



NetApp®

Success Story

Best Best & Krieger Achieves 100% Payback with FlexPod Datacenter with Citrix XenDesktop



Another NetApp solution delivered by:



KEY HIGHLIGHTS

Industry
Legal

The Challenge

Maximize efficiency and productivity by providing attorneys and other employees with virtual desktops and applications through Citrix XenDesktop.

The Solution

With assistance from Agile360, virtualize servers and desktops on the FlexPod® Datacenter platform with NetApp® Flash Cache™ intelligent caching to improve virtual desktop performance.

Benefits

- Achieve 100% payback on infrastructure investment
- Increase attorney and staff productivity
- Position firm to win new business through enhanced security
- Avoid \$200,000 purchase of encryption software
- Reclaim 60% of storage capacity with NetApp deduplication

Customer Profile

A full-service law firm with nearly 200 attorneys in 9 offices across California and in Washington, D.C., Best Best & Krieger LLP (BB&K) delivers effective, timely, and service-oriented solutions for complex legal issues facing public agencies, businesses, and individuals. The firm serves as city attorney to more than 30 cities across California and as general and special counsel to districts that focus on water, transportation, regional planning, and resource conservation. Established in 1891, BB&K offers representation in virtually all law practices, with a particular focus on environmental and natural resources.

The Challenge

Making a case for a better computing model

With an IT staff of 15 supporting over 400 employees, including 200 attorneys, across 9 locations, BB&K is always looking for ways to maximize efficiency. As the firm's IT team began planning an upgrade to Microsoft® Windows® 7 and Office 2010, it became clear that most of BB&K's desktops and laptops would not perform optimally in the new environment with more resource-intensive applications. Procuring new desktops and laptops would be costly, and most

of the company's IT staff would need to be dedicated to a three-month deployment requiring substantial overtime.

Having had great success virtualizing servers using VMware® vSphere®, and delivering applications to remote users with Citrix XenApp, the firm's IT department concluded that virtual desktops running on thin clients could be the answer. "Management wanted to transition to more shared, open workspaces, and allow remote and mobile users to be just as productive as they could be in the office," explains Tim Haynes, director of IT.

Haynes proposed a desktop virtualization solution to the firm's executive committee. In his presentation, he emphasized up-front and ongoing IT staff time savings, minimized disruption to users, and long-term benefits for the firm.

"As a medium-sized business, every dollar we spend needs to generate value," says Haynes. "In today's business climate, it is more important than ever to use technology to make all staff, especially our attorneys, more efficient. Virtual desktops improve workflow while also providing a more secure, centralized environment for our data, which is important to our customers."

“For a law firm, time means money. With all the efficiencies we’ve enabled with Citrix XenDesktop running on FlexPod, we’ve certainly recouped our investment in these technologies.”

Tim Haynes
Director of IT, Best Best & Krieger LLP

The Solution **FlexPod Datacenter with Citrix XenDesktop**

The executive committee approved Haynes’s plan, and he immediately enlisted the firm’s trusted IT advisor, Agile360, to deploy a Citrix XenDesktop solution running on VMware virtual machines. Agile360 is a top-tier integrator of virtualization solutions and a division of Entisys Solutions. “The technical expertise that Agile360 brings to the table is impressive,” says Haynes. “They keep their skill sets current and they do fantastic work. Agile360 really is an extension of my team.”

Using XenDesktop, the firm is able to provide self-service access for users and simplify management for IT by centralizing virtual desktop images in the data center instead of maintaining separate physical computers for each user. Deploying new software and operating system patches take minutes instead of consuming weeks of IT staff time. Employees access their virtual desktops from low-cost, energy-efficient thin-client machines while data processing takes place on the server side, improving application performance.

In preparation for the XenDesktop deployment, Agile360 deployed the FlexPod platform—a single, prevalidated architecture comprised of NetApp FAS3240 storage systems, Cisco® Unified Computing System™ (UCS®) B200

blade servers running VMware vSphere, and Cisco Nexus® 7010 switches. An identical infrastructure was deployed at the firm’s production data center in Scottsdale, Arizona, and at the firm’s Riverside, California, headquarters for disaster recovery (DR). The NetApp storage arrays provide same-box support for iSCSI connectivity, as well as NFS-to-VMware LUNs. The NetApp storage is managed directly from VMware vCenter™ using the NetApp Virtual Storage Console for VMware vSphere, which also automates the virtual machine backup process.

