

*The Only Classroom-Based Training and Self-Assessment System*

GLOBAL KNOWLEDGE™



CERTIFICATION PRESS

# MCSE

MICROSOFT® CERTIFIED SYSTEMS ENGINEER

## Administering Exchange 2000 Server

*STUDY GUIDE* (EXAM 70-224)

**100% Coverage—Over 140 Practice Exam Questions**



### **CertTrainer**

Interactive tutorials and lab simulations give hands-on experience

### **ExamSim**

Realistic practice exam software

**Authors:** **Shane Clawson**, MCSE, MCT  
**Richard Luckett**, MCSE, MCP+I

OSBORNE

# CONTENTS

|                                                                    |              |
|--------------------------------------------------------------------|--------------|
| <i>Foreword</i> .....                                              | <i>iii</i>   |
| <i>About the Authors</i> .....                                     | <i>vi</i>    |
| <i>Acknowledgments</i> .....                                       | <i>vii</i>   |
| <i>Preface</i> .....                                               | <i>xix</i>   |
| <i>Introduction</i> .....                                          | <i>xxiii</i> |
| <br><b>I Introduction to Exchange 2000 Server</b> .....            | <b>I</b>     |
| Overview of Exchange .....                                         | 3            |
| Exchange 4.0 .....                                                 | 3            |
| Exchange 5.0 .....                                                 | 5            |
| Exchange 5.5 .....                                                 | 6            |
| What Is Exchange 2000? .....                                       | 7            |
| Configuring a User Object for Messaging .....                      | 10           |
| Why Do You Want It? .....                                          | 10           |
| Integration with Active Directory .....                            | 12           |
| <b>Exercise 1-1:</b> Configuring a User Object for Messaging ..... | 13           |
| Creating and Managing Address Lists .....                          | 16           |
| Better Control of Distribution Lists .....                         | 16           |
| <b>Exercise 1-2:</b> Creating Address Lists .....                  | 19           |
| Integration with Internet Information Service (IIS) .....          | 21           |
| Information Store .....                                            | 23           |
| Public Folders .....                                               | 25           |
| Collaboration .....                                                | 29           |
| Web Store .....                                                    | 35           |
| Configuring Outlook Web Access .....                               | 39           |
| Outlook Web Access .....                                           | 39           |
| <b>Exercise 1-3:</b> Configuring OWA Access .....                  | 42           |
| Object Management .....                                            | 45           |
| Flexible Administration .....                                      | 48           |
| Messaging Routing .....                                            | 49           |

|                                                                            |           |
|----------------------------------------------------------------------------|-----------|
| Managing Recipient and Server Policies .....                               | 54        |
| Policies .....                                                             | 54        |
| <b>Exercise 1-4:</b> Creating a Recipient Policy .....                     | 55        |
| Clustering Exchange 2000 .....                                             | 58        |
| Virtual Servers .....                                                      | 59        |
| Front-end and Back-end Servers .....                                       | 59        |
| ✓ Two-Minute Drill .....                                                   | 63        |
| Q&A Self Test .....                                                        | 64        |
| Lab Question .....                                                         | 68        |
| Self Test Answers .....                                                    | 69        |
| Lab Answer .....                                                           | 71        |
| <br><b>2 Deploying Exchange 2000 Server and Supported Clients .....</b>    | <b>73</b> |
| Deploying Exchange 2000 Server .....                                       | 74        |
| Planning .....                                                             | 75        |
| Planning Resources and Tools .....                                         | 76        |
| Installation Checklist .....                                               | 79        |
| Installation Environments .....                                            | 85        |
| Three Types of Installations .....                                         | 90        |
| <b>Exercise 2-1:</b> Running ForestPrep for a New Organization .....       | 94        |
| <b>Exercise 2-2:</b> Running DomainPrep .....                              | 97        |
| <b>Exercise 2-3:</b> Installing Exchange .....                             | 100       |
| <b>Exercise 2-4:</b> Mail-Enabling a User Account .....                    | 106       |
| <b>Exercise 2-5:</b> Performing a Subsequent Installation .....            | 110       |
| Changes Made by the Installation .....                                     | 111       |
| Troubleshooting Failed Installations .....                                 | 116       |
| Upgrading Existing Exchange Servers to Exchange 2000 .....                 | 117       |
| Upgrade Requirements .....                                                 | 117       |
| Active Directory Connector .....                                           | 123       |
| <b>Exercise 2-6:</b> Installing the ADC .....                              | 124       |
| Site Replication Service .....                                             | 127       |
| <b>Exercise 2-7:</b> Configuring Connection Agreements with the ADCM ..... | 129       |

