

Enterprise Solutions

Microsoft[®]



From Microsoft and NSI Software

connection



COLLABORATION



Integration



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Integration
SO WHAT?
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Microsoft and NSI Software have long enjoyed a close relationship over the years. During the past year, Microsoft and NSI Software have collaborated to create a great application experience on Windows Server™ 2003. Not only are NSI Software’s flagship applications ready to run on and support Windows Server 2003 but also provide customers great assurance by meeting the rigorous standards of Microsoft’s “Certified for Windows®” program.

Microsoft’s “Certified for Windows” program is designed to provide high levels of availability, reliability, security, and supportability on Windows Server platforms. In order to meet these high standards, Microsoft and participating ISVs work closely in ensuring that key applications meet the certification criteria. The final validation is delivered through VeriTest, a third-party independent testing company who does the actual testing based on Microsoft’s specifications. Customers will soon find NSI Software’s Double-Take® on the certified application list.

Microsoft and NSI Software invite you to discover how we can create better business environment and solutions through NSI Software’s Double-Take running on Windows Server 2003.



Bob Guilbert
Vice President Marketing and Business Development
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Microsoft Server Products Provide Reliable, Scalable Platforms for Mission-Critical Applications

Windows Server 2003 is designed to help customers do more with less. It builds on the strengths of the Windows 2000 Server Family to take application and hardware performance to new heights.

With Windows Server 2003 you receive:

- The most secure Windows Server release yet
- Scalability extending to 64 processors
- Overall enhancements in reliability, availability, and manageability

With Windows Server 2003, customers receive a Windows server environment that supports up to 64 processors and 512 GB of RAM on IA64 platforms (the 64-bit technology is offered on Windows Server 2003 Enterprise and Datacenter Editions), and 32 processors and 64 GB of RAM on IA32 platforms. The Windows Server 2003 family is comprised of the following four SKUs: Web, Standard, Enterprise, and Datacenter Editions.

Microsoft Windows Server 2003 Family

<p>Windows Server 2003, Standard Edition Windows Server 2003 Standard Edition is the reliable network operating system that delivers business solutions quickly and easily. This flexible server is the ideal choice for small businesses and departmental use.</p>	<ul style="list-style-type: none"> • Supports file and printer sharing. • Supports secure Internet connectivity. • Allows centralized desktop application deployment.
<p>Windows Server 2003, Enterprise Edition Windows Server 2003 Enterprise Edition is built for the general-purpose needs of businesses of all sizes. It is the platform of choice for applications, Web services, and infrastructure, delivering high reliability, performance, and superior business value.</p>	<ul style="list-style-type: none"> • Is a full-function server operating system that supports up to 8 processors. • Provides enterprise-class features such as 8-node clustering and support for up to 32 GB of memory. • Is available for Intel Itanium-based computers. • Will be available for 64-bit computing platforms capable of supporting 8 processors and 64 GB of RAM.
<p>Windows Server 2003, Datacenter Edition Windows Server 2003 Datacenter Edition is built for business-critical and missioncritical applications that demand the highest levels of scalability and availability.</p>	<ul style="list-style-type: none"> • Is the most powerful and functional server operating system Microsoft has ever offered. • Supports up to 32-way SMP and 64 GB of RAM. • Provides both 8-node clustering and load balancing services as standard features. • Is available for 64-bit computing platforms capable of supporting 64 processors and 512 GB of RAM.
<p>Windows Server 2003, Web Edition A new product within the Windows operating systems, Windows Server 2003 Web Edition is provided for both Web serving and hosting.</p>	<ul style="list-style-type: none"> • Is provided for building and hosting Web applications, Web pages, and XML Web Services. • Is designed to be used primarily as an IIS 6.0 Web server. • Provides a platform for rapidly developing and deploying XML Web services and applications that use ASP.NET technology, a key part of the .NET Framework. • Is easy to deploy and manage.

Security

Microsoft has invested heavily in the Secure Windows Initiative with the goal of delivering systems that are secure by design, default, and deployment. In addition, Windows Server 2003 is the first Windows operating system to ship under the Trustworthy Computing initiative (launched by Bill Gates in January 2002) which is based on four pillars: security, privacy, reliability, and business integrity.

