

## Ahead of the Class

### *College of The Albemarle Proactively Manages the Network with Observer®*

IT professionals who are responsible for managing college networks may have one of the most demanding networking jobs because they typically have to support thousands of students who bring in their own computer systems. These systems run on various hardware and operating systems, and have unknown client software installed. They also introduce potential points of vulnerability into the network because they may contain peer-to-peer client software or can be infected with viruses. Network Administrator Wayman White understands the complexity and uniqueness of that situation because he is responsible for managing all five campuses of the College of The Albemarle in North Carolina. White depends on Network Instrument's® Expert Observer to manage what could easily become an uncontrollable network environment.

### About College of The Albemarle

The College of The Albemarle has five locations serving seven counties in Northeastern North Carolina. Approximately 1,500 students and 250 staff members depend on the college's network. The Elizabeth City Campus is the main site that serves the other remote locations.

### An Evolving Network

Albemarle's network has developed over the last decade to support registration, online classes, academic blogs, and career guidance. If the network goes down, students and faculty lose out on those valuable services.

"So much of the college's livelihood is dependent on the network these days," White said. "If the network goes down, productivity goes down, and that's money out of the college's pocket."

White has Observer probes deployed on the frame relay, on the student VLAN, on the DMZ port for online courses, and on both sides of the fire wall to monitor network & Internet traffic.

"By deploying Observer probes throughout the system, I always have a global picture of how my network is doing," White said. "That way I can't get blindsided."

### The Network Can't Depend on the Honor System

Every Albemarle student signs a computer use policy upon admittance. File sharing and downloading illegal material are strictly prohibited because such activity crowds out legitimate network traffic and can cause legal problems for the college. Observer constantly tracks network activity in real time and can be configured to notify an IT professional when any abnormal, potentially illegal activity occurs.

Illegal activity such as file sharing is many times correlated with a jump in bandwidth utilization. White can set an alarm in Observer to notify him when utilization spikes unusually high. To determine an appropriate threshold for the alarm, White uses Observer's Trending capabilities to baseline traffic patterns. From there he is able to determine what is normal utilization for the network and set the alarm accordingly.

Recently, Observer showed a spike in bandwidth utilization. White immediately ran a packet capture, which revealed about 100 machines pointing back to one machine that was sharing KAZAA files. From there he pulled up Top Talkers and confirmed that a student was indeed sharing music files.

"Observer is like the red bat phone—you just can't miss problem activity," White said.

With that evidence, he was able to alert the appropriate authorities to enforce school policy. White also reconfigured the network to block KAZAA.

Students may sometimes download games from the Internet. One student was trying to download a game using FTP, which is against the school's policy, causing bandwidth utilization to jump up between 80 and 90 percent. With Observer's bandwidth utilization feature, White immediately detected the utilization spike. Once again he ran a packet capture and viewed Top Talkers to confirm the activity and source, and then passed that information along to college officials.

Faculty and staff employees are also required to sign an acceptable use policy when they start working for the college. Because the college provides them with computers, school officials have the right to request a review of Internet activity. When a request to review a machine is made by an official, White pulls up Network Trending. From there he uses the web viewer to identify the specific station. By clicking on that station, a list of visited sites appears as well as the duration on those sites. The amount of data downloaded or uploaded is also shown.

"This detailed information is very useful when anti-policy activity is suspected on a machine," White said. "It's the evidence that's required for a thorough investigation."

*In summary...*

### About the College of The Albemarle

College of The Albemarle has five campuses serving seven counties in Northeastern North Carolina. The purpose of College of The Albemarle is to provide accessible education, training, and retraining for better jobs and better lives in Northeastern North Carolina. Approximately 1,500 students and 250 staff members depend on the network.

### Challenge

As the network grew, College of The Albemarle needed a way to manage network communication. The network administrator was constantly putting out fires.

### Solution

With Observer, the network administrator was able to manage all network communication and eliminate concerns before they became problems.

