

WHITE PAPER

Evaluating the Business Benefits for Windows Users of Deploying Windows Server 2003

Sponsored by: Dell Inc.

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IDC OPINION

Despite Microsoft's introduction of two vastly improved, more scalable and reliable operating systems — Windows 2000 Server and Windows Server 2003 — many customers continue to hold onto their Windows NT Server 4.0 installations, with more than 2 million units still in use. Customers that own these systems will find themselves largely unsupported by Microsoft after December 31, 2004, when the company discontinues its incident and security-related hotfix support for Windows NT.

Such customers tend to fit into one of three categories: those that have definitive plans within a specific timetable to move off Windows NT (in most cases, to Windows Server 2003); those that specifically plan to continue using Windows NT and have no plans to migrate; and in the middle ground, those that want to upgrade — or at a minimum, have no objections to upgrading — but have no specific time frame in mind.

These middle-ground customers may be held back by any one of several issues, including concerns — perceived or real — about the complexity, difficulty, and cost associated with a move to Windows Server 2003, Active Directory, and the trickle-down impact that upgrading to Windows Server 2003 will have on application software packages and database software that sit on top of their current Windows NT configurations.

In a study conducted by IDC, we interviewed IT managers at 24 sites that are deploying Exchange as a workload running on Windows NT Server, Windows 2000 Server, and Windows Server 2003 platforms. All of the companies are deploying at least two of these three platforms, and 18% are deploying or have deployed all three versions of Windows.

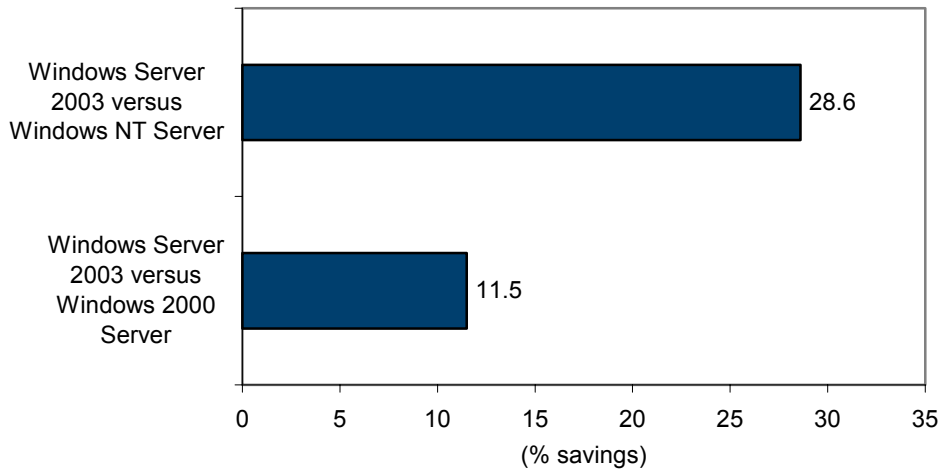
The intent of the study was to determine the three-year total cost of ownership (TCO) for the three versions of Windows server operating environments (SOEs). One of the questions we attempted to answer is, "Is there in fact a lower operational cost associated with Windows Server 2003 compared with Windows NT Server?"

Figure 1 identifies the high-level results of this study, which shows a clear benefit associated with moving to Windows Server 2003 from a Windows NT Server configuration. According to the results of this study data, Windows Server 2003 is 28.6% less expensive than Windows NT Server and 11.5% less expensive than Windows 2000 Server when measured on the basis of a three-year TCO.

By comparison, Windows 2000 Server offers a 19.3% lower three-year TCO than Windows NT Server.

FIGURE 1

Total Cost of Ownership Benefit Delivered by Windows Server 2003

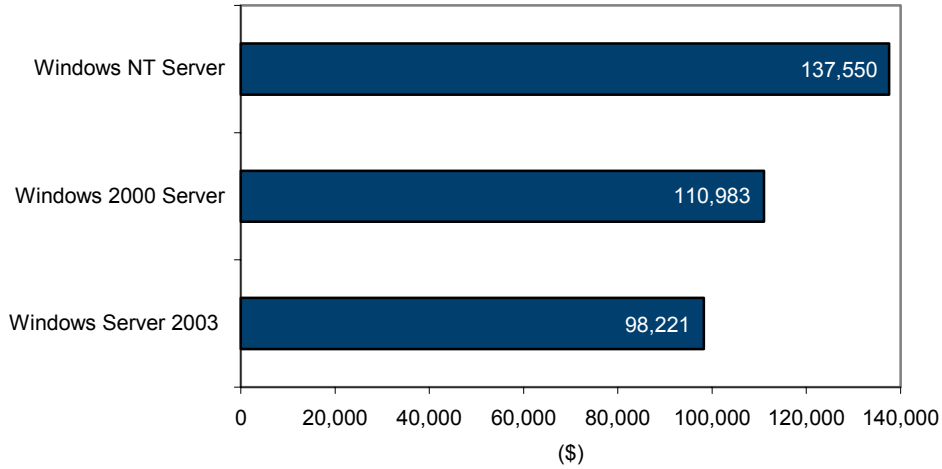


Source: IDC, 2004

In terms of absolute costs, Figure 2 shows that the three-year TCO for 100 supported users on Windows NT Server is \$137,550. By comparison, the three-year TCO for Windows 2000 Server is \$110,983, or 19.3% less expensive than that of Windows NT. Extending this comparison, we found that the three-year TCO for Windows Server 2003 is \$98,221, or 28.6% less expensive than that of Windows NT Server. Not surprisingly, these results show a clear benefit associated with using more current Microsoft products.

