



NetApp®

Success Story

City of Fayetteville Helps Emergency Services Respond More Quickly with NetApp



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KEY HIGHLIGHTS

Industry

Local government

The Challenge

Provide sufficient storage I/O to support optimal VDI performance for emergency services departments.

The Solution

Deploy NetApp® FAS2240 storage systems and use NetApp Flash Pool™ technology to automate storage tiering between SSD and SATA drives.

Benefits

- Allows police and fire departments to respond faster to dispatch requests, improving public safety
- Saves 30% in overall storage costs
- Recoups 40% of storage space with NetApp deduplication

Customer Profile

With a population of approximately 200,000 residents, the City of Fayetteville is the sixth-largest municipality in North Carolina and a three-time winner of the National Civic League's All-America City Award. Perhaps best known as the home of U.S. Army base Fort Bragg, the City of Fayetteville is the county seat of Cumberland County and one of the most diverse cities in the United States.

The Challenge

Give first responders fast, reliable virtual desktops

To improve efficiency, the City of Fayetteville is rolling out virtual desktop infrastructure (VDI) and zero clients to various city agencies, beginning with police and fire departments. The ability to access virtual desktops anytime, anywhere and receive updates in minutes instead of days is particularly useful to first responders, who must react quickly to emergencies.

"When we rolled out virtual desktops to our police and fire departments, we had to commit to providing excellent performance, and that means removing storage I/O bottlenecks," says Marcus Greene, information technology network services manager for the City of Fayetteville.

"The virtual desktops can't be slow. If we couldn't keep pace with 911 calls or get dispatch information out to the field quickly, then citizens' safety could be jeopardized."

The city also wanted to reduce backup and restore times by moving from tape backups to disk-to-disk backups as well as improve disaster recovery with site-to-site replication.

The Solution

Automated storage tiering for robust VDI performance

Typically, up to 90% of state and local governments' storage either is never accessed after it is written or is only accessed occasionally. The remainder of the data usually requires fast access to support read-intensive workloads such as VDI. NetApp offers adaptive solid-state solutions that allow customers to accommodate changing performance requirements as their environments evolve.

The City of Fayetteville replaced its legacy EMC storage with NetApp FAS2240 storage systems and NetApp Flash Pool technology, an integral component of the NetApp Virtual Storage Tier. NetApp Flash Pool mixes SSD and HDD at the

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Marcus Greene

Information Technology Network Services Manager, City of Fayetteville

aggregate level and automates storage tiering to provide higher I/O speed for “hot” data, balancing cost efficiency with performance demands.

The city worked with NetApp partner Data Network Solutions to deploy the solution. “Data Network Solutions made it easy to get up and running,” says Greene. “With their assistance, we deployed NetApp Flash Pool technology in less than six hours, accelerating time to value.”

The IT team manages the platforms using NetApp Data ONTAP® operating in 7-Mode and OnCommand® System Manager. The city leverages NetApp deduplication to optimize the storage environment and protects its systems and data locally with NetApp Snapshot™ and SnapRestore® technologies in combination with SnapManager® for Microsoft® SQL Server®. NetApp SnapVault® provides integrated, disk-to-disk backups, while NetApp SnapMirror® replicates data to an identical NetApp storage configuration at a disaster recovery site. The city uses NetApp Flash Pool aggregates on both sides.

“In our previous storage environment, we weren’t able to deploy VDI because it would have been very difficult and expensive for us to replicate virtual desktop images and backups to a secondary data center,” says Greene. “In contrast, NetApp SnapMirror and

SnapVault technologies make disaster recovery easy and reliable by automating these tasks.”

Business Benefits

Responding more quickly to emergency dispatch requests

By automatically shifting high-I/O storage traffic to SSD, and migrating less frequently used data to cost-effective SATA drives, NetApp Flash Pool is enabling the city to handle “boot storms” and support robust VDI performance. Police and fire departments can respond more quickly to dispatch requests, improving public safety.

“We’re delivering great performance by running our VDI workloads and SQL Server virtual machines on NetApp Flash Pool,” says Greene. “We benefit from the speed of solid-state drives to mitigate boot storms and improve database query performance without paying a premium for pure SSDs. Because less frequently used data is automatically migrated to cost-effective SATA drives, NetApp Flash Pool has reduced our overall storage costs by 30%.”

NetApp Flash Pool has also enabled the city to achieve superior performance in its data center with 20% fewer physical servers, reclaiming rack space and saving on power and cooling costs. “By using NetApp Flash Pool in our virtualized SQL Server environment, we’re getting better performance from a

single host than we were getting from four hosts previously,” notes Greene.

Enhancing data protection and disaster recovery

By eliminating tape backups, the city has decreased data restore time from days to minutes, saving 10 to 20 hours a week. In addition, NetApp deduplication is improving storage efficiency.

“One of the reasons we chose NetApp is that it allows us to benefit from deduplication without adding an extra appliance to our SAN,” says Greene. “By using NetApp deduplication, we’re reclaiming at least 40% of our total storage capacity, while meeting the service demands of our law enforcement and fire departments.”

In conjunction with VMware® vCenter™ Site Recovery Manager, NetApp SnapMirror and SnapVault are helping the IT team deliver a highly reliable disaster recovery plan. “We have two types of data protection now,” says Greene. “We have a near-synchronous mirror for active data and a disk-to-disk backup solution that copies only the data blocks that have changed since the last backup.”

The city’s NetApp storage is easy to manage with OnCommand System Manager and NetApp Virtual Storage Console for VMware vSphere®, allowing the IT team to shift resources away

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from storage administration toward expanding the city’s VDI initiative to more departments.

Like other local governments across the nation, the City of Fayetteville must continually keep an eye on its budget and leverage new technologies to drive down the costs of data storage without compromising performance.

“Our first responders are impressed by the performance of their virtual desktops, and the only way we could cost-effectively achieve our goals is by using NetApp Flash Pool,” says Greene. “We now have the I/O performance we need to extend the benefits of VDI to other city departments.”

SOLUTION COMPONENTS

NetApp Products

NetApp FAS2240 storage systems
NetApp Data ONTAP operating in 7-Mode
NetApp OnCommand System Manager
NetApp Flash Pool
NetApp Virtual Storage Tier
NetApp Virtual Storage Console for VMware vSphere
NetApp Snapshot technology
NetApp SnapRestore
NetApp SnapManager for Microsoft SQL Server
NetApp SnapMirror
NetApp SnapVault
NetApp deduplication

Protocols

NFS
CIFS
iSCSI

Environment

Applications: Computer-aided dispatch software, Microsoft Exchange Server
Database: Microsoft SQL Server
Server platform: Windows Server®
Virtualization: VMware vSphere 5.1, VMware Horizon View™ 5.2, VMware vCenter Site Recovery Manager

Partner

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