

## Minnesota National Guard Captures Cost Savings, Improves Network Management and Enhances Response Time and Productivity with Cisco IP Communications Solutions

**The Minnesota National Guard is installing a Cisco IP Communications solution to improve staff responsiveness and productivity and provide more effective network management.**

### Background

The Minnesota National Guard is part of America's community-based defense force, with more than 10,000 soldiers based in 62 locations throughout the state. National Guard members are citizen-soldiers and airmen who are active participants in Minnesota's cities and towns. This close link between the community and its soldiers is what makes the National Guard unique.

### The Challenge

To provide command and control support for its widely dispersed forces, the Minnesota National Guard depends on its voice and data networks. The Guard's wide-area network (WAN) supports vital applications such as e-mail,

videoconferencing, Web browsing, training, and database access. The organization deployed a Cisco data infrastructure in the early 1990s, and has been continually expanding the network ever since.

"We implemented a voice over Frame Relay network about five years ago and used it to support communication between each of our training and community centers without incurring any long distance costs," explains Master Sergeant Bob Andree. "As our bandwidth requirements grew, we found that we would be able to upgrade both network performance and manageability by moving to an IP telephony environment."

Network administrators at the Minnesota National Guard determined that migrating to IP telephony would enable them to implement advanced new call handling and messaging features, while providing additional administrative savings that the previous system couldn't offer.

"One reason we wanted to move to an IP telephony solution was because we have a large number of sites that are hundreds of miles apart," explains Colonel Bill Hose. "To perform a network upgrade, a staffer would have to jump in the car, drive out to the site and do the work. Network upgrades required 90 days' advance notice, which



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— Colonel Bill Hose, Minnesota National Guard

was difficult on our users, and hard on my staff as well. There are only five of us in the telecommunications department to provide support for the Guard throughout the entire state of Minnesota, and if I had to send my staff out to handle office changes, I'd have them on the road all the time.”

The Guard needed an IP solution that would integrate smoothly with its existing network to provide a flexible, manageable communications platform for more than 2,000 regular users, while scaling to handle new features and applications as needed.

### The Solution

The Minnesota National Guard is upgrading its sites to an IP telephony solution based on Cisco AVVID (Architecture for Voice, Video and Integrated Data). Cisco AVVID delivers the infrastructure and intelligent network services that are key for rapid deployment of emerging technologies and new Internet solutions. Although other products were available, the Cisco solution provided the most elegant mix of integrated voice and data features and performance.

“We looked at a lot of other products, but most of them were hybrid analog and IP systems that were awkward, and didn't give us the smooth integration that the Cisco solution offered,” says Colonel Hose.

At each of its sites, the Guard is installing Cisco 3725 or Cisco 3745 multiservice access routers, which provide connectivity to the organization's WAN via a mix of T1 and Frame Relay connections. Designed specifically for demanding IP communications applications, Cisco 3700 Series routers are providing quality of service (QoS) features, high availability, and security in a single, integrated platform.

Cisco 7940 and 7960 IP phones at each of the locations offer clear, high-quality phone service. Each phone has an LCD display screen to support sophisticated IP telephony calling features. National Guard sites that have not yet migrated to IP telephony are using analog phones connected to the Cisco 3700 Series routers via their foreign exchange station (FXS) analog ports.

To support call handling and messaging, Colonel Hose and his team are deploying Cisco CallManager software and Cisco Unity unified messaging software. Cisco CallManager delivers enterprise-level calling features like conferencing, call forwarding, and four-digit dialing, making workplace collaboration easier and helping reduce the need for costly staff travel. And Cisco Unity helps National Guard users increase their productivity and responsiveness by giving them easy access to voicemail, e-mail, and fax messages.

“When we installed the Cisco Unity unified messaging system, we were like heroes. Our users love being able to check their voicemail and e-mail from the road,” explains Colonel Hose. “They can call in and listen to e-mail using the voice system, or download voice messages to their PC to play them back or respond later.”

The National Guard has to be ready to respond immediately in the event of local or national emergencies, so the reliability of its communications is a key priority for its IT department.

“One of the reasons we chose the Cisco solution was because it would enable us to deploy a centralized Cisco CallManager for easier administration and troubleshooting,” says MSgt. Andree. “And with the survivability features built into the Cisco routers, if the circuit does go down, the phones don't lose connection with the outside world—we're still able to place outside calls. This gives us a big advantage, because we don't have to buy additional equipment and place it alongside the routers to ensure network reliability.”

At the network core, a Cisco Catalyst<sup>®</sup> 8500 Series switch and Cisco 7200 Series router provide additional support for demanding voice and data applications, delivering high-speed connectivity to the State of Minnesota network and the public switched telephone network (PSTN). Also, CiscoWorks software provides comprehensive, Web-based network management, enabling Guard IT staff to configure and manage devices from a convenient, intuitive Web interface.

## Results

Although installation of the Cisco IP Communications solution is not yet complete to all sites, Colonel Hose and his staff are already learning how much easier it is to administer adds, moves, and changes.

“With an IP telephony environment, I can take any IP phone and move it anywhere, while still providing the same phone number and feature set,” explains Colonel Hose. “This manageability can provide big savings for us in network administration.”

Today, because the Cisco IP telephony solution treats phones as just another network device, users can easily perform network changes themselves, with minimal support from the Guard’s IT department.

IP telephony is also creating new options for the Guard in terms of mobility and flexibility. In early 2002, the Guard participated in a test of new bridge equipment with the U.S. Army, and needed phone connectivity from a remote location at Camp Ripley, Minnesota. Using Cisco Aironet® access points, Colonel Hose was able to establish wireless network connectivity at the bridge site to deliver phone service precisely where it was needed.

“We connected Cisco IP phones to the remote wireless network, and after the exercise the Army told us that it was the best support they’d ever had, and that the network worked great,” says Colonel Hose.

“We needed to provide voice service out in the middle of nowhere, and we used our Cisco wireless network and Cisco IP Communications solution and it worked like a champ.”

## Next Steps

The Minnesota National Guard is rapidly completing installation of its Cisco IP Communications system, setting the stage for better performance and new network services.

“After we complete deployment of the solution to all of our locations, we’re planning to expand our multimedia collaboration applications like videoconferencing,” says Colonel Hose. “And with the money we save on telecommunications bills and network administration, we can also afford to put more money into bandwidth for our end users.”

With its intelligent, scalable Cisco AVVID infrastructure in place, the Minnesota National Guard will be able to continually upgrade its capabilities to serve its community more effectively.

## Contact:

Colonel Bill Hose, Minnesota National Guard



**Corporate Headquarters**  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

**European Headquarters**  
Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

**Americas Headquarters**  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

**Asia Pacific Headquarters**  
Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 6317 7777  
Fax: +65 6317 7799

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