

“Network managers have always wished they could have a time machine to travel back to when the problem occurred. And of course, that wasn’t possible until GigaStor.”

Jeff Parker
OpenWater Solutions
Managed Service Provider for Central DuPage Hospital



About Central DuPage Hospital

- Independent healthcare network with over 800 physicians and a staff of 4000
- 2nd busiest surgical center in Illinois
- National reputation as center of innovation for heart and spinal procedures as well as robotic surgery
- Named to the list of “100 Most Wired” health systems for IT leadership and innovation by Hospitals and Health Network Magazine

Challenge

Over the last year, Central DuPage implemented several major technology initiatives:

- A significant VoIP deployment
- Telemetry to provide patient monitoring in cardiology unit
- Full implementation of a Computerized Physician Order Entry (CPOE) system

Central DuPage lacked adequate tools to manage network, application, and connectivity issues associated with a recent VoIP implementation and expansion of critical network applications. The organization desperately needed an analyzer to monitor network performance.

CENTRAL DUPAGE
HOSPITAL

Solution

Central DuPage used Observer® Expert to conduct network assessments to benchmark network performance before implementing VoIP. Observer remains crucial in monitoring the four-hundred Cisco 7920 phones, as well as monitoring wireless network communications between doctors, nurses, other hospital staff, and patients. The wireless network transmits patient health information and alerts hospital staff to avert potential health crises.

Network Instruments® Equipment

Observer Expert
2 TB GigaStor™
Advanced Single Probes
Advanced Multi-Probes
Advanced Expert Probes

Using Observer to Manage VoIP

“Initially, we didn’t have adequate network analysis tools to manage network, application, or connectivity issues,” said Jack King, director of IT for Central DuPage Hospital. “We were in the middle of a significant VoIP deployment and had plans for implementing other critical network applications. We really needed some type of network analyzer to monitor and maintain network performance.”

Central DuPage worked through Jeff Parker, managing partner of OpenWater Solutions, who recommended Network Instruments’ Observer Expert and the GigaStor appliance.

They immediately used Observer Expert to conduct network assessments, thus ensuring a successful VoIP deployment.

Performing WLAN Diagnosis

In addition to managing the VoIP network, King uses Observer to monitor and troubleshoot other applications and basic network infrastructure. For example, the wireless network facilitates communications between doctors, nurses, and hospital staff, delivers patient heart information in real-time to the nurse’s phone, and delivers Internet access, which the hospital provides free to patients and their family. All of these applications and activities are critical in ensuring the hospital functions and effectively cares for its patients.

Before using Observer, employees complained about connectivity issues, often erroneously blaming the network. Another key task of Network Instruments’ analysis solutions is to perform regular network audits.

With patients and equipment being shuffled throughout the hospital, the network is in a state of constant change. Observer Expert allows IT staff to quickly identify and fix performance problems, whether the source is the application or the network. Audits are key to understanding the impact of infrastructure changes on network performance.



The importance of audits and monitoring was illustrated recently when the staff noticed that Wireless Medical Telemetry Service (WMTS) network connections were being unexpectedly dropped. WMTS is used to monitor and report patient physiological parameters (such as cardiac signals) through the wireless network to the nurse's phone to alert them of any emergency. With Observer on a laptop with a wireless card, King's staff was able to quickly locate the source of the dropped connections: a vendor, in demonstrating a product, was using an uncertified microwave, which interfered with the wireless signal in the area. The issue was immediately resolved, because the staff was able to proactively respond using Observer.

Acquiring a Complete Network History

In addition to handling performance issues with Observer, the IT staff uses the Network Instruments GigaStor for historical analysis and policy enforcement. The GigaStor appliance allows

the hospital to store days, weeks, and months worth of packet-level data for comprehensive historical analysis. Using GigaStor's unique time-based navigator, IT staff can quickly sort through massive amounts of traffic to find policy violations or anomalous traffic. Network administrators can even reassemble packet streams to recreate e-mails sent and received, web pages visited, IM sessions, and VoIP calls.

King often uses GigaStor to troubleshoot intermittent network problems. "GigaStor has saved me hours of time in troubleshooting," said King. "Usually network problems will take several days before reaching us. And by that time we receive only vague details of the problem at best. During one occasion, a complaint of a network slowdown came through the CIO with little detail. We only knew there was a slowdown in e-mail, and that it happened last week. GigaStor and Observer's Expert Analysis allowed us to quickly isolate and resolve routing and retransmission issues with the e-mail server. Without GigaStor, we could have spent hours trying to replicate the slowdown."

In this case, GigaStor's massive hard disk captured the problematic traffic, thus eliminating the time-consuming step of trying to recreate vaguely defined network problems.

"Network Instruments provides us with complete visibility into everything occurring on our network," said King. "Visibility is absolutely critical for us to be able to quickly identify and troubleshoot any issue before it impacts our network performance. With so many healthcare applications being dependent upon the network to function, having it go down is not an option. Being without GigaStor and Observer Expert and trying to locate the cause of a problem would be like trying to find a needle in a haystack in the dark."

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Jack King
Central DuPage Hospital
Director of Information Technology



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