Microsoft Partner Solutions Center
Case Study

POWERED BY Microsoft Partner Solutions Center

Server Virtualization Speeds Deployment, Cuts Costs, and Reduces Environmental Impact

Overview

Country or Region: United States
Industry: Software engineering

Customer Profile

The Microsoft® Partner Solutions Center (MPSC) supports sales teams from Microsoft and its partners, helping customers evaluate the benefits and risks of potential IT solutions in a secure development environment.

Business Situation

Faced with growing demand, the center needed to lower hardware costs and space requirements, increase flexibility, decrease deployment times, and reduce the electricity needed to operate and cool its systems.

Solution

The MPSC architected and deployed a server consolidation and virtualization strategy that operates on Windows Server® 2008 with Hyper-V™ and Microsoft System Center Virtual Machine Manager 2008 on Sun Fire x64–based servers.

Benefits

- Reduced expenses
- Improved response time
- Lowered impact on the environment

"Virtualization will save us in hardware, in rack space, and in the electricity we use while decreasing our deployment times. We estimate we'll save $12 million over the next three fiscal years."

David Hayes, Director, Microsoft Partner Solutions Center

The Microsoft® Partner Solutions Center (MPSC) offers customers and partners the opportunity to create proof-of-concept demonstrations and test-pilot projects for companies considering new IT solutions. The MPSC faced technical challenges and increasing expenses as the center attempted to meet the growing demand for its services by simply applying more hardware to existing resources. MPSC managers wanted to streamline the setup and provisioning of servers for customer projects, and they wanted to reduce operating expenses and energy needed to run and cool the facility. The MPSC chose virtualization to consolidate a physical resource pool of over 700 servers. The new architecture will save an estimated U.S.$12 million over three years. Now, the center can respond more efficiently to customer needs while cutting down on electricity requirements and the resulting greenhouse emissions.

Fast Facts	
Number of original servers	700
Number of servers after virtualization	4
Number of architects and system administrators	12
Time to complete	3 months
Administration tools	■ Microsoft System Center Configuration Manager 2007 ■ Microsoft System Center Virtual Machine Manager 2008
Server operating system	Windows Server 2008 Datacenter

Situation

The Microsoft® Partner Solutions Center (MPSC), headquartered on the Microsoft campus in Redmond, Washington, supports field sales efforts of both Microsoft and its key partners. The MPSC provides a customer-facing laboratory setting for proof-of-concept (POC) demonstrations, pilot projects, and even production-level solutions for proposed customer implementations of Microsoft products and technologies.

Full-Service Infrastructure

To be effective, the MPSC must be able to deploy projects that reflect the scale of customer operations, and the MPSC must demonstrate the ability to meet business needs of customers from a variety of industries and environments. The 21,000-square-foot facility contains 15 labs and showcase spaces, 15 team workrooms, several meeting rooms, an executive briefing room, and three training rooms.

The facility now delivers data-center resources through Hyper-V™ and virtualization, supported by Microsoft operating systems, network and management tools, and a storage-area-network (SAN) with a capacity of 80 terabytes of data.

Challenges of Time, Space, and Cost

The MPSC supports a variety of IT or service-provider configurations and both remote and on-site solution demonstrations with secure access throughout the world. Staff found that using a manual process to configure physical servers to match a customer's environment took as long as four hours and adjusting server configurations to test various options or production environments was a time-consuming process. In addition, because the MPSC was becoming more and more popular, it was running out of rack space and the staffing needed to deploy and manage multitudes of customer environments.

At the same time, Microsoft faced increasing energy costs for operating and cooling vital equipment. The MPSC needed a way to reduce electricity usage to save on this expense and to be in line with the company's effort to protect the environment from the effects of climate change while maintaining its business objectives.

Often, the MPSC helps partners and customers meet these same challenges of cost control and efficiency improvement with a strategy of server consolidation through virtualization. Recently, leaders at the MPSC implemented a similar strategy to improve operations, reduce the need for physical servers, save money, and demonstrate the advantages of server consolidation.

"We faced the same issues as our customers: the need to lower our server footprint substantially while continuing to scale to support growing demand," says David Hayes, Director of the MPSC. "And, we wanted to support the environmental goals at Microsoft for lowering power consumption and reducing our carbon footprint."

Solution

With help from MPSC partners Sun Microsystems and Compellent, a team of four Microsoft architects and systems administrators took less than three months to plan, architect, and deploy a server consolidation and virtualization strategy.