FIGURE 2

Three-Year Total Cost of Ownership per 100 Supported Users by Platform



Source: IDC, 2004

The cost savings, running at \$25,000 to \$39,000 per 100 supported users, present a compelling reason to move to Windows Server 2003. However, IDC also recognizes that to achieve such cost savings, customers must first make an investment in new hardware, operating system software, and application software and implement the changes required for a full deployment of Windows Server 2003. The value for customers that make such a move, where staffing costs drop by nearly 29% compared with the costs of supporting Windows NT Server configurations, is a long-term benefit organizations can take to the bank.

IDC's standard methodology calculates TCO on the basis of 100 supported users to normalize variations in the deployments of study participants. For organizations with considerably more than 100 supported users, the cost benefits continue to accrue proportionally, resulting in a larger absolute cost savings figure.

METHODOLOGY

IDC interviewed IT managers at 24 sites that are deploying Exchange as a workload running on Windows NT Server, Windows 2000 Server, and Windows Server 2003 platforms. All of the companies interviewed for this study are using at least two of these three platforms, and 18% are deploying or have deployed all three versions of Microsoft's server operating system products. These companies are large enterprises with complex environments. Representatives were drawn from manufacturing, financial, and business services industries.

The resulting data was analyzed using IDC's standard methodology for performing TCO analysis, and the results produced were normalized to costs per 100 supported users.

For more detail on the methodology used to collect this data and perform the related analysis, please see the methodology discussion in the Appendix.

IN THIS WHITE PAPER

This IDC white paper provides an analysis of the TCO for three common Microsoft SOEs: Windows NT Server, Windows 2000 Server, and Windows Server 2003. The analysis is based on interviews conducted to collect fixed acquisition and operational costs associated with the configurations in use. This white paper uses IDC's TCO analysis methodology to compare the results for typical systems configured using these three widely used operating environments.

SITUATION OVERVIEW

The Legacy of Windows NT

Microsoft's broad success as a solution provider for the operating systems requirements among companies of all sizes has led to an installed base that is unequaled in the industry. This success has also created a significantly large installed base of legacy systems that are still utilizing one of Microsoft's older operating systems products, typified by Windows NT Server 4.0.

With the launch of Windows 2000 Server in February 2000, Microsoft set the stage for customers to move to a more current technology. The improvements introduced in Windows 2000 Server were broad in nature and included technologies focused on:

- ☒ Vastly improving basic reliability and uptime
- ☒ Boosting scalability beyond the four-way configurations that Windows NT 4.0 could support
- ☒ Introducing Active Directory as a fundamental component of the operating system and a key element for managing network, client, and application user complexity
- ☒ Improved management tools for system configuration provisioning and lockdown

With the launch of Windows Server 2003, Microsoft expanded on Windows 2000 Server as follows:

- ☒ Improvements to existing Windows 2000 Server features
- ☒ New features that help lower adoption blockers for Windows NT 4.0 users
- ☒ Features intended to address one of Microsoft's three targeted deployment scenarios: application servers, information workers, and infrastructure servers

- ☒ Security improvements designed to provide better out-of-box security, including an integrated firewall, Internet Information Server not installed by default and, when installed, default configured to a locked-down default configuration.
- ☒ Greater leverage of software installation restrictions (Group policy now supports prohibition of unsigned software installations aboard Windows Server 2003.)
- ☒ Improvements that boost the overall scalability of the Windows Server product family
- ☒ Cross-forest trust and management, which allows secure access to other forests and provides mechanisms for trusts to be established between forests
- ☒ Directory improvements (These improvements include features such as domain rename, which allows an organization to rename a domain after configuration, and a tool for determining a resultant set of policies applied to a client system authenticating into a Windows domain.)

Of particular interest to Microsoft was the inclusion of features in Windows Server 2003 targeted at easing the transition from Windows NT 4.0. One example of technology focused on this area is an improved ADPrep tool, which is used to help migrate a Windows NT 4.0 domain controller to Windows Server 2003 and Active Directory.

Facing the End of Support

Long after the initial release of Windows NT 4.0 back in July 1996 and its replacement by two successive products in the past four years, Microsoft is now trying to move customers toward a graceful end of life for Windows NT 4.0 deployments. On December 31, 2003, the company discontinued its nonsecurity-related hotfix support for all customers, except those with custom support contracts. Microsoft already has extended the support life cycle on Windows NT Server 4.0 once because of customer feedback, and at present, plans call for the discontinuation of incident and security-related hotfix support on December 31, 2004. (IDC notes that third-party customer support continues to exist, although third parties typically are not able to provide kernel-level support.)

