ExtraHop

Protecting Your SaaS Investment: Monitoring Office 365 Performance

Utilizing the ExtraHop platform to ensure high performance from your Office 365 applications

Achieving Higher Productivity and Business Continuity Starts with Regaining Lost Visibility

For many businesses, moving to Microsoft Office 365 can reduce the overhead and administrative burden on IT Operations teams. Yet these benefits come at a cost: a loss of visibility into the business-critical services users rely on. In this whitepaper, we explore how IT Ops teams can expedite data visualization, analysis, and insights for Office 365 with ExtraHop.

In a SaaS-Centric World, Traditional APM Approaches Deal Enterprises a Weak Hand

Enterprises use SaaS to save money, stay up-to-date with the latest capabilities, and simplify IT management, and 73 percent say nearly all of their apps will be SaaS by 2020. Yet IT Operations teams, as well as some networking and security teams, may still reminisce about the days of knowing how their on-premises apps were performing or not performing—visibility that's lost with SaaS. No application data, no log data, no insight. Just symptoms and hunches.

For business-critical SaaS applications such as Microsoft Office 365, individually minor inconveniences such as delayed email or slow-loading documents can—if afflicting multiple users over multiple days—significantly constrain productivity and even result in lost business. For most enterprises, IT Operations is accountable for ensuring application performance, even when contributing factors may be beyond their visibility or control.

The nature of SaaS customer/vendor relationships makes it too convenient for vendors to skimp on investigating performance issues on their end, and instead redirect blame on the customer's network. Unlike on-premises applications that can be monitored to a certain extent with event and log analysis, packet probe analysis, and other tools, SaaS applications can't be monitored with traditional APM tools. These obstacles can make it extremely difficult for IT Operations teams to determine whether poor application performance is stemming from issues in their network or issues on the vendor's side.

Surfacing SaaS Performance Insights with Wire Data

The ExtraHop platform uses real-time stream processing to transform unstructured packets—the data flowing through your network—into structured wire data at line rate, enabling IT Operations to discover, observe, and analyze every digital interaction as it happens. ExtraHop also enables IT Ops to see, share, and act on these insights with role-based dashboards, as well as live activity maps and a visual query language for simple mining of transactions on the wire.

| UNSTRUCTURED PACKETS | REAL-TIME STREAM PROCESSOR | STRUCTURED WIRE DATA | MACHINE LEARNING | ACTIONABLE INSIGHT |
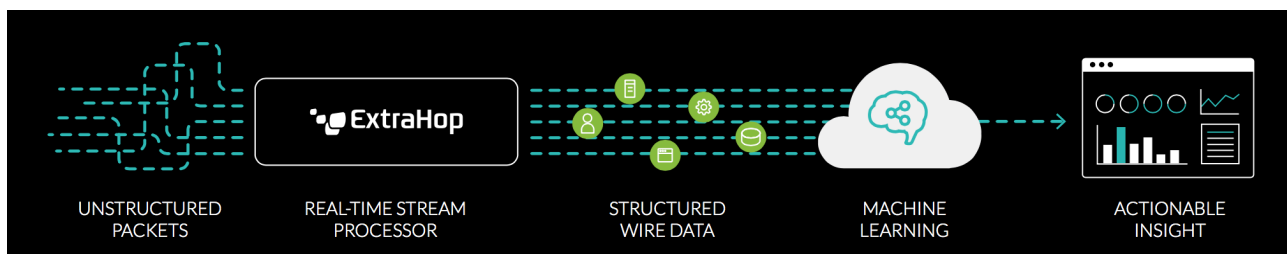
ExtraHop shines a spotlight on the SaaS traffic traversing your network by utilizing the service URLs and IP Address Ranges published by the vendor and performing real user monitoring based on wire data. ExtraHop then generates objective, real-time insights into what's working or failing in your network—and what's working or likely failing in your software vendor's network. What's more, ExtraHop can monitor any SaaS or on-premises app your business uses.

Getting to the root of SaaS application performance issues starts with key indicators:

- What's impacting throughput and how much traffic is dedicated to a given service?

- How is traffic performing, is there significant latency, and is communication breaking down?

- Is the issue affecting all users or just a subset?