Secure by Design

The improved security of Windows Server 2003 reflects Microsoft's \$200 million investment in 2003 to reduce code vulnerabilities in its platform, modify the development process, and improve accountability at every level for security. Focusing on security improvements, Windows Server 2003 includes a redesigned IIS, strong authentication protocols such as 802.1x and PEAP, and common language runtime (CLR) to create a safer computing environment.

Secure by Default

To secure Windows Server 2003 by default, the attack surface area was reduced by creating stronger default policies (e.g., file system Access Control Lists); redesigning IIS; and reducing the total number of services, reducing the number of services running by default, and reducing the number of services running as System.

Secure in Deployment

In addition to the more secure architecture design and added security features in Windows Server 2003, Microsoft offers its customers tools, prescriptive guidance, training, and services to help them deploy a secure, connected infrastructure.

Tools

- **Software Restriction Policy (SRP)** is a new feature in Windows Server 2003 and Windows XP that gives administrators a policy-driven mechanism to identify software running in their domain and control its ability to execute.
- **Security Configuration Editor (SCE)** is designed to help businesses secure Windows systems operating in various roles and deployment scenarios, such as a Web server that is connected both to the Internet and to a secure internal network. The goal of SCE is to help customers maximize the security of such systems without sacrificing functionality.
- **Microsoft Audit Collection Services (MACS)** is a tool used to monitor and audit systems. MACS collects security events in a compressed, signed, encrypted manner and loads them into a SQL database for analysis.

Internet Information Services (IIS) 6.0

One of the key highlights of the security enhancements in Windows Server 2003 is the complete redesign of IIS 6.0. This powerful Web service is available in all versions of Windows Server 2003. It helps to provide a highly reliable, manageable, scalable, and secure Web application infrastructure. IIS 6.0. makes it possible for organizations of all sizes to quickly and easily deploy powerful Web sites and applications, and IIS 6.0. provides a high-performance platform for all applications.

Because of the integration of the .NET framework into the IIS 6.0.

process model, applications built with the Microsoft .NET framework are faster and more reliable.

The benefits of choosing IIS 6.0 include:

- less planned and unplanned system downtime
- increased Web site and application availability
- lower system administration costs
- server consolidation (reduced staffing, hardware, and site management costs)
- a significant increase in Web infrastructure security

Scalability

Windows Server 2003 takes the scalability gains found in the Windows 2000 Server Family to new heights. It is designed for both scale-up and scale-out scenarios-with scale-up scenarios enabled by symmetric multiprocessing (SMP) and Cache Coherent Non-Uniform Memory Access (CC-NUMA) optimizations, and scale-out by the various types of clustering provided by Microsoft.

Internal tests indicate that, compared to Windows 2000 Server, Windows Server 2003 delivers up to 140 percent better performance in the file system as well as significantly better performance in various other features, including Microsoft Active Directory service, Web server, Terminal Server components, and networking services.

Key scalability enhancements include:

- **64-Bit Support.** Support for 64-bit architecture with Enterprise and Datacenter Editions and 512 GB of RAM.
- **Support for Intel Hyper-Threading.** Allows a single physical processor to execute multiple threads (instruction streams) simultaneously, potentially providing greater throughput and improved performance.
- **NUMA Optimization.** Most Windows applications will perform optimally without modification on NUMA systems running Windows Server 2003 because of automated NUMA features in the operating system (offered only on Enterprise and Datacenter Editions).
- **Hot Add Memory.** Allows ranges of memory to be added to a computer that supports this feature. This was made available to the operating system and applications as part of the normal memory pool-without requiring downtime or rebooting the computer (offered only on 32-bit versions of Enterprise and Datacenter Editions).

Reliability, Availability

Reliability and availability are woven into every aspect of Windows Server 2003 design to provide for a better customer experience. Key highlights include:

- **8-Node Clustering.** Increasing the number of nodes in a server cluster gives administrators more options for deploying applications and providing failover policies that match business expectations and risks. (8-node clustering is supported on the 32-bit and 64-bit Enterprise and Datacenter Editions.)
- **Network Load Balancing Manager.** This new utility in Windows Server 2003 provides a single point of configuration and management for NLB clusters.
- **Datacenter High Availability Program.** The Datacenter Program has been expanded to meet the growing customer demand for higher availability on Windows.