"...I wanted a product that had everything bundled into one solution at a reasonable price. I took a look at Fluke, but it cost over \$20,000 and required me to purchase multiple products...Observer caught my eye because all of the features were already built in and it fit within my budget."

**Wayman White**  
Network Administrator  
College of The Albemarle



### Observer Justifies an Upgrade

While class was in session one morning, the college's bandwidth utilization maxed out on one of the frame relay lines. With Observer's Top Talkers, White was able to source the unusual traffic to two separate labs at a remote building. Specifically, he discovered that a web cam was running in real time at each lab. White had the instructors turn off the web cams and bandwidth returned to normal. The professors emphasized that the web cams are an integral part of the class, and without their use, will interfere with class progress. White is using the information he gathered during that episode to justify a bandwidth upgrade.

"Purchasing this upgrade will ensure the college is fulfilling its academic mission," White said. "Without Observer, I would be hard pressed to validate the upgrade."


### Intra System Network Management

As a result of Network Instruments' Distributed Network Analysis (NI-DNA™) architecture, White has the ability to manage the local site as easily as remote sites. NI-DNA ensures uniform functionality and seamless integration across all of Network Instrument's products, regardless of topology. From the Observer console, White can see activity collected from all the probes on the network—allowing him to manage multiple segments simultaneously.

"I can check several parts of the network at the same time from one location with just a few clicks of the mouse," White said. "I'm currently checking my LAN and VLANs at the main campus and monitoring the frame relay and DMZ traffic."

That saves money by eliminating travel between campuses to solve network problems.

Observer's all-in-one functionality also saves College of The Albemarle the time and money it would cost to train the IT staff on multiple products.

"When I was searching for an analyzer, I wanted a product that had everything bundled into one solution at a reasonable price," Whitesaid. "I took a look at Fluke, but it cost over \$20,000 and required me to purchase multiple products to get the functionality I required. Observer caught my eye because all of the features were already built in and it fit within my budget." 

### About Top Talkers

The Observer Top Talkers display offers an instant view of bandwidth utilization by all stations on the network. This screen also shows detailed traffic flow statistics that can indicate a runaway station, a broadcast/multicast storm, or an unbalanced switch. With this information, network administrators can determine network use patterns, detect faulty network hardware, and determine what percentage of the network's bandwidth potential each system is using—all from one comprehensive display.

### About Triggers and Alarms

Observer's Triggers and Alarms allow administrators to set an alarm for a particular network condition activity (using customized filters or convenient presets) and trigger an action to occur when the condition is present. Multiple triggers can be set to run concurrently. Actions can be pop-up windows, printed trouble tickets, or information appended to an event log. Triggers can also be set to execute a user-defined program—such as an e-mail package or paging software. Triggers and Alarms provide instant notification of abnormal network activity and improve response time.

### About Trending and Reporting

Observer Suite's Trending and Reporting feature allows an administrator, end-user, or consultant to view secure network trending data monitored by Observer from any Web browser. All statistics are available for single stations or the entire network.

### 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](http://www.networkinstruments.com).

### About College of The Albemarle

In accordance with a statement drafted by the Board of Trustees in November, 1993, and officially adopted in January, 1994: The purpose of College of The Albemarle is to provide accessible education, training, and retraining for better jobs and better lives in Northeastern North Carolina.

In keeping with the mission of the North Carolina Community College System, College of The Albemarle opens the door to high-quality, accessible educational opportunities that minimize barriers to post secondary education, maximize student success, and improve the lives and well being of individuals by providing:

- Education, training, and retraining for the adult work force in a global economy, including basic skills education, occupational, and prebaccalaureate programs;
- Support for workforce and economic development through services to new, existing, and expanding businesses and industry;
- Cultural enrichment opportunities to communities and individuals which enhance the quality of life; and
- An environment that promotes job satisfaction and career development for faculty and staff.

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-Wayman White

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