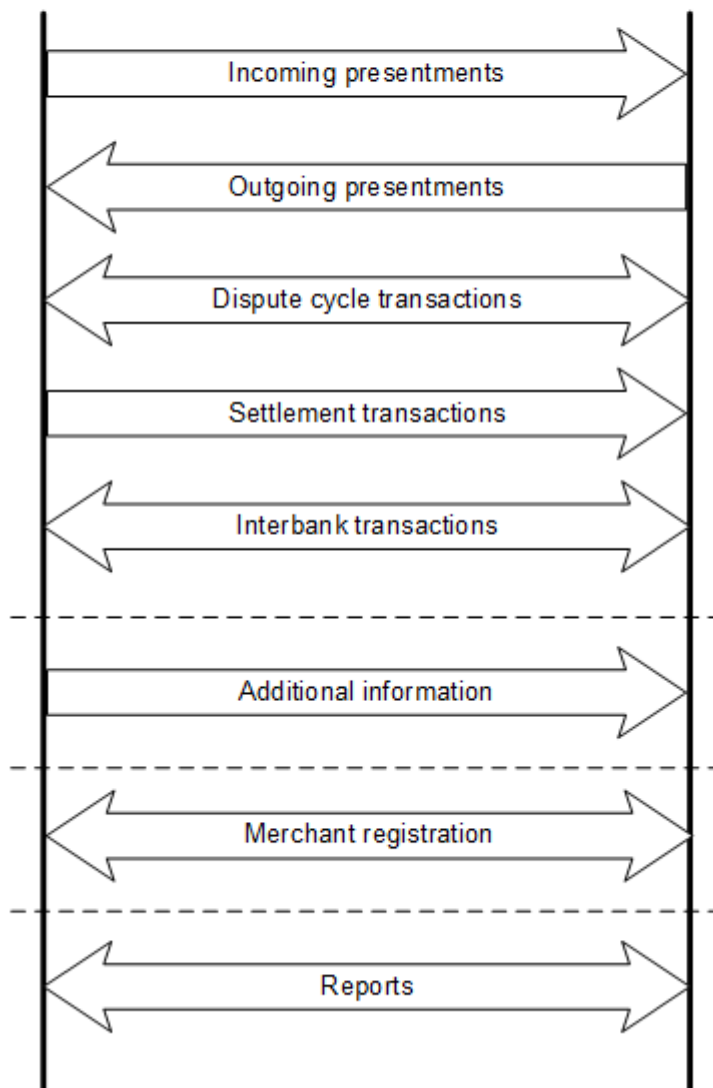
JCB interface functionality

1.2 Principles of exchanging transaction information with JCB

Way4 and JCB exchange files through the Inward Processing and Outward Processing procedures.
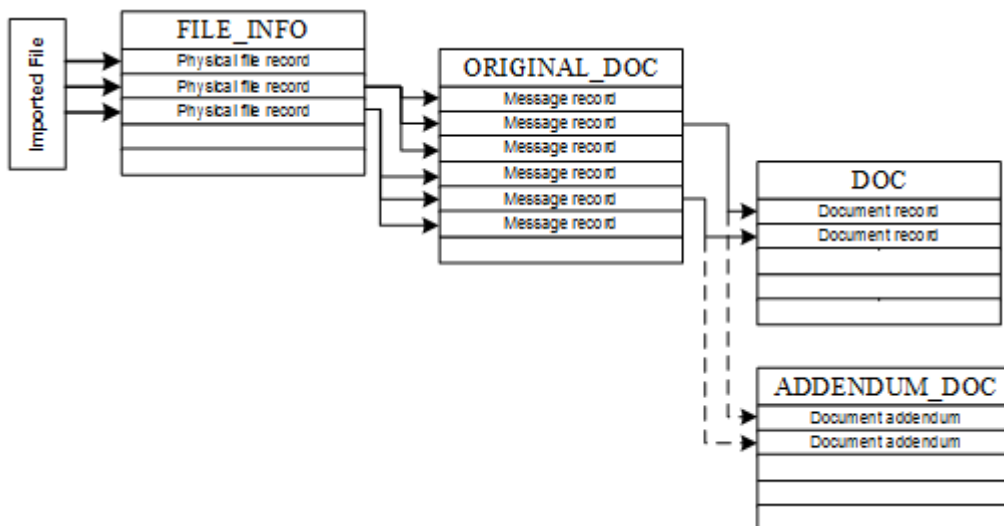
1.2.1 Importing transaction information to Way4

Data is imported to Way4 as physical files whose format is regulated by JCB. For each imported file, a record is created in the FILE_INFO table. Each physical file contains one or several logical files. Each logical file is located between the physical file's header and trailer.

