

A wide-angle photograph of a dark tunnel. The floor and walls are lined with bright blue glowing lines that curve and twist, creating a sense of depth and motion. The overall atmosphere is mysterious and futuristic.

APPLICATION ANALYTICS

Go From APM Black Box To Complete App Visibility

Leverage ExtraHop's breakthrough application analytics to understand your business from the inside out and deliver world-class user experience.

ABSTRACT

IT Operations teams are managing highly complex applications and APM solutions fail at providing them with the end-to-end visibility they need to maintain performance and customer satisfaction. Log and agent-based solutions are not fit for the hybrid enterprise and leave IT organizations with many blind spots. In this eBook, you will learn why APM tools are no longer enough to efficiently monitor revenue-generating applications and how wire data provides IT teams with the complete visibility they need to deliver the best user experience to customers.

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Complex Applications And Siloed Environments

As enterprises scale to support a seamless digital experience despite intensifying complexity, IT must move from awareness, to understanding, to action faster than ever before. Modern applications are more complex than ever and rely on highly dynamic architectures, APIs, and microservices, and are often deployed in hybrid or multi-cloud environments.

The pace of change leads enterprises to leverage more and more new technologies, which in turn makes the service delivery chain much more difficult to track with more interdependencies and potential points of failure. The user experience no longer depends solely on the code residing at the core of the application and IT teams need visibility from core to edge to cloud to maintain the performance and availability of their critical applications.

Because of the complexity of modern applications and hybrid environments, IT Operations teams have to deal with a multiplication of operational and monitoring silos. Each component or application tier is managed by a different team using its own data set and very often its own single-purpose tool to monitor performance. Siloed organizations lead to difficulties in issue detection and root cause identification, resulting in finger pointing in war rooms and causing extensive time to resolution.

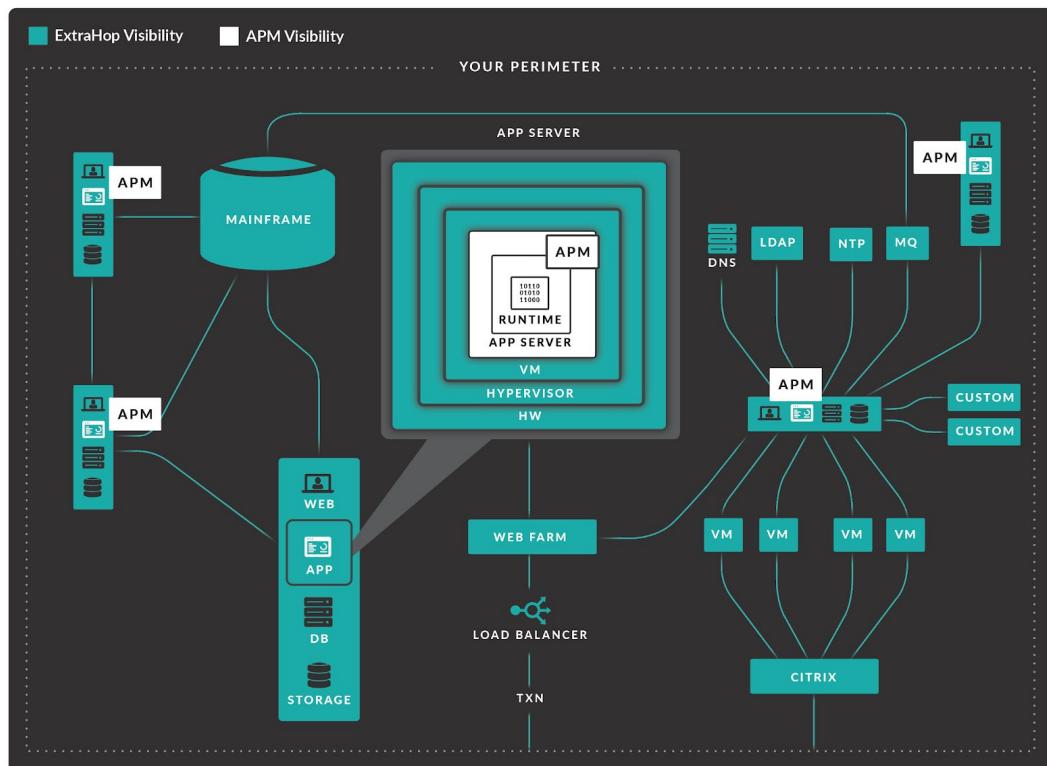
According to IDC, the average cost of critical application failure is between \$500,000 and \$1,000,000 per hour. The cost of poor application performance is high. When end users interact with your applications, they see your business, and if your applications are not delivering on their promises it will inevitably translate into damaged brand image and lost revenue. End-to-end visibility across the entire IT environment from core to edge to cloud is a necessity for enterprises who want to maintain their competitive edge and deliver the best user experience.