Using ExtraHop to Monitor Office 365 Performance

ExtraHop correlates and visualizes wire data to derive deeper insight into the specific applications in Office 365. Monitoring the encrypted network traffic from Microsoft is made possible by matching traffic in three ways, starting with IP address. When there is no IP match, an exact hostname match is attempted by watching DNS traffic, and matching certificate hosts and subjects by performing SSL/TLS envelope analysis. If an exact hostname match fails, an attempt is made against the hostname and certificate subjects using a fuzzy match approach.
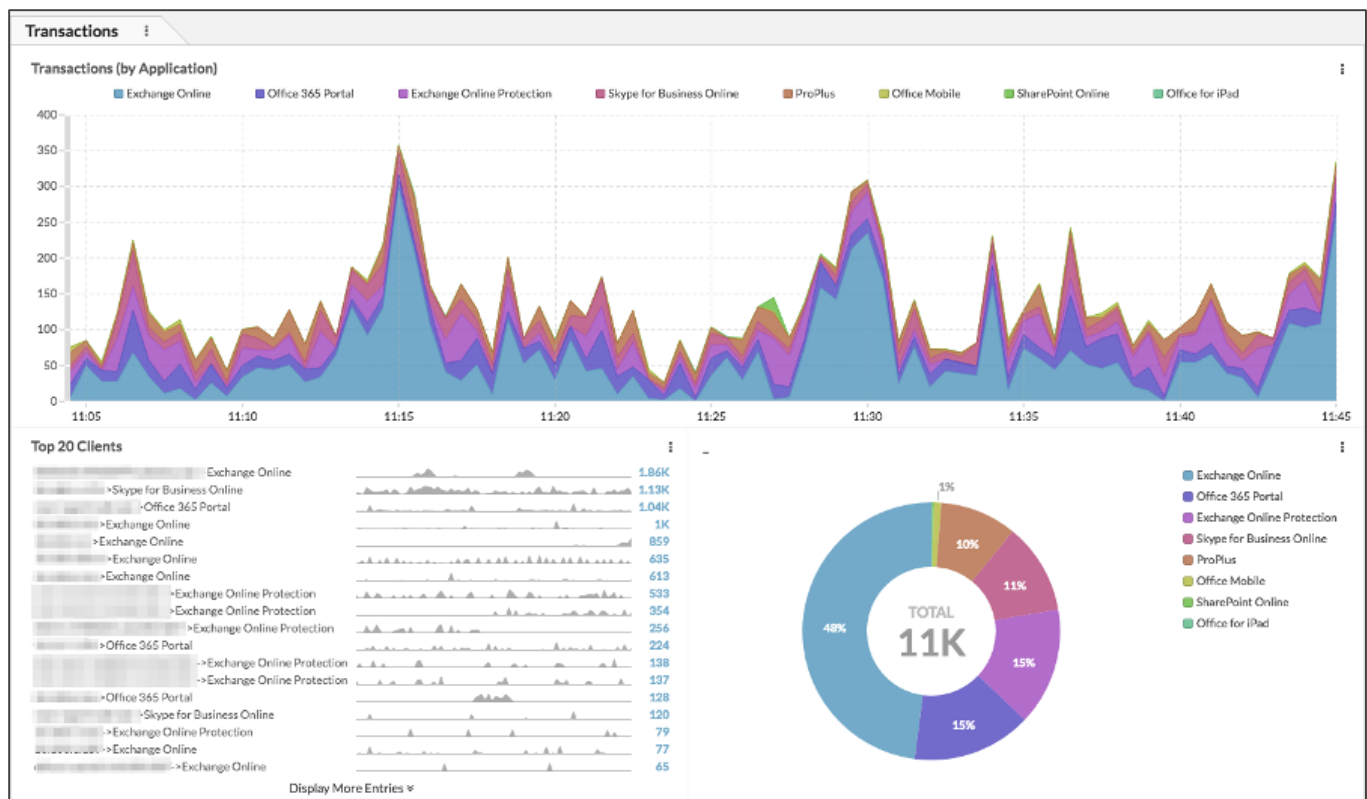
The ExtraHop platform discovers and classifies Office 365 web transactions. This dashboard shows high-level activity but the products allows drill-downs in HTTP and SSL metrics by application and client as well.