A logical file contains information grouped in messages, each of which takes up one or several lines of the logical file. A logical file's messages can contain information on financial operations (presentments, chargebacks, etc.), non-financial operations (for example, retrieval requests), settlements, as well as service information (file header and trailer or message batch) and other data.

For each message, including headers and trailers, a record is generated in the ORIGINAL_DOC table. In these records, all message fields are stored in a special packed format. If necessary, these records can be unpacked and used for detailed manual analysis.

Depending on their type, messages can generate records in the DOC (documents) and ADDENDUM_DOC (additional document parameters) tables, as well as records containing various reference information in the corresponding service tables:

Importing transaction information to Way4

1.2.2 Exporting transaction information to JCB

During data export, Way4 processes document that were assigned the "To be Sent" status during document processing. The creation of an export file is accompanied by the generation of records in the FILE_INFO table – for the file that is being exported (physical) and for logical files included this file.

> (i) In the current version, an export file contains only one logical file.

During export, records in the ORIGINAL_DOC table are created for all the messages in a logical file.

2 Importing reference information

To update a financial institution's stop lists and BIN table, information must be imported to Way4 from JCB.

2.1 Importing stop lists

The import procedure is the same as the procedure described in the section "Stop List" of the document "Way4™ Stop Lists". To import information, use the menu item "JCB → JCB. Daily Procedures → JCB. Load Stop List → Load JCB Stop List", to delete obsolete records from a stop list, use the menu item "JCB → JCB. Daily Procedures → JCB. Load Stop List → Close Inactive JCB Stop List Records".

2.2 Importing the BIN table

BIN tables are described in the document "Interchange Routing".

To import data to the BIN table, do as follows:

- Make sure that the "BIN Groups" form (Full → Configuration Setup → Routing → BIN Groups) contains a record with "JCB" in the *Default Channel* field and "J" in the *Group Code* field. If this record is missing, add it. The code of the BIN group for importing data to the BIN table can be redefined using the pipe parameter "BIN_GROUP_CODE" (see "BIN table import pipe parameters"). The code of a regional BIN group is set in the format JR<Region>, for example, "JR1". The code of a BIN group for a country is set in the format JC<Country>, for example, "JC422".
- Copy the file received from the payment system to the directory "<OWS_WORK>\Data\Interchange\JCB_BIN". The file import directory is defined using the "SOURCE_DIR" parameter of the import pipe.
- Run the menu item "JCB → JCB. Daily Procedures → JCB. Load Bin Table and Handbooks → JCB BIN Table Import". Execution of this menu item is accompanied by display of a warning about the need to make sure that the file being imported is correct:
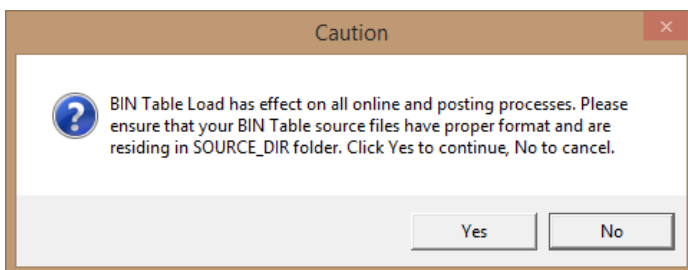
Warning about the need to make sure that the file being imported is correct

If the import procedure is continued, the "Select Files" window will be displayed. In this window, select files for import.

2.2.1 BIN table import pipe parameters

The "JCB BIN Table Import" pipe (com.openwaygroup.pipe.jcb.bin_table_import.jar) for importing the JCB BIN table is used with the following parameters:

Parameter	Values	Description
SOURCE_DIR	String	Directory for incoming files. Mandatory parameter.
MODE	String	Import mode. Possible values: – "FULL" – import the full data file. This is the default value. – "UPDATE" – import the file of updates (Maintenance Data File).
FILE_MASK		File selection mask. The default value is IN083*
BIN_GROUP_CODE	Character	BIN group code. The default value is "J".
PROCESSED_DIR	String	Specifies the name of the directory for processed files.
ERROR_DIR	String	Specifies the name of the directory for error files.
COMMIT_INTERVAL	Number	The number of processed records after which the SQL commit statement is executed. The default value is "100".

