

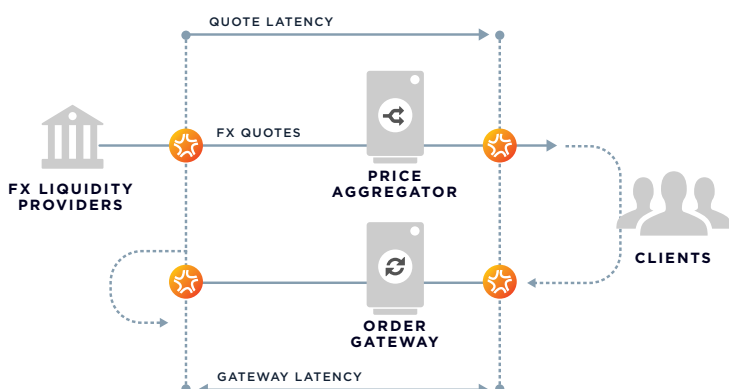
Turn Electronic FX Into a Competitive Advantage

Corvil Analytics for the FX Business

Corvil is used by the world's top banks and ECNs to safeguard and optimize the operations of their FX trading business. The transition to electronic FX has been swift. To be competitive, businesses must invest in high speed technology and analytics tools that allow them to operate efficiently and predictably. Corvil is the platform of choice for infrastructure and trading teams looking to gain an edge in this competitive environment.

PROBLEM OVERVIEW

Electronic FX trading is taking over, representing more than half of the \$5.3 trillion-a-day FX market for the first time in 2015, as clients seek greater transparency following industry scandals. Market participants want to trade faster and be sure they're getting the best price possible, by connecting to multiple FX brokers and ECNs. Banks and other liquidity providers are under pressure to deliver quotes faster and tighten spreads to win business. FX trades are increasingly being broken into smaller pieces to minimize market impact. Hedge funds, CTAs and prop traders are placing bets on currency movements, and attempting to profit from arbitrating prices on different electronic platforms. Just like equities, electronic FX businesses must operate high-throughput, low-latency trading infrastructures and provide the determinism, transparency, and compliance demanded by client, regulator and business owner stakeholders.



SOLUTION OVERVIEW

Corvil taps into the data flowing across the FX network to provide an independent, real-time authoritative record of all FX market data, pricing and trading activity with nanosecond precision. Corvil captures, timestamps, decodes, correlates and analyzes this data in real-time, with zero impact on the performance of the FX trading infrastructure. The resulting real-time business and operations metrics are used by multiple teams including compliance, client reporting, trade support and IT operations.

In electronic FX, reducing the latency of the pricing engine is key to reducing arbitrage risk. Corvil specifically supports "Tick-to-Quote" latency measurement to allow optimization of this critical performance indicator. From a customer relationship point of view, Corvil is used to assure fast order response times both for client orders and orders sent to FX liquidity providers. Corvil can also be used to collect a precision machine-time data record of all transactions and maintain a forensic audit-trail record of all messages involved in a transaction for compliance report purposes.

Our clients demand consistent, low-latency, pricing and order processing and implementing Corvil will give us the ability to monitor our systems and networks in realtime, providing nanosecond latency timings. Using Corvil demonstrates our commitment to delivering a new ultra-high performance brokerage system.

ADSS

OUTCOMES

- Minimize risk of trading off stale quotes and arbitrage exposure
- Provide complete transparency of order processing lifecycle to clients
- Optimize latency and performance of key infrastructure components
- Slash time to troubleshoot and fix service quality problems
- Quickly respond to client queries with high quality data
- Reduce risk of service quality degradation and outages
- Lower regulatory tailrisk with trusted data to show compliance

We've invested in Corvil Analytics at key points across our infrastructure to capture all of our client order flow so there's a huge amount of data. The Corvil APIs offer us programmatic access to the rich data so we can develop our own ability to data mine in the future.

TRADITION

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 don't 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 proactively push knowledge of sessions into your Corvil deployment.

Right Sizing Your Systems So You Are "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 ANALYTICS

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.

Tick-to-Order

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

Order-to-Tick

Calculates the venue response latency: the time from transmission of an order to receipt of tick update on the venue feed reflecting the trade.

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 time stamps 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

- Managing risk of stale quotes exposing business to arbitrage and/or client defection
- Lowering risk of business-impacting outage and improving time to fix problems
- Managing escalating cost of technology to keep business competitive – how fast?
- Regulators demanding increased visibility and accountability for all electronic activity

MANAGE CLIENTS

- Optimize order response time
- Provide full transparency for orders
- Quickly respond to client queries
- Report client quote to order times
- See activity by currency pairs

MANAGE IT SYSTEMS

- Optimize latency of pricing engine
- Get real-time alerts for performance issues
- Quickly troubleshoot problems
- Optimize performance of order gateway
- Hold service providers SLA to account

MANAGE LIQUIDITY PROVIDERS

- Monitor quality of market data
- Balance traffic across LPs
- Manage connectivity health to LPs
- Monitor FX Rates volumes and rates
- Measure LP response times