

# MCA

**Microsoft 365 Certified Associate**

**Modern Desktop Administrator**

# STUDY GUIDE

**EXAM MD-100**

**Includes interactive online learning environment and study tools:**

**Custom practice exam**

**100 electronic flashcards**

**Searchable key term glossary**

**WILLIAM PANEK**  
*Microsoft MVP*

 **SYBEX**  
A Wiley Brand

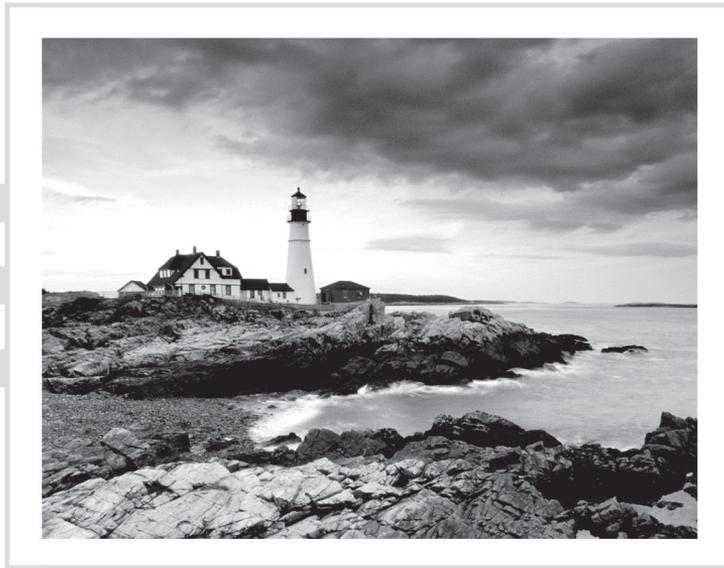


# **MCA**

## **Modern Desktop Administrator**

### **Study Guide**

#### **Exam MD-100**





# MCA

## Modern Desktop Administrator

### Study Guide

#### Exam MD-100



William Panek

 **SYBEX**  
A Wiley Brand

Copyright © 2019 by John Wiley & Sons, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN: 978-1-119-60590-4

ISBN: 978-1-119-60593-5 (ebk.)

ISBN: 978-1-119-60591-1 (ebk.)

Manufactured in the United States of America

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

**Limit of Liability/Disclaimer of Warranty:** The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Web site is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Web site may provide or recommendations it may make. Further, readers should be aware that Internet Web sites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services or to obtain technical support, please contact our Customer Care Department within the U.S. at (877) 762-2974, outside the U.S. at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit [www.wiley.com](http://www.wiley.com).

**Library of Congress Control Number:** 2019942262

**TRADEMARKS:** Wiley, the Wiley logo, and the Sybex logo are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.

10 9 8 7 6 5 4 3 2 1

*This book is dedicated to the three ladies of my life: Crystal, Alexandria,  
and Paige.*



# Acknowledgments

I would like to thank my wife and best friend, Crystal. She is always the light at the end of my tunnel. I want to thank my two daughters, Alexandria and Paige, for all of their love and support during the writing of all my books. The three of them are my support system and I couldn't do any of this without them.

I want to thank my family, and especially my brothers, Rick, Gary, and Rob. They have always been there for me. I want to thank my father, Richard, who helped me become the man I am today, and my mother, Maggie, for all of her love and support.

I would like to thank all of my friends and co-workers at StormWind Studios ([www.stormwindstudios.com](http://www.stormwindstudios.com)). Thanks to all of you for everything that you do. I would not have been able to complete this book without all of your help and support.

I want to thank everyone on my Sybex team, especially my development editor, Mary Ellen Schutz, who helped me make this the best book possible, and Jon Buhagiar, who is the technical editor of this book and an outstanding resource on this book. It's always good to have the very best technical guy backing you up. I want to thank Katie Wisor, who was my production editor, and Judy Flynn for being the copyeditor.

I want to also thank Jon Buhagiar who is my technical proofreader. Special thanks to my acquisitions editor, Kenyon Brown, who was the lead for the entire book. Finally, I want to thank everyone else behind the scenes that helped make this book possible. It's truly an amazing thing to have so many people work on my books to help make them the very best. I can't thank you all enough for your hard work.



# About the Author



**William Panek** holds the following certifications: MCP, MCP+I, MCSA, MCSA+ Security and Messaging, MCSE-NT (3.51 and 4.0), MCSE (2000, 2003, 2012/2012 R2), MCSE+Security and Messaging, MCDBA, MCT, MCTS, MCITP, CCNA, CCDA, and CHFI. Will is also a five-time and current Microsoft MVP winner.

