

Forecasting Clear Connections

The Organization Tasked With Monitoring the World's Weather Uses Observer to Maintain Optimal Network Conditions

Organizations across many industries depend on the weather. For certain industries, accurate and timely weather information such as severe thunderstorm warnings can save lives and property; for others, weather reports allow them to adjust inventories and other business practices. Weather Services International (WSI) Corporation, the world's leading weather information provider, realizes the criticality of its service. WSI conducts its business over VPNs and provides weather information through its industry-targeted web sites, so it's essential that each of the sites is running at optimal performance. To ensure optimal web performance and manage vital Internet activity, WSI Senior Communications Specialist, Jeff Larkham, turns to Network Instruments® Observer® technology.

Delivering the Latest in Weather Information

WSI Corporation was founded in 1978 and is headquartered in Andover, MA, with additional offices in Birmingham, England. WSI continues to be the leader in developing the technologies of displaying, analyzing, and forecasting weather data, and is renowned for turning mountains of meteorological data into meaningful information for weather reports. Organizationally, WSI is part of The Weather Channel Companies—the largest private weather company in the world—which includes The Weather Channel®, weather.com, and WSI.

The WSI network supports hundreds of users, many of whom are meteorologists. The core is located at the U.S. site and connects to the U.K. sites through VPNs. All locations are based upon a copper, gigabit LAN.

Severe Usage Warnings

WSI uses the Internet as a means to provide clients with up-to-the-minute weather information. Without access to weather information, lives and businesses could be in peril. For example, TV stations depend on weather information from WSI to disseminate watches and warnings. In order to keep WSI's information readily available and provide superior customer support, Larkham closely manages the company's Internet connectivity.

Larkham previously used Ethereal to monitor network traffic, including Internet communication. However, the network evolved and he needed to monitor gigabit traffic through multiple links. Ethereal could not keep up with the gigabit traffic and it only provided a half-duplex view of the connection. That's why Larkham turned to Observer technology, including Observer Suite and a Gigabit Probe, to manage the network.

"With Ethereal, we couldn't even look at the traffic because it was running at gigabit speed across multiple links—we were just hoping things were going well," Larkham said. "Our business can't survive on hope alone. With Observer's Gigabit Probe, we can access multiple links and get detailed, full-duplex analysis on all network traffic, including Internet activity."

As part of the Observer solution, Larkham uses the Internet Observer feature, which includes Internet Patrol, Pairs Matrix, and IP Subprotocols to view Internet activity. WSI uses Internet Patrol to monitor all the devices of communication to specific MAC addresses, particularly routers. Internet Patrol can track packets, bytes, and other statistics in aggregate for all communication between the user and the router. Pairs Matrix is used to break out the individual conversations that are happening through the router by showing all IP-to-IP traffic. Metrics such as packets, bytes, and time frame are all provided on a per conversation basis. IP subprotocols are used to break out the protocols and applications that are being run by the IP addresses. HTTP, HTTPS, FTP, and other forms of communication can be tracked on a per station basis.

Larkham also uses Observer's Connection Dynamics to manage Internet traffic, which allows him to watch traffic passing through ports and the corresponding latency. In one case, he used Connection Dynamics to determine whether an Internet problem could be associated with either the network or a client. Selected clients get access into some of the weather information servers via their VPN. A client, who had been accessing the service for a long time, was suddenly denied access—keeping that organization from getting pertinent weather information. Larkham viewed Connection Dynamics as the client attempted to log into the network and discovered that the IP address trying to log in was not the same as the registered IP address. That proved that the problem was on the client's end. In fact, the client's IP address was changed by the client's IT administrator without the client knowing. Larkham was then able to help the client re-register and gain access back into the network.

Even if a client can access the network, up-to-the-minute weather reports aren't effective if it takes a long time to download the information. Although slow connections can indicate a problem with WSI's network, customers could also be complaining about a problem with their own network or Internet connection. Through Observer's Connection Dynamics, Larkham can identify why a connection is slow.

"All I have to do is pull up the response times and follow the conversation to see if the problem is on our end or whether the customer just has a slow Internet connection," Larkham said. "Many times the problem is on the customer's end. Observer helps me immediately address the situation and provide superior service to our clients."

