



## STP FIX API Integration Guide

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## Overview

The STP FIX gateway provides customers a simple, reliable and fault tolerant mechanism to access execution reports for trades done via the Autobahn FX platform.

The STP FIX gateway relies on the FIX 4.2 protocol.

The STP FIX API Integration Guide is primarily intended for readers who will be implementing integration software that will connect to the Autobahn FX trading platform.

## Terminology

**STP FIX gateway** – software deployed in Deutsche Bank accepting FIX protocol connections, streaming FX trades execution reports to the customers.

**Client application** – an application connecting to the STP FIX gateway.

**Inbound message** – a message sent from a client application to the STP FIX gateway.

**Outbound message** – a message sent from the STP FIX gateway to the client application.

**Client certificate** – an X.509 certificate issued together with a unique FIX session ID to the customer. The combination of the FIX session ID and the certificate is used to authenticate a session for a client application.

**Currency pair** – a seven character uppercase abbreviation of a currency pair, conforming to the FIX convention. For example: EUR/USD, USD/JPY.

## Session Management

The client application connects to Deutsche Bank servers using the Internet or VPN. The data on the Internet channel is encrypted using SSL protocol. Deutsche Bank offers a signed X.509 certificate for authentication. The data on VPN channel is not encrypted.

## **Logon**

The client application should open a socket to initiate a FIX session over the trading connection. After the connection is established, the standard exchange of Logon messages should be initiated by the client application. The Logon message (as well as any other message transmitted over the FIX session) must contain a valid unique FIX session ID.

The client application must reset inbound sequence number to 1 in the beginning of every week. It is also possible to configure a client connection to reset sequence number on daily basis. Please contact the Client Integrations team if you require daily sequence reset.

## **Logout**

The STP FIX gateway closes all FIX sessions after Close of Business on Friday (5:00PM EST). The client application may close the session earlier by sending a Logout message. After the session is closed the client application must send Logon message to re-establish the session.





If the FIX session is closed in the middle of the week, then the client application must continue a new FIX session from the same sequence number.

## Fault Tolerance

The STP FIX gateway provides two connection points residing on independent installations. In case of hardware or network failure, the client application may decide to re-establish connection to the same connectivity point or connect to another connectivity point. The FIX session will be continued from the same point after the client application will establish the connection again. The standard FIX message recovery mechanism must be used by the client application to retrieve any messages missed due to temporary connectivity loss.

## Message Header and Trailer

This section describes header and trailer mandatory for all FIX messages.

### Inbound Message Header

The client application must increment the inbound message sequence (the MsgSeqNum tag) with every next message being sent. The value of the SenderCompID tag is the FIX session ID identifying the customer. This ID is created by the Client Integrations team and communicated to the client together with the client certificate.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
8	BeginString	Y	String	= 'FIX.4.2'.
9	BodyLength	Y	Int	Message length.
34	MsgSeqNum	Y	Int	Message sequence number.
35	MsgType	Y	String	Message type. Please refer sections below for valid message types.
52	SendingTime	Y	UTCTimestamp	Timestamp when the message was sent.
122	OrigSendingTime	N	UTCTimestamp	Present if the message was resent.
49	SenderCompID	Y	String	Unique FIX session ID.
56	TargetCompID	Y	String	= 'ABFX'.

### Outbound Message Header

The STP FIX gateway increments the outbound message sequence (the MsgSeqNum tag) with every next message being sent.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
8	BeginString	Y	String	= 'FIX.4.2'.
9	BodyLength	Y	Int	Message length.
34	MsgSeqNum	Y	Int	Message sequence number.
35	MsgType	Y	String	Message type. Please refer sections below for valid message types.
52	SendingTime	Y	UTCTimestamp	The timestamp when the message was sent.
122	OrigSendingTime	N	UTCTimestamp	Present if the message was resent.
49	SenderCompID	Y	String	= 'ABFX'.
56	TargetCompID	Y	String	FIX session ID the SenderCompID tag from the header of inbound messages.





