



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 provides a single technical solution for access to all ASX products and services. It does this through a fully managed, high capacity and low latency network capable of simultaneously and incrementally delivering multiple services.

In an environment with escalating capacity and latency minimisation demands, and with the complexity and cost of accessing multiple venues and services, ASX Net offers a competitive access solution for today and into the future.

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

ASX Net will be initially implemented to support ASX's new trading system, ASX Trade and will be available prior to ASX Trade going live in November 2010. Access to additional ASX and third-party services will be made available progressively, with the timeframe for additional services detailed on page 3 of this document.

Features of ASX Net include:

- **Fully managed network solution** - ASX Net is a fully managed and resilient network solution. ASX Net benefits from the experience and expertise that ASX has accumulated by managing critical real-time trading networks since 1987
- **Leading technology** - ASX Net utilises leading network technology, including carrier optical fibre and the most up-to-date network equipment
- **Extensive and responsive capacity** - ASX Net supports the current and future growth of Australian financial market data without the requirement for disruptive bandwidth upgrades
- **Low latency** - ASX Net provides the lowest latency distributed access to ASX products and services and provides Sydney CBD users with performance only marginally behind ASX CoLo
- **Leveraged infrastructure** - ASX Net utilises a single connection to support access to multiple ASX and third-party services and venues reducing cost and complexity for users

## Fully managed and resilient service

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 market since the introduction of electronic trading and distributed access in 1987.

ASX Net is a point-to-point Ethernet network provided over point-to-point fibre that achieves high degrees of availability and performance. The point-to-point nature of the network ensures that network routes are fixed and that performance is highly predictable and network infrastructure is minimised to remove all potential impediments to network availability and performance.



# ASX Net

ASX Net connections are required to be redundant in most circumstances incorporating network bandwidth, infrastructure and ASX data centre termination.

ASX will consider the implementation of a non-redundant ASX Net connection under certain conditions, however users are responsible for ensuring that their site redundancy meets their requirements. ASX will provide each user with details on the extent of network commonality for each of their sites.

## Capacity

The bandwidth capacity required for distributed access to ASX services continues to increase as a result of new trading strategies, new market participants and reductions in trading system latency. Capacity requirements are projected to rapidly escalate as a result of the introduction of ASX Trade in November 2010 and the fragmentation of liquidity caused by multiple trade execution venues.

ASX Net ensures appropriate capacity is maintained for both today and future data transfer base and spike needs. As part of the fully managed service, ASX continually monitors capacity utilisation at a connection level and will commission additional capacity without user disruption or involvement. This ensures that ASX Net responds to changes in data through-put while minimising cost and disruption to the user.

## Lowest Latency

ASX Net responds to user requirements for the lowest latency distributed access to ASX products and services. ASX Net delivers Sydney CBD (within 5km of the ASX Bridge Street data centre) distributed network access latency of approximately 200 microseconds ( $\mu\text{s}$ ) this is comprised of 25% network propagation delay and 75% network MAN switch throughput latency. This represents an approximate 98% reduction in network latency when compared to the existing ASX NiPPA network connection. The performance of ASX Net will be monitored between the central network management servers and the distributed user Gateways and network hardware.

After the introduction of ASX Trade the distributed network will represent approximately 50% of total latency, and Sydney CBD distributed access will be within 150  $\mu\text{s}$  of the network latency achieved in the ASX CoLo facility.

## Extensive data feeds and choice

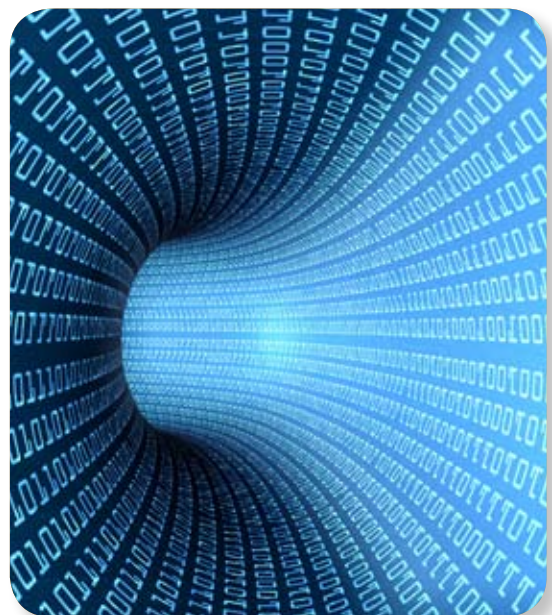
ASX Net supports access to multiple Australian financial market products and services without the cost and complexity of duplicating network infrastructure.

