

Microsoft Windows 7 Administrator's Reference

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Upgrading, Deploying, Managing,
and Securing Windows 7

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Dedicated to my wife, Danielle. I love you

Contents

About the Author	xxi
Preface.....	xxiii
Acknowledgments.....	xxiv
Contributors	xxv
Introduction.....	xxvii
CHAPTER 1 Introduction to Windows 7	1
Built on Vista	2
Different Editions.....	2
Windows XP Editions	2
Windows Vista Editions.....	4
Windows 7 Editions.....	6
32-Bit and 64-Bit Computing.....	7
64-bit Explained.....	9
64-bit Architectures.....	9
Tests for 64-bit Hardware	10
Hardware Requirements	11
Windows 7 Upgrade Advisor.....	12
Choosing the Right Windows 7 Version.....	12
Major Changes in Windows 7	13
Deployment	13
Desktop Interface.....	14
Management	15
User Account Control (UAC).....	16
User Profile Data.....	17
New Features in Windows 7	22
Connectivity	23
BranchCache.....	24
DirectAccess	24
HomeGroup	25
Internet Explorer 8	25
Offline Domain Join	29
VPN Reconnect	29
Windows Mobility Center.....	29
Windows Connect Now	30
Entertainment	31
DirectX 11.....	31
Gadgets.....	32
Games Explorer	33

Multiplayer Games	34
Play To.....	35
Remote Media Streaming.....	35
Windows Media Center.....	36
Windows Media Player 12	37
Performance	37
64-bit Computing.....	38
Action Center	39
Audio and Video.....	41
Enhanced Driver and Device Support.....	43
Power Management.....	45
ReadyBoost	45
Startup Repair	47
System Restore	48
Windows Anytime Upgrade.....	50
Windows Easy Transfer.....	51
Windows Experience Index.....	53
Windows Troubleshooting.....	54
Windows Update.....	55
Productivity.....	56
Accessibility.....	57
Aero	61
Calculator.....	64
Desktop.....	65
Device Management.....	66
Federated Search.....	67
Getting Started.....	69
Jump Lists	70
Libraries.....	70
Location Aware Printing.....	71
Multilingual User Interface	71
Paint	71
Problem Steps Recorder	72
Snipping Tools.....	73
Sticky Notes	74
Tablet PC.....	75
Windows Fax and Scan.....	76
Windows Live Essentials	76
Windows Search	77
Windows Taskbar.....	77

Windows Touch	78
Windows XP Mode	79
WordPad.....	79
XPS Viewer	79
Security	81
AppLocker.....	82
Backup and Restore	82
Biometric Security	83
BitLocker	84
BitLocker To Go	85
Encrypted File System (EFS)	87
Parental Controls.....	87
User Account Control.....	87
Windows Defender.....	87
Windows Firewall	88
Summary	90

CHAPTER 2 Installing and Upgrading to Windows 7 93

Planning and Preparation	96
Select the Windows 7 Edition	97
System Compatibility	97
Windows 7 Upgrade Advisor	98
Back Up Current System.....	100
Windows Easy Transfer.....	101
Windows Vista File Backup	103
Windows Vista Complete Backup	107
Manual Backup of User Data.....	109
Other Tools	112
Determine Deployment Scenario	113
New System Scenario	114
Upgrade System Scenario.....	116
System Refresh Scenario	116
System Replace Scenario	116
Select Install Type	116
Preinstalled	117
Clean Install.....	118
In-place Upgrade	119
Migration	121
Virtualization and Dual Booting.....	121
Obtain Windows 7.....	122

Retail.....	122
Original Equipment Manufacturer.....	124
Volume License.....	124
Obtain Device/Hardware Drivers.....	124
Clean Install.....	125
Preparation and Planning for a Clean Install.....	126
Performing a Clean Install	127
Post Clean Install.....	135
Clean Install with Upgrade Media	136
In-place Upgrade	137
Preparation and Planning for an In-place Upgrade.....	137
Perform a Full Backup of Windows Vista.....	138
Check Compatibility	138
Performing an In-place Upgrade.....	139
In-place Upgrade Post Install	141
Issues with In-place Upgrade	142
Migrate to Windows 7.....	142
Preparation and Planning for Migration	142
Back Up Current System	143
Software Compatibility	143
Perform Migration Install.....	143
Migration Post Install	145
Delete the Windows.old Directory	145
Virtualization and Dual Boot	146
Virtualization	146
Introduction to Virtualization	146
Virtualization Software.....	147
Planning and Preparation for Virtual Deployment.....	147
Performing a Windows 7 Install on a VM.....	148
Virtual Machine Post Install.....	149
Dual Booting.....	150
Planning and Preparation.....	150
Performing a Dual Boot Install.....	153
Dual Boot Post Install	153
Post Install.....	155
Activation	155
Install Hardware and Device Drivers	156
Update Windows	158
Install Antivirus.....	159
Free Antivirus.....	160

