RBC Investor & Treasury Services

STRAIGHT THROUGH ENTRY

ACCOUNTING

Technical specifications for file interface
Options / Futures – Linked Deal

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Introduction

This document describes RBC Investor & Treasury Services proprietary file format 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 injected;
- **.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_ACC / HTTP_ACC
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.

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

#	FIELD	DESCRIPTION	FORMAT	O/M/C	RULES
1	ACTION		A30	M	CREATE/DELETE
2	SOURCE_ORIGID		A16	M	Your User ID
3	SOURCE_ID	Your trade reference number	A11	M	Must be unique
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	LNK-TRD	Indicates if the trade is in a lot of trades	A1	O	Y / N
14	STG-NME	Strategy Name	A35	O	
15	LOT-ID		A35	C	M if LNK-TRD=Y
16	TRD-NBR	Transaction Number in the Lot	A3	C	M if LNK-TRD=Y
17	TOT-TRD	Total Trades in the Lot	A3	C	M if LNK-TRD=Y
18	OPE_TYP	Operation Type	A3	M	Cf Table
19	MGP	Is the Fund were the trades are to be input	A16	M	RBC Investor & Treasury Services Portfolio Reference Code
20	FM-TXT	Fund Manager Reference	A6	O	Investor Services Online Fund Ref Number
21	ISS-TYP	Issuer Quality	A3	M	Cf Table
22	SEC-COD	Security Code	A12	M	National Security Number
23	ISS-REF	Contract Number	A16	M	
24	INST-CODE	Type of Future ID Number	A3	M	Cf Table
25	OPT-TYP	Type of Option	A3	C	M for Options: CAL/PUT
26	SEC-DES	Security Description	A35	M	
27	TYP-TRT	Treatment Type: Opening / Closing / Continuing	A4	M	O / C / T. Cf Table
28	TRA-DAT	Trade Date	A8	M	YYYYMMDD
29	SET-DAT	Settlement Date	A8	M	YYYYMMDD
30	MAT-DAT	Maturity Date	A8	M	YYYYMMDD
31	QTY	Quantity	N13.4	M	
32	TRS-CUR	Trade Currency	A3	M	ISO 4217
33	PRI	Price	N13.6	M	
34	TRS-GRO-AMT	Transaction Gross Amount	N13.4	M	In TRS-CUR. See comment below

#	FIELD	DESCRIPTION	FORMAT	O/M/C	RULES
35	INI-MAR	Contract Size	N13.4	O	
36	FEE-CUR	Transaction Fees Currency	A3	M	ISO 4217
37	BRK-FEE	Brokerage Fee	N13.4	O	MF Code = 21 (B) or 28 (S)
38	CLR-FEE	Clearing Brokerage Fee	N13.4	O	MF Code = F1
39	NFA-FEE	Clearing Fees -> Clearing House	N13.4	O	MF Code = F2
40	CUS-FEE	Custodian Fee	N13.4	O	MF Code = F3
41	FEE-AMT	Management Company Fees Amount	N13.4	O	MF Code = F4
42	SCUS-FEE	Sub-Custodian Fee	N13.4	O	MF Code = F5
43	TRS-NET-AMT	Transaction Net Amount	N13.4	M	In TRS-CUR. See comment below
44	SET-CUR	Settlement Currency	A3	M	ISO 4217
45	CHG-RAT	Exchange Rate	N9.6	C	M if <>0
46	SET-NET-AMT	Settlement Net Amount	N13.4	M	In SET-CUR. See comment below
47	BRK-REF	Broker reference	A11	M	BIC or Z Code
48	BRK-DES	Custodian Reference	A30	M	
49	CLR-BRK-REF	Clearing Broker Reference	A11	M	BIC or Z Code
50	CLR-BRK-DES	Clearing Broker Description	A30	O	
51	INT-REF	Intermediary Swift	A11	C	M if INT-REF-LIB filled
52	INT-REF-LIB	Intermediary Designation	A35	C	M if INT-REF filled
53	CUS-BEN-REF	Receiving Agent Swift	A11	C	BIC Code / M if CUS-BEN-LIB filled
54	CUS-BEN-LIB	Receiving Agent Designation	A35	C	M if CUS-BEN-REF filled
55	CUS-BEN-REF-NCSC	Receiving Agent	A15	O	//XX +11 car
56	CUS-BEN-REF-SAFE	Receiving Agent Account Number	A35	O	
57	BEN-REF	Beneficiary Instit Swift	A11	O	BIC Code
58	BEN-REF-LIB	Beneficiary Instit Designation	A35	O	
59	BEN-REF-SAFE	Beneficiary Instit Account Number	A35	O	
60	BEN-REF-NCSC	Beneficiary Instit	A15	O	//XX + 11 car
61	COM-TXT	External Comment	A35	O	
62	DEAL-TYP	Deal Type (Trading / Hedging)	A1	M	T / H
63	EUR_US_FLG	EUR-US Option	A3	O	EUR / US
64	STR-PRI	Strike Price	N14.6	O	
65	QUO_PLC	Quotation Place	A30	O	
66	UND_SEC_COD	Underlying Sec. Identification	A12	O	
67	UND_SEC_TYP	Underlying Sec. Identification Type	A3	C	M if UND_SEC_COD <> null
68	UND_SEC_DES	Underlying Sec. Description	A30	O	
69	TIC_BBG	Ticket Bloomberg Code	A30	O	
70	TYPE PARTS	Share Class for advanced hedging on derivatives	A4	O	