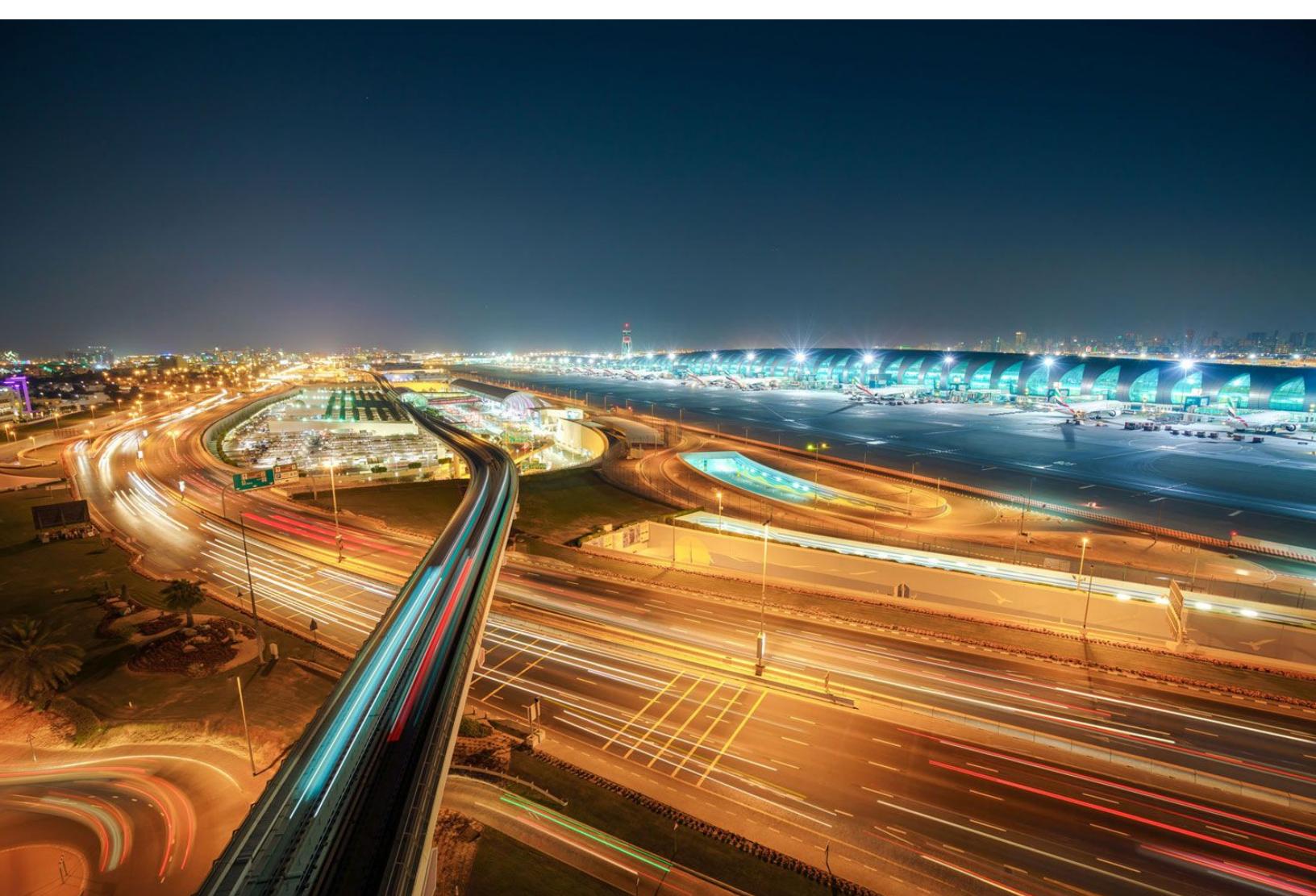
APM Tools Are Valuable But Not Enough

By tapping data from the core of the application, APM solutions deliver valuable insights to developers, such as resource utilization (CPU, Mem, etc.). However, they fail at delivering IT Operations teams with a comprehensive view of the application delivery chain and leave many blind spots:

- No visibility into Commercial Off-The-Shelf applications (e.g. SAP, Citrix, O365, Epic, etc.)
- No L7 visibility into shared services (e.g. DNS, Databases, Storage, Active Directory, MQ, NTP, etc.)
- No auto-discovery or classification of devices and assets in the environment
- Invasive agent or code-based solutions increase overhead on critical components



Exclusively monitoring the code of applications or app servers doesn't give you the full picture. The user experience no longer depends solely on the code residing at the core of the application. A multitude of elements, such as firewalls, DNS, cloud platforms, or load balancers, can have a significant impact on how your customers are able to interact with your service, and APM cannot help you with that. For understaffed IT Operations teams already facing reactive "firefighting" scenarios, this lack of visibility makes it even more difficult to understand performance issues and move to resolution in a fast and efficient way.

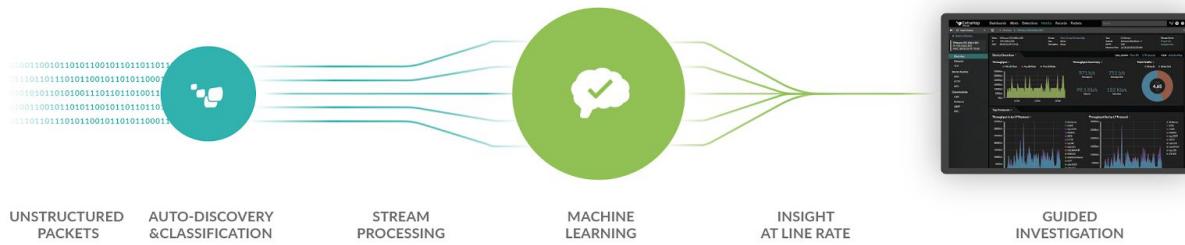


Gain Complete Application Visibility With Wire Data

