



# Windows Server 2008 Product Overview

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Microsoft Windows Server 2008 is the next generation of the Windows Server operating system that helps information technology (IT) professionals maximize control over their infrastructure while providing unprecedented availability and management capabilities, leading to a significantly more secure, reliable, and robust server environment than ever before. Windows Server 2008 delivers new value to organizations by ensuring all users regardless of location are able to get the full complement of services from the network. Windows Server 2008 also provides deep insight into the operating system and diagnostic capabilities to allow administrators to spend more time adding business value.

Windows Server 2008 builds on the success and strengths of the award-winning Windows Server 2003 operating system and on the innovations delivered in Service Pack 1 and Windows Server 2003 R2. However, Windows Server 2008 is far more than a refinement of predecessor operating systems. Windows Server 2008 is designed to provide organizations with the most productive platform for powering applications, networks, and Web services from the workgroup to the datacenter with exciting, valuable new functionality and powerful improvements to the base operating system.

## Improvements to the Windows Server Operating System

In addition to new functionality, Windows Server 2008 provides powerful improvements to the base operating system over Windows Server 2003. Notable improvements include those to networking, advanced security features, remote application access, centralized server role management, performance and reliability monitoring tools, failover clustering, deployment, and the file system. These improvements and many others help organizations maximize the flexibility, availability, and control of their servers.

## Benefits of Windows Server 2008

Windows Server 2008 delivers benefits in four primary areas:

Benefit	Description
<b>Web</b>	<p>Windows Server 2008 gives you the ability to deliver rich web-based experiences efficiently and effectively, with improved administration and diagnostics, development and application tools, and lower infrastructure costs.</p> <ul style="list-style-type: none"><li data-bbox="423 1528 1442 1688">● Simplified Web server management with Internet Information Services 7.0, which is a powerful Web platform for applications and services. This modular platform provides a simplified, task-based management interface, greater cross-site control, security enhancements, and integrated health management for Web services.</li><li data-bbox="423 1688 1442 1751">● Task based interface simplifies common management Web server tasks.</li><li data-bbox="423 1751 1442 1835">● Cross-site copy allows you to easily copy Web site settings across multiple Web servers without additional configuration.</li></ul>

Benefit	Description
	<ul style="list-style-type: none"> <li>● Delegated administration of applications and sites so you can give control to different parts of the Web server to those who need it.</li> </ul> <p>Deliver flexible and comprehensive applications that connect users to each other and their data, enabling them to visualize, share, and act on information.</p>
<b>Virtualization</b>	<p>With its built-in server virtualization technology, Windows Server 2008 enables you to reduce costs, increase hardware utilization, optimize your infrastructure, and improve server availability.</p> <ul style="list-style-type: none"> <li>● Built-in virtualization to virtualize multiple operating systems—Windows, Linux and others—on a single server. With virtualization built into the operating system and with simpler, more flexible licensing policies, it's now easier than ever to take advantage of all the benefits and cost savings of virtualization.</li> <li>● Centralized application access and seamless integration of remotely published applications. Improvements also add the ability to connect to remote applications across firewalls and without the use of a VPN, so you can quickly respond to the needs of your users, regardless of their location.</li> <li>● New deployments options to provide the most suitable method for your environment.</li> <li>● Interoperability with your existing environment.</li> <li>● Robust and vibrant technical community to provide a rich experience throughout the product life cycle.</li> </ul>
<b>Security</b>	<p>Windows Server 2008 is the most secure Windows Server ever. Its hardened operating system and security innovations, including Network Access Protection, Federated Rights Management, and Read-Only Domain Controller, provide unprecedented levels of protection for your network, your data, and your business.</p> <ul style="list-style-type: none"> <li>● Protection of your server with security innovations that reduce attack surface area of the kernel, resulting in a more robust and secure server environment.</li> <li>● Protection of your network access with Network Access Protection that gives you the power to isolate computers that don't comply with security policies you set. The ability to enforce security requirements is a powerful means of protecting your network.</li> <li>● Enhanced solutions for intelligent rules and policies creation to increase control and protection over networking functions, allowing you to have a policy-driven network.</li> <li>● Protection of your data to ensure it can only be accessed by users with the correct security context, and to make it available when hardware failures occur.</li> <li>● Protection against malicious software with User Account Control with a new authentication architecture.</li> <li>● Increased control over your user settings with Expanded Group Policy.</li> </ul>
<b>Solid Foundation for Business</b>	<p>Windows Server 2008 is the most flexible and robust Windows Server operating system to date. With new technologies and features such as Server Core, PowerShell, Windows Deployment Services,</p>

