Murphy USA Fuels Faster Networks and Applications with Operational Intelligence

MURPHY USA

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—Micah Rodgers, Senior Network Security Engineer, Murphy USA

COMPANY PROFILE
Murphy USA, a wholly owned subsidiary of Murphy Oil, operates 1,258 gas stations in 23 states. In 2011, Murphy USA earned $13.1 billion in revenue.

CHALLENGE
Responsible for network and application performance at bandwidth-constrained gas stations, the Network team at Murphy USA sought deep visibility with zero overhead.

SOLUTION
ExtraHop delivered deep application-level visibility to help Murphy USA's lean Network team solve problems quickly and collaborate more effectively with other IT groups.

BENEFITS
- **Up to five times faster application performance**
- **Estimated 70% reduction in mean time to resolution (MTTR)**
- **Easy-to-navigate interface with actionable information**
- **Noninvasive 15-minute deployment with no configuration**

KEY FIGURES
- **More than 700 Murphy USA gas stations share a VSAT link**
- **80% of Murphy USA applications are customized**
- **Payment card industry (PCI) compliance requires strict safeguards, including no stored packets**

Challenge

How well applications use the network is especially important to Murphy USA, which operates 1,258 gas stations throughout the Southeastern United States. Each new store is connected to a shared 10Mbps VSAT link and then upgraded to faster DSL connections, if available. Currently, more than 700 locations and numerous complex, critical applications share the meager VSAT link, including the following:

- A highly customized point-of-sale system that depends on more than 20 sub-applications

- A credit-card payment-processing application that must comply with payment card industry (PCI) regulations

- Centralized gasoline-price sign controls that send price updates to 3,000 signs each day

- Fuel-tank monitors that support refueling logistics

"The distributed and bandwidth-constrained nature of our environment means that our Network team is the first to take the call when something goes wrong, whether it is a network or application problem," says Micah Rodgers, Senior Network Security Engineer at Murphy USA. "We're the ones that get the call at 2 a.m. asking, 'Why can't we sell gas?'"

Despite having numerous tools in place from traditional network monitoring vendors, the Network team at Murphy USA lacked insight into how the network and applications interacted. "We are responsible for fielding issues that would normally be assigned to the Application Support group or a DBA, so we need visibility into application and system performance—even if we don't have access to those systems," explains Rodgers.

Solution

Seeking greater visibility into application health and performance, the Network team at Murphy USA launched a three-month product evaluation of more than 25 vendors. Murphy USA chose ExtraHop based on its noninvasive deployment, ease of use, and superior analysis capabilities.

"Many of the tools we looked at relied solely on NetFlow, which provides a quick summary of who is talking to whom over which port, but no details for those conversations," says Rodgers. "ExtraHop provided the application-level detail we sought, and did so without agents or synthetic transactions, which would have added unacceptable network overhead."

Operational Intelligence

Deployed in Murphy USA's primary datacenter, the ExtraHop platform analyzes all transactions from L2 to L7 to extract critical health and performance metrics from across the network, web, database, and storage tiers. This analysis gives the Network team at Murphy USA the operational intelligence they need to answer previously intractable questions. In one instance, the Network team used ExtraHop to pinpoint the cause of slow web application load times.

"We had previously spent months trying to determine the root cause of extremely slow load times at certain stores," says David Conner, Network Engineer at Murphy USA. "With ExtraHop, we saw the affected stores also had an abnormally high number of HTTP 304 status codes, indicating that the browser was checking for updated content despite it not having expired, resulting in asking the server for updated versions of each of the 18 web objects on that page. This was due to an incorrect browser setting, so we rolled out an update and used ExtraHop to watch the superfluous requests start to disappear."

Visibility for All Applications

The Murphy USA Network team uses the ExtraHop platform to gain application visibility even when they do not have direct access to those applications or systems. With this insight, the Network team can provide actionable information to application owners.

"Our inventory system uses a batch FTP upload, and some of the files were not showing up or were corrupted," says Conner. "Though the network was suspect, we saw a spike in FTP 425 errors corresponding with the reported problems that meant the clients could not establish a data connection. With this evidence, we worked with the FTP server owner to fix the misconfiguration causing this behavior."

Benefits

The ExtraHop platform equips Murphy USA's lean Network team with operational intelligence so they can solve problems faster, optimize how applications use the network, and work more collaboratively with other IT groups.

Speedier Application Performance

ExtraHop helps Murphy USA optimize the performance of its applications. In the case of the slow web application, the ExtraHop platform has helped speed load times by a factor of five.

"ExtraHop helps us understand what is happening within our environment," says Conner. "We can start at a high level and see the trend in performance across the various technology tiers. To investigate something, we can select that timeframe and drill down to see which devices are causing problems, and then drill down again to see the transaction details. In this way, our team can isolate the root cause of a problem in just a few clicks."

Greater Collaboration

With real-time intelligence into network and application behavior, various IT groups at Murphy USA have begun working more collaboratively.

"ExtraHop shows what the applications are actually saying, not just who is talking to whom," explains Rodgers. "This application-level insight provides a basis for our IT organization to collaborate. Our DBAs use ExtraHop to tune queries and eliminate redundant queries, for example. And many groups refer to ExtraHop first before contacting the Network team."

Easy to Learn and Use

Within minutes of installation, Murphy USA network engineers were intuitively navigating the ExtraHop user interface and discovering useful information.

"ExtraHop offers more than pretty performance dashboards. I could immediately see interesting and usable data such as SQL errors," says Rodgers. "I've seen a lot of products, and ExtraHop is the easiest-to-learn network and application monitoring product that I've come across."

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.

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