



MARKET CONNECTIVITY

EMEA - CASH MARKETS

Regulated Markets

Abu Dhabi Securities Exchange - ADX	FIX, TSMR
Amsterdam Stock Exchange	Optiq OEG, MDG
Athens Stock Exchange	OASIS IDS - ODL
Borsa Istanbul	Genium INET ITCH, OUCH, FIX
Borsa Italiana MTA	MillenniumIT
Borsa Italiana ETFPlus	MillenniumIT
Brussels Stock Exchange	Optiq OEG, MDG
Copenhagen Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Dubai Financial Market - DFM	FIX, TSMR
Helsinki Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Iceland Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Irish Stock Exchange	T7
Lisbon Stock Exchange	Optiq OEG, MDG
London Stock Exchange	MillenniumIT
Moscow Exchange MICEX-RTS	MFIX, FIX/FAST
NASDAQ Dubai Exchange	FIX, TSMR
Oslo Stock Exchange	Optiq OEG, MDG
Paris Stock Exchange	Optiq OEG, MDG
Riga Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Frankfurt Certificate Stock Exchange (ex-Scoach)	T7
Saudi Stock Exchange - Tadawul	GBS FIX
SIX Structured Products Exchange (ex-Scoach Swiss)	IMI, OTI, QTI, RDI, STI
SIX Swiss Exchange - SWX	IMI, OTI, QTI, RDI, STI
Stockholm Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Tallinn Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Vilnius Stock Exchange	NASDAQ OMX ITCH, OUCH, FIX
Warsaw Stock Exchange	UTP
Xetra (Bonds, Warrants, Energy, Equities)	T7

Multilateral Trading Facilities

Cboe Europe Equities	FIX, PITCH, Multicast PITCH
NYSE Arca Europe	UTP MD, UTP Direct
LSE Turquoise	MillenniumIT

EMEA - DERIVATIVES MARKETS

Athens Stock Exchange	OASIS IDS - ODL
Borsa Istanbul	Genium INET ITCH, OUCH, FIX
Borsa Italiana Italian Derivative Market - IDEM	SAIL, HSVF
Borsa Italiana SEDEX	MillenniumIT
CATS-OS	FIX
CATS-LS	FIX
Eurex	T7 (RDI, ETI, EMDI, OEBI)
European Warrant Exchange - Euwax Stuttgart	TIQS Issuers Interface
Euronext Derivatives	CCG, Optiq MDG
ICE Futures Europe	FIX OS, iMpac

London Stock Exchange Derivatives	SAIL, HSVF
Madrid Futures Exchange - MEFF	MEFFGate Trading
NASDAQ Dubai Exchange	FIX, TSMR
Moscow Exchange Futures & Options Market - FORTS	Plaza-2
Saudi Stock Exchange - Tadawul	DirectFN FIX
SIX Swiss Exchange - SWX	STI, QTI, MDI
Warsaw Stock Exchange	UTP

ASIA - CASH MARKETS

Australian Stock Exchange - ASX	OMX
Bursa Malaysia - KLSE	BDA
Hong-Kong Stock Exchange	CMG, OMD-C
Korea Exchange	Koscom NFS
Shanghai Stock Exchange - SSE	SBF, FAST
Shenzhen Stock Exchange - SZSE	SBF, FAST
Thailand Stock Exchange - SET	Cinnober EMAPI
Tokyo Stock Exchange / JPX Group	ArrowHead, TosTNet

ASIA - DERIVATIVES MARKETS

Australian Stock Exchange - ASX	OMX
Australian Stock Exchange - ASX24	FIX
Bombay Stock Exchange	OMB
Bursa Malaysia - BMD	Market Data Platform 3, iLink
China Financial Futures Exchange - CFFEX	CTP, Hundsun
Dalian Commodity Exchange - DCE	Feichuang, CTP, Hundsun
Hong-Kong Futures Exchange	OMX, OMD-D
Hong-Kong Mercantile Exchange	EMAPI
Korea Exchange	Koscom NFS
Osaka Securities Exchange / JPX Group	OMX
Shanghai Futures Exchange - SHFE	CTP, Hundsun
Shanghai Stock Exchange - SSE	FIX, Hundsun
Singapore Exchange - SGX	OMX
Thailand Futures Exchange - TFEX	Cinnober EMAPI
Tokyo Financial Exchange - TFX	MM Quote System
Zhengzhou Commodity Exchange - ZCE / CZCE	eSunny, CTP, Hundsun

