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Success Stories

Bimba Manufacturing Pulls the Plug on DAS, Air Conditioning, and High Costs



KEY HIGHLIGHTS

Industry
Manufacturing

The challenge

Build a virtual infrastructure with centralized storage to expand application services, simplify admin, and save on hardware and energy costs

The solution

Implement combined Citrix and NetApp® solution for continuous application services, single-console manageability, and reduced data center costs

Benefits

- Accelerated company-wide upgrade to Exchange 2007
- Eliminated 16 servers with DAS and saved \$70K
- Eliminated one air conditioner, cut yearly energy costs by \$16K
- Assured simple scalability for growth, new applications

CUSTOMER PROFILE

A forward-thinking innovator of actuation technology, Bimba Manufacturing (www.bimba.com) specializes in cutting-edge solutions for engineering challenges. Bimba introduced the round line, stainless steel body cylinder more than five decades ago and now offers an extensive line of industry-leading air cylinders, rotary actuators, linear thrusters, rodless cylinders, flow controls, and position-sensing cylinders. Bimba products, used in machinery and automation, are sold to OEMs and end users throughout the world in an expanding variety of industries, including automotive, construction and mining, entertainment, high-tech, medical, packaging, transportation, and many more.

THE CHALLENGE

Replace conventional infrastructure with more dynamic and manageable solution for mission-critical applications

The 2007 acquisition of Mead Fluid Dynamics extended Bimba's offering of high-quality automation solutions and reflected the company's commitment to long-term growth and customer service. But the acquisition posed challenges for the Bimba IT team. The company's existing infrastructure was already a hard-to-manage mix of servers with direct-attached storage (DAS). Aging hardware posed mounting reliability risks,

and lengthy, complex provisioning processes frequently bogged down the rollout of new or upgraded applications. Integrating a whole new set of users and applications seemed a daunting task.

Matt Nantais, network manager at Bimba, explains, "We were already running out of capacity on our servers—space was always an issue—and bringing the new company into our existing infrastructure promised to be both costly and time-consuming. Another problem was our planned transition to Microsoft® Exchange 2007. At the time, we were supporting multiple e-mail platforms across five facilities and needed to simplify administration as well as to improve e-mail functionality and reliability. We're supporting an international business that requires 24x7 availability of e-commerce and other mission-critical applications, so we can't afford downtime of any kind. The existing infrastructure simply didn't give us the scalable capacity, redundancy, and manageability we needed for a failsafe enterprise-wide Exchange deployment."

Nantais says that Bimba's strategy was to transition to a virtual infrastructure that would be more manageable, make better use of server and storage resources, assure availability, and enable faster response to always-evolving business needs.

“If we have a problem with a server, we use the template to bring up a new virtual machine, and storage is provisioned the instant we create the new machine. Instead of hours of administrative time to build a server and allocate storage, it’s minutes.”

Matt Nantais

Network Manager, Bimba Manufacturing

THE SOLUTION

Implement a business applications solution with Citrix and NetApp

Working with Cyberklix, a managed services provider with expertise in virtualization, the Bimba team engineered a solution built on the Citrix XenServer virtualization platform and NetApp storage. The XenServer platform includes the Citrix Storage Delivery Services Adapter for NetApp Data ONTAP®, a jointly developed, certified solution that streamlines virtual machine creation and management by enabling storage configuration and provisioning from the Citrix XenCenter console.

“Our consulting team has considerable experience helping companies implement virtualization solutions, and we know firsthand the complexities that can come with configuring IP SAN storage in many mixed environments, including Linux® and Windows®,” says Jesse Korn, director of Application Delivery at Cyberklix. “That’s why NetApp’s one-click storage integration with the XenServer virtualization solution is so appealing. Having a radio button to provision storage directly into your XenCenter Resource Pool makes the process simple—it totally eliminates the need to drop down into a number of different environments to allocate servers and storage. Any time you can take advantage of a solution composed of tech-

nologies engineered to work together, your customer will benefit in terms of operational efficiency.”

Partnering with the Cyberklix team, Nantais implemented a NetApp StoreVault™ S550 system that now provides storage resources to approximately 30 virtual servers running on eight blade servers communicating using iSCSI to the NetApp system. The XenServer environment leveraging the NetApp storage supports critical Bimba Manufacturing business, production, and engineering systems, including Citrix XenApp and XenCenter, Microsoft Windows Server 2008, clustered Microsoft Exchange 2007, Microsoft SQL Server™, Microsoft Office SharePoint® Server, domain controllers, file and print services, AutoCAD, and SolidWorks 3D rendering applications.

BUSINESS BENEFITS

Continuous availability for tier-one applications

The new virtual infrastructure helps Bimba assure availability of critical application services, including Exchange 2007, the first application moved to the XenServer environment leveraging the NetApp storage. The clustered Exchange environment serves some 500 employees at five facilities and runs across four virtual machines on two blade servers. Nantais explains the advan-

tage; “Because we can very easily distribute the Exchange environment across multiple virtual and physical hosts, we are no longer susceptible to the failure of a single Exchange server. If there’s a problem on one blade, we can just drag the application to another one, and it keeps running. Having centralized storage lets us take full advantage of the enhanced features of XenServer.”