After many successful years in the computer industry, Will decided that he could better use his talents and his personality as an instructor. He began teaching for schools such as Boston University and the University of Maryland, just to name a few. He has done consulting and training for some of the biggest government and corporate companies in the world, including the United States Secret Service, Cisco, United States Air Force, and United States Army.

In 2015, Will became a Sr. Microsoft Instructor for StormWind Studios ([www.stormwindstudios.com](http://www.stormwindstudios.com)). He currently lives in New Hampshire with his wife and two daughters. Will was also a Representative in the New Hampshire House of Representatives from 2010 to 2012. In his spare time, he likes to do blacksmithing, shooting (trap and skeet), snowmobiling, playing racquetball, and riding his Harley. Will is also a commercially rated helicopter pilot.



# Contents at a Glance

<i>Introduction</i>		<i>xxi</i>
<i>Assessment Test</i>		<i>xxxi</i>
<b>Part I</b>	<b>Exam MD-100</b>	<b>1</b>
<b>Chapter 1</b>	Windows 10 Installation	3
<b>Chapter 2</b>	Configuring Users	77
<b>Chapter 3</b>	Managing Data	161
<b>Chapter 4</b>	Managing the Windows 10 Environment	193
<b>Chapter 5</b>	Configuring Security and Devices	253
<b>Chapter 6</b>	Configuring Network Connectivity	301
<b>Chapter 7</b>	Configuring Recovery	355
<b>Appendix</b>	Answer to Review Questions	403
<i>Index</i>		<i>411</i>



# Contents

*Introduction* *xxi*

*Assessment Test* *xxxii*

**Part I** **Exam MD-100** **1**

**Chapter 1** **Windows 10 Installation** **3**

Understanding the Basics	4
Windows 10 Features	8
Windows 10 Architecture	10
Preparing to Install Windows 10	11
Windows 10 Home	11
Windows 10 Pro	12
Windows 10 Enterprise	13
Windows 10 Enterprise E3 and E5	14
Windows 10 Requirements	14
New Install or Upgrade?	17
Disk Partitioning	20
Language and Locale	21
Installing Windows 10	22
Performing a Clean Install of Windows 10	22
Performing an Upgrade to Windows 10	31
Troubleshooting Installation Problems	36
Supporting Multiple-Boot Options	38
Using Windows Activation	39
Understanding Automated Deployment Options	40
An Overview of the Microsoft Deployment Toolkit	41
An Overview of Unattended Installation	46
An Overview of Windows Deployment Services	48
An Overview of the System Preparation Tool and Disk Imaging	51
Overview of the Windows Assessment and Deployment Kit	55
Windows Configuration Designer	56
Summary of Windows 10 Deployment Options	56
Deploying Unattended Installations	57
Using the System Preparation Tool to Prepare an Installation for Imaging	59
Using Windows Configuration Designer to Create a Disk Image	61

	Using the Deployment Image Servicing and Management Tool	63
	Using Windows System Image Manager to Create Answer Files	65
	Windows Update	66
	The Update Process	66
	Using Windows Update	68
	Using Command-Line Options	69
	Installing Windows Store Updates	70
	Summary	71
	Exam Essentials	72
	Video Resources	73
	Review Questions	74
<b>Chapter 2</b>	<b>Configuring Users</b>	<b>77</b>
	Understanding User Accounts	78
	Account Types	79
	Built-In Accounts	80
	Local and Domain User Accounts	81
	Working with User Accounts	82
	Using the Local Users and Groups Utility	82
	Using the User Accounts Option in Control Panel	84
	Creating New Users	85
	Disabling User Accounts	90
	Deleting User Accounts	91
	Renaming User Accounts	93
	Changing a User's Password	94
	Using Windows Hello, Pictures, and Biometrics	94
	Using Device Guard	95
	Understanding Credential Guard	98
	Configuring Device Health Attestation	99
	Managing User Properties	101
	Managing User Group Membership	101
	Setting Up User Profiles, Logon Scripts, and Home Folders	103
	Troubleshooting User Account Authentication	109
	Managing and Creating Groups	110
	Using Built-In Groups	111
	Creating Groups	115
	Managing Group Membership	116
	Deleting Groups	118
	Managing Security Using GPOs and LGPOs	118
	Understanding the GPO and LGPO Basics	118
	Using the Group Policy Result Tool	120
	Managing and Applying LGPOs	121

