RBC Investor & Treasury Services

STRAIGHT THROUGH ENTRY

CUSTODY

Technical specifications for file interface Forex

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Introduction

This document describes RBC Investor & Treasury Services proprietary file format and structure to be sent using secured STP connections.

Trades can be sent via STP using 2 different protocols:

The HTTP protocol (HTTPS)

This protocol is available on our secured web portal "Investor Services Online" https://online.rbcis.com. Authorized transactions can be manually keyed or uploaded, checked and confirmed on a one-by-one basis or by batch processing. Only confirmed transactions are executed. Unconfirmed transactions remain pending until cancelled.
After confirming all transactions, you should receive the following message: "No pending transaction."

The FTP protocol (SFTP - PUT METHOD)

This process is an automated way to post encrypted transactions on our server using a secured connection. You send a first file with the extension *filename*.stp.pgp or *filename*.stp.gpg with the trades, and to notify us the end of the trade, you send an empty file with the extension *filename*.stp.ok (just keep the same filename).

There are 4 possible technical confirmation messages:
- **.ack** return receipt to confirm the successful delivery of your file to our server;
- **.nack** return receipt to confirm the non-delivery of your file;
- **.sok** return receipt indicates that the file we received was properly formatted and has been inserted;
- **.sko** return receipt indicates that the file needs to be repaired and sent back.

Also for FTP Protocol, you will have the possibility to consult the status return online using Investor Services Online.

Each transaction type has a specific file format corresponding to a distinct layout description. Please advise your relationship manager in case you require further information on the interfaced transactions types available.

Please note that it is not required to send a separate file by transaction type if you plan to interface more than one type. In other words, a STP file can be made of different transaction types.

Important notices

An: The maximum length allowed is **n** alphanumeric characters;

Nn.d: Numeric field for **n** digits before the decimal place and **d** digits after;

STP col.:   **M** for mandatory fields, **O** for optional fields and **C** for conditional fileds. The file transfer will only be accepted if all the mandatory fields are filled in.

A maximum of 1000 trades per file can be uploaded.

The following special characters are not supported: **< > \ / " ' &**

With this layout you are able to handle the trade in Linked Deals.

File interface

The same file description will be used for collecting STP data and sending back the results.

- The file is in TXT format;
- The field separator is the semicolon ";" and field values are free (without any quote);
- The decimal separator is the dot "."

Fields are described below and listed in the same order as in the file. A new line follows the file header, and then a new line follows each trade in the file body.

File Header

FIELD	FORMAT	IN / OUT	M / O	RULE
FROM	A30	IN	M	your user ID
TO	A30	IN	M	RBC
DATE	A8	IN	O	YYYYMMDD
TIME	A6	IN	O	HHMMSS
PATH	A200	IN	O	Path of file
NAME	A30	IN	M	Name of file. This name is unique for each new file sent
EXTNAME	A30	IN	O	Extension of file
ANSWER1	A30	IN	O	Transfer method: FTP_CUS / HTTP_CUS
COUNT	N6	IN	M	Number of trades in the file. Used for file consistency checking

The User ID is provided by our Client Services Manager.

File Body and specifications per operation type

O / M / C: Optional / Mandatory / Conditional.

#	FIELD	DESCRIPTION	FORMAT	M/O/C	RULES
1	ACTION	Action code	A30	M	CREATE/DELETE
2	EMETTEUR	Your User ID	A16	M	
3	REF-EXT	Your trade reference number	A16	M	Must be unique for each trade.
4	INTERNAL_ORIGID		A16	O	
5	INTERNAL_ID		A16	O	
6	INTERNAL_STATUS		A20	O	
7	EXTERNAL_ORIGID		A16	O	
8	EXTERNAL_ID		A20	O	
9	EXTERNAL_STATUS		A20	O	
10	DATE_OUT		A8	O	
11	TIME_OUT		A6	O	
12	ERROR_MESSAGE		A70	O	
13	OPE_TYP	Operation type	A3	M	FGX for Spot, FWX for Forward
14	MGP	Fund were the trades are input	A16	M	RBC Investor & Treasury Services Portfolio Reference Code
15	SEL-CUR	Sell Currency	A3	M	ISO 4217
16	SEL-AMT	Sell Amount	N13.4	M	
17	BUY-CUR	Buy Currency	A3	M	ISO 4217
18	BUY-AMT	Buy Amount	N13.4	M	
19	CLI-RATE	Client Rate	N9.6	M	
20	BRK-REF	Broker reference	A11	M	BIC or Z Code
21	BRK-DES	Custodian Reference	A30	M	
22	TRA-DAT	Trade Date	A8	M	YYYYMMDD
23	SET-DAT	Settlement Date	A8	M	YYYYMMDD
24	INT-TXT	Comment	A35	O	

