

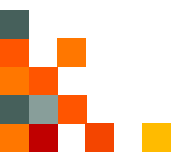


# Leveraging network data for client experience, risk, and security

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STAC New York 23 Jun 2016

# Agenda

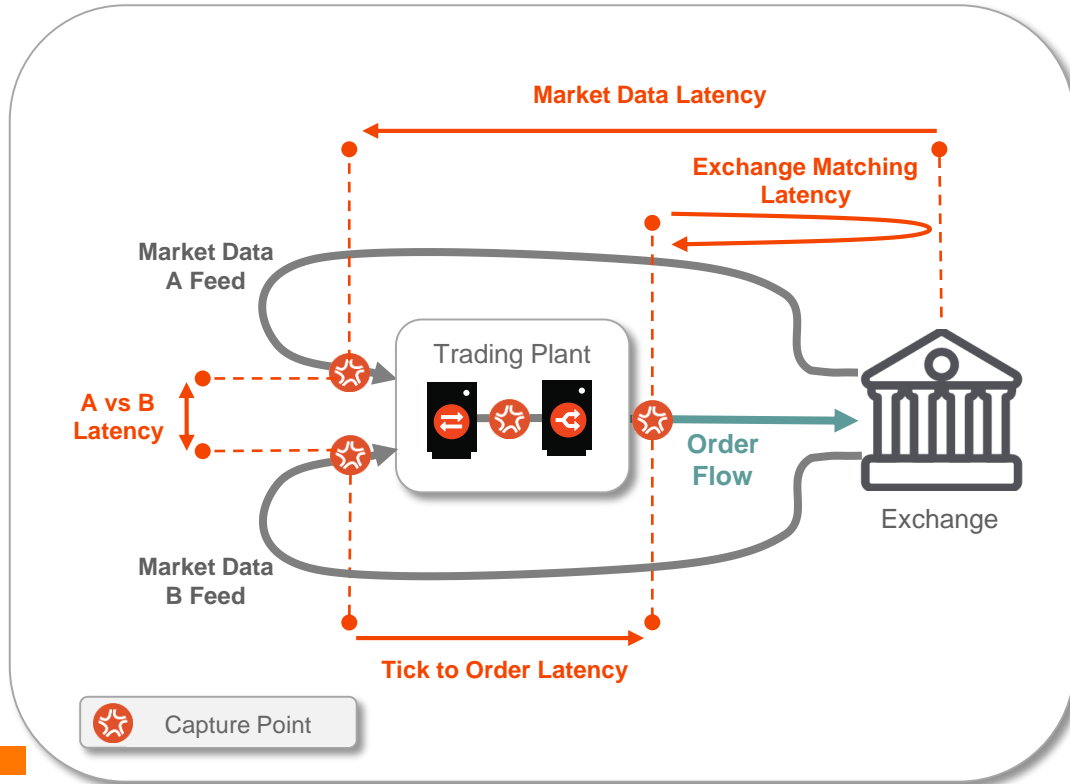
- What's new with network data?
- Three use-cases:
  - Client performance
  - Trading anomalies and risk
  - Security analytics



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- **What's new with network data?**
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# What's old with Network Data?



Traditional use-cases:

- Market-data staleness and gaps
- Application processing time
- Order-fill and cancel-out round-trip

All about latency

# Today's questions

What's the hit rate for Client X on Market Y for Symbol Z?



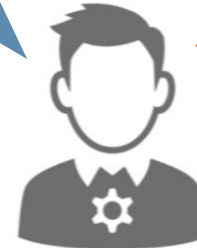
Head of Business

Are we meeting our regulatory obligations?



Trading Apps & Dev

Can we address Cyber Security without affecting performance?



Trading Ops & Infrastructure

Why were there gaps in my market data?

Which Trader traded the highest volume at market open?

Has the latest application release affected customer performance?

Why are orders being rejected?

What is the health and performance of our primary service provider connection?