Restore User Files and Settings 160
 Using Windows Easy Transfer 161
 Restore Windows File Backup 164
 Manually Restore User Data 165
 Summary 166

CHAPTER 3 Deploying Windows 7 in an Enterprise Environment 169

Deployment Overview 169
 Deployment Scenarios 170
 Upgrade Scenario 170
 New Installation 171
 Refresh Scenario 171
 Replace Scenario 171
 Understanding the Setup Process 171
 Deployment Tools 174
 Setup Stages 174
 Windows Image Management 176
 Planning a Windows 7 Deployment 178
 Current Environment 180
 Microsoft Assessment and Planning Tool 4.0 181
 Installing MAP 4.0 181
 Discovering Network Computers 181
 Inventory and Analysis with MAP 183
 Analyzing MAP Data 185
 Deployment Solutions 185
 Working with MDT 2010 185
 Installing MDT 2010 187
 Preparing an LTI Deployment with MDT 2010 188
 Creating a New Deployment Share in
 Deployment Workbench 189
 Configuring and Provisioning the Deployment Share in
 MDT 2010 191
 Delivery 194
 Configuring WDS 194
 Multicast 200
 Migration 200
 User State Migration Tool 200
 Hard-Link Migration 201
 When to Use a Hard-Link Migration 202

Using USMT 4.0	202
Scanstate.exe	203
Summary	205
CHAPTER 4 The New Windows 7 Desktop Environment.....	207
The User Interface.....	209
Log In.....	209
Welcome Screen.....	211
Desktop	212
Themes	212
Desktop Options	221
Modify Window Views	222
Desktop Content	223
Windows Aero	227
Screen Resolution and Display	232
Gadgets.....	235
Start Menu	237
Pin to Start Menu	239
Start Menu Search.....	239
Jump Lists.....	240
Customize the Start Menu	241
Start Menu Menus and Options	247
Startup Folder	249
Taskbar.....	250
Taskbar Options	251
Pin a Shortcut to the Taskbar	252
Change Size and Position of Taskbar	252
Customize the Taskbar	253
Notification Area	254
Toolbars.....	258
Windows Explorer.....	260
Windows Explorer Window	260
Address Bar	260
Windows Explorer Toolbar	262
Details Pane	262
Menu Bar.....	263
Navigation Pane	264
Preview Pane.....	265
Libraries.....	266
Configure Windows Explorer.....	268
Shortcuts.....	273

- Creating Shortcuts in Windows Explorer 273
- Configure Shortcut Properties in Windows Explorer 273
- Internet Explorer 8.....276
 - First Run 276
 - Toolbars 277
 - IE 8 Toolbar 279
 - New IE 8 Features 279
 - Accelerators 279
 - Compatibility View 280
 - Search Suggestions 281
 - Suggested Sites 282
 - Tabbed Browsing 282
 - Web Slices 283
 - Internet Explorer Options 284
 - General Tab 285
 - Connections Tab 290
 - Programs Tab 291
 - Advanced Tab 292
- Applications 294
 - Application UAC 294
 - Run as Administrator 295
 - Installing Applications..... 297
 - Installing Windows Features 297
 - Installing Add-on Applications 299
 - Default Applications..... 299
 - Change Default Settings for Media or Devices 299
 - Make a File Type Always Open in a Specific Program 300
 - Set Your Default Programs 302
- Summary 303

CHAPTER 5 Managing the Windows 7 Desktop Environment..... 305

- Local Management Tools 305
 - Control Panel 306
 - System and Security 306
 - Network and Internet 318
 - User Accounts and Family Safety 320
 - Clock Language and Region 325
 - Ease of Access 331
 - Microsoft Management Console 3.0 333
 - Computer Management Console 337

