

# Contents

Introduction .....xxi

## **Chapter 1 • Overview of Operations Management ..... 1**

Defining Operations Management .....	1
Systems Management .....	1
Operations Management .....	2
Understanding IT Service Management .....	2
Exploring the IT Infrastructure Library .....	2
Exploring the Microsoft Operations Framework .....	7
Overview of System Center Configuration Manager .....	14
Configuration Manager Features .....	14

## **Chapter 2 • Planning a Configuration Manager Infrastructure ..... 23**

Gathering Deployment Intelligence .....	23
Determining What You Need to Accomplish .....	24
Describing the Network .....	25
Describing Your Migration Needs .....	25
Planning the Configuration Manager Environment .....	26
System Requirements .....	26
Extending Active Directory Schema .....	36
Hierarchies and Sites .....	37
Site Boundaries and Boundary Groups .....	44
Site System Roles .....	45
Best Practices for Site System Design .....	47
SQL Considerations .....	49
Site Communications .....	50
Site Security Mode .....	51
Discovery of Your Resources .....	51
Client Settings and Client Deployment .....	52
Content Management .....	52
Role-Based Administration .....	53
Migration .....	54
Disaster Recovery .....	55
Designing Your Configuration Manager Environment .....	56
Planning the Configuration Manager Hierarchy .....	58
Planning Configuration Manager Site Systems .....	58
Planning Configuration Manager Clients .....	59
Determining How to Deploy Configuration Manager .....	59
Building a Proof-of-Concept Environment .....	60
The Bottom Line .....	64

<b>Chapter 3 • Migrating from Configuration Manager 2007</b> .....	<b>65</b>
Introducing Migration .....	65
Migration Functionality in Configuration Manager 2012 .....	66
Source Hierarchy .....	67
Data-Gathering Process .....	67
Migration Job Types .....	68
Objects Supported for Migration .....	70
Objects Not Supported for Migration .....	77
Distribution Point Sharing .....	78
Planning a Migration .....	79
Preparing Your Migration .....	79
Planning Your Migration Strategy .....	80
Performing the Migration .....	81
Using the Side-by-Side Migration Strategy .....	81
Using the Wipe-and-Load Strategy .....	97
Upgrading the Configuration Manager Console .....	98
Post-Migration or Installation Considerations .....	99
Migrating Packages to the New Application Model .....	100
What Is Package Conversion Manager? .....	101
The Conversion Process .....	102
The Conversion Process Steps .....	107
Package Conversion Manager Best Practices .....	107
Monitoring Conversion .....	108
Migrating Branch Offices with the Physical-to-Virtual Migration Toolkit .....	109
Requirements .....	109
P2V Migration Scenario .....	110
The Task Sequence .....	110
Steps for Using the P2V Migration Toolkit .....	110
The Bottom Line .....	117
 <b>Chapter 4 • Installation and Site Role Configuration</b> .....	 <b>119</b>
Understanding Configuration Manager 2012 Site Types .....	120
Implementing Site Servers .....	123
Software Requirements .....	123
Implementing a Central Administration Site .....	125
Implementing a Primary Site .....	134
Implementing a Secondary Site .....	138
Verifying Proper Site Installation .....	145
Troubleshooting a Configuration Manager 2012 Site Installation .....	152
Unattended Installation .....	155
Installing Site System Roles .....	157
Understanding Configuration Manager 2012 Site System Roles .....	160
Component Server .....	162
Distribution Point .....	162
Management Point .....	174
Site Database Server .....	179

