

# ISO/IEC 24775: 2011-03(E)

## Information technology\_ - Storage management

---

### Contents

FOREWORD .....	37
INTRODUCTION.....	39
<b>1 Scope .....</b>	<b>40</b>
<b>2 Definitions, Symbols, Abbreviations, and Conventions .....</b>	<b>41</b>
2.1 Terms and definitions .....	41
2.2 Acronyms and abbreviations .....	46
2.3 Keywords .....	
2.4 Conventions .....	4
<b>3 Business Overview .....</b>	<b>49</b>
3.1 Preamble .....	49
3.2 Business Rationale .....	49
3.3 Interface Definition .....	49
3.4 Technology Trends .....	52
3.5 Management Environment .....	53
3.6 Architectural Objectives .....	54
<b>4 Typographical Conventions .....</b>	<b>56</b>
4.1 Deprecated Material .....	56
4.2 Experimental Material .....	56
4.3 Maturity Model.....	5
<b>5 Overview .....</b>	<b>57</b>
5.1 Base Capabilities .....	57
5.1.1 Object Oriented.....	57
5.1.2 Messaging Based .....	59
5.2 Functionality Matrix .....	61
5.2.1 Overview .....	61
5.2.2 Multi-Level Model Of Networked Storage Management Functionality .....	61
5.2.3 FCAPS.....	62
5.2.4 Management Functionality Within Each Level Of The Model .....	62
5.2.4.1 (Level 1) Device Level Functionality.....	62
5.2.4.2 (Level 2) Connectivity Level Functionality .....	62
5.2.4.3 (Level 3) Block Level Functionality.....	62
5.2.4.4 (Level 4) File/Record Level Functionality .....	62
5.2.4.5 (Level 5) Application Level Functionality .....	63
5.2.5 Referring To Levels And Capabilities In The Multi-level Model .....	63
5.2.6 Functionality Descriptions in SMI-S Profiles .....	63
5.3 Capabilities of This Version.....	63
5.3.1 Device Level .....	63
5.3.1.1 Fault Management .....	63
5.3.1.2 Configuration Management .....	63
5.3.1.3 Accounting Management.....	63
5.3.1.4 Performance Management.....	63
5.3.1.5 Security Management .....	63
5.3.2 Connectivity Level.....	64
5.3.2.1 Fault Management .....	64
5.3.2.2 Configuration Management .....	64

5.3.2.3	Accounting Management.....	64
5.3.2.4	Performance Management.....	64
5.3.2.5	Security Management .....	64
5.3.3	Block Level .....	64
5.3.3.1	Fault Management .....	64
5.3.3.2	Configuration Management.....	64
5.3.3.3	Accounting Management.....	64
5.3.3.4	Performance Management.....	64
5.3.3.5	Security Management .....	64
5.3.4	File/Record Level.....	65
5.3.4.1	Fault Management .....	65
5.3.4.2	Configuration Management.....	65
5.3.4.3	Accounting Management.....	65
5.3.4.4	Performance Management.....	65
5.3.4.5	Security Management .....	65
5.3.5	Application Level.....	65
5.4	Operational Environment .....	66
5.5	Using this Specification .....	67
5.6	Language Bindings .....	67
<b>6</b>	<b>Transport and Reference Model.....</b>	<b>68</b>
6.1	Introduction .....	68
6.1.1	Overview.....	68
6.1.2	Language Requirements .....	68
6.1.3	Communications Requirements.....	68
6.1.4	XML Message Syntax and Semantics.....	68
6.2	Transport Stack.....	69
6.3	Reference Model.....	70
6.3.1	Overview.....	70
6.3.2	Roles for Interface Constituents .....	70
6.3.2.1	Client .....	70
6.3.2.2	Agent.....	70
6.3.2.3	CIM Server .....	71
6.3.2.4	Provider.....	71
6.3.2.5	Lock Manager.....	71
6.3.2.6	Directory Server (SLP Directory Agent) .....	71
6.3.3	Cascaded Agents .....	71
<b>7</b>	<b>Object Model General Information.....</b>	<b>72</b>
7.1	Model Overview (Key Resources).....	72
7.1.1	Overview.....	72
7.1.2	Introduction to CIM UML Notation .....	72
7.2	Techniques.....	73
7.2.1	CIM Fundamentals .....	73
7.2.2	Modeling Profiles .....	75
7.2.3	CIM Naming.....	76
7.2.4	Correlatable and Durable Names .....	77
7.2.4.1	Overview .....	77

7.2.4.2	Guidelines for SCSI Logical Unit Names.....	78
7.2.4.3	Guidelines for Port Names .....	78
7.2.4.4	Guidelines for Storage System Names .....	79
7.2.4.5	Standard Formats for Correlatable Names .....	79
7.2.4.6	Case Sensitivity.....	85
7.2.4.7	Testing Equality of correlatable Names.....	86
7.2.4.8	Operating System Device Names .....	86
7.2.4.9	iSCSI Names.....	86
7.3	Health and Fault Management.....	88
7.3.1	Objectives .....	88
7.3.2	Overview .....	88
7.3.3	Terms.....	88
7.3.4	Description of Health and Fault Management .....	89
7.3.4.1	Operational Status and Health State (Polling).....	89
7.3.4.2	Standard Errors and Events .....	90
7.3.4.3	Indications .....	90
7.3.4.4	Event Correlation and Fault Containment .....	90
7.3.4.5	Fault Regions .....	93
7.3.4.6	Examples.....	95
7.4	Policy.....	99
7.4.1	Objectives .....	99
7.4.2	Overview.....	99
7.4.3	Policy Terms .....	99
7.4.4	Policy Definition .....	100
7.4.4.1	Query Condition .....	100
7.4.4.2	Method Action .....	100
7.4.4.3	Query Condition Result .....	100
7.4.4.4	Method Action Result .....	100
7.4.4.5	Capabilities.....	101
7.4.5	Policy Recipes .....	101
7.5	Standard Messages .....	103
7.5.1	Overview.....	103
7.5.2	Required Characteristics of Standard Messages.....	103
7.5.2.1	Common Messages .....	105
7.5.2.2	Storage Messages .....	118
7.5.2.3	Fabric Messages.....	132
7.6	Recipe Overview .....	135
7.6.1	Recipe Definition.....	135
7.6.2	Recipe Pseudo Code Conventions .....	135
7.6.2.1	Overview .....	135
7.6.2.2	General Syntax.....	135
7.6.2.3	CIM related variable and methods .....	136
7.6.2.4	Data Structure .....	137
7.6.2.5	Operations.....	137
7.6.2.6	Control Operations .....	138
7.6.2.7	Functions.....	139
7.6.2.8	Exception Handling .....	139

7.6.2.9	Built-in Functions .....	139
7.6.2.10	Extrinsic method calls .....	141
<b>8</b>	<b>Normative References .....</b>	<b>142</b>
8.1	Introduction to Profiles .....	144
8.1.1	Profile Content .....	144
8.1.1.1	Profile Definition .....	144
8.1.1.2	Format for Profile Specifications .....	145
<b>9</b>	<b>Object Model .....</b>	<b>148</b>
9.1	Registry of Profiles and Subprofiles .....	148
9.2	Packages, Subprofiles and Profile .....	154
9.2.1	Common Profiles .....	154
9.2.1.1	Access Points Subprofile .....	154
9.2.1.2	Cascading Subprofile .....	159
9.2.1.3	Cluster Subprofile (DEPRECATED) .....	188
9.2.1.4	Device Credentials Subprofile .....	189
9.2.1.5	Extra Capacity Set Subprofile (DEPRECATED) .....	194
9.2.1.6	Health Package .....	195
9.2.1.7	Job Control Subprofile .....	203
9.2.1.8	Location Subprofile .....	216
9.2.1.9	Multiple Computer System Subprofile .....	219
9.2.1.10	Physical Package Package .....	231
9.2.1.11	Policy Package .....	238
9.2.1.12	Software Installation Service Subprofile .....	306
9.2.1.13	Software Package .....	313
9.2.1.14	Software Subprofile .....	316
9.2.1.15	Software Repository Subprofile .....	319
9.2.2	Common Target Port Subprofiles Overview .....	325
9.2.2.1	Parallel SCSI (SPI) Target Ports Subprofile .....	328
9.2.2.2	FC Target Port Subprofile .....	333
9.2.2.3	iSCSI Target Ports Subprofile .....	339
9.2.2.4	Direct Attach (DA) Port Subprofile .....	374
9.2.3	Common Initiator Port Subprofiles Overview .....	379
9.2.3.1	Parallel SCSI (SPI) Initiator Port Subprofile .....	381
9.2.3.2	Fibre Channel Initiator Port Subprofile .....	386
9.2.3.3	iSCSI Initiator Port Subprofile .....	393
9.2.3.4	Back End Ports Subprofile (DEPRECATED) .....	400
9.2.4	CIM Server Related Profiles .....	405
9.2.4.1	Server Profile .....	405
9.2.4.2	Indications Subprofile .....	436
9.2.4.3	Object Manager Adapter Subprofile .....	464
9.2.5	Security Profiles and Subprofiles .....	468
9.2.5.1	Security Profile .....	468
9.2.5.2	Authorization Subprofile .....	481
9.2.5.3	Security Resource Ownership Subprofile .....	499
9.2.5.4	Security Role Based Access Control Subprofile .....	516
9.2.5.5	IdentityManagement Subprofile .....	532

9.2.5.6	CredentialManagement Subprofile .....	557
9.2.5.7	3rd Party Authentication Subprofile .....	568
9.2.6	Fabric Topology Profiles .....	580
9.2.6.1	Fabric Profile .....	580
9.2.6.2	Enhanced Zoning Subprofile .....	611
9.2.6.3	Zone Control Subprofile .....	618
9.2.6.4	FDMI Subprofile .....	636
9.2.6.5	Fabric Path Performance Subprofile .....	649
9.2.6.6	Switch Profile.....	655
9.2.6.7	Switch Configuration Data Subprofile.....	693
9.2.6.8	Blades Subprofile .....	698
9.2.6.9	Extender Profile.....	704
9.2.7	Host Profiles .....	736
9.2.7.1	FC HBA Profile .....	736
9.2.7.2	iSCSI Initiator Profile .....	766
9.2.7.3	Host Discovered Resources Profile.....	779
9.2.7.4	SCSI Multipath Management Subprofile .....	792
9.2.7.5	Disk Partition Subprofile .....	805
9.2.8	Storage Profiles .....	822
9.2.8.1	Array Profile.....	822
9.2.8.2	Storage Virtualizer Profile.....	829
9.2.8.3	Volume Management Profile .....	838
9.2.8.4	NAS Head Profile .....	848
9.2.8.5	Self-Contained NAS Profile .....	889
9.2.8.6	Filesystem Manipulation Subprofile.....	926
9.2.8.7	File Export Manipulation Subprofile.....	963
9.2.8.8	Pool Management Policy Subprofile .....	994
9.2.8.9	Resource Ownership Subprofile.....	1014
9.2.8.10	Block Services Package .....	1022
9.2.8.11	Block Server Performance Subprofile .....	1091
9.2.8.12	Copy Services Subprofile .....	1162
9.2.8.13	Disk Drive Subprofile (DEPRECATED).....	1276
9.2.8.14	Disk Drive Lite Subprofile .....	1277
9.2.8.15	Disk Sparing Subprofile.....	1285
9.2.8.16	Extent Composition Subprofile .....	1303
9.2.8.17	Extent Mapping Subprofile (DEPRECATED) .....	1329
9.2.8.18	LUN Creation Subprofile (DEPRECATED) .....	1330
9.2.8.19	LUN Mapping and Masking Subprofile.....	1331
9.2.8.20	Masking and Mapping Subprofile .....	1332
9.2.8.21	Pool Manipulation Capabilities, and Settings Subprofile (DEPRECATED) ..	1370
9.2.8.22	Storage Library Profile.....	1371
9.2.8.23	Element Counting Subprofile.....	1388
9.2.8.24	InterLibraryPort Connection Subprofile .....	1394
9.2.8.25	Partitioned/Virtual Library Subprofile.....	1398
9.2.8.26	Library Capacity Subprofile .....	1402
9.2.8.27	LibraryAlert Events/Indications for Library Devices .....	1405
9.2.8.28	Media Movement Subprofile .....	1426

9.2.8.29 Limited Access Port Elements Subprofile .....	1432
9.3 Cross Profile Considerations.....	1439
9.3.1 Overview.....	1439
9.3.2 HBA model.....	1439
9.3.2.1 Recipes .....	1439
9.3.3 Switch Model .....	1440
9.3.3.1 Recipes .....	1440
9.3.4 Array Model .....	1445
9.3.4.1 Storage Virtualization Model .....	1446
9.3.5 Fabric Topology (HBA, Switch, Array) .....	1447
9.3.5.1 Overview .....	1448
9.3.5.2 Main Recipe .....	1448
9.3.5.3 Array paths .....	1457
9.3.5.4 Host Discovered Resource.....	1460
9.3.5.5 Common Initiator Port .....	1461
9.3.5.6 Fabric Layer .....	1463
9.3.5.7 IP Network Layer.....	1472
9.3.5.8 Local Disk Layer.....	1473
9.3.5.9 Logical Disk Layers .....	1477
9.3.5.10 Multipath Layer.....	1480
9.3.5.11 Virtualizer Layer .....	1481
9.3.5.12 Volume Manager Layer.....	1487
<b>10 SMI-S Roles .....</b>	<b>1492</b>
10.1 Complete reference model.....	1492
10.2 Overview .....	1492
10.3 SMI-S Client .....	1493
10.3.1 Overview.....	1493
10.3.2 SLP Functions .....	1493
10.3.3 CIM-XML Protocol Functions.....	1493
10.3.4 Security Considerations.....	1493
10.3.5 Lock Management Functions.....	1494
10.4 Dedicated SMI-S Server .....	1494
10.4.1 Overview.....	1494
10.4.2 SLP Functions .....	1494
10.4.3 CIM-XML Protocol Functions.....	1494
10.4.3.1 General.....	1494
10.4.3.2 Required Intrinsic Methods.....	1495
10.4.3.3 Required Model Support .....	1495
10.4.4 Security Considerations.....	1496
10.4.5 Lock Management Functions.....	1496
10.5 General Purpose SMI-S Server .....	1496
10.5.1 Overview.....	1496
10.5.2 SLP Functions .....	1496
10.5.3 CIM-XML Protocol Functions.....	1496
10.5.3.1 General.....	1496
10.5.3.2 Required Intrinsic Methods.....	1496

