

Introduction

Welcome to *MCSA/MCSE Managing and Maintaining a Microsoft Windows Server 2003 Environment Exam Cram*! Whether this book is your first or your fifteenth *Exam Cram* series book, you'll find information here that will help ensure your success as you pursue knowledge, experience, and certification. This book aims to help you get ready to take—and pass—the Microsoft certification exam “Managing and Maintaining a Microsoft Windows Server 2003 Environment” (Exam 70-290). This introduction, along with Chapter 1, explains Microsoft's certification programs in general and talks about how the *Exam Cram* series can help you prepare for Microsoft's latest MCSE and MCSA certification exams. Chapters 2 through 9 are designed to remind you of everything you'll need to know to pass the 70-290 certification exam. The two sample tests at the end of the book should give you a reasonably accurate assessment of your knowledge—and, yes, we've provided the answers and their explanations for these sample tests. Read the book, understand the material, and you'll stand a very good chance of passing the real test.

Exam Cram books help you understand and appreciate the subjects and materials you need to know to pass Microsoft certification exams. *Exam Cram* books are aimed strictly at test preparation and review. They do not teach you everything you need to know about a subject. Instead, the author streamlines and highlights the pertinent information by presenting and dissecting the questions and problems he's discovered that you're likely to encounter on a Microsoft test.

Nevertheless, to completely prepare yourself for any Microsoft test, we recommend that you begin by taking the self assessment that is included in this book, immediately following this introduction. The self-assessment tool will help you evaluate your knowledge base against the requirements for becoming a Microsoft Certified Systems Administrator (MCSA) and a Microsoft Certified Systems Engineer (MCSE) for Windows Server 2003 under both ideal and real circumstances.

Based on what you learn from the self assessment, you might decide to begin your studies with some classroom training or some background reading. On the other hand, you might decide to pick up and read one of the many study guides available from Microsoft or third-party vendors. We also recommend that you supplement your study program with visits to <http://www.examcram.com> to receive additional practice questions, get advice, and track the Windows Server 2003 MCSA and MCSE programs.

This book also offers you an added bonus of accessing Exam Cram practice tests online. All you need is a connection to the Internet and you can take advantage of these practice exam questions right from your very own web browser! This software simulates the Microsoft testing environment with similar types of questions that you're likely to see on the actual Microsoft exam. We also strongly recommend that you install, configure, and play around with the network operating system software that you'll be tested on: Nothing beats hands-on experience and familiarity when it comes to understanding the questions you're likely to encounter on a certification test. Book learning is essential, but without a doubt, hands-on experience is the best teacher of all!

The Microsoft Certification Program

Microsoft currently offers several certification titles, each of which boasts its own special abbreviation. (As a certification candidate and computer professional, you need to have a high tolerance for acronyms.) Except for the Microsoft Certified Trainer (MCT) and the Microsoft Certified Learning Consultant (MCLC) designations, the current certification credentials that Microsoft offers fall into one of two major categories—*Microsoft Certifications for Application Developers* and *Microsoft Certifications for Information Technology (IT) Professionals*.

NOTE

The MCT credential is offered to qualified instructors whom Microsoft can certify to deliver training classes to *both* IT professionals *and* application developers using Microsoft Official Curriculum (MOC) courseware. MCTs whose job roles have expanded to incorporate a high level of expertise in designing and delivering customized learning solutions for customers can earn the MCLC title.

The Microsoft Certified Professional (MCP) Title

The easiest certification title to earn is the MCP designation. This entry-level certification is designed to provide an individual with the first step on the road to higher levels of Microsoft certification. An MCP candidate needs to pass only one *current* Microsoft certification exam from any current Microsoft certification track. You become an MCP after successfully *passing at least one qualifying exam*—qualifying MCP exams include tests from *both* the application developer certification category *and* from the IT professional certification category.

However, *not all Microsoft exams qualify an individual for MCP status*—for example, passing Exam 70-122, “Designing and Providing Microsoft Volume License

Solutions to Large Organizations,” does not certify an individual as a Microsoft Certified Professional (MCP). The list of qualifying certification tracks from which a candidate must successfully pass an exam to achieve MCP status are as follows:

- ▶ MCDST on Windows XP
- ▶ MCSA on Windows 2000
- ▶ MCSA: Security on Windows 2000
- ▶ MCSA on Windows Server 2003
- ▶ MCSE on Windows 2000
- ▶ MCSE: Security on Windows 2000
- ▶ MCSE on Windows Server 2003
- ▶ MCDBA on Microsoft SQL Server 2000
- ▶ MCAD on Microsoft .NET
- ▶ MCSD on Microsoft .NET
- ▶ MCSD on Microsoft Visual Studio 6.0

Microsoft Certifications for Application Developers

The Microsoft certifications for application developers are divided into three basic skill sets—*New Developers*, *Experienced Developers*, and *.NET Development*. The following certification credentials are available to professional application developers:

- ▶ *MCTS (Microsoft Certified Technology Specialist)*—These certification titles reflect a technology professional’s in-depth knowledge and expertise in specialized areas of Microsoft technology. An individual receives the designation of MCTS by demonstrating a consistent ability to build, implement, troubleshoot, and debug a specific Microsoft technology by successfully passing the corresponding certification exam. The MCTS certifications include the following areas of specialization:
 - ▶ Technology Specialist: .NET Framework 2.0 Web Applications
 - ▶ Technology Specialist: .NET Framework 2.0 Windows Applications
 - ▶ Technology Specialist: .NET Framework 2.0 Distributed Applications

