



THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
*Phoenix, Arizona,
United States*

YEAR:
2006

STATUS:
Laureate

CATEGORY:
*Government and
Non-Profit Organizations*

NOMINATING COMPANY:
Cisco

ORGANIZATION:

National Law Enforcement Telecommunications System

PROJECT NAME:

The International Justice and Public Safety Information Sharing Network

Summary

Nlets, the International Justice and Public Safety Information Sharing Network, is the primary interstate law-enforcement network in the United States. The messages that travel over Nlets are instrumental in saving the lives of U.S. citizens as well as first responders. Owned by the states, Nlets carries over 51 million messages each month to over 30,000 agencies and 550,000 devices at the local, state, and federal levels in the U.S. and Canada. Because the security, reliability, and flexibility of the network directly affect public safety, Nlets chose to migrate to a fully IP-capable network based on a foundational infrastructure with imbedded security.

Introductory Overview

When any state, local, or federal law enforcement agency in the United States sends an inquiry to an agency in another state, that inquiry travels over the Nlets network. For example, when a highway patrol officer stops an out-of-state driver for a traffic violation, the Nlets network enables the agency to query out-of-state databases for motor vehicle and driver's data, criminal history records, Canadian "hot file" records, and U.S. citizenship and immigration services databases. Every criminal history record searched in a database in the U.S. is delivered via Nlets. Nlets also delivers homeland security messages and Amber alerts. "Without the network, there is no Nlets," says Frank Minice, director of operations for Nlets.

In 2000, the FBI Advisory Policy Board passed a motion requiring public safety agencies to encrypt data end-to-end by 2005. To comply with that requirement, Nlets decided to upgrade its Frame Relay network from an older protocol to IP. Nlets viewed the upgrade as an opportunity to increase its service effectiveness in other ways, as well, including the following:

- The organization wanted more safeguards to ensure network reliability. "Nlets can't afford to be down because public safety agencies rely on the information that travels over the network to make decisions," says Bonnie Locke, Nlets director of administration. "Certain decisions must be made in seconds, such as 'Should I arrest this person?' or 'Is he armed and dangerous?'"
- Nlets also wanted the flexibility to quickly connect new agencies and deliver new services such as transmitting messages in a format that each requesting agency could reformat in its own



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report style.

- And last but not least, Nlets wanted to improve its own staff's efficiency and productivity. "With 14 people supporting 18,000 law enforcement agencies, Nlets has to be extremely efficient," says Bill Phillips, Nlets security specialist.

Nlets achieved its goals by migrating to a fully-IP capable network based on Cisco® foundation infrastructure and Cisco Security solutions. "We chose a Cisco network solution because of its security, resilience, and flexibility to add new members and services," says Steve Correll, Nlets executive director. The widespread use of Cisco network solutions in public safety agencies also factored into the decision. "Cisco has a solid reputation within public safety agencies, so our members felt comfortable replacing their existing network equipment with Cisco routers," Locke says. "One way we provide excellent service is by using vendors that our members trust."

The new network enables greater security and reliability of the information, dramatically improving the ability to ensure public safety by providing police officers with the information they need when they need it. The standards-based network also allows members to re-format messages from other states to their own format, eliminating the need to look for information in an unfamiliar layout, and greatly reducing the time needed to make an informed decision. Nlets increases productivity and efficiency, helping law enforcement agencies do more with fewer resources. And the network is scalable, allowing new services or bandwidth to be added quickly as needed.

Benefits

Improved Public Safety

The end-to-end Cisco network improves public safety in two principal ways. First, information can be encrypted end-to-end across the Nlets network. Even if an intruder is able to intercept public safety messages, the messages cannot be read or altered. This level of security comes at nominal cost to network performance, as messages travel end-to-end across the Nlets network, to any public safety agency in the United States, usually in less than one second.

Second, the Cisco network solution significantly increases network reliability. This reduces the risk that a police officer, for example, cannot access the information he or she needs to determine that someone stopped for a traffic violation has outstanding warrants in another state. "To date, we've never had a Cisco device fail," Minice notes.

Innovative Services

Standards-based technology in Cisco network solutions enables Nlets to offer its members valuable new services based on Extensible Markup Language (XML) and Web services. "Our standards-based network lets members format messages from other states in the way they're accustomed to seeing them," Minice says. For example, a Minnesota agency might request a criminal history from California. With the old network, the history appeared in California's format, which might cost Minnesota officers valuable time as they skimmed the criminal history record looking for the information they needed. With the standards-based network from Cisco, Nlets is now able to transmit messages in XML. The requesting agency's server can take the items of information in the report and format them in whatever way command and field personnel are accustomed to, cutting valuable seconds from the time needed to make an informed decision.



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Staff Multiplier

Prior to the Cisco network deployment, devices on the Nlets network requiring service sometimes had to be shipped back to Nlets headquarters, a costly inconvenience. Today, Nlets staff can support the network more easily because most member agencies use Cisco equipment for their own networks and have internal technical expertise. "It's fairly easy to find someone in a member agency who can resolve an issue with a Cisco device, which is a big advantage for us," Correll says. "Because Cisco gear and training are so widespread and our end customers can assist with troubleshooting and resolution, Nlets has virtually increased staff and service effectiveness. Using Cisco equipment, we can accomplish what larger agencies with larger budgets and staffs cannot."

