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Exam 70–290: Managing and Maintaining a Microsoft Windows Server 2003 Environment

Abstract

This Exam Preview Guide intends to provide you with information to prepare for the Microsoft 70-290 Exam.

As of the time of this writing, this exam is not formally released for BETA yet. However, it will still be multiple choices based, with certain new graphical and simulation challenges which emphasis more on practical experience than memorization skills.

Before you start

This study guide provides you with information on the many different aspects of the Windows 2003 Server. You should not use this information as your first step into solution consulting, as this exam is targeted towards candidates with real experience and solid background on implementing Windows 2003 based network. If you are a beginner, I recommend that you first study material related to Windows 2000, as they are very similar in many aspects.

Practical experience is VERY IMPORTANT for this exam. Remember, new question types aim at completely eliminate the braindump market. There will be no answer that are absolutely certain – you can say that the answers are quite subjective, but this is how the game works.

What is Windows 2003 Server?

In short, you will see Windows 2000 server appearing with a “look” as fancy as that of Windows XP

Of course, there are the gadgets of .NET architecture too.

"Windows Server 2003 includes all the functionality customers expect from a mission-critical Windows server operating system, such as security, reliability, availability, and scalability. In addition, Microsoft has improved and extended the Windows server operating systems to enable your organization to experience the benefits of Microsoft .NET—software for connecting information, people, systems, and devices".
<http://www.microsoft.com/windowsserver2003/evaluation/overview/family.msp>

What can you do with Windows Server 2003?

Basically you do not expect a lot of whole new concepts or technologies. What can be done with Windows Server 2003 can actually be done with Windows Server 2000. Still, for the purpose of the exam, take a look:

- File and print server.
- Web server and Web application server.
- Mail server.
- Terminal Server.
- Remote access/virtual private network (VPN) server.
- Directory services, Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP) server, and Windows Internet Naming Service (WINS).
- Streaming media server.

What can be tested in the new exam?

Apart from the features of the new OS, you must be very strong in terms of windows network management. All concepts originated from Windows Server 2000 still apply. Therefore, I recommend the following study path:

Know the client side first – you should be good at both W2KPRO and WINXP, cos you will need to support these two major client OS.

Read the tutorial and notes for 210 and 270.

Know the server side – make yourself familiar with W2KServer, and read the tutorial and notes for 215.

Know the infrastructure side and Active Directory inside and out –read the tutorial and notes for 216 and 217.

Know Windows Server 2003. Obtain a 120 day trial RC copy from Microsoft, and apply your knowledge in a practice

70-290

What are the new features (on top of Windows Server 2000) you can expect from Windows Server 2003 which are likely to be tested in the exam?

Whole new interface – remember, the interface is completely different. There are many fancy gadgets in the interface alone.

NEW licensing types. The Windows Server 2003 license gives the holder the right to install and use the server software. The Windows CAL provides the right for a device or user to access the server software. This is known as a two-component license model: it provides a low entry price and a means by which to pay for capacity used: The more devices or users accessing the server software, the greater the license fees or price.

You should also know the difference between a Device CAL and a User CAL. A Device CAL permits one device (used by any user) to access or use the server software. A User CAL permits one user (using any device) to access or use the server software. You may use BOTH CAL on the same server. However, for ease of management and tracking, Microsoft recommends that customers buy CALs on either a device or user basis.

.NET integration. What is .NET? It is a new framework that is infused into the products that make up the Microsoft platform. It provides the ability to quickly and reliably build, host, deploy, and use secure and connected solutions through XML Web services. The Microsoft platform provides a suite of developer tools, client applications, XML Web services, and servers necessary to participate in this connected world.

XML Web Services implemented by IIS 6.0. As described by MS,

"IIS 6.0 is an important component of the Windows Server 2003 family. Administrators and Web application developers demand a fast, reliable Web platform that is both scalable and secure. Significant architectural improvements in IIS include a new process model that greatly improves reliability, scalability, and performance. IIS is installed by default in a locked-down state. Security is increased because the system administrator enables or disables system features based on application requirements. In addition, direct editing support of the XML metabase improves management".

Note that .NET integration relies heavily on IIS's XML web service:

"Microsoft .NET is deeply integrated into the Windows Server 2003 family. It enables an unprecedented level of software integration using XML Web services: discrete, building-block applications that connect to each other—as well as to other, larger applications—via the Internet".

Enterprise UDDI services. As described by MS,

"Windows Server 2003 includes Enterprise UDDI services, a dynamic and flexible infrastructure for XML Web Services. This standards-based solution enables companies to run their own internal UDDI service for intranet or extranet use. Developers can easily and quickly find and re-use the Web services available within the organization. IT administrators can catalog and manage the programmable resources in their network. With Enterprise UDDI services, companies can build and deploy smarter, more reliable applications".

The latest version of Windows Media Services. Streaming media becomes a hot topic, and is increasingly deployed in corporate environment for the purpose of training, demonstration, marketing...etc. As described by MS,

"Windows Server 2003 includes the industry's most powerful digital streaming media services. These services are part of the next version of the Microsoft Windows Media™ technologies platform that also includes a new Windows Media Player, Windows Media Encoder, audio/video codecs, and Windows Media Software Development Kit".

Scalability. Windows Server 2003 scales from single processor solutions all the way up to 32-way systems. It supports both 32-bit and 64-bit processors. INTEL only. Also, keep in mind that the 64-bit versions of Windows Server 2003, Enterprise Edition and Windows Server 2003, Datacenter Edition are only compatible with 64-bit Intel Itanium-based systems, meaning they cannot be successfully installed on 32-bit systems.

