

# Contents

Foreword .....	<i>xi</i>
About the Authors .....	<i>xiii</i>
About the Technical Reviewer .....	<i>xiv</i>
Acknowledgments .....	<i>xv</i>
Introduction .....	<i>xvii</i>

## Chapter 1 Storage Strategies .....1

Why Storage Strategies Are Needed .....	<i>1</i>
What Constitutes a Storage Strategy? .....	<i>5</i>
Storage Manager Roles .....	<i>11</i>
Storage Strategy Examples .....	<i>21</i>
Acronyms Used in This Chapter .....	<i>33</i>
Vendors Mentioned in This Chapter .....	<i>36</i>
Summary .....	<i>37</i>

## Chapter 2 Storage Technologies Overview .....39

Disk Storage .....	<i>41</i>
Tape Storage .....	<i>67</i>
Automated Tape Libraries .....	<i>72</i>
Network-Attached Storage .....	<i>75</i>
Storage Area Network .....	<i>76</i>
Acronyms Used in This Chapter .....	<i>78</i>
Vendor and Organization Web Sites .....	<i>82</i>
Summary .....	<i>82</i>

<b>Chapter 3 Direct Attached Storage (DAS)</b>	<b>85</b>
DAS Overview	85
DAS Connection Technologies	90
Advantages and Disadvantages of DAS	101
Useful DAS Management Items	106
Acronyms Used in This Chapter	107
Vendor and Organization Web Sites	109
Summary	110
 <b>Chapter 4 Network-Connected Storage</b>	 <b>111</b>
Overview of Network-Connected Storage	111
SNIA Shared Storage Model	116
Network-Attached Storage (NAS)	120
Storage Area Network (SAN)	128
Network Backup	139
Network Remote Mirroring	141
Acronyms Used in This Chapter	142
Vendor and Organization Web Sites	146
Summary	147
 <b>Chapter 5 Backup and Restore</b>	 <b>149</b>
Overview of Backup/Restore	150
Manual Backup/Restore	153
Automated Backup and Restore	159
Database Backup/Restore Techniques	163
Stratifying Backup and Restore	168
Summary	170
 <b>Chapter 6 Disaster Recovery</b>	 <b>173</b>
Overview of DR	174
Planning for DR	184
When Disaster Strikes	198
Acronyms Used in This Chapter	201
Summary	203

<b>Chapter 7 Hierarchical Storage Management (HSM)</b>	<b>205</b>
Overview of HSM	205
HSM Evolution	207
HSM Management	217
HSM Political Considerations	222
Summary	224
 <b>Chapter 8 Performance Analysis</b>	 <b>225</b>
Overview of Performance Analysis	225
Focus on Storage Performance Analysis	230
Performance Math	250
Summary	254
 <b>Chapter 9 Capacity Planning</b>	 <b>255</b>
Overview of Storage Capacity Planning	255
Focus on Storage Capacity Planning	257
Ongoing Capacity Planning	266
Summary	267
 <b>Chapter 10 Vendor Management</b>	 <b>269</b>
Overview of Vendor Management	269
Kinds of Vendor Representatives	270
Vendor Management Techniques	274
Summary	280
 <b>Appendix A DAS Hardware Vendors</b>	 <b>281</b>
 <b>Appendix B NAS Hardware Vendors</b>	 <b>287</b>

Appendix C SAN Hardware Vendors .....289

Appendix D Storage Management Software Vendors ...293

Appendix E TCP/IP Network Primer .....295

Index .....303