Following Windows NT Server, Windows 2000 Server will see its mainstream support discontinued on March 31, 2005, and extended support discontinued on March 31, 2007.

IDC research tracks the installed base of server operating systems, and current IDC data shows a substantial number of Windows NT Server installations in use — in excess of 2 million units. Our recent research finds that end users are increasingly aware of the urgency of moving off Windows NT Server 4.0 and increasingly favor initiating such a move.

A move to Windows Server 2003 involves many benefits and comparatively few drawbacks. The main drawbacks include some remaining application compatibility issues (most frequently related to older Windows NT applications that do not install themselves appropriately into a Windows Server 2003 environment) and the need for

regression testing. Even the challenge of implementing Active Directory has been reduced substantially through both new Windows NT Server 4.0 migration tools and more flexible deployment techniques for Active Directory.

On the benefit side, end users will find themselves moving to an environment that is not only inherently more stable and scalable but also far more easily managed.

Considering the uptake of Windows Server 2003 that IDC has tracked and the few new issues that have arisen as deployment blockers, moving to — or at least establishing a plan to move to — Windows Server 2003 from Windows NT Server 4.0 is advisable today.

Security Improvements over Windows 2000 Server and Windows NT

In many respects, Windows Server 2003 is arguably a dot release upgrade to Windows 2000 Server, but the fit and finish, paint and polish of the most current release is measurably better than that of Windows 2000. One area to which Microsoft paid considerable attention — and in which it continues to make important enhancements — is security. Some improvements offered in Windows Server 2003 include:

- ☒ **Built-in firewall.** Microsoft's Internet Connection Firewall is included with Windows Server 2003. This technology is not as robust as some commercial offerings, but it still provides some out-of-box capabilities that don't exist for Windows NT Server.
- ☒ **Support for IEEE 802.1x.** The native support included in Windows Server 2003 supports features such as encryption, dynamic key determination, and use of domain log-on credentials for authentication, reducing or eliminating the need for a certificate server.
- ☒ **Software restriction policies.** The inclusion of software identification and execution privilege through the use of group policy objects helps lower the potential for unwanted software to run within an organization's network.
- ☒ **Signed software installation restrictions.** Group policy also allows the prohibition of unsigned software aboard Windows Server 2003.
- ☒ **Built-in file encryption.** Windows 2000 Server and Windows Server 2003 offer built-in file-level encryption that can protect data if it is stolen or compromised at an access level.

In addition, Windows Server 2003 continues to receive important security enhancements such as attention from Microsoft as part of its patch management initiative, which will lead to far easier patch organization, deployment, and installation. At this time, the effort Microsoft is placing on patch management is being optimized for Windows Server 2003 and Windows XP.

Making a Business Case for Migrating

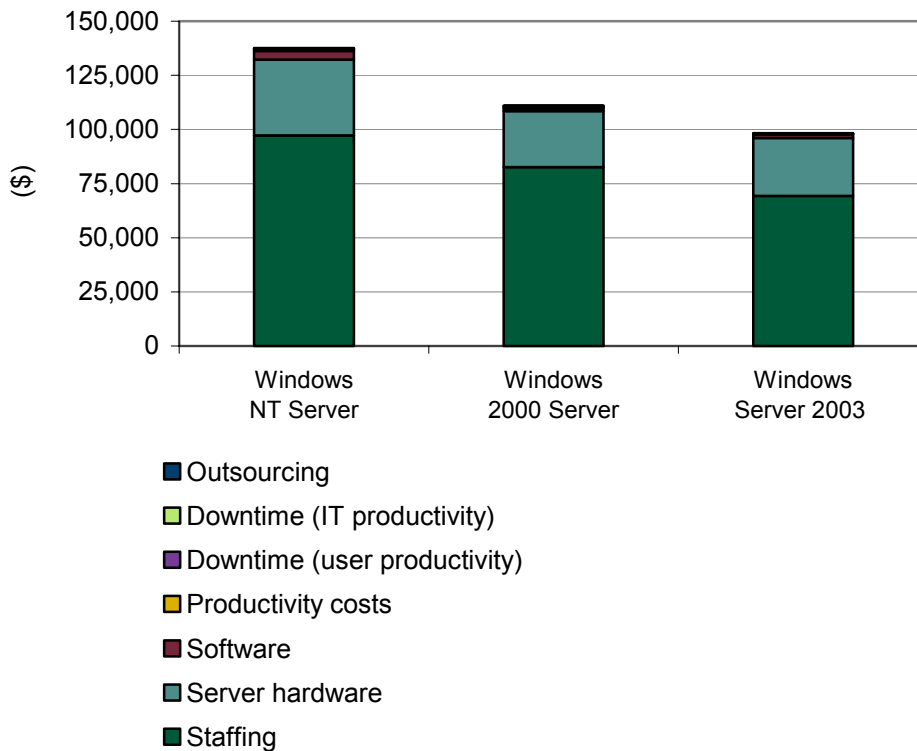
Although there has been much speculation in the industry that Windows NT 4.0 holdouts are prospects for moving to Linux, studies conducted by IDC have not found such a migration to be a most likely scenario. The difficulty of moving application software from Windows to Linux, combined with the vastly different skill sets required to manage a network of Linux systems compared with Windows systems, suggests that a more likely scenario is for existing Windows NT 4.0 installs to eventually go to Windows Server 2003.

