

London Stock Exchange Derivatives Market

LSEDM102 - Connectivity Guide

Issue 2.0

14 December 2015



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1.0 Introduction

The purpose of this publication is to provide participants with the knowledge and technical details necessary for accessing the London Stock Exchange derivatives trading system.

The London Stock Exchange derivatives platform utilises a standard FIX 4.2 (Financial Information eXchange) interface for order entry & execution.

Participants can also use the native SOLA Access Information Language (SAIL) protocol for order entry & execution.

Market data is disseminated via HSVF (High-Speed Vendor Feed) protocol using TCP.

1.1 Purpose

The purpose of this document is to provide participants with information on how to connect to the London Stock Exchange derivatives platform for both the test Customer Development Service and the production service.

1.2 Readership

This document is a supporting document to the interface technical specifications. When read in conjunction with the other technical specifications, these documents provide all of the details London Stock Exchange participants require to obtain access to the derivatives trading system.

This document is particularly relevant to project and technical staff within member firms and companies that provide London Stock Exchange related services to member and non-member firms.

1.3 Document Series

This document is part of series of documents providing a holistic view of full trading and information services available from London Stock Exchange for derivatives trading.

For reference the full range of documents is outlined below:

- LSEDM102 Connectivity Guide (this document)
- LSEDM200 FIX 4.2 Business Design Guide
- LSEDM201 FIX 4.2 Technical Specification
- LSEDM300 SAIL Business Design Guide
- LSEDM301 SAIL Technical Specification
- LSEDM401 HSVF Market Data Specification
- LSEDM601 Guide to Certification FIX
- LSEDM602 Guide to Certification SAIL

1.4 Document History

Issue	Date	Description
1.0	30 September 2013	First issue of this document published.

		Updated with SOLA 8 Production SDC IP addresses for LSEDM and OB.
2.0	14 December 2015	
		Added details of new PDC SAIL gateway for LSEDM and OB.

1.5 Enquires

Contact Technical Account Management at London Stock Exchange for any functional queries regarding the services outlined in this document. Technical Account Management can be contacted Monday to Friday between 07:30 UK and 18:00 UK:

Telephone: +44 (0)20 7797 3939

Email: londontam@lseg.com

2.0 Connectivity Overview

2.1 Connectivity Protocol

London Stock Exchange uses TCP/IP (Transmission Control Protocol/Internet Protocol) for network connectivity. All FIX and native SAIL interface messages are transported using TCP. All data sent by the HSVF interface is broadcast via TCP unicast. London Stock Exchange only supports IPv4.

2.2 Services

London Stock Exchange provides a gateway to enter orders and receive market data.

2.2.1 SAIL Trading Gateway

The SAIL trading gateways provide a native low-latency trading interface which allows participants to send and manage orders on the trading system. The SAIL protocol in addition provides market-marking functionality via quoting messaging. The interface enables clients to perform the following activities:

- Submit an order
- Cancel an order
- Mass Cancel orders
- Cancel/Replace an order
- Market-Making

The SAIL trading gateway uses a proprietary interface referred to as the native interface.

2.2.2 FIX Trading Gateway

The FIX 4.2 trading gateway allows participants to send and manage orders on the trading system. The interface enables clients to perform the activities outlined below.

- Submit an order
- Cancel an order
- Mass Cancel orders
- Cancel/Replace an order

The entry of quotes for market-making is not supported by the FIX trading gateway. The FIX trading gateway uses the FIX 4.2 protocol.

2.2.3 Market Data Gateway

The HSVF market data feed is comprised of trades, quotes, market depth, strategies, bulletins, summaries and statistics.

The HSVF market data feed uses a TCP/IP broadcast interface. Each message type is fixed in format and messages are non-blocked (i.e. London Stock Exchange does not wait for an acknowledgement before sending the following message) re-transmission of any data is available.

HSVF messages consist of a standard message header followed by the message body which varies in format according to the message type.

Messages transmitted by HSVF include:

- Trades
- Request for Quotes
- Quotes
- Market Depth
- Trade Cancellation
- Instrument Keys
- Instrument Summaries
- Administration messages including connection and "heartbeat" etc

2.2.4 BTS and BCS Applications

The Borsa Italiana Systems (BItS) Trading Station (BTS) Service allows access to London Stock Exchange derivatives trading services. In addition, it is also used to access all other London Stock Exchange Group cash, fixed income and derivatives markets.

The BltS Clearing Station (BCS) allows access to London Stock Exchange derivatives clearing services provided on CC&G technology.

The applications enable access through a client-server trading software application and through a FIX 4.2 gateway. The server layer is located at the London Stock Exchange derivatives data centre that is connected directly to the markets. The client application runs on the member's own computers. The client application is an advanced multi-market trading application, compatible with a majority of Windows and Linux based operating systems.

2.3 Connection Options

Participants are able to connect to the London Stock Exchange derivatives platform via London Stock Exchange Extranex, CMC, co-location hosting or VPN connectivity. London Stock Exchange also supports third-party leased-line connectivity.

2.4 Architecture

The London Stock Exchange derivatives platform consists of the following gateways:

- A single endpoint (IP address and port) interface for FIX trading.
- A single endpoint interface for SAIL trading & market-making.
- A single endpoint interface for HSVF market data services.
- Two endpoint interfaces each are provided for BTS trading and BCS post-trade services respectively.

Each FIX, SAIL, HSVF and BTS & BCS endpoint is supplemented with a secondary standby which is invoked during a failover in the event of an issue occurring with the primary.

An equivalent configuration of primary and secondary standby interfaces are present at a secondary datacentre which is invoked in the event of a disaster recovery situation. The endpoints (IP addresses and ports) of the secondary disaster recovery datacentre site are equivalent to those of the interfaces located at the primary datacentre site. However with the release of SOLA 8 (February 2016) the endpoints of the secondary datacentre will be updated as detailed in section 3.2.