Configuring Local Security Policies	123
Using Account Policies	124
Using Local Policies	130
Configuring User Account Control	138
Privilege Elevation	138
Registry and File Virtualization	140
Understanding Smart Cards	140
Configuring Remote Management	143
Remote Assistance	143
Remote Desktop	148
Enabling PowerShell Remoting	150
Configuring a VPN Connection	151
Transparent Caching	153
Broadband Tethering	153
Using PowerShell	155
Summary	157
Exam Essentials	157
Video Resources	157
Review Questions	158
<b>Chapter 3</b>	
<b>Managing Data</b>	<b>161</b>
Managing File and Folder Security	162
Folder Options	163
Understanding Dynamic Access Control	167
Securing Access to Files and Folders	168
Determining and Viewing Effective Permissions for NTFS	172
Determining NTFS Permissions for Copied or Moved Files	174
Managing Network Access	174
Creating and Managing Shared Folders	175
Configuring Share Permissions	176
Configuring OneDrive	178
Understanding Hardware Security	181
Using BitLocker Drive Encryption	182
Features of BitLocker	183
Windows 7 vs. Windows 10	185
Using the BitLocker Administration and Monitoring Utility	187
Understanding Smart Cards	188
Summary	188
Exam Essentials	189
Video Resources	189
Review Questions	190

<b>Chapter 4</b>	<b>Managing the Windows 10 Environment</b>	<b>193</b>
	Managing Windows	194
	Manipulating the Desktop Environment	195
	Configuring Personalization	204
	Using Control Panel	209
	Using the Microsoft Management Console	218
	Using the System Icon	219
	Understanding the Settings Window	222
	Using PowerShell	224
	Configuring Mobility Options	225
	Configuring Offline Files and Synchronization	225
	Configuring Power Policies	227
	Configuring Windows To Go	233
	Managing Windows 10 Services	236
	Configuring Internet Browsers	238
	Cortana	239
	Browser Controls	240
	Pinning Sites to the Taskbar	240
	Searchable Address Bar	240
	Security and Privacy Enhancements	240
	Using the Browser's Compatibility View	240
	Using Protected Mode for IE11	241
	Using InPrivate Browsing	242
	Configuring Windows Internet Explorer 11 Options	243
	Summary	247
	Exam Essentials	247
	Video Resources	248
	Review Questions	249
<b>Chapter 5</b>	<b>Configuring Security and Devices</b>	<b>253</b>
	Understanding Filesystems	254
	Filesystem Selection	255
	Filesystem Conversion	257
	Configuring NTFS	258
	Configuring Hardware	259
	Understanding Devices	259
	Using Device Manager	261
	Installing and Updating Device Drivers	265
	Driver Signing	275
	Managing I/O Devices	275
	Configuring Removable Storage Devices	275
	Managing Printers	278
	Configuring Windows Defender Firewall	291
	Understanding the Windows Defender Firewall Basics	292
	Windows Defender Firewall with Advanced Security	292

	Summary	297
	Exam Essentials	297
	Video Resources	298
	Review Questions	299
<b>Chapter 6</b>	<b>Configuring Network Connectivity</b>	<b>301</b>
	Understanding the Basics	302
	Peer-to-Peer Networks	302
	On-site Active Directory Networks	304
	Cloud-Based Azure Active Directory	306
	Other Microsoft Networking Terms and Roles	306
	Configuring NIC Devices	309
	Configuring a Network Adapter	310
	Troubleshooting a Network Adapter	316
	Configuring Wireless NIC Devices	316
	Configuring Wi-Fi Direct	324
	Understanding TCP/IP	326
	Benefits and Features of TCP/IP	327
	Basics of IP Addressing and Configuration	329
	Using IPv6 Addresses	334
	Configuring TCP/IP on Windows 10	344
	Testing Your IP Configuration	346
	Configuring Windows 10 on a Network	348
	Summary	350
	Exam Essentials	351
	Video Resources	351
	Review Questions	352
<b>Chapter 7</b>	<b>Configuring Recovery</b>	<b>355</b>
	Understanding Recovery	357
	Knowing the Startup/Boot Options	358
	Starting in Safe Mode	359
	Enabling Boot Logging	362
	Using Other Startup Setting Options	364
	Understanding System Restore	365
	Using the System Image Recovery	366
	Using the Startup Repair Tool	367
	Maintaining Windows 10 with Backup and Restore	368
	Creating a Backup	369
	Restoring Files from a Backup	370
	Recovering Files from OneDrive	371
	Using the Wbadmin Command Utility	372
	Using Advanced Backup Options	373