The study data in this white paper offers a compelling view on how ongoing support costs can be lowered through such a move. Figure 3 identifies the actual cost elements of a three-year TCO for 100 supported users.

Like past IDC studies, this study found that the single largest cost element is the staffing/support costs, which make up in excess of 70% of the three-year TCO values for all three platforms.

FIGURE 3

Actual Costs for Three-Year Total Cost of Ownership per 100 Supported Users by Platform



Source: IDC, 2004

Not surprisingly, we found that hardware acquisition costs have declined roughly 25% when we compared the cost of hardware acquired for use with Windows Server 2003 and Windows NT. The delta in hardware costs between Windows 2000 and Windows Server 2003 is negligible.

This decline is a normalized value, where the common denominator is 100 supported users. Naturally, Moore's law has a net positive impact on this line. Simply deploying Windows NT 4.0 on more modern hardware (if it could even run on such hardware; its ability to do so is questionable in some cases) would likely result in a larger number of users supported per CPU and/or per server, which in turn lowers the hardware costs on the basis of 100 supported users.

Of much more interest, however, is the decline in the staffing/support costs. As shown in Figure 3, the decline is very real: a drop from \$97,294 to \$82,622, or a change of 15% when comparing Windows NT Server with Windows 2000 Server. When comparing Windows NT Server with Windows Server 2003, we found that the numbers fall from \$97,294 to \$69,259, or a drop of 28%. This cost item — a dramatic portion of the single largest cost item in the TCO study — has a significant net positive impact on overall TCO values.

Drilling slightly deeper into the data presented in Figure 3, we can consider the broad collection of cost areas included in staffing costs — for example, the cost associated with system management, including setup and configuration as well as ongoing operating system support.

Table 1 identifies the percentage of administrator time that is spent on two specific line items: server setup and configuration and server operating system support.

TABLE 1			
Percentage of Server Administrator Time Spent on Setup, Configuration, and Operating System Support			
Cost item	Windows NT Server	Windows 2000 Server	Windows Server 2003
Server setup and configuration	11	10	8
Server operating system support	30	22	14

Source: IDC, 2004

Among the organizations interviewed for this study, we clearly found a lower cost of setup and configuration and a lower cost of ongoing operating system support both for Windows 2000 Server and for Windows Server 2003 when compared with Windows NT. This finding should not come as a big surprise because a major element of Microsoft's development effort for the Windows 2000 Server/Windows Server 2003 product family was reducing deployment and ongoing support costs. (IDC studies typically show that as an operating system matures, support costs

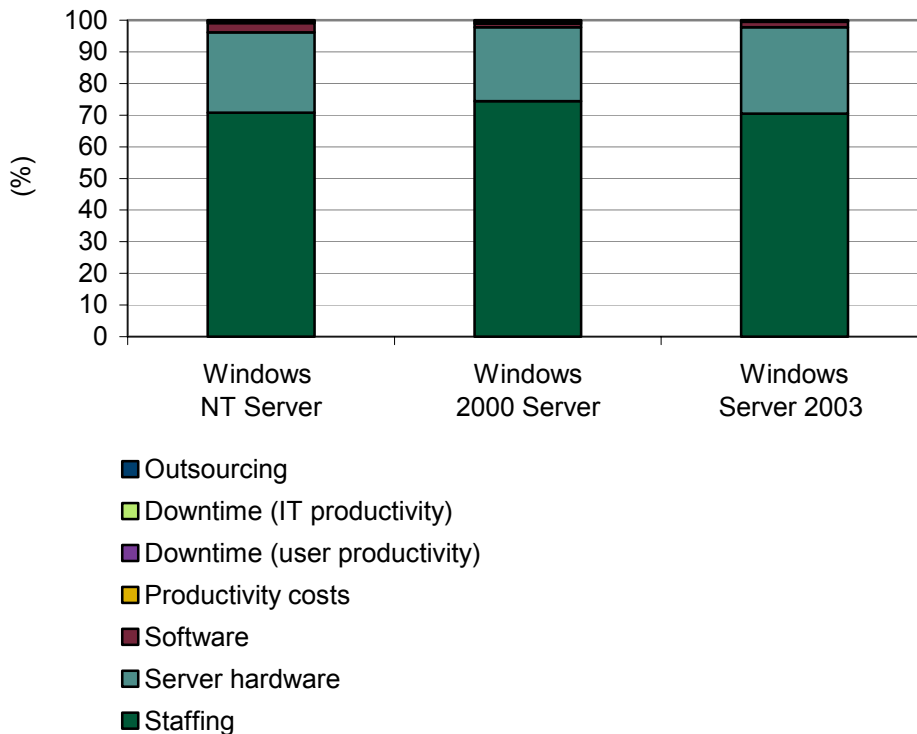
tend to fall because staff expertise continues to grow, management tools become more sophisticated, and often more of these tools are included with the base operating system.)