3 Processing incoming JCB transactions and exporting outgoing ones

This section contains the main rules for processing incoming transactions and exporting outgoing ones when working with JCB.

⚠️ Note that when Russian rubles with the code 810, corresponding to the Russian ruble before devaluation in 1998 are used by banks and processing centers in settlements, additional settings are required before importing/exporting data. To make the settings, it is recommended to use the technology described in the section "Redefining Currency Parameters" of the document "Currency Conversion". It is also possible to do so using the following import/export pipe parameters:

- "CHANGE_CURR_OUT=810643" for export pipes. In this case, the currency code will be changed from "810" to "643" in all documents being exported.
- "CHANGE_CURR_IN=643810" for import pipes. In this case, the currency code will be changed from "643" to "810" in all documents being imported from the payment system.

These pipe parameters have a higher priority than the settings described in the section "Redefining Currency Parameters" of the document "Currency Conversion".
If the currency is not redefined, exported and imported files will be processed incorrectly.

3.1 Processing incoming transactions

ℹ️ Incoming transactions are processed during daily procedures.

Incoming JCB transactions are processed using the menu item "JCB → JCB. Daily Procedures → JCB. Inward Processing → JCB ISO Inward Processing ". Incoming JCB clearing files are processed. The files contain clearing and settlement information, as well as information about interbank documents.

Executing this menu item opens the "Open Inward File for JCB_CHANNEL" window. In this window, select the files to be imported.

As part of this menu item's execution, debit or credit amounts are calculated for incoming clearing messages (Accept Clearing). This procedure makes it possible to process clearing documents from incoming JCB files separately from the general document processing procedure (see the section "Posting Documents and Solving Typical Problems" of the document "Documents").

3.2   Exporting outgoing transactions

> ⓘ   Outgoing transactions are exported during daily procedures.

When exporting outgoing transactions to JCB, the following procedures are run. These procedures are accessed from the user menu group "JCB → JCB. Daily Procedures → JCB. Outward Processing":

- The menu item "JCB ISO Outward Processing" – preparation of outgoing clearing files for JCB. These files are generated on the basis of documents for transactions made on the bank's own devices or the devices of affiliate banks with the cards of other payment system members, and on the basis of dispute and interbank documents.
- The menu item "JCB Merchants Export" – export a file containing documents to register, change or cancel a merchant's registration in JCB.

3.3   Monitoring Imported and Exported Files

To monitor the status of imported and exported files, use the menu folder "JCB → JCB File Management":
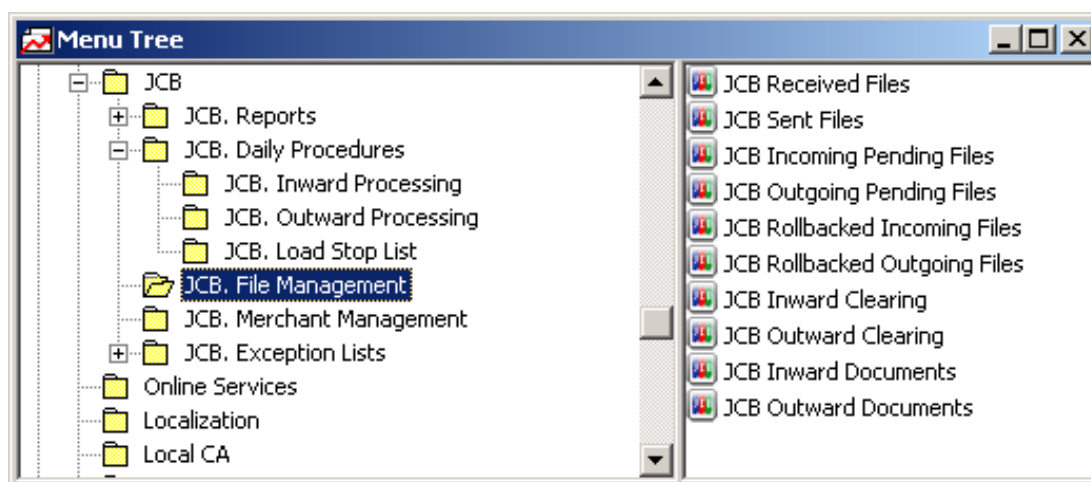
User menu folder for monitoring imported and exported JCB files

3.3.1   Imported files

Imported files are monitored in the "JCB Received Files" form opened by selecting the menu item "JCB → JCB. File Management → JCB Received Files".

