



## SUCCESS STORIES

# PENNSYLVANIA OFFICE OF ATTORNEY GENERAL BUILDS THE CASE WITH NETWORK APPLIANCE

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GEORGE WHITE Chief Information Officer, Pennsylvania Office of Attorney General



### KEY HIGHLIGHTS

**Location** Harrisburg, PA

**Industry** State government

### Customer Profile

The Pennsylvania Office of Attorney General is the Commonwealth's chief law enforcement officer. Duties include prosecution of organized crime, legal representation of Commonwealth agencies, and administration of the provision on consumer protection laws. (Source: [www.attorneygeneral.gov](http://www.attorneygeneral.gov))

### The Challenge

An outdated IT infrastructure with 120 servers and local storage suffered from performance issues and costly overhead. With an aggressive one-year timeline, the office needed to overhaul the structure to support critical applications, growth, and DR goals.

### The Solution

A high-availability NetApp FAS series solution with NetApp SnapRestore®, SnapMirror®, SnapManager®, and SnapDrive® software delivers performance, reliability, simplicity, and scalability to support the agency's server virtualization and consolidation project. Fast backup/ recovery helps protect mission-critical data.

### Benefits

- At-hand data for agents/attorneys
- Scalability for unpredictable growth
- >\$100K annual backup savings
- Repurposed staffing resources

### THE CUSTOMER

The Pennsylvania Office of Attorney General (OAG) serves as the Commonwealth's chief law enforcement officer and is organized into four major divisions: Public Protection, Criminal Law, Civil Law, and Management Services. Duties and responsibilities include prosecution of organized crime and public corruption, legal representation of the Commonwealth and its agencies, administration of the provisions relating to consumer protection, and representation of the Commonwealth and its citizens in any action brought for violation of U.S. and Pennsylvania anti-trust laws. (Source: [www.attorneygeneral.gov](http://www.attorneygeneral.gov))

### THE CHALLENGE:

#### Implement a One-Year Plan to Overhaul IT Infrastructure and Move to a Virtualized Environment

One of Attorney General Tom Corbett's key campaign promises was to make technology a priority for his administration. This made good sense—without the right tools for their jobs, the OAG's investigative agents and attorneys would be handicapped against adversaries and limited in their ability to carry out legislative mandates. But the new attorney general's pledge to update the OAG's IT infrastructure presented daunting challenges for the Information Technology Section team headed by chief information officer (CIO) George White. “Lacking any meaningful investment over the last few years, our IT infrastructure had fallen

behind the times. We had performance and reliability problems, data availability issues, and no real disaster recovery with respect to mission-critical data. To achieve the agency's mission and meet strategic objectives, we had to overhaul the entire structure—desktops, networks, servers, and storage.”

With an aggressive one-year timeline in mind, the IT team mapped out a strategy of data consolidation and server virtualization to enable administrative cost savings, facilitate backup/recovery, and support growth. White says, “We were determined to engineer a forward-thinking solution, one that would meet our immediate needs and yet afford flexibility and headroom for the longer term. Making small, incremental updates that would be short-lived did not make economic or strategic sense.”

### THE SOLUTION:

#### Standardize on Network Appliance Solution for Enterprise Storage

As part of its infrastructure update, the office conducted an in-depth appraisal of storage technologies, ultimately narrowing the competitive field to two vendors—EMC and Network Appliance. “We chose NetApp,” says White, “because we believed it to be the more flexible technology, and it delivered the same or better performance. The NetApp solution was much more cost-effective.”

“Ask our users about the new infrastructure and they’ll most likely tell you that when they need data, it’s there. The NetApp solution works, and it’s transparent—that’s what makes it a great technology and a great deployment story.”

**GEORGE WHITE** Chief Information Officer, Pennsylvania Office of Attorney General

Jim Ingalzo, assistant CIO, adds, “There were four key drivers in our decision-making. First of all, the NetApp user interface was the most easily understood and user friendly. When you’re implementing all new technology, simpler is better. Second, NetApp Snapshot™ technology is ready-made for how we envision pulling back data at will. We also determined that NetApp offers an easier growth path than EMC.