10.5.3.3	Required Model Support .....	1496
10.5.3.4	Security Considerations .....	1496
10.5.4	Lock Management Functions.....	1497
10.5.5	Provider Subrole .....	1497
10.5.5.1	Overview .....	1497
10.5.5.2	Required Model Support .....	1497
10.6	Directory Server .....	1497
10.6.1	SLP Functions .....	1497
10.6.2	CIM-XML Protocol Functions.....	1497
10.6.3	Security Considerations.....	1497
10.6.4	Lock Management Functions.....	1497
10.7	Combined Roles on a Single System.....	1497
10.7.1	Overview.....	1497
10.7.2	General Purpose SMI-S Server as a Profile Aggregator .....	1497
10.7.2.1	SLP Functions .....	1497
10.7.2.2	CIM-XML Protocol Functions .....	1498
10.7.2.3	Security Considerations .....	1498
10.7.2.4	Lock Manager Functions .....	1498
<b>11</b>	<b>Service Discovery .....</b>	<b>1499</b>
11.1	Objectives .....	1499
11.2	Overview .....	1499
11.3	SLP Messages .....	1501
11.4	Scopes .....	1502
11.5	Services Definition .....	1503
11.5.1	Service Type.....	1503
11.5.2	Service Attributes.....	1503
11.6	User Agents (UA) .....	1505
11.7	Service Agents (SAs) .....	1505
11.8	Directory Agents (DAs) .....	1506
11.9	Service Agent Server (SA Server) .....	1506
11.9.1	General Information .....	1506
11.9.2	SA Server (SAS) Implementation .....	1506
11.9.3	SA Server (SAS) Clients.....	1507
11.9.3.1	Description .....	1507
11.9.3.2	SAS Client Requests – SA Server Responses .....	1507
11.9.4	SA Server Configuration .....	1507
11.9.4.1	Overview .....	1507
11.9.4.2	SLP Configuration File .....	1507
11.9.4.3	Programmatic Configuration.....	1508
11.9.4.4	DHCP Configuration.....	1508
11.9.4.5	Scope .....	1508
11.9.5	SA Server Discovery.....	1509
11.9.6	SAS Client Registration .....	1509
11.10	'Standard WBEM' Service Type Templates .....	1509
<b>12</b>	<b>Bibliography .....</b>	<b>1514</b>
<b>13</b>	<b>Installation and Upgrade.....</b>	<b>1515</b>
13.1	Introduction .....	1515

13.2	Role of the Administrator .....	1515
13.3	Goals .....	1515
13.3.1	Non-Disruptive Installation and De-installation .....	1515
13.3.2	Plug-and-Play .....	1515
13.4	Device Support .....	1516
13.4.1	Installation .....	1516
13.4.2	Discovery and Initialization of Device Support .....	1516
13.4.3	Uninstallation .....	1516
13.4.4	Update .....	1516
13.4.5	Reconfiguration .....	1517
13.4.6	Failure .....	1517
13.5	WBEM Service Support & Related Functions .....	1517
13.5.1	Installation .....	1517
13.5.2	Multiple CIM Servers on a Single Server System .....	1517
13.5.3	Uninstallation/Upgrade .....	1518
13.5.4	Reconfiguration .....	1518
13.5.5	Failure .....	1518
13.6	Client .....	1518
13.6.1	Uninstallation .....	1518
13.6.2	Reconfiguration .....	1518
13.7	Directory Service .....	1518
13.7.1	Installation .....	1518
13.7.2	Uninstallation/Failure .....	1518
13.8	Issues with Discovery Mechanisms .....	1518
	<b>Annex A (informative) Mapping CIM Objects to SNMP MIB Structures .....</b>	<b>1520</b>
A.1	Purpose of this Annex .....	1520
A.2	CIM-to-MIB Mapping Overview .....	1520
A.3	The SML MIB .....	1520
	<b>Annex B (normative) Compliance with the SNIA SMI Specification .....</b>	<b>1521</b>
B.1	Compliance Statement .....	1521
B.2	How Compliance Is Declared .....	1521
B.3	The Server Profile and Compliance .....	1521
B.4	Backward Compatibility .....	1522

## List of Tables

Table 1 -	Functionality Matrix .....	61
Table 2 -	SLP Properties .....	75
Table 3 -	Standard Formats for StorageVolume Names .....	80
Table 4 -	Standard Formats for Port Names .....	81
Table 5 -	Standard Formats for Storage System Names .....	82
Table 6 -	Standard Operating System Names for Tape Devices .....	84
Table 7 -	LogicalDisk.Name for disk partitions .....	85
Table 8 -	GenericDiskParitition.Name for disk partitions.....	85
Table 9 -	Standard Operating System Names for Unpartitioned Disks.....	85
Table 10 -	OperationalStatus for Disk Drive .....	89
Table 11 -	Example Standard Message Declaration .....	104
Table 12 -	Example Standard Message Values .....	105
Table 13 -	Authorization Failure Message Arguments .....	105
Table 14 -	Authorization Failure Error Properties .....	106
Table 15 -	Operation Not Supported Message Arguments .....	106
Table 16 -	Property Not Found Message Arguments .....	107
Table 17 -	Invalid Query Message Arguments .....	107
Table 18 -	Parameter Error Message Arguments.....	108
Table 19 -	Parameter Error Properties .....	108
Table 20 -	Query Syntax Error Message Arguments.....	109
Table 21 -	Query Syntax Error Properties .....	109
Table 22 -	Query Too Expensive Message Arguments.....	109
Table 23 -	Query Too Expensive Error Properties .....	110
Table 24 -	Class or Property Invalid in Query Message Arguments.....	110
Table 25 -	Class or Property Invalid in Query Error Properties .....	110
Table 26 -	Invalid Join in Query Message Arguments.....	111
Table 27 -	Invalid Join in Query Error Properties .....	111
Table 28 -	Unexpected Hardware Fault Message Arguments.....	111
Table 29 -	Unexpected Hardware Fault Error Properties .....	111
Table 30 -	Too busy to respond Message Arguments .....	112
Table 31 -	Shutdown Started Message Arguments.....	112
Table 32 -	Shutdown Started Alert Information .....	112
Table 33 -	Component Overheat Message Arguments.....	113
Table 34 -	Component Overheat Error Properties.....	113
Table 35 -	Component Overheat Alert Information .....	113
Table 36 -	Device Failover Message Arguments.....	114
Table 37 -	Functionality is Not Licensed Message Arguments.....	114
Table 38 -	Functionality is not licensed Error Properties .....	115
Table 39 -	Invalid Property Combination During Instance Creation or Modification Message Arguments .....	115
Table 40 -	Invalid Property Combination during instance creation or modification Error Properties .....	116
Table 41 -	Property Not Found Message Arguments .....	116
Table 42 -	Property Not Found Error Properties.....	116
Table 43 -	Proxy Can Not Connect Message Arguments.....	117
Table 44 -	Proxy Can Not Connect Error Properties .....	117
Table 45 -	Not Enough Memory Message Arguments .....	117
Table 46 -	Not Enough Memory Error Properties .....	118
Table 47 -	Object Already Exists Error Properties.....	118
Table 48 -	Device Not ready Message Arguments.....	119
Table 49 -	Device Not ready Error Properties .....	119
Table 50 -	Internal Bus Error Properties.....	119
Table 51 -	DMA Overflow Error Properties.....	120
Table 52 -	Firmware Logic Error Properties .....	120
Table 53 -	Front End Port Error Message Arguments .....	120
Table 54 -	Front End Port Error Alert Information.....	121
Table 55 -	Back End Port Error Message Arguments .....	121
Table 56 -	Back End Port Error Alert Information .....	121
Table 57 -	Remote Mirror Error Message Arguments .....	122

Table 58 - Remote Mirror Error Properties.....	122
Table 59 - Remote Mirror Error Alert Information.....	122
Table 60 - Cache Memory Error Properties.....	123
Table 61 - Unable to Access Remote Device Error Properties.....	123
Table 62 - Error Reading Data Alert Information.....	124
Table 63 - Error Writing Data Alert Information.....	124
Table 64 - Error Validating Write (CRC) Alert Information.....	124
Table 65 - Copy Operation Failed Error Properties.....	125
Table 66 - RAID Operation Failed Error Properties.....	125
Table 67 - Invalid RAID Type Error Properties.....	125
Table 68 - Invalid Storage Element Type Error Properties.....	126
Table 69 - Configuration Change Failed Error Properties.....	126
Table 70 - Buffer Overrun Error Properties.....	127
Table 71 - Stolen Capacity Message Arguments.....	127
Table 72 - Stolen Capacity Error Properties.....	127
Table 73 - Invalid Extent passed Message Arguments.....	128
Table 74 - Invalid Extent passed Error Properties.....	128
Table 75 - Invalid Deletion Attempted Error Properties.....	128
Table 76 - Job Failed to Start Error Properties.....	129
Table 77 - Job was Halted Message Arguments.....	129
Table 78 - Invalid State Transition Message Arguments.....	130
Table 79 - Invalid State Transition Error Properties.....	130
Table 80 - Invalid SAP for Method Message Arguments.....	130
Table 81 - Invalid SAP for Method Error Properties.....	131
Table 82 - Resource Not Available Message Arguments.....	131
Table 83 - Resource Not Available Error Properties.....	131
Table 84 - Resource Limit Exceeded Message Arguments.....	132
Table 85 - Resource Limit Exceeded Error Properties.....	132
Table 86 - Zone Database Changed Message Arguments.....	132
Table 87 - Zone Database Changed Alert Information.....	133
Table 88 - ZoneSet Activated Message Arguments.....	133
Table 89 - ZoneSet Activated Alert Information.....	133
Table 90 - Session Locked Error Properties.....	134
Table 91 - Session Aborted Error Properties.....	134
Table 92 - Standards Dependencies for SMI-S.....	142
Table 93 - Profile Components.....	146
Table 94 - Registry of Profiles and Subprofiles.....	148
Table 95 - RemoteAccessPoint InfoFormat and AccessInfo Properties.....	155
Table 96 - CIM Server Requirements for Access Points.....	156
Table 97 - CIM Elements for Access Points.....	156
Table 98 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	157
Table 99 - SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint.....	157
Table 100 - SMI Referenced Properties/Methods for CIM_SAPAvailableForElement.....	158
Table 101 - Related Standards for Access Points.....	158
Table 102 - Supported Subprofiles for Cascading.....	169
Table 103 - Extrinsic Methods Supported by Cascading Subprofile.....	169
Table 104 - Cascading Capabilities Patterns.....	172
Table 105 - CIM Server Requirements for Cascading.....	172
Table 106 - CIM Elements for Cascading.....	173
Table 107 - SMI Referenced Properties/Methods for CIM_Dependency (System Dependency).....	174
Table 108 - SMI Referenced Properties/Methods for CIM_Dependency (Object Manager Dependency).....	175
Table 109 - SMI Referenced Properties/Methods for CIM_Dependency (RegisteredProfile OM Dependency).....	175
Table 110 - SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	176
Table 111 - SMI Referenced Properties/Methods for CIM_ElementConformsToProfile (Leaf).....	176
Table 112 - SMI Referenced Properties/Methods for CIM_HostedCollection (AllocatedResources).....	177
Table 113 - SMI Referenced Properties/Methods for CIM_HostedCollection (Remote Resources).....	177
Table 114 - SMI Referenced Properties/Methods for CIM_HostedService.....	178

