

Windows Server 2003

Yes, that is the final name for this much-anticipated upgrade to Windows 2000 Server. First released in beta test form way back in December 2000, Windows 2003 Server has gone by many other names, including Windows 2002 Server and Windows .NET Server. Though the latter name resurrected many old Windows NT jokes (Windows .NOT, Not There yet) early indications are that Microsoft has greatly improved its server platform.

Although Microsoft again increased the minimum hardware requirements to run Windows Server 2003, reports are that it runs a bit faster than Windows 2000 on the same hardware. In contrast to previous versions Windows 2003 Server installs in a secure configuration. This is in line with Microsoft's new Trustworthy Computing initiative which promises software will only ship after it is as secure as possible. For example add-on services like Microsoft's IIS web server, so often the target of viruses and crackers, is disabled by default in this version.

Like Windows 2000, Server 2003 will run on Active Directory. However the new version is not compatible with Windows NT domain controllers, which must be eliminated before upgrading a LAN containing both Windows 2000 and Windows NT servers. Active Directory is a directory service which allows programs like Microsoft Exchange and Office 2003 access to the network user list,

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XML and Office 2003

One of the most interesting new features in the forthcoming Office 2003, due later this year, is its support for XML, an emerging standard in data management. XML stands for eXtensible Markup Language. Though it looks similar to HTML, the language used on all web pages, XML was designed specifically as a universal way to describe data. HTML by contrast describes how data should look visually. With this article we hope to provide a brief overview of XML and how it applies to the upcoming release of Microsoft Office 2003.

XML by itself does not do anything, it simply describes the data contained within an XML document. Since everyone's data is different, there is no one standard for the XML codes; in fact everyone must make up their own XML codes. For example, consider this short XML document:

```
<note>
<to>Steve</to>
<from>Bob</from>
<subject>Wireless LAN</subject>
<body>Thanks again for setting up my
wireless network, it works amazingly
well!</body>
</note>
```

This note clearly has a sender, recipient, subject, and body, yet any program can access the note and display this data in its own way. Applications can even add their own XML tags, extending the original data (for example, adding a *date* tag to the above note).

Now think of how XML might be used to store a business's accounting data in one database, accessible by its accounting software, sales/contact management software, reporting

software for use by company management, and more. Or consider a reporter who files a story using his or her choice of software applications, and has the story automatically import into print and online layouts simultaneously, including formatting. Or, a company might have the terms of a contract that is written in Word automatically import to the firm's accounting software for that client's bills.

To ensure compatibility between programs, administrators define an XML Schema Document (XSD) to provide a structured format for compliant documents to follow, for example an Excel template. Data can also be validated against rules, allowing administrators to control data entry on forms across a variety of applications. In this way XML may well become a universal method for cross-platform data sharing using plain text files.

Office 2003

Indications are that Office 11, now officially named Office 2003, will either be a release that is very important to your business, or a release to consider skipping. One major hurdle for many companies is that Office 2003 will only run on Windows 2000 or Windows XP. Users running Windows 95, 98, Me, and NT 4.0 will need to upgrade. In many cases users may find it either necessary or more cost-effective to purchase a new computer.

XML support is of course a major feature of Office 2003. Microsoft is so serious about XML that it hired one of the coauthors of the original XML specification to manage its XML initiatives. Longer term, it intends to

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include XML compatibility in virtually all of its software.

Microsoft will release Office 2003 in more configurations, including a Professional Enterprise edition, a Basic edition, and a Small Business edition (the Small Business version of Office XP was only available preloaded on new computers). For example, Office 2003 Basic will include only Word, Excel, and Outlook, and be available only preloaded on a new PC. Users can also purchase Office applications like FrontPage, PowerPoint, Access, and a new application, InfoPath, as stand alone products at retail or through volume licensing.

