Enterprise Solutions

From Microsoft and BMC Software
Microsoft and BMC Software, Inc. have long enjoyed a close relationship over the years. During the past year, Microsoft and BMC Software have collaborated to create a great application experience on Windows Server™ 2003. Not only are BMC Software’s flagship management solutions ready to run on and support Windows Server 2003 but they 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 BMC Software’s PATROL® for Microsoft Windows Servers on the certified application list.

Microsoft and BMC Software invite you to discover how we can create a better business environment and solutions through BMC Software’s PATROL for Microsoft Windows Servers running on Windows Server 2003.

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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

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<th>Edition</th>
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|                                 | Supports secure Internet connectivity.  
|                                 | Allows centralized desktop application deployment.                                               |
| **Windows Server 2003, Enterprise Edition** | 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. |
| **Windows Server 2003, Datacenter Edition** | 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. |
|                                 | 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.  

A new product within the Windows operating systems, Windows Server 2003 Web Edition is provided for both Web serving and hosting.
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 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.
The release of Windows Server 2003 signals Microsoft’s expanding commitment to distributed systems. From small enterprise to datacenter environments, Windows Server 2003 is suddenly an affordable, reliable alternative to RISC- and CISC-based hardware running Unix and Linux. As more and more companies like yours move business-critical applications to this platform, the need to manage those applications becomes crucial.

To manage the applications that drive business, you must be in control of all the pieces: databases, Internet applications and servers, server hardware, middleware, and operating systems. Managing these diverse components requires solutions that are easy-to-use, flexible, scalable, and integrated.

PATROL® solutions from BMC Software keep Windows-based systems and applications available and performing optimally by burrowing deep into native Windows services, where they have access to system-level information and control functions. The long-standing partnership BMC Software has maintained with Microsoft brought them in on the ground floor of the .NET initiative that led to Windows Server 2003.

PATROL for Microsoft Windows Servers earned the “Certified for Microsoft Windows 2000 Server” logo—the first enterprise systems management solution to do so—and BMC Software is already in line for the new "Certified for Windows" Server 2003 logo. Certification matters to you because it assures you that PATROL will provide the highest level of assurance on Windows Servers 2003, Standard, Enterprise, and Datacenter Editions.

CONTROL-M®/Business Integrated Scheduling complements PATROL by providing batch job scheduling and tight ERP application integration. The CONTROL-M/Enterprise Manager provides a single pane of glass for monitoring and management of the entire enterprise.

SQL-BackTrack for SQL Server is a database-intelligent, high performance backup and recovery product that simplifies and automates database administration tasks associated with backup and recovery. SQL-BackTrack for SQL Server shortens the time to recovery and recovers exactly what you want to recover—at an object level or a point in time.

SmartDBA™ Performance Solutions add value to PATROL by ensuring that databases and applications will be available throughout your enterprise. These integrated, expert DBA tools start with the Web-based SmartDBA Cockpit console and include modules for monitoring, space management, and SQL tuning. The tools share data and services to provide seamless, task-oriented workflow, regardless of the problems they might ultimately diagnose.

These solutions include database-specific PATROL Knowledge Modules that enable synchronized, real-time event monitoring via the Enterprise Database View and automatically provide common information to both the System Administrator and DBA teams. The result is a vastly accelerated and simplified process for detection and resolution of problems.

Inside BMC Software solutions and Windows Server 2003

PATROL is an infrastructure management tool, and as such its goal is to ensure:

- you’re using all the services you have available
- those services are running as efficiently as possible
- those services are under your control

Effective infrastructure management lets you maximize IT performance without increasing costs.

As Global Enterprise Partners, BMC Software and Microsoft have jointly developed a laboratory in Redmond WA, leading to innovations for both companies. BMC Software has helped Microsoft move into the datacenter environment, and Microsoft has repaid that help by making BMC Software a major partner in its development process.

PATROL and Active Directory

Active Directory, an essential component of Windows Server 2003, provides the directory services at the heart of Windows networking. PATROL monitors Active Directory availability, internal connections, replication, and performance, identifying both current and potential problems before they can affect users.

CONTROL-M and .NET

Leading analysts recognize BMC Software CONTROL-M as a market-leading batch scheduling solution. It utilizes inherent Windows Server 2003 abilities, such as job objects, as well as providing a specialized user interface that provides advanced tools for job definition and management. Recently, Alnova Technologies Corporation, an Accenture company and a global solutions provider for the financial industry, chose to incorporate CONTROL-M as the core batch scheduling component in its .NET-compliant Financial Solutions. “The partnership between Alnova, BMC Software, and Microsoft,” according to Osvaldo Ostermann, Director of Channels and Alliances, "has enabled the development of the .NET version of Alnova Financial Solutions, the company’s retail banking system.”

