



New Virtual Servers Will Help Hoster Cut IT Work and Save \$2 Million Annually

Overview

Country or Region: United States

Industry: Hosting

Customer Profile

Hostway Corporation is one of the world's largest Web hosting companies, serving 2 million customers from data centers around the world. Hostway is based in Chicago, Illinois, and has 700 employees.

Business Situation

Hostway wanted to reduce the time its staff spent deploying servers and also extend its use of virtualization to create new enterprise-caliber hosting services with very high levels of availability.

Solution

Hostway deployed Windows Server® 2008 R2 Datacenter with Hyper-V™ and Microsoft® System Center data center solutions, with guidance from Microsoft, to create a Virtual Dedicated Server offering.

Benefits

- IT work cut by 1,000 hours monthly
- Savings of U.S.\$2 million annually
- Faster time-to-market
- Zero-downtime guarantee

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Todd Benjamin, Director of Enterprise Hosting, Hostway

Hostway Corporation is one of the world's largest Web hosting companies, providing a full range of Internet services to 2 million direct and indirect customers worldwide. To curb server proliferation, reduce hardware and setup costs, and improve availability, the Hostway Enterprise Services division used the Windows Server® 2008 R2 Datacenter operating system, the Hyper-V™ technology, Microsoft® System Center data center solutions, and the Microsoft Dynamic Data Center Toolkit for Hosting to create an on-demand, dedicated virtual server offering. With the new platform, Hostway will slash server deployment work by up to 1,000 hours a month and expects hardware and electrical costs to drop by nearly U.S.\$2 million annually. Hostway was also able to cut 60 to 90 days from its product introduction cycle and get to market sooner with a cost-effective offering that boasts 100 percent uptime.



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Situation

Founded in 1998, Hostway is one of the world’s largest Web hosting companies with a presence in 13 countries, 17 worldwide operation centers, and 250,000 square feet of state-of-the-art data centers. Hostway provides domain name registration, Web hosting and e-commerce, network services, collocation, managed and dedicated hosting, software-as-a-service hosting, Web design, and online marketing services to over 1.4 million Web sites and 2 million direct and indirect end-user customers worldwide. The Hostway Enterprise Services division focuses on providing high value, robust enterprise-class solutions to corporations, and online application providers. Hostway is based in Chicago, Illinois, and has more than 700 employees.

To help maintain its leadership position, Hostway constantly works to stay abreast of the latest data center technologies, reduce capital and operating costs, and improve customer service. With success, the company’s data centers and costs have grown. By 2009, Hostway had 11,000 servers in its North American data centers, growing at a rate of 200 to 400 each month.

“Historically, we have provided customers with physical dedicated servers, but there are a great many manual processes involved in configuring servers to meet customer requirements,” says Todd Benjamin, Director of Enterprise Hosting at Hostway. “In addition to the customization steps, servers have to be ordered, unpacked, tested, racked, and maintained. We were spending from 800 to 1,600 hours a month on routine, repetitive deployment tasks and wanted to reduce this time so we could reduce our costs, serve customers faster, and increase our agility. Because it took us up to four hours to deploy one server, we typically promised to turn around new server orders in approximately 48 hours.”

Hostway was already using server virtualization to offer low-cost virtual private servers on both Windows®-based and Linux-based servers. However, resources on these virtual machines—such as operating system, processors, random access memory (RAM), and storage—were shared rather than dedicated.

“Many of our enterprise customers wanted dedicated virtual servers that offered a much higher degree of isolation—individual operating systems on each virtual machine and RAM, processors, and storage that could be assigned to each virtual machine,” explains Joe Young, Senior Windows Administrator at Hostway. “We needed to step up our virtualization efforts to stay competitive. Plus, our servers were underutilized and we had significant excess capacity.”

Hostway’s enterprise customers were also demanding higher availability services at lower costs. “We saw that with virtualization we could do things that we could not do with dedicated physical servers, such as high availability [HA] and failover clusters,” Benjamin says. “We can always build redundancy into a physical server, but everything still runs on one box. If the server fails, the customer’s workload goes down. It was complex and expensive to achieve seamless failover with physical servers. Customers wanted a premium, seamless HA offering at an affordable cost.”

Solution

To expand its virtual-server offerings with a dedicated virtual server option, as well as to expand the use of virtualization in its data centers to reduce costs and improve availability, Hostway revisited the virtualization software market in early 2009. The IT staff evaluated the Windows Server® 2008 operating system with the Hyper-V™

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technology, Xen, VMware, and others. Ultimately, Hostway chose Windows Server 2008 R2 Datacenter with Hyper-V.

"We chose Hyper-V for our Virtual Dedicated Server because we're a Microsoft® Gold Certified Partner and already buy lots of software under our Microsoft Service Provider License Agreement," Benjamin says. "Windows Server 2008 R2 Datacenter offers attractive licensing advantages for deploying large numbers of virtual machines, and Hyper-V promised support for both Windows and Linux, which was critical to us."

