Since 1985, businesses have turned to Payformance for payment solutions. Today, the company is an application service provider focusing on the healthcare industry. Its proprietary Web-based application, Payspan Health, delivers thousands of healthcare payers and providers significant savings in time and money by enabling electronic claims settlement and automating reconciliation, correlation, and explanations of payment information. With healthcare organizations striving to cut costs, improve efficiency, and maintain competitiveness, Payformance has grown significantly.

The Challenge
Payformance’s success has challenged the company to quickly expand its capacity. “Not only have our customer numbers increased many times over, but the amount of data we handle for each customer also continues to grow,” explains Jason Beckham, vice president information technology at Payformance. “Because our system wasn’t originally designed for the I/O load that we were experiencing, we occasionally suffered from slow response times. We needed a wholesale upgrade of both our network and our storage infrastructure to increase performance and business continuity for greater customer satisfaction. Also, we needed a flexible infrastructure to support our continued rapid growth.”

To upgrade Payformance’s network, Beckham decided to change from a mix of Fibre Channel (FC) and Ethernet switches to Cisco Nexus 5010 Fibre Channel over Ethernet (FCoE) switches and QLogic Converged Network Adapters. FCoE combines the FC protocol and an enhanced 10-Gigabit Ethernet physical transport to provide more options for SAN connectivity and networking. “From a total investment perspective, it made sense to consolidate at the same time as we upgraded, so we worked with NetApp, Cisco, and QLogic to design and implement an FCoE infrastructure,” Beckham says. “It was important for us, as an early adopter of converged networking, to work with QLogic. We were impressed by the company’s expertise in this area, and by its ability to take a team approach in resolving issues.”

For a better storage infrastructure, Beckham turned to NetApp storage systems. Payformance had been using EMC storage, but, at the suggestion of a colleague, Beckham evaluated NetApp products—and liked what he saw. “NetApp products won, hands down, because they

- Increased maximum throughput from 200MB to 1.5GB
- Saved 30% to 50% on network fabric costs
- Increased storage efficiency, reducing data by 50% through deduplication
- Eliminated need to purchase disks, saving $60,000
- Extended useful life of existing storage arrays
“NetApp sees storage as more than just a place to put data. The company understands that its storage systems have to enable the entire business system in order to add maximum value.”

Jason Beckham
Vice President Information Technology, Payformance

could provide us greater efficiency and key features, such as deduplication, Snapshot® technology, performance acceleration, and integration with our VMware® platform, all at a significant savings,” he says. “But even more important was the fact that NetApp sees storage as more than just a place to put data. The company understands that its storage systems have to enable the entire business system in order to add maximum value.”

THE SOLUTION
Payformance’s cornerstone application is Payspan Health, a custom application that delivers healthcare providers and payers remittance notices; payment functionality, including ACH and EFT; and claims matching capabilities to streamline the process of invoicing, paying, and recording payments. Approximately 70 employees work with this application that leverages multiple Microsoft® products, including SQL Server®, BizTalk, IIS, as well as other technologies.

Today, when Payformance customers upload data into Payspan Health, the data passes seamlessly through the company’s VMware virtual infrastructure to a NetApp V3170 open storage controller. To speed access to the data, NetApp Performance Acceleration Module (PAM) cards and second-generation Flash Cache (PAM II) cards optimize the performance of Payformance’s read-intensive workloads.

To protect Payformance with disaster recovery capabilities and to support business continuity, NetApp SnapMirror® technology is being implemented to replicate data from a hosted data center in Jacksonville to a facility in Atlanta. There, a NetApp V3140 open storage controller front-ends Payformance’s storage arrays.

The NetApp FCoE storage solution operates over an end-to-end 10Gb Ethernet transport that allows Payformance staff to use existing tools and techniques to manage all elements of the solution, including both Ethernet and FC networks and storage. Almost all storage and network traffic now runs over a converged enhanced 10Gb Ethernet network. Payformance uses CIFS and NFS for less I/O-intensive workloads.

BUSINESS BENEFITS
With the converged enhanced Ethernet infrastructure in place, Beckham reports that the benefits his team experienced during testing—including performance gains, cost savings, risk reduction, and greater manageability—have materialized in the company’s production implementation, too.

NetApp Flash Cache and FCoE combine for “phenomenal” performance gains
Improving performance and rebuilding customer satisfaction with faster response times was one of the key objectives of the switch to NetApp. “When we first tested out our NetApp storage system with PAM running over an FCoE network, we ran through some of our I/O profiles and recorded a huge performance gain,” says Beckham. “Our previous system could handle 200MB sustained throughput, but, in our test of the NetApp infrastructure, we blew right past our goal of doubling throughput, recording up to 100,000 IOPs in small sequential reads thanks to the PAM card. We’re confident now that we can deliver excellent performance under any load we’re likely to experience.”