ASX Net will progressively offer distributed access to all ASX products and services, and where available to a range of third-party Australian financial market products and services.

To maintain user choice ASX will continue to support the ASX 24 domestic and international network (SFE WAN) and the Austraclear (ANNI) networks as single data feed networks. In addition domestic access to ASX 24 (SFE) and Austraclear will be offered via ASX Net.

Choosing ASX Net for CoLo connectivity will significantly simplify the connectivity requirement for a user resulting from the implementation of the new ASX CoLo facility in the third quarter of 2011.

The ASX NiPPA network will not support connectivity to ASX Trade.



## Data feed implementation schedule

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

ASX DATA FEEDS	TIMELINE	REGIONAL SITES
<b>ASX Variable Cost Data Feeds</b>		
ASX (TradeMatch and VolumeMatch)	November 2010	All
ASX (TradeMatch, VolumeMatch and PureMatch)	Q2 2011	All
ASX 24 (SFE)	Q1 2011	All
ASX CoLo	Q1 2011	Sydney only
Austraclear	TBC	TBC
Low Latency Market Data	Q3 2011	Sydney only
<b>ASX Fixed Cost Data Feeds</b>		
ACH (DCS)	November 2010	All
SFECC (Secur)	Q1 2011	All
ASX Best	Q2 2011	Sydney only
ASX Best	TBC	Non-Sydney
MarketPoint	Q1 2011	All
ReferencePoint	Q2 2011	All
ComNews	Q1 2011	All
ASX External Technical Environments	Q2 2011	All
ASTC CHESS	Q1 2011	All
SFE ITC	Q2 2011	All
Voiceline	Q2 2011	All
<b>Third Party Service Feeds</b>		
Third Party Services	On availability	Sydney only
Third Party Services	TBC	Non-Sydney

## Data Feeds

- **ASX (TradeMatch, VolumeMatch and PureMatch)** – data from direct access to ASX Trade
- **ASX 24** – data from direct access to ASX Trade24 (SYCOM trading system replacement)
- **ASX CoLo** – direct ASX Net connection from the user site to the ASX CoLo facility enabling users to transfer their own data directly to equipment located in their ASX CoLo facility rack
- **Austraclear** – data from direct access to the Austraclear Settlement System
- **ACH (DCS)** – data from direct access to ACH (DCS)
- **SFECC (Secur)** – data from direct access to SFECC (Secur)
- **ASX Best** – direct ASX Net connection from the user site to the ASX Best (smart order routing) service located in the ASX CoLo facility
- **MarketPoint, ReferencePoint and ComNews** – data resulting from direct access to ASX market data
- **Low Latency Market Data** – data resulting from the low latency access model of ASX market data
- **ASX External Technical Environments** – direct connection to ASX External Technical Environments
- **ASTC (CHESS)** – data from direct access to the ASX Settlement system CHESS
- **SFE ITC** – market data direct from the ASX 24 market (SFE)
- **Voiceline** – voice company announcements
- **Third Party Services** – technical market access to third party services via an ASX data centre

## Fees and charges

All ASX Net costs are available through the ASX Market Connectivity – Schedule of Fees  
[www.asx.com.au/about/pdf/asx\\_market\\_connectivity\\_fee\\_schedule.pdf](http://www.asx.com.au/about/pdf/asx_market_connectivity_fee_schedule.pdf)

ASX Net pricing incorporates a cost for the infrastructure and additional fixed and/or variable costs for each incremental data feed service that users choose to access via the ASX Net infrastructure.

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

## Technical information

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

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 (note – users can extend the 100 metre radius via standard media converters).

ASX Net will utilise hardware based fibre to Ethernet technology to minimise installation and support requirements due to an elimination of the requirement for IOS upgrades.

ASX Net sites that subscribe to a single data feed will utilise chassis based hardware operating at 100Mb, and provide power redundancy and enhanced network management capabilities.

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

## Further information

### ASX Market Access

1800 663 053 or [marketaccess@asx.com.au](mailto:marketaccess@asx.com.au)

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