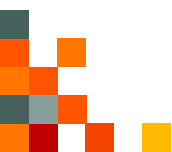
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# Client Performance Reporting

**Q.** *What's the hit rate for Client X on Market Y for Symbol Z?*

**Challenge:** data required to answer this question is scattered throughout the infrastructure...



# Client Performance Reporting

**Q.** *What's the hit rate for Client X on Market Y for Symbol Z?*

**Challenge:** data required to answer this question is scattered throughout the infrastructure...

**Solution:**

- Stream minimal identifiers on orders back to Big Data cluster
- Ingest via Kafka
- Use Spark Streaming to
  - Link all messages back to originating client
  - Summarise per-client views

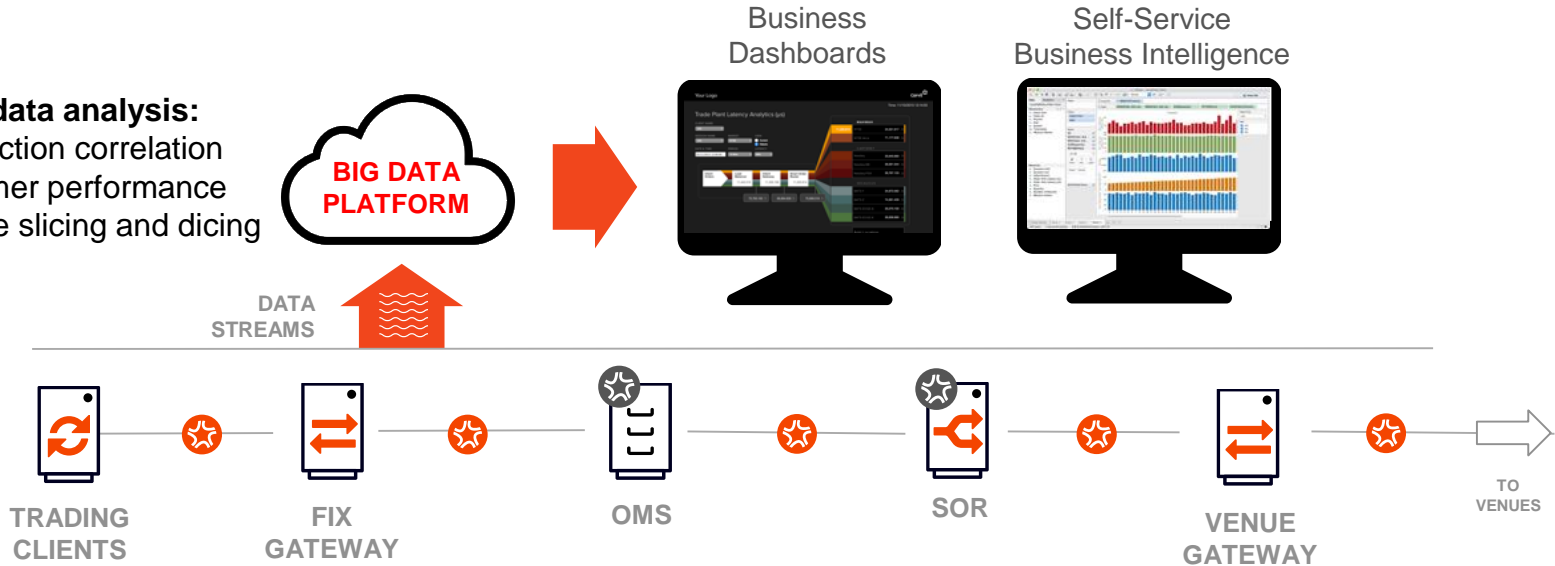


# Client Performance Reporting

Q. What's the hit rate for Client X on Market Y for Symbol Z?

## Global data analysis:

- Transaction correlation
- Customer performance
- Flexible slicing and dicing



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# Real-time Trade Reconciliation for Risk



- Bank has sophisticated risk-monitoring system in place  
...fed by opt-in logging/agents
- What about rogue machines? Order-flow not accounted for?



# Real-time Trade Reconciliation for Risk



- Bank has sophisticated risk-monitoring system in place  
...fed by opt-in logging/agents
- What about rogue machines? Order-flow not accounted for?
  