|                                                                                                 |     |
|-------------------------------------------------------------------------------------------------|-----|
| Troubleshooting Active Directory Connector Problems .....                                       | 134 |
| Upgrade/Migration Strategies .....                                                              | 136 |
| Moving Exchange 5.5 into a Windows 2000 Environment ...                                         | 139 |
| Moving Accounts and Mailboxes .....                                                             | 139 |
| Troubleshooting the Upgrade Process .....                                                       | 142 |
| Managing Exchange 2000 Migrations .....                                                         | 143 |
| Maintaining Third-party Connectivity .....                                                      | 144 |
| Configuring Messaging Backbones .....                                                           | 145 |
| Maintaining Common User Lists .....                                                             | 145 |
| Maintain Existing Connectors .....                                                              | 146 |
| Moving Users to Exchange 2000 .....                                                             | 147 |
| Reasons to Move to Native Mode .....                                                            | 147 |
| Migration Tools .....                                                                           | 149 |
| <b>Exercise 2-8:</b> Running the Active Directory Account<br>Cleanup Wizard (Search Mode) ..... | 154 |
| Deploying Clients .....                                                                         | 157 |
| Outlook 2000 .....                                                                              | 158 |
| <b>Exercise 2-9:</b> Using the Microsoft Outlook Setup Wizard ..                                | 161 |
| Outlook Express .....                                                                           | 166 |
| <b>Exercise 2-10:</b> Configuring Outlook Express as<br>an Exchange Client .....                | 167 |
| Chat Services (Internet Relay Chat) .....                                                       | 169 |
| Outlook Web Access .....                                                                        | 170 |
| Configuring Client Access Protocols .....                                                       | 172 |
| ✓ Two-Minute Drill .....                                                                        | 177 |
| Q&A Self Test .....                                                                             | 179 |
| Lab Question .....                                                                              | 184 |
| Self Test Answers .....                                                                         | 185 |
| Lab Answer .....                                                                                | 187 |

|                                                                         |            |
|-------------------------------------------------------------------------|------------|
| <b>3 Understanding and Configuring Exchange 2000 Server Roles .....</b> | <b>191</b> |
| Exchange System Manager .....                                           | 192        |
| Configuring Exchange 2000 for Messaging and Collaboration .....         | 193        |

|                                                                                                   |     |
|---------------------------------------------------------------------------------------------------|-----|
| Configuring Exchange 2000 Server Information<br>in the Windows 2000 Active Directory .....        | 193 |
| Configuring Information Store Objects .....                                                       | 195 |
| <b>Exercise 3-1:</b> Creating a New Storage Group .....                                           | 196 |
| <b>Exercise 3-2:</b> Adding a Mailbox Store .....                                                 | 198 |
| <b>Exercise 3-3:</b> Adding a Public Folder Store .....                                           | 203 |
| Configuring Multiple Storage Groups for Data Partitioning ...                                     | 205 |
| Configuring Multiple Databases within a Single<br>Storage Group .....                             | 207 |
| Configuring Virtual Servers to Support Internet Protocols ....                                    | 208 |
| <b>Exercise 3-4:</b> Adding and Configuring an SMTP Virtual<br>Server .....                       | 213 |
| <b>Exercise 3-5:</b> Configuring the Default NNTP Virtual<br>Server .....                         | 220 |
| Configuring Instant Messaging Objects .....                                                       | 223 |
| <b>Exercise 3-6:</b> Adding an IM Virtual Home Server .....                                       | 225 |
| Configuring Chat Objects .....                                                                    | 228 |
| <b>Exercise 3-7:</b> Adding and Configuring a Chat<br>Community .....                             | 230 |
| Defining Exchange 2000 Administrative Groups .....                                                | 236 |
| What Is an Administrative Group? .....                                                            | 237 |
| Scope of Administration .....                                                                     | 237 |
| <b>Exercise 3-8:</b> Creating a Custom Administrative Group ...                                   | 240 |
| Configuring Exchange 2000 for High-volume Messaging .....                                         | 241 |
| Sizing an Exchange 2000 Server .....                                                              | 242 |
| Content Indexing .....                                                                            | 248 |
| <b>Exercise 3-9:</b> Creating Full-Text Index and Configuring<br>Full-Text Index Properties ..... | 249 |
| Troubleshooting Exchange 2000 Availability and Performance .....                                  | 251 |
| System Monitor Terminology .....                                                                  | 252 |
| Diagnose and Resolve Memory Constraints .....                                                     | 253 |
| Diagnose and Resolve Processor Constraints .....                                                  | 254 |
| Diagnose and Resolve Hard Disk Constraints .....                                                  | 255 |
| Diagnose and Resolve Network Constraints .....                                                    | 258 |
| Configuring Exchange 2000 for High Security .....                                                 | 261 |
| Key Management Server (KMS) Process Overview .....                                                | 263 |