Greater Flexibility

Finally, the Cisco foundation infrastructure gives Nlets the flexibility to quickly form new partnerships, an important benefit in the rapidly shifting public safety environment. "The public safety environment is very dynamic," Correll says. "If we need to add bandwidth or new services, we want to be able to do it quickly, and the Cisco equipment helps us remain nimble."

The Importance of Technology

Redundant, Resilient Network Design

To plan and implement the Cisco solution, Nlets engaged Darcomm, a Cisco Gold partner, to provide the equipment as well as configuration and design services. Darcomm designed a redundant, resilient network to provide the continuous communications required in critical public safety environments. The network backbone, located at Nlets headquarters in Phoenix, Arizona, comprises redundant Cisco routers, Cisco Catalyst switches, and Cisco PIX™ firewalls. A backup facility in Idaho has an identical configuration. With Cisco equipment end to end, all transmissions are encrypted to ensure data privacy. A Cisco intrusion prevention system (IPS) helps the agency protect network resources from unauthorized or malicious activity.

Smooth Migration

After migrating the network backbone to a Cisco foundation infrastructure, Nlets helped its 18,000 member agencies migrate, and celebrated the final cut-over to the standards-based IP network in March, 2005. Nlets tested its new Cisco equipment while continuing to use the old equipment and protocol for live traffic. "The ability to support the existing network and the new IP connections in parallel was a major advantage of the Cisco solution," Minice says. "Our users were able to attain a comfort level with the new technology for a mission-critical service before cutting away from the old equipment."

IP Telephony

Nlets headquarters is home not only to the Nlets network backbone, but also an internal network that Nlets staff uses for productivity applications, including a Cisco IP Telephony solution. "Productivity improved immediately after we adopted IP telephony because we were able to receive and forward voice mail and transfer calls," Minice says. Nlets expects further productivity gains when it adds Cisco Unity™ Unified Messaging, which will allow the organization's mobile employees to listen to their voicemail messages from their e-mail inboxes instead of having to check for messages on both their phones and PCs. Nlets is also considering offering IP



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telephony to its member agencies to further improve security. Member agencies would be able to encrypt voice communications just as they now encrypt data communications.

Originality

Nlets is the first of its kind, allowing local, state, and federal law enforcement personnel throughout North America to access critical public safety information instantaneously. Every interstate Amber Alert, interstate license inquiry, request for criminal history, or almost 90 types of other data required by public safety personnel is accessible through Nlets in an XML, standardized format.

Nlets supports the Global JXDM standard, an XML standard designed specifically for criminal justice information exchanges, providing law enforcement, public safety agencies, prosecutors, public defenders, and the judicial branch with a tool to effectively share data and information in a timely manner between disparate systems.

“The features that make Nlets very attractive is first of all the reliability but also the capabilities that it offers our officers, our investigators, and our cohorts,” says Brenda Owens, PMP, CIO Florida Department of Law Enforcement. “It’s a myriad of offerings that we can’t get anywhere else.”

“Whenever our officers run a registration or a license inquiry for an out of state vehicle or driver, that transaction is routed through Nlets network,” says Michael J. McDonald, Director of Information Technology, Delaware State Police. “I think the mobile data computer in the patrol car has been single greatest enhancement to the officer being able to request and retrieve information. There’s no question in my mind that we are getting maximum value, even today with much more work to do.”

Nlets also passed the disaster recovery test in the aftermath of Hurricane Katrina. During Katrina, the FBI Criminal Justice Information Systems division wide area network, the nation’s primary criminal database, went down in four states. The CJIS WAN was able to piggyback on Nlets and continue to operate throughout the disaster and its aftermath.

In addition, immediately after Hurricane Katrina passed through the Gulf Coast, special National Insurance Crime Bureau (NICB) catastrophe teams established two operations centers in Baton Rouge, Louisiana and Mobile, Alabama, to begin the process of identifying and cataloging flood-damaged vehicles. Working in partnership with the Louisiana State Police Insurance Fraud Unit and insurance company investigators, NICB created a database where all vehicle identification numbers and boat hull identification numbers are being stored. This data, run over Nlets, is made available to law enforcement, state fraud bureaus, insurance companies and state departments of motor vehicles as a result of a unanimous desire to keep future innocent consumers from being victimized by unscrupulous auto and watercraft sellers.

In the future, Nlets will become voice capable, enabling the ability for public safety personnel to share conversations on IP phones between 18,000 federal, tribal, state, and local law enforcement agencies across the nation.



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Success

Nlets now meets federal mandates for improved security by encrypting information end to end. The new network reliably carries 51+ million transactions per month, each of which travel over the Nlets network to any agency - usually in one second or less.

“The Nlets mission is to help save lives, both of citizens and first responders,” Locke says. “We accomplish that mission every day by delivering information and services over our network, and the reliable Cisco network solution is an integral part of that effort.”

The network supports IP standards such as XML, so member agencies can reformat messages as needed. Nlets employees are more productive because of IP telephony and because member agencies now have the expertise to resolve equipment issues quickly and efficiently.

Difficulty

Needless to say, the biggest obstacle Nlets had to face was getting 18,000 agencies to migrate away from their existing solutions. To make the transition easier, Cisco partnered with DarComm to run both networks in parallel to give Nlets users time to get comfortable with the new system and experience firsthand its effectiveness and resiliency.

Nlets' Executive Board also worked closely with Nlets' Advisory Board, which consisted of representation from all 50 states. Because this transition required not only a technology migration but a cultural evolution, gaining consensus among representatives of all the agencies it would support was critical.