



New Trading Platform Customer Development Environment Connectivity Guide



Information Classification – Public

1. Version History

Date	Version	Change
28/08/15	V1.0	Initial version
07/09/15	V1.1	IP and port tables updated Addition of ASX Terminal connection information
15/10/15	V1.2	Appendix 1 IP and Port tables updated for Market data and CDE+ New Target CompID for CDE added
20/10/15	V1.3	Introduction updated to include CDE+ and remove PDE
10/11/15	V1.4	Inclusion of the Rendezvous Point and change of Multicast Group IP addressing in appendix 1
12/11/15	V1.5	Diagrams updated.

2. Introduction

ASX is currently building a New Trading Platform (NTP) to replace the ASX Trade (cash equities) and ASX Trade24 (futures) trading systems.

This guide summarises the technical connectivity details for the Customer Development Environment (CDE). The CDE is the first externally available test environment in the NTP project for the Derivatives market. It is a shared environment utilising the current version of the NTP software and will also be connected to the Genium platform for End to End testing.

There will also be a CDE+ environment for the Cash Equities market which will be connected to the CHES platform for End to End testing. In the future, dedicated 'per customer' environments will also be offered. Further details around these environments will be added to this guide once they are available.

The CDE will include FIX 5.0 for Order Entry and Market Data as well as the ASX Market Data Protocol (formerly ITCH). ASX will also provide a Terminal for both Order entry and Pre Trade Risk Management (PTRM) however, the ASX Terminal will not be available via VPN.

The intention is for the test platform to be available 24x7 although there may be limited support available for the environment outside of business hours (8am-6pm Mon-Fri).

The NTP CDE will be accessible via the same methods as the existing FTE environments on ASX Trade and Trade24 platforms. That is, customers can connect from an ALC cabinet directly (for a lower-latency, production-like connection), via ASX Net switch-in-cabinet or via Internet VPN. The Internet VPN option has been updated to a GRE-tunnelled hardware VPN (site-to-site). Customers who currently use the Cisco AnyConnect software client for establishing a remote-access type VPN can continue to connect in this way, however this solution is not available to customers who are establishing new connectivity to the test platform.

Each of these options will be looked at in detail in this guide.

3. Customer Development Environment Architecture

The CDE architecture is shown below. This diagram is a high level overview showing all of the different access methods to the environment.