Local Group Policy Editor	338
Computer Configuration	339
User Configuration	339
Windows Registry	340
Simplified Configuration and Management of Desktops	340
Managing Hardware Devices and Drivers	342
Install Devices	342
Install Drivers with Windows Update	342
Device Manager	344
Devices and Printers	345
Devices	346
Printers and Faxes	346
Managing Disks and File Systems	348
Partitions	348
MBR and GPT	348
Volumes	350
Create a Simple Volume	351
Create a Spanned Volume	351
Create a Striped Volume	351
Create a Mirrored Volume	353
Resize a Volume	353
Delete a Volume	354
Virtual Hard Disk	355
File System Fragmentation	356
Symbolic Links	356
Create Symbolic Links	357
Create Relative or Absolute Symbolic Links	357
Use Hard Links	358
Windows ReadyBoost	358
Disk Quotas	358
Configure Disk Quotas	359
Summary	359

CHAPTER 6 Networking and Mobility	361
TCP/IP	362
IPv4	362
IPv6	363
Next Generation TCP/IP Stack	363
Network Location and Network Discovery	363
Network Explorer	365

Network and Sharing Center	366
Network Map	367
Active Networks	368
Set Up a New Connection or Network.....	370
Connect to the Internet	370
Set Up a New Network	372
Dial-Up Connection	372
Locations and Dialing Rules	372
Dial-Up Connection to an ISP.....	373
Connect to a Workplace	374
Wireless	379
Wireless Basics.....	380
Connect to a Wireless Network.....	380
Wireless Properties.....	381
Manage Wireless Networks.....	385
Soft Access Point	388
Manual Configuration.....	390
Connectify.....	390
Connect to a Soft Access Point	390
Connect to a Network.....	391
Network Connections	391
Properties	392
Networking Tab	392
Sharing tab.....	397
HomeGroup	398
Mobility	401
Windows Mobility Center	401
Location Aware Printing.....	402
VPN Reconnect.....	403
Working Offline	404
Power Management.....	407
Power Plans	407
Group Policy	411
Command Line.....	412
Enhancements with Windows Server 2008 R2	412
BranchCache	412
DirectAccess.....	414
Domain Join	414
Offline Domain Join.....	416
Summary	418

CHAPTER 7 Managing Windows 7 in an Enterprise Environment	421
Management Tools	421
Group Policy	422
Windows PowerShell Cmdlets for Group Policy	422
Group Policy Preferences	426
Scheduled and Immediate Tasks	430
Internet Explorer 8	438
Starter GPOs	440
Creating Shortcuts through Active Directory	442
PowerShell	444
Cmdlets	444
Remote Management	446
Integrated Scripting Environment	446
Remote Management	448
Remote Desktop	448
Remote Server Administration Toolkit	450
Active Directory Administrative Center	452
Reset Password Widget	452
Global Search Widget	453
Object Properties in Active Directory Administrative Center ...	454
Active Directory Module for Windows PowerShell	457
Active Directory Users and Computers	460
Roaming	461
Administrative Templates	462
Summary	464
 CHAPTER 8 Securing Windows 7	 465
User and Group Accounts	466
User and Group Account Basics	467
Default User and Group Accounts	468
Manage User and Group Accounts	471
Basic User Management	471
Advanced User and Group Management	478
User Account Control	483
User Account Control Settings	484
Credential Manager	487
Parental Controls	489
Biometric Security	490
Windows Biometric Framework	491
Biometric Devices – Control Panel	492

- File System Security 493
 - Basic Permissions 493
 - Advanced Permissions and Ownership..... 499
 - Auditing 503
- Sharing Files and Folders..... 504
 - Enable Sharing..... 506
 - Configuring and Managing Shares 508
 - Accessing Shared Resources 511
- Action Center513
 - Action Center Configuration..... 515
 - Keep Systems Up-to-Date 517
 - Windows Update 517
 - Software Updates..... 520
 - Antivirus and Anti-malware 521
 - Evaluating Antivirus Solutions 521
 - Antivirus Policy..... 522
 - Windows Defender..... 523
 - Network Firewall..... 525
 - Basic Firewall Settings 527
 - Advanced Firewall Settings..... 529
 - Internet Explorer 8 534
 - Internet Security Settings..... 535
 - Internet Explorer 8 Security Features..... 540
 - Network Access Protection 543
- Encryption 544
 - BitLocker..... 544
 - Trusted Platform Module..... 545
 - Enable BitLocker in Control Panel 547
 - Enable BitLocker in Group Policy 547
 - BitLocker To Go 548
 - Encrypting File System..... 549
- Applocker 550
- Summary 552

CHAPTER 9 Virtualization and Windows 7 553

- Windows XP Mode 553
 - Verifying Your Windows 7 Version..... 554
 - Confirm Hardware Virtualization 555
 - Loading Windows XP Mode..... 558
 - Setup of Windows XP Mode..... 564