The ExtraHop platform inspects and filters traffic based on IPv4 and URL data published by Microsoft, resulting in application-specific (Exchange Online, Office 365 Portal, Skype for Business Online, etc.) data including HTTP and SSL transaction metrics, round trip times, and throughput by application and client. This real-time information enables IT Operations to answer key questions:

- Which Office 365 services are being used by which clients, as well as how much, when, and what is the performance of those connections?

- What is the network performance of each individual Office 365 service in aggregate and for individual clients?

- When issues arise, is it my environment or something within the Office 365 cloud?

- What is the impact and performance of this new traffic on my network? How is this growing over time?

Real-World Impact: Large Healthcare Provider

Losing Productivity from the Top Down – A large healthcare provider was moving an increasing number of its applications to the cloud, including Microsoft Office. Then the company started experiencing performance issues, particularly among admins supporting C-Level leadership across the company. More than just struggling to access their own email or calendars in Office 365, the admins couldn't access these for the executives, putting an immediate priority on the issue from the top down.

Gaining Immediate Insight with ExtraHop - When Microsoft's support told the company that the issue must be in their own network, they looked at ExtraHop to see if that was the case. The IT team quickly realized the issue wasn't in their network—and they had proof from ExtraHop: the affected admins had profiles, mailboxes, calendars, etc. housed in regions that were geographically distant, with latency in the hundreds of milliseconds. With this evidence in hand, the IT team worked with Microsoft to host all of the profiles, mailboxes, and calendars in regions that were closer and saw latency drop to tens of milliseconds.

OFFICE 365 USE CASE	
Symptoms	Some users experienced much worse performance than others when accessing profiles, mailboxes, calendars, etc.
Investigation	The IT team looked at internal network performance and also round-trip time for external address spaces most often accessed across Office 365 sites.
Root Cause	Users whose assets were hosted in geographically distant regions experienced high latency. Once moved, performance improved dramatically.

Latency is calculated for each Office 365 application based on TCP round-trip timing. Again, drill-downs are available by application and client.

Real-World Impact: Children's Research Hospital

Flying Blind – A children's research hospital was migrating some 10,000 users to Office 365. But with minimal visibility into the impact thousands of SaaS users would have on the network—let alone overall user productivity—over time, the IT team needed a way to gain this missing insight. As a way to mitigate risk, the team was moving users over in small increments.

Deploying Smarter with ExtraHop – IT team deployed ExtraHop and gained "exactly the visibility we needed" to gauge the impact on network infrastructure. IT Operations also learned that certain applications in the Office 365 suite (e.g. Yammer) were consuming significant bandwidth, despite not being authorized by IT.

Creating New Efficiencies, Company-Wide – Within the first few months, the IT team had accelerated its Office 365 deployment. Furthermore, the company was able to identify and address bottlenecks in their remote clinics that didn't have sufficient bandwidth to handle both Office 365 and clinical apps.

OFFICE 365 USE CASE	
Symptoms	The IT team did not know the impact that Office 365 would have on the network and so was migrating 10,000 users over incrementally.
Investigation	With ExtraHop, the IT team could measure Office 365 usage by application and the impact on the network infrastructure.
Root Cause	The team discovered some unauthorized applications in use and also identified network bottlenecks in some remote clinics.

Regain SaaS Application Visibility with ExtraHop

Regardless of the SaaS application, ExtraHop offers crucial visibility for IT Operations to know what's happening in their network, hold SaaS vendors accountable, and better enforce service level agreements to champion optimal user experiences.

To learn more, check out the ExtraHop demo: www.extrahop.com/demo

ABOUT EXTRAHOP
ExtraHop makes real-time data-driven IT operations possible. By harnessing the power of wire data in real time, network, application, security, and business teams make faster, more accurate decisions that optimize performance and minimize risk. Hundreds of organizations, including Fortune 500 companies such as Sony, Lockheed Martin, Microsoft, Adobe, and Google, start with ExtraHop to discover, observe, analyze, and intelligently act on all data in flight on-premises and in the cloud.

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