Providing Reliable Patient Care at US Acute Care Solutions
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US Acute Care Solutions (USACS) is the national leader in physician-owned integrated acute care solutions; including emergency medicine, hospitalist and observation services. Founded in 2015, USACS provides high-quality emergency and hospitalist care to over 6 million patients annually at more than 200 locations in 22 states.

**Industry:** Healthcare

**Headquarters:** Canton, Ohio, US

**Use Case:** WAN monitoring, internal application monitoring, SaaS monitoring, device monitoring

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*Aaron Howard*

*Lead Engineer, Network and Security*

*US Acute Care Solutions*

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**Providing the Best Around-the-Clock Patient Care**

US Acute Care is a well-established leader in hospital management solutions across a variety of medical disciplines ranging from emergency medicine, acute care to hospital medicine. Through customized solutions that include staffing emergency rooms to providing a seamless medical billing process and claims adjustments, US Acute Care strives to align hospital systems. Enhancing the quality and efficiency of hospital management—from reducing patient wait times to providing fast yet accurate diagnosis during emergencies—has an impact on patient care. When you have the potential to impact one patient every five seconds, delivering a 24/7 service is critical.
Maintaining an Always-on Network in an Internet-Dependent World

The network is the central nervous system of US Acute Care operations. Be it connecting doctors to the right patient service application or remote workers to medical coding and insurance claims software; the network binds it all. A hiccup in the network means operations go awry and has a direct correlation with the quality of patient care. Maintaining the network—both internal and external—is the single most vital task of the IT team within US Acute Care.

However, the network is not what it used to be. **Software-as-a-service (SaaS)** applications and remote working have altered the DNA of enterprise architectures. External dependencies have increased and digitally transforming enterprises are under duress to deliver exceptional quality of service despite minimal control and visibility into this changing environment. When the network begins to sprawl beyond traditional enterprise boundaries, the “fault-zone” expands, leaving network teams blindsided.

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*Figure 1: US Acute Care relies on ThousandEyes Transaction tests to monitor user-journey and user-experience of SaaS applications.*
Diminished Visibility and the Pillar-to-Post Troubleshooting Syndrome

US Acute Care uses multiple ISPs and redundant circuits between data centers and to external SaaS applications from each data center. Doctors accessing these applications from their acute care centers are either backhauled through their data centers or breakout directly to the Internet. With an expansive network that now includes the Internet and cloud-based applications, troubleshooting connectivity and availability involved checking every aspect of the interconnected system—from internal firewalls to switches to routing bandwidth to external ISP circuits with no clear way of understanding what is going on. The transient nature of some of these issues and a lack of historical baseline made it challenging to triage root cause and left the operations teams with limited insight. Being unable to detect and isolate issues and convince stakeholders and third-party service providers to fix problems led to extended resolution times and left both users and the IT teams frustrated.

“We once had an intermittent and patchy connectivity issue to our cloud applications. Even after 2-3 weeks of back and forth with our upstream ISP provider, we were unable to decode where the problem was,” said Aaron Howard, Lead Engineer, Network and Security at US Acute Care Solutions.

Go Ahead, Blame the Network

When the network is the glue that binds users to the cloud, it is not surprising that it often carries the blame. Every time users complain of either a slow application or loss in connectivity, the network teams are immediately alerted and it is upon them to demonstrate otherwise. Rather than working on business-impacting projects, the network team ends up burning man-hours proving innocence, while the issue at hand still prevails impacting users. According to Howard, “All roads lead to the network. When issues occur it’s logical to assume the network’s at fault. The burden of proof often comes back to the network team—it falls on us to demonstrate that it’s not.”

Figure 2: Device Layer gives USACS the ability to monitor their data center switches, routers and access points.
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ThousandEyes Solution

US Acute Care relies on ThousandEyes to maintain a 24/7 network service that allows them to provide around-the-clock care to their patients. US Acute Care selected ThousandEyes to address their internal WAN and SaaS application challenges. During their initial trial with ThousandEyes, they were able to gain resolution on a long term network issue caused by a malfunctioning router at their upstream ISP.

US Acute Care deploys ThousandEyes Enterprise Agents in three data centers to monitor availability and connectivity to SaaS applications critical for medical coding, billing and employee productivity. These Enterprise Agents form a trifecta of vantage points allowing them to monitor both the availability and bandwidth of their internal circuits while keeping tabs on their upstream ISPs.

“Our team was very impressed with the ThousandEyes Device Layer feature. It gives us the ability to continuously monitor our switches, routers and access points without losing focus on application performance. It’s a different level of monitoring than what you get from most solutions out there that only focus on the devices. The historical timeline view helps to identify before and after conditions across devices including port utilization and errors,” said Howard. “ThousandEyes’ cloud-based data inference engine presents data in a visually compelling layout, layering application performance to Layer 3 network behavior to Layer 2 device anomalies and BGP routing that allows the network engineering team to quickly triage outages affecting user-experience.”

Expediting Root Cause Analysis with Evidence

Before ThousandEyes it used to take Howard and his team sometimes weeks to identify the root cause of a sluggish application, gather necessary proof and escalate to the right teams to trigger resolution. Since incorporating ThousandEyes into US Acute Care’s network operations, there has been a transformative change to fault triaging and escalation. Howard commented, “What used to take us weeks has been reduced to minutes. It has allowed us to quickly isolate issues, escalate to the appropriate internal teams and focus on business impacting initiatives.”

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99% Faster Mean Time to Troubleshoot

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Optimizing User-Experience and Customer Journey

US Acute Care leverages ThousandEyes selenium-based Transaction tests to mimic their user’s experience while accessing external SaaS applications. By being able to see the end-to-end interaction, it is easier to diagnose the root cause of application slowness. When ThousandEyes proactively alerted US Acute Care to a 15% increase in page load times of a third-party application, the team was able to escalate to the application provider and influence a resolution with very minimal user disruption. In addition they were able to provide the exact source of the issue to their SaaS. By examining the timeline it was easy to determine what was introduced during the page load experience that caused the problem.

Building Partnerships with Service Providers

When consuming SaaS applications, there is a great deal of reliance on external service providers and ISPs. ThousandEyes’ active monitoring technique allows US Acute Care to detect and triangulate network issues in their upstream ISPs with a consistent set of data. “Rather than finger-pointing and placing blame, we can now collaborate with our service providers, working toward resolving the problem faster and reducing MTTR. The use of sharelinks has been instrumental in expediting resolution. ISP’s want evidence. We create a fully interactive snapshot and within seconds can provide the needed evidence to get the issue escalated. With ThousandEyes we already know where the problem is. We know with 100 percent certainty the issue is outside of our network and scope for resolution,” noted Howard.