

The Virginia State Police



Virginia State Police Enhances Law Enforcement Services Using Modern Web Applications and the Latest Server Solutions from Fujitsu

Challenge:

The Virginia State Police wanted to replace its aging mainframe applications with a new generation of web-based software to meet today's evolving law enforcement demands.

Solution:

The Virginia State Police contracted with Fujitsu to initially test, and ultimately deploy, two Fujitsu PRIMEPOWER enterprise servers and a Fujitsu ETERNUS6000 storage unit. Running Solaris and binary-compatible with Sun servers, the Fujitsu hardware is being used to run existing legacy software as well as host a new generation of web applications under development.

Benefits:

Fujitsu has enabled the Virginia State Police to better scale processing power with user and application demands, add features without adding additional database software licenses, enjoy a significant improvement in transaction performance and enhanced system redundancy and security—both at its primary data center in Richmond, Virginia and a remote disaster recovery site. The fast processors used in the Fujitsu PRIMEPOWER servers, along with fast I/O from the ETERNUS storage system, have increased data center performance by almost 50 percent, with transactions receiving an average response time of .04 of a second.

The Fujitsu ETERNUS storage systems add another layer of speed and flexibility. State Police file backups that previously took 45 minutes to complete now finish in about 18 minutes. The Fujitsu PRIMECLUSTER® software also efficiently manages multiple clusters from a single user interface.



The Fujitsu PRIMEPOWER® 1500 server.

Established in 1932, the Virginia State Police provides critical law enforcement patrol and investigative services for the Commonwealth of Virginia. Among its many responsibilities are the enforcement of traffic laws on state highways and interstates, rapid response and support to federal and local law enforcement, and state-of-the-art investigative resources and equipment. The Virginia State Police is also responsible for the gathering, maintenance, and dissemination of numerous criminal justice databases.

Three years ago, the Information Technology & Planning Division of the Virginia State Police initiated a multi-year project to modernize applications originally developed for the division's Unisys 2200 mainframe. This included mission-critical database programs that are core to the Virginia Criminal Information Network (VCIN) needed by police to access information about wanted or missing persons and stolen vehicles.

Facing rising maintenance costs in its data center, no disaster recovery site and armed with plans to migrate to web-based systems, the Virginia State Police had every incentive to replace its mainframe. That happened in August of 2004. By using the Inqlenet Business Solutions "TIPix" middleware to run the Unisys COBOL, DMS 2200 and DPS 2200 applications—and by converting their Mapper applications to Unix Mapper—a Sun® 6800 midrange server running Solaris® was now the new host for all of the Virginia State Police applications. While the new hardware worked well, it was soon apparent that the department needed to acquire additional domains or servers to complete the migration. So it decided to revisit the server options.

A Look at Alternatives

A Fujitsu PRIMEPOWER® 1500 server was selected for the project for its ability to dynamically assign processors to domains with minimal hardware or software changes. Such capacity enables the Virginia State Police to create domains as needed without incurring additional hardware or software expenses or database licenses; assign more processors to production applications as demand increases; and to build-in system redundancy. Fujitsu's use of fast processors and efficient I/O have resulted in a 50 percent improvement in transaction performance for the department. In addition, Fujitsu had just won an award from the Commonwealth to supply UNIX hardware for much of the state, so there was no need to bid out an additional contract.

21st Century Technology Tackles Tough Police Work

The Fujitsu PRIMEPOWER 1500 server, together with a PRIMEPOWER 900 server acquired for the disaster recovery center, today run a mix of new and legacy applications to make police work more efficient. In addition, the larger server has access to other databases routinely accessed by more than 700 police organizations throughout the state to fight crime. Users, for example, can use VCIN to view the FBI's National Crime Information Center (NCIC) database to conduct criminal background checks. A connection to another crime database provides international information needed by state, local and federal law enforcement agencies.

Many applications today are being upgraded with new features such as digital fingerprint files and digital photos for driver license records. Last year, for example, 210,000 arrest fingerprints were transmitted electronically to State Police from local law enforcement agencies equipped with a "live scan" device. Meanwhile, new legislation meant to enhance arrest records has led to a spike in the number of electronic arrest records submitted with digital photographs.

Together with recent requirements to retain information online longer, the new applications have driven storage demands ever upward. To keep pace and to plan for the future, the State Police acquired a Fujitsu ETERNUS®6000 storage system with 10 TB of storage for its primary data center, and a Fujitsu ETERNUS®3000 unit for the disaster recovery site. Currently only 3 TB of the larger system are being used. But with newer applications coming online, that can and will change.

Speed, Flexibility and Redundancy

While performance was a critical deciding factor, the need for more flexibility was considered equally important. The preceding system was a six processor server that was dedicated to just one task: running

the division's legacy Mapper applications in the event of an emergency. But the Fujitsu PRIMEPOWER 900, with eight processors, can be configured to run as many as eight separate domains with just one processor in each; or where demand dictates, four domains with two processors in each one. This allows computing power to scale seamlessly with user demand.

Better Prepared

Because the IT team is able to split domains over multiple systems boards, the data center is better positioned in the event of a hardware failure. What's more, the separate domains provide added security, an important consideration for certain applications such as the Virginia State Police's public web server.

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A Partnership that Works

Two years after moving off the mainframe, the Virginia State Police is now executing on its plan to provide faster and more user-friendly web applications. Thanks to careful planning, the transition has so far been gradual and largely invisible to users.





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