Table 115 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (Allocated Resources) .....	178
Table 116 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (Remote Resources) .....	178
Table 117 - SMI Referenced Properties/Methods for CIM_Namespace (Leaf).....	179
Table 118 - SMI Referenced Properties/Methods for CIM_NamespaceInManager (Leaf).....	180
Table 119 - SMI Referenced Properties/Methods for CIM_ObjectManager (Leaf) .....	180
Table 120 - SMI Referenced Properties/Methods for CIM_ObjectManager (Cascading Profile).....	181
Table 121 - SMI Referenced Properties/Methods for CIM_RegisteredProfile.....	181
Table 122 - SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint .....	182
Table 123 - SMI Referenced Properties/Methods for CIM_SAPAvailableForElement .....	183
Table 124 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	183
Table 125 - SMI Referenced Properties/Methods for SNIA_AllocatedResources.....	184
Table 126 - SMI Referenced Properties/Methods for SNIA_AllocationService .....	184
Table 127 - SMI Referenced Properties/Methods for SNIA_CascadingCapabilities .....	185
Table 128 - SMI Referenced Properties/Methods for SNIA_RemoteResources .....	186
Table 129 - Related Standards for Cascading .....	187
Table 130 - CIM Server Requirements for Device Credentials .....	190
Table 131 - CIM Elements for Device Credentials .....	190
Table 132 - SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	191
Table 133 - SMI Referenced Properties/Methods for CIM_HostedService .....	191
Table 134 - SMI Referenced Properties/Methods for CIM_RegisteredProfile.....	191
Table 135 - SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	191
Table 136 - SMI Referenced Properties/Methods for CIM_SharedSecret .....	192
Table 137 - SMI Referenced Properties/Methods for CIM_SharedSecretIsShared .....	192
Table 138 - SMI Referenced Properties/Methods for CIM_SharedSecretService .....	192
Table 139 - SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	193
Table 140 - Related Standards for Device Credentials .....	193
Table 141 - OperationalStatus Details .....	197
Table 142 - CIM Server Requirements for Health .....	200
Table 143 - CIM Elements for Health .....	200
Table 144 - SMI Referenced Properties/Methods for CIM_ComputerSystem.....	201
Table 145 - SMI Referenced Properties/Methods for CIM_LogicalDevice .....	201
Table 146 - SMI Referenced Properties/Methods for CIM_RelatedElementCausingError.....	201
Table 147 - Related Standards for Health .....	202
Table 148 - OperationalStatus to Job State Mapping .....	205
Table 149 - Standard Message for Job Control Subprofile .....	206
Table 150 - CIM Server Requirements for Job Control .....	209
Table 151 - CIM Elements for Job Control .....	210
Table 152 - SMI Referenced Properties/Methods for CIM_AffectedJobElement .....	211
Table 153 - SMI Referenced Properties/Methods for CIM_AssociatedJobMethodResult.....	211
Table 154 - SMI Referenced Properties/Methods for CIM_ConcreteJob .....	212
Table 155 - SMI Referenced Properties/Methods for CIM_MethodResult .....	214
Table 156 - SMI Referenced Properties/Methods for CIM_OwningJobElement .....	215
Table 157 - Related Standards for Job Control .....	215
Table 158 - CIM Server Requirements for Location .....	217
Table 159 - CIM Elements for Location .....	217
Table 160 - SMI Referenced Properties/Methods for CIM_Location.....	217
Table 161 - SMI Referenced Properties/Methods for CIM_PhysicalElementLocation .....	218
Table 162 - Related Standards for Location.....	218
Table 163 - Redundancy Type .....	220
Table 164 - CIM Server Requirements for Multiple Computer System .....	226
Table 165 - CIM Elements for Multiple Computer System .....	227
Table 166 - SMI Referenced Properties/Methods for CIM_ComponentCS.....	228
Table 167 - SMI Referenced Properties/Methods for CIM_ComputerSystem.....	228
Table 168 - SMI Referenced Properties/Methods for CIM_ConcretelIdentity .....	229
Table 169 - SMI Referenced Properties/Methods for CIM_IsSpare .....	229
Table 170 - SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	229
Table 171 - SMI Referenced Properties/Methods for CIM_RedundancySet.....	230
Table 172 - Related Standards for Multiple Computer System .....	230

Table 173 - CIM Server Requirements for Physical Package .....	233
Table 174 - CIM Elements for Physical Package .....	234
Table 175 - SMI Referenced Properties/Methods for CIM_Container .....	235
Table 176 - SMI Referenced Properties/Methods for CIM_PhysicalPackage .....	235
Table 177 - SMI Referenced Properties/Methods for CIM_Product .....	236
Table 178 - SMI Referenced Properties/Methods for CIM_ProductParentChild .....	236
Table 179 - SMI Referenced Properties/Methods for CIM_ProductPhysicalComponent .....	236
Table 180 - SMI Referenced Properties/Methods for CIM_SystemPackaging .....	237
Table 181 - Related Standards for Physical Package .....	237
Table 182 - Static Policy Instance Manipulation Methods .....	259
Table 183 - Dynamic Policy Instance Manipulation Methods .....	259
Table 184 - Methods that cause Instance Creation, Deletion, or Modification of Dynamic Policy Rules .....	259
Table 185 - SMI-S Supported PolicyCapabilities Patterns .....	263
Table 186 - CIM Server Requirements for Policy .....	263
Table 187 - CIM Elements for Policy .....	264
Table 188 - SMI Referenced Properties/Methods for CIM_CompoundPolicyAction (Pre-defined) .....	266
Table 189 - SMI Referenced Properties/Methods for CIM_CompoundPolicyAction (Client defined) .....	268
Table 190 - SMI Referenced Properties/Methods for CIM_CompoundPolicyCondition (Pre-defined) .....	270
Table 191 - SMI Referenced Properties/Methods for CIM_CompoundPolicyCondition (Client defined) .....	271
Table 192 - SMI Referenced Properties/Methods for CIM_ElementCapabilities .....	273
Table 193 - SMI Referenced Properties/Methods for CIM_MethodAction (Pre-defined) .....	273
Table 194 - SMI Referenced Properties/Methods for CIM_MethodAction (Client defined) .....	275
Table 195 - SMI Referenced Properties/Methods for CIM_PolicyActionInPolicyAction (Pre-defined) .....	276
Table 196 - SMI Referenced Properties/Methods for CIM_PolicyActionInPolicyAction (Client defined) .....	277
Table 197 - SMI Referenced Properties/Methods for CIM_PolicyActionInPolicyRule (Pre-defined) .....	278
Table 198 - SMI Referenced Properties/Methods for CIM_PolicyActionInPolicyRule (Client defined) .....	278
Table 199 - SMI Referenced Properties/Methods for CIM_PolicyConditionInPolicyCondition (Pre-defined) .....	279
Table 200 - SMI Referenced Properties/Methods for CIM_PolicyConditionInPolicyCondition (Client defined) .....	280
Table 201 - SMI Referenced Properties/Methods for CIM_PolicyConditionInPolicyRule (Pre-defined) .....	281
Table 202 - SMI Referenced Properties/Methods for CIM_PolicyConditionInPolicyRule (Client defined) .....	282
Table 203 - SMI Referenced Properties/Methods for CIM_PolicyContainerInPolicyContainer (Pre-defined) .....	283
Table 204 - SMI Referenced Properties/Methods for CIM_PolicyRule (Pre-defined) .....	284
Table 205 - SMI Referenced Properties/Methods for CIM_PolicyRule (Client defined) .....	287
Table 206 - SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem (Pre-defined) .....	290
Table 207 - SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem (Client defined) .....	290
Table 208 - SMI Referenced Properties/Methods for CIM_PolicySetAppliesToElement (Pre-defined) .....	291
Table 209 - SMI Referenced Properties/Methods for CIM_PolicySetAppliesToElement (Client defined) .....	292
Table 210 - SMI Referenced Properties/Methods for CIM_PolicySetValidityPeriod (Pre-defined) .....	293
Table 211 - SMI Referenced Properties/Methods for CIM_PolicySetValidityPeriod (Client defined) .....	293
Table 212 - SMI Referenced Properties/Methods for CIM_PolicyTimePeriodCondition (Pre-defined) .....	295
Table 213 - SMI Referenced Properties/Methods for CIM_PolicyTimePeriodCondition (Client defined) .....	298
Table 214 - SMI Referenced Properties/Methods for CIM_QueryCapabilities .....	299
Table 215 - SMI Referenced Properties/Methods for CIM_QueryCondition (Pre-defined) .....	300
Table 216 - SMI Referenced Properties/Methods for CIM_QueryCondition (Client defined) .....	302
Table 217 - SMI Referenced Properties/Methods for CIM_ReusablePolicy .....	304
Table 218 - SMI Referenced Properties/Methods for CIM_ReusablePolicyContainer .....	304
Table 219 - Related Standards for Policy .....	305
Table 220 - CIM Server Requirements for Software Installation Service .....	309
Table 221 - CIM Elements for Software Installation Service .....	310

Table 222	- SMI Referenced Properties/Methods for CIM_ElementCapabilities	310
Table 223	- SMI Referenced Properties/Methods for CIM_HostedService	310
Table 224	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity	311
Table 225	- SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement	311
Table 226	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity	311
Table 227	- SMI Referenced Properties/Methods for CIM_SoftwareInstallationService	312
Table 228	- SMI Referenced Properties/Methods for CIM_SoftwareInstallationServiceCapabilities	312
Table 229	- Related Standards for Software Installation Service	312
Table 230	- CIM Server Requirements for SoftwarePackage	314
Table 231	- CIM Elements for SoftwarePackage	314
Table 232	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity	314
Table 233	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity	315
Table 234	- Related Standards for SoftwarePackage	315
Table 235	- CIM Server Requirements for SoftwarePackage	317
Table 236	- CIM Elements for SoftwarePackage	317
Table 237	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity	317
Table 238	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity	317
Table 239	- Related Standards for SoftwarePackage	318
Table 240	- CIM Server Requirements for Software Repository	320
Table 241	- CIM Elements for Software Repository	321
Table 242	- SMI Referenced Properties/Methods for CIM_HostedCollection	321
Table 243	- SMI Referenced Properties/Methods for CIM_MemberOfCollection	322
Table 244	- SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint	322
Table 245	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement	322
Table 246	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity	323
Table 247	- SMI Referenced Properties/Methods for CIM_SoftwareIdentityCollection	323
Table 248	- SMI Referenced Properties/Methods for CIM_System	323
Table 249	- Related Standards for Software Repository	324
Table 250	- How Common storage devices are modeled in CIM	326
Table 251	- SPIPort OperationalStatus	329
Table 252	- CIM Server Requirements for SPI Target Ports	329
Table 253	- CIM Elements for SPI Target Ports	330
Table 254	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation	330
Table 255	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint	330
Table 256	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint	331
Table 257	- SMI Referenced Properties/Methods for CIM_SPIPort	331
Table 258	- SMI Referenced Properties/Methods for CIM_SystemDevice	332
Table 259	- Related Standards for SPI Target Ports	332
Table 260	- FCPort OperationalStatus	334
Table 261	- CIM Server Requirements for FC Target Ports	334
Table 262	- CIM Elements for FC Target Ports	335
Table 263	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation	336
Table 264	- SMI Referenced Properties/Methods for CIM_FCPort	336
Table 265	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint	337
Table 266	- SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort	337
Table 267	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement	337
Table 268	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint	338
Table 269	- SMI Referenced Properties/Methods for CIM_SystemDevice	338
Table 270	- Related Standards for FC Target Ports	338
Table 271	- iSCSI Terminology and SMI-S Class Names	340
Table 272	- EthernetPort OperationalStatus	342
Table 273	- CIM Server Requirements for iSCSI Target Ports	357
Table 274	- CIM Elements for iSCSI Target Ports	358
Table 275	- SMI Referenced Properties/Methods for CIM_BindsTo	360
Table 276	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	360
Table 277	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation	360
Table 278	- SMI Referenced Properties/Methods for CIM_ElementCapabilities	361
Table 279	- SMI Referenced Properties/Methods for CIM_ElementSettingData	361
Table 280	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData	361
Table 281	- SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe	361

Table 222	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	310
Table 223	- SMI Referenced Properties/Methods for CIM_HostedService.....	310
Table 224	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity.....	311
Table 225	- SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement.....	311
Table 226	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	311
Table 227	- SMI Referenced Properties/Methods for CIM_SoftwareInstallationService.....	312
Table 228	- SMI Referenced Properties/Methods for CIM_SoftwareInstallationServiceCapabilities.....	312
Table 229	- Related Standards for Software Installation Service.....	312
Table 230	- CIM Server Requirements for SoftwarePackage.....	314
Table 231	- CIM Elements for SoftwarePackage.....	314
Table 232	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity.....	314
Table 233	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	315
Table 234	- Related Standards for SoftwarePackage.....	315
Table 235	- CIM Server Requirements for SoftwarePackage.....	317
Table 236	- CIM Elements for SoftwarePackage.....	317
Table 237	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity.....	317
Table 238	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	317
Table 239	- Related Standards for SoftwarePackage.....	318
Table 240	- CIM Server Requirements for Software Repository.....	320
Table 241	- CIM Elements for Software Repository.....	321
Table 242	- SMI Referenced Properties/Methods for CIM_HostedCollection.....	321
Table 243	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	322
Table 244	- SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint.....	322
Table 245	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement.....	322
Table 246	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	323
Table 247	- SMI Referenced Properties/Methods for CIM_SoftwareIdentityCollection.....	323
Table 248	- SMI Referenced Properties/Methods for CIM_System.....	323
Table 249	- Related Standards for Software Repository.....	324
Table 250	- How Common storage devices are modeled in CIM.....	326
Table 251	- SPIPort OperationalStatus.....	329
Table 252	- CIM Server Requirements for SPI Target Ports.....	329
Table 253	- CIM Elements for SPI Target Ports.....	330
Table 254	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	330
Table 255	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	330
Table 256	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	331
Table 257	- SMI Referenced Properties/Methods for CIM_SPIPort.....	331
Table 258	- SMI Referenced Properties/Methods for CIM_SystemDevice.....	332
Table 259	- Related Standards for SPI Target Ports.....	332
Table 260	- FCPort OperationalStatus.....	334
Table 261	- CIM Server Requirements for FC Target Ports.....	334
Table 262	- CIM Elements for FC Target Ports.....	335
Table 263	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	336
Table 264	- SMI Referenced Properties/Methods for CIM_FCPort.....	336
Table 265	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	337
Table 266	- SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort.....	337
Table 267	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement.....	337
Table 268	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	338
Table 269	- SMI Referenced Properties/Methods for CIM_SystemDevice.....	338
Table 270	- Related Standards for FC Target Ports.....	338
Table 271	- iSCSI Terminology and SMI-S Class Names.....	340
Table 272	- EthernetPort OperationalStatus.....	342
Table 273	- CIM Server Requirements for iSCSI Target Ports.....	357
Table 274	- CIM Elements for iSCSI Target Ports.....	358
Table 275	- SMI Referenced Properties/Methods for CIM_BindsTo.....	360
Table 276	- SMI Referenced Properties/Methods for CIM_ConcreteDependency.....	360
Table 277	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	360
Table 278	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	361
Table 279	- SMI Referenced Properties/Methods for CIM_ElementSettingData.....	361
Table 280	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData.....	361
Table 281	- SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe.....	361