“It’s exciting to have integrated components that we can manage from a single window,” says Haynes. “It’s easier for us to expand. Cisco also has the best blade servers in the industry, from airflow to the way the enclosures are managed. It’s a better, more efficient design.”

Paul Sunok, director of the NetApp Storage Practice at Agile360, helped BB&K architect and deploy the solution. Sunok says, “The FlexPod environment offers a unified platform that enables Best Best & Krieger to move in any direction. It simplified what could have been a very complex project.”

Accelerating desktop virtualization performance with intelligent caching

To provide optimal performance for Citrix XenDesktop and VMware virtual machines, Agile360 suggested using

NetApp Flash Cache controller-attached PCIe intelligent caching. By caching recently read user data and NetApp metadata, Flash Cache can increase I/O throughput by up to 75% without the need to add more hard disk drives.

“NetApp Flash Cache gave us a clear edge on IOPS, which Agile360 demonstrated with a proof of concept,” says Dario Frescas, systems engineer at BB&K. “Consequently, we haven’t had any trouble with boot storms or virtual desktop performance. There’s no way we could have successfully implemented VDI with our old storage—we would have kept running into disk bottlenecks, and users would have been frustrated.”

BB&K is also using NetApp deduplication to maximize storage efficiency. Because Flash Cache is fully deduplication aware, the firm is able to make optimal use of the cache and further improve the efficiency of its flash deployment for VDI. “We’re getting up to 60% capacity savings on some of our volumes,” says Frescas. “Deduplication lets us make the best use of our storage capacity, which goes along with our whole mantra of improving efficiency any way we can.”

Simplifying data protection

BB&K replaced its previous backup solution with NetApp SnapVault® software for disk-to-disk backup and NetApp SnapMirror® software for automated data replication between data

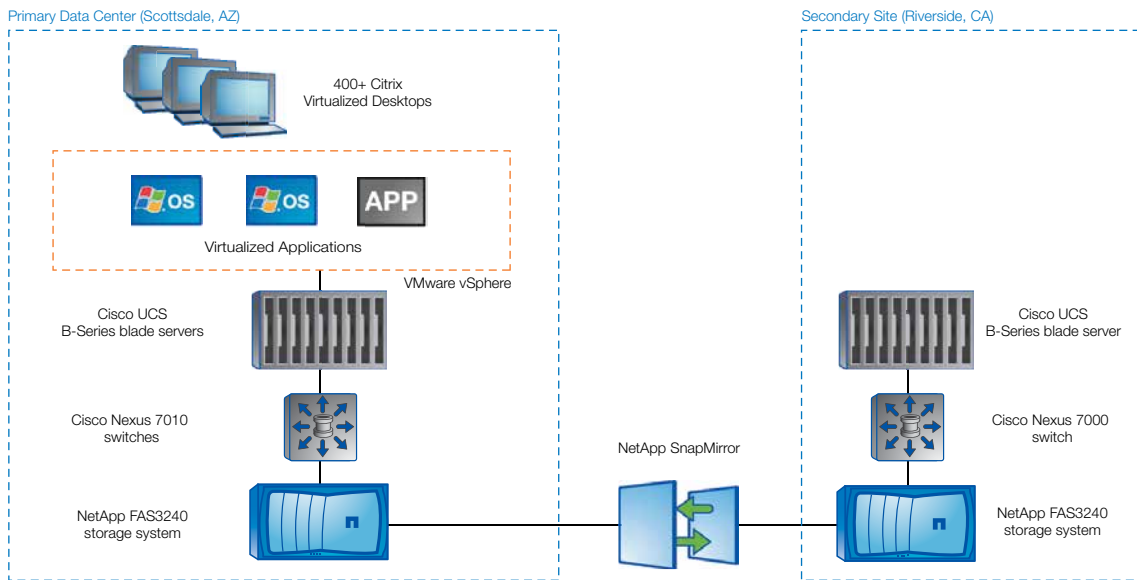


Figure 1) Best Best & Krieger LLP FlexPod Datacenter with Citrix XenDesktop

NetApp SnapMirror replicates virtual machines between a production data center in Scottsdale, Arizona, and the firm's headquarters in Riverside, California.

centers. Copies of virtual machines or datastores are rapidly created and can be restored from any level of granularity as needed. In the event of a disaster, a NetApp Snapshot™ copy at the DR site can quickly be promoted to a production copy using NetApp SnapRestore® software, thereby minimizing impact on business operations.