Site Server . . . . .	180
Site System . . . . .	180
System Health Validator Point . . . . .	180
State Migration Point . . . . .	182
Fallback Status Point . . . . .	185
Out-of-Band Service Point . . . . .	187
Reporting Services Point . . . . .	189
Application Catalog Web Service Point and Application	
Catalog Website Point . . . . .	191
Enrollment Proxy Point and Mobile Device and AMT Enrollment Point . . . . .	195
Software Update Point . . . . .	199
EndPoint Protection Point . . . . .	204
Asset Intelligence Synchronization Point . . . . .	206
The Bottom Line . . . . .	207
<b>Chapter 5 • Role-Based Administration . . . . .</b>	<b>209</b>
Overview of Role-Based Administration . . . . .	209
Using Security Roles and Security Scopes . . . . .	210
Managing with Flat Hierarchies . . . . .	210
Security Roles . . . . .	210
Security Scopes . . . . .	214
Creating a Custom Security Scope . . . . .	214
Assigning Resources to a Security Scope . . . . .	216
Viewing Security Scope Objects . . . . .	217
Collections . . . . .	218
Using Collections . . . . .	219
Understanding the Default Collections . . . . .	219
Administrative Users . . . . .	220
The Bottom Line . . . . .	227
<b>Chapter 6 • Client Installation . . . . .</b>	<b>229</b>
Creating Client Settings . . . . .	229
Supported Operating Systems . . . . .	234
Discovering Network Objects . . . . .	235
Active Directory Discovery Methods . . . . .	236
Configuring Boundaries and Boundary Groups . . . . .	245
Client Installation Methods . . . . .	247
Command-Line Properties . . . . .	247
Manually Installing the Client . . . . .	252
Client Push . . . . .	253
Group Policy . . . . .	257
Software Update . . . . .	257
Software Distribution . . . . .	258
Logon Script Installation . . . . .	258
Imaging . . . . .	258
Keeping Clients Up to Date . . . . .	259

Verifying Client Installation . . . . .	260
Troubleshooting a Client Installation . . . . .	261
Ensuring Client Health . . . . .	261
Automatic Client Remediation . . . . .	261
Determining Client Health . . . . .	262
Monitoring Client Status . . . . .	263
Configuring Alerts . . . . .	263
The Bottom Line . . . . .	265
<b>Chapter 7 • Application Deployment . . . . .</b>	<b>267</b>
What’s New in Application Deployment? . . . . .	267
Distribution Point Changes . . . . .	269
Applications: Application References . . . . .	271
Deployments . . . . .	272
Dependencies for Application Deployment . . . . .	274
Management Point . . . . .	274
Distribution Point . . . . .	275
Default Client Settings . . . . .	275
Elements of Application Deployment . . . . .	281
Applications . . . . .	282
Deployment Types . . . . .	282
Deployments . . . . .	283
The Application Deployment Process . . . . .	284
Create Application Wizard . . . . .	284
Options for Application Deployment: the Ribbon . . . . .	288
Exploring the Sample Application . . . . .	293
Exploring the Deployment Type . . . . .	298
Create Deployment Wizard . . . . .	307
Application Deployment—Client Experience . . . . .	314
Application Deployment—Advanced Configurations . . . . .	317
User Device Affinity . . . . .	322
Troubleshooting Application Deployment . . . . .	325
The Bottom Line . . . . .	328
<b>Chapter 8 • Software Updates . . . . .</b>	<b>329</b>
What’s New in Software Updates . . . . .	329
Prerequisites for Software Updates . . . . .	332
Elements of Software Updates . . . . .	333
Software Update Point . . . . .	333
Software Updates Client Agent . . . . .	334
Software Updates Metadata . . . . .	334
Software Update Files . . . . .	335
Software Update Objects . . . . .	335
Software Update Groups . . . . .	337
Deployment Templates . . . . .	337
Deployment Packages . . . . .	338