Table 282	- SMI Referenced Properties/Methods for CIM_EthernetPort .....	362
Table 283	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	362
Table 284	- SMI Referenced Properties/Methods for CIM_HostedCollection .....	362
Table 285	- SMI Referenced Properties/Methods for CIM_HostedService .....	363
Table 286	- SMI Referenced Properties/Methods for CIM_IPProtocolEndpoint.....	363
Table 287	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	363
Table 288	- SMI Referenced Properties/Methods for CIM_NetworkPipeComposition .....	364
Table 289	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement .....	364
Table 290	- SMI Referenced Properties/Methods for CIM_SCSIProtocolController .....	364
Table 291	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	365
Table 292	- SMI Referenced Properties/Methods for CIM_SystemSpecificCollection .....	365
Table 293	- SMI Referenced Properties/Methods for CIM_TCIPProtocolEndpoint.....	365
Table 294	- SMI Referenced Properties/Methods for CIM_iSCSICapabilities.....	366
Table 295	- SMI Referenced Properties/Methods for CIM_iSCSIConfigurationCapabilities .....	366
Table 296	- SMI Referenced Properties/Methods for CIM_iSCSIConfigurationService .....	367
Table 297	- SMI Referenced Properties/Methods for CIM_iSCSIConnection .....	367
Table 298	- SMI Referenced Properties/Methods for CIM_iSCSIConnectionSettings .....	368
Table 299	- SMI Referenced Properties/Methods for CIM_iSCSILoginStatistics .....	369
Table 300	- SMI Referenced Properties/Methods for CIM_iSCSIProtocolEndpoint.....	370
Table 301	- SMI Referenced Properties/Methods for CIM_iSCSISession .....	370
Table 302	- SMI Referenced Properties/Methods for CIM_iSCSISessionFailures.....	371
Table 303	- SMI Referenced Properties/Methods for CIM_iSCSISessionSettings .....	371
Table 304	- SMI Referenced Properties/Methods for CIM_iSCSISessionStatistics .....	372
Table 305	- Related Standards for iSCSI Target Ports .....	373
Table 306	- DAPort OperationalStatus .....	375
Table 307	- CIM Server Requirements for DA Target Ports.....	375
Table 308	- CIM Elements for DA Target Ports.....	376
Table 309	- SMI Referenced Properties/Methods for CIM_DAPort.....	376
Table 310	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	377
Table 311	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	377
Table 312	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	377
Table 313	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	378
Table 314	- Related Standards for DA Target Ports .....	378
Table 315	- SPIPort OperationalStatus .....	381
Table 316	- CIM Server Requirements for SPI Initiator Ports.....	382
Table 317	- CIM Elements for SPI Initiator Ports.....	382
Table 318	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	383
Table 319	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	383
Table 320	- SMI Referenced Properties/Methods for CIM_LogicalDevice .....	383
Table 321	- SMI Referenced Properties/Methods for CIM_SCSIInitiatorTargetLogicalUnitPath.....	384
Table 322	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	384
Table 323	- SMI Referenced Properties/Methods for CIM_SPIPort.....	385
Table 324	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	385
Table 325	- Related Standards for SPI Initiator Ports .....	385
Table 326	- FCPort OperationalStatus .....	386
Table 327	- CIM Server Requirements for FC Initiator Ports.....	387
Table 328	- CIM Elements for FC Initiator Ports.....	388
Table 329	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	388
Table 330	- SMI Referenced Properties/Methods for CIM_FCPort.....	389
Table 331	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	390
Table 332	- SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort.....	390
Table 333	- SMI Referenced Properties/Methods for CIM_SCSIProtocolController .....	391
Table 334	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	391
Table 335	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	392
Table 336	- Related Standards for FC Initiator Ports .....	392
Table 337	- EthernetPort OperationalStatus .....	394
Table 338	- CIM Server Requirements for iSCSI Initiator Ports .....	394
Table 339	- CIM Elements for iSCSI Initiator Ports .....	395
Table 340	- SMI Referenced Properties/Methods for CIM_BindsTo .....	395

Table 341 - SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation.....	396
Table 342 - SMI Referenced Properties/Methods for CIM_EthernetPort .....	396
Table 343 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	397
Table 344 - SMI Referenced Properties/Methods for CIM_IPProtocolEndpoint.....	397
Table 345 - SMI Referenced Properties/Methods for CIM_LogicalDevice .....	398
Table 346 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	398
Table 347 - SMI Referenced Properties/Methods for CIM_TCPProtocolEndpoint.....	398
Table 348 - SMI Referenced Properties/Methods for CIM_iSCSIProtocolEndpoint.....	399
Table 349 - Related Standards for iSCSI Initiator Ports .....	399
Table 350 - CIM Server Requirements for Backend Ports .....	401
Table 351 - CIM Elements for Backend Ports .....	401
Table 352 - SMI Referenced Properties/Methods for CIM_FCPort.....	402
Table 353 - SMI Referenced Properties/Methods for CIM_ProtocolControllerAccessesUnit.....	402
Table 354 - SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort.....	402
Table 355 - SMI Referenced Properties/Methods for CIM_SCSIProtocolController .....	403
Table 356 - SMI Referenced Properties/Methods for CIM_StorageExtent.....	403
Table 357 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	404
Table 358 - Related Standards for Backend Ports .....	404
Table 359 - SMI-S Preferred Cipher Suites.....	410
Table 360 - Supported Subprofiles for Server .....	415
Table 361 - CIM Server Requirements for Server .....	426
Table 362 - CIM Elements for Server .....	427
Table 363 - SMI Referenced Properties/Methods for CIM_CIMXMLCommunicationMechanism .....	428
Table 364 - SMI Referenced Properties/Methods for CIM_CommMechanismForManager .....	429
Table 365 - SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	429
Table 366 - SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity .....	429
Table 367 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	430
Table 368 - SMI Referenced Properties/Methods for CIM_HostedService .....	430
Table 369 - SMI Referenced Properties/Methods for CIM_Namespace .....	430
Table 370 - SMI Referenced Properties/Methods for CIM_NamespaceInManager .....	431
Table 371 - SMI Referenced Properties/Methods for CIM_ObjectManager.....	431
Table 372 - SMI Referenced Properties/Methods for CIM_ReferencedProfile.....	432
Table 373 - SMI Referenced Properties/Methods for CIM_RegisteredProfile.....	432
Table 374 - SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	433
Table 375 - SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	434
Table 376 - SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	434
Table 377 - SMI Referenced Properties/Methods for CIM_System .....	434
Table 378 - Related Standards for Server.....	435
Table 379 - Indications Subprofile Methods that Cause Instance Creation, Deletion or Modification .....	447
Table 380 - CIM Server Requirements for Indication .....	453
Table 381 - CIM Elements for Indication .....	454
Table 382 - SMI Referenced Properties/Methods for CIM_AlertIndication.....	455
Table 383 - SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	456
Table 384 - SMI Referenced Properties/Methods for CIM_IndicationFilter (Pre-defined).....	457
Table 385 - SMI Referenced Properties/Methods for CIM_IndicationFilter (Client defined).....	458
Table 386 - SMI Referenced Properties/Methods for CIM_IndicationSubscription .....	458
Table 387 - SMI Referenced Properties/Methods for CIM_InstCreation .....	459
Table 388 - SMI Referenced Properties/Methods for CIM_InstDeletion .....	460
Table 389 - SMI Referenced Properties/Methods for CIM_InstModification .....	461
Table 390 - SMI Referenced Properties/Methods for CIM_ListenerDestinationCIMXML.....	461
Table 391 - SMI Referenced Properties/Methods for CIM_QueryCapabilities .....	462
Table 392 - Related Standards for Indication .....	463
Table 393 - CIM Server Requirements for Object Manager Adapter .....	465
Table 394 - CIM Elements for Object Manager Adapter .....	465
Table 395 - SMI Referenced Properties/Methods for CIM_CommMechanismForObjectManagerAdapter.....	466
Table 396 - SMI Referenced Properties/Methods for CIM_ObjectManagerAdapter .....	466
Table 397 - Related Standards for Object Manager Adapter .....	467
Table 398 - Security Subprofiles .....	469
Table 399 - Supported Subprofiles for Security .....	472
Table 400 - CIM Server Requirements for Security.....	475

Table 401 - CIM Elements for Security .....	475
Table 402 - SMI Referenced Properties/Methods for CIM_Account .....	476
Table 403 - SMI Referenced Properties/Methods for CIM_AccountOnSystem .....	476
Table 404 - SMI Referenced Properties/Methods for CIM_AssignedIdentity .....	477
Table 405 - SMI Referenced Properties/Methods for CIM_AuthenticationRule .....	477
Table 406 - SMI Referenced Properties/Methods for CIM_ConcretelIdentity .....	477
Table 407 - SMI Referenced Properties/Methods for CIM_Identity .....	478
Table 408 - SMI Referenced Properties/Methods for CIM_IdentityContext .....	478
Table 409 - SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem .....	478
Table 410 - SMI Referenced Properties/Methods for CIM_PolicySetAppliesToElement .....	479
Table 411 - SMI Referenced Properties/Methods for CIM_RegisteredProfile .....	479
Table 412 - SMI Referenced Properties/Methods for CIM_System .....	479
Table 413 - Related Standards for Security .....	480
Table 414 - CIM Server Requirements for Security Authorization .....	490
Table 415 - CIM Elements for Security Authorization .....	491
Table 416 - SMI Referenced Properties/Methods for CIM_AuthorizationRule .....	492
Table 417 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToIdentity .....	492
Table 418 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToPrivilege .....	492
Table 419 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToTarget .....	492
Table 420 - SMI Referenced Properties/Methods for CIM_AuthorizedPrivilege .....	493
Table 421 - SMI Referenced Properties/Methods for CIM_AuthorizedSubject .....	493
Table 422 - SMI Referenced Properties/Methods for CIM_AuthorizedTarget .....	493
Table 423 - SMI Referenced Properties/Methods for CIM_ConcreteDependency .....	493
Table 424 - SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	494
Table 425 - SMI Referenced Properties/Methods for CIM_HostedService .....	494
Table 426 - SMI Referenced Properties/Methods for CIM_Identity .....	494
Table 427 - SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem .....	494
Table 428 - SMI Referenced Properties/Methods for CIM_PolicySetAppliesToElement .....	495
Table 429 - SMI Referenced Properties/Methods for CIM_Privilege .....	495
Table 430 - SMI Referenced Properties/Methods for CIM_PrivilegeManagementService .....	495
Table 431 - SMI Referenced Properties/Methods for CIM_PrivilegePropagationRule .....	496
Table 432 - SMI Referenced Properties/Methods for CIM_RegisteredProfile .....	496
Table 433 - SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	496
Table 434 - SMI Referenced Properties/Methods for CIM_ServiceAffectsElement .....	497
Table 435 - SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement .....	497
Table 436 - SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	497
Table 437 - SMI Referenced Properties/Methods for CIM_System .....	497
Table 438 - Related Standards for Security Authorization .....	498
Table 439 - CIM Server Requirements for Security Resource Ownership .....	505
Table 440 - CIM Elements for Security Resource Ownership .....	506
Table 441 - SMI Referenced Properties/Methods for CIM_AuthorizationRule .....	507
Table 442 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToIdentity .....	507
Table 443 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToPrivilege .....	507
Table 444 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToRole .....	508
Table 445 - SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToTarget .....	508
Table 446 - SMI Referenced Properties/Methods for CIM_AuthorizedPrivilege .....	508
Table 447 - SMI Referenced Properties/Methods for CIM_AuthorizedSubject .....	508
Table 448 - SMI Referenced Properties/Methods for CIM_AuthorizedTarget .....	509
Table 449 - SMI Referenced Properties/Methods for CIM_ConcreteDependency .....	509
Table 450 - SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	509
Table 451 - SMI Referenced Properties/Methods for CIM_HostedService .....	509
Table 452 - SMI Referenced Properties/Methods for CIM_Identity .....	510
Table 453 - SMI Referenced Properties/Methods for CIM_MemberOfCollection .....	510
Table 454 - SMI Referenced Properties/Methods for CIM_OwningCollectionElement .....	510
Table 455 - SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem .....	510
Table 456 - SMI Referenced Properties/Methods for CIM_PolicySetAppliesToElement .....	511
Table 457 - SMI Referenced Properties/Methods for CIM_Privilege .....	511
Table 458 - SMI Referenced Properties/Methods for CIM_PrivilegeManagementService .....	511
Table 459 - SMI Referenced Properties/Methods for CIM_PrivilegePropagationRule .....	512