Speaking of InfoPath, this is a new Office application for designing and filling out XML-based forms. InfoPath stores data as plain text XML files, allowing for easy importing to any XML-compatible back end database or web service. The down side is that InfoPath will only be bundled with the Professional Enterprise edition of Office 2003, available only through volume licensing. However, anyone will be able to buy InfoPath as a separate application.

Some new features of Office 2003 depend on Windows Server 2003 and its updated Active Directory, for example compatibility with the shared collaboration features of SharePoint Team Services. Other features are more cosmetic, such as a new "transparent" look that many see as modeled after the Aqua interface found on MacOS X.

One thing is clear: now that Microsoft has just about perfected the basic word processor, it intends to build programs around the Office "system" and Windows Server to keep users upgrading. Since Microsoft is pushing towards a subscription-based revenue model it must continually provide a perceived value for its subscription upgrades or risk losing upgrade revenue. How successful they will be in doing this remains to be seen.

Serial ATA

Serial ATA is a new standard in hard drive technology. Existing ATA hard drives (also known as IDE drives) have maxed out at the current ATA100 standard due to technological limitations of the signaling used (one manufacturer supports ATA133). ATA100 can transfer data between the hard drive and your computer at a maximum rate of 100 MB/s. Serial ATA, by contrast, starts at a maximum speed of 150 MB/s and is expected to increase substantially over time.

Serial ATA changes the signaling to use a serial connection, allowing for a much smaller cable to improve airflow inside the case. The serial connection also allows for a longer cable length; the new 1 meter limit would allow for external drives, competing with FireWire, SCSI, and USB 2.0 drives. In the future, Serial ATA will also allow for hot-swapping drives while a system is still powered on.

One change is that serial ATA drives use a point-to-point connection. The elimination of master/slave jumpers makes drives easier to set up but limits the hardware to one drive per cable. As a result computers will likely come with ATA100 connectors for several years to accommodate older hardware.

For the near term Serial ATA seems to be targeted more towards servers and higher end workstations. Most Serial ATA drives available so far are designed using higher speed internal components to take advantage of the faster bus speed, therefore the cost is much higher than today's ATA100 drives (which now start well under \$100).

Currently Serial ATA is available as an add-on to any PC. Longer term, component manufacturers will improve Serial ATA integration, allowing for even faster speeds.

Humor

If We Sold Toasters...

by unknown

If **IBM** made toasters...They would want one big toaster where people bring bread to be submitted for overnight toasting. IBM would claim a worldwide market for five, maybe six toasters.

Microsoft: Every time you bought a loaf of bread, you would have to buy a toaster. You wouldn't have to take the toaster, but you'd still have to pay for it anyway. Toaster95 would weigh 15000 pounds (hence requiring a reinforced steel countertop), draw enough electricity to power a small city, take up 95% of the space in your kitchen, would claim to be the first toaster that lets you control how light or dark you want your toast to be, and would secretly interrogate your other appliances to find out who made

them. Everyone would hate Microsoft toasters, but nonetheless would buy them since most of the good bread only works with their toasters.

Apple: It would do everything the Microsoft toaster does, but 5 years earlier. Only Apple Toaster fans would buy these toasters but that's a small number of people so Apple would have to look to another company to buy its toaster factory or go bankrupt.

Xerox: You could toast one-sided or double-sided. Successive slices would get lighter and lighter. The toaster would jam your bread for you.

Radio Shack: The staff would sell you a toaster, but not know anything about it. Or you could buy all the parts to build your own toaster.

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Tips

Organize Your Start Menu

One of the nice things about a new PC is that it looks so *clean*. However once you start to accumulate software the Start Menu can quickly become a cluttered mess. Windows 95 automatically alphabetized icons, but did not allow for much customization. Starting with Windows 98 Microsoft allows far more customization but puts each new program at the bottom of the list. Also, if you have too many items the list scrolls vertically. Fortunately there are ways to fix that.

