

CHI-X EUROPE

Multicast Market Data Network Configuration

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Version: 1.2

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System response times may vary for a number of reasons including market conditions, trading volumes and system performance.

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1 INTRODUCTION

This document is to be read by network engineers, project engineers and software developers at those firms intending to utilise Chi-X Europe Multicast Market Data and should be read in conjunction with the Chi-X Europe Multicast Data Feed Specification.

1.2 Version History

Date	Version	Changes
07/09/2010	1.0	Issued document.
22/09/2010	1.1	Corrected section 4.1
07/10/2010	1.2	Amended description of feeds

2 NETWORK CONSIDERATIONS

2.1 IGMPv2

The customer application should support IGMPv2. Chi-X Europe router interfaces will use default IGMP timers, IGMP query interval default (60s)

2.2 PIMv2

Customer router interfaces should be configured with PIMv2, with DR priority greater than 0 to ensure the success of DR election. This may be necessary if the customer router is required to subscribe to other RP's internally for customer side multicast group registration.

Pimv2 timers to be set (Query – Hello 5s / Hold 15s)

If customers wish to participate in multicast routing, Chi-x Europe will require the IP addresses of the router interfaces from which a PIM adjacency will be created. Please contact uk.networks@chi-xeurope.com with these details.

2.3 RPF Checking

In order for the customer to subscribe to the respective multicast groups and pass the RPF check (if multicast routing is used), customers will need to have routes in place pointing towards the primary routers for A/UAT A channel feeds / RP A and secondary routers for B/UAT B channel feeds / RP B. This will also be required for the C channel feed / RP C at the standby location Park Royal.

Multicast Rendezvous Point:

Slough /Frankfurt:	A Channel Rendezvous Point address - 195.3.210.128
Slough :	B Channel Rendezvous Point address - 195.3.210.129
Park Royal / Frankfurt :	C Channel Rendezvous Point address - 195.3.208.128
Slough:	UAT A Channel Rendezvous Point address - 195.3.211.128
Slough:	UAT B Channel Rendezvous Point address - 195.3.211.129

Multicast Source Networks:

Slough /Frankfurt:	A Channel Sources – 195.3.210.192/27 (193 – 222)
Slough:	B Channel Sources – 195.3.210.224/27 (225 – 254)
Park Royal / Frankfurt :	C Channel Sources – 195.3.208.192/27 (193 – 222)
Slough:	UAT A Channel Sources – 195.3.211.192/27 (193 – 222)
Slough:	UAT B Channel Sources – 195.3.211.224/27 (225 – 254)

3 PRODUCTION PARAMETERS

3.1 Production Multicast Source Networks

A Channel Sources – 195.3.210.192/27 (193 – 222)

B Channel Sources – 195.3.210.224/27 (225 – 254)

C Channel Sources – 195.3.208.192/27 (193 – 222)

3.2 Production Multicast Rendezvous Points

A Channel Rendezvous Point address - 195.3.210.128

B Channel Rendezvous Point address - 195.3.210.129

C Channel Rendezvous Point address - 195.3.208.128

3.3 Production Multicast Group and UDP Destination port assignments

Site	Channel	Feed Type	Multicast Group	UDP Port
Slough /Frankfurt	A	Order-by-Order Composite	233.162.21.128	60,000
Slough /Frankfurt	A	Order-by-Order LSE	233.162.21.129	60,001
Slough /Frankfurt	A	Order-by-Order Euronext	233.162.21.130	60,002
Slough /Frankfurt	A	Order-by-Order XETRA	233.162.21.131	60,003
Slough /Frankfurt	A	Order-by-Order Others	233.162.21.132	60,004
Slough /Frankfurt	A	Snapshot Composite	233.162.21.144	60,016
Slough /Frankfurt	A	Snapshot LSE	233.162.21.145	60,017
Slough /Frankfurt	A	Snapshot Euronext	233.162.21.146	60,018
Slough /Frankfurt	A	Snapshot XETRA	233.162.21.147	60,019
Slough /Frankfurt	A	Snapshot Others	233.162.21.148	60,020

Site	Channel	Feed Type	Multicast Group	UDP Port
Slough	B	Order-by-Order Composite	233.162.21.192	60,200
Slough	B	Order-by-Order LSE	233.162.21.193	60,201
Slough	B	Order-by-Order Euronext	233.162.21.194	60,202
Slough	B	Order-by-Order XETRA	233.162.21.195	60,203
Slough	B	Order-by-Order Others	233.162.21.196	60,204
Slough	B	Snapshot Composite	233.162.21.208	60,216
Slough	B	Snapshot LSE	233.162.21.209	60,217
Slough	B	Snapshot Euronext	233.162.21.210	60,218
Slough	B	Snapshot XETRA	233.162.21.211	60,219
Slough	B	Snapshot Others	233.162.21.212	60,220