What if there was a single point of instrumentation that could provide meaningful insight in every type of environment? The good news is that you have had a constant, uniform source of real-time insight all along: your network! No matter whether the devices and applications you are tasked with supporting run in your datacenter, in the cloud, or in dozens of remote offices, they all communicate on the network. The answer to managing complex and highly dynamic applications lies in making sense of all that rich data in flight.

With ExtraHop you can gain control over hybrid IT environments and complex applications. Instead of relying on deploying agents or gathering logs, ExtraHop delivers insights from all data in flight via data observed on the network. Because you get a centralized view, you can extend IT and business visibility in a way that's never been possible until now.

The ExtraHop Performance Platform deploys passively and without agents on premises, in the public cloud, or across hybrid environments, using a port mirror or network tap to acquire a network traffic feed. Once it receives a data feed, the platform automatically performs decryption, discovers and classifies systems communicating on the network, and transforms raw packets into structured wire data. Analytics and machine learning are then applied to that data set, surfacing performance anomalies in real time and allowing customers to visualize, search, and query up-to-date and accurate information such as errors, methods, file names, and users.



With a powerful combination of complete visibility, real-time detections, and guided investigations, ExtraHop goes far beyond traditional APM monitoring solutions to provide total context into your revenue-generating applications so you can identify performance problems before they result in downtime or negatively affect user experience.