“Another factor was the strength of the NetApp partner, Technisource. Working with a Technisource team to scope both processing and storage requirements, we completed an inventory of our applications, evaluated utilization levels, and gathered a wealth of background data. Based on what we saw of the Technisource team’s product knowledge, experience, prior deployments, and staff quality, we knew they would be able to deliver excellent support throughout the project.”

With support from Technisource, White’s IT team quantified technical and business requirements to map out a deployment strategy that included agency standardization on Network Appliance™ technology. Now in production, the NetApp solution serves as the enterprise-wide storage platform for all of the office’s mission-critical systems and applications, including Microsoft® Cluster Server, SQL Server 2005, Exchange, SharePoint Services, and a VMware-based server environment

with VMotion. The agency efficiently pairs server virtualization with storage consolidation, running VMware ESX Server and storing the VM images on NetApp storage. Virtual machines connect to NetApp storage via iSCSI.

High-availability NetApp FAS3020 unified storage systems deliver essential performance, capacity, and reliability to support some 1,000 users and new industry-specific applications, including integrated case management and investigation management systems. Other NetApp features, such as boot-from-SAN, support for multipathing (the ability to have multiple paths from a server to storage), and RAID-DP™ (RAID double parity for data protection in the event of two disk failures), enhance reliability and recoverability from failure events.

The agency also leverages NetApp Snapshot technology for high-speed, point-in-time copying and to enable user-recoverable backups. NetApp SnapMirror software enables efficient data replication and NetApp SnapRestore software provides near-instantaneous restoration of enterprise data. NetApp SnapManager for Exchange with Single Mailbox Restore, SnapManager for SQL Server, and SnapDrive software simplify storage and data management.

#### **BUSINESS BENEFITS:**

##### **Unprecedented Data Availability, Cost Savings, and Architecture Longevity**

##### **The Right Data in the Right Hands at the Right Time**

Every day, agents and attorneys at the Office of the Attorney General collect critical case information, including investigatory data and material to support litigation efforts. White explains that the NetApp solution serves a vital role in protecting that data and ensuring access to it: “With NetApp, we have peace of mind—that the technology is there, that it’s going to work, and, if for some reason there’s a blip and we need to recover data, it’s not going to take us three weeks to do it.

“Before NetApp, data recovery was a mess. If the information was on tape, we had to make a call to the off-site storage facility, identify the appropriate tape, then have it re-delivered. At the time, we were also using Iron Mountain LiveVault services for certain data, but it still took too long to restore information. We could easily spend two weeks working to recover two weeks’ worth of Exchange mail. And it was never an easy process.

“In our agency, losing data or taking too long to retrieve it negatively impacts our ability to work a case successfully. We are often under court-established timelines, so without timely and reliable access to documents and information, our attorneys can find themselves behind the eight ball in prosecuting a case. Because we’re not a private-sector company, you might think we don’t have competitors or revenue goals. But we absolutely have adversaries—we are competing against other law firms defending suspects or litigants. Our ability to put the right information in the hands of agents and attorneys—at the right time and in the right format—is mission-critical, even if you can’t directly put a dollar sign on it.”

#### **Fast Data Backup/Recovery for Business Continuation**

White adds that the office leverages the NetApp solution for a combination of high-speed backup, fast data retrieval, and site-wide disaster recovery. “The NetApp technology allows us to retrieve data instantly and at will. We expect to eventually eliminate all tape backup. Prior to deploying the NetApp solution, we used an off-site vaulting service and were always concerned about data security. Although every vendor claims to have built-in safeguards, we know from the daily news that those safeguards don’t always work. Being able to eliminate an outside service certainly raises our data-security comfort level.”

