File Postload Processing

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Introduction

File Postload Processing (FPLP) is a WAY4 UFX Interchange component and is intended for additional checking and processing of a file's loaded documents before their acceptance.

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

• "WAY4 UFX Interchange"

The following conventions are used throughout this document:

- Field labels in screen forms are displayed in *italics*.
- Button labels in screen forms are encased in square brackets, as in [Approve].
- User menu selection sequences are given using arrows, as in: "Issuing → Contracts Input & Update".
- Sequences for selection of items from the system menu are shown using another type of arrow, as in: "Database => Change password".
- Key combinations used in working with WAY4 Manager are displayed in angular brackets, for example <Ctrl>+<F3>.
- Values such as directory and file names, as well as file paths which vary for each local instance of the program are also shown in angular brackets, as in <OWS HOME>.
- Warnings that there is a risk of making an incorrect action are marked with the sign.
- Messages marked with the isign contain information about important features, additional facilities, or the optimal use of certain functions of the system.

Chapter 1. Main Principles of File Postload Processing

After loading documents in UFX format into the system, additional checking and processing of a file's documents may be required before their acceptance. This process is called File Postload Processing, or FPLP, and is a component of WAY4 UFX Interchange.

The system supports batch processing.

File Postload Processing Mechanism

The FPLP mechanism is based on database stored procedures and can include the following:

- Control procedures and functions enabling the processing of file elements (file, document batch, document), standard procedure calls in a particular order for checking and processing documents, as well as processing the results of executing these procedures.
- Standard procedures for checking and processing documents.
- Parameters for checking and processing files. A unique set of parameters can be specified for each file type (the value of the DocFile\FileHeader\FileLabel field; for more information, see the section "Document Types" of the document "WAY4 UFX Interchange"), sent by a given sender (the value of the DocFile\FileHeader\Sender field) to a given recipient (the value of the DocFile\FileHeader\Receiver field). For a description of parameters, see the section "Parameters for Checking and Processing File Elements".
- Custom user procedures for checking and processing, called after the
 execution of standard procedures (with the exception of those executed last,
 i.e. at the "FILE_FINISH" stage). It is possible to decline the execution of
 standard procedures and use only custom procedures. For a description of
 custom user procedures, see the section "Custom User Procedures".

Starting FPLP

The following methods exist for starting FPLP:

- By selecting the user menu item "Core Banking Interface → CBS. Daily Procedures → CBS. Inward Processing → CBS Documents Import With Postload Processing". When this item is chosen, select the loadable files in the "Select Files" window and click [OK]. As a result, the selected files will be loaded and then file postload processing of those files which were successfully loaded (for which the file header document has the status "Suspended") will be executed.
- From the "UFX Received Files" form (see Fig. 1), opened on the screen by the user menu item "Core Banking Interface → CBS. File Management → UFX Received Files".

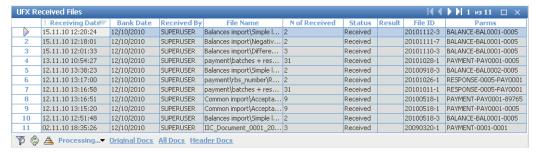


Fig. 1. List of loaded files

This form contains a list of all loaded files. To view the list of a file's documents, click [All Docs] in this form. The form "Docs for <file name>" will appear on the screen (see Fig. 2).



Fig. 2. List of file documents

To start FPLP, select the file in the "UFX Received Files" form, click [Processing...], and select the item [PostLoad Processing].

To start FPLP it is necessary that the file header document has the status "Suspended", i.e. in the *Post Stat* field of the "Docs for <file name>" form for this document, the value "Suspended" must have been specified. Otherwise, FPLP will not be executed and a window with the message "File Skipped" will appear on the screen.

