

No	Cxema	General setup conditions	Notes
1.		Within the MOEX Dataspace colocation facility, the client equipment can be connected as follows: 1. Client server equipment is connected directly to MOEX network equipment (hereinafter, L2 link) 2. Client server equipment is connected to MOEX through Client network equipment (hereinafter, L3 link).	The clients equipment requirements vary between links . This document contains references to link types for each condition.
2.	L3	Image 1. L3 link The diagram illustrates the L3 link setup. It features three main network segments: the Production network segment (top left), the UAT network segment (bottom left), and the Internet-facing segment (right). The central 'L3 connected Client' is connected to all three. The Production segment includes a 'Production Trade system network' and a 'Production network segment' with a 'Connector network 10.215.x.y/30'. The UAT segment includes a 'UAT Trade system network' and a 'UAT network segment' with a 'Connector network 10.214.x.y/30'. The Internet-facing segment includes an 'Internet-facing segment' with a 'Connector network 10.215.x.y/30' and an 'Internet' icon. The client equipment includes 'One or more Client network equipment' and 'Several 10.X.X.0/24 Network segment Allocated to Client'. The client's AS number is noted as being owned by the client or provided by the Technical center from the AS64512-AS65534 private range. BGP connections are shown between the client and the Production/UAT segments (AS48009) and between the client and the Internet-facing segment (AS64600). Access-lists are enabled for PROD, UAT, and Internet access. Link types include 10GBase-SR, 1000Base-SX, 1000Base-LX/LH, and 1000Base-TX.	
3.	L2/L3	MOEX colocation facility in Dataspace contains 3 isolated network segments:	This architecture was created to ensure infrastructure stability and security
3.1	L2/L3	A. Production network segment	Used to access the production and gaming environments
3.2	L2/L3	B. UAT network segment	used to access UAT
3.3	L2/L3	C. Internet-facing segment	Internet access
4.	L2/L3	The client can connect to one (production) or more network segments, making as many links as needed	

5.	L2/L3	All connections to each network segment are done via 2 physical links to 2 different MOEX network devices.	Two links provide redundant connection. Internet, iLo, IPMI, UAT connections are not redundant.
6.	L2/L3	Redundant links facing client equipment can be connected as follows:	Different capabilities for L2/L3 connections.
6.1	L3	· to different Client network devices	Recommended.
6.2	L3	· to different network interfaces of a single Client network device	Lower level of redundancy, not recommended.
7.	L3	Each Client link should be connected to L3 interfaces with BGP support.	
8.	L2/L3	Physical connections parameters:	Different capabilities for L2/L3 connections.
8.1	L3	· 10G port, 10GBase-SR type (MM fibre)	All 3 network segments are supported
8.2	L3	· 10G port with 1G Speed, 1000Base-SX type (MM fibre) or 1000Base-LX type (MM fibre)	Only for UAT network segment
8.3	L3	· 1G port, 1000Base-TX type (UTP)	Only for Internet connections
9.	L3	Connections to different network segments on the Client side can be connected to:	
9.1	L3	· different network devices	Recommended.
9.2	L3	· same network device	Lower level of redundancy, not recommended.
10.	L3	Within client networks (including endpoint client equipment) access to the services located in different network segments could be organized as follows:	
10.1	L3	· from physically different equipment	Recommended.
10.2	L3	· from different network interfaces of a single piece of equipment	Lower level of redundancy, not recommended.
10.3	L3	· from same network interface of a single piece of equipment	Lower level of redundancy, not recommended.
11.	L3	Link redundancy on logical level is provided by BGP on each physical link:	
11.1	L3	· transit networks (/30) are provided by the Technical center from private address space (RFC 1918)	
11.2	L3	· Technical center AS number for Exchange engines-facing connection is AS48009	
11.3	L3	· Technical center AS number for Internet-facing connection is AS64600	
11.4	L3	· Technical center AS number for UAT network-facing connection is AS64700	
11.5	L3	· Client-side AS number is provided by the Technical center from AS64512-AS65534 private range (Client own AS number could also be accepted).	