PAM cards and Flash Cache, along with the Cisco Nexus 10Gb Data Center Ethernet, were key contributors to the increase in performance. “We ran some separate tests with the PAM cards and Flash Cache, and estimated that we’d get at least a five-fold improvement in performance from them alone,” comments Beckham. “Performance is phenomenal, and our customers are delighted with our new response times.”
NetApp helps cut the cost of storage

Though Payformance was primarily seeking to improve performance, its switch to NetApp products running over an FCoE network also delivered significant cost savings. PAM and Flash Cache have saved Payformance approximately $180,000 by enabling it to avoid purchasing several trays’ worth of disks. The move to a converged network has saved between 30% and 50% of the costs of buying separate adapters and switches. Plus, Beckham’s team is saving on management time. “With the switch to a converged network and FCoE, we’re now able to manage one large, converged infrastructure that includes both Ethernet and FC networks and storage, rather than two different fabrics,” says Beckham. “This simplifies troubleshooting, zoning, and management for my team.”

Payformance also achieved significant cost savings by putting its old storage arrays behind the NetApp V-Series controller. “With the V-Series in front of our old arrays, I continue to get value from our investment,” explains Beckham. “At the same time, I get new functionality, such as deduplication, CIFS, and NFS, that I never had from the original system. Plus, now that the old arrays are behind the V-Series, I no longer have to manage them as separate pieces of equipment. They are just a seamless part of my NetApp infrastructure.”

Just three employees manage the company’s storage infrastructure, which has raw capacity of approximately 200TB. Payformance has also benefited from virtualizing its server systems, reducing its footprint from 50 physical servers to just 15, with consequent reductions in licensing costs. Since Payformance rents floor space in a hosted data center, it has been able to downsize its requirements and achieve significant savings from VMware virtualization, NetApp storage efficiency, the converged network, and the tight end-to-end integration between them.

NetApp tools reduce risk

Beckham also values NetApp for its reduction of risk—especially after a recent event, when a technician made a mistake changing the configuration of a production server. “Before NetApp, it would have taken us about five hours to fix the problem and get service levels back up,” says Beckham. “Instead, we just used the tools in NetApp SnapManager® for Virtual Infrastructure and restored the whole thing in about eight minutes. We definitely sleep better with NetApp in place.”

Systems management capabilities support flexibility, efficiency

The systems management capabilities built into NetApp have dramatically simplified storage management, enabling Payformance to respond more rapidly to changing demands of the business. “NetApp FlexVol® and other NetApp capabilities make it easy for us to extend volumes whenever we need to, without requiring IT time or disrupting service,” Beckham explains. “This makes us more agile, because we don’t have to be as exacting about our plans for growth. No matter what the requirements of new businesses or products, no matter whether they draw on file services, OLTP databases, or reporting databases, we know we can provision for them quickly.”

This thin, flexible provisioning has also reduced Payformance’s storage requirements, yielding cost savings. The team no longer has to lock up large blocks of storage just to prepare for the possibility of growth. Instead, it can maximize storage utilization, easily adding high-performance storage capacity when it’s needed. Simultaneously, NetApp deduplication has improved storage efficiency and reduced the amount of data Payformance needs to store by 50% in
“Our previous system could handle 200MB sustained throughput, but, in our test of the NetApp infrastructure, we blew right past our goal of doubling throughput, recording up to 100,000 IOPs in small sequential reads thanks to the PAM card. We’re confident now that we can deliver excellent performance under any load we’re likely to experience.”

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Vice President Information Technology, Payformance

many areas, or approximately 10TB. This has saved the company approximately $60,000 by enabling it to avoid purchasing additional disks.

Of all the benefits of the move to NetApp FCoE storage over a converged Ethernet network, the one Beckham values most is the overall flexibility of the solution. “If in the future I want to migrate to an Ethernet-only network, for example, I can do that without having to make major changes,” he says. “No matter what direction I need to take, I can do it with NetApp FCoE storage on a converged network.”

SOLUTION COMPONENTS

<table>
<thead>
<tr>
<th>NetApp products</th>
<th>Third-party products</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetApp V3170 open storage controller</td>
<td>VMware vSphere™</td>
</tr>
<tr>
<td>NetApp V3140 open storage controller</td>
<td>QLogic QLE8152 Converged</td>
</tr>
<tr>
<td>Data ONTAP® 8.0 operating system</td>
<td>Network Adapters</td>
</tr>
<tr>
<td>SnapMirror</td>
<td>Cisco Nexus 5010</td>
</tr>
<tr>
<td>Snapshot</td>
<td>EMC CLARiiON arrays</td>
</tr>
<tr>
<td>FlexVol</td>
<td>Hitachi Data Systems</td>
</tr>
<tr>
<td>PAM</td>
<td></td>
</tr>
<tr>
<td>Flash Cache</td>
<td></td>
</tr>
<tr>
<td>SnapManager for Virtual Infrastructure</td>
<td></td>
</tr>
<tr>
<td>Protocols</td>
<td></td>
</tr>
<tr>
<td>FCoE</td>
<td></td>
</tr>
<tr>
<td>CIFS</td>
<td></td>
</tr>
<tr>
<td>NFS</td>
<td></td>
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</tbody>
</table>

Third-party products

Third-party products

VMware vSphere™
QLogic QLE8152 Converged
Network Adapters
Cisco Nexus 5010
EMC CLARiiON arrays
Hitachi Data Systems

Environment
Applications: proprietary Payspan application, Microsoft Office suite, Microsoft SharePoint®, Microsoft Exchange
Database: Microsoft SQL Server 2008
Server platform: VMware vSphere

NetApp partner
QLogic
www.qlogic.com

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