



Hoster Saves \$971,000 in Data Center Costs with Integrated Virtualization Solution

Overview

Country or Region: United States

Industry: Information technology—
Hosting

Customer Profile

Based in Fenton, Missouri, Fpweb.net is a hoster for Microsoft® SharePoint® Products and Technologies. More than a million people rely on the company's hosting services. It employs 50 people.

Business Situation

Fpweb.net wanted to expand its virtualized environment to reduce data center costs and improve server manageability and customer service. It could either upgrade its VMware solution or pick another vendor.

Solution

Fpweb.net chose the Windows Server® 2008 Datacenter operating system with Hyper-V™ to develop a cost-effective virtualized environment.

Benefits

- Reduces operating costs
- Improves IT manageability
- Gains 60 percent in server provisioning
- Increases server availability
- Enables true "cloud computing"

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Rob LaMear IV, Founder and Chief Executive Officer, Fpweb.net

Fpweb.net has been hosting Microsoft® SharePoint® Products and Technologies since 1999. To weather a tough market, the company wanted to hone its competitive advantage by reducing operational costs and passing the savings to customers. It tried a VMware virtualization solution to cut hardware costs but reached the limit of the product's capabilities. To expand its virtualized environment, Fpweb.net switched to Windows Server® 2008 with Hyper-V™, saving U.S.\$100,800 in licensing costs over the VMware option. It has since virtualized 115 servers, avoiding an increase in data center rental costs of \$180,000 a year and raising IT worker productivity by 30 percent. Fpweb.net also deployed Microsoft System Center Virtual Machine Manager 2008 with which IT staff can provision virtual servers 60 percent faster. Today, Fpweb.net stays competitive by delivering better customer service at less cost.



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Tom Brauch, President, Fpweb.net

Situation

Fpweb.net started hosting Microsoft® SharePoint® Products and Technologies in 1999. Development teams at Fpweb.net analyze, design, and deliver customized SharePoint solutions for customers of all sizes. More than 5,000 enterprise clients, including Pepsi, Dow Chemical, and the U.S. Air Force rely on the company's managed services to keep their SharePoint solutions running at top speed and at high availability. Today, the company also hosts Microsoft Exchange Server and Microsoft Dynamics® CRM solutions.

Fpweb.net has grown its business through building personal, long-term relationships with customers and cultivating a deep expertise in the software itself. Today, the company operates state-of-the-art data centers situated on a dual-utility power grid. These high-tech facilities include biometric security, redundancy in all critical systems, and on-site network operations centers.

Hosting is a competitive business. "We are constantly looking at ways to get smarter and more innovative with our technology to meet our customers' needs better than our competition," says Tom Brauch, President of Fpweb.net. "In this Internet age, customers want everything yesterday. When we bring on a new client, we want to sell them on our customer service, so getting their solution up and running to meet their needs as soon as possible is critical."

It's also important to maintain that agility over time, working in partnership with customers to manage their hosted SharePoint technologies in tandem with their evolving business requirements. "We need to be able to tweak and scale a

customer's solution as their load or storage demands change," says Rob LaMear IV, Founder and Chief Executive Officer of Fpweb.net. "We also strive to increase high-availability and disaster-recovery capabilities to meet the expectations of our customers."

Until recently, Fpweb.net achieved these goals using hardware, maintaining a stockpile of Web servers to quickly meet a new customer's demands, adding and removing servers to right-size a client's solution, or configuring physical clusters to improve availability. Over the years, however, this approach yielded some unfortunate side effects, including costly inventory levels, diminishing data center space, rising electrical costs, and reduced IT productivity, all of which impact customer service and costs. While these types of problems affect many growing businesses that maintain large data centers, for a hoster like Fpweb.net, they strike at the core of the company's business model.

"Obviously, the big costs are our data center, our servers, and our staff. Managing a growing number of physical servers takes time and requires more labor," says Brauch. "For customers, this translates into slower service and increased fees. For us, it translates into a reduced competitive edge and a lower profit margin. We faced an impending data center expansion to accommodate servers for new clients, yet paying for more space and more physical machines would diminish our revenue growth."

Fpweb.net also wanted to be a good corporate citizen with regard to the environmental impact of its business. "Those of us that have been using a disproportionate amount of power per capita must do our part and go on a

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Steve Laux, IT Director, Fpweb.net

kilowatt diet," says LaMear. "At Fpweb.net, we wanted to get on the 'green treadmill' and consolidate servers to trim resources and drive efficiency."

In early 2008, Fpweb.net decided to tackle these issues using virtualization. The company chose VMware ESX Server 3.0.2. The IT staff built a modest virtualized environment of 10 physical servers that hosted 35 virtual machines. Most of the workloads were handled by Web servers running Windows® SharePoint Services 3.0. Following deployment, Fpweb.net noted reduced inventory and hardware costs, confirming the IT staff's opinion that virtualization held the key to increased operational efficiency.

