

Corvil Analytics is Trusted by All Major Exchanges Globally

The Corvil solution for exchanges is used by the leading equities, options, derivatives and commodities exchanges globally. It is the essential visibility and analytics platform for monitoring member execution experience, assuring infrastructure performance, and providing trusted data and forensics to demonstrate compliance in an increasingly regulated environment.

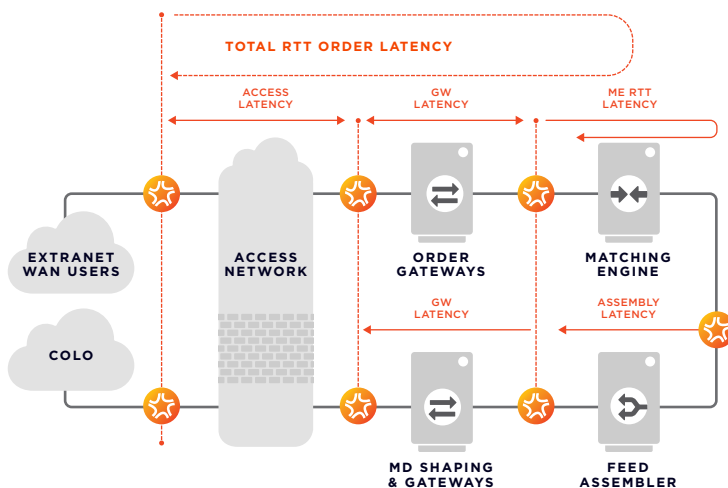
PROBLEM OVERVIEW

Today's electronic exchanges are powered by high performance computing infrastructures with machines capable of matching millions of trades per second. Member orders must be processed in an orderly and transparent manner. Market data reflecting latest venue prices must be distributed as quickly as possible. The modern exchange business is highly dependent on data-driven analytical insight and transparency into electronic operations at unprecedented levels of detail to address customer experience, business continuity, operational risk and regulatory compliance challenges.

SOLUTION OVERVIEW

Corvil provides machine-time visibility and real-time analysis of both order execution and market data publishing processes capable of handling the most demanding electronic exchange environments. The latency of every member order can be measured and tracked from the moment it is received, passed through the gateway and forwarded to the matching engine. All messages involved in the order execution process are captured, analyzed, recorded and can be streamed to external BI and data warehousing systems for further forensics and reporting.

The Corvil solution also monitors market data publication and distribution from feed assembly right through to the data hand-off point. Corvil provides a unique set of market data analytics to assure latency and quality of the distributed market data feeds. Finally, Corvil provides comprehensive support for member monitoring both for colocation members and members accessing the venue via the WAN.



OUTCOMES

- Full transparency provided to members for order execution
- Reduced risk of service quality degradation and outages
- Improved response time for execution inquiry from members
- Time to troubleshoot and fix service quality problems slashed
- Optimized execution latency for every infrastructure hop and path
- Maximized quality of data feeds with precise data and analytics
- Lower regulatory tail risk with trusted data to show compliance
- Time-synchronized audit trail captured for every transaction

In our commitment to better serve our member firms, we use Corvil's powerful real-time data analytics to proactively monitor and enhance their trading experience. We believe the wider industry will also adopt this type of technology which provides greater visibility to deal with competitive and regulatory forces that shape exchange operations.

NASDAQ

Managing Market Data Quality and Performance

Corvil provides full support for managing the quality and performance of market data with the ability to detect gaps, determine impact of microbursts and measure both absolute and relative latency for symbol updates or events in any feed. With support for all market data protocols globally, Corvil provides the most comprehensive off-the-shelf solution available for monitoring both order flow and market data within the broker environment.

Making Sure You Never Miss Content Flow

With client and venue sessions being added and removed on a weekly or daily basis, it can be hard to keep application and monitoring systems up to date. Client onboarding processes do not always notify the technology terms of required changes to monitoring systems, leaving you with potential blind spots. Corvil auto discovery handles this, ensuring that all client trading flows are automatically discovered, tagged and monitored. Configuration APIs allow you to pro-actively push knowledge of sessions into your Corvil deployment.

Right Sizing Your Systems To Be “Fast Enough”

Combining internal and external latency visibility, Corvil helps you determine how fast you need to be and pinpoints any bottlenecks that stand in your way. We provide comprehensive performance monitoring of external exchange latency, as well as hop-by-hop latency across internal processing stages, and across the networks that connect you to your markets and clients. We analyze microburst workloads to help ensure that each network and application processing stage is correctly sized for optimal performance.

TRADE PERFORMANCE

Fill Rate

Order tracking state is used to monitor the success or failure of orders through the fill-rate calculation: the percentage of the request volume that was filled.

Order Capture

Calculates the algorithm response latency: the time from receipt of the triggering tick to the transmission of the order.

Order-to-Tick

Captures a time-synchronized record of all messages involved in the order execution life cycle and streams them to external BI and big data systems.

Order Response

Calculates the venue response latency: the time from transmission of an order to receipt of acknowledgment of the order from the venue.

Microburst Analysis

Calculates the volume of a specified metric for short timescales, e.g., the number of messages received in 1ms.

Gap Detection

Tracks the sequence numbers of all multicast market data feeds, and uses this tracking to report and alert on any gaps.

Relative Latency

Calculates the relative latency between two measured events with timestamps from a common time reference.

Bandwidth Prediction

Calculates an estimate of the amount of bandwidth needed to meet a quality of service objective for a given traffic load e.g., a market data feed.

CHALLENGES

- Providing transparency and optimal execution outcome for member orders
- Mitigating risk of operational brown-out or market outage from IT systems
- Meeting the new data requirements for regulatory compliance
- Achieving rapid time to respond to member enquiry and fix underlying issues

MANAGE MEMBERS

- Auto-discover member order flow
- Demonstrate execution transparency
- Prove advantage of venue colocation
- Improve mean time to resolution
- Analyze connection health

MANAGE IT SYSTEMS

- Validate performance of gateways, ME, FA
- Properly size capacity for optimal performance
- Benchmark performance of software updates
- Quickly troubleshoot and fix IT problems
- Keep third party service providers accountable

MANAGE MARKET DATA

- Analyze latency for every hop
- Detect gaps and microbursts
- Monitor network performance
- Correctly size bandwidth for feed
- Optimize order-to-tick response