



ASX

AUSTRALIAN SECURITIES EXCHANGE

# ASX Net

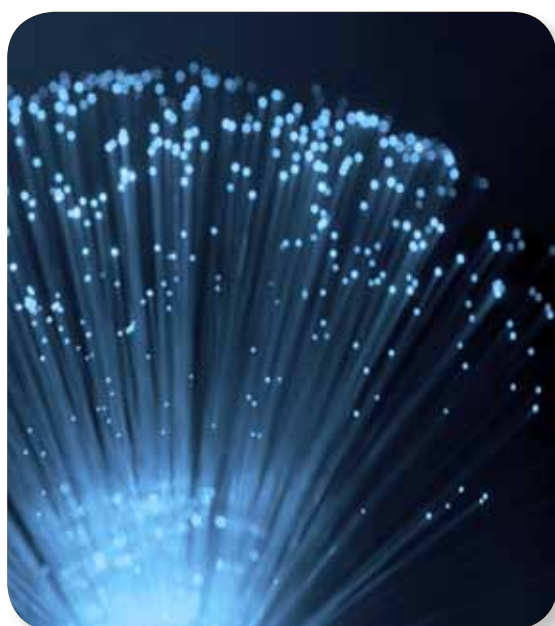
Fully managed, low latency, high capacity network solution to connect to the Australian financial market

ASX Net is a low latency, full managed network solution for connectivity to the Australian Securities Exchange (ASX) and third party Australian financial market service providers.

ASX Net is in a managed network solution that ensures its clients have leading edge network capacity, resilience and performance to respond effectively to future changes within Australia's financial marketplace. This includes minimising the cost of connecting to multiple services and fragmented liquidity.

ASX Net provides ASX data service delivery and simplified, fully managed connections to third party services. The key products to date are ASX trading, clearing, settlement and test/development environment system connectivity. The next steps are to include third-party service providers, and connectivity to cabinets in the ASX Australian Liquidity Centre, ALC (to be launched in November) and Chi-X.

- **Fully managed network solution** – ASX Net is a fully managed, resilient point-to-point optical fibre network. ASX Net benefits from the experience and expertise that ASX has accumulated by managing critical real-time trading networks since 1987.
- **Leveraged infrastructure** – ASX Net utilises a single connection to support connectivity to multiple ASX and third-party services and venues reducing cost and complexity for users.
- **Extensive and responsive capacity** – ASX Net supports the current and future growth of Australian financial market data requirements without the need for disruptive bandwidth upgrades.
- **Low latency** – ASX Net provides the lowest latency distributed connection to ASX products and services, outside ASX CoLo.



## Fully managed and resilient service

ASX Net is a point-to-point Ethernet network provided over optical fibre, achieving high degrees of availability and performance. The point-to-point nature of the network ensures fixed network routes and consistent performance. Network infrastructure is minimised to remove all potential impediments to network availability.

ASX Net is provisioned, monitored and managed by ASX. The Exchange has significant experience and expertise in managing critical financial market networks gained by operating the networks that have supported the Australian financial markets since the introduction of electronic trading and distributed connectivity in 1987.

# ASX Net

## Capacity

The bandwidth required for distributed connectivity to ASX services continues to increase as trading volumes grow, new market Participants and reductions in trading system latency. Capacity requirements rose markedly as a result of the introduction of ASX Trade in November 2010 and the fragmentation of liquidity caused by multiple trade execution venues is expected to continue this trend.

As part of the fully managed service, ASX continually monitors capacity utilisation at each connection and will commission additional bandwidth as the need arises without user disruption or involvement. This ensures that ASX Net responds to changes in data throughput while minimising cost and disruption to the user.

## Lowest Latency

ASX Net delivers Sydney CBD<sup>1</sup> distributed network connection latency of approximately 200 microseconds ( $\mu$ s). This represents approximately 98% reduction in network latency when compared to the now retired ASX NiPPA network.

The performance of ASX Net is monitored between the central network management servers and the distributed user gateways and network hardware.

Since the introduction of ASX Trade, ASX Net contributes approximately half the total round trip latency, allowing Sydney CBD ASX Net sites to be within 150  $\mu$ s of the latency achieved in the existing ASX CoLo facility at Bondi.

## Extensive data feeds and choice

ASX Net supports connection to multiple Australian financial market products and services without the cost and complexity of duplicating network infrastructure. Key among these are:

- Distributed connectivity to all ASX products and services,
- An expanding range of third-party Australian financial market products and services,
- Connectivity to customer cabinets in the ASX Australian Liquidity Centre (ALC), and
- Low Latency and Standard Latency options for Chi-X connectivity from an ASX Net site (from October 2011)