File Postload Processing

File postload processing is executed as follows:

- The processing status of the file header document is checked: if the status of the document is "Suspended", file postload processing is executed, otherwise processing of the file is terminated.
- A search is made for checking and processing parameters for the given file and the corresponding standard procedures are called. In doing so, the procedures for checking and processing documents called in a particular order, shown in Table 1.
- Custom user procedures are called if they have been specified by the user.
 These procedures are called after the execution of standard procedures, with
 the exception of standard procedures that are executed last (i.e. at the
 "FILE_FINISH" stage). For more information, see the section "Custom User
 Procedures".

The process of file postload processing can be completed after the processing of all the file's documents or if an error occurs which rejects a file (the documents of a file). If a file's documents are rejected, the corresponding document receives the posting status "Rejected". In the event of successful processing of a file, the file header document receives the "Closed" status, and successfully processed file documents get the "Waiting" status.

It is possible to cancel the results of FPLP. To do so, in the "UFX Received Files" form (see Fig. 1 of the section "Starting FPLP") click [Processing...] and select the item [Undo PostLoad Processing].

The results of FPLP are cancelled in the following way:

- The possibility to cancel the results of FPLP is checked (according to the status values of all the file's documents).
- The parameters of rejected documents and the original statuses of all documents are restored, and all messages created for documents as a result of checking and processing are deleted from the process log.
- The "Suspended" status is restored for the file header document, as well as for batch header documents.

After the results of FPLP are cancelled, FPLP can be started again from the "UFX Received Files" form (see Fig. 1 of the section "Starting FPLP").

After the results of FPLP are canceled, the results of changes made to documents during execution of custom user procedures will not be canceled. Therefore, these procedures must take into account the event of a repeat start for an earlier-processed document. Moreover, some system and custom user procedures do not take into account a repeat start and the results of changes made to a document cannot be canceled.

Chapter 2. Configuring FPLP

Configuring FPLP Parameters

Parameters for checking and processing documents used in file postload processing can be grouped.

A new group of parameters is added in the "NW Groups" form (see Fig. 3), opened by the user menu item "Full \rightarrow Configuration Setup \rightarrow Main Tables \rightarrow NW Groups".



Fig. 3. Groups of parameters

It is necessary to fill in the following fields of this form:

- *NW Area* select the value "Core Bank System" in this field.
- *Name* the name of the group of parameters.

To add new parameters to a group, in the "NW Area" form, click [Parameters]. The "Parameters for <name of group>" form which contains a list of all of this group's parameters will be shown on the screen (see Fig. 4).

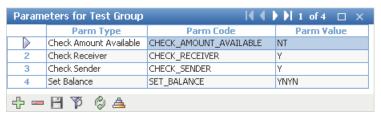


Fig. 4. List of a group's parameters

This form contains the following fields:

- *Parm Type* drop-down list with the names of document checking and processing parameters
- *Parm Code* parameter code
- Parm Value parameter value

Names, codes and values of checking and processing parameters are provided in the section "Parameters for Checking and Processing File Elements".

File checking and processing parameters are configured depending on the file type, sender and receiver using the "FPLP Configuration Parameters" form (see Fig. 5), opened by the user menu item "Core Banking Interface \rightarrow CBS. File Management \rightarrow FPLP Configuration Parameters".

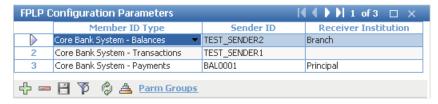


Fig. 5. File checking and processing parameters

This form contains the following fields:

- *Member ID Type* drop-down list to specify the file type (see the section "Document Types" of the document "WAY4 UFX Interchange"):
 - "Core Bank System Balances" a file containing documents to change contract balances (the parameter of the "Message Class" document has the "BALANCE" value)
 - "Core Bank System Transactions" a file containing financial documents (the parameter of the "Message Class" document has the "DOCUMENT" value)
 - "Core Bank System Payments" a file containing payment documents (the parameter of the "Message Class" document has the "PAYMENT" value)
- Sender ID file sender
- Receiver Institution file recipient; the file recipient is determined by the financial institution that in the Branch Code field of the "Financial Institution" form must have the value corresponding to the value of the DocFile\FileHeader\Receiver field of the file.