Site	Channel	Feed Type	Multicast Group	UDP Port
Park Royal / Frankfurt	C	Order-by-Order Composite	233.162.21.0	60,400
Park Royal / Frankfurt	C	Order-by-Order LSE	233.162.21.1	60,401
Park Royal / Frankfurt	C	Order-by-Order Euronext	233.162.21.2	60,402
Park Royal / Frankfurt	C	Order-by-Order XETRA	233.162.21.3	60,403
Park Royal / Frankfurt	C	Order-by-Order Others	233.162.21.4	60,404
Park Royal / Frankfurt	C	Snapshot Composite	233.162.21.16	60,416
Park Royal / Frankfurt	C	Snapshot LSE	233.162.21.17	60,417
Park Royal / Frankfurt	C	Snapshot Euronext	233.162.21.18	60,418
Park Royal / Frankfurt	C	Snapshot XETRA	233.162.21.19	60,419
Park Royal / Frankfurt	C	Snapshot Others	233.162.21.20	60,420

3.4 Production Unicast Replay Server and Port Assignments

Note: The TCP replay service will be reachable via the same default gateway as existing unicast services.

Site	Channel	Feed Type	Server Address	TCP Port
Pri Slough	N/A	Order-by-Order Composite	195.3.210.120	61,000
Pri Slough	N/A	Order-by-Order LSE	195.3.210.120	61,001
Pri Slough	N/A	Order-by-Order Euronext	195.3.210.120	61,002
Pri Slough	N/A	Order-by-Order XETRA	195.3.210.120	61,003
Pri Slough	N/A	Order-by-Order Others	195.3.210.120	61,004
Sec Park Royal	N/A	Order-by-Order Composite	195.3.208.120	61,000
Sec Park Royal	N/A	Order-by-Order LSE	195.3.208.120	61,001
Sec Park Royal	N/A	Order-by-Order Euronext	195.3.208.120	61,002
Sec Park Royal	N/A	Order-by-Order XETRA	195.3.208.120	61,003
Sec Park Royal	N/A	Order-by-Order Others	195.3.208.120	61,004

4 USER ACCEPTANCE TESTING

4.1 UAT Multicast Source Networks

UAT A Channel Source 195.3.211.192/27 (193 – 222)

UAT B Channel Source 195.3.211.224/27 (225 – 254)

4.2 UAT Multicast Rendezvous Points

UAT A Channel Rendezvous Point address - 195.3.211.128

UAT B Channel Rendezvous Point address - 195.3.211.129

4.3 UAT Multicast Group and UDP Destination port assignments

Site	Channel	Feed Type	Multicast Group	UDP Port
Slough	UAT A	Order-by-Order Composite	233.162.21.64	60,600
Slough	UAT A	Order-by-Order LSE	233.162.21.65	60,601
Slough	UAT A	Order-by-Order Euronext	233.162.21.66	60,602
Slough	UAT A	Order-by-Order XETRA	233.162.21.67	60,603
Slough	UAT A	Order-by-Order Others	233.162.21.68	60,604
Slough	UAT A	Snapshot Composite	233.162.21.80	60,616
Slough	UAT A	Snapshot LSE	233.162.21.81	60,617
Slough	UAT A	Snapshot Euronext	233.162.21.82	60,618
Slough	UAT A	Snapshot XETRA	233.162.21.83	60,619
Slough	UAT A	Snapshot Others	233.162.21.84	60,620

Site	Channel	Feed Type	Multicast Group	UDP Port
Slough	UAT B	Order-by-Order Composite	233.162.21.96	60,800
Slough	UAT B	Order-by-Order LSE	233.162.21.97	60,801
Slough	UAT B	Order-by-Order Euronext	233.162.21.98	60,802
Slough	UAT B	Order-by-Order XETRA	233.162.21.99	60,803
Slough	UAT B	Order-by-Order Others	233.162.21.100	60,804
Slough	UAT B	Snapshot Composite	233.162.21.112	60,816
Slough	UAT B	Snapshot LSE	233.162.21.113	60,817
Slough	UAT B	Snapshot Euronext	233.162.21.114	60,818
Slough	UAT B	Snapshot XETRA	233.162.21.115	60,819
Slough	UAT B	Snapshot Others	233.162.21.116	60,820

4.4 UAT Unicast Replay Server and Port Assignments

Note: The TCP replay service will be reachable via the same default gateway as existing unicast services.

Site	Channel	Feed Type	Server Address	TCP Port
UAT Slough	N/A	Order-by-Order Composite	195.3.211.120	62,000
UAT Slough	N/A	Order-by-Order LSE	195.3.211.120	62,001
UAT Slough	N/A	Order-by-Order Euronext	195.3.211.120	62,002
UAT Slough	N/A	Order-by-Order XETRA	195.3.211.120	62,003
UAT Slough	N/A	Order-by-Order Others	195.3.211.120	62,004