Install an Application in Windows XP Mode.....	570
Many Forms of Virtualization	575
VECD Licensing Is a Challenge.....	576
VDI or Centralized Virtual Desktops.....	577
Distributed Virtual Desktops	579
Application Virtualization.....	581
Remote Desktop Services.....	581
App-V.....	583
User Session Virtualization	584
Folder Redirection.....	585
Roaming Profiles	586
Microsoft Enterprise Desktop Virtualization	586
Summary.....	588

CHAPTER 10 Windows 7 Troubleshooting and Performance Tools 591

Action Center – Maintenance	591
Action Center – Maintenance Alerts.....	593
Action Center – Maintenance Items	595
Check for Solutions to Problem Reports	595
Backup	596
Check for Updates.....	596
Troubleshooting: System Maintenance.....	596
Action Center – Troubleshooting.....	597
Programs	597
Run Programs Made for Previous Versions of Windows.....	598
Hardware and Sound	599
Configure a Device.....	599
Use a Printer	600
Troubleshoot Audio Recording.....	600
Troubleshoot Audio Playback.....	600
Network and Internet.....	601
Connect to the Internet.....	601
Access Shared Files or Folders on Other Computers.....	601
Appearance and Personalization	602
Display Aero Desktop Effect.....	602
System and Security.....	603
Fix Problems with Windows Update	603
Run Maintenance Tasks	603
Improve Power Usage	604
Check for Performance Issues.....	604

Resource Monitor.....	604
Resource Monitor Overview Tab	605
CPU	606
Disk	606
Network	606
Memory.....	606
Resource Monitor CPU Tab	606
Processes	606
Services.....	607
Associated Handles	607
Associated Modules.....	607
Resource Monitor Memory Tab.....	608
Processes	609
Physical Memory	609
Resource Monitor Disk Tab	609
Processes with Disk Activity.....	610
Disk Activity.....	610
Storage.....	610
Resource Monitor Network Tab	610
Processes with Network Activity	611
Network Activity	611
TCP Connections.....	611
Listening Ports	612
Event Viewer.....	612
Overview and Summary	612
Windows Logs	614
Application Log	614
Security Log.....	614
Setup Log	615
System Log	615
Forwarded Events	615
Applications and Services Logs	616
Troubleshooting Windows Services.....	616
Services Snap-in Overview.....	616
Service Tasks.....	617
Windows 7 Services	618
Service Properties	623
General.....	623
Log On	624
Recovery	624

Dependencies	624
Problem Steps Recorder	625
Accessing the PSR.....	626
Using the PSR.....	627
Making Recordings	627
Running the PSR as Administrator	628
PSR Settings	628
Summary	630
 SUBJECT INDEX	 631

About the Author

Jorge Orchilles has been involved in the information technology field since 2001. He began his career as a network and system administrator for a small private high school that he attended. Realizing his passion for IT, he opened up a branch of a small business in 2002, The Business Strategy Partners – IT Consultants. Here, he began serving residential and small business clients in the South Florida area as an IT consultant. While gaining work experience, he was a very involved full-time student at Florida International University (FIU). He founded the FIU MIS Club and continues to be a contributor to the club. While at FIU he was contracted to work on the university's Active Directory Migration Project. After completing the project, he decided to move to a corporate environment to continue gaining knowledge and experience in the IT field. After two years of working in corporate IT, he developed a large interest in IT security and has chosen to move in that direction. He currently holds a position as a security operating center analyst while continuing to be a full-time student. He also is involved in various IT, security, and business organizations in the South Florida area. He is currently vice president of the South Florida ISSA chapter.

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Preface

Welcome to *Microsoft Windows 7 Administrator's Reference*, the only Windows 7 book for system administrators written by system administrators. As you might have seen among the other books on the shelves or e-commerce sites, most books on Windows 7 are either for the end user or for administrators, but not for both. This is because most books are written by technical writers, who are not real-world system administrators and lack the understanding of a system administrator. As experienced system administrators, we know that you need to master not only how to use Windows 7 from an end-user perspective but also how to manage and eventually share your knowledge with your users. This book will cover everything you need to know to successfully plan, deploy, configure, manage, administer, and troubleshoot Windows 7 systems. We have deployed thousands of end-user machines and know what administrators are really looking for. Additionally, we offer multiple methods of accomplishing certain tasks, not just the way Microsoft dictates.