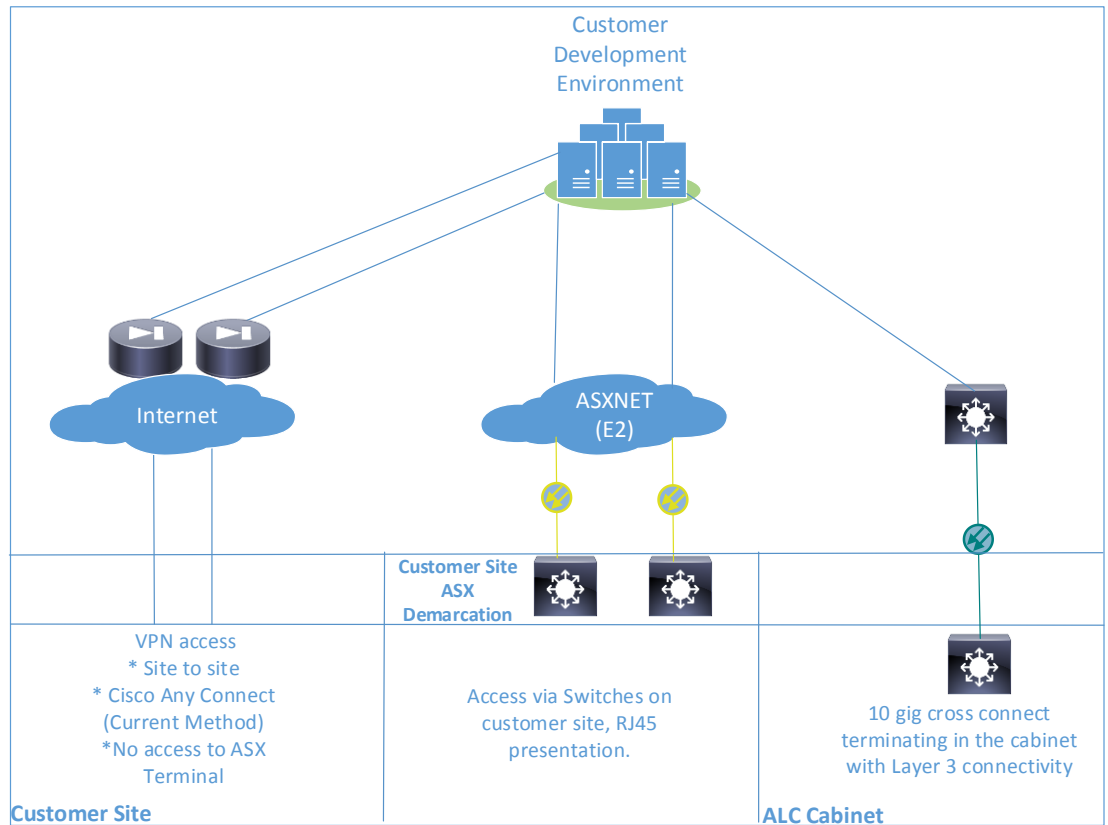


Figure 1. Customer Development Environment Architecture

Each of these connectivity options will be reviewed in further detail over the following pages of this guide.

3.1. Direct Connectivity from an ALC Cabinet

Customers can access the CDE from an Australian Liquidity Centre (ALC) cabinet directly. The direct connection closely mirrors the production connection in that it is delivered via a 10G multimode fibre cross connect into the customer cabinet. Copper connections via ALC Cabinets will no longer be supported for both Development and Production NTP environments.

Connectivity from any ALC cabinet allows access to both FIX and the ASX Market Data Protocol.

Where a customer connects to the CDE from an ALC cabinet directly, the IP addresses and ports will be the actual IP addresses and ports of the test environment gateways. The IP addresses and ports for connectivity using this method will be provided to the customer after a direct connection has been ordered.

This connection method is the same as the existing performance test access product that is available on ASX Trade today. This design is not currently available on the ASX 24 market.



Note:

The CDE is not a performance testing environment and should not be used for performance/load testing.

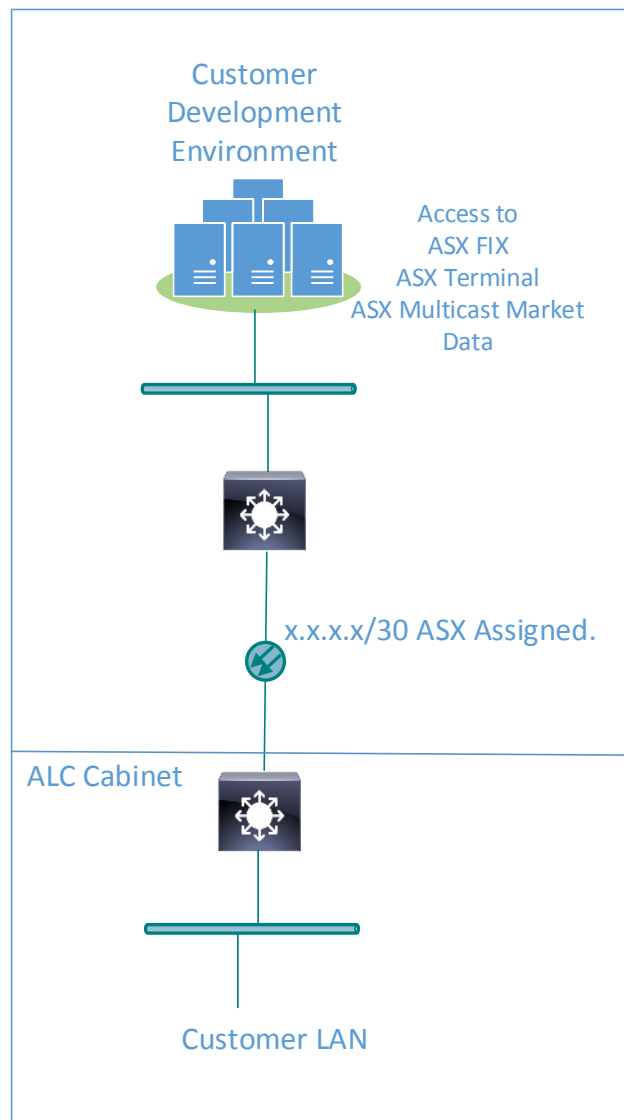


Figure 2. ALC Cabinet Direct Connection

3.2. Connection over ASX Net

Customers can connect to the customer development platform using ASX Net from their own data centre via the E2 switch stack installed at their site.