	Using System Protection	375
	Creating Restore Points	376
	Restoring Restore Points	376
	Cleaning Up Old Restore Points	377
	Using the Recycle Bin	377
	Monitoring Windows	378
	Introducing Performance Monitor	379
	Using Other Performance-Monitoring Tools	388
	Summary	397
	Exam Essentials	398
	Video Resources	399
	Review Questions	400
<b>Appendix</b>	<b>Answer to Review Questions</b>	<b>403</b>
	Chapter 1: Windows 10 Installation	404
	Chapter 2: Configuring Users	404
	Chapter 3: Managing Data	405
	Chapter 4: Managing the Windows 10 Environment	406
	Chapter 5: Configuring Security and Devices	407
	Chapter 6: Configuring Network Connectivity	408
	Chapter 7: Configuring Recovery	409
	<i>Index</i>	411

# Table of Exercises

<b>Exercise</b>	<b>1.1</b>	Performing a Clean Install of Windows 10 . . . . .	23
<b>Exercise</b>	<b>1.2</b>	Upgrading Windows 8.1 to Windows 10 . . . . .	31
<b>Exercise</b>	<b>1.3</b>	Configuring Locales . . . . .	35
<b>Exercise</b>	<b>1.4</b>	Troubleshooting Failed Installations with Setup Logs . . . . .	37
<b>Exercise</b>	<b>1.5</b>	Downloading and Installing MDT . . . . .	42
<b>Exercise</b>	<b>1.6</b>	Configuring MDT . . . . .	44
<b>Exercise</b>	<b>1.7</b>	Prepare a System for Imaging by Using the System Preparation Tool . . . . .	61
<b>Exercise</b>	<b>2.1</b>	Adding the Local Users and Groups Snap-In . . . . .	83
<b>Exercise</b>	<b>2.2</b>	Accessing Local Users and Groups via the Computer Management Utility . . . . .	84
<b>Exercise</b>	<b>2.3</b>	Creating New Users via the MMC . . . . .	89
<b>Exercise</b>	<b>2.4</b>	Disabling User Accounts . . . . .	91
<b>Exercise</b>	<b>2.5</b>	Deleting a User Account . . . . .	93
<b>Exercise</b>	<b>2.6</b>	Renaming a User Account . . . . .	93
<b>Exercise</b>	<b>2.7</b>	Changing a User's Password . . . . .	94
<b>Exercise</b>	<b>2.8</b>	Adding a User to an Existing Group . . . . .	102
<b>Exercise</b>	<b>2.9</b>	Setting Up User Profiles . . . . .	104
<b>Exercise</b>	<b>2.10</b>	Assigning Home Folders . . . . .	108
<b>Exercise</b>	<b>2.11</b>	Creating Local Groups . . . . .	116
<b>Exercise</b>	<b>2.12</b>	Adding Accounts to Groups . . . . .	117
<b>Exercise</b>	<b>2.13</b>	Adding the Local Computer Policy Snap-In . . . . .	122
<b>Exercise</b>	<b>2.14</b>	Accessing an LGPO . . . . .	123
<b>Exercise</b>	<b>2.15</b>	Configuring Password Policy . . . . .	127
<b>Exercise</b>	<b>2.16</b>	Configuring Account-Lockout Policies . . . . .	129
<b>Exercise</b>	<b>2.17</b>	Configuring Audit Policies . . . . .	133
<b>Exercise</b>	<b>2.18</b>	Applying a User-Rights Policy . . . . .	138
<b>Exercise</b>	<b>2.19</b>	Seeing How UAC Affects Accounts . . . . .	139
<b>Exercise</b>	<b>2.20</b>	Enabling Remote Desktop . . . . .	150
<b>Exercise</b>	<b>2.21</b>	Setting Up a VPN Connection . . . . .	152
<b>Exercise</b>	<b>3.1</b>	Managing NTFS Permissions . . . . .	171
<b>Exercise</b>	<b>3.2</b>	Logging into OneDrive . . . . .	179
<b>Exercise</b>	<b>3.3</b>	Using BitLocker in Windows 10 . . . . .	186
<b>Exercise</b>	<b>4.1</b>	Configuring Windows 10 Desktop Options . . . . .	208
<b>Exercise</b>	<b>4.2</b>	Installing New Features . . . . .	216