With that said, congratulations, by picking up this book, you have begun your journey of mastering Windows 7. As opposed to Vista, most reviews for Microsoft's latest operating system are very positive. In reality, and as you will soon see, Windows 7 is awesome! Not only will it be easier, quicker, and better to use for you, but it will also make business users more productive and efficient. Windows 7 is more reliable, compatible, and secure.

On that note, security has become one of the biggest issues with end-user operating systems. Unlike other books that are dedicated to securing the operating system after the fact, this book considers security very seriously, showing you how to securely deploy and configure the operating system from the start. Since starting its security initiative, Microsoft has done an incredibly good job securing its latest products.

Windows users currently make up almost 90 percent of the desktop market; this means that more likely than not, you and your users will be migrating to this new and improved operating system soon. Some surveys also suggest that between 75 and 90 percent of corporations skipped migrating to Windows Vista in their enterprise environment. Taking this into consideration, we note that this book does not require Windows Vista experience, although it is recommended.

HOW TO USE THIS BOOK

This book can be your guide through the journey of Windows 7 administration from start to finish. You can begin reading from Chapter 1, "Introduction to Windows 7," and go through the book chronologically to cover all of the topics a typical administrator would typically encounter. Remember, this book is written by real administrators; we know what you need to know to support these systems.

Additionally, this book is a reference; you will be able to look for certain topics, flip right to them, and get on with your day.

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Contributors

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In 2009, Denny was named a Microsoft MVP for the Microsoft SQL Server product. Denny has written dozens of articles for a variety of Web sites, as well as print magazines on a variety of subjects, including SQL Server, clustering, storage configuration, and SharePoint.

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Kenneth holds a bachelor's degree from Colorado Technical University. He currently resides in Olathe, KS, with his loving and supportive wife, Sandy, and near their daughter, Tabitha, and their grandsons, Wesley ("Peanut") and Austin. Their son, Keith, is currently on active duty with the US Navy.

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Rodney enjoys all his personal and professional activities and is up-front about the support he gets from his family and especially his wife, Lisa. Without her support, what he does would not be possible.

TRADEMARKS

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Introduction

This book is for Windows end users and system administrators alike. We understand that to be a great system administrator, you also need to know how to use the operating system. Therefore, this book is tailored to a range of Windows users. Whether you administer a few computers in a home, home office, or small to medium-sized business or hundreds or thousands of desktops in a large organization or public institution, this book is for you. With this book, you will learn everything you need to know about Windows 7 from the start, so that you may use and administer it for its life cycle.

HOW THIS BOOK IS ORGANIZED

This book will follow the flow an administrator generally takes with a new operating system. First, you will find out what is new with the operating system. Then, you will install and/or upgrade to it and begin using the new features – this phase generally involves navigating the desktop environment and networking/mobility. Following your experimentation with and acceptance of the new operating system, you will begin the planning and deploying phase of the new operating system in your environment. You will then need to be able to manage all the new deployments, implement security features, and troubleshoot the environment. All of these skills, when mastered, will make you an excellent administrator. Remember to share the knowledge with your users because it will help them help you!

CHAPTER 1: INTRODUCTION TO WINDOWS 7

The first chapter begins by introducing the new Microsoft operating system that was built on many of the new features of Windows Vista. Because Windows Vista was not the biggest success in Microsoft's history, many lessons were learned and improvements were made to make Windows 7 the great operating system that it is. This chapter will introduce the hardware requirements and the difference between 32-bit and 64-bit computing. Next, the newest and best features of Windows 7 will be highlighted with quick *how-to* for referencing in the future.

CHAPTER 2: INSTALLING AND UPGRADING TO WINDOWS 7

The second chapter in this book will walk the end user and administrator through the task of getting Windows 7 on their systems. There are many different tasks and methods to reach this goal, and they depend heavily on the individual deployment scenario – whether it is a new system, upgrade, refresh, or replace, this chapter will describe the process to go about it. It is critical for an administrator to learn and understand the deployment process for Windows 7 because it has been changed from earlier versions of Windows. Furthermore, understanding a single system deployment will assist in an enterprise-wide deployment.

CHAPTER 3: DEPLOYING WINDOWS 7 IN AN ENTERPRISE ENVIRONMENT

Deploying Windows 7 across an entire organization or environment does not have to be so daunting. This chapter will provide the knowledge and references required to make deploying Windows 7 easier and quicker for both the administrator and end users. Every environment is different, making it tricky to provide a step-by-step guide. Instead, this chapter will introduce you to tools and methodology for deploying Windows 7 in an enterprise environment. In case we do not mention a specific task, there are many references to online documentation to assist you.