Figure 4 provides a slightly different view of the data; it shows the share of total on the basis of 100% of the costs. An interesting observation from this view is that staffing costs remain essentially flat at 71–75% of the three-year TCO for 100 supported users. Yet the software improvements with each version of Windows drop the absolute value roughly in line with the declining hardware costs.

Other factors, including software, productivity, and downtime costs, were minor contributors, with software costs running between 1% and 3% and other costs all below 1% of the three-year TCO.

FIGURE 4

Relative Costs for Three-Year Total Cost of Ownership per 100 Supported Users by Platform



Source: IDC, 2004

Table 2 presents the same data introduced in Figures 3 and 4 in numerical/tabular form. As previously discussed, the bulk of the costs originates from staffing and hardware costs, with software costs a low, single-digit component in all categories.

TABLE 2

Three-Year Costs per 100 Supported Users by Platform

Cost Item	Windows NT Server (\$)	% of Total	Windows 2000 Server (\$)	% of Total	Windows Server 2003 (\$)	% of Total
Staffing	97,294	71.1	82,622	74.9	69,259	70.7
Server hardware	34,995	25.6	25,889	23.5	26,797	27.3
Software	3,985	2.9	1,195	1.1	1,627	1.7
Productivity costs	629	0.5	638	0.6	242	0.2
Downtime (user productivity)	568	0.4	560	0.5	150	0.2
Downtime (IT productivity)	61	0.0	78	0.1	92	0.1
Outsourcing	18	0.0	2	0.0	54	0.1
Total (calculated)	137,550	100	110,983	101	98,221	100

Source: IDC, 2004

This data shows an interesting result that requires further analysis: Hardware costs associated with Windows Server 2003 deployments are 3.5% higher than hardware costs associated with Windows 2000 Server deployments.

Analyzing the data on a per-server basis provides some interesting insight into the reason for this shift. The study data shows that the studywide average server hosting Windows 2000 Server had 1.6 processors. By comparison, the average Windows Server 2003 installation ran on a system with 2.3 CPUs. In other words, the typical Windows Server 2003 environment was installed on more robust, expensive hardware.

Taking this analysis one step further, we found that the average system running Windows Server 2003 supported 15.2% more users than a configuration running Windows 2000 Server. By comparison, an average Windows Server 2003 configuration supported 42% more users than a server hosting Windows NT Server.

Software costs are those for the acquisition, setup, and maintenance of the operating system exclusive of database, integrated collaborative environments, or business processing software. IDC attributes the low average values for software costs,

particularly for Windows 2000 Server and Windows Server 2003, as the result of a number of factors, including the following:

- ☒ Operating system software already owned by companies, which had been moved forward to new hardware and upgraded under a Software Assurance contract to the most current version. In that case, customers may have attributed no acquisition costs to the operating system.
- ☒ The effect of volume licensing contracts and unlimited user licenses such as an Internet Connector license can decrease per-user per-server costs.
- ☒ The potential for organizations to allocate Client Access License costs to client machines rather than to the supporting server operating system.

IDC notes that this data is not normalized on the basis of individual workloads, which, in this view, shows the effect of more complex workload combinations (meaning more discrete applications being supported on a per-server basis) in conjunction with larger discrete systems. Although the per-user hardware costs are marginally higher, the trade-off is that users are now managing a smaller number of larger systems.

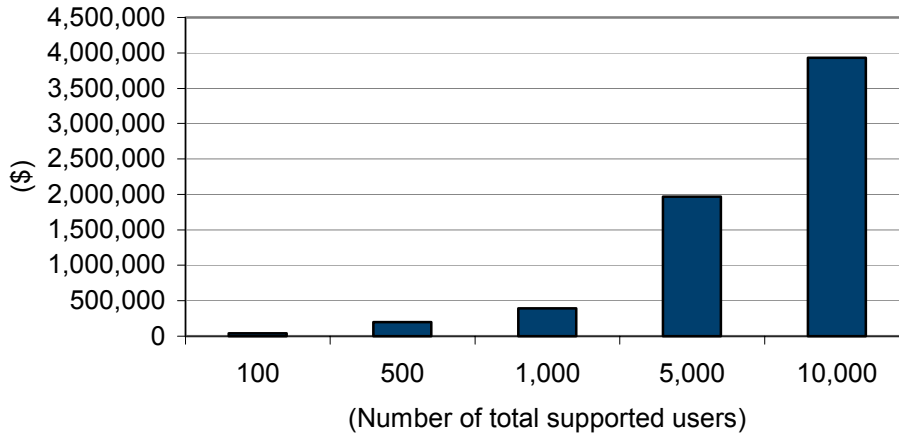
This trend toward smaller numbers of individually larger systems also contributes to the significantly lower staffing/support costs shown in Table 2.

