

Taking Off with VoIP

CI Travel Uses Observer Suite to Manage VoIP Traffic and Help Cut Telecom Costs

High phone bills were eating up CI Travel's profits. Because reducing call volume really wasn't an option, CI Travel's IT Director, Paul Ingram, decided to take advantage of Voice over Internet Protocol (VoIP) technology to reduce per-call expenses. The new VoIP phones, while dramatically reducing per-call costs, came with a new set of problems. To make the investment in VoIP technology really pay off, Ingram required tools to monitor and troubleshoot the VoIP exchange. After evaluating a number of products, he chose Network Instruments'® Observer®, which has allowed him to successfully manage VoIP traffic ever since.

Making Connections

CI Travel is a \$150 million company with 300 employees at 49 locations across the globe. The core of their network is a high-capacity gigabit copper backbone located at corporate headquarters in Norfolk, VA. From there, a MPLS WAN connects the sites together. Each LAN is a switched gigabit copper network. The entire infrastructure is based on Cisco equipment.

Ensuring Passenger Communication

Ingram's biggest challenge is to effectively manage VoIP communication. Currently, there are 175 VoIP phones deployed at CI Travel's offices around the world. Next year, he expects there to be one VoIP phone per employee. Since much of the company's business is conducted over phone lines, Ingram has to be certain that VoIP users are getting the best quality of service attainable.

"Bad voice quality makes people turn to the standard phone system, which could quickly eliminate any savings we were intending to realize with VoIP," Ingram said. "The company depends heavily on phone communication to service customers; calls are going to be made with the most reliable phone, no matter the cost."

Choosing the Best Route

Ingram wanted CI to completely break free of its dependence on the traditional phone system. He purchased VoIP phones from Cisco, which ultimately lowered the phone bill, but there were new problems that came up and he needed a way to manage them.

"We were experiencing VoIP issues and needed a solution immediately," Ingram said.

He researched three products: Sniffer®, Ethereal, and Observer Suite.

"Sniffer is really behind on VoIP features," he said. "It can't even record voice packets for audio playback. Ethereal (an open-source "free" product) is actually more advanced than Sniffer when it comes to VoIP, but I am not comfortable using a product without any guarantee of technical or service support. Observer, on the other hand, was even better than Ethereal, and includes a higher level of support than either of them. Overall, I found Observer to be the best value."

Ingram purchased Observer technology, including a probe he placed on the WAN backbone to troubleshoot VoIP.

In one case, Ingram used Observer to troubleshoot erratic jitter that was occurring between his office and another office. He couldn't hear the problem on his end so he ran a packet capture and played it back to hear the problem. Not only did Observer help him verify that there was a problem, it also lead him to the solution. A packet capture identified a misconfigured application that was hogging bandwidth and causing a general network slowdown.

"Armed with the information provided by Observer, I was able to reconfigure the misbehaving application," Ingram said. "I also defined a QoS policy on the switch to give VoIP traffic the highest priority, thereby preventing other applications from compromising VoIP reliability."

Finding a Low-Cost Carrier

Observer shows you what applications and systems are doing on the network: What resources are being used, when they are being used, and at what rate. Intelligent re-allocation of network resources has saved the company a substantial amount of money. As long as VoIP traffic has priority on the network, communication problems are minimized, allowing CI Travel to maintain its independence from the traditional phone system.

"So far, Observer's VoIP capabilities has helped cut CI Travel's phone bill by about 25 to 30 percent," Ingram said.

In summary...

About CI Travel

CI Travel, founded in 1972, is a \$150 million company with 49 locations. It is an affiliate of TRAVELSAVERS, INC., one of the leading international marketing organizations. In 2003, CI Travel was given the "Growing with Technologies" award from Cisco Systems for implementing leading-edge technology.

Challenge

To reduce costs associated with long-distance phone calls, IT Director Paul Ingram implemented VoIP phones. Along with the implementation came new problems, which interfered with phone communication.

Solution

Ingram used Network Instruments' Observer Suite to troubleshoot and monitor VoIP traffic. He was able to identify and resolve VoIP problems at a fraction of the time it would take with Sniffer—and at only a fraction of the cost.

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Paul Ingram
IT Director
CI Travel



Screening For Security Threats


He has also experienced a great deal of value through Observer's ability to detect viruses and other malware, a common problem Ingram had to deal with.