CHAPTER 4: THE NEW WINDOWS 7 DESKTOP ENVIRONMENT

The new Windows 7 desktop environment is the biggest difference the end user will see when using Windows 7. This chapter focuses on all those changes, and introduces the end user and administrator to new features and how to use them. Many of the new features, including the new user interface, Windows Aero, Internet Explorer 8, and Windows Explorer, are core features of what makes Windows 7. The administrator must master these features in order to properly configure the user desktop environment, and end users also need to master them to be efficient and productive when using the Windows 7 system. Applications make Windows the operating system it is today by allowing a range of productivity software to be used on Windows 7. User Account Control is one of the biggest features related to Windows 7, and it is explained in depth in this chapter to allow an administrator to deploy applications without issues. Many of the items in this chapter will need to be passed on to your users, and mastering them will make that easier.

CHAPTER 5: MANAGING THE WINDOWS 7 DESKTOP ENVIRONMENT

This chapter focuses on managing the Windows 7 environment from the system itself. Microsoft provides many tools for local system administration, and these are introduced and referenced in this chapter. More administrative tasks such as managing devices and drivers and managing disks and file systems are the core of this chapter because they are tasks performed to manage the Windows 7 desktop environment. This chapter will serve as a great reference when troubleshooting and working with drivers, devices, printers, and file systems.

CHAPTER 6: NETWORKING AND MOBILITY

Chapter 6 will first introduce the administrator to Transmission Control Protocol/Internet Protocol (TCP/IP) in Windows 7 and Microsoft's next-generation TCP/IP stack, which uses both IPv4 and IPv6. Other new features in Windows 7 networking include network location and network

discovery that allow easier networking for end users. The Network and Sharing Center provides a centralized location to perform almost all network-related tasks. The same is true for mobile users with the Mobility Center and wireless networking. HomeGroup will be referenced as well for users and administrators working in home networks. Power management is also covered in this chapter because it plays a large role when dealing with mobile systems. Finally, Windows 7 enhancements with Windows Server 2008 R2, including DirectAccess, Branch Cache, and VPN Reconnect, will be introduced.

CHAPTER 7: MANAGING WINDOWS 7 IN AN ENTERPRISE ENVIRONMENT

Most administrators will be working with Windows 7 in an enterprise environment. Microsoft has improved a multitude of tools for easily and quickly performing these tasks. This chapter will look at Group Policy and PowerShell, two of the most powerful tools for managing Windows 7 systems in an enterprise environment. Like Chapter 3, “Deploying Windows 7 in an Enterprise Environment,” not every scenario or environment is the same, so managing many computers will not be exactly the same for each administrator. Therefore, this chapter will present the tools and methodologies for using the most common tools.

CHAPTER 8: SECURING WINDOWS 7

Microsoft and security have never been closely associated. Windows Vista showed huge improvements on Microsoft’s side to improve security in the desktop. Windows 7 has improved on those steps and proves to be the most secure desktop operating system released by Microsoft. This chapter begins with user accounts and access rights in Windows 7 and then moves to protecting the system. The Action Center will be used to manage antivirus, antispyware, Windows Updates, and User Account Control. Biometric devices will be referenced. Internet Explorer 8 has many security features that will need to be relayed to your users, and AppLocker keeps great control of installed applications. BitLocker and BitLocker to Go offer drive encryption, while Encrypted Files System protects the file system. Other new features such as DNSSec, Windows Filtering Platform, and Certificates will also be reviewed in this chapter.

CHAPTER 9: VIRTUALIZATION AND WINDOWS 7

Virtualization is one of the newest and favorite technologies for system administrators. Windows 7 allows both running the system in a virtualized environment and running a virtual machine within the Windows 7 system. This chapter will look at running Windows 7 as a virtualized desktop with technology like Virtual Desktop Infrastructure. It will also focus on Windows Virtual PC and XP Mode, which allows a virtual instance of Windows XP to run within Windows 7 for software compatibility.

CHAPTER 10: WINDOWS 7 TROUBLESHOOTING AND PERFORMANCE TOOLS

Troubleshooting has traditionally been one of the main tasks of administrators. Microsoft attempts to change that by making Windows 7 easier than ever to troubleshoot. This chapter will introduce troubleshooting and performance tools. Using these tools correctly will reduce the time it takes to troubleshoot issues within Windows 7. Some of the features in this chapter, such as the Problem Step Recorder, need to be relayed to your users to help them help you troubleshoot issues.