Deployments . . . . .	339
Automatic Deployment Rules . . . . .	340
System Center Updates Publisher . . . . .	342
The Software Update Process in Configuration Manager . . . . .	342
Synchronization . . . . .	342
Compliance . . . . .	343
Deployment . . . . .	344
Planning to Use Software Updates in Configuration Manager . . . . .	345
Determining What Needs to Be Accomplished . . . . .	346
Role-Based Administration . . . . .	357
System Center Updates Publisher . . . . .	358
Testing in an Isolated Lab . . . . .	359
Configuring Software Updates . . . . .	360
Configuring the Software Updates Client Agent . . . . .	360
Installing Windows Server Update Services 3.0 Server . . . . .	361
Installing the Windows Server Update Services 3.0 SP2 Administrative Console . . . . .	365
Setting Up the Active Software Update Point . . . . .	366
Configuring Software Updates Settings and Synchronization . . . . .	375
Synchronizing Updates with Export and Import . . . . .	379
Preparing Software Updates for Deployment . . . . .	380
Finding the Software Updates to Be Deployed . . . . .	380
Downloading Software Updates . . . . .	384
Creating a Software Update Group . . . . .	388
Deploying Software Updates with the Deploy Software Updates Wizard . . . . .	388
Using System Center Updates Publisher . . . . .	395
Installing the System Center Updates Publisher . . . . .	395
Configuring System Center Updates Publisher . . . . .	396
Using System Center Updates Publisher . . . . .	397
Third-Party Updates in Configuration Manager . . . . .	402
Monitoring Software Update Deployments . . . . .	404
In-Console Monitoring . . . . .	404
Reporting . . . . .	407
The Bottom Line . . . . .	409
<b>Chapter 9 • Operating System Deployment . . . . .</b>	<b>411</b>
What's New in Operating System Deployment . . . . .	411
Planning for OSD with Configuration Manager 2012 . . . . .	412
Deployment Scenarios . . . . .	412
The Kind of Images to Deploy . . . . .	412
Operating System Deployment Components . . . . .	413
User Device Affinity . . . . .	418
Deployment Process . . . . .	418
Prepare for Operating System Deployment . . . . .	418
Build and Capture an Operating System . . . . .	419
Deploy an Operating System . . . . .	419

Preparing Configuration Manager 2012 for Operating System Deployment . . . . .	419
Configuring the Network Access Account . . . . .	420
Creating the Configuration Manager Client Install Package . . . . .	421
Creating a USMT Package . . . . .	422
Configuring the State Migration Point Role . . . . .	424
Configuring PXE on Distribution Points . . . . .	426
Distributing the Boot Image Package . . . . .	428
Enabling Boot Images for PXE . . . . .	428
Adding Operating System Installers . . . . .	429
Developing a Task Sequence for Creating a Capture Image . . . . .	430
Task Sequences Used with PXE Boot . . . . .	431
Task Sequences Used with Media Boot . . . . .	433
Capturing an Operating System Image . . . . .	436
Building and Capturing Automatically . . . . .	436
Capturing a Reference Computer . . . . .	438
Deploying an Image . . . . .	440
Adding a Captured Image . . . . .	440
Distributing and Deploying the Image . . . . .	441
Developing a Task Sequence for Deployment . . . . .	441
Deploying the Task Sequence . . . . .	444
Deploying the Operating System on Bare Metal . . . . .	448
Importing Computer Information . . . . .	449
Creating a Task Sequence for the Bare-Metal OSD . . . . .	450
Deploying the Bare-Metal Task Sequence . . . . .	451
Installing Device Drivers into OSD . . . . .	454
Servicing Your Operating System Images Offline . . . . .	457
Using User Device Affinity . . . . .	459
Manually Configure a Primary User for a Device . . . . .	460
Manually Configure a Primary Device for a User . . . . .	460
Configure a Site to Automatically Create User Device Affinities . . . . .	460
Import User Device Affinities . . . . .	461
Enable Users To Configure Their Primary Device . . . . .	462
Pre-deploy User Applications . . . . .	463
Microsoft Deployment Toolkit 2012 . . . . .	464
Installing Microsoft Deployment Toolkit 2012 . . . . .	464
Integrating the Deployment Toolkit . . . . .	464
Creating a New Boot Image . . . . .	465
Creating a Deployment Toolkit Task Sequence . . . . .	466
Using a Replace Scenario . . . . .	469
Maintaining the User State . . . . .	470
The Bottom Line . . . . .	471
<b>Chapter 10 • Asset Intelligence . . . . .</b>	<b>473</b>
Requirements for Asset Intelligence . . . . .	473
Client Agent Prerequisites . . . . .	473
Maintenance Tasks . . . . .	474
Windows Event Log Settings . . . . .	475