Connectivity over ASX Net allows access to both FIX and the ASX Market Data Protocol, although via separate interfaces on the E2 switch stack.

For FIX, the connection is routed across the ASX Net (E2) network across the E2 core and then into the CDE. Connectivity over ASX E2 is the same as that currently available today to access both the ASX Trade and ASX 24 market test platforms, although with a new public target IP address.

For ASX Multicast Market Data Protocol connectivity over ASX Net, ASX will utilise a separate interface on the E2 switch stack for customers to connect to the multicast data over.

See Appendix 1 for IP address and port details of the test environment when accessed via ASX Net

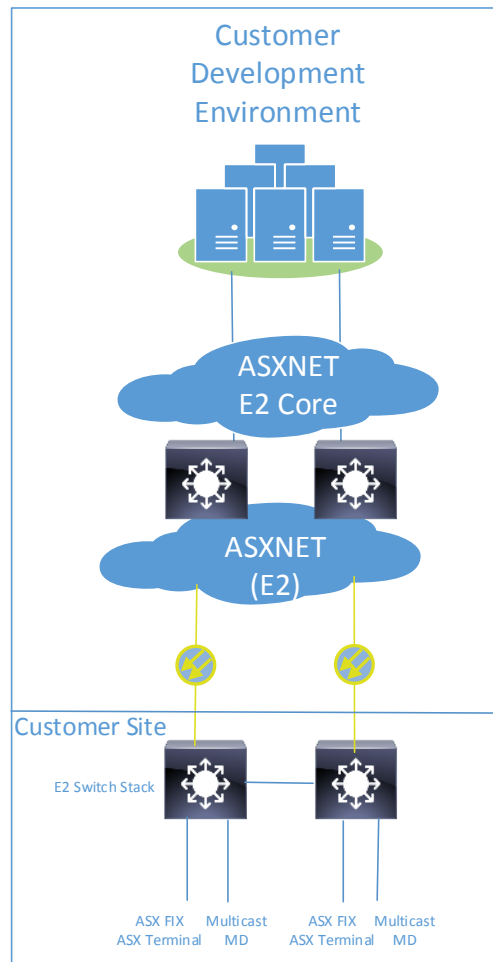


Figure 3. ASX Net Connection

3.3. Connection via Internet VPN

ASX offers a VPN solution based on secure Internet connectivity. As VPN tunnels are setup over the Internet any ISP can be utilised.

Customers can choose the method for connecting to the internet. Options may include:

- ADSL
- Cable Modem
- Ethernet
- Corporate

ASX offers connectivity over an Internet VPN into the CDE via the E2 network. Any customers who are connecting to the test environment for the first time via Internet VPN must configure a site-to-site VPN.

For customers who have an existing connection to the test platform via the Cisco AnyConnect software-based remote-access type VPN, this method of connectivity will still be allowed.

See Appendix 1 for IP address and port details of the test environment when accessed via Internet VPN.