Architecture

The MPSC took advantage of Microsoft products and technologies, including Microsoft System Center Virtual Machine Manager 2008, Windows Server® 2008 Datacenter, and Hyper-V. System Center Virtual Machine Manager 2008 provides centralized administration of a virtual machine infrastructure and enables increased physical server utilization and rapid provisioning of new virtual machines by the

administrator. Hyper-V, a technology included with Windows Server 2008, is a hypervisor-based virtualization technology that automates the creation and management of partitions within the operating system. With these technologies running on Sun Fire x4450 servers, system administrators can quickly create multiple virtual servers running on fewer physical servers.

The resulting architecture replaced the large number of physical servers with a small, yet dynamic, set of Hyper-V host servers. The MPSC decided to lease rather than purchase the new hardware for the solution, converting what would be a significant capital expense (for replacing 700 physical servers) to an operating-expense line item.

With this solution, the MPSC now offers a Virtual Innovation and Development Lab program that focuses on rapid development and testing of new partner and customer virtualization solutions.

Deployment Example

A typical MPSC engagement for a customer POC or pilot project—often conducted with the help of a Microsoft partner or field sales team—might include Windows Server, a Microsoft SQL Server® database, and an application such as Microsoft Office SharePoint® Server, depending on the needs of the customer. MPSC staff provides technical support for the Hyper-V environment. Either MPSC or a training partner delivers training while the engagement owner at the MPSC supports the application.

MPSC technologists build the POC or pilot within a virtualized environment and make it available for customer testing through a Terminal Server gateway connected to the Internet (see Figure 1). MPSC IT administrators use System Center Virtual Machine Manager 2008 and System Center Configuration Manager 2007 to generate a particular server configuration for the

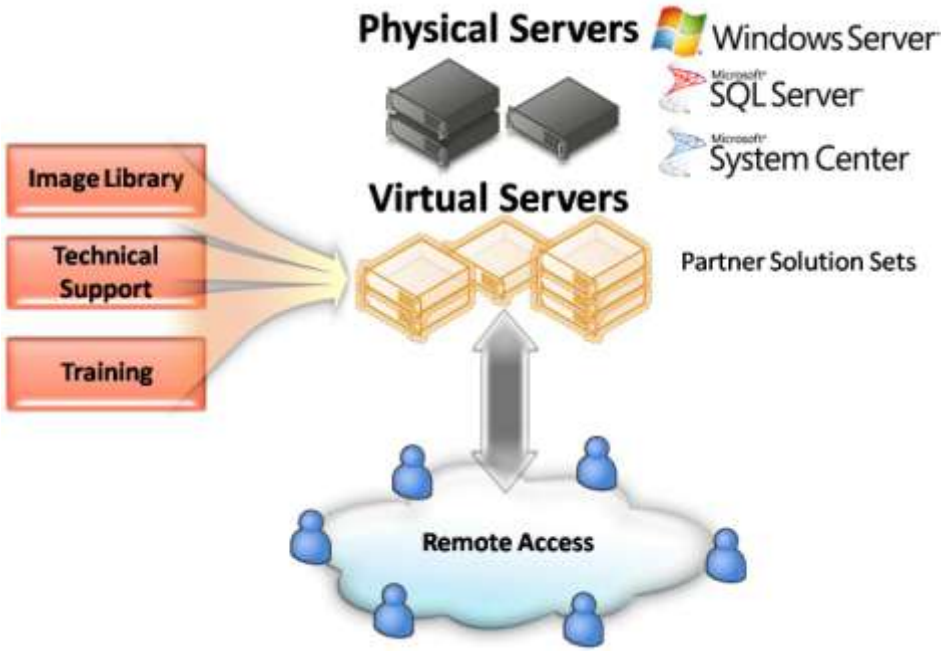

Figure 1. MPSC architecture, with example customer POC or pilot projects

Best Case for Virtual Server Consolidation

Ideal candidates for consolidation and virtualization solutions from the MPSC include organizations with one or more of the following characteristics:

- Applications that lend themselves well to consolidation
- A sufficient number of servers so that the consolidated environment does not create a heavy reliance on too few pieces of hardware
- Existing hardware infrastructure that is approaching the end of its depreciation schedule and needs to be upgraded
- A low average-server utilization rate—for example, under 10 percent
- Larger IT environments: the larger the data center, the greater the potential is for savings
- Smaller environments that need backup and recovery capabilities

customer POC or pilot and store it in the customer's image library. Customers then can implement the server configuration from the image library in minutes.