This form uses information from the FILE_INFO database table (see the section "Importing transaction information to Way4").

List of files that were imported from the payment system

Form fields:

- *Receiving Date* – calendar date and time when file import started.
- *Bank Date* – bank date of file import.
- *File Type* – file type; this field contains the value "JCB_INC".
- *Received By* – user who imported the file.
- *File Name* – file name.
- *N of Received* – number of documents in the file.
- *Status* – file status; for imported files, the value in this field will be "Received".
- *Result* – result of processing the file; for JCB files, this field is not filled in.
- *File ID* – file ID.
- *Parms* – this field is reserved for forward compatibility.

The [Messages] button is used to view messages created by the system during file import.

To access messages contained in a file, select the row corresponding to the required file, and click the [Original Docs] button.

The "Original Docs for <file name>" form will open with information about messages in the file. The form uses information from the ORIGINAL_DOC database table (see the section "Importing transaction information to Way4").

Information about a file's messages

Form fields:

- *Creation Date* – bank date of file import.
- *Channel* – name of clearing channel.
- *Direction* – this field contains the "Inward" (import) value.
- *File ID* – logical file ID.
- *Batch ID* – batch ID, if messages are grouped in batches.
- *Message ID* – message sequence number.
- *Message Code* – message code.
- *Source Member ID* – sender's identifier according to JCB rules.
- *Target Member ID* – recipient's identifier according to JCB rules.
- *Level* – message type, for example, "Presentment", "1 Chargeback". The "Administrative" value will be specified in this field for a logical file's header and trailer.

- *Status* – message status.
- *File Info* – name of the imported file.

Clicking the [Doc] button in the "Original Docs for <file name>" form opens the "Doc for <...>" form with information about the document corresponding to the selected file message.

A logical file's messages are stored in the database in packed form. To access a message's data, select the user menu item "Full → DB Administrator Utilities → Special OpenWay Utilities → Interchange → All Files", in the "All Files" form that opens, select the required file and click the [Original Data] button.

The "Original Data for <...>" form will open. This form's fields are the same as those of the "Original Docs for <name of logical file>" form. In the "Original Data for <...>" form, click the [Unpack All] button. The process of unpacking messages will be started and a progress bar will be displayed.

When this process finishes, click the [Log Fields] button in the "Original Data for <...>" form. The "Log Fields for Original Data for <...>" form will open. This form contains information about message fields and their values.

Log Fields for Original Data for JCB-NON-SEPA-1prs.I01	<< < > >>	10 of 39	b x
Name	**Value**		
001	1		
Record Type	DT		
Record Format	01		
Transaction Type	101		
Transaction Date	12182009		
FMS Data Flag	0		
Reserved 1			
Source Licensee ID	160301		
Destination Licensee ID	000000		
➜ Card Number	5569990012118922		
PAN Entry Mode	01		
Electronic Commerce Indicator			
Transaction Amount	000000061340		
Transaction Currency	EUR		
Number of Installment	00		
Reference Number	1234567312734567891 2346		
Approval Code	500981		
Merchant Number	182928591108094		
Ins Del Query			

Information about message field values

3.3.2   Exported files

Files exported to the payment system are monitored using the "JCB Sent Files" form opened by selecting the menu item "JCB → JCB. File Management → JCB Sent Files".

