

Top 10 Ways Windows Server 2008 R2 Helps Save You Money

Windows Server® 2008 R2 is the newest Windows Server operating system from Microsoft. Designed to help organizations reduce operating costs and increase efficiencies, Windows Server 2008 R2 provides enhanced management control over resources across the enterprise. It is designed to provide better energy efficiency and performance by helping to reduce power consumption and lower overhead costs. Windows Server 2008 R2 also delivers improved branch office capabilities, an exciting new remote access work experience, streamlined server management, and hugely expands Microsoft virtualization vision. With all that under the hood, here are the top 10 ways the new Windows Server can help your bottom line:

#1. Optimize Resources

Advances in server hardware mean most organizations significantly under-utilize their physical servers. CPU cycles, storage capacity and even network bandwidth go to waste, and worse that waste is repeated as workloads are distributed across an increasing physical server sprawl. Consolidating these workloads onto fewer machines has the potential to save on power and cooling while increasing management efficiency and IT agility.

Hyper-V™ in Windows Server 2008 R2 enhances the powerful virtualization technology Microsoft introduced in Windows Server 2008. The new platform takes better advantage of the host's physical hardware, including support for 64 logical processors and the latest CPU architecture enhancements. It also contains improved networking features for better performance and can take advantage of the same power saving features as Windows Server 2008 R2 instances running on physical machines.

Early customer deployments have seen customers triple the number of available servers in their datacenters with no increase in floor space, power or cooling requirements.¹

#2. Reduce Power Consumption

Windows Server 2008 R2, like its predecessor Windows Server 2008, has been designed with energy efficiency in mind. Recent tests found that Windows Server 2008 R2 helped improve power efficiency by up to 18 percent over Windows Server 2003, out of the box.²

¹ To learn how Lionbridge Technologies optimized resources with Windows Server 2008 R2, read the case study at http://mscomapps/gcrpinternal/Case_Study_Search_Results.aspx?Type=1&Keywords=Lionbridge.

Windows Server 2008 introduced a 'balanced' power policy, which monitors the utilization level of the processors on the server and dynamically adjusts the processor performance states to limit power to the needs of the workload. Windows Server 2008 R2 enhances this power saving feature by adding more granular abilities to help manage and monitor server and server CPU power consumption, as well as extending this ability to the desktop via new power-oriented Group Policy settings.

Active Directory® Domain Services Group Policy in Windows Server 2008 already gave administrators a certain amount of control over power management on client PCs. These capabilities are enhanced in Windows Server 2008 R2 and Windows® 7 to provide even more precise control in more deployment scenarios for even greater potential savings.

#3. Improve Branch Office Performance and Management

Many branch office IT architectures have relatively low bandwidth. Slow WAN links impact the productivity of branch office employees waiting to access content from the main office, and costs for branch office bandwidth allocation can be huge. To address this challenge, Windows Server 2008 R2 introduces a feature called BranchCache™, which is designed to reduce WAN utilization and improve the responsiveness of network applications.

With BranchCache, content requested from the corporate network is cached at the branch, either in hidden caches on Windows 7 clients (distributed mode) or on a Windows Server 2008 R2 machine (hosted mode). Clients requesting cached data are authorized at the corporate network, but then download their content from this cache at the local branch, resulting in a more productive network environment for them, while simultaneously decreasing expensive WAN bandwidth usage. Early customer deployments have seen WAN bandwidth costs drop by more than 50%.³

#4. Reduce Desktop Costs

Much of the interest in virtualization solutions is in the server world. However, equally exciting advances are being made in presentation virtualization, where application processing happens on a server optimized for capacity and availability while graphics, keyboard, mouse, and other user I/O functions are handled at the user's desktop. In effect, users 'see' and work with applications on their PCs, but those applications are actually running on a managed server in the datacenter, not on their local PC.

² "Power In, Dollars Out: How to Stem the Flow in the Data Center" white paper:
www.microsoft.com/whdc/system/pnppwr/powermgmt/Svr_Pwr_ITAdmin.msp

³ For the complete story of how Sporton International saved on WAN bandwidth costs see:
http://mscomapps/gcprinternal/Case_Study_Search_Results.aspx?Type=1&Keywords=Sporton

This functionality is mature, and was called Terminal Services in Windows Server 2008. In Windows Server 2008 R2, however, this vision expands and feature has been renamed to more closely describe its functionality: Remote Desktop Services (RDS). RDS works with the enhanced Virtual Desktop Infrastructure (VDI) technology, which extends the functionality of Windows Server 2008's Terminal Services to deliver virtualized applications to employee desktops seamlessly and with better performance than in previous versions. Tight interoperability with Windows 7 means Remote Desktop Services can make virtual resources, including applications, application suites and even entire virtual desktops, available in the same way as local applications. Administrators can update these resources and "re-deploy" with no client-side interference required.