12.	L2/L3	For each client the Technical center provides /24 networks from private range (as per RFC 1918) for each isolated network segment and for specific services within one network segment.	
13.	L2/L3	Specific addresses within allocated address space are enabled by the Technical center and added into ACLs as per the Client requests	
14.	L2/L3	Client connections to specific services of a certain network perimeter are only possible from IP addresses enabled by the Technical center from the range of Client-allocated address space for this service/network segment.	
15.	L3	The following services are announced over BGP:	
15.1	L3	· default route (for internet-facing connections),	
15.2	L3	· specific prefixes of the PROD or UAT services (located within PROD and UAT network segments).	
16.	L3	Announces trading system prefixes include public network (i.e. 91.203.x.x), private networks (i.e. 10.63.x.x) and non-internet advertized networks (i.e. 196.x.x.x).	
17.	L3	Within PROD network segment announced and real route lengths to trading servers for both physical links are equal.	
18.	L3	The Client can announce over BGP network prefixes allocated to Client	
19.	L3	In case the Client has multiple L3 links to the same network segment, the Technical center can accept Client network prefixes for each L3 link.	Used to ensure connection redundancy.
20.	L3	If necessary, the best route among different Client connections can be set on the Client side by changing AS Path length for specific prefix.	
21.	L3	Accepted prefix size: max - /24, min - /32.	
22.	L2/L3	FAST feeds are divided to several groups and are available, including TCP Recovery, from different address spaces and VLANs (for L2), separately for Feed A and Feed B.	
23.	L3	FAST feeds subscription is done using PIM protocol.	Between the Client network equipment and the Technical center network equipment.
23.1	L3	Feed A data is provided through one physical link and Feed B – through another.	
24.	L2/L3	Address space and VLANs list for PROD network segment:	
24.1	L2/L3	IP:10.224.0.0/16 VLAN:224	Transactional network
24.1	L2/L3	IP:10.231.0.0/16 VLAN:231	FAST (Equities) - Feed A

24.2	L2/L3	IP:10.241.0.0/16 VLAN:241	FAST (Equities) - Feed B
24.3	L2/L3	IP:10.232.0.0/16 VLAN:232	FAST (FX) - Feed A
24.4	L2/L3	IP:10.242.0.0/16 VLAN:242	FAST (FX) - Feed B
24.5	L2/L3	IP:10.233.0.0/16 VLAN:233	FAST (Derivatives) - Feed A
24.6	L2/L3	IP:10.243.0.0/16 VLAN:243	FAST (Derivatives) - Feed B
24.7	L2/L3	IP:10.234.0.0/16 VLAN:234	FAST (Full Order Log for Derivatives) - Feed A
24.8	L2/L3	IP:10.244.0.0/16 VLAN:244	FAST (Full Order Log for Derivatives) - Feed B
25.	L2/L3	Address space and VLANs list for UAT network segment:	
25.1	L2/L3	IP:10.223.0.0/16 VLAN:223	UAT system transactional network
25.2	L2/L3	IP:10.221.0.0/16 VLAN:221	FAST UAT - Feed A
25.3	L2/L3	IP:10.222.0.0/16 VLAN:222	FAST UAT - Feed B
26.	L2/L3	Address space and VLANs list for Internet connections:	
26.1	L2/L3	IP:10.218.0.0/16 VLAN:218	Internet transit network
26.2	L2/L3	IP:10.219.0.0/16 VLAN:219	Internet transit network (mgmt interfaces only)
27.	L2/L3	In the Internet connection segment, all incoming and outgoing connections are restricted by default, except: - connection to public DNS (8.8.8.8, 8.8.4.4) and internal DNS (85.118.176.17, 85.118.176.19), - outgoing ping from Internet connection network (10.218.0.0/16).	Further connections are allowed at the request.
27.1	L2/L3	Addresses 8.8.8.8, 8.8.4.4 (or internal 85.118.176.17, 85.118.176.19) can be used as DNS servers to configure interfaces in the Internet transit network segment.	Other DNS servers can be enabled at the request.