- ▶ Technology Specialist: SQL Server 2005
- ▶ Technology Specialist: BizTalk Server 2006
- ▶ *MCSD (Microsoft Certified Solution Developer)*—The MCSD for Microsoft .NET credential reflects the skills required to create multitier, distributed, and Component Object Model (COM)-based solutions, in addition to desktop and Internet applications, using new technologies. To obtain MCSD certification, an individual must demonstrate the ability to analyze and interpret user requirements; select and integrate products, platforms, tools, and technologies; design and implement code; customize applications; and perform necessary software tests and quality assurance operations. To obtain the MCSD for Microsoft .NET credential, an individual must pass a total of five exams: four core exams and one elective exam.
- ▶ *MCAD (Microsoft Certified Application Developer) for Microsoft .NET*—The MCAD credential provides industry recognition for professional developers who build powerful applications using Microsoft Visual Studio .NET and Web services. MCAD candidates are required to pass two core exams and one elective exam in an area of specialization.
- ▶ *MCPD (Microsoft Certified Professional Developer)*—The MCPD title does not just share its name with the “Microsoft Campus Police Department.” No, not at all. The MCPD credential stands out as the current premier certification for programmers developing applications using Microsoft technology. Individuals who attain the MCPD credential distinguish themselves as experts for building Windows applications, web applications, or enterprise-level applications using the Microsoft .NET Framework 2.0. The MCPD certifications include the following areas of specialization:
 - ▶ Professional Developer: Web Developer
 - ▶ Professional Developer: Windows Developer
 - ▶ Professional Developer: Enterprise Applications Developer
- ▶ *MCAP (Microsoft Certified Architect Program)*—The Microsoft Certified Architect Program aims to identify and recognize the top experts in the industry who possess the vision and talent to successfully design *both* application-based solutions and infrastructure-based frameworks *and* methodologies across the entire IT life cycle. Microsoft Certified Architects can integrate multiple technologies to solve business problems while providing the necessary metrics and measurements to define the success or failure of each project.

Microsoft Certifications for IT Professionals

The Microsoft certifications for IT professionals provide a series of credentials for individuals to demonstrate their levels of knowledge and proficiency for using Microsoft technology in the realm of computer systems, networking infrastructure, and database infrastructure. The following Microsoft certification titles are available to IT professionals:

- ▶ *MCITP (Microsoft Certified IT Professional)*—The MCITP credentials offer technology professionals the opportunity to highlight their particular skills in a specific area of expertise. The MCITP certification titles include such specialized expertise as a database developer, a database administrator, and a business intelligence developer. The current IT Professional certifications include the following designations:
 - ▶ IT Professional: Database Developer
 - ▶ IT Professional: Database Administrator
 - ▶ IT Professional: Business Intelligence Developer
- ▶ *MCSA (Microsoft Certified Systems Administrator)*—This certification is for anyone who possesses a high level of networking expertise with Microsoft operating systems and software products. This credential is designed to prepare individuals to manage, maintain, and support information systems, networks, and internetworks built around the Microsoft Windows Server System and Windows XP and Windows 2000 desktop computers. MCSA candidates must pass four exams to become certified. Microsoft currently offers two tracks for the MCSA credential—MCSA on Windows 2000 and MCSA on Windows Server 2003. The exam requirements for attaining each MCSA credential are detailed in Tables I.1 and I.2.

TIP

MCSA on Windows 2000 Specializations—After a candidate successfully passes the three required core exams, he has the options to specialize in the areas of Messaging and/or Security. A candidate earns the specialization title of *MCSA on Windows 2000: Messaging* by passing *one* of the following elective exams as listed in Table I.1—Exam 70-224 covering Exchange 2000 Server or Exam 70-284 covering Exchange Server 2003.

A candidate earns the specialization title of *MCSA on Windows 2000: Security* by passing *two* of the following elective exams also listed in Table I.1—Exam 70-214 covering security in a Windows 2000 network *plus* one of the following three exams:

- ▶ Exam 70-227 covering ISA Server 2000
- ▶ Exam 70-350 covering ISA Server 2004
- ▶ Exam SYO-101: CompTIA Security+

NOTE

Required core exams that are also available as elective exams can only be counted once toward a candidate's certification. An exam may count as fulfilling a core requirement *or* it may count as an elective, but the same exam cannot count as both a core exam and as an elective exam.

NOTE

Once you become an MCSA on Windows Server 2003, you can upgrade your status to the MCSE on Windows Server 2003 credential by passing the remaining exams required for MCSEs. You may take either a Windows Server 2003 networking design exam *or* a Windows 2000 networking design exam to satisfy the MCSE on Windows Server 2003 design skills requirement.

TABLE I.1 MCSA on Windows 2000 Exam Requirements

Exam Number	Exam Title
Client Operating System Exams	
<i>Candidates Must Pass One of the Following Exams</i>	
70-210	Installing, Configuring, and Administering Microsoft Windows 2000 Professional
OR	
70-270	Installing, Configuring, and Administering Microsoft Windows XP Professional
Networking System Exams	
<i>Candidates Must Pass Two of the Following Exams</i>	
70-215	Installing, Configuring, and Administering Microsoft Windows 2000 Server
70-218	Managing a Microsoft Windows 2000 Network Environment
Elective Exams	
<i>Candidates Must Pass One of the Following Elective Exams (or candidates must pass one or two of the qualifying equivalent alternative exams)</i>	
70-028	Administering Microsoft SQL Server 7.0
70-081	Implementing and Supporting Microsoft Exchange Server 5.5
70-089	Designing, Implementing, and Managing a Microsoft Systems Management Server 2003 Infrastructure
70-214	Implementing and Administering Security in a Microsoft Windows 2000 Network
70-216	Implementing and Administering a Microsoft Windows 2000 Network Infrastructure

