

Visualizing the Network

Case Study—Enhancing networks for the blind



The American Foundation for the Blind

Founded in 1921, the American Foundation for the Blind is a nonprofit that expands possibilities for the more than 25 million people with vision loss in the United States. This historic organization, which included 40 years of distinguished service from Helen Keller, is an unwavering innovator and champion of assistive technologies that provide access to information for the blind.

Today, delivering a quality Internet experience is an essential service of the American Foundation for the Blind (AFB). In addition to providing information and web-based services, AFB also provides technical consulting and conducts evaluations and tests of many specialized technologies, products, and services for the blind and visually impaired.

Centralization for a Decentralized staff

AFB maintains multiple offices including its headquarters in New York City. In addition, many of its approximately 65 employees regularly telecommute from their homes across the country. Providing a consistent “in-office” feel for all network users regardless of their location or degree of visual impairment required a significant shift in IT operations and the network architecture.

AFB used to outsource all of its WAN administration and portions of its networking tasks to managed service providers and hired different Internet providers for each of its remote locations. But today AFB manages its entire network internally from its New York City headquarters with additional technical and backup services in West Virginia.

The network includes eight Cisco routers located in New York, West Virginia, Washington DC, and Dallas.

Product and Service Testing

Although convenient from a routine maintenance standpoint, the managed services arrangement did not support the flexibility and response times AFB needed. Network change orders typically took weeks or even months to implement, making it nearly impossible to conduct network-related product and services testing.

AFB realized that to meet its own standards of accessibility and network quality meant managing them entirely in house, even with its small budget and three-person IT staff.

Access and Performance

Many of AFB’s primary network applications such as Internet access, VoIP, file sharing, and office applications are much like those found in a typical business network. Where AFB’s network differs significantly is its extensive use and support of assistive technologies and remote desktop applications for the blind.

American Foundation for the Blind

With the help of an IT consulting company, AFB Systems Engineer Roberto Hernandez completed the network migration three years ago but it hasn't been a trouble-free experience. In terms of network performance, VPN access was often very slow and VoIP call quality and jitter could be "horrendous" at times. To make matters more difficult, the timing and location of these problems was inconsistent making it hard to isolate and correct problems.

Enter LiveAction

Hernandez happened to see a video featuring LiveAction software from ActionPacked! Networks and decided to download a free trial. Although he had tried many other products, he considered LiveAction to be "the easiest, most straightforward, and most informative" of any network management tool he had ever used.

With LiveAction's flow visualizations he could literally see and identify surges and other anomalies on the network for the very first time.

The QoS Audit

During the free trial period, Hernandez was able to perform a quick QoS audit using LiveAction to inspect the policies in AFB routers. The software immediately revealed that the consulting company he used had failed to turn up QoS in two of the routers, accounting for some of the major performance problems his network was suffering.

This became a key justification for purchasing LiveAction, and Hernandez plans to use the software to configure and manage Cisco QoS throughout the network.

Tracking Users

While he hasn't gone so far as to use LiveAction to actually block individuals who consume inordinate amounts of AFB's bandwidth, Hernandez acknowledged that with LiveAction it would be very easy to "blacklist" individuals who abuse or overuse their network privileges.

He jokingly indicated that he has been able to manage users that LiveAction identifies with a just few "gentle conversations." So far this approach is working well and AFB users have been very understanding and supportive.

Screen Reading Software

Many AFB staff members are blind including CEO Carl R. Augusto. For computer and Internet access, perhaps the most essential assistive application AFB supports is screen reading software that converts text to audio. The network currently supports two leading screen readers that can operate as desktop clients or server-based applications with remote desktop for access. Both applications are bandwidth, processor, and latency sensitive especially when used with a remote desktop application.

Hernandez and the IT staff make screen reading assistive workstations available for staff and visitors throughout the AFB offices as well as to remote users and telecommuting staff. He has found LiveAction to be an invaluable troubleshooting tool for investigating why some workstations on the same network experience performance issues while others don't.

Multiple Returns on Investment

Hernandez expects a very rapid return for his investment in LiveAction software because he can now understand and troubleshoot the network himself without relying on outsourced managed services.

Additionally he expects the LiveAction master suite will help him recoup more of his investment in his Cisco routers by enabling some of their most powerful features. While the features within NetFlow, QoS, routing, and IP SLA were always there, they were essentially unusable due to their complexity and the time required to learn and manage them.

Perhaps the best return Hernandez has seen from LiveAction were the initial improvements in network consistency and quality of service for its users. Hernandez expects this to continue to improve dramatically as he gains more experience with the tool.

Find out about assistive technologies

AFB is a great source of information on assistive technologies that are available for people who are blind. For more information as well as guidelines on improving web accessibility visit www.afb.org/technology.



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