Complete Visibility - Unlike other monitoring tools that only give you part of the picture, ExtraHop shows everything: IT teams no longer have to patch together incomplete data from logs, agents and feeds after the fact.

- **Auto-discovery & classification** - ExtraHop automatically maps out every relationship in the environment without requiring polling, scans or manual tagging to understand device roles.
- **Agentless deployment** - ExtraHop passively analyzes network data for application insights, and does not require agents deployed on servers to gain visibility.
- **Transaction fluency** - Deep application-layer protocol fluency for more than 50 protocols.
- **Scalability** - Real-time analytics at up to 100 Gbps.
- **Line-rate decryption** - Line-rate out-of-band SSL/TLS decryption for full traffic visibility with no impact on network performance and security.

Real-Time Detections - With ExtraHop, IT teams can automatically spot any issues or anomalies before they impact user experience. Unlike other products that are designed for one team, ExtraHop serves as a source of truth for all teams to eliminate silos and stop the blame game.

- **Advanced machine learning** - Automatically detect anomalies for every device, network segment and application based on deviations from normal behavior thanks to advanced machine learning models using over 4,700 metrics.
- **Live activity maps** - Graphic map of all interactions among devices and applications to enable a 360° view of your dynamic infrastructure.

Guided Investigation - ExtraHop puts data and alerts in context, allowing IT teams to easily explore at a high level and then drill down into specifics in a matter of clicks. ExtraHop saves hours of troubleshooting time, enabling real-time insights so teams can rise above the noise and move to resolution with confidence and agility.

- **Investigation workflows** - Seamless investigatory workflows with drill down capability to identify root cause of issues and move to resolution in a few clicks.
- **Open platform** - Event streaming into the industry's most popular data stores, orchestration systems, analytics platforms and ticketing systems (e.g. Splunk, MongoDB, ServiceNow) to automate workflows.

Application Analytics For Your Most Critical Projects

Whether you are trying to improve user experience, migrating an application to the cloud, or trying to gain more visibility into commercial applications, wire data eliminates the blind spots left by APM solutions and provides complete visibility by correlating metrics across tiers and mapping dependencies to help IT Operations teams understand everything from the infrastructure to the user experience.

Improve User Experience And Gain Valuable Business Insights

ExtraHop provides end-to-end visibility across the application delivery chain and definitive insights into the behaviors and communications of revenue-generating applications. It offers a centralized view of your IT environment, eliminating operational silos and monitoring tool sprawl so you can deliver outstanding end user experience.

With ExtraHop's unique approach, you gain deep insights into user activity and operational performance as it happens and without requiring data scientists. One nationwide retailer used ExtraHop to observe how the checkout process differed from store to store. They saw that their retail locations in Hawaii took much longer to complete the process and wanted to know why—it turned out that all the IT was working fine, but employees and customers on the islands were so friendly that they would simply talk together longer. These are the types of insights that often hide from organizations as they grow their operations but which can have substantial impact on revenue.



CASE STUDY



The Home Depot Builds Unified User Experience Thanks to Greater Application Visibility

The Home Depot is on a mission to provide the best customer experience in retail, delivering a seamless experience no matter how the customer engages with The Home Depot—online, in stores, or otherwise. For the IT team, visibility is a critical part of supporting this multi-channel customer experience. In order to manage the complexity and scale of an operation this size, The Home Depot needed visibility across its entire infrastructure—from the datacenter to stores, distribution and fulfillment centers, and other remote sites.

The Technology team deployed ExtraHop at nearly 2,300 remote sites, including stores, distribution and fulfillment centers, call centers, and technology offices. With this rollout, the Technology team had the ability to collect telemetry at the retail edge—closest to the associate and customer—providing real-time insight into the performance of applications and infrastructure systems.

ExtraHop also allows The Home Depot to perform real-time application and service monitoring by collecting standard metrics such as volume, availability, latency, and errors for every application. ExtraHop is used to aggregate the data from every store and identify key trends and perform chain-wide analytics, ultimately improving application performance by 40%.