Windows Server 2003 Features

Features	Datcenter Edition	Enterprise Edition	Standard Edition	Web Edition
32-bit Max Processors	32	8	4	2
32-bit Max RAM	64GB	32GB	4GB	2GB
64-bit Max Processors	64	8	No Support	No
64-bit Max RAM	512GB	64GB	No Support	No
File Sharing Connections	Unlimited	Unlimited	Unlimited	Limited to 10; No CALs
Print Server	Yes	Yes	Yes	No
Active Directory	Domain Controller or Member Server	Domain Controller or Member Server	Domain Controller or Member Server	No
Terminal Services	App and Admin Mode	App and Admin Mode	App and Admin Mode	Admin Mode Only
Terminal Services Session Directory	Yes	Yes	No	No
UDDI	Yes	Yes	Local DB Only	No
Fail-over Clustering	8-Node	8-Node	No	No
Windows Media Server	Enterprise	Enterprise	Basic	No
VPN Connections	Unlimited	Unlimited	1,000 Maximum	1 Per Media Type
Internet Authentication Service (IAS)	Yes	Yes	Limited to 50 Devices	No
Certificate Server	Yes	Yes	Windows 2000 Level	No
Windows System Resource Manager	Yes	Yes	No	No
Datcenter High Availability Program	Yes	No	No	No

Manageability

Windows Server 2003 delivers enhanced management capabilities designed to simplify and automate the management of Windows environments, while providing the flexibility and reliability to meet customers' business needs.

Key highlights include:

- **Automated Deployment.** New and enhanced capabilities to automate the deployment and redeployment of the operating systems and applications.
- **Policy Based Management.** Provides fine-grained control over the definition and enforcement of IT policies.
- **Effective User Service Management.** IntelliMirror® gives users consistent access to their applications, roaming user profiles, and user data, from any managed computer (even when they are disconnected from the network). IntelliMirror also gives centralized backup of user data and configuration files department.
- **Enhanced Security Management.** Powerful tools to establish and manage the security of their Windows environments.
- **Scalable Operations Management.** Remote administration is enabled via Terminal Server, Windows Script Host, and Windows Management Instrumentation (WMI), the management infrastructure that provides access to more than 10,000 system objects in Windows Server 2003 via application, scripting, and command line interfaces.
- **Windows System Resource Manager (WSRM).** WSRM enhances application availability and quality of service by providing control over application CPU and memory utilization, making it easier to run mixed application workloads on a single server.
- **Active Directory Enhancements.** Increased flexibility and manageability enhancements, such as secure credential and certificate management, provide a consistent single sign-on experience and health monitoring visibility to easily monitor trusts and replication activity.

Virtual Server

Virtual Server (acquired from Connectix) addresses customer needs for application migration and server consolidation. Virtual Server enables customers to run multiple operating systems and applications in Virtual Machine (VM) environments (a VM is essentially a computer-implemented in software-running in isolated software partitions on a physical computer).

The benefits of VM technology for application migration and server consolidation include:

- **Simplicity:** Virtual Server supports every major x86 Microsoft provided operating system running in the VM environment, leveraging industry-standard device drivers. This capability enables customers to run their Windows NT™ 4-based applications (for example), without change or disruption in usage or management, on more powerful and more resilient hardware that takes advantage of the performance and reliability enhancements of Windows Server 2003.
- **Automation:** Virtual Server is fully extensible through a COM API that enables scripted or programmatic control over the configuration, operation, management, and integration of VM environments.
- **Flexibility:** Virtual Server can be configured on desktop systems and deployed on high-end Intel-based servers. Virtual Hard Drives (VHDs) are highly portable and system integrators can integrate and enrich XML configuration files for fast, economic deployment.
- **Security:** Virtual Server provides separate security contexts for each Virtual Server, allowing internal and external hosting environments to provide complete control of the VM to 'owners', without compromising the security of other VMs, or the system overall.