Field description

1. ACTION
- CREATE: For new trade
- DELETE: For Reversal

18. OPE-TYP / 27. TYP-TRT

OPERATION TYPES CODIFICATION	DESIGNATION
AFP	Accounting Future Purchase
AFS	Accounting Future Sell
AFPID	Accounting Future Purchase Intraday
AFSID	Accounting Future Sell Intraday
AOP	Accounting Option Purchase
AOS	Accounting Option Sell

PRODUCT	MF CODE	DESCRIPTION	ACTION	OPE-TYP	TYP-TRT	ACC. METHOD
OPTIONS	OP02	Opening Long Contract	CREATE	AOP	O	AUTO FIFO
	OP03	Reversal of Opening Long Contract (after an OP02)	DELETE	AOP	O	
	OP12	Continuing Long Contract	CREATE	AOP	T	
	OP13	Reversal of Opening Long Contract (after an OP12)	DELETE	AOP	T	
	OP22	Closing Long contract	CREATE	AOS	C	
	OP23	Reversal of Closing Long Contract	DELETE	AOS	C	
	OP32	Opening Short Contract	CREATE	AOS	O	
	OP33	Reversal of Opening Short Contract	DELETE	AOS	O	
	OP42	Continuing Short Contract	CREATE	AOS	T	
	OP43	Reversal of Continuing Short Contract	DELETE	AOS	T	
	OP52	Closing Short Contract	CREATE	AOP	C	
	OP53	Reversal of Closing Short Contract	DELETE	AOP	C	

PRODUCT	MF CODE	DESCRIPTION	ACTION	OPE-TYP	TYP-TRT	ACC. METHOD
FUTURES	FU12	Opening Long Contract	CREATE	AFP	O	AUTO FIFO
	FU13	Reversal of Opening Long Contract	DELETE	AFP	O	
	FU22	Continuing Long Contract	CREATE	AFP	T	
	FU23	Reversal of Continuing Long Contract	DELETE	AFP	T	
	FU32	Closing Long contract	CREATE	AFP	C	
	FU33	Reversal of Closing Long Contract	DELETE	AFS	C	
	FU42	Opening Short Contract	CREATE	AFS	O	

PRODUCT	MF CODE	DESCRIPTION	ACTION	OPE-TYP	TYP-TRT	ACC. METHOD
	FU43	Reversal of Opening Short Contract	DELETE	AFS	O	
	FU52	Continuing Short Contract	CREATE	AFS	T	
	FU53	Reversal of Continuing Short Contract	DELETE	AFS	T	
	FU62	Closing Short Contract	CREATE	AFS	C	
	FU63	Reversal of Closing Short Contract	DELETE	AFP	C	
	FU12	Opening/Continuing (Buy) Long Contract	CREATE	AFP	O	
	FU72	Opening/Continuing (Buy) Long Contract Intraday	CREATE	AFPID	O	
	FU23	Reversal of Opening (Buy) Long Contract	DELETE	AFP	T	
	FU23	Reversal of Opening (Buy) Long Contract Intraday	DELETE	AFPID	T	
	FU42	Closing (Sell) Long Contract	CREATE	AFS	O	
	FU82	Closing (Sell) Long Contract Intraday	CREATE	AFSID	C	
	FU53	Reversal of Closing (Sell) Long Contract	DELETE	AFS	T	FIFO BACKTRADED
	FU53	Reversal of Closing (Sell) Long Contract Intraday	DELETE	AFSID	T	
	FU42	Opening/Continuing (Sell) Short Contract	CREATE	AFS	O	
	FU92	Opening/Continuing (Sell) Short Contract Intraday	CREATE	AFSID	O	
	FU53	Reversal of Opening (Sell) Short Contract	DELETE	AFS	T	
	FU53	Reversal of Opening (Sell) Short Contract Intraday	DELETE	AFSID	T	
	FU12	Closing (Buy to cover) Short Contract	CREATE	AFP	O	
	FUA2	Closing (Buy to cover) Short Contract Intraday	CREATE	AFPID	C	
	FU23	Reversal of Closing (Buy to cover) Short Contract	DELETE	AFP	T	
	FU23	Reversal of Closing (Buy to cover) Short Contract Intraday	DELETE	AFPID	T	

21. ISS-TYP

ISSUER QUALITY CODIFICATION	DESIGNATION
AFM	Announcement Fund Manager
EFM	Execution Fund Manager
EBK	Execution Broker
CBN	Clearing Broker Notification

24. INST-CODE
The Bloomberg Unique Identifier (B1) is strongly recommended (Not Ticker Bloomberg)
Otherwise:
- CV if you can provide in SEC-COD our Accounting system product number
- CB if you provide your internal product identification. In this case you must populate some identified fields (please take contact with RBC IS to have more details)
34. TRS-GRO-AMT / 43. TRS-NET-AMT / 46. SET-NET-AMT

All amounts, including fees, must have a number of decimals which match the currency (i.e. 2 decimals for USD, EUR, …).

67. UND_SEC_TYP

List of possible values of the type of the security code:
- GB: SEDOL
- IC: ISIN (strongly recommended)
- TK: TELEKURS
- US: CUSIP
- CV: INTERNAL CODE MDF Code (RBC IS securities master file)
- BL: BLOOMBERG CODE

Example of transaction

USERID;RBCIS;20080319;130637;083500;FILE200803191306.stp;STP;FTP_ACC;1
CREATE;USERID;999650;;;;;;;20080319;125851;;N;;;0;0;AFP;PA7122;;EFM;IX4422065-0;VGH8;B1;;DJ EURO STOXX 50 FUTURE (VG);O;20080319;20080319;20080301;8.0000;EUR;3580.000000;286400.0000;10;;0.0000;;;0.0000;;;286400.0000;;;286400.0000;FIMAFRPP;;Z9044169;;;;;;;;;;;;;;T;EUR;;;;;;