Table 460	- SMI Referenced Properties/Methods for CIM_ReferencedProfile.....	512
Table 461	- SMI Referenced Properties/Methods for CIM_RegisteredProfile.....	512
Table 462	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	512
Table 463	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	513
Table 464	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	513
Table 465	- SMI Referenced Properties/Methods for CIM_Role.....	513
Table 466	- SMI Referenced Properties/Methods for CIM_RoleLimitedToTarget.....	514
Table 467	- SMI Referenced Properties/Methods for CIM_ServiceAffectsElement .....	514
Table 468	- SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement .....	514
Table 469	- SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	514
Table 470	- SMI Referenced Properties/Methods for CIM_System .....	515
Table 471	- Related Standards for Security Resource Ownership.....	515
Table 472	- CIM Server Requirements for Security RBAC.....	525
Table 473	- CIM Elements for Security RBAC.....	525
Table 474	- SMI Referenced Properties/Methods for CIM_AuthorizationRule .....	526
Table 475	- SMI Referenced Properties/Methods for CIM_AuthorizationRuleAppliesToRole.....	526
Table 476	- SMI Referenced Properties/Methods for CIM_ConcreteDependency.....	526
Table 477	- SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	527
Table 478	- SMI Referenced Properties/Methods for CIM_HostedService.....	527
Table 479	- SMI Referenced Properties/Methods for CIM_Identity.....	527
Table 480	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	528
Table 481	- SMI Referenced Properties/Methods for CIM_MoreRoleInfo .....	528
Table 482	- SMI Referenced Properties/Methods for CIM_OtherRoleInformation .....	528
Table 483	- SMI Referenced Properties/Methods for CIM_OwningCollectionElement .....	528
Table 484	- SMI Referenced Properties/Methods for CIM_PolicyRuleInSystem .....	529
Table 485	- SMI Referenced Properties/Methods for CIM_Privilege.....	529
Table 486	- SMI Referenced Properties/Methods for CIM_PrivilegeManagementService.....	529
Table 487	- SMI Referenced Properties/Methods for CIM_RegisteredProfile.....	530
Table 488	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	530
Table 489	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile .....	530
Table 490	- SMI Referenced Properties/Methods for CIM_Role.....	530
Table 491	- SMI Referenced Properties/Methods for CIM_RoleLimitedToTarget.....	531
Table 492	- SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	531
Table 493	- SMI Referenced Properties/Methods for CIM_System .....	531
Table 494	- Related Standards for Security RBAC .....	531
Table 495	- CIM Server Requirements for Security Identity Management .....	543
Table 496	- CIM Elements for Security Identity Management .....	544
Table 497	- SMI Referenced Properties/Methods for CIM_Account .....	545
Table 498	- SMI Referenced Properties/Methods for CIM_AccountManagementService .....	546
Table 499	- SMI Referenced Properties/Methods for CIM_AccountMapsToAccount .....	546
Table 500	- SMI Referenced Properties/Methods for CIM_AccountOnSystem.....	546
Table 501	- SMI Referenced Properties/Methods for CIM_AssignedIdentity .....	547
Table 502	- SMI Referenced Properties/Methods for CIM_AuthenticationService.....	547
Table 503	- SMI Referenced Properties/Methods for CIM_ConcreteDependency.....	547
Table 504	- SMI Referenced Properties/Methods for CIM_ConcreteIdentity .....	547
Table 505	- SMI Referenced Properties/Methods for CIM_ElementConformsToProfile .....	548
Table 506	- SMI Referenced Properties/Methods for CIM_GatewayPathID .....	548
Table 507	- SMI Referenced Properties/Methods for CIM_Group .....	548
Table 508	- SMI Referenced Properties/Methods for CIM_HostedService .....	548
Table 509	- SMI Referenced Properties/Methods for CIM_IPNetworkIdentity .....	549
Table 510	- SMI Referenced Properties/Methods for CIM_Identity.....	549
Table 511	- SMI Referenced Properties/Methods for CIM_IdentityContext .....	549
Table 512	- SMI Referenced Properties/Methods for CIM_ManagesAccount.....	550
Table 513	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	550
Table 514	- SMI Referenced Properties/Methods for CIM_MoreGroupInfo .....	550
Table 515	- SMI Referenced Properties/Methods for CIM_MoreOrgUnitInfo.....	550
Table 516	- SMI Referenced Properties/Methods for CIM_MoreOrganizationInfo .....	551
Table 517	- SMI Referenced Properties/Methods for CIM_MorePersonInfo.....	551
Table 518	- SMI Referenced Properties/Methods for CIM_OrgStructure.....	551
Table 519	- SMI Referenced Properties/Methods for CIM_OrgUnit.....	551

Table 520	- SMI Referenced Properties/Methods for CIM_Organization	552
Table 521	- SMI Referenced Properties/Methods for CIM_OtherGroupInformation	552
Table 522	- SMI Referenced Properties/Methods for CIM_OtherOrgUnitInformation	552
Table 523	- SMI Referenced Properties/Methods for CIM_OtherOrganizationInformation	553
Table 524	- SMI Referenced Properties/Methods for CIM_OtherPersonInformation	553
Table 525	- SMI Referenced Properties/Methods for CIM_OwningCollectionElement	554
Table 526	- SMI Referenced Properties/Methods for CIM_Person	554
Table 527	- SMI Referenced Properties/Methods for CIM_RegisteredProfile	554
Table 528	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile	555
Table 529	- SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement	555
Table 530	- SMI Referenced Properties/Methods for CIM_StorageHardwareID	555
Table 531	- SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile	555
Table 532	- SMI Referenced Properties/Methods for CIM_System	556
Table 533	- SMI Referenced Properties/Methods for CIM_UserContact	556
Table 534	- Related Standards for Security Identity Management	556
Table 535	- CIM Server Requirements for Security Credential Management	560
Table 536	- CIM Elements for Security Credential Management	561
Table 537	- SMI Referenced Properties/Methods for CIM_CredentialContext	561
Table 538	- SMI Referenced Properties/Methods for CIM_ElementConformsToProfile	562
Table 539	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint	562
Table 540	- SMI Referenced Properties/Methods for CIM_HostedService	562
Table 541	- SMI Referenced Properties/Methods for CIM_IKESecretIsNamed	562
Table 542	- SMI Referenced Properties/Methods for CIM_LocallyManagedPublicKey	563
Table 543	- SMI Referenced Properties/Methods for CIM_NamedSharedIKESecret	563
Table 544	- SMI Referenced Properties/Methods for CIM_PublicKeyManagementService	563
Table 545	- SMI Referenced Properties/Methods for CIM_RegisteredProfile	564
Table 546	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile	564
Table 547	- SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint	564
Table 548	- SMI Referenced Properties/Methods for CIM_SharedSecret	564
Table 549	- SMI Referenced Properties/Methods for CIM_SharedSecretIsShared	565
Table 550	- SMI Referenced Properties/Methods for CIM_SharedSecretService	565
Table 551	- SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile	566
Table 552	- SMI Referenced Properties/Methods for CIM_System	566
Table 553	- SMI Referenced Properties/Methods for CIM_UnsignedPublicKey	566
Table 554	- Related Standards for Security Credential Management	567
Table 555	- CIM Server Requirements for Security 3rd Party Authentication	570
Table 556	- CIM Elements for Security 3rd Party Authentication	571
Table 557	- SMI Referenced Properties/Methods for CIM_Account	572
Table 558	- SMI Referenced Properties/Methods for CIM_AccountOnSystem	572
Table 559	- SMI Referenced Properties/Methods for CIM_AssignedIdentity	572
Table 560	- SMI Referenced Properties/Methods for CIM_AuthenticationService	573
Table 561	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	573
Table 562	- SMI Referenced Properties/Methods for CIM_ConcreteIdentity	573
Table 563	- SMI Referenced Properties/Methods for CIM_CredentialContext	574
Table 564	- SMI Referenced Properties/Methods for CIM_ElementConformsToProfile	574
Table 565	- SMI Referenced Properties/Methods for CIM_Group	574
Table 566	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint	574
Table 567	- SMI Referenced Properties/Methods for CIM_HostedService	575
Table 568	- SMI Referenced Properties/Methods for CIM_Identity	575
Table 569	- SMI Referenced Properties/Methods for CIM_IdentityContext	575
Table 570	- SMI Referenced Properties/Methods for CIM_MemberOfCollection	575
Table 571	- SMI Referenced Properties/Methods for CIM_ReferencedProfile	576
Table 572	- SMI Referenced Properties/Methods for CIM_RegisteredProfile	576
Table 573	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile	576
Table 574	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile	576
Table 575	- SMI Referenced Properties/Methods for CIM_RegisteredSubProfile	577
Table 576	- SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint	577
Table 577	- SMI Referenced Properties/Methods for CIM_Role	577
Table 578	- SMI Referenced Properties/Methods for CIM_ServiceSAPDependency	578

Table 579 - SMI Referenced Properties/Methods for CIM_SubProfileRequiresProfile .....	578
Table 580 - SMI Referenced Properties/Methods for CIM_System .....	578
Table 581 - SMI Referenced Properties/Methods for CIM_System .....	578
Table 582 - SMI Referenced Properties/Methods for CIM_UserContact .....	579
Table 583 - Related Standards for Security 3rd Party Authentication .....	579
Table 584 - Supported Subprofiles for Fabric .....	585
Table 585 - Port OperationalStatus .....	586
Table 586 - OperationalStatus for ComputerSystem .....	586
Table 587 - CIM Server Requirements for Fabric .....	591
Table 588 - CIM Elements for Fabric .....	592
Table 589 - SMI Referenced Properties/Methods for CIM_ActiveConnection .....	594
Table 590 - SMI Referenced Properties/Methods for CIM_AdminDomain (SAN) .....	594
Table 591 - SMI Referenced Properties/Methods for CIM_AdminDomain (Fabric) .....	595
Table 592 - SMI Referenced Properties/Methods for CIM_Component .....	595
Table 593 - SMI Referenced Properties/Methods for CIM_ComputerSystem (Fibre Channel Switch) .....	596
Table 594 - SMI Referenced Properties/Methods for CIM_ComputerSystem (Fibre Channel Platform) .....	597
Table 595 - SMI Referenced Properties/Methods for CIM_ConnectivityCollection .....	597
Table 596 - SMI Referenced Properties/Methods for CIM_ContainedDomain .....	598
Table 597 - SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation .....	598
Table 598 - SMI Referenced Properties/Methods for CIM_ElementCapabilities .....	598
Table 599 - SMI Referenced Properties/Methods for CIM_ElementSettingData .....	599
Table 600 - SMI Referenced Properties/Methods for CIM_FCPort (Switch) .....	599
Table 601 - SMI Referenced Properties/Methods for CIM_FCPort (Devices) .....	600
Table 602 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	601
Table 603 - SMI Referenced Properties/Methods for CIM_HostedCollection (LogicalPortGroup) .....	602
Table 604 - SMI Referenced Properties/Methods for CIM_HostedCollection (ConnectivityCollection) .....	602
Table 605 - SMI Referenced Properties/Methods for CIM_HostedCollection (Zone, ZoneSet, and ZoneAlias) .....	603
Table 606 - SMI Referenced Properties/Methods for CIM_LogicalPortGroup (Fibre Channel Node) .....	603
Table 607 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (FCPort to LogicalPortGroup) .....	604
Table 608 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (ProtocolEndpoint to ConnectivityCollection) .....	604
Table 609 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (ZoneAlias and ZoneMember to Zone) .....	605
Table 610 - SMI Referenced Properties/Methods for CIM_MemberOfCollection (Zone to ZoneSet) .....	605
Table 611 - SMI Referenced Properties/Methods for CIM_ProtocolEndpoint .....	605
Table 612 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	606
Table 613 - SMI Referenced Properties/Methods for CIM_Zone (Active) .....	606
Table 614 - SMI Referenced Properties/Methods for CIM_Zone (Inactive) .....	607
Table 615 - SMI Referenced Properties/Methods for CIM_ZoneCapabilities .....	607
Table 616 - SMI Referenced Properties/Methods for CIM_ZoneMembershipSettingData .....	609
Table 617 - SMI Referenced Properties/Methods for CIM_ZoneSet (Active) .....	610
Table 618 - SMI Referenced Properties/Methods for CIM_ZoneSet (Inactive) .....	610
Table 619 - Related Standards for Fabric .....	610
Table 620 - CIM Server Requirements for Enhanced Zoning and Enhanced Zoning Control .....	615
Table 621 - CIM Elements for Enhanced Zoning and Enhanced Zoning Control .....	615
Table 622 - SMI Referenced Properties/Methods for CIM_HostedCollection .....	615
Table 623 - SMI Referenced Properties/Methods for CIM_MemberOfCollection .....	616
Table 624 - SMI Referenced Properties/Methods for CIM_NamedAddressCollection .....	616
Table 625 - SMI Referenced Properties/Methods for CIM_ZoneService .....	616
Table 626 - Related Standards for Enhanced Zoning and Enhanced Zoning Control .....	617
Table 627 - CIM Server Requirements for Zone Control .....	633
Table 628 - CIM Elements for Zone Control .....	633
Table 629 - SMI Referenced Properties/Methods for CIM_HostedService .....	633
Table 630 - SMI Referenced Properties/Methods for CIM_ZoneService .....	634
Table 631 - Related Standards for Zone Control .....	635
Table 632 - CIM Server Requirements for FDMI .....	637
Table 633 - CIM Elements for FDMI .....	638
Table 634 - SMI Referenced Properties/Methods for CIM_ComputerSystem .....	639
Table 635 - SMI Referenced Properties/Methods for CIM_ControlledBy .....	639
Table 636 - SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity .....	639
Table 637 - SMI Referenced Properties/Methods for CIM_FCPort .....	640