Company Overview

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Double-Take is real-time data replication software for Windows Server 2003 that reduces downtime and data loss, including protection for the Windows-Powered NAS platform. Double-Take allows for faster recovery time, compliments the standard tape backup process and can also be used to provide offsite disaster recovery or centralized backup. Double-Take protects data at some of the world's largest organizations in industries including financial services, legal services, healthcare and government.

Based on its proven Double-Take replication technology, NSI Software's GeoCluster™ product extends the capabilities of Microsoft Cluster Service. GeoCluster provides multi-site disaster recovery protection, improved data availability, reduced downtime, and greater flexibility, all at a cost lower than building a traditional cluster. GeoCluster supports active/active configurations where each node can support production users yet fail over to the other node as required.

Highlights

- Host-based, real-time replication without geographic limitations. Replicating changes as they occur at the byte level over any shared or private IP-based LAN, MAN, or WAN ensures that Double-Take can protect changed data almost immediately and make an up to date replica available in an instant if necessary.
- Application protection. Double-Take protects a wide range of enterprise applications such as Exchange and SQL Server, as well as file and Web servers.
- Automatic failover for ensured productivity. In the event of a primary server outage, planned or unplanned, Double-Take allows a secondary server to stand in--either automatically or with the push of a button--providing maximum availability and flexibility to end users.
- Investment protection. Double-Take runs on your existing servers and storage platforms, prolonging the life of existing assets and not requiring the capital expense of two new identical systems (unlike most failover technologies).
- Best possible protection at the lowest cost with an accelerated return on investment. Double-Take delivers extensive functionality (typically offered only in higher-end products) at a much lower entry price point. In most business critical environments Double-Take will pay for itself within months.

Company description

Established in 1991, NSI® Software is a leading developer of patented, award-winning data replication technologies and services. NSI Software products, including Double-Take® and GeoCluster™, enable companies to recover quickly and easily from disasters and continue to provide business-critical information for demanding customer environments. Privately funded, NSI has strategic technical and marketing relationships with industry leaders including Microsoft, IBM, Dell, HP and many others. NSI Software works with its OEM partners and reseller channel to deliver comprehensive solutions and support to business users.

Inside Double-Take, GeoCluster, and Windows Server 2003

NSI Software's technology provides the most efficient replication solution available—by capturing and sending only the actual bytes that change. This is unlike technologies that replicate disk blocks (32KB or larger) or whole file copy programs. Regardless of whether your enterprise will be running SQL, Exchange, or File Sharing on the Windows 2003 platform, Double-Take will provide the same level of data protection, with the same feature-set and same management tools (instead of having a different fault tolerant mechanism for each application).



- Double-Take provides robust queuing and bandwidth management, to allow the administrator to determine the percentage of bandwidth available for data protection.
- Double-Take does not change the way that your existing server is deployed, instead it simply enables another Windows platform to protect your existing resources.
- Double-Take equally protects all three current Windows server versions, to allow your existing Windows 2000 and NT 4 servers to share target platforms with newly deployed Windows 2003 servers. This also enables easier migrations from existing older Microsoft versions to new Windows 2003, by simply replicating the data.

Double-Take has a particularly intimate relationship with the Windows Server operating system because its filtering mechanism, a non-blocking driver, resides just below the operating system and just above the file system stack. Here it is able to capture every block of data that passes into the system and relay it via TCP/IP to the replica server.

Double-Take's unique STAR methodology (Sequential Transfer and Asynchronous Replication) maintains sequential ordering of the replicated data to preserve data integrity--while allowing the server to continue at full capacity.

NSI's GeoCluster product integrates with the Cluster Service of Windows Server 2003 to extend the capabilities of MSCS and create a stretch cluster--a group of computers in separate locations that work together to run a common set of applications and provide the image of a single system to clients and applications. Stretch clusters allow computers to fail over remotely between different sites.

This service provides high availability and scalability for mission-critical applications such as databases, messaging systems, and file and print services. Multiple server nodes in a cluster remain in constant communication. If one of the nodes in a cluster becomes unavailable as a result of failure or maintenance, the other node can immediately begin providing service.