## Technical information

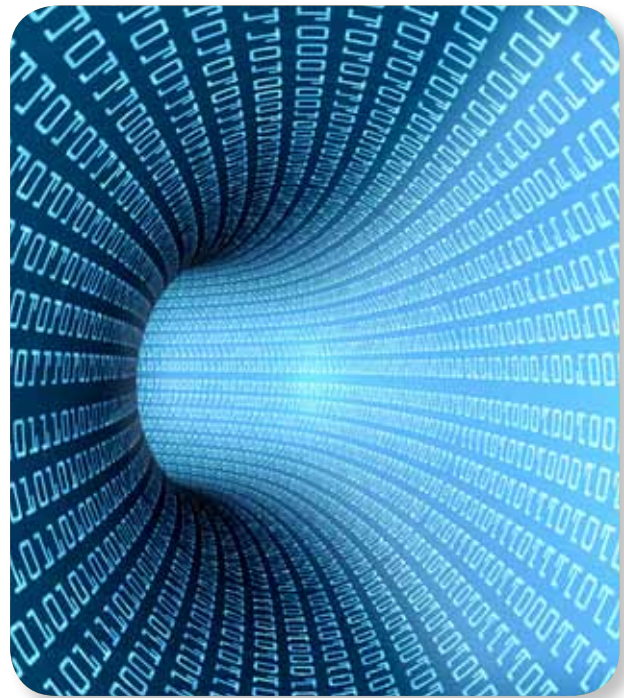
ASX Net is a fully managed point-to-point Ethernet network delivered over optical fibre. Ethernet supports standardised delivery properties allowing data feeds to be connected discreetly and independently.

To ensure compatibility with current systems, service port presentation is UTP with speeds from 10Mb to 1Gb TX. This allows ASX Net to support multiple data feeds in the most timely manner.

UTP port presentation allows user systems to be distributed within a 100 metre radius of the ASX Net access point, providing users with flexibility in the deployment of their systems.

ASX Net utilises hardware-based fibre-to-Ethernet technology to minimise installation and support requirements.

ASX Net sites subscribing to multiple data feeds are installed with chassis-based hardware providing UTP 10Mb/100Mb/1000Mb connectivity. This configuration enables an expandable standards based service.



<sup>1</sup> Within 5km of the ASX Bridge Street data centre.

## Data feed implementation schedule

The following table details the schedule for implementation of ASX Net services. Additional feeds will be offered as they become available.

ASX DATA FEEDS	TIMELINE	REGIONAL SITES
<b>ASX Variable Cost Data Feeds</b>		
ASX (TradeMatch, VolumeMatch and CentrePoint)	Available	All
ASX (PureMatch)	Q3 2011	All
ASX 24	Available	All
ASX ALC Cabinet	Q3 2011	Sydney only
ASX ITCH	Q4 2011	ALC and CoLo only
<b>ASX Fixed Cost Data Feeds</b>		
ASX Clear (DCS)	Available	All
ASX Clear (Futures) (SECUR)	Available	All
MarketSource	Available	All
ReferencePoint	Available	Sydney only
ComNews	Available	Sydney only
ASX Trade Participant Test Environments	Available	Sydney only
ASX Settlement (CHESS)	Available	Sydney only
ASX 24 ITC	Available	Sydney only
Voiceline	Available	Sydney only
SIGNAL B	Available	Sydney only
<b>Equinix Connectivity</b>		
Direct	October 2011	Sydney
Standard	October 2011	Sydney
<b>Third Party Service Feeds</b>		
Third Party Services	TBC	

## Data Feeds

- **ASX (TradeMatch, VolumeMatch, CentrePoint)** – data from direct connection to ASX Trade.
- **ASX (PureMatch)** – data from direct connection to ASX Trade.
- **ASX 24** – data from direct connection to ASX Trade24.
- **ASX ALC Cabinet** – direct ASX Net connection from the user site to the ASX Australian Liquidity Centre enabling users to communicate directly with equipment located in their ALC cabinet.
- **ASX ITCH** – Low latency market data feed from ASX Trade.
- **ASX Clear (DCS)** – data from direct connection to the equities derivatives clearing system, DCS.
- **ASX Clear (Futures) (SECUR)** – data from direct connection to ASX Clear (Futures) (SECUR).
- **MarketPoint, ReferencePoint and ComNews** – data resulting from direct connection to ASX market data.
- **ASX Participant Test Environments** – direct connection to ASX Trade test environments for testing user applications.
- **ASX Settlement (CHESS)** – data from direct connection to the ASX Settlement system, CHESS.
- **ASX 24 ITC** – market data from the ASX 24 market.
- **Voiceline** – voice company announcements.
- **Equinix Direct Connection** - low latency, application agnostic ASX Net connection to the primary Chi-X data centre.
- **Equinix Standard Connection** - application agnostic ASX Net connection to the primary Chi-X data centre.
- **Third Party Services** – connectivity to third party services via ASX Net.

## Fees and charges

All ASX Net fees are published in the ASX Market Connectivity – Schedule of Fees  
[https://www.asxonline.com/intradoc-cgi/groups/participant\\_services/documents/information/asx\\_016046.pdf](https://www.asxonline.com/intradoc-cgi/groups/participant_services/documents/information/asx_016046.pdf)

or

**ASX Online > Participant > Library > Information > Schedule of Fees**

Network carrier charges are directly billed from the carrier, PIPE Networks, to the ASX Net customer.

## Further information

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