Tested in Action

The virtualized MPSC has already performed outstandingly in situations where failure was not an option. For example, the Microsoft disaster recovery team, which supports international relief and government agencies with technical support during natural disasters, asked the MPSC for help. The MPSC created a set of templates and configurations for use in quickly setting up a database and Web portal to help coordinate humanitarian efforts. The disaster recovery team has employed these tools to assist disaster recovery agencies in responding effectively to hurricanes Ike and Gustav.

Benefits

Hayes estimates that the virtualization solution will save the center millions of dollars. In addition to the cost savings, the virtualization strategy reduces the time to develop, set up, deploy, and repurpose POC or pilot projects.

"We're working with leading-edge technology that is easy to set up," says Hayes. "This helps Microsoft match computing capabilities to business needs, and it reduces costs for our customers and for us."

Reduced Expenses

Because the MPSC leased the hardware, including the SAN, rather than purchasing it, the center does not require a large multiyear capital investment to gain the performance and flexibility required to respond to growing demand from partners and customers.

"Virtualization will save us in hardware, in rack space, and in the electricity we use while decreasing our deployment times. We estimate we'll save $12 million over the next three fiscal years," says Hayes.

Improved Response Time

The new solution uses image libraries and templates to configure and deploy virtual servers to support pilot projects and POC demonstrations. These tools save the center many hours of labor and administration in setting up and deploying a new project, which means a faster response to requests from partners and customers. An added benefit is that, at the end of a POC or pilot project, MPSC staff can transfer successful demonstrations directly from the MPSC to a customer site at reduced cost and risk.

The disaster recovery program at Microsoft has benefited greatly from this velocity. "The MPSC team played a pivotal role in helping a large community of intergovernmental and nongovernmental organizations in their goal to save the lives of cyclone victims in Myanmar," says Claire Howell Bonilla, Senior Director of Disaster Management for Microsoft. "This is the third time I have reached out to them and once again, they have provided support and ingenuity in creating a partnership. Without their drive, we would never have been able to respond so rapidly."

Hayes estimates that the virtualized deployment in support of the relief effort in Myanmar cost U.S.$12,500. A deployment of physical hardware to create the same functionality would have cost more than U.S.$38,000 and taken much longer to implement.

Lowered Impact on the Environment

Microsoft aims to be a good steward of the environment by adhering to sound environmental principles and business practices. With the new virtualization solution, the MPSC dramatically reduces both

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 Sun Microsystems products and services, call (800) 786-0404 or visit the Web site at: www.sun.com

For more information about Compellent products and services, call (952) 294-3300 or visit the Web site at: www.compellent.com

the consumption of expensive electricity and the emission of greenhouse gases.

In a recent white paper, Microsoft reported that a physical server running four virtual servers might require only 3.5 percent more electricity for operations and cooling than a physical server running a single instance of the server.[1] This means that each of the four virtual servers would use about 25 percent of the electricity that the standalone physical server would require. Running 10 virtual servers on a single physical machine means that each virtual server performs the same workload with 90 percent less energy.

The white paper also notes that a single server running Hyper-V with 10 virtual servers saves almost 44,000 kilowatt hours of electricity per year compared to 10 physical servers. Virtualization would reduce the annual output of carbon dioxide by more than 30 metric tons—the equivalent of burning just 396 gallons of gasoline rather than 3,698 gallons.

1 "Windows Server 2008 Power Savings," June 2008

Windows Server 2008

Windows Server 2008, with built-in Web and virtualization technologies, enables you to increase the reliability and flexibility of your server infrastructure. New virtualization tools, Web resources, and security enhancements help you save time, reduce costs, and provide a platform for a dynamic and optimized datacenter. Powerful new tools like IIS 7.0, Server Manager, and Windows PowerShell, allow you to have more control over your servers and streamline Web, configuration, and management tasks. Advanced security and reliability enhancements like Network Access Protection and the Read-Only Domain Controller option for Active Directory Domain Services harden the operating system and protect your server environment to ensure you have a solid foundation on which to build your business.

For more information, go to: www.microsoft.com/windowsserver2008

Software and Services

- Microsoft Server Product Portfolio
  - Microsoft System Center Configuration Manager 2007
  - Microsoft System Center Virtual Machine Manager 2008
  - Windows Server 2008
- Technologies
  - Hyper-V
- Hardware
  - Sun Fire x4450 servers

[1] "Windows Server 2008 Power Savings," June 2008

Contact Us: David Hayes, Director MPSC (dhayes@microsoft.com); Jerry Metcalf, Business Operations Lead, MPSC (jmetcalf@microsoft.com); Jeff Amels, Technical Operations Lead, MPSC (jamels@microsoft.com).

Learn More
http://infoweb2007/commsector/salesenablementexcellence/mpsc/pages/default.aspx

Document published December 2008