

SHOMITI AT WORK

Shomiti Systems'

Explorer 10/100

Ethernet Analyzer Keeps

Southwest Missouri

State University

at the Head of the Class



Final Exam Question:

What do you do if it's your job to maintain a smooth running network that supports 18,000 students dispersed over three campuses with distance learning applications, T1 Internet connections, plus a potential move to packetized video to support video conferencing for the deans?

Answer:

If you're Michael Kindle, network analyst at Southwest Missouri State University (SMSU) in Springfield, Missouri, you implement a troubleshooting, maintenance and evaluation system from Shomiti Systems.



Shomiti Explorer and Century 12-Tap:
Distributed 10/100 Ethernet Analyzer System and
Full-Duplex 10/100 Ethernet Splitter

With only two network managers and two student assistants to manage this large and thriving university community, Kindle needed diagnostic equipment that works quickly and effectively and can be deployed remotely but be managed from one location. That's why he chose the Shomiti Systems Encompass family of monitoring and analysis tools. The Shomiti Encompass family, including the Explorer portable protocol analyzer plus Century Taps and Surveyor software, allows Kindle to monitor and evaluate network activity, catching issues before they become problems and keeping the university's high speed network running at top performance.

SMSU is committed to providing students with the tools they need for effective higher education including student e-mail, shared applications for class curriculums and connectivity to a new on-line library extension. To support these goals, and the subsequent bandwidth demands, SMSU implemented a high speed network. In addition to adding new networking equipment, the university needed to be pro-active in monitoring network activity to keep ahead of innovative students using high bandwidth applications and expensive Internet connections.

The SMSU Network

The SMSU network connects 48 buildings, 60 subnets and over 4,000 network devices. The campus network is split into five major zones, each with a Cisco Catalyst 5000 switch which is connected with 100Mbps full-duplex Ethernet to a Cisco 7513 router at the core of the network. Each of the Catalyst's 10-12 subnets connects to a 3Com SuperStack II hub which provides shared 10/100Mbps to the university clients. SMSU also uses full-duplex 100Mbps links for its server farm consisting of approximately 50 servers, most of which are Windows NT. For extra redundancy, SMSU connects the server farm to a Cisco 2926 switch and also to the router at the network nucleus.

The two remote SMSU campuses, Mountain Grove and West Plains, also connect to the main campus network for Internet use and campus resources with a 56K line and a T1 line, respectively.

SMSU uses Shomiti Surveyor plus Remote software, six full-duplex Explorer analyzers (5 distributed and 1 portable), and seven Century 12-Taps. In order to monitor subnet traffic,

a Shomiti Century 12-Tap is connected to each Catalyst switch. Because Shomiti Explorers can be remotely controlled, SMSU technicians are able to monitor the entire network, or all 60 subnets, from any PC running Surveyor plus Remote software.