The Bottom Line

PATROL, Control-M, SmartDBA and SQL-BackTrack solutions manage, define, measure, predict, report, and optimize business-critical service levels for all critical application components.
Reliability is the key issue in this major grocery chain scenario. It has deployed Windows Server 2003, Datacenter Edition, to run SQL Server 2000 in its corporate headquarters. The balance of its network consists of Windows 2000 Servers in an Active Directory domain, and a 20-server Exchange environment. Over 1500 stores across North America use Windows Terminal Services to run Microsoft Office applications from the home office; those same stores have 5000 local Point of Sales servers running Windows Server 2003, which management chose for its enhanced security and manageability.

The chains’ mission critical applications are Exchange, Windows Terminal Services, and SQL Server 2000 at corporate headquarters. Fifteen hundred outlets processing checks, inventory, or frequent shopper applications could be impacted by any outage. For this environment, the company requires a proactive management solution that not only provides an early-warning system of potential problems, but automatically fixes common problems before they impact business services.

The BMC Software solution called for a range of PATROL products. Each of the three mission-critical software packages—Exchange 2000, Active Directory, and SQL Server 2000—has its own respective solution: PATROL for Microsoft Exchange Servers, PATROL for Microsoft Windows Servers, and PATROL for Microsoft SQL Server. Prior to upgrading the datacenter server, the company used PATROL Perform and PATROL Predict to analyze workloads and perform what-if scenarios, accurately gauging the requirements for the new system.

For the Point of Sale servers, the company decided to deploy PATROL Express, a rapid-to-deploy, agentless, remote monitoring solution that captures all key operations from the servers at each retail outlet. Management was especially pleased by the richness of features and scalability of PATROL, and most of all by its ability to manage system resources in an aggressive manner.

Another retail scenario focuses on a highly diverse computing environment. The client is a huge retail clothing chain where management is struggling to gain control of a chaotic business.

This chain has over 500 stores, part of a wide area network that stretches across North America. The network includes Unix and Microsoft Windows systems running everything from critical line of business applications to file and print services. Windows operating systems range from Windows 95 in some outlying stores to Windows Server 2003, Datacenter Edition, in the home office. The critical applications include Microsoft Exchange Server and Microsoft SQL Server, Citrix MetaFrame servers, and proprietary point of sales applications.

System administrators spend their time fighting fires, using a set of ad hoc tools or no tools at all. In the absence of root cause analysis, the same problems occur repeatedly and get fixed differently each time.

BMC Software Professional Services came on site to help install and roll out its PATROL products, with immediate and compelling results. The PATROL solutions’ efficient data collection and centralized interface for monitoring and managing user accounts made an immediate impression; PATROL Perform and PATROL Predict went on to add performance management and capacity planning to the company’s IT tool kit.

The return on investment was quick to materialize and easy to see. All aspects of the business, from the Web site to accounting to application services, became more stable, with higher capacity. IT began to spot problems before they occurred, and fix the ones that did occur more quickly—and more efficiently, because they were able to get to the root of the problem. And the heart of the system, the IA-64 machine running Windows Server 2003, has yet to see any downtime.
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Microsoft Links
Microsoft Windows Server 2003
www.microsoft.com/windowsserver2003/default.mspx

Security Services in Windows Server 2003

Internet Information Services 6.0
www.microsoft.com/windowsserver2003/evaluation/overview/technologies/iis.mspx

Active Directory Enhancements
www.microsoft.com/windowsserver2003/evaluation/overview/technologies/active-directory.mspx

Windows System Resource Manager

Microsoft Virtual Server Technology
www.microsoft.com/windowsserver2003/techinfo/overview/virtualization.mspx

Windows Datacenter OEMs
www.microsoft.com/windowsserver2003/partners/oems/default.mspx

Windows Server 2003 Datacenter Certified ISVs
www.microsoft.com/windowsserver2003/partners/isvs/isvs.mspx

“Certified for Windows” Homepage
www.microsoft.com/windowsserver2003/partners/isvs/cfw.mspx

“Certified for Windows” Applications List
cert.veritest.com/CfWreports/server/

BMC Software Links
BMC Software and Microsoft partner information
www.bmc.com/microsoft

BMC Software Windows Management Solutions
www.bmc.com/windows

BMC Software Database Management Solutions for Microsoft SQL Server
www.bmc.com/sqlserver/
Microsoft’s Certified for Windows program is sponsored by industry-leading companies such as Intel and Unisys. Microsoft and VeriT est 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.