



## Case Study

### Virginia State Police

In 2001, the FBI mandated that all state criminal information networks increase security by adding encryption to the data they provide. Moreover, new applications were planned that would require advanced levels of security and additional bandwidth.

**Customer:** Virginia State Police

**Country:** United States

**Challenge:** To provide agency partners throughout the Commonwealth with cost-effective access to vital information while meeting new, more stringent national security requirements. The solution needed to be highly reliable, scalable, flexible — and absolutely secure.

**Solution:** Smart, secure and cost-effective, the solution leverages Nortel's Layered Defense approach to network security. Nortel's Layered Defense uses multiple approaches to security enforcement at multiple areas within a network — ensuring the security architecture has no single points of failure and can adapt easily to future threats.

The solution includes Nortel VPN Routers, Nortel Ethernet Switches, Nortel Ethernet Routing Switches and Nortel Switched Firewalls.

### The scenario

In 2001, the central office of the Virginia State Police (VSP) was paying \$1.4 million a year in frame relay networking charges to enable partners — including federal, state and local criminal justice agencies in the Commonwealth of Virginia — to access law-enforcement applications.



The Nortel solution allows VSP's partner agencies to use their own networks for access and terminal placement — a particular bonus for large agencies that have VSP application terminals in more than one building. The solution also enables remote access connectivity to suppliers, contractors and other business partners — and from dynamic and mobile locations. For example, VSP can do secure background checks on individuals purchasing firearms at gun shows or anywhere else Internet access is available.

Facing budget pressures and partners' growing demands for access to existing and new applications, VSP had to find a way to decrease networking costs without compromising vital communications. In addition to financial challenges, VSP would also have to add an unprecedented level of security to its network to address emerging security mandates from the FBI.

These requirements provided both financial and technical challenges to VSP. Previously, VSP had addressed critical applications — such as Automated Fingerprint Information System, Live Scan, the Tactical Processing System (TIPS) and the Virginia Criminal Information Network — by providing dedicated circuits into their associates' sites. As the demand for these services grew, this approach proved inefficient, impractical and cost-prohibitive.

New technology was needed — in particular, an advanced solution that would provide the required level of security, deliver high performance and reliability, and control costs.

### **The solution: security from the perimeter to the core**

After reviewing the options, Virginia State Police (VSP) implemented a virtual private network (VPN) solution from Nortel. The solution delivers 99.999 percent reliability, exceeds national security requirements for encryption and helps control capital and operational costs.

With Nortel's security solutions in place, any concerns that VSP had about meeting new FBI mandates have been addressed. The new infrastructure — which is comprised of Nortel's tried, tested and proven secure products — ensures that the network is protected at multiple points within the network, including at the perimeter and core.

### **Reliability**

"During my two years with the Virginia State Police, Nortel's security solution has never gone down or let us down. It's a level of reliability we count on to protect the people of Virginia."

— **Annette Shaffer, Virginia State Police  
Technology Manager**

### **Cost savings**

"Since migrating to Nortel's VPN technology, we have significantly reduced our OPEX budget during the past three years."

— **Annette Shaffer, Virginia State Police  
Technology Manager**

### **Nortel VPN Routers**

The VSP network includes Nortel VPN Router — a portfolio of award-winning unified access platforms that address site-to-site and remote access requirements. The network incorporates 4600s at the central site, and Nortel VPN Router 600, 1100, 1700 and 2700 at remote sites. Using exclusive Nortel Secure Routing Technology (SRT), VSP can implement advanced features such as dynamic routing protocols, VRRP, stateful firewalls, advanced filtering, network address translation and dynamic backup.

Nortel VPN Routers are purpose-built access-routing devices designed to secure transmission of IP traffic via VPN/IPSec branch office tunnels. At each of the sites in the VSP network, Nortel VPN Routers allow for the elimination of multiple dedicated frame relay circuits and enable VSP associates and partners to use their own Internet connections to access VSP law-enforcement applications in a secure manner.

## Why Nortel

"We felt Nortel presented the best solution — one that considered much more than just products. Nortel gave us an overall business solution that was scalable, cost-effective and provided encryption we need to meet federal mandates."

### Nortel Switched Firewalls

To detect intrusion and block attacks that directly target applications at the perimeter of the network, the VSP solution incorporates Nortel Switched Firewalls. As an integral part of layered defense, these firewalls enable VSP to use the Internet as a secure primary access portal for internal and external clients. VSP will also be able to incorporate multiple virtual firewalls, establish multiple rule sets that apply to different types of customers — such as Sheriff's departments, the Attorney General's office and educational institutions. Nortel Accelerated Switched Firewalls will also deliver the higher performance and redundancy features required by VSP.

### Nortel Ethernet Routing Switch and Ethernet Switch

After seeing the performance and resiliency of Nortel's VPN solution, VSP recently extended the same reliability and resiliency into its LAN infrastructure, by incorporating Nortel Ethernet Routing Switch 8600, Nortel Ethernet Routing Switch 5500, Nortel Ethernet Switch 470 and components of what was formerly the Alteon data portfolio. Now VSP has a carrier-class data infrastructure that boasts the high availability necessary to support its mission-critical applications.

VSP has also implemented Split Multi-Link Trunking (SMLT) — a unique, resilient architecture available only from Nortel. The first offering of its kind in the world, SMLT helps eliminate single points of failure and creates multiple paths from user access switches to the core of the network. SMLT is ideal for organizations like VSP, which have severely limited maintenance windows. SMLT will enable VSP to remove Nortel Ethernet Routing Switch 8600 from the network to perform maintenance and upgrades — without disrupting service.

The VSP network primarily provides criminal history reports. It also serves as a conduit to the Division of Motor Vehicles' database. For example, if an officer pulls over a vehicle with reasonable suspicion that the driver has committed a criminal act, he or she needs to make only one transaction to gain the suspect's criminal history. The officer has access not only to state data but also to that of the National Crime Information Center for federal information and the National Law Enforcement Telecommunications System to gain access to other states' data.



## Disaster recovery and network survivability

VSP is leveraging the inherent flexibility of VPN technology for its disaster recovery site. In the unlikely event of a disaster at VSP's headquarters, the Internet Service Provider reroutes Public Internet IP addresses from headquarters to the disaster recovery site. The process takes place automatically and transparently — ensuring that it is business as usual for the network's several hundred users.

## Crime-fighting applications for today and tomorrow

Today, VSP's primary applications include Automated Fingerprint Information System, Live Scan (an element of the fingerprinting system), TIPS and the Virginia Criminal Information Network. The applications, however, won't stop there, thanks to the scalability and flexibility of the Nortel security solution.

VSP looks forward to adding other advanced VPN applications to its network. Plans include the addition of imaging — an application that will enable a number of valuable capabilities, such as delivery of drivers' photos or quick access to wanted posters in just seconds. Other new service options include gun-registry checks for retailers and patrol car Mobile Computer Terminals.

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