The Bottom Line

Double-Take has established itself as a leader and is one of the only replication products that can protect everything from servers to clusters to Windows Powered NAS environments.

Construction Company Builds Recovery Strategy

A hypothetical construction company is one of the largest in the country, with branch offices in 30 cities from coast to coast. Their headquarters, however, is in Massachusetts, where winter storms have been known to cause extended power outages and delay vital service calls. Because some jobs run night and day, and because the entire company has come to depend on computerized contract and project management, the existing tape back up system has become woefully inadequate. Not only can as much as a full day's data be lost, but the tape backup system can't offer the kind of instant recovery that crews in the field require.



The company chose to move to a datacenter-level server running Windows Server 2003 and SQL Server Enterprise Edition. The major server manufacturer who sold them their hardware recommended NSI's Double-Take as the best disaster recovery solution on the market, using their old server as the D/R target. In addition, they deployed another server to a second location and installed GeoCluster to provide failover protection and load balancing.

A Capital Plan for SEC Compliance

A Chicago firm just discovered severe problems with the solution it adopted to meet the SEC's requirements for data protection and soundness of client transactions and funds. Many of the alternative solutions, however, had prohibitive downsides: "hot sites" with requirements for leasing recovery equipment, security companies that demanded access to the company's data, etc.

Under the advice of its auditors, the company decided to replace its aging server with new hardware running Windows Server 2003, SQL Server, and NSI's Double-Take. They placed two servers on opposite sides of the Loop, connected by a secure leased line. With Double-Take's management console installed on the administrators' workstations, they handled everything from the initial configuration, to ongoing monitoring, to recovery from their desktops.

The company is now fully compliant with the SEC regulations, plus has the comfort of knowing that they'll have virtually instantaneous access to their data in case Chicago sees another great fire or flood.

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Microsoft Links

Microsoft Windows Server 2003

www.microsoft.com/windowsserver2003/default.aspx

Security Services in Windows Server 2003

www.microsoft.com/windowsserver2003/technologies/security/default.aspx

Internet Information Services 6.0

www.microsoft.com/windowsserver2003/evaluation/overview/technologies/iis.aspx

Active Directory Enhancements

www.microsoft.com/windowsserver2003/evaluation/overview/technologies/activedirectory.aspx

Windows System Resource Manager

www.microsoft.com/windowsserver2003/downloads/wsrp.aspx

Microsoft Virtual Server Technology

www.microsoft.com/windowsserver2003/techinfo/overview/virtualization.aspx

Windows Datacenter OEMs

www.microsoft.com/windowsserver2003/partners/oems/default.aspx

Windows Server 2003 Datacenter Certified ISVs

www.microsoft.com/windowsserver2003/partners/isvs/isvs.aspx

“Certified for Windows” Homepage

www.microsoft.com/windowsserver2003/partners/isvs/cfw.aspx

“Certified for Windows” Applications List

cert.veritest.com/CfWreports/server/

NSI Links

NSI Software Double-Take Data Sheet

<http://www.nsisoftware.com/pro/doubletake/datasheets/>

NSI Software Double-Take Product Evaluation

<http://www.nsisoftware.com/pro/product/>

NSI Software Double-Take Theory of Operations Whitepaper

http://www.nsisoftware.com/_pdf/DTtheory.pdf

NSI Software Product Webinar

<http://www.nsisoftware.com/roo/webex.asp>

NSI Software Double-Take Certification Training

<http://www.nsisoftware.com/tra/certification/>

Capacity Planning for Double-Take

<http://www.nsisoftware.com/prs/CapacityPlanning.asp>

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Microsoft's Certified for Windows program is sponsored by industry-leading companies such as Intel and Unisys. Microsoft and VeriTest are working closely with these sponsors to provide a better testing environment for independent software vendors who participate in the Certified for Windows program.

The objective of this certification program is to provide customers the highest level of assurance when choosing applications running on Windows 2000 Server and Windows Server 2003. In order to have an application certified, an independent software vendor and Microsoft work together to ensure that the application meets the highest standards for reliability, availability, security and supportability. These standards apply to Microsoft and third-party applications.



www.intel.com



www.veritest.com



www.unisys.com

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Part no. 098-97351