The OAG’s disaster recovery plan includes replication of all mission-critical data to a secondary site in State College. White elaborates, “Today we store all mission-critical data—mail, business databases, evidentiary material, and administrative data—on NetApp. We are currently utilizing NetApp SnapMirror software to replicate data to a second NetApp system here in Harrisburg. When that process is completed, we’ll deploy the system to the disaster recovery site. In the event of a major site disaster, recovery time will be predicated only upon the availability of application servers. Having the network-attached storage has really facilitated our move to a virtualized server environment, and that is allowing us to dramatically minimize the risk and duration of any business downtime.”

#### **>\$100K in Backup Savings—and Much More**

In terms of financial benefits, White discloses, “Just eliminating the online backup service represents an annual savings of more than \$100K. And then there’s administration. People seem most surprised to learn that we’ve been able to completely overhaul our infrastructure, including increasing storage capacity and functionality, without additional staffing. In fact, we’ve been able to repurpose existing administrative resources to work on more productive projects such as new-application rollout.

“In contrast to the high overhead costs of our old environment—which included some 120 servers with direct-attached storage—the NetApp storage solution represents significant management savings. Then factor in performance, and NetApp is appreciably more cost-effective than either our old DAS or the EMC solution we evaluated.”

White adds that NetApp SnapManager for Exchange with Single Mailbox Restore software has been a critical tool in helping to reduce the administrative burden. Used in production on the Microsoft cluster, NetApp SnapManager for Exchange software integrates with NetApp SnapDrive and SnapRestore software to enable fast, space-efficient, disk-based, verified backups of the Exchange environment. Of particular value is the ability to quickly and easily recover Exchange items such as entire mailboxes, single messages, and contacts from Snapshot copies.

#### **Room to Grow, Business Flexibility**

Ingalzo points out that implementing a centralized storage solution has produced unexpected benefits in file protection and user productivity. “Before we set up home drives on the NetApp storage, users felt most comfortable saving documents on their local machines. But nobody backed them up, no matter how much we cajoled, warned, or threatened. Once we deployed the NetApp solution, it didn’t take users long to figure out the benefits of storing everything on the H drive—unlimited

capacity, centralized backup, and recovery at will. Based upon the explosion of data we've seen, users clearly are appreciating the NetApp solution."

Which leads Ingalzo to emphasize another benefit of the NetApp solution—scalability. "Our original storage estimates were meant to accommodate capacity requirements for the next four years. But we're already off by two years. Home drives alone grew 100% in the first year. Fortunately, the NetApp system can grow with us by the day—we don't have to keep going back to the new-system well or be caught off-guard with growth that wasn't forecasted. As we continue to roll out new services and systems, our storage needs will no doubt expand exponentially. In the NetApp solution we have an architecture that will scale seamlessly to track even the most aggressive growth rate."

Rapid storage deployment and application rollout are also benefits of the new virtualized environment supported by NetApp storage. "In the old model," explains Ingalzo, "if we had to deploy an application, we needed a box to store it on, the server had to be configured with enough storage capacity, and we had to set up the backup process. That's incredibly inefficient. Today, we just allocate storage on-the-fly, whenever and wherever it's needed. Everything else is centralized and automated."

"If you compare where we were just one year ago to where we are now, it's a world of difference," comments White. "Ask our users about the new infrastructure and they'll most likely tell you that when they need data, it's there. The NetApp solution works, and it's transparent—that's what makes it a great technology and a great deployment story. Our users don't want to know what we're doing to protect their data, they don't want to know where it's

stored, or how we implement disaster recovery. They want to focus on investigating perpetrators and trying cases—they expect to access information as easily as they'd turn on a faucet or light switch. And that's exactly what the NetApp technology has enabled us to deliver."

#### **ABOUT NETWORK APPLIANCE**

Network Appliance is a world leader in unified storage solutions for today's data-intensive enterprise. Since its inception in 1992, Network Appliance has delivered technology, product, and partner firsts that simplify data management. Information about Network Appliance™ solutions and services is available at [www.netapp.com](http://www.netapp.com).

#### **NETAPP SOLUTION COMPONENTS**

High-availability NetApp FAS3020 unified storage systems  
NetApp SnapRestore, SnapMirror, SnapManager for Exchange with Single Mailbox Restore, SnapManager for SQL, and SnapDrive software