Elements of Asset Intelligence . . . . .	475
Asset Intelligence Catalog . . . . .	476
Asset Intelligence Validation States . . . . .	478
Asset Intelligence Synchronization Point . . . . .	479
The Asset Intelligence Home Page . . . . .	479
Asset Intelligence Reports . . . . .	481
Configuring Asset Intelligence . . . . .	485
Enabling Asset Intelligence . . . . .	485
Import Software License into Asset Intelligence . . . . .	488
Importing Software License Information . . . . .	488
Creating the Microsoft Volume License Statement . . . . .	489
Creating the General License Statement . . . . .	489
The Bottom Line . . . . .	491
<b>Chapter 11 • Inventory and Software Metering . . . . .</b>	<b>493</b>
Inventory in Configuration Manager 2012 . . . . .	493
Collecting Hardware Inventory . . . . .	494
Collecting Software Inventory . . . . .	499
Using Resource Explorer to View Inventory . . . . .	500
Scheduling Inventory . . . . .	501
Configuring Inventory . . . . .	502
Configuring Software Inventory for a Configuration Manager Site . . . . .	511
Troubleshooting Inventory . . . . .	518
Software Metering in Configuration Manager 2012 . . . . .	521
Overview of Software Metering . . . . .	521
Configuring Software Metering . . . . .	522
The Bottom Line . . . . .	530
<b>Chapter 12 • Reporting . . . . .</b>	<b>533</b>
Installing SQL Server Reporting Services . . . . .	534
Considerations for Installing SQL Server Reporting Services . . . . .	534
Installation of the Reporting Services Site System . . . . .	535
Default Reports . . . . .	538
Running a Report . . . . .	541
Viewing Available Reports . . . . .	542
Running a Report from the Administrative Console . . . . .	542
Running a Report from Report Manager . . . . .	543
Working with Reporting Security . . . . .	545
Permissions Required to Run Reports . . . . .	545
Managing Reports . . . . .	550
Working with Subscriptions . . . . .	558
Creating Reports . . . . .	561
Basic SQL Commands . . . . .	561
Report Models . . . . .	562
Creating a Report Using Report Builder . . . . .	563

Creating a Report Using Business Intelligence Development Studio . . . . .	566
Moving Reports . . . . .	568
Linked Reports . . . . .	569
Importing and Exporting Reports . . . . .	569
Importing Reports . . . . .	570
Exporting Reports . . . . .	570
The Bottom Line . . . . .	571
<b>Chapter 13 • Compliance Settings . . . . .</b>	<b>573</b>
Overview of Compliance Settings . . . . .	573
What's New in Configuration Manager 2012? . . . . .	574
What Can You Do with Compliance Settings? . . . . .	575
Configuration Items . . . . .	575
Configuring Compliance Settings Client Settings . . . . .	576
Creating Configuration Items . . . . .	577
Name, Description, and Category . . . . .	579
Choosing a Detection Method . . . . .	581
Creating and Validating a Setting . . . . .	582
Building a Configuration Baseline . . . . .	589
Creating the Initial Baseline . . . . .	589
Baseline Rules . . . . .	590
Assigning the Configuration Baseline to Clients . . . . .	593
Additional Configuration Baseline Options . . . . .	594
Client Validation of Compliance Baseline Rules . . . . .	594
Compliance Settings Reporting . . . . .	596
Importing Configuration Packs . . . . .	597
The Bottom Line . . . . .	600
<b>Chapter 14 • Mobile Device Management . . . . .</b>	<b>603</b>
What's New in Mobile Device Management . . . . .	603
Requirements for Mobile Device Management . . . . .	604
Lite Management . . . . .	604
Depth Management . . . . .	616
Troubleshooting . . . . .	645
The Bottom Line . . . . .	646
<b>Chapter 15 • Troubleshooting . . . . .</b>	<b>647</b>
Creating the Maintenance Plan . . . . .	647
Using Troubleshooting Tools . . . . .	651
Log Files . . . . .	651
Status Messages . . . . .	657
Troubleshooting Configuration Manager Deployment . . . . .	664
Troubleshooting Configuration Manager Database Replication . . . . .	665
Data Types . . . . .	666
DRS Initialization . . . . .	668
The Bottom Line . . . . .	671