#	FIELD	DESCRIPTION	FORMAT	M/O/C	RULES
25	COM-TXT	External Comment	A35	O	
26	FM-TXT	Fund Manager Reference	A35	O	Investor Services Online Fund Ref Number
27	PAY-INS	Payment Instruction	A35	M	
28	DEX-CUS-BUY-REF	RBCIS Custodian Swift	A11	O	BIC Code
29	DEX-CUS-BUY-REF-LIB	RBCIS Custodian Reference	A35	O	Designation
30	DEX-CUS-BUY-REF-SAFE	RBCIS Custodian Account Number	A35	O	
31	DEX-CUS-BUY-REF-CITY	RBCIS Custodian Town Designation	A35	O	
32	DEX-CUS-BUY-REF-NCSC	RBCIS Custodian	A15	O	//XX + 11 car
33	DEX-CUS-SALE-REF	RBCIS Custodian Swift	A11	O	BIC Code
34	DEX-CUS-SALE REF-LIB	RBCIS Custodian Designation	A.35	O	
35	DEX-CUS-SALE-REF-SAFE	RBCIS Custodian Account Number	A35	O	
36	DEX-CUS-SALE-REF-NCS	RBCIS Custodian	A15	O	//XX + 11 car
37	INT-REF	Intermediary Swift	A11	C	M if INT-REF-LIB filled
38	INT-REF-LIB	Intermediary Designation	A35	C	M if INT-REF filled
39	CUS-BEN-REF	Receiving Agent Swift	A11	C	BIC Code / M if CUS-BEN-LIB filled
40	CUS-BEN-LIB	Receiving Agent Designation	A35	C	M if CUS-BEN-REF filled
41	CUS-BEN-REF-NCSC	Receiving Agent	A15	O	//XX +11 car
42	CUS-BEN-REF-SAFE	Receiving Agent Account Number	A35	M	
43	BEN-REF	Beneficiary Instit Swift	A11	C	M if available. BIC Code.
44	BEN-REF-LIB	Beneficiary Instit Designation	A35	M	
45	BEN-REF-SAFE	Beneficiary Instit Account Number	A35	O	
46	BEN-REF-NCSC	Beneficiary Instit	A15	O	//XX + 11 car
47	HDG-SEC-TYP	Type of Code. See Below.	A10	O	
48	HDG-SEC-CODE	Security Code	A12	O	

Field description

26. FM-TXT
Additional comment available from the fund manager.

27. PAY-INS
This field specifies the payment instructions for the operation.

28. DEX-CUS-BUY-REF
Receiving agent.
This field identifies the BIC CODE of the financial institution where the payee will receive the amount bought.

29. DEX-CUS-BUY-REF-LIB

This field identifies the NAME of the financial institution where the payee will receive the amount bought.

30. DEX-CUS-BUY-REF-SAFE

This field identifies the account number of the financial institution where the payee will receive the amount bought.

31. DEX-CUS-BUY-REF-CITY

This field identifies the city of the financial institution where the payee will receive the amount bought.

32. DEX-CUS-BUY-REF-NCSC

This field identifies the National Clearing System Code (NCSC) of the financial institution where the payee will receive the amount bought.

33. DEX-CUS-SALE-REF

Delivery agent
This field identifies the BIC CODE of the financial institution from which the payer will transfer the amount sold.

34. DEX-CUS-SALE-REF-LIB

This field identifies the name of the financial institution from which the payer will transfer the amount sold.

35. DEX-CUS-SALE-REF-SAFE

This field identifies the account of the financial institution from which the payer will transfer the amount sold.

36. DEX-CUS-SALE-REF-NCS

This field identifies the NCSC of the financial institution from which the payer will transfer the amount sold. This field may be used to indicate a national clearing system code.
- BL: German Bankleizahl, (+ 6 digits);
- SC: Branch Sort Code Chaps, (+ 6 digits);
- FW: Rounding Number Fedwire (+9 digits).

41. CUS-BEN-REF-NCSC

This field identifies the financial institution and NCSC where the payee will receive the amount sold. This field may be used to indicate a national clearing system code.
- BL: German Bankleizahl, (+ 6 digits)
- SC: Branch Sort Code Chaps, (+ 6 digits)
- FW: Rounding Number Fedwire (+9 digits)

42. CUS-BEN-REF-SAFE

This field identifies the financial institution and account where the payee will receive the amount sold.

43. BEN-REF
This field identifies the BIC CODE of the institution in favour of which the payment is done.

44. BEN-REF-LIB
This field identifies the NAME of the institution in favour of which the payment is done.

45. BEN-REF-SAFE
This field identifies the ACCOUNT NUMBER of the institution in favour of which the payment is done.

46. BEN-REF-NCSC
This field identifies the NCSC of the institution in favour of which the payment is done.

47. HDG-SEC-TYP

List of possible values:
- GB: SEDOL
- IC: ISIN (strongly recommended)
- TK: TELEKURS
- US: CUSIP

48. HDG-SEC-COD
Security Description

With fields HDG-SEC-TYP and HDG-SEC-COD the system can determine automatically the share type.

Example of transaction

USERID;RBC;20080119;1030;;Filename20080226001;TXT;HTTP_CUS;1
CREATE;USERID;Cust20080119-
05;;;;;;;;;;;FGX;TEST;EUR;37716.87;NOK;300000;7.954;FETALULLISV;FETALULLISV;20070721;2
0070721;;;;;;;;;;;;;;;;;;FETALULLISV;FETALULLISV;;FETALULLISV;FETALULLISV;FETALULLISV;;A