- Order generates exposure when sent to market – the network provides the authoritative record
- Corvil deployed to automatically detect all activity
- Streamed to risk-monitoring system for cross-ref.
- Effectively a “network-generated drop-copy”

*“You can sleep much better at night knowing you have an independent watchdog system that sees everything.*”

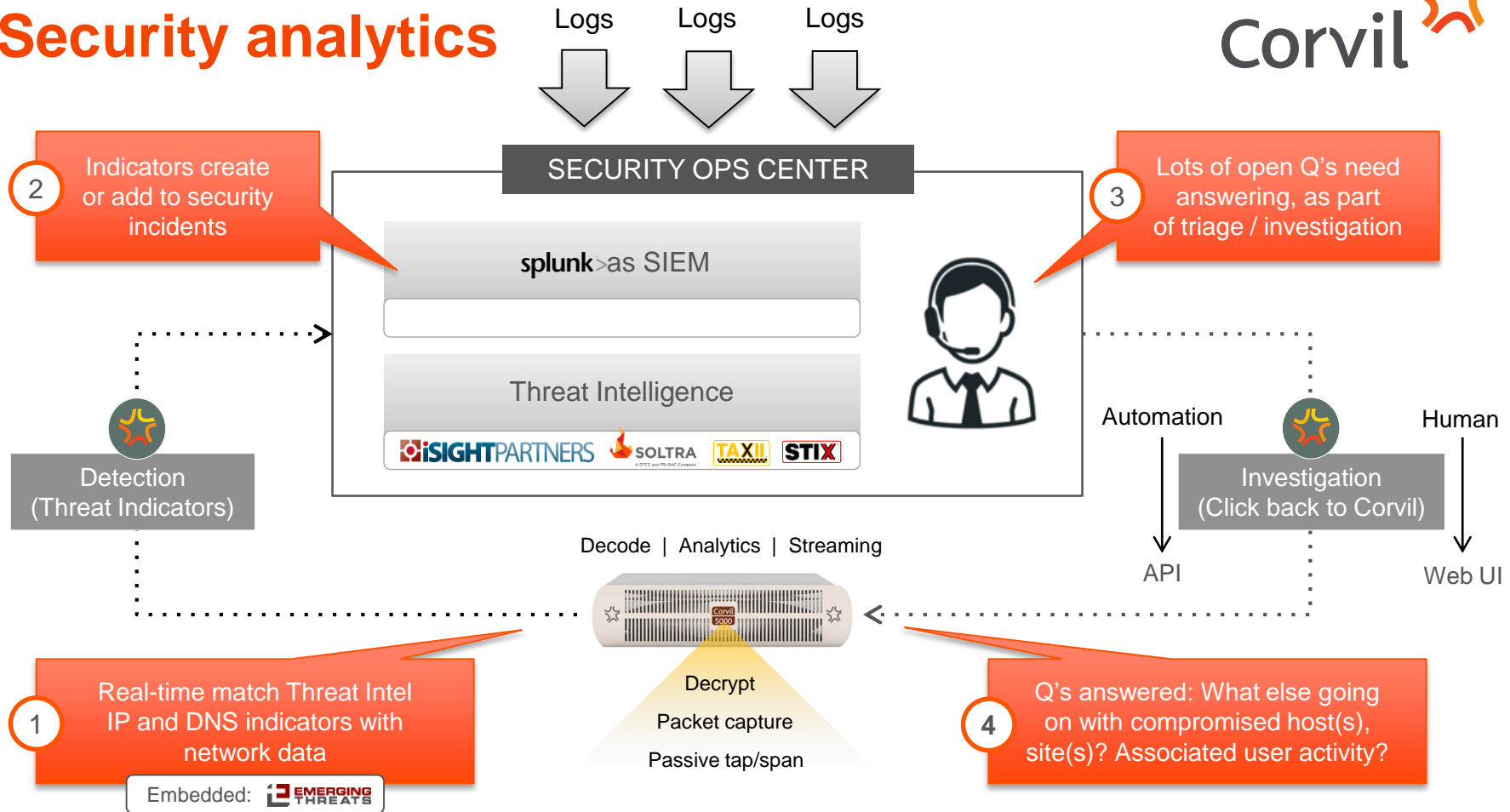
*The scary situations are the events no one has imagined, and Corvil helps protect us from those”*

**MD Global Investment Bank**

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# Security analytics



# Summary and Q&A

Three use-cases for network-data:

- Client performance
- Trading anomalies and risk
- Security analytics