Benjamin and Young also liked the live migration feature in Windows Server 2008 R2, which enables the IT staff to transparently move running virtual machines from one node of a failover cluster to another node in the same cluster.

"We would have to go to multiple vendors to find the same set of tools that we got with Hyper-V and the Microsoft System Center data center solutions," Young adds. "System Center programs interoperate well with Windows Server 2008 and are all updated on a coordinated schedule, which enables us to better meet our deadlines. As a complete virtualization platform, the Microsoft programs are very easy to use."

Managed Services Guidance

Another factor that influenced the Hostway decision for Windows Server 2008 R2 was the targeted virtualization and "cloud" computing deployment assistance that Microsoft provided. Cloud computing refers to hosting and managing applications and services through Internet-based data centers, and it is becoming a popular deployment option in the hosting business.

"A key reason we went with Microsoft was the totality of its solution, including tools like

the Microsoft Dynamic Data Center Toolkit for Hosting," Young says. "Microsoft brought together everything we needed in a cohesive package. Thanks to the Dynamic Data Center Toolkit, we were able to launch our VDS [Virtual Dedicated Server] service with nearly zero programming."


Young is referring to a free* Microsoft toolkit that provides guidance, sample code, best practices, and collateral to help hosting providers rapidly build and launch managed services powered by Windows Server 2008 Hyper-V and Microsoft System Center data center solutions. The Dynamic Data Center Toolkit for Hosting provides step-by-step instructions for building an instantly scalable virtualized infrastructure. It even provides advice for hosting partners in marketing and selling managed services and solutions.

"The Dynamic Data Center Toolkit brings all Microsoft virtualization and cloud technologies together in one place," Young continues. "Having this package was a huge help for me; otherwise, I would have been running down documents on the Internet."

Virtual Dedicated Server

Hostway used Windows Server 2008 R2 Datacenter and Hyper-V as the foundation of its new VDS, which features dedicated processors, RAM, enterprise storage, and operating system resources, as well as optional database and backup services. "The Hostway VDS is a highly available virtual server solution that enables us to create, customize, and host servers on demand and manage them using System Center tools," Benjamin says.

Hostway is just getting underway with its Windows Server 2008 R2 Datacenter deployment but expects to have thousands of physical servers and virtual machines running the operating system within three years. All VDS orders will be created on



Windows Server 2008 R2, and Hostway has also moved several internal applications to Windows Server 2008 R2. Hostway uses Dell PowerEdge servers with Intel Xeon processors to run its customer-facing Hyper-V infrastructure.

Hostway is also testing its Linux distributions under Hyper-V and hopes to complete certifications by late 2009. "It's great having a single hardware and virtualization environment that can support multiple operating system requirements," Young says. "It really simplifies our support work."

Interoperable Management Tools

Hostway used the Microsoft System Center Management Suite in the Service Provider License Agreement to acquire Microsoft System Center data center solutions that simplify virtual-machine creation, management, monitoring, and backup. "Using the Suite license to purchase our System Center solutions cut our licensing costs in half over what they would have been licensing the programs individually," Benjamin says.

Hostway uses System Center Virtual Machine Manager 2008, one of the System Center programs, to quickly create new virtual machines and dynamically move them between hosts. "Before, it took us up to four hours to build a server including testing and quality assurance; we can bring that down to 5 to 15 minutes using profiles and other tools in System Center Virtual Machine Manager 2008," Young says.

"System Center Virtual Machine Manager 2008 is very utilitarian," Young continues. "The storage migration feature enables me to move a customer's business off failing hardware or out of harm's way in the event of an emergency. I use the Windows PowerShell™ command-line interface and scripting language to produce scripts


immediately after a configuration action, which is very handy when building static or dynamic provisioning systems."

Additionally, Young explains, "The Performance Resource and Optimization (PRO) feature allows me to create not only a proactive environment but a reactive one as well. And integrating System Center Virtual Machine Manager 2008 with System Center Operations Manager 2007 enables me to use Operations Manager alerts and actions to create a reactive solution when a specific problem occurs in the environment. If something fails, we can build off PRO Tips for automatic self-healing."

Young also extensively uses the Failover Cluster Management Console in System Center Virtual Machine Manager 2008, which, he notes, "is easy to use and will get a cluster environment going long before you have a requirement for System Center Virtual Machine Manager 2008 on a larger scale."

Hostway also uses Microsoft System Center Operations Manager 2007 R2 to monitor physical servers and virtual machines, Microsoft System Center Configuration Manager 2007 for rapid, dynamic software provisioning, and Microsoft System Center Data Protection Manager 2007 to back up its physical and virtual servers on disk and tape.