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<b>Workloads</b>	<p>and enhanced networking and clustering technologies, Windows Server 2008 provides you the most versatile and reliable Windows platform for all of your workload and application requirements.</p> <ul style="list-style-type: none"> <li>● Increased dependability with advanced reliability enhancements to reduce loss of access, work, time, data, and control.</li> <li>● Simplified management of your IT infrastructure by using new tools that provide a one-stop interface for server configuration and monitoring, as well as the ability to automate routine tasks.</li> <li>● Streamlined installation and management of Windows Server 2008 by installing only the roles and features you need. The customization of the server configuration simplifies ongoing maintenance by minimizing the attack surface area and reducing the need for software updates.</li> <li>● Effectively pinpointing and resolving trouble spots with powerful diagnostic tools that give you ongoing visibility into your server environment, both physical and virtual.</li> <li>● Increased control over servers located in remote locations, such as the branch office. With optimized server administration and data replication, you can provide users with better service while reducing management headaches.</li> </ul>

## **Windows Server 2008 Technologies**

### **Web**

Windows Server 2008 gives you the ability to deliver rich Web-based experiences efficiently and effectively, with improved administration and diagnostics, development and application tools, and lower infrastructure costs.

**Internet Information Services 7.0:** Windows Server 2008 delivers a unified platform for Web publishing that integrates Internet Information Services (IIS) 7.0, ASP.NET, Windows Communication Foundation, Windows Workflow Foundation, and Windows SharePoint Services 3.0. IIS 7.0 is a major enhancement to the existing Windows Web server and plays a central role in integrating Web platform technologies. IIS 7.0 helps developers and administrators alike maximize their control over network/Internet interfaces through key functionality pillars that include delegated administration, enhanced security and a reduced attack surface area, integrated application and health management for Web services, and improved administration tools.

### **Virtualization**

With its built-in server virtualization technology, Windows Server 2008 enables you to reduce costs, increase hardware utilization, optimize your infrastructure, and improve server availability.

**Terminal Services:** Windows Server 2008 introduces new functionality in Terminal Services to connect to remote computers and applications. Terminal Services RemoteApp completely integrates applications running on a terminal server with users' desktops such that they behave as if they were running on an individual user's local computer; users can run programs from a remote location side-by-side with their local programs. Terminal Services Web Access permits this same flexibility of remote application access via Web browser, granting an even wider variety of ways user can access and use programs executing on a terminal server. These features in conjunction with Terminal Services Gateway allow users to access remote desktops and remote applications via HTTPS in a firewall-friendly manner.

## Security

Windows Server 2008 is the most secure Windows Server ever. Its hardened operating system and security innovations, including Network Access Protection, Federated Rights Management, and Read-Only Domain Controller, provide unprecedented levels of protection for your network, your data, and your business.

**Network Access Protection (NAP):** A new framework that allows an IT administrator to define health requirements for the network and to restrict computers that do not meet these requirements from communicating with the network. NAP enforces administrator-defined policies that describe the health requirements for the given organization. For example, health requirements may be defined to include all updates to the operating system be installed, or having antivirus or antispyware software installed and updated. In this way, network administrators can define the baseline level of protection all computers carry when connecting to the network.

Microsoft BitLocker provides additional security for your data through full volume encryption on multiple drives, even when the system is in unauthorized hands or running a different operating system time, data, and control.

**Read-Only Domain Controller (RODC):** A new type of domain controller configuration in the Windows Server 2008 operating system that makes it possible for organizations to easily deploy a domain controller in locations where the physical security of a domain controller cannot be guaranteed. An RODC hosts a read-only replica of the Active Directory directory services database for a given domain. Prior to this release, users who had to authenticate with a domain controller, but were in a branch office that could not provide adequate physical security for a domain controller, had to authenticate over a wide area network (WAN). In many cases, this was not an efficient solution. By placing a read-only Active Directory database replica closer to branch users, these users can benefit from faster logon times and more efficient access to authentication resources on the network, even in environments with inadequate physical security to deploy a traditional domain controller.

**Failover Clustering:** Improvements are aimed to makes it easier to configure server clusters while providing protection and availability of your data and applications. By using the new Validate Tool in failover clusters, you can perform tests to determine whether your system, storage, and network configuration is suitable for a cluster. With failover clusters in Windows Server 2008, administrators can carry out setup and migration tasks, as well as management and operations tasks more easily. Improvements to the cluster infrastructure help administrators maximize availability of the services they provide to users, achieve better storage and network performance and improve security.

## Solid Foundation for Business Workloads

Windows Server 2008 is the most flexible and robust Windows Server operating system to date. With new technologies and features such as Server Core, PowerShell, Windows Deployment Services, and enhanced networking and clustering technologies, Windows Server 2008 provides you the most versatile and reliable Windows platform for all of your workload and application requirements.