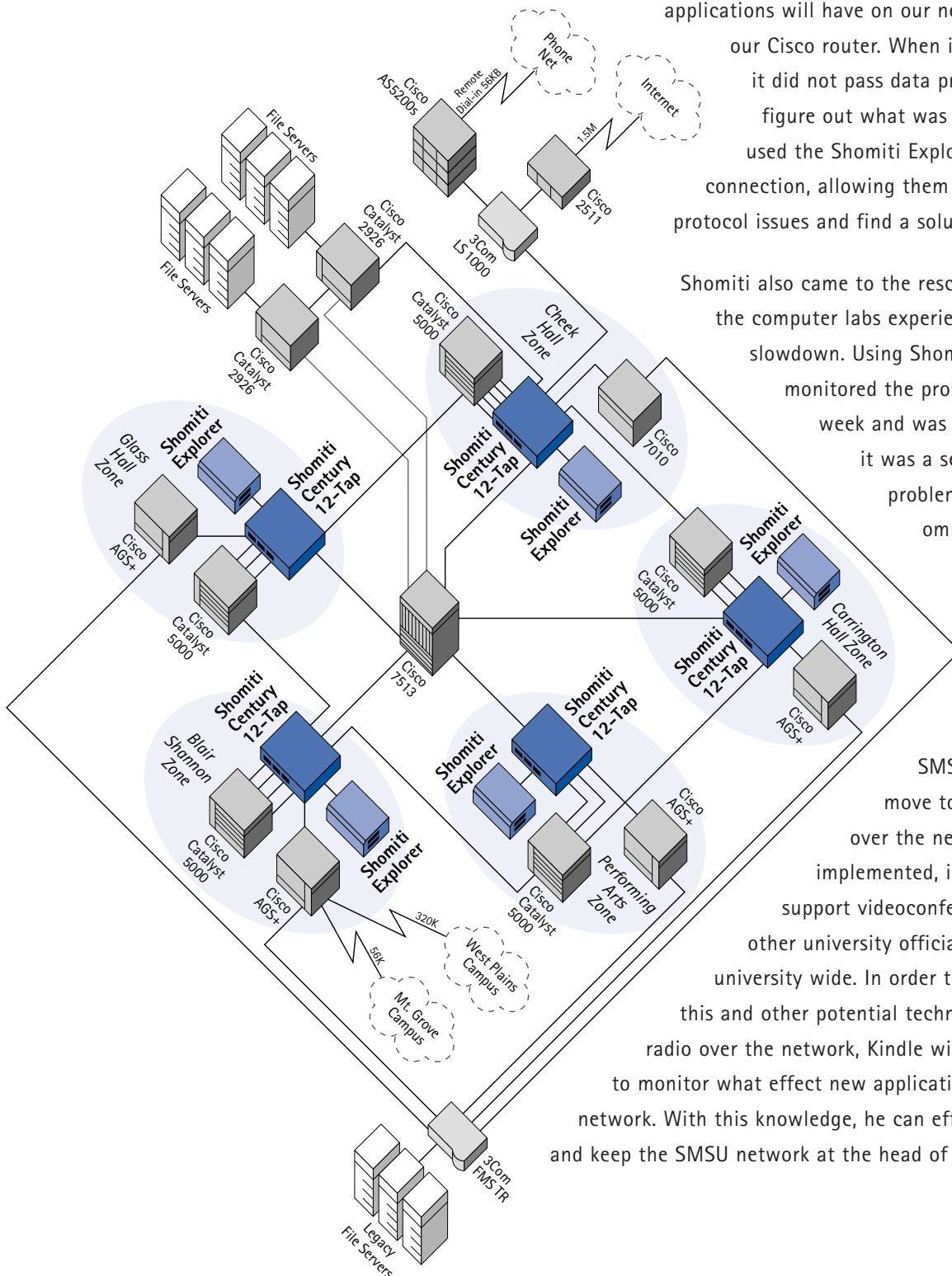
"Before installing the Shomiti system, we used Network General's portable Sniffer. The Sniffer could not analyze full-duplex or handle 100Mbps speeds, which meant we could see only a tiny snapshot of what was happening in the network," said Kindle. "Shomiti gives us the tools to effectively monitor newly installed equipment so we can capture intermittent problems, or even chart the effect new

applications will have on our network. A good example is our Cisco router. When it was initially installed, it did not pass data properly and no one could figure out what was wrong. Cisco technicians used the Shomiti Explorer to analyze the connection, allowing them to diagnose certain protocol issues and find a solution."

Shomiti also came to the rescue when one of the computer labs experienced a significant slowdown. Using Shomiti's Explorer, Kindle monitored the problem segment for a week and was able to determine that it was a server, not a network problem. Shomiti gave him an omniscient view of the network, allowing him to respond quickly, or in this case, avoid unnecessary blame.

Future plans

SMSU is investigating a move to packetized video over the network in early 1998. If implemented, it will initially be used to support videoconferencing by deans and other university officials and then utilized university wide. In order to effectively implement this and other potential technologies, like campus radio over the network, Kindle will use the Shomiti Explorer to monitor what effect new applications might have on the network. With this knowledge, he can effectively plan for growth and keep the SMSU network at the head of the class.



About the University:

Southwest Missouri State University is a four-campus metropolitan university whose single purpose is to develop educated persons while focusing on five themes: professional education, health care, business and economic development, and performing arts, with a statewide mission in public affairs. The main campus is located in Springfield, with a two-year campus in West Plains and the Research Campus located in Mountain Grove. The fourth campus is SMSU's "virtual university" provided via various distance learning technologies. The SMSU system offers a full continuum of educational opportunities from literacy through associate degrees and bachelor's degrees to master's degrees and a cooperative doctorate to lifelong learning. SMSU's 17,800 students come from every county in Missouri, 47 states and 75 foreign countries.



Shomiti Systems Incorporated

1800 Bering Drive

San Jose, CA 95112

1-888-SHOMITI

408-437-3940

Fax: 408-437-4041

www.shomiti.com

email: info@shomiti.com