2.5 Disaster Recovery

London Stock Exchange operates in cold standby mode. In the event of total loss of the primary site datacentre, London Stock Exchange activates the disaster recovery site. This procedure is expected to elapse in the order of 2 hours.

Once the disaster recovery site is active, all intraday orders are cleared and the trading system re-started. Prior Good Till Date orders submitted from previous days are re-instated.

3.0 Connectivity

3.1 Customer Development Service (CDS) Test Platform

3.1.1 CDS Trading Services

LONDON STOCK EXCHANGE Equity Derivatives			
Service	IP Address	TCP Port	
FIX Trading	194.169.14.164	51350	
SAIL Trading	194.169.14.162	51300	
SAIL Drop Copy	194.169.14.162	51305	
BTS Trading	194.169.14.168	34900 (UDP 13)	
BCS Clearing	194.169.14.170	34900 (443)	

OSLO BORS			
Service	IP Address	TCP Port	
FIX Trading	194.169.13.164	51351	
SAIL Trading	194.169.13.162	51301	
SAIL Drop Copy	194.169.13.162	51306	
BTS Trading	194.169.13.168	34900 (UDP 13)	
BCS Clearing	194.169.13.170	34900 (443)	

3.1.2 CDS Information Services

LONDON STOCK EXCHANGE Equity Derivatives				
Service	IP Address	TCP Port		
HSVF Market Data	194.169.14.166	52300		
OSLO BORS				
Service	IP Address	TCP Port		
HSVF Market Data	194.169.13.166	52301		

3.2 Production Platform

3.2.1 Production Trading Services

LONDON STOCK EXCHANGE Equity Derivatives				
Service	Channel	IP Address	TCP Port	
FIX Trading	Primary	194.169.14.132	61350	
SAIL Trading 01	Primary	194.169.14.130	61300	
SAIL Trading 02 (Available in SOLA 8)	Primary	194.169.14.130	61302	
SAIL Drop Copy	Primary	194.169.14.130	61305	
FIX Trading (Available in SOLA 8)	Secondary	194.169.14.150	61350	
SAIL Trading 01 (Available in SOLA 8)	Secondary	194.169.14.148	61300	
SAIL Trading 02 (Available in SOLA 8)	Secondary	194.169.14.148	61302	
SAIL Drop Copy (Available in SOLA 8)	Secondary	194.169.14.148	61305	
BTS Trading 01	Primary / Secondary	194.169.14.134	34900 (UDP 13)	
BTS Trading 02	Primary / Secondary	194.169.14.135	34900 (UDP 13)	
BCS Clearing 01	Primary / Secondary	194.169.14.136	34900 (443)	
BCS Clearing 02	Primary / Secondary	194.169.14.137	34900 (443)	

OSLO BORS				
Service	Channel	IP Address	TCP Port	
FIX Trading	Primary	194.169.13.132	61351	
SAIL Trading 01	Primary	194.169.13.130	61301	
SAIL Trading 02 (Available in SOLA 8)	Primary	194.169.13.130	61303	
SAIL Drop Copy	Primary	194.169.13.130	61306	
FIX Trading (Available in SOLA 8)	Secondary	194.169.13.150	61351	
SAIL Trading 01 (Available in SOLA 8)	Secondary	194.169.13.148	61301	
SAIL Trading 02 (Available in SOLA 8)	Secondary	194.169.13.148	61303	

OSLO BORS				
SAIL Drop Copy (Available in SOLA 8)	Secondary	194.169.13.148	61306	
BTS Trading 01	Primary / Secondary	194.169.13.134	34900 (UDP 13)	
BTS Trading 02	Primary / Secondary	194.169.13.135	34900 (UDP 13)	
BCS Clearing 01	Primary / Secondary	194.169.13.136	34900 (443)	
BCS Clearing 02	Primary / Secondary	194.169.13.137	34900 (443)	

3.2.2 Production Information Services

LONDON STOCK EXCHANGE Equity Derivatives				
Service	Channel	IP Address	TCP Port	
HSVF Market Data	Primary	194.169.14.146	62300	
HSVF Market Data (Available in SOLA 8)	Secondary	194.169.14.152	62300	

OSLO BORS				
Service	Channel	IP Address	TCP Port	
HSVF Market Data	Primary	194.169.13.146	62301	
HSVF Market Data (Available in SOLA 8)	Secondary	194.169.13.152	62301	

3.3 Enablement Process

Requests to be connected to the London Stock Exchange derivatives platform are required to be directed to your Technical Account Manager on + 44 (0) 20 7797 3939 or londontam@lseg.com

Participants are required to specify the following information:

3.3.1 CDS (Customer Development Service) Test Platform

- Company
- London Stock Exchange SAP
- Primary and secondary contact (name, email, telephone)
- Services required (FIX, SAIL, SAIL DROP COPY, HSVF, BTS, BCS)

3.3.2 Production Platform

- Company
- London Stock Exchange SAP
- Primary and secondary contact (name, email, telephone)
- Services required (FIX, SAIL, SAIL DROP COPY, HSVF, BTS, BCS)

4.0 VPN Connectivity

4.1 CDS (Customer Development Service)

VPN connectivity is available for access to the London Stock Exchange CDS test platform via the VPN Extranex Developer service:

http://www.londonstockexchange.com/products-and-services/connectivity/extranex/extranet-vpn-developer.pdf

4.2 Production

VPN connectivity access to production services is available upon request; for further information, please contact your Technical Account Manager on + 44 (0) 20 7797 3939 or londontam@lseg.com

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