David Elfassy
J. Peter Bruzzese, Technical Editor

Mastering Microsoft® Exchange Server 2013

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This book is dedicated to my loving, gorgeous wife, Gillian, and to my three daily inspirations, Zachary, Zoe, and Savannah. Thank you for enduring all my late nights and continuously encouraging me through this journey. I love you all.
— D

Acknowledgments

Thank you once again, Microsoft, for a great release of Exchange Server. This is now the seventh major release of the well-known premiere messaging system. In this release, we can see the effort and the ingenuity come together in solving customer problems to create a truly superior product. Congratulations!

As the team that is working on this book completes the final steps required to send it to the printer, I continue to bring some real-world expertise into the content. I have deployed several Exchange Server 2013 infrastructures to date, but this product is so vast and so broad that I continue to find design options, best practices, and architecture recommendations on a daily basis. I'm pretty sure that I will be updating the content up to the last minute!

When I was approached to take on this book, several months before Exchange Server 2013 was about to release to manufacturing, my reaction was, "What about Jim?" Jim McBee, having authored three previous editions of this book, has been the pillar of the *Mastering Exchange Server* series and an inspiring role model in my own Exchange Server consulting career. I consider it to be a true honor to take over for Jim McBee as the lead author for this book, and I hope that this edition has adequately followed through on his tradition.

Throughout the book, I have tried to keep the tone and language similar to what was used in the previous editions of this book, so if you are familiar with Jim's writing style, you should find comfort in these pages. In addition, I have removed some of the introductory technical information from previous editions, to reflect the depth of initial experience of the readers.

Taking on the responsibility of a 900+ -page manual is no simple task and not one that can be undertaken by only one person. Along the way, I have invited several contributors to this effort. Their knowledge and expertise have added incredible value to this book. Having written anywhere from several paragraphs to complete chapters, Chris Crandall, Devin Ganger, Mahmoud Magdy, Adam Micelli, Bob Reinsch, Jeffrey Rosen, and Michael Smith are Exchange Server gurus who have provided key content for this book. Some of this has been outside my areas of expertise and a great contribution to this effort. Thank you!

There is also a man who has kept us all honest and has been the gatekeeper for technical accuracy in this book, and he has helped revise a couple of chapters more substantially. J. Peter Bruzzese agreed to take on the responsibility of technical reviewer for this book and has done a formidable job. When I received a chapter back from Peter with only very few red marks, I considered it an achievement! Peter, thank you!

The great folks at Wiley have been patient beyond belief when it comes to deadlines, content, and outline changes as well as our ever-changing list of contributors. They include acquisitions editor Mariann Barsolo, developmental editor Candace Cunningham, and production editor Dassi Zeidel.

Along the way, several Exchange Server experts have answered my questions, calmed my nerves, and listened to my rants about configuration frustrations. I would like to acknowledge them, even if some of them answered my questions without knowing it. They include Paul Adare, David Espinosa, Stan Reimer, Paul Robichaux, Scott Schnoll, Ross Smith, Greg Taylor, and Brian Tirch. And a big thank-you goes to Corey Hynes and Kim Frank for providing me with some very useful virtual server environments.

I would also like to acknowledge those who have helped me in my own Exchange Server path, from Sandra Ford, who hired me to teach my first Exchange Server 5.0 course, to Ken Rosen, who inspired me to write my first course on Exchange Server 2003, to Jennifer Morrison, who pushed to hire me on my first large Microsoft project. Thank you!

I would also like to thank my business partner and friend, Jonathan Long, for doing the work I was supposed to be doing when I was writing this book and for supporting me through this latest writing effort.

And a special acknowledgement to those in my daily life, my father, Elie Elfassy; my uncle, Leon Elfassy; my sister, Celine Elfassy; and my father-in-law, Sam Katz: thank you for always being supportive of all my endeavors.

About the Author

David Elfassy, MCSE, MCT, and MVP: Exchange Server, is an international presenter and trainer, having presented on messaging technologies to thousands of Microsoft clients since the late 1990s. David collaborates with Microsoft on certification, courseware, and key development projects. As a senior technical advisor for two Microsoft Gold Certified Partners, including Netlogon Technologies, where he specializes in large enterprise consulting and technical writing, and Kalleo, where he specializes in small business network management (overseeing a team of consultants and network technicians), David is a project lead on many migrations and implementations of Microsoft infrastructure technologies for government and corporate organizations. Helping organizations migrate to the latest versions of Microsoft Exchange Server has always been a key focus of David's consulting commitments. David is a regular presenter at international conferences such as TechEd North America and TechEd Europe. David was also the coauthor of the previous edition of this book, *Mastering Exchange Server 2010* (Sybex, 2010) with Jim McBee.

When David is not troubleshooting SMTP connections or working on Microsoft projects, he's usually snowboarding or skateboarding, depending on the season. He also spends a fair bit of time running after his three young children, Zachary, Zoe, and Savannah, and hanging out with his supporting, lovely wife, Gillian.