<b>Exercise 4.3</b>	Changing the Computer Name . . . . .	221
<b>Exercise 4.4</b>	Changing the System's Virtual Memory . . . . .	221
<b>Exercise 4.5</b>	Configuring a Power Plan . . . . .	231
<b>Exercise 4.6</b>	Configuring the Power Button for Hibernate Mode . . . . .	231
<b>Exercise 4.7</b>	Configuring Services . . . . .	237
<b>Exercise 5.1</b>	Opening Devices . . . . .	260
<b>Exercise 5.2</b>	Viewing Device using Device Manager . . . . .	261
<b>Exercise 5.3</b>	Configuring Network Adapter Advanced Properties . . . . .	264
<b>Exercise 5.4</b>	Viewing Driver Details . . . . .	268
<b>Exercise 5.5</b>	Updating a Driver . . . . .	269
<b>Exercise 5.6</b>	Rolling Back a Driver. . . . .	269
<b>Exercise 5.7</b>	Disabling and Enabling a Device in Device Manager . . . . .	270
<b>Exercise 5.8</b>	Uninstalling and Reinstalling a Device Driver . . . . .	271
<b>Exercise 5.9</b>	Verifying Signed Drivers . . . . .	275
<b>Exercise 5.10</b>	Configuring an Input/Output Device . . . . .	277
<b>Exercise 5.11</b>	Installing a Printer. . . . .	281
<b>Exercise 5.12</b>	Installing a Shared Network Print Device . . . . .	282
<b>Exercise 5.13</b>	Managing Documents in the Local Queue. . . . .	287
<b>Exercise 5.14</b>	Removing a Printer from Printers & Scanners . . . . .	288
<b>Exercise 5.15</b>	Using the Print Migration Tools . . . . .	290
<b>Exercise 5.16</b>	Creating a New Inbound Rule . . . . .	295
<b>Exercise 6.1</b>	Viewing the Network Connection Details . . . . .	318
<b>Exercise 6.2</b>	Viewing Wireless Network Connection Properties . . . . .	320
<b>Exercise 6.3</b>	Accessing the Windows 10 Wireless Properties. . . . .	322
<b>Exercise 6.4</b>	Configuring a Static TCP/IP Address . . . . .	344
<b>Exercise 6.5</b>	Using DHCP . . . . .	345
<b>Exercise 6.6</b>	Connecting a Windows 10 Machine to the Domain . . . . .	349
<b>Exercise 6.7</b>	Adding Windows 10 to the Domain via Active Directory . . . . .	350
<b>Exercise 7.1</b>	Booting Your Computer to Safe Mode . . . . .	361
<b>Exercise 7.2</b>	Using Boot Logging . . . . .	363
<b>Exercise 7.3</b>	Backing Up Files . . . . .	370
<b>Exercise 7.4</b>	Restoring Files. . . . .	371
<b>Exercise 7.5</b>	Configuring OneDrive . . . . .	372
<b>Exercise 7.6</b>	Creating a System Image. . . . .	373
<b>Exercise 7.7</b>	Creating a Restore Point. . . . .	376
<b>Exercise 7.8</b>	Restoring a Restore Point . . . . .	377
<b>Exercise 7.9</b>	Using the Recycle Bin. . . . .	378

# Introduction

This book was written from more than 25 years of IT experience. I have taken that experience and translated it into a Windows 10 book that will help you not only prepare for the Microsoft 365 Certified: Modern Desktop Administrator Associate exams but also to develop a clear understanding of how to install and configure Windows 10 while avoiding all the possible configuration pitfalls.

Many Microsoft books just explain the Windows operating system, but with *Microsoft 365 Certified: Modern Desktop Administrator Associate: Exam MD-100*, I go a step further, providing many in-depth, step-by-step procedures to support my explanations of how the operating system performs at its best.

Microsoft Windows 10 is the newest version of Microsoft's client operating system software. Microsoft has taken the best of Windows 7 and Windows 8 and combined them into the latest creation, Windows 10.

Windows 10 eliminates many of the problems that plagued the previous versions of Windows clients and it includes a much faster boot time and shutdown. It is also easier to install and configure, and it barely stops to ask the user any questions during installation. In this book, I will show you what features are installed during the automated installation and where you can make changes if you need to be more in charge of your operating system and its features.

This book takes you through all the ins and outs of Windows 10, including installation, configuration, online Microsoft subscriptions, auditing, backups, and so much more.

Windows 10 has improved on Microsoft's Desktop environment, made networking easier, enhanced search ability, improved performance—and that's only scratching the surface.

When all is said and done, this is a technical book for IT professionals who want to take Windows 10 to the next step and get certified. With this book, you will not only learn Windows 10 and hopefully pass the exams, you will also become a Windows 10 expert.

## The Microsoft Certification Program

Since the inception of its certification program, Microsoft has certified more than two million people. As the computer network industry continues to increase in both size and complexity, this number is sure to grow—and the need for proven ability will also increase. Certifications can help companies verify the skills of prospective employees and contractors.

