Practice Fusion Delivers EMR Performance to Help Doctors Save Lives

practice fusion®
Free, web-based Electronic Health Records

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>
> **—John Hluboky, VP of Technical Operations, Practice Fusion**

COMPANY PROFILE
Practice Fusion is the fastest growing EMR community in the United States with more than 150,000 medical providers housing 50 million patient records.

CHALLENGE
With increasing demand for its free, web-based EMR solution, Practice Fusion needed greater visibility into and control over application performance.

SOLUTION
The SaaS provider's Operations and Engineering teams use the ExtraHop system to monitor and measure performance in all stages of the application lifecycle.

BENEFITS
- Correlated visibility across tiers
- Faster and lower-risk application rollouts
- Proactive problem resolution
- Real-time SSL decryption with no threat to patient privacy

KEY FIGURES
- $75,000 cost avoidance with P2V migration
- 80% virtualized server infrastructure
- 270% growth in users between 2011 and 2012
- 20 Technical Operations team members and 40 Software Engineering team members

Challenge

Practice Fusion provides a free, web-based electronic medical record (EMR) system that helps healthcare providers, even physicians with small practices, to reap the benefits of digital medical records. This includes federal Meaningful Use incentives worth up to $44,000. Practice Fusion earns money from its free EMR application by serving relevant advertisements, such as co-pay coupons for patients, and has won numerous product awards for its laboratory, e-prescription, scheduling, charting, and billing features.

Because of its disruptive business model and federal incentives for EMR, the healthcare software-as-a-service (SaaS) provider saw more than 270 percent growth in the number of physicians using its solution from 2011 to 2012.

Behind the scenes, the Technical Operations team at Practice Fusion works to efficiently scale the IT infrastructure while supporting rapid iterations in the software code. Most importantly, the Technical Operations team works to ensure the availability and speed of the EMR service, which is based on the Microsoft .NET Framework and uses a traditional three-tier architecture.

"We take application performance very seriously," says John Hluboky, VP of Technical Operations at Practice Fusion. "Ours isn't just any SaaS application—it's a life-saving tool that physicians use to access patient history and essential information such as drug allergies. We are the only EMR provider to offer a service-level agreement to our customers."

As demand for its service grew rapidly, Practice Fusion sought an application performance management (APM) solution that would help the IT organization collaborate to ensure optimal performance. "We had many point solutions that provided information about discrete components, but nothing that gave us a holistic, correlated view," says Hluboky. "We were looking for a platform that could give us comprehensive visibility and foster greater collaboration across teams."

Solution

Practice Fusion evaluated traditional APM tools including HP Application Performance Management and Quest Foglight, but eventually chose the ExtraHop Application Delivery Assurance system.

"There's no other APM solution like the ExtraHop system on the market today in terms of real-time visibility across tiers," says Hluboky. "I've been part of several large-scale monitoring projects that cost millions of dollars and spanned years, but did not provide this level of visibility at their conclusion."

Fast Deployment that Protects Patient Privacy

Deploying the ExtraHop system was as simple as installing the appliance and registering certificates for SSL decryption. A unique advantage of the ExtraHop system is that it does not store packets that can contain personal health information. "We manage more than 50 million patient records," says Hluboky. "It's incredibly important that ExtraHop can monitor all our traffic—even the encrypted traffic—and do it without any potential privacy violations."

Support for the Entire Application Lifecycle

The Software Engineering team at Practice Fusion uses the ExtraHop system to speed code releases and reduce risk. "We set up the ExtraHop system in our staging environment so that the Engineering team can see the impact of new code against our baseline performance," says Hluboky. "With visibility across all tiers of the environment, we can determine whether a performance problem is due to infrastructure, misconfiguration, or possibly a code-level issue. We can see the performance of particular web servers or URLs when using a certain type of transaction, for example. We catch performance issues earlier in the development cycle this way and also monitor the impact of new code releases the next day when users start logging in."

ExtraHop Networks provides a passive, network-based approach to application performance management (APM) built to ensure that business-critical transactions do not fail.

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

IT Infrastructure Change

When making decisions about IT infrastructure, including during physical-to-virtual (P2V) migrations, the Technical Operations team relies on the ExtraHop system.

"We recently used ExtraHop to successfully migrate a portion of our web application from a physical to a virtual infrastructure," says Hluboky. "This part of the application was customized to run on a particular HP server platform, and previous attempts to virtualize the workload failed, creating race conditions and similar problems. Our team used the ExtraHop system to baseline several key performance indicators, including application response time, and then spin up a parallel virtual infrastructure to compare performance. Using ExtraHop, we could prove that performance was the same or slightly better on the virtual infrastructure. Because the HP servers were reaching end-of-life, we would have spent up to $75,000 purchasing new hardware and revalidating the software for the new platform. ExtraHop helped us avoid that expenditure."

Benefits

With the ExtraHop system, Practice Fusion gains the comprehensive visibility that it needs to manage the performance of a dynamic, rapidly scaling application environment.

Proactive Problem Resolution

The ExtraHop system continuously monitors application performance across all tiers, delivering early warning alerts when trends deviate from historical baselines. "ExtraHop has helped us move from a reactive mode of operations to proactively resolving issues," says Hluboky. "We've achieved the 'holy grail' of IT Operations where we're not just remediating problems faster, but preventing problems from occurring in the first place."

Industry reports on SaaS-based EMR solutions praise Practice Fusion for its excellent application response time—

something that customers have noticed as well. "The number of support calls over the past year has remained roughly the same even while the number of users has doubled," says Hluboky.

Greater IT Efficiency

As transaction volumes grow by 10 percent each month, Practice Fusion's Technical Operations team uses the ExtraHop system to efficiently scale its IT infrastructure.

"ExtraHop provides crucial information about the performance of our network, web, database, and storage infrastructure. We can plan capacity, tune configurations, and consolidate servers," says Hluboky. "Our server infrastructure is currently 80 percent virtualized. ExtraHop gives us the visibility we need to safely migrate critical application workloads to virtual infrastructure, gaining flexibility and cost-efficiency."

Broad and Rapid Adoption

Practice Fusion uses the ExtraHop system to gain a holistic, correlated view of application performance.

"Every team in our IT organization uses the ExtraHop system. It's our single pane of glass," says Hluboky. "Our system engineers and network engineers use it most often, but the application support team and DBAs also use the ExtraHop system to determine authentication failures or tune a database query, for example. This information is available immediately off the wire in terms that everyone can easily understand."

The intuitive ExtraHop system user interface facilitates rapid adoption. "One of my favorite features of the ExtraHop system is the customizable summary page where I can quickly correlate performance across tiers to understand what is happening," says Hluboky. "The ability to start at a high level and drill down into actionable information helps even new team members with more generalist skills solve problems quickly."

ExtraHop