TABLE I.1 *Continued*

Exam Number	Exam Title
Candidates Must Pass One of the Following Elective Exams (or candidates must pass one or two of the qualifying equivalent alternative exams)	
70-224	Installing, Configuring, and Administering Microsoft Exchange 2000 Server
70-227	Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000, Enterprise Edition
70-228	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-244	Supporting and Maintaining a Microsoft Windows NT Server 4.0 Network
70-284	Implementing and Managing Microsoft Exchange Server 2003
70-350	Implementing Microsoft Internet Security and Acceleration (ISA) Server 2004
Qualifying Alternative Exams and Certifications	
CompTIA	Security+
CompTIA A+ and CompTIA Network+	Passing both of these alternative exams qualifies as having passed one Microsoft elective exam.
CompTIA A+ and CompTIA Server+	Passing both of these alternative exams qualifies as having passed one Microsoft elective exam.
70-271 and 70-272	Passing both of these exams earns the Microsoft Certified Desktop Support Technician (MCDST) credential and qualifies as having passed one alternative elective exam. <i>Exam 70-271: Supporting Users and Troubleshooting a Microsoft Windows XP Operating System. 70-272: Supporting Users and Troubleshooting Desktop Applications on a Microsoft Windows XP Operating System.</i>

TIP

MCSA on Windows Server 2003 Specializations—After a candidate successfully passes the three required core exams, he has the options to specialize in the areas of messaging and/or security. A candidate earns the specialization title of *MCSA on Windows Server 2003: Messaging* by passing the following elective exam as listed in Table I.2—Exam 70-284 covering Exchange Server 2003.

A candidate earns the specialization title of *MCSA on Windows Server 2003: Security* by passing *two* of the following elective exam choices, which are also listed in Table I.2:

- ▶ Exam 70-227 covering ISA Server 2000 **or** Exam SYO-101: CompTIA Security+
- ▶ Exam 70-350 covering ISA Server 2004
- ▶ Exam 70-299 covering security in a Windows Server 2003 Network

Table I.2 MCSA on Windows Server 2003 Exam Requirements

Exam Number	Exam Title
Client Operating System Exams	
<i>Candidates Must Pass One of the Following Exams</i>	
70-210	Installing, Configuring, and Administering Microsoft Windows 2000 Professional
OR	
70-270	Installing, Configuring, and Administering Microsoft Windows XP Professional
Networking System Exams	
<i>Candidates Must Pass Each of the Following Two Exams</i>	
70-290	Managing and Maintaining a Microsoft Windows Server 2003 Environment
70-291	Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
Elective Exams	
<i>Candidates Must Pass One of the Following Elective Exams (or candidates must pass one or two of the qualifying equivalent alternative exams)</i>	
70-086	Implementing and Supporting Microsoft Systems Management Server 2.0
70-089	Designing, Implementing, and Managing a Microsoft Systems Management Server 2003 Infrastructure
70-227	Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000, Enterprise Edition
70-228	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-284	Implementing and Managing Microsoft Exchange Server 2003
70-299	Implementing and Administering Security in a Microsoft Windows Server 2003 Network
70-350	Implementing Microsoft Internet Security and Acceleration (ISA) Server 2004
Qualifying Alternative Exams and Certifications	
CompTIA	Security+ (<i>satisfies both the MCSA on Windows Server 2003 elective requirement and the MCSA on Windows Server 2003:Security specialization requirement</i>)
CompTIA A+ and CompTIA Network+	Passing both of these exams qualifies as having passed one Microsoft elective exam.
CompTIA A+ and CompTIA Server+	Passing both of these exams qualifies as having passed one Microsoft elective exam.

TABLE I.2 *Continued*

Exam Number	Exam Title
Qualifying Alternative Exams and Certifications	
70-271 and 70-272	Passing both of these exams earns the Microsoft Certified Desktop Support Technician (MCDST) credential and qualifies as having passed one alternative elective exam. (<i>Exam 70-271: Supporting Users and Troubleshooting a Microsoft Windows XP Operating System</i> and <i>Exam 70-272: Supporting Users and Troubleshooting Desktop Applications on a Microsoft Windows XP Operating System.</i>)
MCSA on Windows 2000	An individual who holds this certification qualifies as having passed one Microsoft elective exam.
MCSE on Windows 2000	An individual who holds this certification qualifies as having passed one Microsoft elective exam.
MCSE on Windows NT 4.0	An individual who holds this certification qualifies as having passed one Microsoft elective exam.

TIP

If you are already certified as an MCSA on Windows 2000, you can expedite the certification process for becoming an MCSA on Windows Server 2003. Just pass the single upgrade test—Exam 70-292, “Managing and Maintaining a Microsoft Windows Server 2003 Environment for an MCSA Certified on Windows 2000.” Once you’ve passed this one upgrade exam, you’re certified as an MCSA on Windows Server 2003.

- *MCSE (Microsoft Certified Systems Engineer)*—Anyone who has a current MCSE is recognized as possessing a high level of networking expertise with Microsoft operating systems and networking solutions. This credential is designed to recognize individuals who have the skills to plan, design, implement, maintain, and support information systems, networks, and internetworks built around Microsoft Windows Server 2003, Windows XP, Windows 2000, Windows NT 4.0, Windows 9x, and the Windows Server System family of products. The road to becoming an MCSE can start by attaining MCSA credential. MCSE candidates must pass seven exams to become certified. Microsoft currently offers two tracks for the MCSE credential—MCSE on Windows 2000 and MCSE on Windows Server 2003.