The Microsoft certification tracks for Windows 10 include the following certifications:

**Microsoft 365 Certified: Modern Desktop Administrator Associate: Windows 10** The Microsoft 365 Certified: Modern Desktop Administrator Associate is now the highest-level certification you can achieve with Microsoft in relation to Windows 10. It requires passing exams MD-100 and MD-101. This book assists in your preparation for exam MD-100.

**Microsoft Certified Technology Associate (MTA)** This is Microsoft’s newest certification program. This certification targets those new to the IT field and tests candidates on the core competencies necessary to become an IT professional.

**Microsoft Certified Technology Specialist (MCTS)** The MCTS certification program targets specific technologies instead of specific job roles. You must take and pass one to three exams.

**MCSE: Server Infrastructure or MCSE: Desktop Infrastructure** The MCSE certifications, in relation to Windows Server, require that you become a Windows Server MCSA first and then pass two additional exams. The additional exams will vary depending on which of the two MCSE tracks you choose. For more information, visit Microsoft’s website at [www.microsoft.com/learning](http://www.microsoft.com/learning).

## How Do You Become Certified on Windows 10?

Attaining Microsoft certification has always been a challenge. In the past, students have been able to acquire detailed exam information—even most of the exam questions—from online “brain dumps” and third-party “cram” books or software products. For the new generation of exams, this is simply not the case.

Microsoft has taken strong steps to protect the security and integrity of its new certification tracks. Now prospective candidates must complete a course of study that develops detailed knowledge about a wide range of topics. It supplies them with the true skills needed, derived from working with the technology being tested.

The new generations of Microsoft certification programs are heavily weighted toward hands-on skills and experience. It is recommended that candidates have troubleshooting skills acquired through hands-on experience and working knowledge.

Fortunately, if you are willing to dedicate the time and effort to learn Windows 10, you can prepare yourself well for the exam by using the proper tools. By working through this book, you can successfully meet the requirements to pass the Windows 10 exams.

## Microsoft 365 Certified: Modern Desktop Administrator Associate Exam Requirements

Candidates for MCSA certification on Windows 10 must pass two Windows 10 MCSA tests:

- MD-100: Windows 10
- MD-101: Managing Modern Desktops

Microsoft provides exam objectives to give you a general overview of possible areas of coverage on the Microsoft exams. Keep in mind, however, that exam objectives are subject to change at any time without prior notice and at Microsoft’s sole discretion. Please visit the Microsoft Learning website ([www.microsoft.com/learning](http://www.microsoft.com/learning)) for the most current listing of exam objectives. The published objectives and how they map to this book are listed later in this introduction.



For a more detailed description of the Microsoft certification programs, including a list of all the exams, visit the Microsoft Learning website at [www.microsoft.com/learning](http://www.microsoft.com/learning).

## Types of Exam Questions

In an effort to both refine the testing process and protect the quality of its certifications, Microsoft has focused its latest certification exams on real experience and hands-on proficiency. There is a greater emphasis on your past working environments and responsibilities and less emphasis on how well you can memorize. In fact, Microsoft says that certification candidates should have hands-on experience before attempting to pass any certification exams.



Microsoft will accomplish its goal of protecting the exams' integrity by regularly adding and removing exam questions, limiting the number of questions that any individual sees in a beta exam, limiting the number of questions delivered to an individual by using adaptive testing, and adding new exam elements.

Exam questions may be in a variety of formats: Depending on which exam you take, you'll see multiple-choice questions as well as select-and-place and prioritize-a-list questions. Simulations and case study based formats are included as well. Let's take a look at the types of exam questions, so you'll be prepared for all of the possibilities.

### Multiple-Choice Questions

Multiple-choice questions come in two main forms. One is a straightforward question followed by several possible answers, of which one or more is correct. The other type of multiple-choice question is more complex and based on a specific scenario. The scenario may focus on several areas or objectives.

### Select-and-Place Questions

Select-and-place exam questions involve graphical elements that you must manipulate to successfully answer the question. For example, you might see a diagram of a computer network. A typical diagram will show computers and other components next to boxes that contain the text "Place here." The labels for the boxes represent various computer roles on a network, such as a print server and a file server. Based on information given for each computer, you are asked to select each label and place it in the correct box. You need to place *all* of the labels correctly. No credit is given for the question if you correctly label only some of the boxes.

In another select-and-place problem, you might be asked to put a series of steps in order by dragging items from boxes on the left to boxes on the right and placing them in

the correct order. One other type requires that you drag an item from the left and place it under an item in a column on the right.



