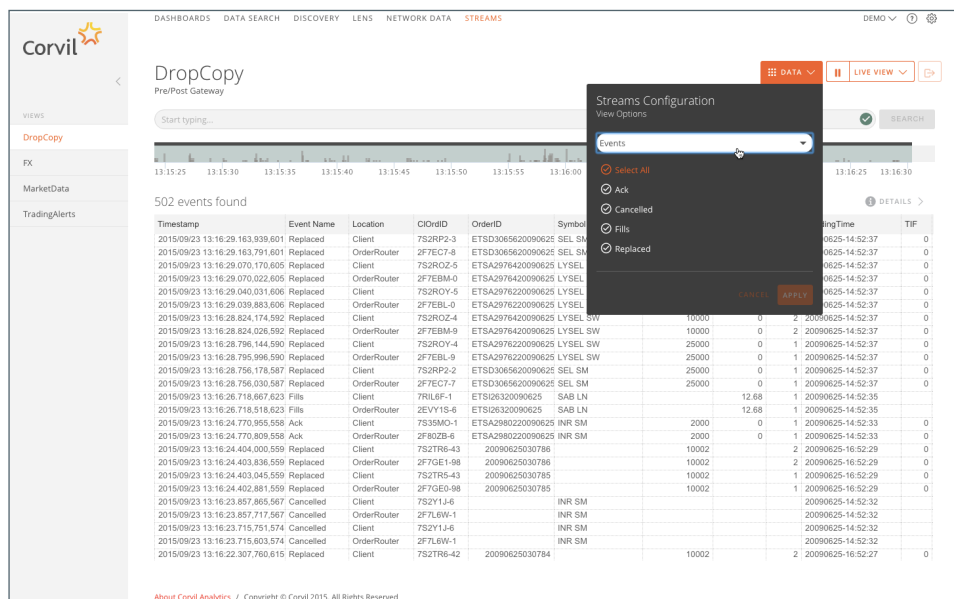


RISK AND COMPLIANCE

Trading Systems

Leveraging Corvil for Risk and Compliance

Corvil provides the largest exchanges, banks and market makers with a complete and authoritative view of trading activity, enabling them to implement real-time risk avoidance and to respond quickly to regulatory demands.



Timestamp	Event Name	Location	ClOrdID	OrderID	Symbol	Quantity	Price	Time	TIF
2015/09/23 13:16:29.163.939.601	Replaced	Client	7S2RP2-3	ETS306562009062S	SEL SM			06:25-14:52:37	0
2015/09/23 13:16:29.163.791.801	Replaced	OrderRouter	2F7EC7-8	ETS306562009062S	SEL SM			06:25-14:52:37	0
2015/09/23 13:16:29.070.170.605	Replaced	Client	7S2RC2-5	ETSA297642009062S	LYSEL			06:25-14:52:37	0
2015/09/23 13:16:29.070.022.605	Replaced	OrderRouter	2F7EBM-0	ETSA297642009062S	LYSEL			06:25-14:52:37	0
2015/09/23 13:16:29.040.031.606	Replaced	Client	7S2ROY-5	ETSA297622009062S	LYSEL			06:25-14:52:37	0
2015/09/23 13:16:29.039.883.606	Replaced	OrderRouter	2F7EBL-0	ETSA297622009062S	LYSEL			06:25-14:52:37	0
2015/09/23 13:16:28.824.174.582	Replaced	Client	7S2RQZ-4	ETSA297642009062S	LYSEL SW	10000	0	2 20090625-14:52:37	0
2015/09/23 13:16:28.824.026.582	Replaced	OrderRouter	2F7EBM-9	ETSA297642009062S	LYSEL SW	10000	0	2 20090625-14:52:37	0
2015/09/23 13:16:28.796.144.590	Replaced	Client	7S2ROY-4	ETSA297622009062S	LYSEL SW	25000	0	1 20090625-14:52:37	0
2015/09/23 13:16:28.795.956.590	Replaced	OrderRouter	2F7EBL-8	ETSA297622009062S	LYSEL SW	25000	0	1 20090625-14:52:37	0
2015/09/23 13:16:28.756.178.587	Replaced	Client	7S2RP2-2	ETS306562009062S	SEL SM	25000	0	1 20090625-14:52:37	0
2015/09/23 13:16:28.756.030.587	Replaced	OrderRouter	2F7EC7-7	ETS306562009062S	SEL SM	25000	0	1 20090625-14:52:37	0
2015/09/23 13:16:26.718.667.623	Fills	Client	7RIL8F-1	ETS2632009062S	SAB LN		12.68	1 20090625-14:52:35	0
2015/09/23 13:16:26.716.516.623	Fills	OrderRouter	2E1Y1S-4	ETS2632009062S	SAB LN		12.68	1 20090625-14:52:35	0
2015/09/23 13:16:24.770.955.558	Ack	Client	7S3SMQ-1	ETSA298022009062S	INR SM	2000	0	1 20090625-14:52:33	0
2015/09/23 13:16:24.770.808.558	Ack	OrderRouter	2F8QZB-6	ETSA298022009062S	INR SM	2000	0	1 20090625-14:52:33	0
2015/09/23 13:16:24.404.000.559	Replaced	Client	7S2TR6-43	20090625030786		10002	2	2 20090625-16:52:29	0
2015/09/23 13:16:24.403.836.559	Replaced	OrderRouter	2F7GE1-98	20090625030786		10002	2	2 20090625-16:52:29	0
2015/09/23 13:16:24.403.045.559	Replaced	Client	7S2TR5-43	20090625030785		10002	1	2 20090625-16:52:29	0
2015/09/23 13:16:24.402.881.559	Replaced	OrderRouter	2F7G59-98	20090625030785		10002	1	2 20090625-16:52:29	0
2015/09/23 13:16:23.857.865.567	Cancelled	Client	7S2Y1J-6		INR SM			20090625-14:52:32	0
2015/09/23 13:16:23.857.717.567	Cancelled	OrderRouter	2F7L6W-1		INR SM			20090625-14:52:32	0
2015/09/23 13:16:23.715.751.574	Cancelled	Client	7S2Y1J-6		INR SM			20090625-14:52:32	0
2015/09/23 13:16:23.715.603.574	Cancelled	OrderRouter	2F7L6W-1		INR SM			20090625-14:52:32	0
2015/09/23 13:16:22.307.760.615	Replaced	Client	7S2TR6-42	20090625030784		10002	2	2 20090625-16:52:27	0