List of files that were exported to the payment system

This form's fields are the same as those of the "JCB Received Files" form (see the figure in the section "Imported files"), with the following exceptions:

- *Sending Date* – calendar date and time when file export started.
- *File Type* – file type; this field contains the value "JCB_OUT".
- *Sent by* – user who exported the file.
- *Status* – file status; for exported files, the value of this field will be "Sent".
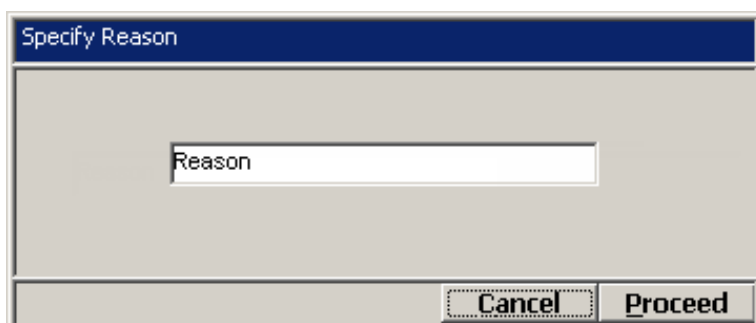
The following fields in this form are only filled if file export was rolled back:

- *Rollback Date* – file rollback date.
- *Rolled back by* – user who rolled back the file.
- *Rollback Reason* – reason for file rollback.

Messages in an exported file's logical file are accessed in the same way as for imported files (see the section "Imported files").

To roll back export of a file, select the required file in the "JCB Sent Files" form and click the [Rollback] button.

The "Specify Reason" form will open. This form is used to enter the reason for file rollback.

Form for entering the reason for file rollback

After entering the required data, click [Proceed], to cancel the activity, click [Cancel].

When the process finishes, the message "1 Files Rolled Back" will be displayed. In forms with information about files, the *Rollback Date*, *Rolled back by* and *Rollback Reason* fields will be filled in for this file.

> ⚠ Note that after rollback, the file will remain on the hard disk and documents that were to be exported in this file will be reassigned the "To be Sent" status. Therefore, after rolling back a file, it is recommended to manually delete it.
>
> Also note that when re-exporting a file for the same bank date, the new exported file will have the same ID.. Therefore, if a file was rolled back and re-exported because it was totally rejected by the payment system (for example, due to an error on the recipient's end), the file should be re-exported for another bank date.

3.4   Troubleshooting file import/export

Typical problems that occur during file import and export can be classified as follows:

- Errors caused by hardware problems like a server failure or local network failure (see "Technical problems").
- Database errors accompanied by "Oracle SQL Error" messages. If this kind of error occurs, see Oracle documentation and/or contact OpenWay Support.
- File logical control errors (see the section "File logical control errors").
- File format control errors (see the section "File format control errors").
- Physical file errors (see the section "Physical file errors").

3.4.1   Technical problems

If this kind of error occurs during file import or export, it is recommended to do the following after the hardware has been restored:

- Terminate the active import or export process (see the section "Active Processes" menu item" of the document "DB Manager Manual").
- Roll back file import/export (see "Monitoring files that are being processed").
- Repeat the import/export procedure.

3.4.2   File logical control errors

Messages about logical file control errors depend on the direction of file transmission (import or export) and the format used on the clearing channel.

When importing files, the following error messages may be generated:

- "Unexpected file header message. Possibly trailer missing" – it is recommended to contact the payment system to correct the imported data.
- "File ID <File ID> from <file name> Already Processed" – the specified file has already been imported.
- "Missing logical file header" – it is recommended to contact the payment system to correct the imported data.

- "Warning: <FILE NAME> is a test file. Do you want to continue?" – warning that the file being imported is a test file, which is not allowed for a production database.
- "Invalid processing BIN in file trailer" – there are no Interchange routing settings in Way4 for the bank with this *Member ID*.
- "Invalid sequence number" – if this message is received, it is recommended to contact the payment system to correct the imported data.
- "Invalid total TCR count:<actual number> – ><specified number>" – incorrect number of TCRs (Transaction Component Records) was found in the logical file trailer. It is recommended to contact the payment system to correct the imported data.
- "Invalid total monetary transactions count" – incorrect total financial transactions amount was found in the logical file trailer. It is recommended to contact the payment system to correct the imported data.
- "Invalid total TC count" – incorrect number of transactions was found in the logical file trailer. It is recommended to contact the payment system to correct the imported data.
- "Invalid total source amount" – incorrect total transactions amount (Source Amount) was found in the logical file trailer. It is recommended to contact the payment system to correct the imported data.
- "Invalid total destination amount" – incorrect total transactions amount (Destination Amount) was found in the logical file trailer. It is recommended to contact the payment system to correct the imported data.

If any other error messages are received, it is recommended to contact OpenWay Support.