Table 638	- SMI Referenced Properties/Methods for CIM_HostedCollection .....	641
Table 639	- SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity .....	642
Table 640	- SMI Referenced Properties/Methods for CIM_LogicalPortGroup .....	642
Table 641	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	643
Table 642	- SMI Referenced Properties/Methods for CIM_PhysicalPackage.....	643
Table 643	- SMI Referenced Properties/Methods for CIM_PortController .....	644
Table 644	- SMI Referenced Properties/Methods for CIM_Product.....	644
Table 645	- SMI Referenced Properties/Methods for CIM_ProductPhysicalComponent.....	645
Table 646	- SMI Referenced Properties/Methods for CIM_Realizes.....	645
Table 647	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	645
Table 648	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	646
Table 649	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	646
Table 650	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	647
Table 651	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	647
Table 652	- Related Standards for FDMI .....	648
Table 653	- CIM Server Requirements for FabricPathPerformance.....	650
Table 654	- CIM Elements for FabricPathPerformance.....	650
Table 655	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData .....	651
Table 656	- SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe.....	651
Table 657	- SMI Referenced Properties/Methods for CIM_HostedCollection .....	651
Table 658	- SMI Referenced Properties/Methods for CIM_HostedNetworkPipe.....	651
Table 659	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	652
Table 660	- SMI Referenced Properties/Methods for CIM_Network .....	652
Table 661	- SMI Referenced Properties/Methods for CIM_NetworkPipe.....	652
Table 662	- SMI Referenced Properties/Methods for CIM_NetworkPortStatistics .....	653
Table 663	- SMI Referenced Properties/Methods for CIM_ProtocolEndpoint.....	653
Table 664	- SMI Referenced Properties/Methods for CIM_StatisticsCollection .....	653
Table 665	- Related Standards for FabricPathPerformance .....	654
Table 666	- FC Port Settings and Capabilities .....	657
Table 667	- Supported Subprofiles for Switch.....	658
Table 668	- Supported Packages for Switch .....	659
Table 669	- CIM Server Requirements for Switch.....	676
Table 670	- CIM Elements for Switch .....	677
Table 671	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	678
Table 672	- SMI Referenced Properties/Methods for CIM_ComputerSystemPackage.....	679
Table 673	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	680
Table 674	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	680
Table 675	- SMI Referenced Properties/Methods for CIM_ElementSettingData .....	680
Table 676	- SMI Referenced Properties/Methods for CIM_ElementSettingData .....	681
Table 677	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData .....	681
Table 678	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData .....	681
Table 679	- SMI Referenced Properties/Methods for CIM_FCPort.....	682
Table 680	- SMI Referenced Properties/Methods for CIM_FCPortCapabilities .....	684
Table 681	- SMI Referenced Properties/Methods for CIM_FCPortRateStatistics.....	684
Table 682	- SMI Referenced Properties/Methods for CIM_FCPortSettings .....	685
Table 683	- SMI Referenced Properties/Methods for CIM_FCPortStatistics.....	686
Table 684	- SMI Referenced Properties/Methods for CIM_FCSwitchCapabilities .....	688
Table 685	- SMI Referenced Properties/Methods for CIM_FCSwitchSettings .....	688
Table 686	- SMI Referenced Properties/Methods for CIM_HostedCollection .....	689
Table 687	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	689
Table 688	- SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	690
Table 689	- SMI Referenced Properties/Methods for CIM_ProtocolEndpoint.....	690
Table 690	- SMI Referenced Properties/Methods for CIM_RedundancySet.....	691
Table 691	- SMI Referenced Properties/Methods for CIM_StatisticsCollection .....	691
Table 692	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	691
Table 693	- Related Standards for Switch.....	692
Table 694	- CIM Server Requirements for Switch Configuration Data.....	695
Table 695	- CIM Elements for Switch Configuration Data.....	695
Table 696	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	695

Table 697 - SMI Referenced Properties/Methods for CIM_ConfigurationData .....	696
Table 698 - SMI Referenced Properties/Methods for CIM_ElementSettingData .....	696
Table 699 - Related Standards for Switch Configuration Data .....	697
Table 700 - CIM Server Requirements for Blades .....	699
Table 701 - CIM Elements for Blades .....	699
Table 702 - SMI Referenced Properties/Methods for CIM_LogicalModule .....	700
Table 703 - SMI Referenced Properties/Methods for CIM_ModulePort .....	701
Table 704 - SMI Referenced Properties/Methods for CIM_PhysicalPackage .....	701
Table 705 - SMI Referenced Properties/Methods for CIM_Product .....	702
Table 706 - SMI Referenced Properties/Methods for CIM_ProductPhysicalComponent .....	702
Table 707 - SMI Referenced Properties/Methods for CIM_Realizes .....	702
Table 708 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	703
Table 709 - Related Standards for Blades .....	703
Table 710 - CIM Server Requirements for Extender .....	717
Table 711 - CIM Elements for Extender .....	718
Table 712 - SMI Referenced Properties/Methods for CIM_BindsTo .....	720
Table 713 - SMI Referenced Properties/Methods for CIM_Component .....	720
Table 714 - SMI Referenced Properties/Methods for CIM_ComputerSystem .....	720
Table 715 - SMI Referenced Properties/Methods for CIM_ComputerSystemPackage .....	721
Table 716 - SMI Referenced Properties/Methods for CIM_ElementSettingData .....	721
Table 717 - SMI Referenced Properties/Methods for CIM_ElementStatisticalData .....	721
Table 718 - SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe .....	722
Table 719 - SMI Referenced Properties/Methods for CIM_EthernetPort .....	722
Table 720 - SMI Referenced Properties/Methods for CIM_EthernetPortStatistics .....	723
Table 721 - SMI Referenced Properties/Methods for CIM_FCIPSettings .....	724
Table 722 - SMI Referenced Properties/Methods for CIM_FCPort .....	724
Table 723 - SMI Referenced Properties/Methods for CIM_FCPortStatistics .....	726
Table 724 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	727
Table 725 - SMI Referenced Properties/Methods for CIM_HostedNetworkPipe .....	728
Table 726 - SMI Referenced Properties/Methods for CIM_IPEndpointStatistics .....	728
Table 727 - SMI Referenced Properties/Methods for CIM_IPProtocolEndpoint .....	729
Table 728 - SMI Referenced Properties/Methods for CIM_IPSettings .....	730
Table 729 - SMI Referenced Properties/Methods for CIM_Network .....	730
Table 730 - SMI Referenced Properties/Methods for CIM_NetworkPipe .....	730
Table 731 - SMI Referenced Properties/Methods for CIM_NetworkPipeComposition .....	731
Table 732 - SMI Referenced Properties/Methods for CIM_PortImplementsEndpoint .....	731
Table 733 - SMI Referenced Properties/Methods for CIM_ProtocolEndpoint .....	731
Table 734 - SMI Referenced Properties/Methods for CIM_RemotePort .....	732
Table 735 - SMI Referenced Properties/Methods for CIM_RemoteServiceAccessPoint .....	732
Table 736 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	733
Table 737 - SMI Referenced Properties/Methods for CIM_TCPEndpointStatistics .....	733
Table 738 - SMI Referenced Properties/Methods for CIM_TCPProtocolEndpoint .....	733
Table 739 - SMI Referenced Properties/Methods for CIM_TCPSettings .....	734
Table 740 - SMI Referenced Properties/Methods for CIM_TCPStatisticalData .....	734
Table 741 - Related Standards for Extender .....	735
Table 742 - CIM Server Requirements for FC HBA .....	749
Table 743 - CIM Elements for FC HBA .....	750
Table 744 - SMI Referenced Properties/Methods for CIM_AlarmDevice .....	751
Table 745 - SMI Referenced Properties/Methods for CIM_AssociatedAlarm .....	752
Table 746 - SMI Referenced Properties/Methods for CIM_ComputerSystem .....	752
Table 747 - SMI Referenced Properties/Methods for CIM_ControlledBy .....	753
Table 748 - SMI Referenced Properties/Methods for CIM_ElementCapabilities .....	753
Table 749 - SMI Referenced Properties/Methods for CIM_ElementSettingData .....	753
Table 750 - SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity .....	754
Table 751 - SMI Referenced Properties/Methods for CIM_ElementStatisticalData .....	754
Table 752 - SMI Referenced Properties/Methods for CIM_FCPort .....	754
Table 753 - SMI Referenced Properties/Methods for CIM_FCPortStatistics .....	754
Table 754 - SMI Referenced Properties/Methods for CIM_HostedCollection .....	756
Table 755 - SMI Referenced Properties/Methods for CIM_HostedService .....	756
Table 756 - SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity .....	756

Table 757 - SMI Referenced Properties/Methods for CIM_LogicalPortGroup .....	757
Table 758 - SMI Referenced Properties/Methods for CIM_MemberOfCollection.....	757
Table 759 - SMI Referenced Properties/Methods for CIM_OSStorageNameBinding.....	758
Table 760 - SMI Referenced Properties/Methods for CIM_PhysicalPackage.....	759
Table 761 - SMI Referenced Properties/Methods for CIM_PortController.....	759
Table 762 - SMI Referenced Properties/Methods for CIM_Product.....	760
Table 763 - SMI Referenced Properties/Methods for CIM_ProductPhysicalComponent.....	760
Table 764 - SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort.....	760
Table 765 - SMI Referenced Properties/Methods for CIM_Realizes.....	761
Table 766 - SMI Referenced Properties/Methods for CIM_ServiceAvailableToElement .....	761
Table 767 - SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	761
Table 768 - SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	762
Table 769 - SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	762
Table 770 - SMI Referenced Properties/Methods for CIM_StorageNameBinding .....	763
Table 771 - SMI Referenced Properties/Methods for CIM_StorageNameBindingCapabilities.....	764
Table 772 - SMI Referenced Properties/Methods for CIM_StorageNameBindingService .....	764
Table 773 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	765
Table 774 - Related Standards for FC HBA .....	765
Table 775 - iSCSI Terminology .....	766
Table 776 - OperationalStatus Values .....	769
Table 777 - Supported Subprofiles for iSCSI Initiator .....	769
Table 778 - CIM Server Requirements for iSCSI Initiator.....	770
Table 779 - CIM Elements for iSCSI Initiator.....	770
Table 780 - SMI Referenced Properties/Methods for CIM_ComputerSystem.....	771
Table 781 - SMI Referenced Properties/Methods for CIM_ControlledBy.....	771
Table 782 - SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe.....	772
Table 783 - SMI Referenced Properties/Methods for CIM_InstalledSoftwareIdentity .....	772
Table 784 - SMI Referenced Properties/Methods for CIM_PhysicalPackage.....	773
Table 785 - SMI Referenced Properties/Methods for CIM_PortController.....	773
Table 786 - SMI Referenced Properties/Methods for CIM_Product.....	773
Table 787 - SMI Referenced Properties/Methods for CIM_ProductPhysicalComponent.....	774
Table 788 - SMI Referenced Properties/Methods for CIM_ProtocolControllerForPort.....	774
Table 789 - SMI Referenced Properties/Methods for CIM_SCSIProtocolController .....	775
Table 790 - SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	775
Table 791 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	776
Table 792 - SMI Referenced Properties/Methods for CIM_iSCSIConnection .....	776
Table 793 - SMI Referenced Properties/Methods for CIM_iSCSISession .....	777
Table 794 - Related Standards for iSCSI Initiator .....	778
Table 795 - Supported Subprofiles for Host Discovered Resources.....	783
Table 796 - CIM Server Requirements for Host Discovered Resources.....	785
Table 797 - CIM Elements for Host Discovered Resources.....	786
Table 798 - SMI Referenced Properties/Methods for CIM_ComputerSystem.....	786
Table 799 - SMI Referenced Properties/Methods for CIM_HostedAccessPoint .....	787
Table 800 - SMI Referenced Properties/Methods for CIM_LogicalDisk.....	787
Table 801 - SMI Referenced Properties/Methods for CIM_SCSIArbitraryLogicalUnit.....	788
Table 802 - SMI Referenced Properties/Methods for CIM_SCSIInitiatorTargetLogicalUnitPath.....	788
Table 803 - SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint.....	789
Table 804 - SMI Referenced Properties/Methods for CIM_StorageExtent.....	789
Table 805 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	790
Table 806 - SMI Referenced Properties/Methods for CIM_TapeDrive.....	790
Table 807 - Related Standards for Host Discovered Resources.....	791
Table 808 - CIM Server Requirements for Multipath Management.....	802
Table 809 - CIM Elements for Multipath Management.....	802
Table 810 - SMI Referenced Properties/Methods for CIM_SCSIInitiatorTargetLogicalUnitPath.....	803
Table 811 - Related Standards for Multipath Management.....	804
Table 812 - Capabilities Properties .....	809
Table 813 - CIM Server Requirements for Disk Partition .....	816
Table 814 - CIM Elements for Disk Partition .....	816
Table 815 - SMI Referenced Properties/Methods for CIM_BasedOn .....	817