MCSE candidates who are not already certified as MCSEs or MCSAs on Windows 2000 must pass seven tests to meet the MCSE requirements. It’s not uncommon for the entire process to take a year or so, and many individuals find that they must take a test more than once to pass. The primary goal of the *Exam Cram* test preparation guides is to make it possible, given proper study and preparation, to pass all Microsoft certification tests on the first try. The exam requirements for attaining each MCSE status are detailed in Tables I.3 and I.4.

TIP

MCSE on Windows 2000 Specializations—After a candidate successfully passes the five required core exams, he has the options of specializing in the areas of messaging and/or security. A candidate earns the specialization title of *MCSE on Windows 2000: Messaging* by passing *two* of the following elective exams as listed in Table I.3—Exam 70-224 and Exam 70-225 on Exchange 2000 Server **or** Exam 70-284 and Exam 70-285 on Exchange Server 2003.

A candidate earns the specialization title of *MCSE on Windows 2000: Security* by passing *three* of the following elective exams also listed in Table I.3—Exam 70-220 covering security design for a Windows 2000 network, Exam 70-214 on security administration for a Windows 2000 network, *plus one* of following exams:

- ▶ Exam 70-227 covering ISA Server 2000
- ▶ Exam 70-350 covering ISA Server 2004
- ▶ Exam SYO-101: CompTIA Security+

TABLE I.3 MCSE on Windows 2000 Exam Requirements

Exam Number	Exam Title
Client Operating System Exams	
Candidates Must Pass One of the Following Two Exams	
70-210	Installing, Configuring, and Administering Microsoft Windows 2000 Professional
	OR
70-270	Installing, Configuring, and Administering Microsoft Windows XP Professional
Networking System Exams	
Candidates Must Pass Each of the Following Three Exams	
70-215	Installing, Configuring, and Administering Microsoft Windows 2000 Server
70-216	Implementing and Administering a Microsoft Windows 2000 Network Infrastructure
70-217	Implementing and Administering a Microsoft Windows 2000 Directory Services Infrastructure
Networking Design Exams	
Candidates Must Pass One of the Following Exams	
70-219	Designing a Microsoft Windows 2000 Directory Services Infrastructure
70-220	Designing Security for a Microsoft Windows 2000 Network
70-221	Designing a Microsoft Windows 2000 Network Infrastructure
70-226	Designing Highly Available Web Solutions with Microsoft Windows 2000 Server Technologies
70-297	Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
70-298	Designing Security for a Microsoft Windows Server 2003 Network

TABLE I.3 *Continued*

Exam Number	Exam Title
Elective Exams	
<i>Candidates Must Pass Two of the Following Elective Exams (candidates may also choose from the qualifying equivalent alternative exam listed)</i>	
70-219	Designing and Implementing Data Warehouses with Microsoft SQL Server 7.0
70-028	Administering Microsoft SQL Server 7.0
70-029	Designing and Implementing Databases with Microsoft SQL Server 7.0
70-086	Implementing and Supporting Microsoft Systems Management Server 2.0
70-214	Implementing and Administering Security in a Microsoft Windows 2000 Network
70-218	Managing a Microsoft Windows 2000 Network Environment
70-219	Designing a Microsoft Windows 2000 Directory Services Infrastructure
70-220	Designing Security for a Microsoft Windows 2000 Network
70-221	Designing a Microsoft Windows 2000 Network Infrastructure
70-222	Migrating from Microsoft Windows NT 4.0 to Microsoft Windows 2000
70-223	Installing, Configuring, and Administering Microsoft Clustering Services by Using Microsoft Windows 2000 Advanced Server
70-224	Installing, Configuring, and Administering Microsoft Exchange 2000 Server
70-225	Designing and Deploying a Messaging Infrastructure with Microsoft Exchange 2000 Server
70-226	Designing Highly Available Web Solutions with Microsoft Windows 2000 Server Technologies
70-227	Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000 Enterprise Edition
70-228	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-229	Designing and Implementing Databases with Microsoft SQL Server 2000 Enterprise Edition
70-230	Designing and Implementing Solutions with Microsoft BizTalk Server 2000 Enterprise Edition
70-232	Implementing and Maintaining Highly Available Web Solutions with Microsoft Windows 2000 Server Technologies and Microsoft Application Center 2000
70-234	Designing and Implementing Solutions with Microsoft Commerce Server 2000
70-244	Supporting and Maintaining a Microsoft Windows NT Server 4.0 Network
70-284	Implementing and Managing Microsoft Exchange Server 2003
Qualifying Third-Party Alternative Exams	
CompTIA	Security+

TIP

If you are already certified as an MCSE on Windows NT 4.0, you do not need to pass an elective exam to attain the MCSE on Windows Server 2003 credential. You need to pass only six exams, instead of seven. The core exam requirements are the same for MCSEs on Windows NT 4.0 who want to become certified as MCSEs on Windows Server 2003 as for other candidates; the MCSE on Windows NT 4.0 credential qualifies as an elective exam.