Scaling the Results

Extending this analysis to more realistic numbers of supported users, not atypical for medium-sized and large companies, shows that the cost savings can be significant. Figure 5 illustrates the cost savings of Windows Server 2003 compared with those of Windows NT for 100; 500; 1,000; 5,000; and 10,000 users. Although these values present the same 28.6% cost benefit that Windows Server 2003 offers over Windows NT Server, the absolute dollars can become significant. The three-year TCO savings for 1,000 supported users is projected to be \$393,290. The potential savings that can be realized by a large organization with 5,000 users would approach \$2 million.

FIGURE 5

Three-Year Total Cost of Ownership Savings Scaled Up by User Total



Source: IDC, 2004

FUTURE OUTLOOK

Performance Metrics

Table 3 introduces the concept of performance metrics. This data, which is derived from the same data collection process used to build the TCO models, provides an alternative way to compare and contrast different platforms using different, but equally interesting data points. The metrics include:

- ☒ **IT efficiency:** The ratio of the total number of servers and the total IT staff (including system administrators, database and network administrators, as well as developers) in direct support of servers or involved in the deployment of applications
- ☒ **IT productivity:** The percentage of IT staff time required to support servers
- ☒ **Availability:** The percentage of time that applications are available to 100% of users on a 24 x 7 basis

The first row of data in Table 3 highlights the number of servers per IT staff member. The IT staff includes not only system administrators but also other IT support staff, such as network and database administrators as well as developers. The data highlights a significant difference in the average number of servers per IT staff members — that is, IT staff can manage three times as many servers running Windows 2003 compared with Windows NT. Windows 2000 Server also scored considerably better than Windows NT Server, with just under a 3:1 ratio.

The second row of data shows the IT productivity rating, which is the percentage of IT time required to support servers. Windows NT Server and Windows 2000 Server are at similar levels: 18–19%. However, Windows Server 2003 is at just over half the value calculated for Windows NT Server, or 10.3%.

Availability improvements are clear through the progression of Windows products, although the average Windows installation is a long way from offering even "four nines" of uptime.

TABLE 3

IT Performance Metrics

	Overall	Windows NT Server	Windows 2000 Server	Windows Server 2003
IT efficiency (number of servers/IT staff)	1.42	0.94	2.84	3.02
IT productivity (% of time spent on server tasks)	17.5	19.2	18.1	10.3
Availability (%)	99.775	99.715	99.824	99.914
Three-year cost per user (\$)		1,369	1,103	980

Source: IDC, 2004

Virtualization: Tomorrow's Computing

Another consideration for using modern hardware and current operating systems is the industrywide shift toward the use of virtualization software. Software products such as Java Virtual Machines, storage resource management software, user interface virtualization software, and virtual machine software that provides hardware abstraction have become available aboard x86 hardware, significantly broadening the solutions that can be configured and deployed.

Using virtual machine software available in the industry today, companies can host outdated operating systems such as Windows NT Server aboard modern hardware that may be BIOS-incompatible with older operating systems. This makes it possible to consolidate workloads and applications to Windows Server 2003 where it makes sense and to retain virtual images of Windows NT Server and related application stacks where it is best to retain such software. This solution allows users to capture the lower TCO benefits associated with Windows Server 2003 but retain Windows NT Server configurations where a migration is impractical or not cost effective aboard the same physical hardware platform supporting Windows Server 2003.

Advantages of Running Windows 2003/2000 on the Dell Platform

As the market leader in the U.S. x86 industry-standard server market, Dell has a portfolio of proven, Intel-based servers that addresses customer demand across a range of server workloads and applications as well as customer environments. Windows has proven itself to be a major enterprise SOE over the past seven years, and Dell has been one of the leading companies in the industry to actively promote Windows-based servers and server technology — and to build a suite of server-based solutions around the Windows operating system.

Dell's PowerEdge servers scale from one to four processors and are based on Intel Xeon and Xeon MP microprocessor technology. Dell provides these servers singly or in clusters — which allows customers to scale up support for larger groups of end users and support more scalable applications through the use of Microsoft Cluster Server technology in Microsoft Windows Server 2003 Enterprise Edition in both 32-bit and 64-bit versions.

Four years ago, Dell's server business was heavily weighted to small and medium-sized business (SMB) customers and small offices. Today, racks of Dell servers can be found increasingly in many corporate datacenters, tackling business-critical and mission-critical application and database workloads.

Dell's reputation as one of the industry's leading providers of quality high-performance Intel-based servers and its ability to supply enterprise products with the latest technology to its customers are also key advantages that the company maintains — especially when one couples the company's strong product portfolio with its Windows solutions and services strengths outlined above.