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Introduction

Thank you for purchasing (or considering the purchase of) *Mastering Exchange Server 2013*; this is the latest in a series of Mastering Exchange Server books that have helped thousands of readers to better understand Microsoft's excellent messaging system. Along the way, we hope that this series of books has made you a better administrator and allowed you to support your organizations to the best of your abilities.

When we started planning the outline of this book more than a year before its release, Exchange Server 2013 appeared to be simply a minor series of improvements over Exchange Server 2010. Of course, the further we explored the product, the more we found that was not the case. Many of the improvements in Exchange Server 2013 were major improvements (such as DAG management) and sometimes even complete rewrites (such as in the case of the Client Access server role) of how the product worked previously.

Another challenge then presented itself. The market penetration of Exchange Server 2010 was fairly dominant, but we found that many organizations still run Exchange Server 2007. Though increasingly smaller, a percentage of Exchange Server customers are still using Exchange Server 2003. Thus, we needed to explain the differences for not only Exchange Server 2010 administrators but also for the Exchange Server 2007 and even Exchange Server 2003 administrators.

We took a step back and looked at the previous editions of the book to figure out how much of the previous material was still relevant. Some of the material from the Exchange Server 2010 book is still relevant but needed updating. Some required completely new chapters to cover new technologies introduced in Exchange Server 2013 or technologies that have since taken on more importance in deployments and management. We faced the challenge of explaining two management interfaces, Exchange Management Shell and Exchange Admin Center, as well as describing the new roles and features.

We started working with the Exchange Server 2013 code more than a year before we expected to release the book. Much of the book was written using the RTM code that was first made available in October 2012, but as we continued writing the book, we made updates to changes introduced in Cumulative Update 1 and Cumulative Update 2. So, you can safely assume when reading this book that it is based on the latest bits of Exchange Server 2013 that released in late summer 2013. In writing this book, we had a few goals for the book and the knowledge we wanted to impart to the reader:

- We wanted to provide an appropriate context for the role of messaging services in an organization, outlining the primary skills required by an Exchange Server administrator.
- We wanted the reader to feel comfortable when approaching an Exchange Server environment of any size. The content in this book can assist administrators of small companies with only one server, as well as administrators who handle large Exchange Server farms.
- We wanted the skills and tasks covered in this book to be applicable to 80 percent of all organizations running Exchange Server.
- We wanted the book to educate not only "new to product" administrators but also those "new to version" administrators who are upgrading from a previous version.

- We wanted the book to familiarize administrators with Office 365 environments and the implementation of hybrid coexistence with on-premises Exchange Server deployments.
- We wanted to provide familiar references for administrators of previous versions, ensuring that Exchange Server 2003, 2007, and 2010 administrators can easily find equivalent solutions in Exchange Server 2013.

Microsoft listened to the advice of many of its customers, its internal consultants at Microsoft Consulting Services (MCS), Microsoft Certified Systems Engineers (MCSEs), Most Valuable Professionals (MVPs), Microsoft Certified Solutions Masters (MCSMs), and Microsoft Certified Trainers (MCTs) to find out what was missing from earlier versions of the product and what organizations' needs were. Much of this work started even before Exchange Server 2013 was released.

Major Changes in Exchange Server 2013

This book covers the many changes in Exchange Server 2013 in detail, but we thought we would give you a little sample of what is to come in the chapters. As you can imagine, the changes are once again significant, considering the tremendous effort that Microsoft sinks into the Exchange Server line of products. Exchange Server is a significant generator of revenue for Microsoft and is also a foundational service for Office 365. Microsoft has every reason to continue improving this most impressive market leader of email and collaboration services.

The primary changes in Exchange Server 2013 since the latest release (Exchange Server 2010) have come in the following areas:

- Replacement of the Exchange Management Console by the web-based console Exchange Admin Center
- Integration of Transport services into the Client Access and Mailbox server roles and subsequent removal of the Hub Transport server role
- Integration of Unified Messaging services into the Client Access and Mailbox server roles and subsequent removal of the Unified Messaging server role
- Reconfiguration of public folders to be stored in mailbox databases within a *public folder mailbox*
- Improved integration with SharePoint Server 2013 and Lync Server 2013, including options for archiving Lync conversations in Exchange Server
- Completely rewritten Information Store processes, now named the *Managed Store*
- Significant improvement in database maintenance, database availability group management, and overall site resiliency functionalities
- Significant improvement in Transport rules, mainly through the implementation of the new Data Loss Prevention (DLP) policies

Of course, many more changes have been introduced in Exchange Server 2013, but the preceding list stands out to us as the most noteworthy improvements. Chapter 2, "Introducing the Changes in Exchange Server 2013," contains an exhaustive list of all significant changes, as well as changes since specific versions of Exchange Server (for example, Exchange Server 2003 versus Exchange Server 2013).

