Independently monitor and analyse Solace System's next generation messaging middleware with TipOff

Staying ahead in today's ultra-fast trading environment requires consistently efficient processing and maximum system uptime, both of which demand the ability to rapidly detect and address emerging sources of latency and operational risk. As the foundation on which trading systems are built, middleware plays an integral role in execution speed.

Combining the strengths of Velocimetrics' TipOff® with Solace Systems' next-generation messaging middleware gives users a fast, payload-agnostic transport layer that can be independently monitored and analysed at every layer of the stack and at each hop in the data flow.

By complementing traditional monitoring techniques with an understanding of how effectively the middleware and applications are performing on a hop-by-hop basis, users can very quickly detect early warning signs of operational conditions that could lead to poor performance in order and trade handling. Exposing potential load balancing and capacity challenges, users can then proactively manage developing situations and minimise an issue's potential business impact.

Solace Systems

Trading and order management platforms for all asset classes consist of two distinct areas that have very different data distribution needs. In the front office, smart order routers and gateways to clients, exchanges and dark pools all depend on the distribution of market data, orders and trades with extremely low, predictable latency. In the back and middle office, non-real-time systems responsible for trade data capture, risk management, regulatory reporting and settlement demand guaranteed distribution with the ability to accommodate slow consumers, efficient fan out to many recipients, and fast, reliable disaster recovery.

Solace meets all of these needs with a single platform that handles ultra-low latency, reliable and guaranteed messaging, along with efficient distribution over wide area networks. By unifying these different kinds of data movement into a single high-performance platform, Solace helps investment banks take today's trading platforms to the next level while consolidating, simplifying and increasing the robustness of their IT infrastructure.

6 out of the world's 10 biggest investment banks use Solace to make messaging a robust network service that meets the needs of front-office applications like order management systems, smart order routers and dark pools, along with back-office and middle-office systems handling settlement, regulatory reporting, compliance and trade data capture across all asset classes.

TipOff

TipOff enables capital market participants to rapidly detect performance issues impacting real-time systems and networks, down to the level of specific hops and application components, providing extremely granular insight into the application, middleware, network and market data elements of their infrastructure.
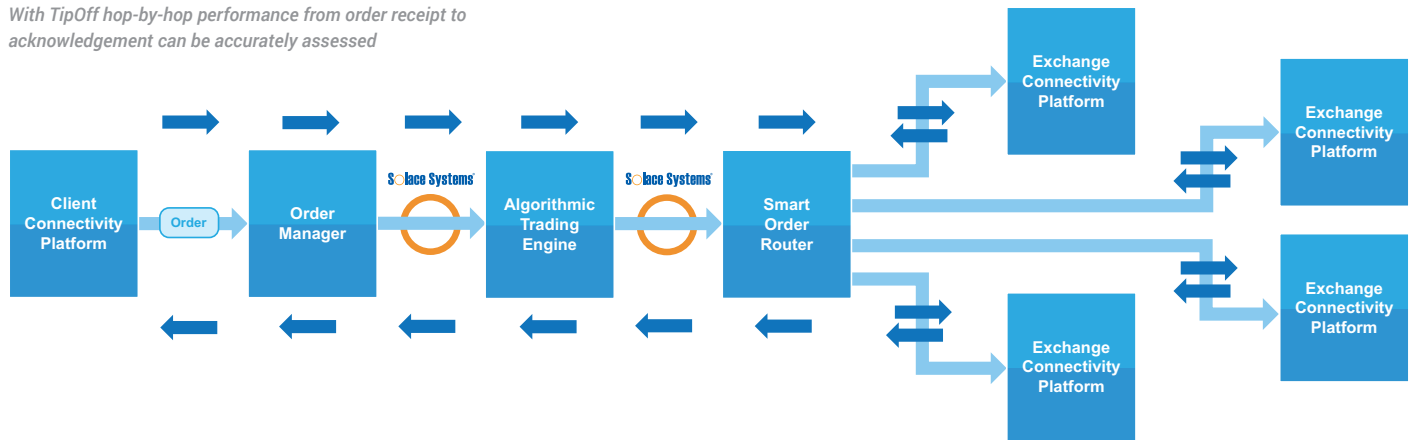
TipOff passively captures 100% of data received at multiple points across a trading system, enabling hop-by-hop order receipt to acknowledgement performance to be effectively understood; monitoring the data traversing all components and every Solace hop in between.