## Message Trailer

All FIX message must be finished with a standard FIX trailer.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
10	Checksum	Y	String (3)	Message checksum.

## Session Messages

The section below describes session level messages supported by the STP FIX gateway.

### Logon (MsgType = A)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
98	EncryptMethod	Y	Int	= 0.
108	HeartBtInt	Y	Int	= 30.

### Heartbeat (MsgType = 0)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
112	TestReqID	N	String (32)	An ID from the Test Request message.

### Test Request (MsgType = 1)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
112	TestReqID	Y	String (32)	An ID returned back in Heartbeat message.

### Resend Request (MsgType = 2)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
7	BeginSeqNo	Y	SeqNum	A sequence number of the first message requested to be resent.
16	EndSeqNo	Y	SeqNum	A sequence number of the last message requested to be resent. Specify 0 (zero) to request resending of all messages starting from BeginSeqNo.

### Session Level Reject (MsgType = 3)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
45	RefSeqNum	Y	SeqNum	A sequence number of the rejected message.
48	Text	N	String (1024)	An explanation of message rejection.
371	RefTagID	N	Int	The tag number of the field being rejected.





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372	RefMsgType	N	String (64)	The MsgType of the rejected message.
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### Sequence Reset (MsgType = 4)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
36	NewSeqNo	Y	SeqNum	A new sequence number.
123	GapFillFlag	N	Boolean	Indicates that the Sequence Reset message is replacing administrative or application messages which will not be resent.

### Logout (MsgType = 5)

Both inbound and outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
58	Text	N	String (1024)	Logout reason.

### Execution Report Messages

Once a FIX connection is established the STP FIX gateway starts sending trade execution reports. The STP FIX gateway guarantees to send one Execution Report message for every trade executed on the Autobahn FX platform.

### Execution Report (MsgType=8)

Only outbound messages of this type are allowed.

TAG	FIX NAME	REQ	FORMAT	DESCRIPTION
37	OrderID	Y	String	Trade request ID specified by client.
11	ClOrdID	Y	String	Same as OrderID.
109	ClientID	Y	String	Autobahn FX client ID of a client who made the trade.
1	Account	Y	String	User ID of the user executed the trade.
17	ExecID	Y	String	Autobahn FX trade ID.
19	ExecRefID	N	String	Autobahn FX trade ID of the cancelled trade for a cancellation report.
21	HandlInst	Y	Char	= 1 (Automated execution order, private).
20	ExecTransType	Y	Char	0 = New, 1 = Cancel.
150	ExecType	Y	Char	= 2 (Fill).
39	OrdStatus	Y	Char	= 2 (Filled).
40	OrdType	Y	Char	'D' = Spot and Outright, 'G' = Swap.
55	Symbol	Y	String	Currency pair.
64	FutSettDate	Y	LocalMktDate	Trade value date for Spot and Outright. Value date of the near trade leg for Swaps.
54	Side	Y	Char	'1' = Buy, '2' = Sell. For swap trades indicates the side of the far leg.
38	OrderQty	Y	Qty	Notional amount of the trade. For swap trades the amount of the near leg.
14	CumQty	Y	Qty	Same as OrderQty.
32	LastShares	Y	Qty	Same as OrderQty.
151	LeavesQty	Y	Qty	= 0.
6	AvgPx	Y	Price	Same as LastPx
31	LastPx	Y	Price	Price of the near leg. Represent the sum of