When exporting files, the following error messages may be generated:

- "File sequence counter overflow. Try on next local date" – file counter for this bank (Sending Member) exceeded JCB limits. It is recommended that the document be reposted and sent on a later banking day.
- "Batch sequence counter overflow. Try on next local date" – batch counter for the bank pair (Sending/Target Member) exceeded JCB limits. It is recommended that the document be reposted and sent on a later banking day.
- "SIC Code incompatible with transaction type" – it is recommended that the document be corrected and reposted.
- "Error in CPS Data format" – if this error message is received, it is recommended to contact OpenWay Support.
- "Chip Data not present" – if this message is received, check whether the *Transaction Condition* field is filled in correctly and repost the document.

If any other error messages are received, it is recommended to contact OpenWay Support.

3.4.3   File format control errors

Way4 uses the following messages to notify users about file format control errors:

- "File <name of file to be imported> validation failed"
- "Some file(s) were rejected during Interchange Engine Prevalidation"
- "Interchange engine reported error".

If these messages are displayed, the process log should be analysed as recommended in the section "Recommendations on Timely Identification of Dispute Situations" of the document "Way4 Dispute Management" and information about the process should be sent to OpenWay Support.

3.4.4   Physical file errors

Way4 uses the following messages to notify users about physical file errors:

- "Could not create directory" – a directory could not be created for the file that is being exported.
- "Error opening audit counter file" – error while working with the NetServer audit counter file.
- "Could not open Engine requested file" – error while working with the file the pipe is trying to call

If these errors are caused by operating system problems, the messages are accompanied by system error messages (see "List of operating system errors while working with files"). Otherwise, or if other messages are displayed, contact OpenWay Support.

3.4.5   List of operating system errors while working with files

If operating system errors occur while working with files, contact the system administrator. These errors are accompanied by the following messages:

- "No such file or directory"
- "Argument list too big"
- "Exec format error"
- "Bad file number"
- "Not enough memory"
- "Permission denied"
- "File exists"
- "Cross-device link"
- "Invalid argument"
- "File Table overflow"
- "Too many open files"
- "No space left on device"
- "Argument too large"
- "Result too large"
- "Resource deadlock would occur"
- "System reported error ..."

3.4.6   Monitoring files that are being processed

To monitor the status of files that are being processed, use the forms opened with the following menu items:

- For incoming files – "JCB → JCB. File Management → JCB Incoming Pending Files"
- For outgoing files – "JCB → JCB. File Management → JCB Outgoing Pending Files"

Selecting one of these menu items opens the "JCB Outgoing/Incoming Pending Files" forms containing lists of files of the corresponding type.

To access information contained in a file, select the required file's record from the list and click the [Original Docs] button. Click the [Rollback] button to roll back import or export of a file.

> ⚠️ Note that a file's import/export cannot be rolled back after the documents in the file have been processed.

4   Generating reports for JCB

The following report types are required for interaction with JCB:

- Statistical reports that are regularly provided to JCB.
- Internal reconciliation reports used by the financial institution's staff.

To general statistical reports, use the menu group "JCB → JCB. Reports → Statistics". This group contains the following items:

- "JCB Issuing Business Report". Used for generation of quarterly reports about issuer transaction activity for JCB and to show fees that were charged.
- "JCB Acquiring Business Report". Used for generation of quarterly reports about acquirer transaction activity for JCB.
- "JCB Dispute Statistics". Used to show statistics for secondary documents.

To generate internal reconciliation reports used by financial institution employees, use the menu group "JCB → JCB. Reports". This group contains the following items:

- "JCB Incoming Files Summary Report". Technical totals for a specified time interval for each file sent by a specified member (*Member Id*) and accepted by JCB. The report provides the number and amount of transactions for all transaction types and various transaction conditions (*Transaction Condition*).
- "JCB Outgoing Files Summary Report". Technical totals for a specified time interval for each file sent by JCB and accepted by a specified member (*Member Id*). The report provides the number and amount of transactions for all transaction types and various transaction conditions (*Transaction Condition*).
- "JCB Inward Monetary Transactions Report". Journal of all transactions accepted from JCB by a specified member (*Member Id*) during a specified time interval. Report data is grouped by settlement currency and clearing file number.
- "JCB Outward Monetary Transactions Report". Journal of all transactions sent to JCB by a specified member (*Member Id*) during a specified time interval. Report data is grouped by settlement currency and clearing file number.