"We estimate that implementing NetApp saved BB&K more than \$835,000—decreasing anticipated spending by more than 48%—compared to what we would have had to invest to address our DR goals in the previous storage infrastructure," says Haynes.

Business Benefits

Faster desktop performance at net-zero cost

When BB&K went live with Citrix XenDesktop on thin clients, the IT team was pleased to hear positive reports from users. "All the feedback we've heard has been positive," says Haynes. "Applications run faster, machines boot faster, and users have the exact same experience no matter where they are, as long as they have a reliable Internet connection. Our Citrix and FlexPod solution is enabling all the firm's employees to be more productive."

Because thin-client terminals are much less expensive than full PCs or laptops, the firm can afford to keep spares on hand at each location. If a thin-client

machine fails—which happens rarely—a new thin client is ready to go, with no configuration necessary. Application and operating system issues or malware infections can be remediated by simply rebooting, with no IT involvement. Users can get back to work in minutes, with all applications and data intact.

"Watching us replace and rebuild a computer for two hours isn't a good use of attorneys' time, not to mention a loss of significant dollars," says Haynes. "We no longer have to do that. Users can now securely access applications from their mobile device or tablet, and keep right on working."

Going forward, it will be much easier for IT to roll out new software and keep users current and consistent with software and operating system versions. "Software rollouts used to take months and involved travel for IT staff," says Frescas. "Now we can deploy new applications in a day, without leaving the office."

As a result, IT employees formerly dedicated to desktop support and maintenance are free to tackle higher-value projects, improving their job satisfaction and accelerating the firm's IT initiatives. "For a law firm, time means money," says Haynes. "With all the efficiencies we've enabled with Citrix XenDesktop running on FlexPod, we've certainly recouped our investment in these technologies."

Enhanced security puts clients at ease

Another benefit of desktop virtualization is improved security for internal and client data, since all data resides on the FlexPod platform and not on laptop and desktop hard drives. When a user logs off, no data remains on the endpoint. "Information security becomes more critical every day," says Haynes. "We feel good being able to tell clients that we're delivering desktops in a more secure manner. In the future, being 100% VDI could even help us win new business."

Today, the desktop virtualization implementation is helping the firm avoid a \$200,000 purchase of encryption software it would otherwise need to comply with audit requirements governing the management of personal health information. "Because there's no data stored locally on endpoints, we don't have to encrypt them," says Haynes.

The firm is also evaluating ShareFile with NetApp storage to allow users to more securely sync and share data from any device. "To address growth and client needs, we need a 'one-box' file-sharing solution to further streamline management and reduce complexity," says Haynes.

Meanwhile, the IT team's dedication has not gone unnoticed. "The technology improvements put in place with Agile360 are definitely appreciated by

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Tim Haynes
Director of IT, Best Best & Krieger LLP

the firm,” says Haynes. “We’ve demonstrated that IT is a team player and that we’re working to improve the firm overall. Running FlexPod Datacenter with Citrix XenDesktop has allowed us to realize all the benefits of VDI while making the most of our IT budget.”

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SOLUTION COMPONENTS

FlexPod Components

NetApp FAS3240 storage systems with Data ONTAP® 8.2 operating in 7-Mode

Cisco Unified Computing System (UCS) blade chassis and B-Series blade servers with UCS Manager

Cisco Nexus 7010 switches

Virtualization Components

Citrix XenDesktop 5.6

VMware vSphere 5.1

VMware vCenter

NetApp Software

NetApp OnCommand® System Manager

NetApp Virtual Storage Console for VMware vSphere

NetApp Flash Cache

NetApp Snapshot technology

NetApp SnapRestore

NetApp SnapMirror

NetApp SnapVault

NetApp deduplication

Third-Party Products

Microsoft Exchange Server 2010

Microsoft Office 2010

Microsoft SQL Server® 2008

Microsoft Windows 7

LexisNexis Concordance

e-discovery management software

Thomson Reuters Elite law firm accounting software

Protocols

NFS

iSCSI

Partner

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Go further, faster®

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