NetApp
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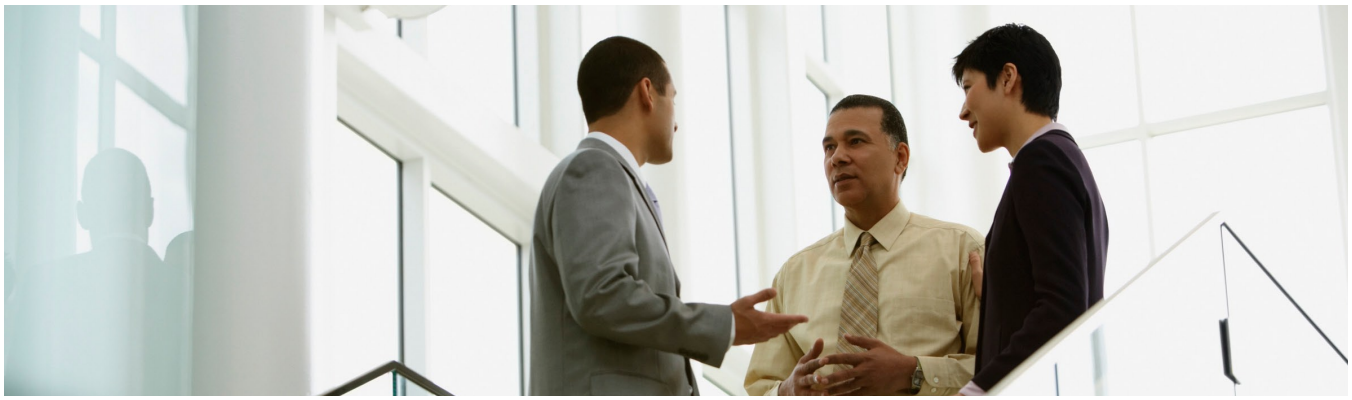
Success Stories

Virginia Credit Union Saves 80% Disk Utilization with NetApp



VIRGINIA CREDIT UNION

KEY HIGHLIGHTS

Industry
Financial services

The challenge
Improve member services, gain agility, and dramatically improve disaster recovery (DR) capability.

The solution
Standardize on NetApp for VMware®, Exchange, SQL Server™, Windows® fileshares, near-line storage, and backup/recovery; use NetApp FlexVol®, FlexClone®, and deduplication technologies.

Benefits
- Fast, reliable rollout of new services
- Cut backup times by 82%
- Shrank capacity needs up to 80%
- DR with <1 hour return to operations
- Business agility with no adds to IT staff

CUSTOMER PROFILE

Chartered in 1928, the Virginia Credit Union (VACU) serves more than 180,000 members. With assets exceeding $1.4 billion, VACU ranks as one of the 75 largest credit unions in the United States. VACU is a not-for-profit financial cooperative owned solely by its members. The credit union offers affordable products and services to meet diverse needs and to help members achieve financial success (source: www.vacu.org).

THE CHALLENGE

Accelerate delivery of enhanced services while reducing cost and complexity
As a member-owned, not-for-profit financial services organization, VACU is all about service. "Everything we do, from a technology standpoint, is to benefit our members," says Chris Saneda, CIO and senior vice president at VACU. "We expect to deliver high-quality service such that whether you're applying for a loan or simply withdrawing from your account, your experience at a VACU branch will be a positive one."

This expectation means that having a branch-office teller wait well over 10 seconds for a single screen to display is unacceptable. Rich Barlow, senior systems architect at VACU, explains, "We had a situation with an application vendor not being able to reliably transition development systems into production. Too often when we rolled out a new service or feature to our branches, the enhancement didn't work properly, or the service was slow to the point of being almost unusable. It could take more than 10 seconds for a teller to move from screen to screen—that's an eternity when members are standing in line waiting for service."

Barlow says that at the same time VACU needed to improve services, it also had to control escalating storage costs. "As a financial institution, we are required to securely store records and documents for three to seven years, depending on the data or document. With escalating storage requirements to accommodate regulations and general data growth, it was important for us to achieve better space efficiencies. Otherwise, we'd face excessive storage, space, and power costs, as well as increasingly long backup windows."

THE SOLUTION

Standardize on NetApp's storage for VMware, Windows, Exchange, and SQL Server environments
Today, VACU ensures fast, reliable delivery of enhanced member services with a virtualized infrastructure based on VMware and NetApp's unified storage technology. A clustered NetApp FAS6070 system serves as storage for VMware implementations,

> "Running VMware on NetApp helps us deliver the best value and service to credit union members. Previously it took one week and $15,000 to deploy a server. Now we can deliver multiple, space-efficient virtual servers in 20 minutes—that gives us tremendous business agility."