TABLE I.4 MCSE on Windows Server 2003 Exam Requirements

Exam Number	Exam Title
Client Operating System Exams	
<i>Candidates Must Pass One of the Following Two Exams</i>	
70-210	Installing, Configuring, and Administering Microsoft Windows 2000 Professional
OR	
70-270	Installing, Configuring, and Administering Microsoft Windows XP Professional
Networking System Exams	
<i>Candidates Must Pass Each of the Following Four Exams</i>	
70-290	Managing and Maintaining a Microsoft Windows Server 2003 Environment
70-291	Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
70-293	Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
70-294	Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure
Networking Design Exams	
<i>Candidates Must Pass One of the Following Exams</i>	
70-297	Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
70-298	Designing Security for a Microsoft Windows Server 2003 Network
Elective Exams	
<i>Candidates Must Pass One of the Following Elective Exams (or one of the qualifying alternative exams)</i>	
70-086	Implementing and Supporting Microsoft Systems Management Server 2.0
70-089	Designing, Implementing, and Managing a Microsoft Systems Management Server 2003 Infrastructure

TABLE I.4 *Continued*

Exam Number	Exam Title
<i>Candidates Must Pass One of the Following Elective Exams (or one of the qualifying alternative exams)</i>	
70-227	Installing, Configuring, and Administering Microsoft Internet Security and Acceleration (ISA) Server 2000, Enterprise Edition
70-228	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-229	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-232	Implementing and Maintaining Highly Available Web Solutions with Microsoft Windows 2000 Server Technologies and Microsoft Application Center 2000
70-281	Planning, Deploying, and Managing an Enterprise Project Management Solution
70-282	Designing, Deploying, and Managing a Network Solution for Small- and Medium-Sized Businesses
70-284	Implementing and Managing Microsoft Exchange Server 2003
70-285	Designing a Microsoft Exchange Server 2003 Organization
70-297	Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
70-298	Designing Security for a Microsoft Windows Server 2003 Network
70-299	Implementing and Administering Security in a Microsoft Windows Server 2003 Network
70-301	Managing, Organizing, and Delivering IT Projects by Using Microsoft Solutions Framework 3.0
70-350	Implementing Microsoft Internet Security and Acceleration (ISA) Server 2004
Qualifying Third-Party Alternative Exams	
CompTIA	Security+ (<i>satisfies both the MCSE on Windows Server 2003 elective requirement and the MCSE on Windows Server 2003:Security specialization requirement</i>)
Unisys	Implementing and Supporting Microsoft Windows Server 2003 Solutions in the Data Center
UNO-101	

TIP

If you are already certified as an MCSE on Windows 2000, you can expedite the certification process for becoming an MCSE on Windows Server 2003. Just pass two exams—70-292, “Managing and Maintaining a Microsoft Windows Server 2003 Environment for an MCSA Certified on Windows 2000,” and 70-296, “Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Environment for an MCSE Certified on Windows 2000.” Once you’ve passed these two upgrade exams, you’re certified as an MCSE on Windows Server 2003.

TIP

MCSE on Windows Server 2003 Specializations—After a candidate successfully passes the six required core exams, he has the options of specializing in the areas of messaging and/or security. A candidate earns the specialization title of *MCSE on Windows Server 2003: Messaging* by passing *each* of the following *two* elective exams as listed in Table I.4—Exam 70-284 **and** Exam 70-285 covering Exchange Server 2003.

A candidate earns the specialization title of *MCSE on Windows Server 2003: Security* by passing *three* of the following elective exams also listed in Table I.4—Exam 70-298 covering security design for a Windows Server 2003 network, Exam 70-299 on security administration for a Windows Server 2003 network, *plus one* of following exams:

- ▶ Exam 70-227 covering ISA Server 2000
- ▶ Exam 70-350 covering ISA Server 2004
- ▶ Exam SYO-101: CompTIA Security+

- ▶ *MCDBA (Microsoft Certified Database Administrator)*—The MCDBA on Microsoft SQL Server 2000 credential reflects the skills required to implement and administer Microsoft SQL Server databases. To obtain MCDBA certification, an individual must demonstrate the ability to derive physical database designs, develop logical data models, create physical databases, create data services by using Transact-SQL, manage and maintain databases, configure and manage security, monitor and optimize databases, and install and configure Microsoft SQL Server. To become an MCDBA on Microsoft SQL Server 2000, an individual must pass a total of three core exams and one elective exam. Table I.5 outlines the exam requirements for becoming an MCDBA.

NOTE

MCDBA candidates who work with Microsoft SQL Server 2005 might want to become certified as Microsoft Certified Technology Specialists (MCTS) or as Microsoft Certified IT Professionals (MCITP). These newer, more targeted certifications are designed for technology professionals who specialize in managing, developing, programming, and/or analyzing SQL Server 2005 database solutions.

TABLE I.5 MCDBA on Microsoft SQL Server 2000 Exam Requirements

Exam Number	Exam Title
Core Exams: SQL Server Administration	
<i>Candidates Must Pass One of the Following Two Exams</i>	
70-228	Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition
70-028*	Administering Microsoft SQL Server 7.0 (<i>*this exam has been retired</i>)
Core Exams: SQL Server Design	
<i>Candidates Must Pass One of the Following Two Exams</i>	
70-229	Designing and Implementing Databases with Microsoft SQL Server 2000 Enterprise Edition
70-029*	Designing and Implementing Databases with Microsoft SQL Server 7.0 (<i>*this exam has been retired</i>)
Core Exams: Networking Systems	
<i>Candidates Must Pass One of the Following Three Exams</i>	
70-290	Managing and Maintaining a Microsoft Windows Server 2003 Environment
70-291	Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
70-215	Installing, Configuring, and Administering Microsoft Windows 2000 Server
Elective Exams	
<i>Candidates Must Pass One of the Following Elective Exams</i>	
70-216	Implementing and Administering a Microsoft Windows 2000 Network Infrastructure
70-293	Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
70-305	Developing and Implementing Web Applications with Microsoft Visual Basic .NET and Microsoft Visual Studio .NET
70-306	Developing and Implementing Windows-Based Applications with Microsoft Visual Basic .NET and Microsoft Visual Studio .NET
70-310	Developing XML Web Services and Server Components with Microsoft Visual Basic .NET and the Microsoft .NET Framework
70-315	Developing and Implementing Web Applications with Microsoft Visual C# .NET and Microsoft Visual Studio .NET
70-316	Developing and Implementing Windows-Based Applications with Microsoft Visual C# .NET and Microsoft Visual Studio .NET
70-320	Developing XML Web Services and Server Components with Microsoft Visual C# and the Microsoft .NET Framework