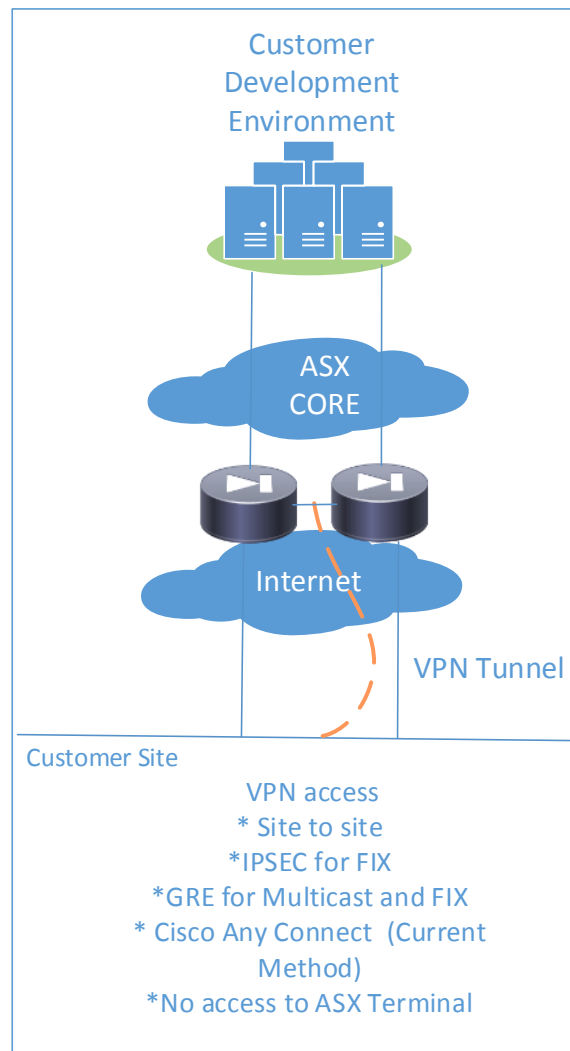


Figure 4. Internet VPN Connection

All VPN connections using this method are secured via triple DES encryption. ASX employs redundant VPN Concentrators and ISP links to ensure high availability within its delivery environment.

For further information regarding Internet VPN access to ASX services, contact Customer Technical Support either via phone: 1800 663 053 or email: cts@asx.com.au.

3.3.1. Site to Site VPN

Site to site VPN will be delivered over IPsec tunnel for FIX connectivity however if Multicast Market data is required via VPN GRE ASX will need to be setup to deliver the multicast data.

VPN endpoint IP and source NAT will be supplied by ASX. Alternatively a unique public IP source can be supplied by the customer.

If a VPN is required ASX will be in contact with customers to work out the details for the setup.

See Appendix 1 for service destination addresses.

3.3.2. Remote Access VPN

This connection method is only available to customers who currently connect to the test platforms in this way. It requires the use of the Cisco AnyConnect VPN client running on a host computer. Current Windows and Red Hat Enterprise Linux platforms are supported.



Note:

New users of the CDE must connect using a site-to-site VPN.

Appendix 1 – IP Address and Port Information

Below are the details of the External Port and IP Addresses for CDE and CDE+.

The **CDE** environment is purposed for **Derivatives** and will be connected to the **Genium** platform for End to End testing.

Target ComplID for CDE = ASX

The **CDE+** environment is purposed for **Equities** and will be connected to the **CHESS** platform for End to End testing.

Target ComplID for CDE+ = ASX

CDE Environment Derivatives			
ALC Access (Colocation)			
CDE	IP address	Priority	TCP Port
FIX and TAX			
FIX Order Entry	103.239.128.66	Primary	6980
	103.239.128.67	Secondary	6980
FIX Market Data	103.239.128.70	Concurrent	7980
	103.239.128.71	Concurrent	7980
FIX Drop Copy	103.239.128.68	Primary	7990
	103.239.128.69	Secondary	7990
ASX Terminal	103.239.128.66	Concurrent	6971
	103.239.128.67	Concurrent	6971
ASX NET and VPN access			
CDE	IP address	Priority	TCP Port
FIX and TAX			
FIX Order Entry	203.4.179.96	Primary	6980
	203.4.179.97	Secondary	6980
FIX Market Data	203.4.179.100	Concurrent	7980
	203.4.179.101	Concurrent	7980
FIX Drop Copy	203.4.179.98	Primary	7990
	203.4.179.99	Secondary	7990
ASX Terminal	203.4.179.96	Concurrent	6971
	203.4.179.97	Concurrent	6971