Corvil Approach

Data Collection

Simply plug Corvil into your network and Corvil captures a distributed, time-synchronized record of every packet, message, quote and order crossing the trading system. Corvil discovers, decodes, correlates, captures and analyzes network data in real time, with zero impact on the performance of your trading infrastructure. Simply deploy an appliance at your network perimeter and within hours you have a real-time, 100% complete view of all trading activity that is happening in your organization. Data is stored at the point of observation and made available from a centralized access point.

Network data offers an independent, complete and authoritative record of all your trading and market data activity. Avoid blind spots and remove the need to instrument servers or subscribe to drop copies. By plugging into the network you can discover all trading activity, whether expected or unexpected.

Corvil Plug-Ins

Corvil appliances ship with hundreds of plug-ins that discover, decode, reconstruct and analyze your order flows and market data in real time. Corvil makes sense of the unstructured network data, extracting the details and performance of each business transaction.

Corvil Discovery

Corvil plug-ins auto-discover trading traffic, without the need to configure network addresses, greatly reducing the configuration burden as new sessions are provisioned, or defunct sessions are removed. Corvil Discovery ensures that all trading traffic is monitored, whether it was expected or unexpected.

Corvil Streams

From the continuous flow of this trading and market data on your network, Corvil Streams pull out the key events for each session, generating a concise summary for each one. These events can be reviewed, filtered, and categorized in the Corvil UI, used to power a network data drop copy server, or streamed in real time to third-party systems such as kdb+, Splunk, Hadoop, Amazon Kinesis, Tableau and STORM.



Key Benefits

Eliminate risk of unmonitored trading

All trading activity is monitored by directly observing the activity on the network between you and your counterparties. Detect expected and unexpected activity using Corvil Discovery. Get an accurate view of the exact trading state between you and your counterparties, even when server logging and exchange drop copy connections fail. Perform independent real-time reconciliation between the trading activity client-side and venue-side across DMAs.

Demonstrate Regulatory Compliance with Complete Trading Data Record

Get a single authoritative record of all trading and market data activity, with comprehensive indexing and retrieval of all data. Respond to queries fast using central searching (for example, by order ID) across potentially petabytes of indexed data. Corvil provides leading support for globally synchronized hardware timestamping.

Powerful and Easy Integration with Risk, Big Data and Storage Platforms

Corvil Streams and Connectors make it straightforward to stream Corvil data and analytics directly to a wide variety of receivers. Power in-house risk management platforms by connecting to a Corvil drop copy server populated with the network-data view of all orders. Stream to kdb+ to provide a comprehensive realtime dataset for deep-dive analysis. Archive the network-data view of trading in a Data Lake for long-term storage.

Independent Zero-Overhead Surveillance

Corvil uses network data to deliver complete visibility without the performance hit of logging loads on servers.

Reduce Operational Cost and Complexity of Data Collection and Access

Discover and monitor trading sessions automatically, removing the need to keep complex network configurations in sync with client session databases.

Corvil provides a single platform for risk and compliance data, big data streaming, performance monitoring and troubleshooting, letting you reduce the number of tools you need to use. Requires no software development for integration, no hooks or agents, and no changes to production protocols.

// You can sleep much better at night knowing you have an independent watchdog system that sees everything. The scary situations are the events no one has imagined, and Corvil helps protect us from those."

MD GLOBAL
INVESTMENT BANK