TABLE I.5 *Continued*

Exam Number	Exam Title
Elective Exams	
Candidates Must Pass One of the Following Elective Exams	
70-528 ^{1,2}	TS: Microsoft .NET Framework 2.0—Web-based Client Development
70-526 ^{2,3}	TS: Microsoft .NET Framework 2.0—Windows-based Client Development
70-529 ⁴	TS: Microsoft .NET Framework 2.0—Distributed Application Development

¹ Note: Candidates who have obtained Microsoft Certified Application Developer (MCAD) certification may substitute Exam 70-551: “Upgrade: MCAD Skills to MCPD Web Developer by Using the Microsoft .NET Framework” for Exam 70-528: “TS: Microsoft .NET Framework 2.0—Web-based Client Development.”

² Note: Candidates who have obtained Microsoft Certified Solutions Developer (MCSD) certification may substitute Exam 70-553: “Upgrade: MCSD Microsoft .NET Skills to MCPD Enterprise Application Developer by using the Microsoft .NET Framework: Part 1” for either of the following exams:

- ▶ Exam 70-526: TS: Microsoft .NET Framework 2.0—Windows-based Client Development
- ▶ Exam 70-528: TS: Microsoft .NET Framework 2.0—Web-based Client Development

³ Note: Candidates who have obtained Microsoft Certified Application Developer (MCAD) certification may substitute Exam 70-552: “Upgrade: MCAD Skills to MCPD Windows Developer by Using the Microsoft .NET Framework” for Exam 70-526: “TS: Microsoft .NET Framework 2.0—Windows-based Client Development.”

⁴ Note: Candidates who have obtained Microsoft Certified Solutions Developer (MCSD) certification may substitute Exam 70-554: “Upgrade: MCSD Microsoft .NET Skills to MCPD Enterprise Application Developer by Using the Microsoft .NET Framework: Part 2” for Exam 70-529: “TS: Microsoft .NET Framework 2.0— Distributed Application Development.”

- ▶ *MCAP (Microsoft Certified Architect Program)*—The Microsoft Certified Architect Program aims to identify and recognize the top experts in the industry who possess the vision and talent to successfully design *both* application-based solutions *and* infrastructure-based frameworks and methodologies across the entire IT life cycle. Microsoft Certified Architects can integrate multiple technologies to solve business problems while providing the necessary metrics and measurements to define the success or failure of each project.

After a Microsoft product becomes obsolete, MCPs typically have to recertify on current versions. (If individuals do not recertify, their certifications become invalid.) Because technology keeps changing and new products continually supplant old ones, this requirement should come as no surprise. It also explains why Microsoft announced that MCSEs had 12 months past the scheduled retirement date for the Windows NT 4 exams to recertify on Windows 2000 topics.

The best place to keep tabs on the MCP program and its related certifications is on the Web. Currently, the URL for the MCP program is <http://www.microsoft.com/learning/default.aspx>. But Microsoft’s website

changes often, so if this URL doesn't work, you should use the Search tool on Microsoft's site and type in either MCP or the quoted phrase "Microsoft Certified Professional" as a search string. This search will help you find the latest and most accurate information about Microsoft's certification programs. If you are already an MCP, you have earned access to the MCP Secured Site, which is open only to skilled technology pros who have passed at least one Microsoft certification exam. MCPs can log on to the MCP Secured Site by visiting <http://www.microsoft.com/learning/mcp/mcpmembersite.asp>. You must use a .NET Passport account to log on to the MCP Secured Site.

Taking a Certification Exam

After you prepare for your exam, you need to register with a testing center. Each computer-based MCP exam costs (U.S.) \$125, and if you don't pass, you can take each again for an additional (U.S.) \$125 for each attempt. In the United States and Canada, tests are administered by Pearson VUE and by Prometric. Here's how you can contact them:

- ▶ *Pearson VUE*—You can sign up for a test by calling 800-837-8734 or via the website at <http://www.vue.com/ms>.
- ▶ *Prometric*—You can sign up for a test through the company's websites, <http://www.2test.com> or <http://www.prometric.com>. Within the United States and Canada, you can register by phone at 800-755-3926. If you live outside this region, you should check the Prometric website for the appropriate phone number.

To sign up for a test, you must possess a valid credit card or contact either Pearson VUE or Prometric for mailing instructions to send a check (in the United States). Only when payment is verified, or a check has cleared, can you actually register for a test.

To schedule an exam, you need to call the appropriate phone number or visit one of the Pearson VUE or Prometric websites at least one day in advance. To cancel or reschedule an exam in the United States or Canada, you must call before 3 p.m. Eastern time the day before the scheduled test time (or you might be charged, even if you don't show up to take the test). When you want to schedule a test, you should have the following information ready:

- ▶ Your name, organization, and mailing address.
- ▶ Your Microsoft test ID. (In the United States, this means your Social Security number; citizens of other countries should call ahead to find out what type of identification number is required to register for a test.)