You can quickly sort icons alphabetically by opening your Start Menu's Programs folder, right clicking, and selecting the *Sort By Name* option. Folders appear at the top of the list, with icons alphabetized towards the bottom.

Windows XP has a nice feature that allows you to "pin" frequently used programs to always appear on the main Start Menu view. Simply right

click an icon and select the *Pin to Start Menu* option.

Users with Windows 98 or later can add their own folders to the Start Menu, creating a similar list for frequently used programs. To do so, right click the Start button itself and select *Explore* (or *Explore All Users*). File/New Folder will create a new folder here, which will appear on the main Start Menu list. Name it "My Programs" or something similar. Copy icons from your Start Menu into this folder so they will also appear in this special folder. We recommend using your right mouse button to drag icons directly from your Start Menu so you can be sure you are not moving the icon from its original location.

You can also reorder icons in the Start Menu by dragging them vertically within their folder. Create subfolders under Programs to sort your icons by category.

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security objects, and other resources. Though overkill for small networks, Active Directory is necessary for some heavier-duty applications.

Another feather in Windows Server 2003's cap is improved management. Simplified graphical tools provide easier, deeper access to managing server processes. While improved management tools will have more of an impact on administrators, hopefully that will translate to a lower cost of ownership, especially for larger sites.

One interesting new feature is Volume Shadow Copy, which allows administrators to make snapshot copies of critical data. Users can then restore these files later without resorting to tape backup.

Pricing

Windows Server 2003 will come in several versions: Standard Edition, Enterprise Edition, Datacenter Edition, and Web-server-only. Pricing is expected to be about the same as Windows 2000 Server, with the new web-only version retailing for just under \$400 in an effort to gain market share from Unix web servers. As with previous versions, client licenses will be required to access the server for file and print sharing as well as for remote computing via Terminal Services.

Overall most of the new features in Windows Server 2003 will be irrelevant to organizations using only file and print services, so there may not be a compelling reason to upgrade. Organizations looking into Exchange 2003 and other Microsoft server technologies will probably have to upgrade, sooner or later. The improved performance and management tools however make Windows Server 2003 the way to go for new servers. Even so many industry watchers recommend organizations delay upgrading until Service Pack 1 is released. Reportedly that will appear in about six months.

Q & A

Are USB and FireWire the same?

FireWire (IEEE 1394) and USB are similar, yet very different. Both are high speed serial bus standard for computers, primarily intended for external devices. Both allow devices to be connected in series, i.e. daisy chained.

USB appears on virtually all PCs nowadays, so is very common in the Windows world. USB 2.0, the current standard, provides for a maximum data rate of 480 Mbits/second (60 MBytes/s). USB 1.1 devices run at 12 Mbits/s. By comparison modern PC hard drives run at 100 MBytes/s.

USB can in theory handle up to 127 devices, though the total cable length is limited to only 5m (USB 2.0) or 3m (USB 1.1). Up to five hubs can be connected in series, allowing for increased expansion capabilities.

FireWire is actually a trademark of

Apple Computer, Inc., so the Windows world may know these devices better as IEEE 1394 devices. FireWire can be found on higher end video equipment, cameras, and scanners. Though it is not commonly built into PCs, add-on cards are readily available.

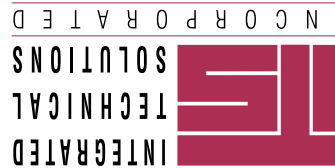
FireWire 400 communicates at 400 Mbits/s (50 MBytes/s), and the new FireWire 800 (IEEE 1394b) runs at twice that speed, approaching hard drive-like performance capabilities. FireWire handles up to 63 devices, though it is limited by a cable length of 4.5m (100m if using optical fiber).

Can I connect Macintosh computers to my Windows network?

Yes. Windows NT Server and Windows 2000 Server include software to allow Macintosh users to connect to shared folders and printers. Also, software is available to allow Macs to connect directly to Windows PCs.

SECOND QUARTER 2003

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