Online Brokerage Transforms IT Operations with Visibility Across Tiers

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—Director of IT, US-Based Online Brokerage Firm

COMPANY PROFILE
Large US-based online brokerage with several million customers.

CHALLENGE
To improve competitiveness, the brokerage sought real-time visibility across tiers.

SOLUTION
The brokerage's IT Operations group uses ExtraHop to enable greater collaboration among teams and to proactively manage application performance.

BENEFITS
• **Greater than 70% improvement in industry benchmark performance**

• **Continuous monitoring with early-warning alerts for proactive remediation**

• **Extensible platform for defining new metrics and open API for integration with homegrown tools**

KEY FEATURES
• **The Operations group aims to triage each incoming issue in under five minutes.**

• **The brokerage's IT group is on heightened alert during market hours, Monday–Friday from 8am to 5pm ET.**

Challenge

To increase its competitiveness, a large US-based online brokerage sought to improve the performance of its online trading application.

"For brokerages, application performance affects brand reputation, customer attrition, and revenue," explains the Director of IT. "Moreover, brokerages are responsible for best-order execution, or ensuring that orders are placed in a way that is advantageous for the customer."

The infrastructure team responsible for the online trading application previously relied on a variety of homegrown and purchased monitoring tools, each of which covered a portion of the overall environment. Each time a performance issue was identified, the brokerage's IT Operations group brought together experts from internal teams responsible for the network, application code, servers, databases, and storage. Using this resource-intensive process, the organization spent an average of 45 minutes identifying the root cause of a problem.

"To improve our benchmark scores, we needed drastic change, starting with technology solutions that would give us visibility across the entire environment and help break down silos between teams," says the Director of IT.

Solution

While evaluating different monitoring solutions, the online brokerage deployed ExtraHop in its test environment. An all-in-one appliance, the ExtraHop platform installed in 15 minutes and started passively analyzing transactions as they traversed the network, extracting real-time operational intelligence from all tiers of the application delivery chain.

Illuminating Black Boxes

During the initial deployment of ExtraHop, the brokerage's Development team began testing a more modular version of its web application and found that some important requests performed slowly. When various system-monitoring tools failed to identify the root cause, the manager of capacity, performance, and automation decided to check ExtraHop.

"With ExtraHop, I could investigate all the tiers of the application and then drill down to find the root cause very easily," says the manager. "The issue turned out to be the application repeatedly querying our Sybase database for the date and time instead of caching and reusing data. We could not recognize that behavior with SysMon monitoring Sybase at five-minute intervals. Even if you knew where to look, SysMon would not provide the granularity needed

to precisely diagnose the problem. This resulted in a black-box scenario on a very important piece of our infrastructure. When I presented ExtraHop's findings to the developers, they were amazed that ExtraHop could provide such detail off the wire. After that, there was no question about the value of the ExtraHop platform."

Better Collaboration Between Development and Operations

The brokerage's IT organization has used ExtraHop to change how it manages application performance, starting with better collaboration between the Development and IT Operations teams.

"We use ExtraHop to find misconfigurations and bottlenecks in testing, and also for continuous monitoring in production," says the manager of capacity, performance, and automation. "If a developer makes a change in production that slows performance or breaks a service, we know immediately and have the information we need for a meaningful conversation, such as the URI associated with HTTP 500 errors."

ExtraHop provides the real-time operational intelligence required to make IT more agile and proactive. The world's best-run IT organizations use ExtraHop to manage more than half a million devices and monitor over a trillion transactions daily.

To learn more, visit www.extrahop.com or call +1 877-333-9872.

The Tool of First Resort

The IT Operations team displays ExtraHop geomaps on 42-inch monitors in its network operations centers. Tier-1 and Tier-2 support teams use ExtraHop as their primary investigative resource. When they see something amiss or receive alerts from ExtraHop, they determine the scope of the problem and then escalate issues to the appropriate teams.

"We give ourselves just five minutes to triage an issue before alerting the entire IT Operations team," says the Director of IT. "Before ExtraHop, this was a tremendous challenge, but now we reliably identify the path to remediation within minutes."

Extensibility and Open API

The brokerage's IT Operations group takes advantage of ExtraHop's extensibility and open API to meet new monitoring needs as they arise. "We don't just use ExtraHop to solve problems as they crop up, but to build on lessons learned," says the brokerage's Application Services Analyst. "ExtraHop enables us to get better at what we do. We use Application Inspection Triggers to define new metrics and export precise, event-driven data to our internal dashboard."

Benefits

Equipped with IT operational intelligence from ExtraHop, the online brokerage can manage application performance much more effectively. "I believe the future of application and infrastructure performance management lies with passive solutions like ExtraHop," says the Director of IT. "It requires no agents to manage, it's continuous and real time, and it dynamically adapts to changes. Moreover, ExtraHop is a mature product that continues to evolve."

Greater Than 70% Improvement in Industry Benchmark Performance

Due to the improved visibility and process improvements afforded by ExtraHop, the brokerage has improved its performance on industry benchmark metrics, which measure the total execution time and success rate for stock-order transactions, by more than 70 percent.

"ExtraHop is the foundation of our application performance improvement efforts," says the Director of IT. "We can understand the contribution each tier makes to overall response time and how different components affect others in n-tier applications. This visibility has helped us to continually find efficiencies and improve our response times."

Improved Cross-Functional Collaboration

ExtraHop helps various teams at the online brokerage work together more collaboratively. "Before, we might have asked the database team to 'look into' their performance—but that's not a trivial task for multiple complex RDBMSs. Now, with ExtraHop, we can give much more specific direction about what to fix, such as SQL statements, database methods invoked, or database tables, and avoid wasting people's time," says the Director of IT.

Proactive Management of Issues

The IT infrastructure team uses ExtraHop to detect small issues before they erupt into much larger problems. "By the time customers tell us about slow performance, it's too late," says the Director of IT. "With ExtraHop, we can be proactive because we can see how specific frontend activity is correlated to activity in our backend systems. We can see not only what is happening, but why."

ExtraHop