



## Network Monitoring Challenges and Solutions for the Health Care Industry

### OVERVIEW

#### Service Assurance

- Continuous monitoring of traffic-based data and real-time analysis to quickly locate problems, regardless of their source
- Full visibility into layers 2 through 7 and a contextual end-to-end view of the IT infrastructure
- Patented ASI technology significantly reduces MTTR and MTTK

#### Cost Benefit Savings

- Protect healthcare provider and patient experience
- Improve reliability of critical services
- Reduce IT staff costs
- Consolidate network monitoring tools to save on CAPEX
- Increase ROI

### Rapidly Triage Network Issues, Cut IT Costs, and Increase ROI While Ensuring and Improving Patient Care

Health care is one of the most information-driven service industries, and never has information technology (IT) played a more pivotal role in its daily practice. The industry at large has embarked on the journey of digital transformation (DX) in which the implementation and management of indispensable IT technology and services plays a vital role. Services critical to patient care including electronic medical record (EMR) applications, telemedicine, mobile health and BYOD initiatives are taxing networks, servers, and databases like never before and create monumental challenges for the health care providers. Cleveland Clinic and a children's hospital in Florida are good examples as to how these challenges are addressed by some of the leading and well-respected health care providers today<sup>1</sup>.

Delays in EMR performance tasks, for example, which are initiated literally millions of times a day from opening charts to scheduling clinical tests to administering medication to reviewing and updating patient records, can diminish clinical efficiency and increase costs. That decrease of efficiency breeds end-user discontent and eventually undermines patient care.

Plus, the health care industry has never been more regulated. The HIPPA Act<sup>2</sup>, for example, requires the industry meet strict privacy and IT security regulations while the HITECH Act<sup>3</sup> decrees the "meaningful use" of health information technology, and mandates the electronic exchange of EMR information while meeting patient quality benchmarks and federal compliance requirements. As a consequence, enormous responsibility has shifted to the IT departments – and networks – of health care organizations.



In addition, some of the more specific problems IT professionals in the health care industry face can be segmented into three main areas, for example:

**Insights into the Network or Visibility**

- Needing end-to-end operational visibility of their service delivery environment's interrelationships and dependencies
- Agility and scalability in managing an evolving service delivery infrastructure

**Operational Efficiencies**

- Lowering time in the war room per major service incident
- Rapidly pinpointing the root cause of service performance issues and thereby lowering mean time to resolution (MTTR)
- Shortening service disruptions that immediately impact patient care
- Reducing IT infrastructure capital and operational expenditures while simultaneously maintaining or even increasing the quality of patient care

**User Experience**

- Maintaining 24/7/365 availability of lifesaving clinical applications to medical staff that depend on system responsiveness
- Ensuring consistent high-quality user experience and the highest level of service performance between main campuses, the data center, and satellite clinics

**The Solution to Your Service Assurance Problems**

The NETSCOUT nGeniusONE™ Service Assurance platform and Adaptive Service Intelligence™ (ASI) technology provides a holistic view and clear insights into service performance problems before they become health care user and patient problems. NETSCOUT nGeniusONE's core functionality is rapid service triage as it combines continuous monitoring and multi-layered real-time analytics capabilities, providing an integrated performance management solution for the most complex and demanding service delivery environments.

The ASI technology is the cornerstone of a highly scalable service assurance architecture that collects, correlates and contextualizes data allowing the IT organization to get a complete understanding of the service experience and to quickly identify the source of a performance problem. ASI is a cutting-edge, network traffic-based analytics technology that generates metadata, which enables a comprehensive real-time and historical view of any service delivery component including network, server, database, service enablers and application. This powerful data mining engine runs on NETSCOUT Intelligent Data Sources that continuously monitors session traffic in real-time as packets cross virtual or physical links. The metadata generated gives important metrics like server throughputs, transaction response times, specific application error codes, traffic volumes and more.