|                       |                                                                                           |            |
|-----------------------|-------------------------------------------------------------------------------------------|------------|
| <b>Exercise 3-10:</b> | Enrolling Users with KMS .....                                                            | 265        |
| <b>Exercise 3-11:</b> | Recovering a User's Key .....                                                             | 268        |
| <b>Exercise 3-12:</b> | Revoking a Certificate .....                                                              | 269        |
| <b>Exercise 3-13:</b> | Importing External CA Certificate into<br>a Group Policy Object .....                     | 271        |
|                       | Configuring Virtual Servers to Limit Access Through<br>Firewalls .....                    | 273        |
|                       | Enable Digest Authentication for Instant Messaging .....                                  | 277        |
| <b>Exercise 3-14:</b> | Modifying Domain Security Policy for<br>Digest Authentication .....                       | 279        |
|                       | Administering Public Folders on the Enterprise .....                                      | 280        |
|                       | Configuring the Active Directory Object Attributes<br>of a Public Folder .....            | 282        |
| <b>Exercise 3-15:</b> | Restricting Top-level Folder Creation .....                                               | 283        |
|                       | Public Folder Inter-organization Replication Tool .....                                   | 286        |
|                       | Administering System Folders .....                                                        | 287        |
|                       | System Folders .....                                                                      | 288        |
| ✓                     | Two-Minute Drill .....                                                                    | 291        |
| Q&A                   | Self Test .....                                                                           | 293        |
|                       | Lab Question .....                                                                        | 299        |
|                       | Self Test Answers .....                                                                   | 300        |
|                       | Lab Answer .....                                                                          | 303        |
| <b>4</b>              | <b>Administering User's Mailboxes and Contacts .....</b>                                  | <b>305</b> |
|                       | Configuring a User Object for Messaging .....                                             | 306        |
|                       | Types of Recipient Objects .....                                                          | 306        |
|                       | Exchange Task Wizard .....                                                                | 307        |
|                       | <b>Exercise 4-1:</b> Enabling a User Account for Messaging .....                          | 310        |
|                       | Creating and Managing Address Lists .....                                                 | 313        |
|                       | Creating Address Lists .....                                                              | 314        |
|                       | <b>Exercise 4-2:</b> Creating an Address List .....                                       | 317        |
|                       | <b>Exercise 4-3:</b> Mail-Enabling a Group .....                                          | 320        |
|                       | Managing User and Information Store Association .....                                     | 325        |
|                       | <b>Exercise 4-4:</b> Assigning a User Permissions to a Mailbox ...                        | 326        |
|                       | Diagnosing and Resolving Problems Involving User and Information<br>Store Placement ..... | 328        |