Table 816	- SMI Referenced Properties/Methods for CIM_DiskPartitionConfigurationCapabilities .....	817
Table 817	- SMI Referenced Properties/Methods for CIM_DiskPartitionConfigurationService.....	818
Table 818	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	818
Table 819	- SMI Referenced Properties/Methods for CIM_GenericDiskPartition.....	818
Table 820	- SMI Referenced Properties/Methods for CIM_InstalledPartitionTable.....	819
Table 821	- SMI Referenced Properties/Methods for CIM_LogicalDisk.....	819
Table 822	- SMI Referenced Properties/Methods for CIM_LogicalDiskBasedOnPartition.....	820
Table 823	- SMI Referenced Properties/Methods for CIM_StorageExtent.....	820
Table 824	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	821
Table 825	- Related Standards for Disk Partition .....	821
Table 826	- Supported Subprofiles for Array .....	823
Table 827	- CIM Server Requirements for Array .....	824
Table 828	- Supported Packages for Array .....	824
Table 829	- CIM Elements for Array .....	825
Table 830	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	825
Table 831	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint.....	826
Table 832	- SMI Referenced Properties/Methods for CIM_LogicalPort .....	827
Table 833	- SMI Referenced Properties/Methods for CIM_SCSIArbitraryLogicalUnit.....	827
Table 834	- SMI Referenced Properties/Methods for CIM_SCSIProtocolController .....	827
Table 835	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	828
Table 836	- Related Standards for Array.....	828
Table 837	- Supported Subprofiles for Storage Virtualizer .....	832
Table 838	- Supported Packages for Storage Virtualizer .....	832
Table 839	- CIM Server Requirements for Storage Virtualizer .....	833
Table 840	- CIM Elements for Storage Virtualizer .....	833
Table 841	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	835
Table 842	- SMI Referenced Properties/Methods for CIM_ConcreteComponent .....	835
Table 843	- SMI Referenced Properties/Methods for CIM_LogicalIdentity .....	836
Table 844	- SMI Referenced Properties/Methods for CIM_LogicalPort (Target Port).....	836
Table 845	- SMI Referenced Properties/Methods for CIM_LogicalPort (Initiator Port).....	836
Table 846	- SMI Referenced Properties/Methods for CIM_StorageExtent.....	837
Table 847	- Related Standards for Storage Virtualizer.....	837
Table 848	- Supported Subprofiles for Volume Management .....	840
Table 849	- Supported Packages for Volume Management .....	840
Table 850	- CIM Server Requirements for Volume Management .....	841
Table 851	- CIM Elements for Volume Management .....	841
Table 852	- SMI Referenced Properties/Methods for CIM_AllocatedFromStoragePool .....	842
Table 853	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	842
Table 854	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	843
Table 855	- SMI Referenced Properties/Methods for CIM_ElementSettingData .....	843
Table 856	- SMI Referenced Properties/Methods for CIM_HostedStoragePool .....	843
Table 857	- SMI Referenced Properties/Methods for CIM_LogicalDisk.....	844
Table 858	- SMI Referenced Properties/Methods for CIM_StorageCapabilities .....	844
Table 859	- SMI Referenced Properties/Methods for CIM_StoragePool (Primordial = False).....	845
Table 860	- SMI Referenced Properties/Methods for CIM_StoragePool (Primordial = True) .....	845
Table 861	- SMI Referenced Properties/Methods for CIM_StorageSetting.....	846
Table 862	- SMI Referenced Properties/Methods for CIM_SystemDevice .....	846
Table 863	- Related Standards for Volume Management .....	847
Table 864	- NetworkPort OperationalStatus.....	857
Table 865	- FileShare OperationalStatus .....	857
Table 866	- Filesystem OperationalStatus .....	858
Table 867	- ProtocolEndpoint OperationalStatus .....	858
Table 868	- Supported Subprofiles for NAS Head .....	860
Table 869	- Supported Packages for NAS Head.....	860
Table 870	- CIM Server Requirements for NAS Head.....	864
Table 871	- CIM Elements for NAS Head .....	865
Table 872	- SMI Referenced Properties/Methods for CIM_BindsTo .....	868
Table 873	- SMI Referenced Properties/Methods for CIM_BindsToLANEndpoint .....	868
Table 874	- SMI Referenced Properties/Methods for CIM_ComputerSystem (Top Level) .....	869
Table 875	- SMI Referenced Properties/Methods for CIM_ComputerSystem (File Server).....	870

Table 876	- SMI Referenced Properties/Methods for CIM_ConcreteComponent	870
Table 877	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	871
Table 878	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation (CIFS or NFS to NetworkPort)	871
Table 879	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation (LANEndpoint to NetworkPort)	872
Table 880	- SMI Referenced Properties/Methods for CIM_ElementSettingData (FileShare)	872
Table 881	- SMI Referenced Properties/Methods for CIM_ElementSettingData (FileSystem)	872
Table 882	- SMI Referenced Properties/Methods for CIM_ExportedFileShareSetting (Setting)	873
Table 883	- SMI Referenced Properties/Methods for CIM_FileShare (Exported File Share)	873
Table 884	- SMI Referenced Properties/Methods for CIM_FileSystemSetting	874
Table 885	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint (CIFS or NFS)	876
Table 886	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint (TCP, IP or LAN)	876
Table 887	- SMI Referenced Properties/Methods for CIM_HostedFileSystem	877
Table 888	- SMI Referenced Properties/Methods for CIM_HostedShare	877
Table 889	- SMI Referenced Properties/Methods for CIM_IPProtocolEndpoint	878
Table 890	- SMI Referenced Properties/Methods for CIM_LANEndpoint	879
Table 891	- SMI Referenced Properties/Methods for CIM_LocalFileSystem	880
Table 892	- SMI Referenced Properties/Methods for CIM_LogicalDisk (LD for FS)	881
Table 893	- SMI Referenced Properties/Methods for CIM_LogicalFile	882
Table 894	- SMI Referenced Properties/Methods for CIM_NetworkPort	883
Table 895	- SMI Referenced Properties/Methods for CIM_ProtocolEndPoint (CIFS or NFS)	884
Table 896	- SMI Referenced Properties/Methods for CIM_ResidesOnExtent	885
Table 897	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement	886
Table 898	- SMI Referenced Properties/Methods for CIM_StorageExtent (Primordial)	886
Table 899	- SMI Referenced Properties/Methods for CIM_SystemDevice	887
Table 900	- SMI Referenced Properties/Methods for CIM_TCPProtocolEndpoint	888
Table 901	- Related Standards for NAS Head	888
Table 902	- NetworkPort OperationalStatus	896
Table 903	- FileShare OperationalStatus	896
Table 904	- Filesystem OperationalStatus	897
Table 905	- ProtocolEndpoint OperationalStatus	897
Table 906	- Supported Subprofiles for Self-Contained NAS System	898
Table 907	- Supported Packages for Self-Contained NAS System	898
Table 908	- CIM Server Requirements for Self-Contained NAS System	902
Table 909	- CIM Elements for Self-Contained NAS System	903
Table 910	- SMI Referenced Properties/Methods for CIM_BindsTo	906
Table 911	- SMI Referenced Properties/Methods for CIM_BindsToLANEndpoint	906
Table 912	- SMI Referenced Properties/Methods for CIM_ComputerSystem (Top Level)	907
Table 913	- SMI Referenced Properties/Methods for CIM_ComputerSystem (File Server)	908
Table 914	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	908
Table 915	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation (CIFS or NFS to NetworkPort)	909
Table 916	- SMI Referenced Properties/Methods for CIM_DeviceSAPImplementation (LANEndpoint to NetworkPort)	909
Table 917	- SMI Referenced Properties/Methods for CIM_ElementSettingData (FileShare)	910
Table 918	- SMI Referenced Properties/Methods for CIM_ElementSettingData (FileSystem)	910
Table 919	- SMI Referenced Properties/Methods for CIM_ExportedFileShareSetting	910
Table 920	- SMI Referenced Properties/Methods for CIM_FileShare (Exported File Share)	911
Table 921	- SMI Referenced Properties/Methods for CIM_FileStorage	911
Table 922	- SMI Referenced Properties/Methods for CIM_FileSystemSetting	912
Table 923	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint (CIFS or NFS)	914
Table 924	- SMI Referenced Properties/Methods for CIM_HostedAccessPoint (TCP, IP or LAN)	914
Table 925	- SMI Referenced Properties/Methods for CIM_HostedFileSystem	915
Table 926	- SMI Referenced Properties/Methods for CIM_HostedShare	915
Table 927	- SMI Referenced Properties/Methods for CIM_IPProtocolEndpoint	916
Table 928	- SMI Referenced Properties/Methods for CIM_LANEndpoint	916
Table 929	- SMI Referenced Properties/Methods for CIM_LocalFileSystem	918
Table 930	- SMI Referenced Properties/Methods for CIM_LogicalDisk (Disk for FS)	919
Table 931	- SMI Referenced Properties/Methods for CIM_LogicalFile	920

Table 932 - SMI Referenced Properties/Methods for CIM_NetworkPort.....	921
Table 933 - SMI Referenced Properties/Methods for CIM_ProtocolEndPoint.....	922
Table 934 - SMI Referenced Properties/Methods for CIM_ResidesOnExtent.....	923
Table 935 - SMI Referenced Properties/Methods for CIM_SAPAvailableForElement.....	923
Table 936 - SMI Referenced Properties/Methods for CIM_SystemDevice.....	924
Table 937 - SMI Referenced Properties/Methods for CIM_TCPProtocolEndpoint.....	924
Table 938 - Related Standards for Self-Contained NAS System.....	925
Table 939 - Supported Subprofiles for Filesystem Manipulation.....	930
Table 940 - Filesystem Manipulation Methods that cause Instance Creation, Deletion or Modification.....	930
Table 941 - Filesystem Manipulation Supported Capabilities Patterns.....	946
Table 942 - CIM Server Requirements for Filesystem Manipulation.....	947
Table 943 - CIM Elements for Filesystem Manipulation.....	947
Table 944 - SMI Referenced Properties/Methods for CIM_ElementCapabilities (FS Capabilities).....	949
Table 945 - SMI Referenced Properties/Methods for CIM_ElementCapabilities (FS Config Capabilities).....	950
Table 946 - SMI Referenced Properties/Methods for CIM_ElementSettingData.....	950
Table 947 - SMI Referenced Properties/Methods for CIM_FileStorage.....	950
Table 948 - SMI Referenced Properties/Methods for CIM_FileSystemCapabilities.....	951
Table 949 - SMI Referenced Properties/Methods for CIM_FileSystemConfigurationCapabilities.....	952
Table 950 - SMI Referenced Properties/Methods for CIM_FileSystemConfigurationService.....	953
Table 951 - SMI Referenced Properties/Methods for CIM_FileSystemSetting (Pre-defined).....	954
Table 952 - SMI Referenced Properties/Methods for CIM_FileSystemSetting (Attached to FileSystem).....	956
Table 953 - SMI Referenced Properties/Methods for CIM_HostedFileSystem.....	958
Table 954 - SMI Referenced Properties/Methods for CIM_HostedService.....	958
Table 955 - SMI Referenced Properties/Methods for CIM_LocalFileSystem.....	958
Table 956 - SMI Referenced Properties/Methods for CIM_LogicalFile.....	960
Table 957 - SMI Referenced Properties/Methods for CIM_ResidesOnExtent.....	961
Table 958 - SMI Referenced Properties/Methods for CIM_SettingAssociatedToCapabilities.....	961
Table 959 - Related Standards for Filesystem Manipulation.....	962
Table 960 - Supported Subprofiles for File Export Manipulation.....	965
Table 961 - FileExportManipulation Methods.....	965
Table 962 - SMI-S File Export Supported Capabilities Patterns.....	978
Table 963 - CIM Server Requirements for File Export Manipulation.....	978
Table 964 - CIM Elements for File Export Manipulation.....	979
Table 965 - SMI Referenced Properties/Methods for CIM_ElementCapabilities (FileExportCapabilities).....	981
Table 966 - SMI Referenced Properties/Methods for CIM_ElementCapabilities (ExportedFileShareCapabilities).....	981
Table 967 - SMI Referenced Properties/Methods for CIM_ElementSettingData.....	982
Table 968 - SMI Referenced Properties/Methods for CIM_ExportedFileShareCapabilities.....	982
Table 969 - SMI Referenced Properties/Methods for CIM_ExportedFileShareSetting (Sample on Capabilities).....	983
Table 970 - SMI Referenced Properties/Methods for CIM_ExportedFileShareSetting (On FileShare).....	985
Table 971 - SMI Referenced Properties/Methods for CIM_FileExportCapabilities.....	987
Table 972 - SMI Referenced Properties/Methods for CIM_FileExportService.....	988
Table 973 - SMI Referenced Properties/Methods for CIM_FileShare.....	989
Table 974 - SMI Referenced Properties/Methods for CIM_HostedService.....	989
Table 975 - SMI Referenced Properties/Methods for CIM_HostedShare.....	990
Table 976 - SMI Referenced Properties/Methods for CIM_LogicalFile.....	990
Table 977 - SMI Referenced Properties/Methods for CIM_ServiceAffectsElement.....	991
Table 978 - SMI Referenced Properties/Methods for CIM_SettingAssociatedToCapabilities.....	991
Table 979 - SMI Referenced Properties/Methods for CIM_SharedElement.....	992
Table 980 - SMI Referenced Properties/Methods for CIM_SharedElementRoot.....	992
Table 981 - Related Standards for File Export Manipulation.....	993
Table 982 - Pool Management Policy Subprofiles.....	997
Table 983 - Static Policy Instance Methods.....	997
Table 984 - Instance Methods of Dynamic Rules and Static Conditions and Actions.....	998
Table 985 - Dynamic Policy Instance Methods.....	998