Chris Saneda
CIO and Senior Vice President, Virginia Credit Union

including a VMware Virtual Desktop Infrastructure (VDI). The same NetApp system also provides storage for Windows fileshares and group directories (using CIFS), as well as Microsoft® SQL Server (using FC SAN) and Exchange (using iSCSI) applications. The 34TB NetApp infrastructure supports a broad array of business-critical credit union applications, including Fidelity National Information Services MISER Branch Automation and IA Systems StreamLend.

VACU takes advantage of NetApp FlexVol technology for fast, simple provisioning and NetApp FlexClone technology to quickly create clones that help accelerate test and development processes and the deployment of production-class virtual desktops. NetApp's deduplication technology significantly increases the amount of data that VACU can store in existing disk space. On the management side, VACU streamlines administration and recoverability by leveraging NetApp SnapManager® for SQL and SnapManager for Exchange software.

VACU utilizes NetApp SnapMirror® software to automatically copy data from the main data center to a clustered NetApp FAS3020 system at a remote disaster recovery (DR) site. Data not mirrored to the DR site is backed up locally to a NetApp NearStore® solution. The NetApp NearStore system supports industry-standard NDMP protocol to facilitate high-speed backup and archiving using Symantec® NetBackup™ 6.0 to tape libraries. "Being able to take advantage of NDMP has completely revolutionized the way we do backups," emphasizes Barlow. "Backing up our core records used to take three weeks, but now takes just 14 hours—that's an 82% time reduction—because of the efficiencies of NDMP."

Barlow points out that while VACU still utilizes tape backup, the organization is moving away from that technology. "Nothing is riskier than a loose tape. So today we only use tape backups for long-term retention and only for data not mirrored to our disaster recovery site. Leveraging SnapMirror to protect the majority of our data decreases both our tape overhead and our retention liability."

BUSINESS BENEFITS: BUSINESS AGILITY, SERVICE CONTINUITY, AND COST SAVINGS

The virtualized infrastructure: business agility to maximize member services
Improving the credit union's ability to more quickly and reliably introduce new member services led the VACU team to implement a virtualized environment based on VMware built on storage from NetApp. In the existing infrastructure, VACU had no way to easily test new application features that had taken months to develop. When it came time to roll out that new functionality into production, there were inevitably problems. The development environment was complex and nearly impossible to keep up to date with changes coming from three separate development teams.

"Today, we've solved those problems by leveraging NetApp FlexVol and FlexClone technologies in conjunction with VMware," says Saneda. "Using FlexVol, we can provision new capacity in less than a minute—that's compared to three hours to provision a LUN on a competing SAN. We use FlexClone to instantly make space-efficient, exact, and up-to-date copies of production or development environments. The speed at which we are able to present environments to developers ensures that we have adequate time to test and still maintain a rapid time to market."

Barlow adds, "As just one example of the benefits of VMware on NetApp, we recently needed our branch offices to road test a new business application. Normally we would have had to bring everyone into our main operation center to run through the tests. But we decided it would be much more efficient to give each branch a group of virtual machines. We utilized VirtualCenter to create clones from a template of a basic Windows XP machine, then used FlexClone

to copy the development environment that would eventually become the production system once local testing was completed. The process worked flawlessly. Using this technology, in less than five minutes we could easily create 100 XP clones."

Barlow says that NetApp's deduplication technology was essential in this exercise. "Each environment required a 20GB file that we cloned six times into a 120GB NFS volume. Then we would deduplicate against that volume—because the virtual machines are all identical copies, the deduplication would drop the total capacity back to 20GB. Ultimately, taking into account metadata and Sysprep processes, we were able use this process to deploy 35 virtual machines in only 50GB of capacity. After the rollout, we extended this to over 100 VMs—and it still took only about 60GB. Without NetApp's technology, the process would have taken considerably more time and more capacity than we could reasonably have made available."

Barlow points out that VACU utilizes the new infrastructure to reliably introduce new services three or four times each year. "Today we can very quickly, efficiently, and reliably roll out important new functionality to our branches. And because every production system is a clone of a fully tested and proven development system, we can guarantee performance. Instead of waiting 20 or more seconds for a screen to display, tellers see nearly immediate service."

Saneda says that the virtualized environment supports more than 200 VMware guests running across some 70 physical servers. "The more our project leaders see how useful and easy this technology is, the more they demand to use it. In the past, it took a week and $10,000 to $15,000 to deploy a new server. Now we can deliver a virtual server in 20 minutes. That gives us tremendous agility to respond to changing business needs."

"The simplicity of provisioning capacity on NetApp's solution helps us keep up with demand," asserts Barlow. "We originally deployed VMware on an FC SAN not from NetApp. But when I saw how easy it was to provision a LUN on the NetApp system, we never went back. We immediately started moving everything to NetApp, which is where it runs today."