- ▶ The name and number of the exam you want to take.
- ▶ A method of payment. (As mentioned previously, a credit card is the most convenient method, but alternate means can be arranged in advance, if necessary.)

After you sign up for a test, you are told when and where the test is scheduled. You should arrive at least 15 minutes early. You must supply two forms of identification—one of which must be a photo ID—to be admitted into the testing room.

All exams are completely closed book. In fact, you are not permitted to take anything with you into the testing area, but you receive a blank sheet of paper and a pen or, in some cases, an erasable plastic sheet and an erasable pen. We suggest that you immediately write down on that sheet of paper all the information you've memorized for the test. In *Exam Cram* books, this information appears on the tear-out sheet (Cram Sheet) inside the front cover of each book. You are given some time to compose yourself, record this information, and take a sample orientation exam before you begin the real thing. We suggest that you take the orientation test before taking your first exam, but because all the certification exams are more or less identical in layout, behavior, and controls, you probably don't need to do so more than once.

When you complete a Microsoft certification exam, the software tells you whether you've passed or failed. If you need to retake an exam, you have to schedule a new test with Pearson VUE or Prometric and pay another (U.S.) \$125.

EXAM ALERT

The first time you fail a test, you can retake the test the next day. However, if you fail a second time, you must wait 14 days before retaking that test. The 14-day waiting period remains in effect for all retakes after the second failure. Once you pass an exam, you may not take that exam again. Registration for prerelease (beta) exams is by invitation only, and these exams may be taken only once.

Tracking MCP Status

As soon as you pass a qualified MCP Microsoft exam, you attain MCP status. Microsoft generates transcripts that indicate which exams you have passed. You can view a copy of your transcript at any time by going to the MCP secured site and selecting the Transcript tool. This tool enables you to print a copy of your current transcript and confirm your certification status.

After you pass the necessary set of exams, you are certified. Official certification is normally granted after six to eight weeks, so you shouldn't expect to get your credentials overnight. The package for official certification that arrives includes a welcome kit that contains a number of elements (see Microsoft's website for other benefits of specific certifications):

- ▶ A certificate that is suitable for framing, along with a wallet card and lapel pin.
- ▶ A license to use the MCP logo, which means you can use the logo in advertisements, promotions, and documents and on letterhead, business cards, and so on. Along with the license comes an MCP logo sheet, which includes camera-ready artwork. (Note that before you use any of the artwork, you must sign and return a licensing agreement that indicates you'll abide by its terms and conditions.)
- ▶ Access to the *Microsoft Certified Professional Magazine Online* website, which provides ongoing data about testing and certification activities, requirements, changes to the MCP program, and security-related information on Microsoft products.

Many people believe that the benefits of MCP certification go well beyond the perks that Microsoft provides to newly anointed members of this elite group. We're starting to see more job listings that request or require applicants to have MCP, MCSA, MCSE, and other certifications, and many individuals who complete Microsoft certification programs can qualify for increases in pay and responsibility. As an official recognition of hard work and broad knowledge, an MCP credential is a badge of honor in many IT organizations.

How to Prepare for an Exam

Preparing for any Microsoft certification test (including Exam 70-290) requires that you obtain and study materials designed to provide comprehensive information about the product and its capabilities that will appear on the specific exam for which you are preparing. The following list of materials can help you study and prepare:

- ▶ The Windows Server 2003 product CD-ROM or DVD-ROM. This disc includes comprehensive online documentation and related materials; it should be one of your primary resources when you are preparing for the test.

- ▶ The exam preparation materials, practice tests, and self-assessment exams on the Microsoft Training and Certification site, at <http://www.microsoft.com/learning/default.aspx>. The Exam Resources link offers samples of the new question types on the Windows Server 2003 Microsoft Certification track series of exams. You should find the materials, download them, and use them!
- ▶ The exam preparation advice, practice tests, questions of the day, and discussion groups on <http://www.examcram.com>.

In addition, you might find any or all of the following materials useful in your quest for Windows Server 2003 expertise:

- ▶ *Microsoft training kits*—Microsoft Learning offers a training kit that specifically targets Exam 70-290. For more information, visit <http://www.microsoft.com/learning/books/>. This training kit contains information that you will find useful in preparing for the test.
- ▶ *Microsoft TechNet CD or DVD and website*—This monthly CD- or DVD-based publication delivers numerous electronic titles that include coverage of Windows Server 2003 and related topics on the Technical Information (TechNet) series on CD or DVD. Its offerings include product facts, technical notes, tools and utilities, and information on how to access the Seminars Online training materials for Windows Server 2003 and the Windows Server System line of products. Visit <http://technet.microsoft.com> and check out the information for TechNet subscriptions. You can utilize a large portion of the TechNet website at no charge.
- ▶ *Study guides*—Several publishers—including Que Publishing—offer Windows Server 2003, Windows Vista, Windows XP, and Windows 2000 titles. Que Publishing offers the following:
 - ▶ *The Exam Cram series*—These books give you insights about the material that you need to know to successfully pass the certification tests.
 - ▶ *The MCSE Exam Prep series*—These books provide a greater level of detail than the *Exam Cram* books and are designed to teach you everything you need to know about the subject covered by an exam.

Together, these two series make a perfect pair.