In summary...

About WSI

WSI is the leading weather service provider in the world. Many industries depend on WSI for weather reports in order to protect consumers and help re-align business practices. The network supports hundreds of users across the United States and the United Kingdom, many of whom are meteorologists.

Challenge

All of WSI's business is conducted over VPNs. Losing that connection could keep clients from getting the critical weather information they need. WSI is parceled into departments, each with its own web site. Departmental managers need a way to accurately determine how much time their staff spends on the Internet so that Internet billing is accurate.

Solution

Observer's Internet Patrol and Connection Dynamics have helped WSI successfully manage its Internet traffic and effectively troubleshoot client problems. Observer's reports showed a department paying 100 percent of the Internet bill was only responsible for 80 percent of the traffic. As a result, accounting realigned WSI's Internet usage billing to represent actual department usage, saving the department substantial dollars.

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Jeff Larkham
WSI
Senior Communications Specialist



Accurate Internet Reports

A number of people outside the IT department have come to depend on Observer. Recently, it has helped accounting realign its practices to more accurately allocate department charges.

WSI is divided into multiple departments that provide weather information to clients through industry-targeted web sites, including aviation, marine, media, energy, and retail. However, one department was always charged with the Internet bill for the entire company because it was perceived to generate the most Internet traffic. Because department budgets are tight, paying for the entire bill was not desirable for that department because it knew it was not responsible for 100 percent of the traffic.

At the request of that business unit, WSI Telecommunications Analyst Dawn Thompson generated a report of Internet usage per department using Observer's Network Trending. It became clear that the department footing 100 percent of the bill was generating only 80 percent of the Internet traffic. The remaining 20 percent was dispersed among other department web sites. As a result of Thompson's investigation, the accounting department realigned WSI's Internet usage billing to better represent actual department usage.

"Prior to Observer, there was no way to break down web traffic," Larkham said. "Internet usage data is critical because it comes off each department's bottom line. Observer helped resolve a billing problem by providing a report of Internet activity per department. Now executives at WSI are requesting network trending reports on a regular basis."

A Necessary Gauge for the Network

In the past, WSI depended on a frame-relay network consisting of dedicated T1 lines to connect its disparate offices. Recently, WSI has come to solely depend on VPNs across the Internet to make those connections.

"If our employees can't connect to the network, the company cannot efficiently carry out business functions, which means customers will not be on top of the weather, or they will turn elsewhere for that weather information," Larkham said. "That's why it's so critical to have Observer monitor that activity. It's something you just have to have—a fundamental tool you need to run a network."

With the network control Larkham has realized from Observer, he can confidently manage WSI's Internet activity.

"At the end of the day, Observer has helped me be a more effective administrator," Larkham said. 

About Internet Observer

Internet Observer permits you to examine Internet traffic on your network. This can be used to monitor overall Internet usage and to focus on a specific station or stations. You can also break down Internet usage by subprotocols. For example, you can easily determine what proportion of Internet traffic involves the World Wide Web versus popmail. Internet Observer is designed to keep track of users' Internet usage in a number of different tabs: Internet Patrol, IP Pairs (Matrix), and IP Subprotocols.

About Trending and Reporting

Observer Suite's Trending and Reporting feature allows an administrator, end-user, or consultant to view network trending data monitored by Observer from any Web browser. Web Publishing Service works in conjunction with Observer and Observer's built-in Web server, permitting you to selectively make trending information available either to anybody with a Web browser and TCP/IP connectivity to the Observer PC, or to those who have been provided with a password. All statistics are available for single stations or the entire network.

About Connection Dynamics

Connections Dynamics shows a selected conversation graphically, illustrating the inter-packet delay as a spacing between packets. Packet-to-packet delay times are shown graphically, allowing instant identification of long latency and response times. Retransmissions and lost packets are flagged in red for quick identification. The packet display can contain either a brief or detailed view of each packet's contents.

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 WSI

WSI Corporation is a provider of professional on-air weather and traffic graphics and data for the energy, aviation and media markets, and multiple federal and state government agencies. WSI is headquartered in Andover, Massachusetts and is a wholly owned subsidiary of Landmark Communications. More information about WSI can be found at www.wsi.com.

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