"We use System Center Operations Manager 2007 R2 with System Center Virtual Machine Manager 2008 and System Center Configuration Manager 2007 to enable our virtual environments to expand and contract as necessary and make them proactive as well as reactive to software and hardware changes," Young says. "System Center Operations Manager provides a wealth of information for a hosting environment and can provide insight into why a customer



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server may be failing through hardware or software targeting.”

Benefits

By deploying Windows Server 2008 R2 Datacenter and System Center system management programs, Hostway was able to dramatically reduce its server deployment time and hardware and electrical costs. It was also able to speed time-to-market with a competitive Virtual Dedicated Server offering that guarantees customers 100 percent uptime.

Server Deployment Cut by 1,000 Hours a Month

Hostway now spends as little as 15 minutes deploying a virtual machine versus as many as 4 hours to deploy a physical server. If the company deploys 250 virtual servers in a month, this adds up to nearly 1,000 hours saved each month in server deployment work.

“This dramatic increase in IT efficiency means that we will need to hire fewer people to care for a growing server load, which increases our profitability,” Benjamin says. “Plus, we can put our staff to work on higher-value activities such as helping customers with networking and backup and creating more managed services, rather than on repetitive work like deploying servers. We can now promise servers in two hours rather than two days.”

Data Center Savings of Up to \$2 Million Annually

Over the next three years, as customers embrace virtualization, Hostway expects as much as 60 percent of its server sales to be virtual machines. “In three years, we may only deploy 80 to 120 physical servers a month rather than the 200 to 400 servers we

deploy today,” Benjamin says. “That’s an annual hardware savings of over \$1 million.”

Hardware savings are just the beginning. Over the life of a server, electrical and cooling costs usually exceed the initial cost of the hardware. By reducing its rate of physical server growth from 3,600 to 1,200 servers annually, Microsoft estimates that Hostway can reduce its energy costs by more than \$1 million annually.

Faster Time-to-Market with Cloud Offerings

“With Windows Server 2008 R2 Datacenter, Hyper-V, System Center solutions, and the Dynamic Data Center Toolkit, we have been able to quickly roll out a very competitive VDS offer,” Benjamin says. “We’ve been able to offer low cost and high availability using the Microsoft virtualization platform, coupled with enterprise-class storage and geographical diversity. Eventually, we’ll introduce a self-service portal and can offer metered billing and other innovations, depending on market demand.”

With the System Center solutions, Hostway eliminated the integration time that would have been required for third-party tools. And using the Dynamic Data Center Toolkit helped in technical deployment and testing and accelerated the development of marketing materials. “The Microsoft software and toolkit probably shaved 60 to 90 days off our development cycle,” Young says. “In addition, Microsoft provided an exceptional level of support through the FastStart program, which helped us get to market quicker and more confidently.”

Zero-Downtime Guarantees

With failover clustering made possible with Windows Server 2008 R2 Datacenter and Hyper-V, Hostway has been able to eliminate server downtime altogether, which is critical to many customers. “We now offer a 100

“We now offer a 100 percent uptime service-level agreement with our high-availability VDS, which we have never done with physical servers.”

Todd Benjamin, Director of Enterprise Hosting, Hostway

or visit the Web site at:

www.hostwayenterprise.com

percent uptime service-level agreement with our high-availability VDS, which we have never done with physical servers,” Benjamin says. “Customers are paying a premium for HA offerings. Now we can give them the exceptional uptime levels that they desire.”

The easy movement of workloads among virtual machines and physical servers also gives Hostway and its customers unprecedented flexibility. “I’ve been able to build Windows failover clusters for a long time, but we can now do P2V [physical to virtual] migration immediately and transparently,” Young says. “Using Windows Server 2008 R2 Datacenter and Hyper-V, I can make a business portable. I can move a customer’s entire business to Hostway from another hoster or internal data center with almost no interruption to the business. This makes it much easier for customers to move their business to Hostway.”

“We anticipate that Microsoft virtualization technology will be a significant factor in the future cloud computing landscape, and we expect to continue to use it in our own offerings,” concludes Benjamin.

Microsoft Virtualization

Microsoft virtualization is an end-to-end strategy that can profoundly affect nearly every aspect of the IT infrastructure management life cycle. 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 R2 Datacenter
 - Microsoft System Center Configuration Manager 2007
 - Microsoft System Center Data Protection Manager 2007
 - Microsoft System Center Operations Manager 2007 R2
- Microsoft System Center Virtual Machine Manager 2008
- Technologies
 - Hyper-V
- Solutions
 - Microsoft Dynamic Data Center Toolkit for Hosting

Hardware

- Dell PowerEdge servers

*Access to and use of the Internet may require payment of a separate fee to an Internet service provider. Local and/or long-distance telephone charges may apply.

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