The company has also made investments in its OpenManage server management tools to enable the management of PowerEdge servers both remotely through a Web browser or directly at the server. This capability is especially critical in datacenter environments that have dozens, or even hundreds, of Windows servers that need to be managed, maintained, and upgraded. In addition, Dell's ability to help customers deploy and manage Windows cluster-server solutions is one of its key attributes and is a high priority among many of the company's larger clients.

Dell also can provide value-added deployment services to customers purchasing servers under its Custom Factory Integration (CFI) program. CFI provides customers with custom configuration and installation of software, including both standard and customer-proprietary configurations at the Dell factory, under the name of Enterprise Software Integration. With Enterprise Software Integration, customers can specify the software stack to be installed in image form, and Dell can preconfigure servers, which are out-of-the-box ready to participate in a customer's network, for delivery to customer sites.

System Management Capabilities

Dell has developed a series of technologies and best practices for automating system deployment and management. Building on Microsoft's Automated Deployment Services (ADS), which was introduced with Windows Server 2003, Dell has documented its best practices in step-by-step form in a series of publications. These documents are helpful for customers that would like to automate the configuration and provisioning as well as the subsequent management of their Windows 2000 Server and Windows Server 2003 systems.

In addition, Dell's Deployment Toolkit can be used with ADS for rapid provisioning of PowerEdge servers using Windows Server 2003. Using the Microsoft tools and Dell processes, users can provision a system from bare metal status to that of a fully operational state, or they can reprovision an existing system for a different purpose.

From an operational perspective, Dell's OpenManage Connections extend monitoring applications such as Microsoft MOM, Tivoli, HP OpenView, and CA Unicenter with agents that provide Dell system discovery and status management, trap events, and provide asset/inventory management for Dell systems on the network. Dell OpenManage also provides application launching capabilities, event management specific to Dell systems, and alert notification and routing.

In addition, Dell has enabled Dell Update Packages to provide a single process for hardware and software patch distribution. This capability allows customers to use the same process for operating system, application, and hardware system software updates such as BIOS or FirmWare using Altiris Patch Management or Microsoft Systems Management Server (SMS) technology.

As one of Microsoft's key OEM partners, Dell plans to deliver additional management technologies that will build upon and leverage Microsoft's Dynamic Systems Initiative (DSI) as Microsoft brings forward components of DSI.

Professional Services

By leveraging a Dell/Windows Server installed base of more than 1.7 million systems worldwide, Dell Professional Services (DPS) has built a knowledge base that helps customers better utilize emerging technologies and best practices to enhance their enterprise Windows server environments. With technical expertise in infrastructure performance and application development, DPS helps customers migrate proprietary environments to standardized platforms and applications. DPS also helps customers consolidate their existing resources onto Windows platforms, further improving efficiencies.

Prior to starting a migration or consolidation, DPS conducts a fixed-scope assessment that provides a complete inventory of a customer's IT infrastructure, identifies challenges and opportunities, and presents a sample architecture and recommendations for moving forward. This information, along with established methodologies and tools, enables DPS to design, plan, and implement an enterprisewide migration or consolidation.

CHALLENGES/OPPORTUNITIES

Despite the compelling TCO benefits and easier, less expensive management identified by this study, many users moving to Windows Server 2003 will face the following challenges:

- ☒ In an ideal world, a move to Windows Server 2003 ultimately calls for full adoption of Active Directory. A move to Active Directory was, and continues to be, an impediment for broad moves to Windows 2000 Server or Windows Server 2003.
- ☒ A move off Windows NT has a potential impact on existing applications in use. In particular, Exchange users will find it necessary to upgrade to Exchange Server 2003. There is also a potential impact on other applications because not all applications will install and run aboard Windows Server 2003 without modification of their installers and default directory structures.
- ☒ Adoption of Windows Server 2003 may cause related migration expenses. Utilities, backup and recovery tools, and management products may need to be replaced. Costs specifically related to migration from one platform to another fall under a return-on-investment (ROI) measurement as opposed to a TCO study — which tracks the "steady state" costs associated with acquisition of and operation of a given hardware/software configuration. (This study specifically evaluated TCO, not ROI.)
- ☒ The considerably lower TCO presented by Windows Server 2003 is a benefit that cannot be achieved by a simple software upgrade. Gaining the full benefit of Windows Server 2003 requires a move to modern hardware and may also call for consolidation of servers and/or workloads running aboard those systems.

CONCLUSION

Because of the economic downturn, enterprises have been reluctant to migrate their server environments to new platforms. The TCO benefits presented in this white paper offer a compelling argument for moving ahead to Windows Server 2003 from existing Windows NT installations. Companies should not begin a large-scale replacement initiative based solely on TCO results for one operating system compared with another, but they should consider cost advantage, which is an important factor. The companies in this study have all chosen to migrate and are finding that the benefits outweigh the costs.