What is the end result or benefit of such an overarching service performance monitoring solution to health care organizations? Fundamentally, the NETSCOUT solution allows network and application teams to quickly identify and triage service performance issues and reduce risk to both the organization and the patients it serves.

Some of the specific benefits health care organizations will derive include:

- Assure the highest quality user and patient experience
- Reduce time spent in the war room resolving service problems
- Dramatically cut MTTK and MTTR such as the Cleveland Clinic experienced
- Improve IT staff productivity by establishing a common situational awareness – something a children's hospital in Florida gleaned
- Consolidate network monitoring tools to save on CAPEX and improve troubleshooting efficiency
- Gain a contextual end-to-end view of the service delivery environment, and visibility into user communities, services and strategic IT assets
- Improve ROI with savings potentially from hundreds of thousands to millions of dollars



## NETSCOUT Helps Cleveland Clinic Identify a Vexing Vocera Communication Badge Connectivity Issue

A real-world example of the power of NETSCOUT solutions was a Dynamic Host Configuration Protocol (DHCP) incident the Cleveland Clinic encountered. The Vocera communication badges used for intra-caregiver communications were not being recognized in the hospital's neonatal clinic. The badges allow instant hands-free communication between nurses and doctors and their inoperability was literally threatening the lives of newborns. A technical malfunction trickled down to the patient proving the indispensable necessity – and interdependence – of a smooth-running network to health care providers.

NETSCOUT nGeniusONE provides a service-oriented workflow that allows IT professionals to drill down from the high-level service dashboard down to protocol-level analysis and forensic evidence collection. Within a few clicks of the mouse, Dave Hines, the network operations manager for the Cleveland Clinic, identified the problem. Says Hines, "There were a large amount of errors prior to the optics that we applied that were immediately visible." The quick diagnosis and resolution of the DHCP-Vocera issue saved the hospital time and money.

The rapid MTTK and MTTR experienced by the Cleveland Clinic are not atypical. A network administrator at another large enterprise health care organization confirmed they slashed their MTTR by an astonishing 80 percent or more using the NETSCOUT nGeniusONE Service Assurance solution.

## A Florida Hospital's NETSCOUT Experience

A Florida children's hospital also touts the results it has derived from using NETSCOUT nGeniusONE saying, "Other applications and services that are vital to the operation of the hospital include Microsoft® Exchange®, Oracle®, and Lawson™ ERP systems. In addition, Voice over IP (VoIP) along with telemedicine video conferencing has become an increasingly important application for the hospital as they facilitate real-time consultation between medical specialists located on and off campus. The ability to provide always-on access to all of these systems is critical to the effective operation of hospital and patient care services."

## Conclusion

Indeed, each industry faces its own unique challenges, but few are as pronounced as health care. The IT mandates found in HIPAA, the HITECH Act, and HIE requirements all present their challenges to the health care industry and to its providers like the Cleveland Clinic and a children's hospital in Florida.

Health care providers that fail to address these challenges effectively stand the risk of undermining the patient care for at the end of the day, human beings' lives depend upon the smooth delivery of vital medical services – some of which can be literally life-threatening. Health care organizations must provide optimal patient care with high performing and continuously available services running across increasingly complex IT infrastructures. And with NETSCOUT solutions deployed by leading health care providers like the Cleveland Clinic and a children's hospital in Florida, that is possible.

For more information about NETSCOUT, visit our website here or call +1 800-309-4804 on how you can enhance your network and application infrastructure service assurance today.

<sup>1</sup> See Page 3 for more details.

<sup>2</sup> Health Insurance Portability and Accountability Act (HIPAA) was passed in 1996 mandates the establishment of regulations for electronic health care transactions, health insurance plans and employers.

<sup>3</sup> The Health Information Technology for Economic and Clinical Health (HITECH) is the health care segment of the American Recovery and Reinvestment Act of 2009 (ARRA).



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