- ▶ *Classroom training*—CTECs, online partners, and third-party training companies (such as Wave Technologies, New Horizons, and Global Knowledge) all offer classroom training on Windows Server 2003,

Windows Vista, Windows XP, and Windows 2000. These companies aim to help you prepare to pass Exam 70-290 as well as several others. Although this type of training tends to be pricey, most of the individuals lucky enough to attend find this training to be quite worthwhile.

- ▶ *Other publications*—There’s no shortage of materials available about Windows Server 2003. The “Need to Know More?” resource sections at the end of each chapter in this book give you an idea of where we think you should look for further discussion.

This set of required and recommended materials represents an unparalleled collection of sources and resources for Windows Server 2003 and related topics. We anticipate that you’ll find this book belongs in this company.

About This Book

Each topical *Exam Cram* chapter follows a regular structure and contains graphical cues about important or useful information. Here’s the structure of a typical chapter:

- ▶ *Opening hotlists*—Each chapter begins with a list of the terms, tools, and techniques that you must learn and understand before you can be fully conversant with that chapter’s subject matter. The hotlists are followed with one or two introductory paragraphs to set the stage for the rest of the chapter.
- ▶ *Topical coverage*—After the opening hotlists and introductory text, each chapter covers a series of topics related to the chapter’s subject. Throughout that section, we highlight topics or concepts that are likely to appear on a test, using a special element called an alert:

EXAM ALERT

This is what an alert looks like. Normally, an alert stresses concepts, terms, software, or activities that are likely to relate to one or more certification-test questions. For that reason, we think any information in an alert is worthy of unusual attentiveness on your part.

You should pay close attention to material flagged in Exam Alerts; although all the information in this book pertains to what you need to know to pass the exam, Exam Alerts contain information that is really important. You’ll find what appears in the meat of each chapter to be

worth knowing, too, when preparing for the test. Because this book's material is very condensed, we recommend that you use this book along with other resources to achieve the maximum benefit.

In addition to the alerts, we provide tips that will help you build a better foundation for Windows Server 2003 knowledge. Although the tip information might not be on the exam, it is certainly related and it will help you become a better-informed test taker.

TIP

This is how tips are formatted. Keep your eyes open for these, and you'll become a Windows Server 2003 guru in no time!

NOTE

This is how notes are formatted. Notes direct your attention to important pieces of information that relate to Windows Server 2003 and Microsoft certification.

- ▶ *Exam prep questions*—Although we talk about test questions and topics throughout the book, the section at the end of each chapter presents a series of mock test questions and explanations of both correct and incorrect answers.
- ▶ *Details and resources*—Every chapter ends with a section titled “Need to Know More?” That section provides direct pointers to Microsoft and third-party resources that offer more details on the chapter's subject. In addition, that section tries to rank or at least rate the quality and thoroughness of the topic's coverage by each resource. If you find a resource you like in that collection, you should use it, but you shouldn't feel compelled to use all the resources. On the other hand, we recommend only resources that we use on a regular basis, so none of our recommendations will be a waste of your time or money (but purchasing them all at once probably represents an expense that many network administrators and Microsoft certification candidates might find hard to justify).

The bulk of the book follows this chapter structure, but we'd like to point out a few other elements. Chapters 21 and 23, “Practice Exam 1” and “Practice Exam 2,” provide good reviews of the material presented throughout the book to ensure that you're ready for the exam. Chapters 22 and 24, “Answers to Practice Exam 1” and “Answers to Practice Exam 2,” offer the correct answers to the

questions on the sample tests that appear in Chapters 21 and 23. Appendix A, “Suggested Readings and Resources,” offers you several books and websites that contain useful information on Windows Server 2003. Appendix B, “Accessing Your Free MeasureUp Practice Test—Including Networking Simulation!” and Appendix C, “MeasureUp’s Product Features,” provide helpful information about how to get access to and then take even more practice exams. Finally, you’ll find a handy glossary and an index.

Finally, the tear-out Cram Sheet attached next to the inside front cover of this *Exam Cram* book represents a condensed and compiled collection of facts and tips that we think are essential for you to memorize before taking the test. Because you can dump this information out of your head onto a sheet of paper before taking the exam, you can master this information by brute force; you need to remember it only long enough to write it down when you walk into the testing room. You might even want to look at it in the car or in the lobby of the testing center just before you walk in to take the exam.

How to Use This Book

We’ve structured the topics in this book to build on one another. Therefore, some topics in later chapters make the most sense after you’ve read earlier chapters. That’s why we suggest that you read this book from front to back for your initial test preparation. If you need to brush up on a topic or if you have to bone up for a second try, you can use the index or table of contents to go straight to the topics and questions that you need to study. Beyond helping you prepare for the test, we think you’ll find this book useful as a tightly focused reference to some of the most important aspects of Windows Server 2003.

The book uses the following typographical conventions:

- ▶ Command-line strings that are meant to be typed into the computer are displayed in monospace text, such as

```
net use 1pt1: \\print_server_name\printer_share_name
```

- ▶ *New terms* are introduced in italics.

Given all the book’s elements and its specialized focus, we’ve tried to create a tool that will help you prepare for—and pass—Microsoft Exam 70-290. Please share with us your feedback on the book, especially if you have ideas about how we can improve it for future test takers. Send your questions or comments about this book via email to feedback@quepublishing.com. We’ll consider everything you say carefully, and we’ll respond to all suggestions. For more information on this

book and other Que Certification titles, visit our website at <http://www.quepublishing.com>. You should also check out the new *Exam Cram* website at <http://www.examcram.com>, where you'll find information updates, commentary, and certification information.

Thanks for making this *Exam Cram* book a pivotal part of your certification study plan: best of luck on becoming certified!