**Server Core:** Beginning with the Beta 2 release of Windows Server 2008, administrators can choose to install Windows Server with only the services required to perform the DHCP, DNS, file server, or domain controller roles. This new installation option will not install non-essential services and applications and will provide base server functionality without any extra overhead. While the Server Core installation option is a fully functioning mode of the operating system supporting one of the designate roles, it does not include the server graphic user interface (GUI). Because Server Core installations include only what is required for the designated roles, a Server Core installation will typically require less maintenance and fewer updates as there are fewer components to manage. In other words, since there are fewer programs and components installed and running on the server, there are fewer attack vectors exposed to the network, resulting in a reduced attack surface. If a security flaw or vulnerability is discovered in a component that is not installed, a patch is not required.

**Windows PowerShell:** A new command-line shell with over 130 tools and an integrated scripting language. It enables administrator to more easily control and securely automate routine system administration tasks, especially across multiple

servers. Windows PowerShell does not require you to migrate your existing scripts, and it is ideally suited for automation of new Windows Server 2008 features. A new admin-focused scripting language, and consistent syntax and utilities, Windows PowerShell accelerates automation of system administration tasks—such as Active Directory, Terminal Server, and Internet Information Server (IIS) 7.0—and improves your organization's ability to address the unique system management problems of your environment.

Windows PowerShell is easy to adopt, learn, and use, because it does not require a background in programming, and it works with your existing IT infrastructure, existing scripts, and existing command-line tools.

**Server Manager:** A new feature that is included in Windows Server 2008. It is a "one-stop-shop" designed to guide Information Technology administrators through the end-to-end process of installing, configuring, and managing server roles and features that are part of Windows Server 2008. Server Manager replaces and consolidates a number of features from Microsoft Windows Server 2003 such as Manage Your Server, Configure Your Server, and Add or Remove Windows Components. You can use Server Manager to configure various "roles" and "features" on your machine.

**Windows Deployment Services (WDS):** An updated and redesigned Windows Server 2008 version of Remote Installation Services (RIS), WDS assists with the rapid adoption and deployment of image-based Windows operating systems. WDS allows network-based installation of Windows Vista and Windows Server 2008 to "bare metal" computers (no operating system installed), and even supports mixed environments including Microsoft Windows XP and Microsoft Windows Server 2003. Windows Deployment Services thus provides an end-to-end solution for deployment of Windows operating systems to client and server computers and reduces the total cost of ownership (TCO) and complexity of Windows Server 2008 and Windows Vista deployments.

## **Windows Server 2008 and Windows Vista Better Together**

Windows Vista and Windows Server 2008 originally began as part of a single development project, and as such they share a number of new technologies across networking, storage, security and management. Although the development of Windows Vista and Windows Server 2008 have branched into separate releases with different release cycles, many of these enhancements apply to both Windows Vista and Windows Server 2008. When organizations deploy both operating systems, they will see how the combined client-server infrastructure provides even greater advantages.

### **Features**

IT professionals who are administering a Windows Vista / Windows Server 2008 infrastructure will notice many improvements in how they control and manage their environment.

- Maintenance is greatly simplified by the use of a single model for updates and service packs across client and server.
- Client computers can monitor for specific events and forward to Windows Server 2008 for centralized monitoring and reporting.
- Windows Deployment Services provides much faster and more reliable operating system deployment.
- Network Access Protection features on Windows Server 2008 ensure that Windows Vista clients connecting to the network are compliant with security policies and restricted from accessing network resources if not.

The reliability, scalability, and overall responsiveness of the infrastructure are greatly increased by improvements made to both Windows Vista and Windows Server 2008.

- Clients can render print jobs locally before sending them to print servers to reduce the load on the server and increase its availability.
- Server resources are cached locally so that they are available even if the server is not, with copies automatically updating when the client and server are reconnected.

- Applications or scripts that need to run on both client and server can take advantage of the Transactional File System to reduce the risk of error during file and registry operations and roll back to a known good state in the event of failure or cancellation.
- Policies can be created to ensure greater Quality of Service for certain applications or services that require prioritization of network bandwidth between client and server.

Windows Vista clients connecting to networks where Windows Server 2008 has been deployed can experience greatly improved communication speeds and reliability.

- Searching Windows Server 2008 servers from a Windows Vista client avails of enhanced indexing and caching technologies on both to provide huge performance gains across the enterprise.
- Native IPv6 support across all client and server services creates a more scalable and reliable network, while the rewritten TCP/IP stack makes network communication much faster and more efficient.
- The new Server Message Block 2.0 protocol provides a number of communication enhancements, including greater performance when connecting to file shares over high-latency links and better security through the use of mutual authentication and message signing.
- Terminal Services on Windows Server 2008 have many improvements, including providing Windows Vista clients with remote access to internal resources through an HTTP gateway and seamless remote applications that run as if on the local desktop.