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				LastSpotRate and LastForwardPoint.
194	LastSpotRate	Y	Price	Spot rate.
195	LastForwardPoints	N	PriceOffset	Forward points of the near leg. Present or Outright and Swap trades.
15	Currency	Y	String	Amount currency.
60	TransactTime	Y	UTCTimestamp	Timestamp of execution trade.
167	SecurityType	Y	String	= 'FOR'
193	FutSettDate2	N	LocalMktDate	Value date of the far trade leg for Swaps (OrdType='G').
192	OrderQty2	N	Qty	Notional amount of the far trade leg for Swaps (OrdType='G').
5191	LastForwardPoints2	N	PriceOffset	User-defined field. Extended for support FIX 4.3 field LastForwardPoints2 (641). Required for swap trades (OrdType='G'). Indicates the forward points for the price of far leg.
6160	FarLegPrice	N	Price	User-defined field. Required for swap trades (OrdType='G'). Price of the far leg. Represent the sum of LastSpotRate and LastForwardPoints2.
6666	NearLegSide	N	Char	User-defined field. Required for swap trades (OrdType='G'). Indicates the side of the near leg.
5544	QuotedCurrency	Y	String	User-defined field. Quoted currency of the trade.
6054	QuotedQty	Y	Qty	User-defined field. Notional amount in of the trade quoted currency.
6055	QuotedQty2	N	Qty	User-defined field. Notional amount of the far trade leg for Swaps (OrdType='G') in quoted currency.
6215	TenorValue	N	String	User-defined field. Required for swap and outright trades. Indicates tenor of the near leg.
6216	TenorValue2	N	String	User-defined field. Required for swap trades. Indicates tenor of the far leg.
5548	SwapPoints	N	Price	User-defined field. Required for swap trades. Swap points.
5549	FullName	Y	String	User-defined field. ABFX client full name.
5540	OldLastForwardPoints2	N	PriceOffset	Deprecated. Same as LastForwardPoints2 (5191).
5541	OldFarLegPrice	N	Price	Deprecated. Same as FarLegPrice (6160).
5542	OldNearLegSide	N	Char	Deprecated. Same as NearLegSide (6666).

## Examples

The section is provided to demonstrate common scenarios of message exchange between the client application and the STP FIX gateway. The messages sent over the trading connection are marked as 'Inbound' or 'Outbound' depending of the direction of transmit. Common header tags are usually omitted in the examples. Refer to [Message Header and Trailer](#) section for the header and trailer tags description.

## Session Messages

Logon (Beginning of the Week):







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DIRECTION	MESSAGE	COMMENT
Inbound	35=A•34=1•49=CPTY•56=ABFX•98=0•108=30	MsgSeqNum = 1.
Outbound	35=A•34=1•49=ABFX•56=CPTY•98=0•108=30	Logon confirmed.
Outbound	35=1•34=2•49=ABFX•56=CPTY•112=7382	Test request.
Inbound	35=0•34=2•49=CPTY•56=ABFX•112=7382	Heartbeat reply.

DIRECTION	MESSAGE	COMMENT
Inbound	35=A•34=567•49=CPTY•56=ABFX•98=0•108=30	MsgSeqNum != 1.
Outbound	35=5•34=1•49=ABFX•56=CPTY•58=Must reset sequence	Logon rejected.

Logon (Middle of the Week):

DIRECTION	MESSAGE	COMMENT
Inbound	35=A•34=567•49=CPTY•56=ABFX•98=0•108=30	Continue from the last sequence.
Outbound	35=A•34=534•49=ABFX•56=CPTY•98=0•108=30	Logon confirmed.
Outbound	35=1•34=568•49=ABFX•56=CPTY•112=7382	Test request.
Inbound	35=0•34=535•49=CPTY•56=ABFX•112=7382	Heartbeat reply.

Logout (User Requested):

DIRECTION	MESSAGE	COMMENT
Inbound	35=5•34=567•49=CPTY•56=ABFX	Logout request.
Outbound	35=5•34=1•49=ABFX•56=CPTY•58=User request	Logout response.

Logout (End of the Week):

DIRECTION	MESSAGE	COMMENT
Outbound	35=5•34=1•49=ABFX•56=CPTY•58=End of Week	Forced logout.
Inbound	35=5•34=567•49=CPTY•56=ABFX	Expected response.