It is not mandatory to fill in the Sender ID and Receiver Institution fields.

The system does not permit the existence of two groups of parameters that differ only by the value of the *Receiver Institution* field.

To add groups of parameters used to process files of a particular type, click [Parm Groups]. The "Parm Groups for FPLP Configuration Parameters" will open on the screen (see Fig. 6).



Fig. 6. Groups of parameters for processing files of a particular type

The value "Core Bank System" must be selected in the *NW Area* field of this form, and the group of parameters registered in the "NW Groups" (see Fig. 3) must be selected in the *NW Group* field. Several groups of parameters may be specified for one type of file.

File processing parameters are searched for as follows. If the type of documents, sender and recipient is specified in a file, a search is made for parameters corresponding to these values. If the appropriate parameters are not found, a search is made for file types in which no recipient is specified. If no parameters are found in this case either, a search is made for parameters for which only file type is specified. That is, the most simple configuration contains only the file type.

Custom User Procedures

Custom procedures can be used as additional procedures for checking and processing documents, and can also be used instead of standard procedures.

All custom procedures have the following call parameters:

- Identifier of the corresponding document (File Header Document, Batch, financial document).
- File document type (see the section "Document Types" of the document "WAY4 UFX Interchange").
- File sender
- File recipient
- Processing parameters. These parameters can be set in the menu item
 definition that calls FPLP. To do so, in the menu item definition, add a
 subitem with the "Assignment" type and then in the *Command Text* field of
 this subitem, add the codes and values of the required parameters as tags, for
 example, "FILE_ACCEPT_LEVEL=F;" (see Table 2 of the section
 "Parameters for Checking and Processing File Elements")
- Additional processing parameters. These parameters can be set in the menu item definition that calls FPLP. To do so, in the menu item definition, add a subitem with the "Assignment" type, and then in the *Buf* field of this subitem, add the codes and values of the required parameters. Additional parameters are used in the system to ensure compatibility with earlier versions.

After their execution, custom procedures can return one of the following values

- "PrcSuccess" the document was successfully checked and processed; move on to the next document.
- "PrcWarning" the document was successfully checked and processed, but a warning was generated; move on to the next document.
- "PrcError" an error occurred while checking and processing; depending on the value of the "File acceptance level" parameter (Table 2 of the section Parameters for Checking and Processing File Elements") the document, batch or file can be rejected.
- "PrcBatchError" an error occurred while checking and processing that requires the batch to be rejected; reject the batch and move on to the next batch. It is not recommended to use this value when working with financial documents.
- "PrcFileError" an error occurred while checking and processing that requires the file to be rejected; reject the file and terminate processing. It is not recommended to use this value when working with financial documents.
- "PrcFileSkip" do not process the file.

Table 1 provides a list of custom user procedures.

Table 1. Custom user procedures

Name	Definition	Permissible returned values
CUST_FPLP_FILE_START	Actions related to a file and completed before the processing of its contents is commenced.	PrcSuccess, PrcFileError
CUST_FPLP_FILE_FINISH	Actions related to a file and completed after its contents are processed.	PrcSuccess, PrcFileError
CUST_FPLP_BATCH_START	Actions related to a batch and completed before the processing of its contents is commenced.	PrcSuccess, PrcFileError, PrcBatchError
CUST_FPLP_BATCH_FINISH	Actions related to a batch and completed after its contents are processed.	PrcSuccess, PrcFileError, PrcBatchError
CUST_FPLP_DOC	Actions related to a financial document.	PrcSuccess, PrcWarning, PrcError

Parameters for Checking and Processing File Elements

Table 2 shows parameters for checking and processing documents. The default value for these parameters will be used only if the parameter is set, but its value is not specified (see Fig. 4 of the section "Configuring FPLP Parameters").