<b>Chapter 16 • Disaster Recovery</b> .....	<b>673</b>
Planning for Disaster Recovery .....	673
What Is Not Included in the Backup .....	674
Backing Up Configuration Manager .....	676
Backup Considerations for the Central Administration Site .....	677
Copying Site Backups to Another Location .....	677
Archiving the Backup Snapshot to Another Server with <i>AfterBackup.bat</i> .....	678
Windows Application Log Entries Created by the Backup Process .....	679
Configuring the Backup ConfigMgr Site Server Maintenance Task .....	680
Restoring Configuration Manager .....	682
Understanding the Effects of a Site Failure .....	682
Recovering a Configuration Manager Site .....	684
Recovering Configuration Manager .....	685
How to Start a Recovery Process .....	686
Recovering a Central Administration Site .....	686
Recovering a Primary Child Site .....	692
Recovering a Primary Standalone Site .....	692
Recovery Scenarios for Multisite Environments .....	692
Other Site Maintenance Options .....	692
The Hierarchy Maintenance Tool .....	693
Post-Recovery Tasks .....	695
The Bottom Line .....	697
<b>Chapter 17 • System Center Endpoint Protection</b> .....	<b>699</b>
Differences between FEP and SCEP .....	699
Additional Benefits of SCEP .....	700
Deployment .....	700
Protection .....	700
Monitoring .....	702
Security .....	702
Endpoint Protection Site System Role .....	702
Endpoint Protection Client Agent .....	705
Endpoint Protection Policies .....	709
Antimalware Policy .....	709
Windows Firewall Policy .....	715
Assigning Policy .....	716
Definition Files .....	717
Alerts .....	719
Reporting .....	723
The Bottom Line .....	728
<b>Chapter 18 • Client Health</b> .....	<b>731</b>
Understanding the Client Health Mechanism .....	731
Scheduled Task .....	732
CCMEval Process .....	736
Client Health Evaluation: Results .....	740
Monitoring: Client Health .....	742
The Bottom Line .....	743

<b>Appendix • The Bottom Line</b> .....	<b>745</b>
Chapter 2: Planning a Configuration Manager Infrastructure .....	745
Chapter 3: Migrating from Configuration Manager 2007 .....	746
Chapter 4: Installation and Site Role Configuration .....	749
Chapter 5: Role-Based Administration .....	750
Chapter 6: Client Installation .....	751
Chapter 7: Application Deployment .....	752
Chapter 8: Software Updates .....	753
Chapter 9: Operating System Deployment .....	754
Chapter 10: Asset Intelligence .....	755
Chapter 11: Inventory and Software Metering .....	756
Chapter 12: Reporting .....	757
Chapter 13: Compliance Settings .....	758
Chapter 14: Mobile Device Management .....	760
Chapter 15: Troubleshooting .....	761
Chapter 16: Disaster Recovery .....	762
Chapter 17: System Center Endpoint Protection .....	762
Chapter 18: Client Health .....	763
<i>Index</i> .....	765