How This Book Is Organized

This book consists of 25 chapters, divided into five broad parts. As you proceed through the book, you'll move from general concepts to increasingly detailed descriptions of hands-on implementation.

This book won't work well for practitioners of the time-worn ritual of chapter hopping. Although some readers may benefit from reading one or two chapters, we recommend that you read most of the book in order. Even if you have experience as an Exchange Server administrator, we recommend that you do not skip any chapter, because they all provide new information since the previous iterations of Exchange Server. Only if you already have considerable experience with these products should you jump to the chapter that discusses in detail the information you are looking for.

If you are like most administrators, though, you like to get your hands on the software and actually see things working. Having a working system also helps many people as they read a book or learn about a new piece of software because this lets them test new skills as they learn them. If this sounds like you, then start with Chapter 7, "Exchange Server 2013 Quick Start Guide." This chapter will take you briefly through some of the things you need to know to get Exchange Server running, but not in a lot of detail. As long as you're not planning to put your quickie server into production immediately, there should be no harm done. Before you put it into production, though, we strongly suggest that you explore other parts of this book. Here's a guide to what's in each chapter.

Part 1: Exchange Fundamentals

This part of the book focuses on concepts and features of Microsoft's Windows Server 2012, Exchange Server 2013, and some of the fundamentals of operating a modern client/server email system.

Chapter 1, "Putting Exchange Server 2013 in Context," is for those administrators who have been handed an Exchange Server organization but who have never managed a previous version of Exchange Server or even another mail system. This will give you some of the basic information and background to help you get started managing Exchange Server and, hopefully, a little history and perspective.

Chapter 2, "Introducing the Changes in Exchange Server 2013," introduces the new features of Exchange Server 2013 as contrasted with previous versions.

Chapter 3, "Understanding Availability, Recovery, and Compliance," helps even experienced administrators navigate some of the new hurdles that Exchange Server administrators must overcome, including providing better system availability, site resiliency, backup and restoration plans, and legal compliance. This chapter does *not* cover database availability groups in detail; instead, that information is covered in Chapter 20, "Creating and Managing Database Availability Groups."

Chapter 4, "Virtualizing Exchange Server 2013," helps you decide whether you should virtualize some percentage of your servers, as many organizations are doing.

Chapter 5, "Introduction to PowerShell and the Exchange Management Shell," focuses on and uses examples of features that are enabled in PowerShell through the Exchange Server

2013 management extensions for PowerShell. All administrators should have at least a basic familiarity with the Exchange Management Shell extensions for PowerShell even if you rarely use them.

Chapter 6, "Understanding the Exchange Autodiscover Process," helps you to come up to speed on the inner workings of the magic voodoo that is Autodiscover, a feature that greatly simplifies the configuration of both internal and external clients.

Part 2: Getting Exchange Server Running

This section of the book is devoted to topics related to meeting the prerequisites for Exchange Server and getting Exchange Server installed correctly the first time. While installing Exchange Server correctly is not rocket science, getting everything right the first time will greatly simplify your deployment.

Chapter 7, "Exchange Server 2013 Quick Start Guide," is where everyone likes to jump right in and install the software. This chapter will help you quickly get a single server up and running for your test and lab environment. While you should not deploy an entire enterprise based on the content of this one chapter, it will help you get started quickly.

Chapter 8, "Understanding Server Roles and Configurations," covers the primary services that run on the two Exchange Server roles: Mailbox server and Client Access server. It also covers the architecture of communications between the roles.

Chapter 9, "Exchange Server 2013 Requirements," guides you through the requirements (pertaining to Windows Server, Active Directory, and previous versions of Exchange Server) that you must meet in order to successfully deploy Exchange Server 2013.

Chapter 10, "Installing Exchange Server 2013," takes you through both the graphical user interface and the command-line setup for installing Exchange Server 2013.

Chapter 11, "Upgrades and Migrations to Exchange Server 2013 or Office 365," helps you decide on the right migration or transition approach for your organization. It recommends steps to take to upgrade your organization from Exchange Server 2007 or 2010 to Exchange Server 2013 or to Office 365. Also included in this chapter are recommendations for migration phases and hybrid coexistence with Office 365.

Part 3: Recipient Administration

Recipient administration generally ends up being the most time-consuming portion of Exchange Server administration. Recipient administration includes creating and managing mailboxes, managing mail groups, creating and managing contacts, and administering public folders.

Chapter 12, "Management Permissions and Role-based Access Control," introduces one of the most powerful features of Exchange Server 2013, Role-based Access Control, which enables extremely detailed delegation of permissions for all Exchange Server administrative tasks. This feature will be of great value to large organizations.

Chapter 13, "Basics of Recipient Management," introduces you to some concepts you should consider before you start creating users, including how email addresses are generated and how recipients should be configured.