In the table, the following designations are used for document processing stages:

- "GLOBAL" general configurations used when processing documents.
- "FILE_START" actions related to a file and completed before the processing of its contents is commenced.
- "FILE_FINISH" actions related to a file and completed after its contents are processed.
- "BATCH_FINISH" actions related to a batch and completed after its contents are processed.
- "DOC" actions related to a financial document.

Please note that in each stage, checking and processing procedures will be executed in the order specified in this table.

Table 2. Checking and processing parameters

Parameter	Parameter code	Processing stage	Value	Defininition
File Acceptance Level	FILE_ACC EPT_LEVE L	GLOBAL	D, B, F, A	This parameter specifies actions taken if an error occurs during document processing: "D" (Document) — if an error occurs during document processing, only the document is rejected. "B" (Batch) — if an error occurs during document processing, all documents in the batch are rejected. "F" (File) — if an error occurs during document processing, all documents of the file are rejected. "A" (Any) — if an error occurs during document processing, this document is not rejected; this value should only be used for testing. The default value is "D". This mode is used even when the parameter is not set.
Additional processing parameters	ADD_PAR MS	GLOBAL	Tags	Additional processing parameters. Values are set as tags. The following parameters are used to load balances: "CR_MSG_CODE=<>;"; "DR_MSG_CODE=<>;"; "ADD_MSG_CODES=<>;".
Check Sender	CHECK_SE NDER	FILE_START	Y/N	Check for file sender. When the value of this parameter is set to "Y", a search is made for the sender (the value of the DocFile\FileHeader\Sender field) in the <i>Member ID</i> field of the BIN table ("Full → Configuration Setup → Routing → BIN Groups → [BIN Table]"). If the file sender is not found, the file is rejected. No check is performed when the value of this parameter is set to "N". The default value is"Y".

Parameter	Parameter code	Processing stage	Value	Defininition
Check Receiver	CHECK_R ECEIVER	FILE_START	<y n=""><y <="" td=""><td>Check for file recipient. First symbol: when the value is set to "Y", a check is performed for the file recipient. In this case, the file sender will also be checked for (Check Sender). When the value is set to "N", no check is performed. Second symbol: when the value is set to "Y", a search is made for the file recipient (the value of the DocFile\FileHeader\Receiver field) in the <i>Branch Code</i> field of the "Financial Institutions" form ("Full -> Configuration Setup -> Main Tables -> Financial Institutions"). If the file recipient is not found, the file is rejected. Third symbol: when this value is set to "Y", a correspondence check is performed for the file sender (the value of the DocFile\FileHeader\Sender field) with the <i>Branch Code</i> field of the "Financial Institutions" form for the recipient's financial institution. It is recommended to use the "Y" value for interaction with the banking system. The default value of the parameter is "YNN".</td></y></y>	Check for file recipient. First symbol: when the value is set to "Y", a check is performed for the file recipient. In this case, the file sender will also be checked for (Check Sender). When the value is set to "N", no check is performed. Second symbol: when the value is set to "Y", a search is made for the file recipient (the value of the DocFile\FileHeader\Receiver field) in the <i>Branch Code</i> field of the "Financial Institutions" form ("Full -> Configuration Setup -> Main Tables -> Financial Institutions"). If the file recipient is not found, the file is rejected. Third symbol: when this value is set to "Y", a correspondence check is performed for the file sender (the value of the DocFile\FileHeader\Sender field) with the <i>Branch Code</i> field of the "Financial Institutions" form for the recipient's financial institution. It is recommended to use the "Y" value for interaction with the banking system. The default value of the parameter is "YNN".
File posting status after FPLP	NEXT_FILE _DOC_STA TUS	FILE_FINISH	Posting status	The status of the file header document after file postload processing. The default value is "C" (Closed).
Batches posting status after FPLP	NEXT_BAT CH_DOC_ STATUS	FILE_FINISH	Posting status	The status of the batch header after file postload processing. The default value is "W" (Waiting).
Check Zero Transaction Amount	CHECK_ZE RO_TRAN S_AMOUN T	DOC	Y/N	Check for zero amount of transaction. When the value of this parameter is "Y", if the transaction amount (value of the DocFile\DocList\Doc\Transaction\ Amount field) is equal to zero, the document is rejected. The default value is "Y".
Check Source Registration Number	CHECK_S OURCE_R EG_NUMB ER	DOC	Y/N	Check for uniqueness of SRN (Source Registration Number). When the value of this parameter is "Y", a check is performed; when the value is "N", no check is performed. The default value is "N".