AMERICAS - CASH MARKETS

BM&FBOVESPA - B3	PUMA
FXall	FIX
International Securities Exchange	FIX Gateway / ISE Depth of Market
New-York Stock Exchange	FIX / ArcaBook, OpenBookRT, OpenBookUltra

AMERICAS - DERIVATIVES MARKETS

BM&FBOVESPA	PUMA
CBOE Futures Exchange	FIX / CFN
Chicago Mercantile Exchange	Market Data Platform 3, iLink
International Securities Exchange	FIX Gateway / ISE Depth of Market
Montreal Exchange	FIX / STAMP
New-York Mercantile Exchange	Market Data Platform 3, iLink



OUTBOUND BROKER FIX CONNECTIVITY*

ABN Amro	FIX
Bank of America Merrill Lynch	FIX
Barclays BARX	FIX
Bay Crest Partners	FIX
BNP FIBEX	FIX
Citadel	FIX
Citic Securities	FIX
Credit Suisse	FIX
Daiwa	FIX
Deutsche Bank	FIX
EquitaSIM (Specialist)	FIX
Goldman Sachs	FIX
Goodmorning Shinhan	FIX
HSBC	FIX
ICF (Specialist)	FIX
InteractiveBrokers	FIX
Instinet	FIX
JP Morgan	FIX
Kepler Cheuvreux	FIX
Knight Capital Group	FIX
Morgan Stanley	FIX
Newedge	FIX
Nomura	FIX
OCBC	FIX
ODDO BHF	FIX
Saxo Bank	FIX
SwissQuote	FIX
SYWG	FIX
Tick-TS (Specialist)	FIX
UBS (including Swiskey)	FIX
Virtu	FIX

* Please note these outbound broker connectivity have been built outside a routing network, hence usually requires a re-certification in the client's scope. Also, this list is not exhaustive and new FIX brokers can be added upon demand following a FIX connectivity certification process.



ORDER ROUTING NETWORKS

OUTBOUND

Bloomberg EMSX Net	FIX
--------------------	-----

INBOUND

Charles River CRD	FIX
Bloomberg EMSX Net	FIX
ITG/Virtu Net GATE	FIX
NYFIX	FIX



MARKET DATA & THIRD PARTY VENDORS

ActivFinancial	ActivContentGateway API
Arqa QUIK	FIX
Bclear	SOAP/axis
Bloomberg	Multi Product Feed, Managed BPipe
Chi-Tech MarketPrizm	MarketPrizm API
Cscreen	SOAP/axis
Feichuang	Xspeed API
Fidessa (ION)	EMMA/OpenAccess, OMAR/OpenAccess, FIX, MDAPI
FIS - SunGard GL TRADE	GL API
Hundsun	TCP2 UFX API
Integral FXCloud	FIX
InteractiveData	CTF, MDG
IRESS - QuantHouse	FeedOS Java API
Lightstreamer	HTTP
Reuters	JRFA (OMM and MD)
RootNet	FIX
SFIT	Comprehensive Transaction Platform (CTP)
SmartTrade	FIX
Trading Technologies	FIX
Ullink (Itiviti)	FIX
Vectalis	UTS Direct access
Vela Trading Technologies	MAMA and MAMDA



CRYPTOCURRENCIES SECURITY TOKENS

SPOT MARKETS

Binance	REST / HTTP + WebSocket
Bitstamp	REST / HTTP + WebSocket
Bittrex	REST / HTTP + WebSocket
GDAX / Coinbase Pro	REST / HTTP + WebSocket
ADDX / iSTOX	FIX
Kraken	REST / HTTP + WebSocket

DERIVATIVES MARKETS

Binance	REST / HTTP + WebSocket
---------	-------------------------