

X-STREAM TRADING

Scalable, high-performance trading technology that serves today's wide variety of marketplaces

For many countries, having a stable, successful economy starts with having a strong capital markets system. At the center of this system are the venues where trading flows. Creating a successful execution venue requires a strong core: a stable, reliable technology foundation that can enable the marketplace to achieve their ambitions. That is where X-stream Trading comes into play.

For execution venues of all kinds - from exchanges to inter-dealer brokers platforms to alternative trading sites - Nasdaq's X-stream Trading provides a comprehensive solution to help firms of all sizes achieve their goals and ambitions, no matter how large. Currently the fastest recorded and most widely used exchange trading platform in the world, X-stream's multi-asset trading and risk management platform is trusted by a wide variety of market operators from Nigeria, to Bangladesh to Switzerland and beyond. It powers trading in everything from dairy futures to complex interest-rate derivatives, and can safely execute orders in any number of assets simultaneously, at anytime, anywhere, on a single platform.

Built upon Nasdaq's proprietary INET architecture, which powers Nasdaq's own trading operations, X-stream combines extraordinary performance with extensive functionality and flexibility to meet current and future business and performance requirements. X-stream consistently raises the bar in performance figures, able to consistently sustain an order rate of over 100,000 thousand orders per second at sub-40 microsecond average latency. Aside from meeting performance requirements, the solution also provides the operational efficiencies needed to keep technology costs in line and the agility needed to adapt as your strategy evolves and your marketplace grows.

Whether your next move is into exotic derivatives or introducing an innovative order type, you can be confident that X-stream Trading can support your business objectives, and shape the capital markets of tomorrow, today.

X-STREAM AT-A-GLANCE

- ▶ Fastest recorded exchange trading platform globally with sub-40 microseconds average door-to-door latency with a sustained order rate of 100,000 orders per second
- ▶ Most widely used exchange trading platform used at 30+ venues
- ▶ Multi-asset trading and risk management that supports trading in everything from sukuk to equities to derivatives and anything in-between
- ▶ Created from over 20+ years of experience developing and delivering trading systems
- ▶ Best-in-class structured delivery process, leveraging proven methodologies utilized in more than 30 major X-stream Trading and SMARTS Market Surveillance deliveries globally
- ▶ 24/7 support services, incident and maintenance release management

KEY BENEFITS

Reduce the cost and complexity of your core business:

X-stream Trading is highly cost-efficient across the product lifecycle, including design, development, testing, deployment, maintenance and upgrades, with an easy learning curve that enables marketplaces to become fully operational with minimal effort and cost.

Enhance attractiveness and improve performance:

X-stream's INET architecture delivers exceptional performance coupled with very low latency, while its adaptable nature and multi-asset, comprehensive functionality enables strategic shifts into new areas with rapid time-to-market.

In-memory Real-time Position Keeping: Able to maintain real-time instrument and cash positions for all asset types, updated order-by-order and trade-by-trade. Links to CSDs and/or Clearing systems for start and end-of-day positions updates and intra-day updates.

Protect your marketplace with robust risk controls: X-stream Trading provides low-latency pre-trade or “at-trade” risk management checks to protect marketplaces from toxic order flow. Pre-trade checks can include capital limits, shareholder or broker limits or counterparty credit limits for non-cleared markets, utilizing the real-time cash and holdings balance keeping capabilities of X-stream. These can be coupled with a clearing system to provide real-time pre-trade confirmation of holdings and funds to reduce settlement risk.

Keep your marketplace operational: X-stream Trading offers robust fault tolerance and disaster recovery. The resilient system is designed to not have a single point of failure throughout the solution and uses parallel, concurrent matching models helping to ensure zero transaction loss during a failover event.

Flexibly and efficiently manage your trading architecture: X-stream Trading provides standardized access via a purpose-built FIX gateway, which promotes efficient connectivity, interoperability and automation.

Future proof your installation: X-stream Trading integrates with other Nasdaq technology for clearing, CSD management and surveillance, as well as third-party or proprietary solutions across the trade lifecycle to preserve current, custom infrastructure requirements and help to future proof system configuration.

Leverage the experience of experts: Nasdaq’s technology offerings are built with 20+ years of experience working with 85+ marketplaces, regulators, CSDs and clearinghouses around the globe and the first-hand know-how of owning and operating 26 venues. This knowledge has resulted in purpose-built solutions across the trade lifecycle that are proven and in use in the most challenging market conditions.

THE X-STREAM FAMILY ADVANTAGE

Nasdaq’s X-stream solutions provide the full value chain – trading, clearing and CSD – within the same technology, from orders settled to registry bookings. Institutions can start with one solution and easily expand as their business grows. X-stream enables marketplaces to become operational with minimal effort and cost.

All X-stream solutions share technology architecture, interfaces and databases, increasing the effectiveness of delivery and support and ensuring consistency of data across each platform. Built on commodity Linux platforms and run on low cost commodity hardware, X-stream solutions are cost-efficient to implement and operate and enable straight-through-processing and transaction lifecycle management. Additionally, as agnostic solutions, X-stream platforms can be used with multiple database management systems.

CONTACT INFORMATION

[BUSINESS.NASDAQ.COM/TECH](https://business.nasdaq.com/tech) | MARKETTECH@NASDAQ.COM



FULL TRADE LIFECYCLE MANAGEMENT VIA NASDAQ'S MARKET TECHNOLOGY:

- Clearing: X-stream Clearing
- CSD: X-stream CSD
- Post-Trade Risk: Sentinel
- Market Surveillance: SMARTS Market Surveillance

FUNCTIONALITY AT-A-GLANCE

- ▶ Comprehensive multi-market model support
- ▶ Wide ranging order type and asset type support
- ▶ Market maker support
- ▶ Fully implied strategy orders
- ▶ ITCH and OUCH protocol support for HFT and even faster trading
- ▶ Market data and integrated index calculator
- ▶ Comprehensive risk management and real-time position keeping
- ▶ Market control and supervision

X-STREAM TRADING INCLUDES:

- Matching Engine
- Trader Workstation and Administration Interface
- X-stream Client API Interface
- FIX 5.0 interface available
- Market control visualizations for order book replay and transparency of depth of book
- Technical operations GUI
- 24/7 support, incident management, maintenance releases
- Full project management and delivery services