NetApp also delivers the storage reliability absolutely essential to supporting the tier-one applications running in Bimba’s virtual environment. Nantais says that compared to the direct-attached storage it replaced, the NetApp solution greatly improves e-mail and other critical-data availability. The sheer numbers of systems in the old infrastructure—a single NetApp StoreVault S550 replaced some 18 servers’ worth of local storage—had increased the likelihood of disk failures, and recurrent failures were a fact of life as many systems neared end of life. Nantais notes that while RAID improved data protection in the old structure, setting up and maintaining RAID arrays on each of the individual systems was time-consuming and often not a practical option.

Alternatively, the StoreVault S550 with integrated RAID-DP® offers a more manageable solution with better data protection and negligible performance overhead. Since deploying



the virtual infrastructure, Bimba has experienced no business-impacting downtime.

Follow-the-business flexibility

The virtual environment with NetApp storage also allows faster response to user and business needs. “Overall, users report faster file access, and our IT staff can respond much more quickly to requests for additional capacity,” continues Nantais. “Just a few years ago, Exchange data for the entire company was less than 6GB. Today we have users whose individual mailboxes exceed 8GB. While we encourage users to make wise use of capacity, we do not want to impose restrictions that limit their ability to do their jobs. So it’s important that we be able to quickly and nondisruptively provision new capacity, whether it’s for a single user or to integrate an entire new user community. NetApp FlexVol® technology lets us more quickly allocate and reallocate storage, and we can make use of thin provisioning to maximize utilization.”

Flexibility factored significantly in Bimba’s selection of the NetApp StoreVault solution. The low acquisition cost of the S550 made it possible for Bimba to implement centralized storage sooner rather than later and without sacrificing functionality. Nantais comments, “As our storage requirements grow, we can transition to the NetApp FAS systems. That’s

especially important in our ability to support new applications. Later this year we expect to implement a new ERP application from an as-yet undetermined vendor. By standardizing on NetApp storage, we can be certain that no matter which ERP product—or other business applications, for that matter—we ultimately deploy, we will have the storage performance, capacity, and scalability to support it.”

“Having on-the-fly scalability within a single box and the same NetApp Data ONTAP operating system across a broad product line assures that we will be able to grow our storage footprint without learning and maintaining multiple architectures. It also protects our investment—for example, when the time comes to add a NetApp FAS system, we’ll use NetApp SnapMirror® software to replicate data from that system to the S550 that we will move to a disaster recovery site. Leveraging the common NetApp architecture and efficient replication technologies, we’ll be able to implement very economical disaster recovery for our virtual environment. The cost and complexity of backup/recovery in the old infrastructure forced us to pick and choose which applications to protect and at what levels. We no longer have those restrictions, so we can do what makes sense for our business and users.”

Reduced hardware and power + management efficiency = cost savings

Based on industry calculators and factoring in a transition from PCs to thin clients, Nantais expects that eliminating 16 to 18 conventional servers with direct-attached storage will result in a hardware cost savings of \$70,000 and an estimated \$16,000 annual reduction in power costs. Eliminating two racks of servers also frees up data center space and has enabled the removal of one air conditioning unit. Nantais says noise reduction has been another major benefit. “In the past, walking into our data center sounded like walking into a jet engine. Our data center staff definitely appreciates the quieter work environment.”

Management efficiency contributes to cost savings, as well. Even with the addition of applications and capacity, a sole IT staffer manages the entire Citrix and NetApp virtual infrastructure. Nantais emphasizes the ability to manage storage directly from XenCenter, “Now we work from a single console to provision and administer both servers and storage. It’s much simpler than administering the direct-attached storage, and we don’t need a storage expert. In the past, allocating storage to a user or application might have required changing out drives or migrating data. Now the process is fast and uncomplicated.”

“Working with an experienced partner like Cyberklix definitely accelerated solution time to value and helped us achieve our objectives for the corporate-wide transition to Exchange 2007.”

Matt Nantais

Network Manager, Bimba Manufacturing

Nantais adds that Bimba stores server templates on the NetApp system. “If we have a problem with a domain controller, for example, we use the template to bring up a new virtual machine, and storage is provisioned the instant we create the new machine. Instead of hours of administrative time to build a server and allocate storage, it’s minutes.”

Partnering with experts for rapid time to value

To assure a nondisruptive transition to the virtual infrastructure, the Bimba IT staff worked closely with the team from Cyberklix to plan and implement the XenServer environment leveraging the NetApp storage.

Nantais concludes, “From the beginning of the project, we leveraged Cyberklix resources to help us architect a virtual infrastructure that would meet our business requirements and to establish a physical-to-virtual schedule best suited to our application priorities and resources availability. Working with an experienced partner definitely accelerated solution time to value and helped us achieve our objectives for the corporate-wide transition to Exchange 2007, as well as other critical-application initiatives. All told it has been a very positive experience resulting in a more dynamic and manageable infrastructure in place to meet our business needs.”

SOLUTION COMPONENTS

NetApp Products

NetApp StoreVault S550 system

Protocols

NetApp CIFS/NFS, IP (iSCSI) SAN

Environment

Citrix XenServer with NetApp adapter

Citrix XenApp and XenCenter

Microsoft Windows Server 2008

Clustered Microsoft Exchange 2007

Microsoft SQL Server

Microsoft Office SharePoint Server



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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