"We wanted to build on the benefits of virtualization, but had reached the limit of our existing solution's capabilities," says Steve Laux, IT Director at Fpweb.net. "We faced a decision: either upgrade our VMware solution or choose another virtualization technology. We had ambitious plans to virtualize up to 99 percent of our data center, so it was important to pick a vendor we felt could be a long-term partner, and a solution that worked well with our infrastructure to deliver maximum benefits over time."

Solution

Instead of investing in upgrading its VMware ESX solution, Fpweb.net chose a Microsoft virtualization solution. The company reasoned that a solution built on the Windows Server® 2008 operating system with Hyper-V™ virtualization technology would work better for a company that hosts Microsoft solutions. In addition, the IT staff is more familiar with Windows-based technology, obviating the need to recruit server administration staff to administer a

VMware ESX solution. "We have been watching the Microsoft virtualization product mature," says Laux. "With the release of Hyper-V, we had access to all the virtualization technologies we need, built to interoperate with the solutions we host."

Not only that, when Fpweb.net compared the costs of acquiring the two solutions, it became clear that VMware would nullify a key reason for pursuing virtualization in the first place. "Virtualization was intended to reduce costs in the data center, so we could pass on the savings to customers in the form of competitive pricing," says Laux. "With VMware, we would face an upfront licensing cost of \$100,800, adding to our operational expenses and putting pressure on our pricing. By comparison, when we licensed Windows Server, Hyper-V was included for free."

Fpweb.net deployed Windows Server 2008 Enterprise and Hyper-V in the last quarter of 2008. Initially, the IT staff focused on virtualizing its aging Windows SharePoint Services-based Web servers. Now, IT staffers are virtualizing workloads on aging Dell 2950 servers. "We started with 35 Web servers, utilizing a cookie-cutter approach, because every time a client orders a SharePoint solution, they need a Web front end," says Laux. "These servers don't consume a lot of input/output or take much processing power. Once we finish moving end-of-life hardware out of the data center, we will migrate our VMware virtual machines over to the Hyper-V environment and retire the VMware solution completely."

Today, the company's Hyper-V environment consists of 20 Dell R610 and R900 host servers running a total of



150 virtual machines. One of these host servers is deployed in the company's IT lab. IT staff use it to test software for customized customer solutions and for evaluating potential products to sell to customers including the U.S. Air Force, Magellan, and Ryder.

As the company's virtualization environment grew, IT staff at Fpweb.net decided to take advantage of Microsoft System Center technologies to better manage both the virtual and physical servers in its data center. Fpweb.net plans to take advantage of the most cost-effective way to acquire these technologies and will be purchasing the Microsoft System Center Server Management Suite Datacenter license. This agreement includes Microsoft System Center Virtual Machine Manager 2007, Microsoft System Center Operations Manager 2007, Microsoft System Center Configuration Manager 2007, and Microsoft System Center Data Protection Manager 2007. The company immediately deployed System Center Virtual Machine Manager 2008 and is planning on replacing an in-house management solution with System Center Operations Manager 2007 to take advantage of how well the System Center products interoperate.

"We are using System Center Virtual Machine Manager 2008 to provision virtual servers quickly by building a library of templates that contain all the specs," says Laux. "We hope to automate this process even more using Windows PowerShell™ View Script controls, to prefigure a server as much as we can in preparation for loading SharePoint technologies for a customer."

Then, in the first quarter of 2008, Fpweb.net decided to take the next step

in expanding its virtualized environment and deployed the R2 version of Windows Server 2008. IT staff deployed Windows Server 2008 R2 Datacenter in the test lab to familiarize themselves with the new features available in this edition of the operating system. Fpweb.net was interested in the Datacenter edition for a number of reasons. "Windows Server 2008 R2 Datacenter is primed for large-scale data centers like ours," says Brauch. "Microsoft has done a great job of listening to its partners and providing solutions that help us do our job more efficiently so we can pass the savings on to our customers. For example, the Windows Server 2008 Datacenter license includes unlimited virtualization rights. Compared to VMware, which requires a license for each virtualized operating system, we are able to scale our virtualization solution at no extra cost."

However, it's the Live Migration feature of Hyper-V in Windows Server 2008 R2 that provided the greatest incentive for deploying the latest version of the operating system. Live Migration will enable the IT staff to quickly configure and deploy failover clusters of virtual machines. Using Live Migration, Fpweb.net IT staff can transparently move running virtual machines from one node of the failover cluster to another node in the same cluster.

"We plan to deploy Windows Server 2008 Datacenter into production in the last quarter of 2009," says Brauch.

Benefits

As a hoster, Fpweb.net is uniquely positioned to take advantage of the benefits of virtualization as a key platform upon which to grow its business. The company realized early on that expanding its virtualization solution

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made sense only if the virtualization solution was cost effective. By choosing Hyper-V, the virtualization technology that comes with Windows Server 2008, the company has reduced operating costs, improved IT manageability, increased solution availability, and built a foundation for "cloud" computing, the next generation of technologies for hosting and managing applications and services in data centers on the Internet.

"Hosting Microsoft SharePoint and Exchange solutions is our core competency, and if we want to keep our customers happy, we cannot compromise on workload performance," says Brauch. "With Hyper-V, we are seeing as good, if not better, performance than our nonvirtualized environment, but at significantly reduced costs."