## Execution Report Messages

Spot Trade Execution:

DIRECTION	MESSAGE BODY	COMMENT
Outbound	109=CPTY•37=BCH111444•11=BCH111444•21=1•20=0• 150=2•39=2•17=2877762•55=EUR/USD•64=20071017•54=1• 38=5000000•31=1.4275•6=0•60=20071015- 14:34:52.783•167=FOR•40=D•14=5000000•151=0•15=EUR	Buy 5M SPOT EUR for USD at 1.4275

Outright Trade Execution:

DIRECTION	MESSAGE BODY	COMMENT
Outbound	109=CPTY•37=BCH111445•11=BCH111445•21=1•20=0• 150=2•39=2•17=2877762•55=EUR/USD•64=20080823•54=2• 38=1000000•31=1.427522•194=1.4275•195=0.000022•6=0• 60=20071015-14:34:52.783•167=FOR•40=D•14=1000000• 151=0•15=USD	Sell 1M Outright USD at 1.427522. Settlement date: 23-Aug-2008

Swap Trade Execution:

DIRECTION	MESSAGE BODY	COMMENT
Outbound	109=CPTY•37=BCH111447•11=BCH111447•21=1•20=0• 150=2•39=2•17=2877764•55=EUR/USD•64=20071017•54=2• 38=1000000•31=1.427522•194=1.4275•195=0.000022•6=0•	Buy 1M USD at 1.427522 17-Oct-2007 and sell 2M USD at 1.460511 17-Nov-







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	60=20071015-14:34:52.783•167=FOR•40=G•14=1000000• 151=0•15=USD•193=20071117•192=2000000•5540=0.033011• 5541=1.460511•5542=1	1007
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Trade Cancellation:

DIRECTION	MESSAGE BODY	COMMENT
Outbound	109=CPTY•37=BCH111444•21=1•20=1•150=2•39=2• 17=2877762•19=2376558•55=EUR/USD•64=20071017•54=1• 38=5000000•31=1.4275•6=0•60=20071015- 14:34:52.783•167=FOR•40=D•14=5000000•151=0•15=EUR	Cancel the trade with Autobahn FX trade ID = 2877762.

## Integration

Deutsche Bank provides customers a User Acceptance Testing (UAT) environment available for client certification on 24/5 basis. The Client Integrations team is available by email [ecommerce.implementations@db.com](mailto:ecommerce.implementations@db.com) to provide assistance in integration, testing and certification.

## Certification

Connectivity details for the User Acceptance Testing.

LOCATION	NETWORK	POINT	CONNECTION
London	Internet	-	160.83.53.134:443

## Connectivity

The production connectivity points are listed in the table below. There is no difference between A and B points in one location.

LOCATION	NETWORK	POINT	CONNECTION
London	Internet	A	160.83.54.54:9001
London	Internet	B	160.83.37.37:9001
London	Radianz	A	206.190.124.63:9001
London	Radianz	B	206.190.124.196:9001

## Production Support

For any assistance, please contact Internet Support Group on one of the numbers below or by e-mail [fxo.isg@db.com](mailto:fxo.isg@db.com) (non urgent queries only):

UK Tel: 44 20 7547 5050  
 US Tel: 866-335-5050  
 Australia Tel: 1800 004 802  
 China Tel: 10800 650 0315  
 Hong Kong Tel: 800 96 6272  
 Indonesia Tel : 00 1803 657 763  
 India Tel : 000 800 650 1303  
 Japan Tel: 00531 650 113  
 Korea Tel: 00 798 651 7262  
 Macau Tel: 0800577  
 Malaysia Tel : 1800 80 6167





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New Zealand Tel: 08 004 90032  
Philippines Tel: 102 718 0065 070 73  
Singapore Tel: 1800 337 8077  
Taiwan Tel: 00801 651 708  
Thailand Tel : 00 1800 656 743