Storage Management. In addition to SAN support, two new features are here: VDS and VSCS. According to MS,

"Virtual Disk service (VDS) enables multivendor storage devices to interoperate in Windows. VDS has APIs to storage hardware and to management programs that manage the storage hardware. Administrators can discover multivendor storage devices and configure those resources with a unified interface. Without VDS, each vendor's storage device often had its own management interface, resulting in many management interfaces in a mixed storage environment".

"The Volume Shadow Copy service provides an infrastructure for creating a point-in-time copy of a single volume or multiple volumes. Used for managing data from direct attached storage to SANs, the Volume Shadow Copy service coordinates with business applications, backup applications, and storage hardware to enable application-aware data management. Solutions built on the Volume Shadow Copy service can produce much higher quality shadow copies than other technologies because of the ability to integrate with business applications and coordinate with storage hardware. As a result, high-fidelity backup recovery and data mining are possible without significantly affecting performance. In addition, the shadow copy restore feature enables Windows-based client computers to view and recover previous versions of their files without IT intervention, resulting in greater productivity at lower costs".

"Storage Area Networks are significantly easier to use in Windows Server 2003. Administrators can control the mounting of volumes with the aid of a SAN friendly button, a benefit that protects volumes from unintentional access. Improved handling of fiber channel SANs and improved SAN Host Bus Adapter (HBA) interoperability further eases administration. With vendor support, the ability to boot from SAN is greatly enhanced in Windows Server 2003".

Pay attention to SAN. This is the buzz word nowadays, and you will definitely see some questions about SAN in the exam.

The Windows Server 2003 product family:

Always remember, not all Windows Server 2003 are the same. They come in different editions. Know which edition to use for what purpose, and know their requirements as well as limitations too.

The focus of the exam will be more on the fundamentals, rather than edition specific.

Product	Description
Windows Server 2003, Standard Edition	<ul style="list-style-type: none">Supports file and printer sharing.Offers secure Internet connectivity.Allows centralized desktop application deployment.
Windows Server 2003, Enterprise Edition	<ul style="list-style-type: none">Is a full-function server operating system that supports up to eight processors.Provides enterprise-class features such as eight-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	<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 eight-node clustering and load balancing services as standard features.Will be available for 64-bit computing platforms capable of supporting 64 processors and 512 GB of RAM.
Windows Server 2003, Web Edition	<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.

The minimum requirements to run Windows Server 2003 are listed as below:

Information based on MS announced information for RC2. Always expect for more...				
Requirement	Standard Edition	Enterprise Edition	Datacenter Edition	Web Edition
Minimum CPU Speed	133 MHz	33 MHz for x86-based computers OR 33 MHz for Itanium-based computers	300 MHz for x86-based computers OR 33 MHz for Itanium-based computers	133 MHz
Recommended CPU Speed	550 MHz	733 MHz	733 MHz	550 MHz
Minimum RAM	128 MB	128 MB	512 MB	128 MB
Recommended Minimum RAM	256 MB	256 MB	1 GB	256 MB
Maximum RAM	4 GB	2 GB for x86-based computers OR 4 GB for Itanium-based computers	4 GB for x86-based computers OR 12 GB for Itanium-based computers	2 GB
Multi-Processor Support **	Up to 4	Up to 8	Minimum 8 required Maximum 64	Up to 2
Disk Space for Setup	1.5 GB	1.5 GB for x86-based computers OR 2.0 GB for Itanium-based computers	1.5 GB for x86-based computers OR 2.0 GB for Itanium-based computers	1.5 GB

On the software side, when you plan to upgrade to Windows Server 2003, you must first check the application compatibility. MS provides you with the Application Compatibility Toolkit, which contains several tools that will make this process easier to manage. More information about this toolkit is available here:

<http://www.microsoft.com/windowsserver2003/compatible/appcompat.mspx>

How to obtain an RC of Windows Server 2003?

Visit this link, and join the customer preview program for free, then download the entire Windows Server 2003 (do it fast! We don't know when the preview program will end):

<http://www.microsoft.com/windowsserver2003/preview/obtaining.msp>

The screenshot shows the Microsoft Windows Server 2003 website. The main heading is "Sign Up for Windows Server 2003 Release Candidate 2 (RC2)". The page is divided into several sections:

- Whether you're new to the Customer Preview Program (CPP) or have already joined...** This section explains the benefits of joining the CPP and provides instructions on how to sign up.
- Are You New to the CPP?** This section provides information for new users, including how to register to download individual products or obtain the Windows Server 2003, Enterprise Edition RC2 CD as part of the updated CPP kit.
- Are You Already a CPP Member and Want to Upgrade to RC2?** This section provides information for existing members, including how to upgrade to RC2 and the benefits of doing so.
- Note to users running Windows Server 2003 Release Candidate 1 (RC1):** This section provides information about a potential vulnerability to the "Slammer" worm and the steps to take to protect the system.
- The CPP Kit:** This section lists the items included in the CPP RC2 kit, including the Windows Server 2003, Enterprise Edition, RC2 CD; the Windows Server 2003, Enterprise Edition for 64-bit Itanium-based Systems, RC1 CD*; the Windows Server 2003 Resource Kit; a Unique Product Key (required for installation); links to additional Web-based documentation; and credentials enabling access to a community of private Windows Server 2003 newsgroups.

The right-hand sidebar contains several sections of links, including "Download the Kit", "Registration", "Customer to Evaluate the Windows Server 2003 RC2 CD Kit", "Documentation", and "Release Links".

Recommend readings:

Microsoft Windows Server 2003 TCP/IP Protocols and Services Technical Reference

by Joseph Davies, Thomas Lee

Introducing Microsoft Windows Server 2003

by Jerry, Jr. Honeycutt

Windows .NET Server 2003 Domains & Active Directory

by Tchekmarev Aleksey

Inside Windows Server 2003

by William Boswell