RDS and VDI have also benefitted from improved protocols, which means a graphics and multimedia experience that mirrors local PC performance. That means users will access virtual resources in the same manner as local resources, and administrators can streamline maintenance and licensing for those resources at the same time. RDS can save IT departments in multiple ways, but especially in desktop and software administration and licensing.

#5. Save Time and Speed Deployment

Microsoft's customers tell us that most organizations use over 70 percent of their IT budgets in maintaining and operating their existing IT infrastructure rather than on investments that add business value.⁴ Windows Server 2008 R2 seeks to give IT administrators new tools with which to automate repetitive IT tasks as well as create customized tool sets specific to their business environments. Key among these is Windows PowerShell™, with which administrators can automate complex and redundant tasks and focus on tasks that matter.

PowerShell is a command-line shell and scripting language that helps IT Professionals achieve greater productivity and control system administration more easily. Windows Server 2008 R2 enhances the popular PowerShell feature introduced in Windows Server 2008 with the inclusion of more than 240 new pre-built cmdlets as well as a new graphical user interface (GUI) that adds professional-level development features for creating new cmdlets. PowerShell 2.0 provides powerful scripting capabilities which can help automate server deployment and configuration, simplifying management – helping to save time and reduce costs.

#6. Reduce Storage Costs

Managing storage isn't just about managing disks. Storage volume is increasing at a 51% compounded annual growth rate between 2008 and 2012 according to IDC.⁵ Storage is no longer simply a marginal

⁵ "Workloads 2008: Understanding Server and Storage System Deployment," IDC.

expense and the cost of storage-related security breaches can be hundreds of dollars *per record*. Additionally, any reductions in the cost of storage hardware are quickly outpaced by the demand for more storage.

To keep pace and stay competitive, organizations must begin managing data, not just disks. Windows Server 2008 R2 gives IT administrators the tools for precisely this kind of initiative with the new File Classification Infrastructure (FCI). This new features builds an extensible and automated classification mechanism on top of existing shared file architectures; this enables IT administrators to direct specific actions for specific files based on entirely customizable classification. FCI is also extensible to partners, which means Windows Server 2008 R2 users can expect to see additional capabilities around FCI being delivered by ISVs in the near future.

#7. Help Protect Data

Windows Server 2008 R2 introduces a new type of connectivity called DirectAccess—a comprehensive “anywhere access” solution that enables organizations to provide virtually always-on, highly secure connectivity to on-premise and remote users alike. DA also helps improve security, and lower total cost of ownership (TCO) for remote worker connectivity.

DirectAccess eliminates the need for users to execute software explicitly to connect with the corporate network while roaming, and provides organizations with the next generation of policy-based, highly secure connectivity. With DA, end users enjoy the same experience whether they are on the corporate network or working remotely. The same is true for administrators who have the same level of control over DA machines whether they’re connecting from inside or outside the corporate network. That adds up to streamlined desktop management and security enforcement across your entire desktop landscape.

#8. Increase Availability

Business success increasingly relies on servers for business critical operations. As result, server availability is a higher priority than ever. Demands of a “24x7” global marketplace mean systems must be online or customers may be lost. A heavily used e-mail or database server can cost a business thousands even millions of dollars in lost productivity – or business – if it fails.

Windows Server 2008 R2 introduces an exciting new feature called Live Migration. With Hyper-V version 1.0, Windows Server 2008 was capable of Quick Migration, which could move VMs between physical hosts with only a few seconds of down-time. Still, those few seconds were enough to cause difficulties in certain scenarios, especially those including client connections to VM-hosted servers. With Live Migration, moves between physical targets happen in milliseconds, which means migration operations become invisible to connected users. And that equates to better agility, increased productivity and reduced costs.

#9. Simplify Management

Although increasing the capabilities of your server operating system is always a good thing, the perceived downside has always been additional complexity and workload for day-to-day server managers. Windows Server 2008 R2 specifically addresses this problem with lots of work evident across all of its management-oriented consoles. New features in these tools include:

- Improved data center power consumption and management,
- Enhanced Windows PowerShell scripting, as detailed previously,
- Improved remote administration, including a remotely-installable Server Manager,
- Improved identity management features via the updated and simplified Active Directory Domain Services and Active Directory Federated Services.

#10. Lower TCO for Web and Application Serving with IIS 7.5

Windows Server 2008 R2 includes Internet Information Services (IIS) 7.5, which builds on the advances delivered in IIS 7.0 to simplify Web server management and enhance Web application development and deployment. IIS 7.5 and IIS extensions enable you to host rich Web-based experiences more efficiently and effectively, with improved administration and diagnostics, powerful development and application tools, and lowered infrastructure costs.

The updated Web server role includes features that can help reduce management and maintenance costs by extending IIS Manager with new administration modules, working with Windows PowerShell Provider and Cmdlets for IIS, and by introducing support for .NET on Server Core. IIS 7.5 also includes new support and troubleshooting features, including configuration logging and a dedicated Best Practices Analyzer. The result is a Web and application server platform that's both cheaper to run, and more flexible and reliable for Web applications built using ASP.NET or PHP.