"Previously, I depended on a security product that used to take two to three hours to diagnose and resolve each viral infestation," Ingram said. "I can usually diagnose a problem with Observer within minutes and then I can resolve it in under an hour."

Using Observer to detect malware activity on the network showed that the problem was worse than originally thought. Using the evidence provided by Observer, Ingram was able to convince management to purchase a product that can stop malware before it can affect the entire network.

Traveling Light

Sniffer was strictly hardware-based when Ingram used it to monitor his network. When a Sniffer appliance would fail, it would often take weeks to get a replacement. Because Observer can be delivered in a software-only version that runs on Windows machines, hardware failures are not an issue.

"My version of Observer is software. So if for any reason my hardware fails, I can install Observer on another machine, obtain another license code, and be up and running on the same day," Ingram said. "That service from Network Instruments keeps me on top of the network." 

About Packet Capture and Decode

Observer offers complete real-time packet capture and decode at wire speed from any local or remote location. While capturing packets, Observer shows total traffic, captured traffic, and dropped packets (if any). You can see the decoded packets in real time, according to specific filter criteria you define. Observer allows you to save the captured packets and share them with other Observer users and perform further filtering and analysis. Observer's protocol decodes now number well over 500, and over 4,000 unique frame types are identified. For switched segments, Observer lets you capture traffic from any one port (or group of ports, depending on the switch). Observer also supports multiple simultaneous captures from a single console. Up to 64 concurrent captures are supported from adapters located on the local system. Additionally, an unlimited number of simultaneous concurrent captures are supported from remote probes. Multiple sessions also support multiple concurrent statistic collections.

About VoIP Expert

Observer's VoIP Expert helps monitor VoIP connections to improve performance across the organization. Observer tracks the amount of VoIP traffic on the network both globally and by user; decodes VoIP protocols; and offers Expert VoIP analysis including video. Observer's complete decode of H.323 ensures administrators having the tools they need when voice and data problems arise.

About Application Analysis

Observer offers Application Analysis, a great way to differentiate between network problems and application problems. It brings troubleshooting to the next level by monitoring user experience metrics and by being able to view applications across the entire network. In the past, network administrators have had to purchase separate tools to monitor applications and traffic. Observer does both. If transactions are failing repeatedly, and it's not clear whether the problem is on the client end or server end, Application Analysis can make the distinction. Then with Observer's additional functions, you can drill down for an even more detailed analysis. For example, with Observer's Connection Dynamics, you can view session-by-session communications to understand the specific client or server problems.

About Virus and Attack Signatures

Observer uses configurable filters to detect virus and attack signatures, sending an immediate notification with Triggers and Alarms if security threats arise. An administrator can take appropriate action to isolate the problem, such as detaching infected devices from the network. New security filters are released periodically, keeping up-to-date with the latest virus and attack signature filters.

About Network Instruments, LLC

Network Instruments is the industry-leading developer of distributed, user-friendly and affordable network management, analysis and troubleshooting solutions. The award-winning Observer family of products combines a comprehensive management and analysis console with high-performance probes and network TAPs to provide integrated monitoring and management for the entire network (LAN, 802.11 a/b/g, gigabit, WAN). All Network Instruments products are designed utilizing a Distributed Network Analysis (NI-DNA™) architecture. With NI-DNA, the Observer solution set simplifies network troubleshooting and management, optimizes network and application performance and scales to meet the needs of any organization. Founded in 1994, Network Instruments is headquartered in Minneapolis, Minnesota with offices in London, Munich, Paris, Toronto, and multiple cities throughout the United States with distributors in over 50 countries. More information about the company, products, innovation, technology, NI-DNA, becoming a partner, and NI University can be found at: www.networkinstruments.com.

About CI Travel

CI Travel, a division of Cruise International, is a \$150 million company which, according to Travel Weekly, is the 36th largest travel agency in the United States and provides travel management services for government and corporate accounts. Located in Norfolk, Virginia; CI Travel operates 49 locations, including 25 agencies in Hampton Roads, with offices in Alabama, California, Florida, Hawaii, Maryland, New Mexico, North Carolina, Ohio, Pennsylvania, Texas, Wisconsin and Washington, DC. CI Travel is the only employee-owned travel company in the nation.

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-Paul Ingram

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