Multicast Market data for all access methods							
Aggregate Address Derivatives	233.71.185.176/29						
Aggregate Address Equities	233.71.185.192/29						
CDE Feed A	Multicast Source IP	Multicast Group	Multicast Destination Port	Glance Address	Glance Port TCP	Blink Address	Blink Port UDP
Partition 1 Derivatives	103.239.128.102	233.71.185.177	17510	103.239.128.102	17810	103.239.128.102	17910
Partition 2 Equities (Reserved not in use)	103.239.128.102	233.71.185.193	17520	103.239.128.102	17820	103.239.128.102	17920
Partition 3 Equities (Reserved not in use)	103.239.128.102	233.71.185.194	17530	103.239.128.102	17830	103.239.128.102	17930
Partition 4 Equities (Reserved not in use)	103.239.128.102	233.71.185.195	17540	103.239.128.102	17840	103.239.128.102	17940
Aggregate Address Derivatives	233.71.185.184/29						
Aggregate Address Equities	233.71.185.200/29						
CDE Feed B	Multicast Source IP	Multicast Group	Multicast Destination Port	Glance Address	Glance Port TCP	Blink Address	Blink Port UDP
Partition 1 Derivatives	103.239.128.103	233.71.185.185	17510	103.239.128.103	17810	103.239.128.103	17910
Partition 2 Equities (Reserved not in use)	103.239.128.103	233.71.185.201	17520	103.239.128.103	17820	103.239.128.103	17920
Partition 3 Equities (Reserved not in use)	103.239.128.103	233.71.185.202	17530	103.239.128.103	17830	103.239.128.103	17930
Partition 4 Equities (Reserved not in use)	103.239.128.103	233.71.185.203	17540	103.239.128.103	17840	103.239.128.103	17940
RP Address	103.239.128.241						

CDE + Environment Equities			
ALC Access (Colocation)			
CDE +	IP address	Priority	TCP Port
FIX and TAX			
FIX Order Entry	103.239.128.76	Primary	7100
	103.239.128.77	Secondary	7100
FIX Market Data	103.239.128.80	Concurrent	7210
	103.239.128.81	Concurrent	7210
FIX Drop Copy	103.239.128.78	Primary	7320
	103.239.128.79	Secondary	7320
ASX Terminal	103.239.128.76	Concurrent	7430
	103.239.128.77	Concurrent	7430
ASX NET and VPN access			
CDE +	IP address	Priority	TCP Port
FIX and TAX			
FIX Order Entry	203.4.179.104	Primary	7100
	203.4.179.105	Secondary	7100
FIX Market Data	203.4.179.108	Concurrent	7210
	203.4.179.109	Concurrent	7210
FIX Drop Copy	203.4.179.106	Primary	7320
	203.4.179.107	Secondary	7320
ASX Terminal	203.4.179.104	Concurrent	7430
	203.4.179.105	Concurrent	7430

Multicast Market data for all access methods							
Aggregate Address Derivatives	233.71.185.208/29						
Aggregate Address Equities	233.71.185.0/29						
CDE + Feed A	Multicast Source IP	Multicast Group	Multicast Destination Port	Glance Address	Glance Port TCP	Blink Address	Blink Port UDP
Partition 1 Derivatives (Reserved not in use)	103.239.128.110	233.71.185.209	17510	103.239.128.110	17810	103.239.128.110	17910
Partition 2 Equities	103.239.128.110	233.71.185.1	17520	103.239.128.110	17820	103.239.128.110	17920
Partition 3 Equities	103.239.128.110	233.71.185.2	17530	103.239.128.110	17830	103.239.128.110	17930
Partition 4 Equities	103.239.128.110	233.71.185.3	17540	103.239.128.110	17840	103.239.128.110	17940
Aggregate Address Derivatives	233.71.185.216/29						
Aggregate Address Equities	233.71.185.32/29						
CDE + Feed B	Multicast Source IP	Multicast Group	Multicast Destination Port	Glance Address	Glance Port TCP	Blink Address	Blink Port UDP
Partition 1 Derivatives (Reserved not in use)	103.239.128.111	233.71.185.217	17510	103.239.128.111	17810	103.239.128.111	17910
Partition 2 Equities	103.239.128.111	233.71.185.33	17520	103.239.128.111	17820	103.239.128.111	17920
Partition 3 Equities	103.239.128.111	233.71.185.34	17530	103.239.128.111	17830	103.239.128.111	17930
Partition 4 Equities	103.239.128.111	233.71.185.35	17540	103.239.128.111	17840	103.239.128.111	17940
RP Address	103.239.128.241						

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