Considering the full benefits that a move might offer, such as better support from Microsoft and partner companies, better availability of modern applications and infrastructure software, and the ability to leverage the benefits of Active Directory, organizations that so far have resisted a move to Windows Server 2003 might want to begin to develop migration plans.

APPENDIX

Scope and Methodology

Scope of This Study

This study focused on capturing total cost of ownership (TCO) data for three server operating environment (SOE) configurations and included data collected from 24 North America-based user organizations. The data was collected through a telephone interview survey that is based on IDC's standard TCO methodology, which has been used at IDC for nearly a decade. The intent of the study was to capture operational costs for three SOEs: Windows NT Server, which would combine the data from Windows NT 3.5x with Windows NT 4.0 (however, it is our expectation that few if any sites continue to use versions of Windows prior to Windows NT 4.0); Windows 2000 Server; and Windows Server 2003.

Interview Methodology

IDC conducted interviews with 24 sites deploying Windows NT, Windows 2000 Server, and Windows Server 2003 platforms. All of the companies are deploying at least two of the three platforms, and 18% are deploying all three. This study did not include 24 unique organizations, as some subjects were interviewed about their deployments of more than one platform. We note that such a scenario is beneficial to the study because interviewing organizations with more than one competitive platform results in a more consistent attribution of less tangible costs such as staffing and downtime costs.

The companies are large enterprises with complex environments, as Table 4 indicates. Representatives were drawn from manufacturing, financial, and business services industries.

IDC routinely constructs an in-depth interview guide that focuses our data collection process to ensure consistent presentation of the questions and categorization of responses during interviews with participating companies.

The interview process begins with a qualification process, which ensures that the interviewee is able to speak about an acceptably sized portion of the company's IT operations and has intimate knowledge of the staffing and costs related to supporting the company's IT infrastructure.

TABLE 4

Average Demographics of Study Base

Cost Item	Overall	Windows NT Server	Windows 2000 Server	Windows Server 2003
Annual revenue (\$M)	597	850	218	527
Employees	5,622	2,835	7,805	5,622
IT users	2,255	2,506	705	2,255
Sites with users	78	26	137	78
Servers	122	59	20	117
Sites with servers	18	25	7	18
IT staff	84	10	28	83

Source: IDC, 2004

Our interview process was conducted with end-user companies that fit one of the following categories:

- Companies that have previously participated in an IDC study and indicated that they are willing to participate in future IDC studies.
- Companies that are identified as potential interview subjects, drawn from trade publication mailing lists, trade show attendee lists, and other databases of end-user organizations to which IDC and/or IDC's parent company, International Data Group (IDG), has access.

For this study, IDC conducted in-depth interviews to collect information on the use of SOEs at end-user companies. The purpose of this discussion was to capture information that would be used to develop a three-year TCO model for three SOEs.

These interviews, conducted from December 2003 through February 2004, were separated into discussions focusing on Windows NT Server, Windows 2000 Server, and Windows Server 2003.

During these interviews, data was collected to account for TCO or data was collected that could be converted into TCO by IDC analysts for topics including hardware and software acquisition and maintenance; staffing costs; the effect of downtime produced by system outages and viruses; and the cost of training both end users and IT support personnel.

As part of the interview process, IDC collected data in the following cost areas:

- ☒ **Hardware costs.** This category includes hardware acquisition, setup, upgrade, training, and maintenance. In addition, we captured life expectancy for systems, allowing secondary hardware purchases that may take place during a three- or five-year TCO window to be considered.
- ☒ **Software costs.** This category covers purchase, setup, upgrade, training, and maintenance costs. We further segmented this category into operating system costs and application costs.
- ☒ **Staffing costs.** Staffing costs, which are typically one of the more influential components in a TCO study, were captured by populating over 20 subcategories of cost areas that are relevant to a TCO calculation. These categories include factors such as hardware and software evaluation and purchasing, software installation and upgrading, user support/help desk, and custom application development.
- ☒ **Productivity costs.** This category incorporates costs from help desk calls, virus infections, security intrusions, troubleshooting email problems, and installation and configuration.
- ☒ **Other costs.** This category incorporates user training costs, IT training costs, and the cost of downtime associated with system outages. The downtime element, in particular, can be an important cost component for both IT staffers and end users and therefore an important influencer in TCO studies.

After completion of the interview process, IDC analysts with expertise in developing TCO and ROI models performed a comprehensive analysis of the collected data.

The TCO metrics presented in this white paper are described in terms of three-year costs per 100 supported users aboard server systems.

IDC's TCO studies frequently find the most significant expense area is ongoing IT support costs, and this labor-intensive cost component lessens the overall impact of initial software and hardware acquisition costs as time goes by. An operating environment that has integrated infrastructure software and performance tools, more mature administration and operations tools, and readily available expertise would generally have an advantage over an operating environment that does not have these attributes because greater integration can have a direct positive impact on IT support costs.

The data presented in this white paper, although based on a conservative sample size, parallels the results of larger studies conducted by IDC for other TCO work involving the Windows platform.

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