Contents

Foreword	xi
Introduction	1
Chapter 1: Identity	9
What Are the Components of a Person's Identity?	10
So Where Does Privacy Fit In?	11
Where Do Roles Fit Into the Concept of an Identity?	16
Can I Have Multiple Identities in an Identity Management	
Environment?	17
Discussion Questions	19
Case Study	19
Chapter 2: Managing Identities and Identity Stores	21
Identities and User Accounts	22
What Is an Identity Store?	23
Why Multiple Stores Are a Fact of Life	24
Strategies for Multiple-Store Environments	27
Managing Roles	30
Role Modeling	32
Delegated Administration and Self-Service	32
Discussion Questions	33
Case Study	34
Chapter 3: Directories	37
Schemas and Namespace Planning	38
The Power of a DIT	46
Issues to Be Aware Of	46
Authoritative Sources	47
Directory and Database Design	48
Virtual Directory	49

The "M" Word	51
Selecting a Configuration	52
Discussion Questions	55
Case Study	55
Chapter 4: Authentication and Access Control	57
Methods of Authentication	59
Levels of Authentication	64
Authentication Assurance Levels	65
Registration Assurance Levels	66
Access Control	67
Discussion Questions	72
Case Study	73
Chapter 5: Provisioning	75
The Mark of a Robust Process	76
Zero-day Start	78
Business System Issues	78
Workflow	81
The Role of Roles	81
The Benefits of Roles	83
Automating a Provisioning System	84
Sequential and Parallel Authorization	87
Discussion Questions	87
Case Study	88
Chapter 6: Role-Based Access Control	89
So What Is RBAC?	89
Why Is RBAC Important?	92
How Should RBAC Be Implemented?	95
Role Discovery	97
A Word of Caution	98
Discussion Questions	98
Case Study	99

Chapter 7: Single Sign-on and Federated Authentication	101
Single Sign-on for the Enterprise	102
Web SSO	105
Federated Authentication	109
Discussion Questions	114
Case Study	114
Chapter 8: Governance, Risk, and Compliance	115
HR Pattern-based Auditing	117
Pattern Reporting	118
Business Policies (IT Controls and SoD Rules)	120
Best Practices for System Cleansing and Auditing	121
Sample Graphs	123
Federated Authentication Auditing	126
Discussion Questions	127
Case Study	128
Chapter 9: Implementation and Roadmap	129
Getting Started	130
Setting Out	135
Physical Implementation	135
Typical Project Structure	136
Sample Roadmap	138
Navigating the Political Landscape	140
Challenges	141
Discussion Questions	146
Case Study	146
Chapter 10: Public Key Infrastructure	147
Why Do We Need PKI?	149
How Does PKI Work?	150
How Is PKI Used?	152
The Components	153
Key Generation	160

Certificate Management	160
Certificate Issues	161
Implementation Considerations	161
A Final Comment	165
Discussion Questions	166
Case Study	166
Chapter 11: Electronic Identity Smartcards	167
History	167
Interoperability	169
Privacy	170
Deployment Issues	171
An Ideal Platform	176
Discussion Questions	176
Case Study	177
Appendix A: Case Scenario	179
Background	179
The "As-Is" Situation	179
The "To-Be" Requirement	180
Constraints	181
System Descriptions	182
Data Repositories	185
Program of Work	187
Exercise	191
Appendix B: Standards	195
Directory Standards	195
Authentication Standards	196
Appendix C: Glossary	199
Appendix D: Public Key Cryptography Standards	203
Appendix E: X.509 Specification	205
Appendix F: Key Lengths	207