Streamline Your Cloud Migration

The adage “You cannot manage what you cannot measure” applies here. IT Operations teams need insight into what devices and applications are active in their environments before they can make decisions about migrating revenue-generating applications to the cloud. The ExtraHop platform allows IT teams to auto-discover and classify every asset - including the dependencies between servers or applications that may not show up on manually updated documentation or spreadsheets - anywhere from 48 hours to 5 weeks depending on the organization timeframe.

In the public cloud, the ExtraHop platform provides unprecedented transaction-level visibility. This facilitates the “lift and shift” of applications to the cloud because application owners can measure performance before, during, and after the migration process. For example, in Amazon Web Services, IT teams can see how workloads perform across AWS Regions and make more informed EC2 sizing decisions by measuring the impact to transaction performance.





CASE STUDY

Edge To Cloud Insight For A Leading Fast-Food Chain

This leading international fast-food chain is fully committed to delivering the “experience of the future” to its customers and focuses heavily on digital initiatives, including the worldwide rollout of their food delivery app hosted on AWS. AWS monitoring tools provided visibility into the app performance in the cloud. Nevertheless, this top fast-food chain still lacked visibility for the rest of the service delivery chain, especially at its branch restaurants, resulting in poor user experience and jeopardizing the success of the rollout.

Thanks to ExtraHop, this leading fast-food chain gained complete visibility from device to cloud to branch location, and was able to offer a world-class customer experience for its new delivery service. The integration with AWS CloudWatch and CloudTrail provided enhanced visibility and significantly helped streamline the application rollout in the cloud.

Hold COTS Application Vendors Accountable

When it comes to troubleshooting application performance issues, vendors of Commercial Off-The-Shelf (COTS) applications have historically enjoyed the benefit of the doubt. In cases where an enterprise's end users experienced performance issues with a commercial application, IT Operations teams might report the issues to their vendor. Assuming the enterprise hadn't voided the vendor's support agreement, the vendor could opt to help troubleshoot—but could also redirect the onus to the enterprise, citing the need for more server hardware or blaming network congestion.

With ExtraHop, IT Operations teams hold more sway in the vendor-customer relationship because they can see the factors attributable to application issues. If a particular database SQL method is taking an unusual amount of time, IT Operations can see it. If network transfer and server processing is taking too long, they can see it. If only a subset of clients is experiencing slowness, they can see it. What's more, ExtraHop makes forensic evidence available for IT Operations to prove its innocence.





CASE STUDY



Middlesex Hospital Achieves Better EMR System Performance

Middlesex Hospital must manage a diverse and ever-expanding array of applications and services, including Cerner, eClinicalWorks, and McKesson Homecare. With so many complex applications to support, troubleshooting was time-consuming. Even when the team was able to successfully identify a problem, their monitoring tools didn't always give them the clear evidence that they needed to convince vendors and internal app teams.

When Middlesex was upgrading one of its EMR systems, the EMR vendor couldn't figure out the cause of significant slowdowns. The vendor kept telling the IT team that they needed to add capacity—but when more capacity didn't solve the problem, the vendor then blamed the network. With ExtraHop, the IT team was able to prove that Citrix round-trip times were good on the network side, which convinced the vendor to go back and correctly identify the issue.

ExtraHop provides Middlesex with objective data off the wire that they can use to arbitrate differences between application and infrastructure teams. "Before, when we would send a packet capture back to the vendor, they might not understand what they were seeing," says Ant Lefebvre, Senior System Engineer. "With ExtraHop, it's the difference between the vendor believing us and the vendor not believing us — or the difference between getting to the root cause of a problem now versus getting to the root cause of a problem weeks from now, after exhausting every other possible avenue."

Go From APM Black Box To Complete App Visibility

Today, the network is the lifeblood of every digital business. APM solutions provide valuable data from the core of an application but fail at delivering a comprehensive view of the full application stack. Wire data empowers IT Operations teams to maintain application performance and better support the business by eliminating the blind spots left by traditional APM solutions and providing actionable insights for every strategic project.



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www.extrahop/app-analytics

ExtraHop demo online at
www.extrahop.com/demo/performance