Service continuity: reliability plus "Bob's your uncle" disaster recovery

VACU users expect consistent service availability. "Delivering the best possible service to our members requires that we deliver fault tolerance and high availability," continues Barlow. "While that can be extremely expensive in the physical world, it's actually fairly inexpensive to do in the virtual world."

The virtualized infrastructure gives VACU the ability to impose stringent recovery objectives for Tier 1 applications. A virtualized infrastructure encapsulates servers and their data into simple-to-manage objects that are recoverable anywhere the proper environment can be installed. System managers no longer have to be concerned with server architectures and maintaining specific batches of recovery servers for specific applications. "As long as we have a VMware infrastructure, we can recover any virtual machine from any production cluster," elaborates Barlow. "NetApp makes this transparent through its incredibly clear and useful interface and a 'hands-off' approach. Once DR replication is set up—a five-minute job—the process works without intervention. Our database administrators used to have to tediously script out backup and disaster recovery processes. Now they simply use the NetApp GUI in the SnapMirror and SnapManager products to quickly and easily set up automatic processes. The first time we showed our CTO how fast we could recover into our DR site for Exchange, he couldn't believe it. I call it 'Bob's your uncle' DR—just hit the button and it's done—simply, reliably."

Should VACU lose its primary production site, the organization can be back in business in about an hour. “It used to take 24 to 48 hours, so this improvement is huge for us,” Barlow stresses. “Being able to ensure business continuity and maintain member confidence in time of a disaster is priceless.”

Cost savings: significant space savings, simple administration

Barlow points out that NetApp’s deduplication technology is producing considerable space savings. “We are seeing major benefits from deduplicating data. We already leverage deduplication for our VDIs, as well as all of our volumes not on VMware. To give just a few examples, we’ve seen an 80% savings on backup copies, 78% in the VDI, and we’re routinely achieving 25% on home directories and group shares, 35% in our live documentation environment, and 50% savings in our scratch volumes. We have never experienced a performance impact, so it only makes sense to routinely utilize deduplication and achieve space savings across a variety of applications and file types. And when you’re realizing such major savings in capacity, you’re also saving on data center real estate and power.”

Barlow notes that achieving such space savings enables VACU to present new services to members. “We can keep records longer, for example—so instead of automatically dropping check images at the end of the retention period, we might choose to make them available to members for a longer period of time.”

In terms of general storage administration, Barlow comments, “I could teach a help desk person to manage the NetApp system. Just two years ago, before we moved our core applications to NetApp, we had a mixed-storage infrastructure. The other storage products were much more difficult to manage.”

“That’s important,” adds Saneda, “because we tend to hire from within the organization so that our IT staff understands the mission of a credit union and can help us maintain our member-focused culture. So while they understand our business and applications, they tend not to be FC or iSCSI experts. NetApp’s solution gives us flexibility without complexity so that we can support the infrastructure with a fairly lean IT staff primarily focused on service. Also, by standardizing on an easy-to-administer storage infrastructure, we don’t have to spend additional resources to train our staff on multiple systems.”

“When you consider the VDI environment in particular,” Barlow interjects, “in two hours I could train someone to roll out a million desktops—it’s that easy. So our desktop people can stop spending time provisioning desktops and worrying about hardware and go about supporting applications and members.”

VMware and NetApp: better together, better for business

“I have become an evangelist for VMware on NetApp,” admits Barlow. “With VMware, we have an added layer of intelligence that allows us to maximize server resources and overall efficiency. NetApp delivers complementary intelligence on the storage side. For example, by using NetApp FlexClone technology, we’re not taking CPU cycles from VMware, so it’s much more efficient. And overall, while other vendors would like to deliver equivalent functionality, NetApp is the only one that integrates capabilities such as Snapshot™, FlexVol, FlexClone, and deduplication into a single box.”

“It’s important that we be good corporate citizens,” emphasizes Saneda. “That includes properly spending the business’s money. In the past we invested in servers that ran at 5% all day. Today we routinely achieve 60% utilization with equivalent efficiencies on the storage side. VMware on NetApp has allowed us to consume less energy, respond quicker to business needs, utilize storage more efficiently, and deploy a more robust business continuity approach. Building our virtualized infrastructure on NetApp is clearly helping us deliver the best value and service to credit union members.”

SOLUTION COMPONENTS

NetApp Products

Clustered NetApp FAS6070, FAS3020, and R200 storage systems

NetApp Data ONTAP® software with FlexVol, FlexClone, and deduplication technologies

NetApp SnapMirror, SnapManager for SQL, and SnapManager for Exchange software

NetApp creates innovative storage and data management solutions that accelerate business breakthroughs and deliver outstanding cost efficiency. Discover our passion for helping companies around the world go further, faster at www.netapp.com.

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