For more information on the various exam question types, go to [www.microsoft.com/learning/mcpexams/policies/innovations.asp](http://www.microsoft.com/learning/mcpexams/policies/innovations.asp).

## Simulations

Simulations are the kinds of questions that most closely represent actual situations and test the skills you use while working with Microsoft software interfaces. These exam questions include a mock interface on which you are asked to perform certain actions according to a given scenario. The simulated interfaces look nearly identical to what you see in the actual product.

Because of the number of possible errors that can be made on simulations, be sure to consider the following recommendations from Microsoft:

- Do not change any simulation settings that don't pertain to the solution directly.
- When related information has not been provided, assume that the default settings are used.
- Make sure that your entries are spelled correctly.
- Close all the simulation application windows after completing the set of tasks in the simulation.

The best way to prepare for simulation questions is to spend time working with the graphical interface of the product on which you will be tested.

## Case Study–Based Questions

Case study–based questions first appeared in the MCSD program. These questions present a scenario with a range of requirements. Based on the information provided, you answer a series of multiple-choice and select-and-place questions. The interface for case study–based questions has a number of tabs, each of which contains information about the scenario. At present, this type of question appears only in most of the Design exams.

## Tips for Taking the Windows 10 Exams

Here are some general tips for achieving success on your certification exam:

- Arrive early at the exam center so that you can relax and review your study materials. During this final review, you can look over tables and lists of exam-related information.
- Read the questions carefully. Do not be tempted to jump to an early conclusion. Make sure that you know *exactly* what the question is asking.

- Answer all questions. If you are unsure about a question, mark it for review and come back to it at a later time.
- On simulations, do not change settings that are not directly related to the question. Also, assume default settings if the question does not specify or imply which settings are used.
- For questions that you're not sure about, use a process of elimination to get rid of the obviously incorrect answers first. This improves your odds of selecting the correct answer when you need to make an educated guess.

## **Exam Registration**

Microsoft exams are given using more than 1,000 Authorized VUE Testing Centers around the world. For the location of a testing center near you, go to VUE's website at [www.vue.com](http://www.vue.com). If you are outside of the United States and Canada, contact your local VUE registration center. Also, many Microsoft exams can be taken live on-line. You need to schedule the exam the same way by using VUE. Just be sure to read the requirements and make sure you meet the requirements before taking an on-line exam.

Find out the number of the exam you want to take, and then register with the VUE registration center nearest to you. At this point, you will be asked for advance payment for the exam. The exams are \$165 each, and you must take them within one year of payment. You can schedule exams up to six weeks in advance or as late as one working day prior to the date of the exam. You can cancel or reschedule your exam if you contact the center at least two working days prior to the exam. Same-day registration is available in some locations, subject to space availability. Where same-day registration is available, you must register a minimum of two hours before test time.

When you schedule the exam, you will be provided with instructions regarding appointment and cancellation procedures, ID requirements, and information about the testing center location. In addition, you will receive a registration and payment confirmation email.

Microsoft requires certification candidates to accept the terms of a nondisclosure agreement before taking certification exams.

## **Who Should Read This Book?**

This book is intended for individuals who want to earn their Microsoft 365 Certified: Modern Desktop Administrator Associate: Windows 10 certification.

This book will not only help anyone who is looking to pass the Microsoft exams, it will also help anyone who wants to learn the real ins and outs of the Windows 10 operating system.

## What's Inside?

Here is a glance at what's in each chapter:

**Chapter 1: Windows 10 Installation** In the first chapter, I explain the requirements and steps to install and configure Windows 10. I will also show you the different versions of Windows 10. This chapter also shows you how to configure automated installation of Windows 10.

**Chapter 2: Configuring Users** This chapter shows you how to configure user authorization and authentication. Understanding how users authenticate onto your network and knowing how to secure your network and users is one of the most important tasks that administrators must perform. I will also show you how to manage local groups, manage local users, configure remote connectivity, configure remote management, and configure devices by using local policies.

**Chapter 3: Managing Data** I show you how to configure disks, volumes, and filesystem options using Disk Management and Windows PowerShell. I will also discuss how to configure removable devices and how to create and configure storage spaces. Finally, I will show you how to troubleshoot storage and removable devices issues.

**Chapter 4: Managing the Windows 10 Environment** This chapter takes you through the different ways to configure the Windows 10 environment, including performing post-installation configuration, configuring Edge and Internet Explorer, configuring mobility settings, configuring sign-in options, and customizing the Windows desktop.

**Chapter 5: Configuring Security and Devices** This chapter takes you through the different ways to configure Windows 10 devices, including configuring Windows Defender Firewall and implementing encryption.