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Parameter	Parameter code	Processing stage	Value	Defininition
Find Source Contract	FIND_SOU RCE_CON TRACT	DOC	<y n=""><y <br="">N></y></y>	Search for source contract. First symbol: if the value is set to "Y", a search is made; if the value is "N", no search is made. Second symbol: if the value is set to "Y", a search is made taking into account the financial institution, which is specified by the values of the Source Member ID and Receiver Member ID; when the value is set to "N", the search is made without regard for the financial institution. A search for the source contract is made according to the contract number, and if such number is not specified, by the RBS number of the contract. When searching by contract RBS number, the main contract is searched for first. Moreover, the uniqueness of the contract number is checked. If the source contract is not found or the number is not unique, the document is rejected. The default value is "NN".
Find Target Contract	FIND_TAR GET_CON TRACT	DOC	<y n=""><y <br="">N></y></y>	Search for target contract. First symbol: when the value is set to "Y", a search is made; when "N" is specified, no search will be made. Second symbol: when the value is set to "Y", a search will be made taking into account the financial institution which is specified by the values of the Source Member ID and (Receiver Member ID; when the value is set to "N", a search is made without regard for the financial institution. A search for the target contract is made according to the contract number or if such number is not specified, by the contract's RBS number. When searching by the contract is RBS number, the main contract is searched for first. Moreover, the uniqueness of the contract number is checked. If the contract is not found or the number is not unique, the document is rejected. The default value is "YN".

Parameter	Parameter code	Processing stage	Value	Defininition
Check Target Client	CHECK_TA RGET_CLI ENT	DOC	<y n=""><y, F,L,R><y <br="">N></y></y, </y>	Check that there is a client for the target contract. First symbol: when the value is set to "Y" a check will be performed; no check will be performed if the value is set to "N". Second symbol: the type of check: "Y" — the value of the SHORT_NAME field of the CLIENT table is checked. "F" — the values of the FIRST_NAM, LAST_NAM and FATHER_S_NAM fields of the CLIENT table are checked. "L" — the value of the CLIENT_NUMBER field of the CLIENT table is checked. "R" — the value of the REG_NUMBER field of the CLIENT table is checked. Third symbol: when the value is set to "Y", a check is performed according to the custom procedure "CUST_FPLP_STR_CMP"; when the value is set to "N", a standard check is performed. If the client check failed, the document is rejected. The default value is "NYN".
Pay to Main Contract	PAY_TO_M AIN_CONT RACT	DOC	Y/N	When this parameter has the "Y" value, the target contract will be replaced by its parent contract; when the parameter value is "N" the contract will not be replaced. If an error occurs during the search for the parent contract, the document is rejected. The default value is "Y".