|                                                                                           |            |
|-------------------------------------------------------------------------------------------|------------|
| User Placement .....                                                                      | 329        |
| Information Store Placement .....                                                         | 330        |
| <b>Exercise 4-5:</b> Creating and Configuring a Mailbox Store ...                         | 331        |
| Diagnosing and Resolving Recipient Update Service (RUS) Problems ..                       | 336        |
| Recipient Update Service .....                                                            | 336        |
| RUS and Exchange 5.5 .....                                                                | 337        |
| DSProxy Service .....                                                                     | 338        |
| <b>Exercise 4-6:</b> Configuring the Recipient Update Service ...                         | 338        |
| ✓ Two-Minute Drill .....                                                                  | 341        |
| Q&A Self Test .....                                                                       | 344        |
| Lab Question .....                                                                        | 349        |
| Self Test Answers .....                                                                   | 350        |
| Lab Answer .....                                                                          | 353        |
| <br><b>5 Administering and Troubleshooting Connectivity ....</b>                          | <b>357</b> |
| Exchange 2000 Routing Overview .....                                                      | 358        |
| Managing and Troubleshooting Connectors .....                                             | 360        |
| Connecting Exchange 2000 Routing Groups .....                                             | 360        |
| <b>Exercise 5-1:</b> Adding a Routing Group Connector .....                               | 361        |
| Foreign Mail System Connectors .....                                                      | 362        |
| <b>Exercise 5-2:</b> Adding an SMTP Connector .....                                       | 365        |
| <b>Exercise 5-3:</b> Adding an X.400 Transport Stack .....                                | 369        |
| <b>Exercise 5-4:</b> Adding an X.400 Connector .....                                      | 370        |
| Diagnosing and Resolving Message Routing Problems .....                                   | 373        |
| Diagnosing and Resolving Problems Reported by Non-Delivery<br>Report (NDR) Messages ..... | 375        |
| <b>Exercise 5-5:</b> Configuring the Postmaster for Exchange 2000<br>376                  |            |
| Managing Exchange 2000 Message Queues .....                                               | 380        |
| SMTP Advanced Queuing Engine .....                                                        | 381        |
| Queue Viewer .....                                                                        | 382        |
| Managing System and Link Queues .....                                                     | 385        |
| <b>Exercise 5-6:</b> Deleting Messages Using Queue Viewer .....                           | 388        |
| Diagnosing Link Status by Tracking Messages .....                                         | 391        |
| Message Tracking Center .....                                                             | 391        |

|                                                                                 |            |
|---------------------------------------------------------------------------------|------------|
| <b>Exercise 5-7:</b> Enabling Message Tracking and Subject Logging .....        | 392        |
| <b>Exercise 5-8:</b> Using the Message Tracking Center to Track a Message ..... | 394        |
| Configuring and Monitoring Client Connectivity .....                            | 396        |
| Configuring Outlook 2000 .....                                                  | 396        |
| Configuring Outlook Web Access .....                                            | 398        |
| Configuring POP3 and IMAP4 Clients .....                                        | 400        |
| Configuring IRC Clients .....                                                   | 401        |
| <b>Exercise 5-9:</b> Installing and Configuring MS Chat .....                   | 402        |
| Monitoring Client Connectivity .....                                            | 406        |
| Troubleshooting Client Connectivity Problems .....                              | 406        |
| TCP/IP Settings .....                                                           | 407        |
| Diagnosing and Resolving DNS Problems .....                                     | 410        |
| Diagnosing and Resolving Server Publishing Problems .....                       | 412        |
| <b>Exercise 5-10:</b> Stopping and Starting the HTTP Virtual Server .....       | 413        |
| Troubleshooting DSProxy and DSAccess Problems .....                             | 415        |
| Troubleshooting Instant Messaging Connectivity Problems ..                      | 417        |
| Troubleshooting Other Connection Protocol Problems .....                        | 417        |
| Troubleshooting Problems on Non-Microsoft Clients .....                         | 419        |
| Managing Public Folder Connectivity .....                                       | 420        |
| Configuring and Monitoring Public Folder Replication .....                      | 421        |
| <b>Exercise 5-11:</b> Configuring Public Folder Replication .....               | 422        |
| Monitoring and Troubleshooting Public Folder Replication ..                     | 426        |
| ✓ Two-Minute Drill .....                                                        | 430        |
| Q&A Self Test .....                                                             | 432        |
| Lab Question .....                                                              | 438        |
| Self Test Answers .....                                                         | 439        |
| Lab Answer .....                                                                | 441        |
| <b>6 Exchange 2000 Change Management .....</b>                                  | <b>443</b> |
| Monitoring Services Use .....                                                   | 444        |
| Using Exchange Monitors .....                                                   | 445        |
| <b>Exercise 6-1:</b> Creating a Notification .....                              | 449        |