**Chapter 6: Configuring Network Connectivity** This chapter will show you how to implement and configure Windows networking, including workgroups and domains. I will also talk about HomeGroups and how to configure TCP/IP.

**Chapter 7: Configuring Recovery** This chapter will explain to you how to implement and configure Windows backups and recovery points. I will show you how to use cloud-based backups and how to recover the Windows 10 system using advanced boot options.

## What's Included with the Book

There are many helpful items intended to prepare you for the MCSA: Windows 10 certification included in this book:

**Assessment Test** There is an Assessment Test at the conclusion of the introduction that can be used to quickly evaluate where you are with Windows 10. This test should be taken

prior to beginning your work in this book and should help you identify areas in which you are either strong or weak. Note that these questions are purposely more simple than the types of questions you may see on the exams.

**Opening List of Objectives** Each chapter includes a list of the exam objectives that are covered in that chapter.

**Helpful Exercises** Throughout the book, I have included step-by-step exercises of some of the more important tasks you should be able to perform. Some of these exercises have corresponding videos that can be downloaded from the book's website. Also, later in this introduction you'll find a recommended home lab setup that will be helpful in completing these tasks.

**Video Resources** After each chapter summary, if the chapter includes exercises with corresponding videos, a list or description of the exercises with video resources will be provided. The videos can be accessed at <http://www.wiley.com/go/Sybextestprep>.

**Exam Essentials** The end of each chapter also includes a listing of exam essentials. These are essentially repeats of the objectives, but remember that any objective on the exam blueprint could show up on the exam.

**Chapter Review Questions** Each chapter includes review questions. These are used to assess your understanding of the chapter and are taken directly from the chapter. These questions are based on of the exam objectives and are similar in difficulty to items you might actually receive on the MCSA: Windows 10 exams.



The Sybex Interactive Online Test Bank, flashcards, videos, and glossary can be accessed at [www.wiley.com/go/Sybextestprep](http://www.wiley.com/go/Sybextestprep).

## Objective Mapping

Table I.1 contains an objective map to show you at-a-glance where you can find each objective covered.

**TABLE I.1** MD-100 Objective Map

Objective	Chapter
<b>Deploy Windows (15–20%)</b>	
<b>Deploy Windows 10.</b>	Chapter 1
<ul style="list-style-type: none"> <li>▪ Configure language packs; migrate user data; perform a clean installation; perform an in-place upgrade (using tools such as MDT, WDS, ADK, etc.); select the appropriate Windows edition; troubleshoot activation issues.</li> </ul>	Chapter 1

**TABLE I.1** MD-100 Objective Map *(continued)*

<b>Objective</b>	<b>Chapter</b>
<b>Perform post-installation configuration.</b>	Chapter 4
<ul style="list-style-type: none"> <li>▪ Configure Edge and Internet Explorer; configure mobility settings; configure sign-in options; customize the Windows desktop.</li> </ul>	Chapter 4
<b>Manage Devices and Data (35–40%)</b>	
<b>Manage local users, local groups, and devices.</b>	Chapter 2
<ul style="list-style-type: none"> <li>▪ Manage devices in directories; manage local groups; manage local users.</li> </ul>	Chapter 2
<b>Configure data access and protection.</b>	Chapter 3
<ul style="list-style-type: none"> <li>▪ Configure NTFS permissions; configure shared permissions.</li> </ul>	Chapter 3
<b>Configure devices by using local policies.</b>	Chapter 2
<ul style="list-style-type: none"> <li>▪ Configure local registry; implement local policy; troubleshoot group policies on devices.</li> </ul>	Chapter 2
<b>Manage Windows security.</b>	Chapter 5
<ul style="list-style-type: none"> <li>▪ Configure user account control (UAC); configure Windows Defender Firewall; implement encryption.</li> </ul>	Chapter 5
<b>Configure Connectivity (15–20%)</b>	
<b>Configure networking.</b>	Chapter 6
<ul style="list-style-type: none"> <li>▪ Configure client IP settings; configure mobile networking; configure VPN client; troubleshoot networking; configure Wi-Fi profiles.</li> </ul>	Chapter 6
<b>Configure remote connectivity.</b>	Chapter 2
<ul style="list-style-type: none"> <li>▪ Configure remote management; enable PowerShell Remoting; configure remote desktop access.</li> </ul>	Chapter 2
<b>Maintain Windows (25–30%)</b>	
<b>Configure system and data recovery.</b>	Chapter 7
<ul style="list-style-type: none"> <li>▪ Perform file recovery (including OneDrive); recover Windows 10; troubleshoot startup/boot process.</li> </ul>	Chapter 7