Applying its extensive library of powerful decoders, TipOff can rapidly decode data prior to, during and after its transportation via the Solace platform, effectively decoding the Solace protocols and whatever trading or market data protocols Solace is encapsulating.

Using advanced correlation capabilities the complete trading flow can then be instantly reconstructed, successfully connecting data from potentially hundreds of different decoders, even when a common order ID fails to survive the flow or if an order is executed as multiple child orders.

The data can then be analysed, and alerts raised, enabling performance issues to be examined in detail or the data to be fed directly into the user's own risk or regulatory analysis tools.

TipOff's approach to high precision monitoring and analysis enables users to benefit from:

High precision performance measurement

TipOff captures and precisely timestamps all traffic to a resolution of +/-10 nanoseconds, so the latency of every hop throughout the complete trading process can be accurately assessed.

Hop-by-hop latency monitoring

TipOff lets you measure the performance of the Solace hops from the point at which applications (such as FIX engines, smart order routers and exchange gateways) send data to Solace, and as it makes its way throughout the Solace platform. Examining this information in combination with that captured at all other hops, Tipoff delivers highly accurate hop-by-hop and round-trip performance measurements for the entire flow.

By revealing the exact latency source, potential misconceptions can be avoided, for example assuming that a Solace hop is causing delays when in fact the component is delayed in picking up the message from Solace. Reading the topic information, TipOff can then pinpoint the exact component causing the delay and potential sources of operational risk and customer dissatisfaction are quickly revealed.

Middleware analysis

TipOff monitors the internal operation of reliability layers within protocols, providing protocol specific statistics, and generates subscriber, publisher and topic statistics for the messages themselves. In doing so, advanced insight into evolving operational conditions that could negatively impact performance and client SLA commitments can be quickly detected.

Network analytics

TipOff's precise instrumentation enables performance issues to be forensically analysed, right down to the individual network packet and nanosecond level. This enables nano burst analysis at OSI layers 1,2 and 3, TCP re-transmission statistics, TCP latency and packet layer latency analytics to be generated with exact timings, alongside detailed bandwidth analysis.

Market data analysis

TipOff facilitates in-depth analysis right across the trading system, including at the business layer, supporting high volume, business level transaction and market data monitoring with minimal footprint. Tracking messages as they traverse the environment and alerting users to potential market data quality issues as they happen.

By using TipOff to monitor Solace and other data hops across a flow, users can effectively measure and manage performance in extremely fast moving and high volume environments without any application changes or impact on your trading platform, providing the level of insight necessary to really understand what is happening inside the trading system.

Solace Systems®

Solace provides technology that improves the speed and efficiency with which information flows between applications, connected devices, datacenters and people. High-speed, reliable information sharing is a critical part of modern IT initiatives from accelerating legacy business processes to enabling big data, cloud computing and the Internet of Things. Solace unifies many kinds of data movement so companies can cost-effectively move all of the information associated with better serving customers and making smarter decisions.

Learn more at www.solacesystems.com

VELOCIMETRICS
MONITOR • ANALYSE • IMPROVE

Velocimetrics sets a new benchmark for business monitoring and operational oversight delivering uncompromised end-to-end visibility across complex environments, accompanied by performance improving analytics.

Its full-spectrum product suite, including Velocimetrics, TipOff and Application Tap, enables emerging problems to be instantly detected and their root-cause rapidly understood from both a business and technical perspective. This significantly reduces an issue's potential impact, whilst identifying opportunities for on-going performance improvements. Providing asset class agnostic, highly customisable, agile, open and globally scalable solutions, Velocimetrics prioritises flexibility so your firm's specific requirements are effectively met.

Formed in 2009, Velocimetrics' world-class financial services expertise continues to attract a growing global client base. Its sophisticated solutions deliver the level of transparency required to instil confidence and its innovative approach demonstrates the future potential for business flow monitoring and performance analysis tools.

Learn more at www.velocimetrics.com