|                                                                     |                |
|---------------------------------------------------------------------|----------------|
| Troubleshooting with Task Manager .....                             | 450            |
| Managing the Growth of the Public and Private Message Store         |                |
| Databases .....                                                     | 452            |
| <b>Exercise 6-2:</b> Creating a New Storage Group .....             | 452            |
| Managing the Growth of the User Population and Message Traffic .... | 454            |
| Placement and Number of Machines .....                              | 454            |
| <b>Exercise 6-3:</b> Creating a Routing Group .....                 | 460            |
| Monitoring the Growth of Client Use .....                           | 465            |
| Information Store .....                                             | 466            |
| SMTP .....                                                          | 467            |
| Managing Recipient and Server Policies .....                        | 468            |
| Server Policies .....                                               | 469            |
| <b>Exercise 6-4:</b> Configuring Server Policies .....              | 470            |
| Mailbox Store Policies .....                                        | 474            |
| Public Folder Store Policies .....                                  | 475            |
| <b>Exercise 6-5:</b> Creating a Public Folder Policy .....          | 476            |
| Diagnosing and Resolving Problems That Involve Recipient and        |                |
| Server Policies .....                                               | 481            |
| Analyzing Multiple System Policy Objects .....                      | 481            |
| <b>Exercise 6-6:</b> Creating and Modifying a Recipient Policy ..   | 482            |
| Optimizing Public Folder and Mailbox Searching .....                | 485            |
| Full-Text Indexing Overview .....                                   | 486            |
| <b>Exercise 6-7:</b> Creating and Configuring a Store for           |                |
| Full-Text Indexing .....                                            | 490            |
| ✓ Two-Minute Drill .....                                            | 495            |
| Q&A Self Test .....                                                 | 497            |
| Lab Question .....                                                  | 503            |
| Self Test Answers .....                                             | 504            |
| Lab Answer .....                                                    | 507            |
| <br><b>7 Disaster Recovery for Exchange 2000 .....</b>              | <br><b>511</b> |
| Implementing a Backup and Restore Plan .....                        | 512            |
| Types of Backup .....                                               | 513            |
| Data Recovery Architecture .....                                    | 516            |
| Mission-critical Mailboxes .....                                    | 522            |

|                                                                  |            |
|------------------------------------------------------------------|------------|
| Multiple Databases Single Store .....                            | 523        |
| Dedicated Recovery Server .....                                  | 523        |
| Windows 2000 Backup .....                                        | 524        |
| <b>Exercise 7-1:</b> Using Windows 2000 Backup Program .....     | 524        |
| Restoring User Data .....                                        | 528        |
| Mailbox Recovery Scenarios .....                                 | 528        |
| <b>Exercise 7-2:</b> Configuring Deleted Mailbox Retention ..... | 529        |
| Configuring a Server for Disaster Recovery .....                 | 534        |
| Storage Groups and Stores .....                                  | 534        |
| Logging Settings .....                                           | 535        |
| <b>Exercise 7-3:</b> Configuring Log Settings .....              | 535        |
| Configuring a Server for Recovery .....                          | 536        |
| Restoring the Information Stores .....                           | 537        |
| Restoring Exchange Server .....                                  | 539        |
| Troubleshooting Backup and Restore Problems .....                | 539        |
| Common Error Messages .....                                      | 540        |
| <b>Exercise 7-4:</b> Running ESEUTIL .....                       | 544        |
| Safeguarding User Keys .....                                     | 546        |
| Backing Up Key Management Services .....                         | 547        |
| <b>Exercise 7-5:</b> Backing Up the CA Certificate .....         | 548        |
| Restoring KMS .....                                              | 552        |
| ✓ Two-Minute Drill .....                                         | 555        |
| Q&A Self Test .....                                              | 558        |
| Lab Question .....                                               | 563        |
| Self Test Answers .....                                          | 566        |
| Lab Answer .....                                                 | 569        |
| <b>A About the CD .....</b>                                      | <b>571</b> |
| Installing CertTrainer .....                                     | 572        |
| System Requirements .....                                        | 572        |
| CertTrainer .....                                                | 572        |
| ExamSim .....                                                    | 573        |
| Saving Scores as Cookies .....                                   | 573        |
| E-Book .....                                                     | 573        |
| CertCam .....                                                    | 574        |

**xviii** MCSE Administering Exchange 2000 Server Study Guide

|                                                        |            |
|--------------------------------------------------------|------------|
| Help .....                                             | 574        |
| Upgrading .....                                        | 574        |
| <b>B About the Web Site .....</b>                      | <b>575</b> |
| Get <i>What</i> You Want <i>When</i> You Want It ..... | 576        |
| <b>Glossary .....</b>                                  | <b>577</b> |
| <b>Index .....</b>                                     | <b>633</b> |