Parameter	Parameter code	Processing stage	Value	Defininition
Check Amount Available	CHECK_A MOUNT_A VAILABLE	DOC	<y n=""><t, F,B></t, </y>	Check for available funds. First symbol: when the "Y" value is set, a check will be performed for available funds; when the "N" value is set, no check will be performed. Second symbol – type of check: "T" – a check is performed taking into account only the transaction amount. "F" – a check is performed taking into account the transaction amount and source fee amount. "B" – a check is performed taking into account the amount that will actually be withdrawn as a result of this transaction. If available funds are not sufficient, the document will be rejected. The default value is "NT".
Partial Amount Charge-Off	PARTIAL_A MOUNT_C HARGE_O FF	DOC	<y n=""><t, F,B></t, </y>	Payment for available amount. First symbol: when the "Y" is set, payment will be made for the available amount; when the value is set to "N", payment will not be made. Second symbol – type of payment: "T" – payment is made taking into account only the transaction amount. "F" – payment is made taking into account the transaction amount and the source fee amount. "B" – payment is made taking into account the amount that can actually be withdrawn as a result of this transaction. If available funds are less than the funds it is necessary to withdraw, the available amount will be withdrawn and the original amount will be saved in the ADD_INFO field of the DOC table as the tag "REQUESTED_AMOUNT". The default value is "NT".

Parameter	Parameter code	Processing stage	Value	Defininition
Rest Amount Charge-Off	REST_CHA RGE_OFF	DOC	Y/N	Withdrawal of balance from contract account. When this parameter is set to "Y" the balance will be withdrawn; if it is set to "N", the balance will not be withdrawn. This procedure is applied only to those documents whose source message code has the prefix "0". After determining the balance, this balance is placed in the TRANS_AMOUNT and SETTL_AMOUNT fields of the document. Moreover, the prefix "0:" will be deleted from the document. The default value is "Y".
Approve Document	APPROVE_ DOC	DOC	Y/N	When this parameter is set to "Y", a procedure to approve the document is started. If an error occurs when approving the document, the document is rejected. The default value is "Y".
Commit Interval	COMMIT_I NTERVAL	DOC	Number	The parameter determines the number of successfully processed documents after which changes are committed to the WAY4 database. If the parameter is not set, commit will be performed at the end of the FPLP process (if commit isn't performed by other procedures).
Approve Batch	APPROVE_ BATCH	BATCH_FINI SH	<y n=""><y <br="">N></y></y>	Batch approval. First symbol: when this parameter is set to "Y", the batch will be approved; when the "N" value is set, it will not be approved. Second symbol: when the value is set to "Y", the transaction amount and settlement amount is recalculated for the batch; if the value is set to "N", no recalculation is performed. It is necessary to use the "Y" value is only if the parameter "Partial Amount Charge-Off" is specified. The default value is "YN".

Parameter	Parameter code	Processing stage	Value	Defininition
Set Balance	SET_BALA NCE	DOC	<y n=""><y <br="">N><y n="">< Y/N></y></y></y>	Change of contract balance. This parameter should only be used when loading files with the "BALANCE" type. First symbol: when the value is set to "Y", the contract balance will be changed; when the value is "N", it will not be changed. Second symbol: when the value is set to "Y", a correspondence check of the balance currency with the contract currency is performed. If the currencies do not correspond, the document is rejected. Third symbol: when the value is set to "Y", only the balances of those accounts for which the "Is Am Av" parameter has the "Yes" value will appear on the contract balance. When the "N" value is set, the balances of all accounts will appear on the contract balance. Moreover, in both cases, a check is performed for the existence of these accounts in the system. Fourth symbol: when the "Y" value is set, a message will be added to the process log about the processing of contracts whose balance did not change as a result of loading. The default value is "YYYN".

Format of Messages Generated during FPLP

During FPLP, it is possible to generate messages for each document. For the correct export of messages in a response file, the message format must be observed.

The following message types exist in the system:

- "Information"
- "Warning"
- "Error"

Message format: "FPLP<Code>-<Message>", where <Code> is the message code consisting of three digits (the codes "000"-"900", as well as "999" cannot be used in custom procedures); <Message> is the message text.

In a UFX document, messages are contained in the aggregate $DocFile\DocList\Doc\Status\TransitStatuses$, and the RespAppId field contains the "FPLP" value.