Reduces Operating Costs through Server Consolidation

Fpweb.net is saving money on many different fronts since deploying Hyper-V. This is good news for both the company and its customers. Fpweb.net uses Hyper-V to cut down on data center costs, support costs, and hardware costs, helping it to price its services lower than the competition. "There's no question that consolidating servers and making more efficient use of resources is a win-win situation," says LaMear. "Hyper-V gets us there more cost effectively than any other virtualization technology."

"Already we have consolidated enough servers that we can postpone our plans to expand our data center, saving us from an increase in rental costs of \$180,000 a year," says Brauch. "The cost of cooling and power has gone down by several percentage points, and this

expense will just keep decreasing as we continue to virtualize our servers."

The company has also achieved hardware cost savings of U.S.\$87,000 by retiring the 35 aging Web servers, and another \$291,000 by virtualizing 115 other servers. When it introduces Live Migration and begins to build highly available failover clusters, it expects to further reduce hardware by 30 percent, generating further savings of approximately \$400,000.

Improves IT Manageability

By using the Microsoft System Center management tools, which are designed to extend the latest improvements in Windows Server 2008 R2, Fpweb.net IT staffers are more productively managing both physical and virtual servers in the data center. This means they can provide better customer service.

"Thanks to System Center Virtual Machine Manager 2008, our IT staff is 30 percent more productive in managing the data center, and 60 percent faster in setting up a new customer," says Brauch. "In hosting, the biggest obstacle to customer service is time: customers want us to stand up their solutions and perform migrations, upgrades, and other services right away. Using Hyper-V and System Center Virtual Machine Manager 2008 to automate server management, we gain time in the data center to hit the ground running and wow customers from the outset. Then we can follow up with more responsive support than our competitors. Getting more time for our engineers to do what they do best and optimize our customers' solutions is an immeasurable benefit."

In the lab, Fpweb.net is using Hyper-V and System Center Virtual Machine

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Manager 2008 to quickly provision test environments when developing customized solutions for customers. Developers can also use the Microsoft virtualization software in the lab to efficiently evaluate new solutions and bring them to market before other hosters.

When the IT staff deploys Windows Server 2008 R2 Datacenter servers into production, it can take advantage of built-in tools and technologies designed to simplify failover clustering, such as the Cluster Validation Tool and one-step cluster installation. Administrators can also benefit from the interoperability between Windows Server 2008 R2 and System Center Virtual Machine Manager 2008 to simplify server management. "We are looking forward to using the Failover Cluster Management Console in System Center Virtual Machine Manager 2008 to streamline cluster-related tasks such as designation and management of cluster reserves, letterless disk drives, and guest clusters," says Laux.

Increases Server Availability

To satisfy customers' increasingly stringent requirements, Fpweb.net is continually raising the bar for offering high-availability solutions. It used to build redundancy for customers by adding more physical servers, but those days are long gone.

"We are excited to use Hyper-V to rapidly deploy a load-balanced and clustered SharePoint infrastructure for less money and in less time than we used to. This is ideal for enterprise-level, mission-critical SharePoint deployments," says LaMear. "For disaster recovery purposes, SharePoint virtual machines don't get any better. You can back them up to media for off-server or out-of-

data-center storage. You can even replicate to your other data center hot site. It's a beautiful thing."

Provides a Platform for True Cloud Computing

Fpweb.net endorses Microsoft technologies as the best platform for cloud computing and the hosting and managing of Web applications and services on the Internet through data centers.

Says Brauch, "We want to develop our cloud infrastructure ahead of our competitors, and we are using Hyper-V and System Center Virtual Machine Manager 2008 to do just that. Using Microsoft virtualization technologies as the foundation for a true cloud computing environment, we can provide on-demand service adjustments—scaling storage for one customer or increasing the number of users for another—without having to re-architect anything. With Microsoft virtualization technologies, we can build our business for the future."

For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to:

www.microsoft.com

For more information about Fpweb.net products and services, call (866) 780-4678 or visit the Web site at:

www.fpweb.net

Microsoft Virtualization

Microsoft virtualization is an end-to-end strategy that can profoundly affect nearly every aspect of the IT infrastructure management lifecycle. It can drive greater efficiencies, flexibility, and cost effectiveness throughout your organization. From accelerating application deployments; to ensuring systems, applications, and data are always available; to taking the hassle out of rebuilding and shutting down servers and desktops for testing and development; to reducing risk, slashing costs, and improving the agility of your entire environment—virtualization has the power to transform your infrastructure, from the data center to the desktop.

For more information about Microsoft virtualization solutions, go to:

www.microsoft.com/virtualization

Software and Services

- Microsoft Server Product Portfolio
 - Windows Server 2008 Datacenter
 - Windows Server 2008 Enterprise
 - Microsoft System Center Operations Manager 2007
 - Microsoft System Center Virtual Machine Manager 2008

- Technologies
 - Microsoft Hyper-V

Hardware

- Server: Dell R610, R900