Table 986 - Required CIM Elements .....	1000
Table 987 - Instance Creation, Deletion or Modification for Pool Management Policy Subprofile Classes .....	1000
Table 988 - Valid Flag Values .....	1001
Table 989 - Properties for MethodAction .....	1002
Table 990 - Properties for MethodActionResult .....	1003
Table 991 - Properties for PolicyActionInPolicyRule .....	1004
Table 992 - Properties for PolicyCapabilities .....	1005
Table 993 - Properties for PolicyConditionInPolicyRule .....	1005
Table 994 - Properties for PolicyRule .....	1006
Table 995 - Properties for PolicyRuleInSystem .....	1008
Table 996 - Properties for PolicySetAppliesToElement .....	1009
Table 997 - Properties for QueryCondition .....	1009
Table 998 - Properties for QueryConditionResult .....	1011
Table 999 - Pool Management Policy Profile Subprofile Standards Dependencies .....	1012
Table 1000 - Pool Management Policy Subprofile Functional Profile Requirements .....	1012
Table 1001 - Block Service Management Rights .....	1015
Table 1002 - Supported Actions to Method Mapping .....	1026
Table 1003 - RAID Mapping Table .....	1030
Table 1004 - Classes Required In Read-Only Implementation .....	1032
Table 1005 - Standard Messages for Block Services Package .....	1037
Table 1006 - CIM Server Requirements for Block Services .....	1074
Table 1007 - CIM Elements for Block Services .....	1075
Table 1008 - SMI Referenced Properties/Methods for CIM_AllocatedFromStoragePool .....	1077
Table 1009 - SMI Referenced Properties/Methods for CIM_ElementCapabilities .....	1077
Table 1010 - SMI Referenced Properties/Methods for CIM_ElementSettingData .....	1078
Table 1011 - SMI Referenced Properties/Methods for CIM_HostedService .....	1078
Table 1012 - SMI Referenced Properties/Methods for CIM_LogicalDisk .....	1078
Table 1013 - SMI Referenced Properties/Methods for CIM_StorageCapabilities .....	1079
Table 1014 - SMI Referenced Properties/Methods for CIM_StorageConfigurationCapabilities .....	1082
Table 1015 - SMI Referenced Properties/Methods for CIM_StorageConfigurationService .....	1083
Table 1016 - SMI Referenced Properties/Methods for CIM_StoragePool .....	1084
Table 1017 - SMI Referenced Properties/Methods for CIM_StoragePool .....	1084
Table 1018 - SMI Referenced Properties/Methods for CIM_StoragePool .....	1085
Table 1019 - SMI Referenced Properties/Methods for CIM_StorageSetting .....	1085
Table 1020 - SMI Referenced Properties/Methods for CIM_StorageSettingWithHints .....	1087
Table 1021 - SMI Referenced Properties/Methods for CIM_StorageSettingsAssociatedToCapabilities .....	1088
Table 1022 - SMI Referenced Properties/Methods for CIM_StorageSettingsGeneratedFromCapabilities .....	1089
Table 1023 - SMI Referenced Properties/Methods for CIM_StorageVolume .....	1089
Table 1024 - Related Standards for Block Services .....	1090
Table 1025 - Summary of Element Types by Profile .....	1100
Table 1026 - Supported Subprofiles for Block Server Performance .....	1111
Table 1027 - Creation, Deletion and Modification Methods in Block Server Performance Subprofile .....	1111
Table 1028 - Summary of Block Statistics Support by Element .....	1140
Table 1029 - Formulas and Calculations .....	1142
Table 1030 - Block Server Performance Subprofile Supported Capabilities Patterns .....	1142
Table 1031 - CIM Server Requirements for Block Server Performance .....	1143
Table 1032 - CIM Elements for Block Server Performance .....	1144
Table 1033 - SMI Referenced Properties/Methods for CIM_AssociatedBlockStatisticsManifestCollection (Pre-defined) .....	1145
Table 1034 - SMI Referenced Properties/Methods for CIM_AssociatedBlockStatisticsManifestCollection (Client defined) .....	1146
Table 1035 - SMI Referenced Properties/Methods for CIM_BlockStatisticsCapabilities .....	1146
Table 1036 - SMI Referenced Properties/Methods for CIM_BlockStatisticsManifest (Pre-defined) .....	1147
Table 1037 - SMI Referenced Properties/Methods for CIM_BlockStatisticsManifest (Client defined) .....	1149
Table 1038 - SMI Referenced Properties/Methods for CIM_BlockStatisticsManifestCollection (Pre-defined) .....	1150
Table 1039 - SMI Referenced Properties/Methods for CIM_BlockStatisticsManifestCollection (Client defined) .....	1151
Table 1040 - SMI Referenced Properties/Methods for CIM_BlockStatisticsServicett .....	1151
Table 1041 - SMI Referenced Properties/Methods for CIM_BlockStorageStatisticalData .....	1152
Table 1042 - SMI Referenced Properties/Methods for CIM_ElementCapabilities .....	1158

Table 1043	- SMI Referenced Properties/Methods for CIM_ElementStatisticalData.....	1158
Table 1044	- SMI Referenced Properties/Methods for CIM_HostedCollection.....	1159
Table 1045	- SMI Referenced Properties/Methods for CIM_HostedService .....	1159
Table 1046	- SMI Referenced Properties/Methods for CIM_MemberOfCollection (Collect Statistics).....	1160
Table 1047	- SMI Referenced Properties/Methods for CIM_MemberOfCollection (Collect pre-defined manifests).....	1160
Table 1048	- SMI Referenced Properties/Methods for CIM_MemberOfCollection (Collect client defined manifests).....	1160
Table 1049	- SMI Referenced Properties/Methods for CIM_StatisticsCollection.....	1161
Table 1050	- Related Standards for Block Server Performance.....	1161
Table 1051	- Copy Services Subprofile FCAPS Support.....	1163
Table 1052	- Synchronization Operation Support Requirements .....	1174
Table 1053	- SyncState Values .....	1175
Table 1054	- SyncMaintained and WhenSynced Properties .....	1176
Table 1055	- OperationalStatus Values for NetworkPipe .....	1182
Table 1056	- Copy Services Alert Indications.....	1183
Table 1057	- Copy Services Error Responses.....	1183
Table 1058	- Extrinsic Methods of ReplicationServices Subprofile.....	1185
Table 1059	- ModifySynchronization.....	1186
Table 1060	- CreateReplica Method.....	1187
Table 1061	- AttachOrModifyReplica Method.....	1188
Table 1062	- CreateReplicationBuffer Method.....	1189
Table 1063	- CreateOrModifyReplicationPipe Method .....	1190
Table 1064	- Patterns Supported for StorageReplicationCapabilities.....	1200
Table 1065	- Space Consumption Properties .....	1202
Table 1066	- Space Consumption Properties, Fixed Pattern.....	1203
Table 1067	- CIM Server Requirements for Copy Services.....	1252
Table 1068	- CIM Elements for Copy Services.....	1253
Table 1069	- SMI Referenced Properties/Methods for CIM_AllocatedFromStoragePool.....	1255
Table 1070	- SMI Referenced Properties/Methods for CIM_AssociatedMemory .....	1256
Table 1071	- SMI Referenced Properties/Methods for CIM_BasedOn.....	1256
Table 1072	- SMI Referenced Properties/Methods for CIM_ConcreteDependency .....	1256
Table 1073	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	1257
Table 1074	- SMI Referenced Properties/Methods for CIM_EndpointOfNetworkPipe .....	1257
Table 1075	- SMI Referenced Properties/Methods for CIM_HostedNetworkPipe.....	1258
Table 1076	- SMI Referenced Properties/Methods for CIM_HostedService .....	1258
Table 1077	- SMI Referenced Properties/Methods for CIM_Memory.....	1258
Table 1078	- SMI Referenced Properties/Methods for CIM_Network.....	1259
Table 1079	- SMI Referenced Properties/Methods for CIM_NetworkPipe .....	1259
Table 1080	- SMI Referenced Properties/Methods for CIM_NetworkPipeComposition .....	1260
Table 1081	- SMI Referenced Properties/Methods for CIM_ProtocolEndpoint .....	1260
Table 1082	- SMI Referenced Properties/Methods for CIM_ReplicaPoolForStorage.....	1261
Table 1083	- SMI Referenced Properties/Methods for CIM_StorageCapabilities.....	1261
Table 1084	- SMI Referenced Properties/Methods for CIM_StorageConfigurationCapabilities .....	1261
Table 1085	- SMI Referenced Properties/Methods for CIM_StorageConfigurationService.....	1262
Table 1086	- SMI Referenced Properties/Methods for CIM_StorageExtent (Copy Services) .....	1263
Table 1087	- SMI Referenced Properties/Methods for CIM_StoragePool.....	1264
Table 1088	- SMI Referenced Properties/Methods for CIM_StorageReplicationCapabilities.....	1264
Table 1089	- SMI Referenced Properties/Methods for CIM_StorageSetting .....	1270
Table 1090	- SMI Referenced Properties/Methods for CIM_StorageSynchronized .....	1272
Table 1091	- SMI Referenced Properties/Methods for CIM_StorageVolume (Array Profile).....	1274
Table 1092	- SMI Referenced Properties/Methods for CIM_SystemComponent .....	1275
Table 1093	- Related Standards for Copy Services.....	1275
Table 1094	- OperationalStatus for a Disk.....	1279
Table 1095	- Volume-Level OperationalStatus .....	1279
Table 1096	- CIM Server Requirements for Disk Drive Lite.....	1280
Table 1097	- CIM Elements for Disk Drive Lite.....	1281
Table 1098	- SMI Referenced Properties/Methods for CIM_DiskDrive .....	1281
Table 1099	- SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity.....	1281
Table 1100	- SMI Referenced Properties/Methods for CIM_MediaPresent.....	1282
Table 1101	- SMI Referenced Properties/Methods for CIM_PhysicalPackage .....	1282
Table 1102	- SMI Referenced Properties/Methods for CIM_Realizes.....	1282

Table 1103	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity	1283
Table 1104	- SMI Referenced Properties/Methods for CIM_StorageExtent	1283
Table 1105	- SMI Referenced Properties/Methods for CIM_SystemDevice	1284
Table 1106	- Related Standards for Disk Drive Lite	1284
Table 1107	- Supported Methods to Method Mapping	1288
Table 1108	- CIM Server Requirements for Disk Sparing	1295
Table 1109	- CIM Elements for Disk Sparing	1295
Table 1110	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	1296
Table 1111	- SMI Referenced Properties/Methods for CIM_HostedCollection	1296
Table 1112	- SMI Referenced Properties/Methods for CIM_IsSpare	1296
Table 1113	- SMI Referenced Properties/Methods for CIM_LogicalDisk	1297
Table 1114	- SMI Referenced Properties/Methods for CIM_MemberOfCollection	1297
Table 1115	- SMI Referenced Properties/Methods for CIM_Spared	1298
Table 1116	- SMI Referenced Properties/Methods for CIM_StorageExtent	1298
Table 1117	- SMI Referenced Properties/Methods for CIM_StoragePool	1298
Table 1118	- SMI Referenced Properties/Methods for CIM_StorageRedundancySet	1299
Table 1119	- SMI Referenced Properties/Methods for CIM_StorageVolume	1300
Table 1120	- SMI Referenced Properties/Methods for SNIA_SpareConfigurationCapabilities	1300
Table 1121	- SMI Referenced Properties/Methods for SNIA_SpareConfigurationService	1301
Table 1122	- Related Standards for Disk Sparing	1302
Table 1123	- Supported Common RAID Levels	1308
Table 1124	- CIM Server Requirements for Extent Composition	1324
Table 1125	- CIM Elements for Extent Composition	1324
Table 1126	- SMI Referenced Properties/Methods for CIM_BasedOn	1325
Table 1127	- SMI Referenced Properties/Methods for CIM_CompositeExtent	1325
Table 1128	- SMI Referenced Properties/Methods for CIM_CompositeExtentBasedOn	1326
Table 1129	- SMI Referenced Properties/Methods for CIM_ConcreteComponent	1327
Table 1130	- SMI Referenced Properties/Methods for CIM_StorageExtent	1327
Table 1131	- Related Standards for Extent Composition	1328
Table 1132	- SCSIProtocolController Property Description	1337
Table 1133	- ExposePath Use Cases	1341
Table 1134	- HidePaths Use Cases	1343
Table 1135	- Use Cases for ExposeDefaultLUs	1345
Table 1136	- Use Cases for HideDefaultLUs	1347
Table 1137	- CIM Server Requirements for Masking and Mapping	1357
Table 1138	- CIM Elements for Masking and Mapping	1358
Table 1139	- SMI Referenced Properties/Methods for CIM_AuthorizedPrivilege	1359
Table 1140	- SMI Referenced Properties/Methods for CIM_AuthorizedSubject	1360
Table 1141	- SMI Referenced Properties/Methods for CIM_AuthorizedTarget	1360
Table 1142	- SMI Referenced Properties/Methods for CIM_ConcreteDependency	1360
Table 1143	- SMI Referenced Properties/Methods for CIM_ControllerConfigurationService	1361
Table 1144	- SMI Referenced Properties/Methods for CIM_ElementCapabilities	1361
Table 1145	- SMI Referenced Properties/Methods for CIM_ElementSettingData	1362
Table 1146	- SMI Referenced Properties/Methods for CIM_HostedCollection	1362
Table 1147	- SMI Referenced Properties/Methods for CIM_HostedService	1362
Table 1148	- SMI Referenced Properties/Methods for CIM_LogicalDevice	1363
Table 1149	- SMI Referenced Properties/Methods for CIM_MemberOfCollection	1363
Table 1150	- SMI Referenced Properties/Methods for CIM_PrivilegeManagementService	1363
Table 1151	- SMI Referenced Properties/Methods for CIM_ProtocolController	1364
Table 1152	- SMI Referenced Properties/Methods for CIM_ProtocolControllerForUnit	1364
Table 1153	- SMI Referenced Properties/Methods for CIM_ProtocolControllerMaskingCapabilities	1365
Table 1154	- SMI Referenced Properties/Methods for CIM_SAPAvailableForElement	1367
Table 1155	- SMI Referenced Properties/Methods for CIM_SCSIProtocolEndpoint	1367
Table 1156	- SMI Referenced Properties/Methods for CIM_StorageClientSettingData	1367
Table 1157	- SMI Referenced Properties/Methods for CIM_StorageHardwareID	1368
Table 1158	- SMI Referenced Properties/Methods for CIM_StorageHardwareIDManagementService	1368
Table 1159	- SMI Referenced Properties/Methods for CIM_SystemSpecificCollection	1369
Table 1160	- Related Standards for Masking and Mapping	1369
Table 1161	- Supported Subprofiles for Storage Library	1375

Table 1162	- Supported Packages for Storage Library.....	1375
Table 1163	- CIM Server Requirements for Storage Library .....	1378
Table 1164	- CIM Elements for Storage Library .....	1378
Table 1165	- SMI Referenced Properties/Methods for CIM_ChangerDevice .....	1380
Table 1166	- SMI Referenced Properties/Methods for CIM_Chassis.....	1380
Table 1167	- SMI Referenced Properties/Methods for CIM_ComputerSystem.....	1381
Table 1168	- SMI Referenced Properties/Methods for CIM_ComputerSystemPackage.....	1382
Table 1169	- SMI Referenced Properties/Methods for CIM_ElementCapabilities.....	1382
Table 1170	- SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity.....	1382
Table 1171	- SMI Referenced Properties/Methods for CIM_ElementSoftwareIdentity.....	1383
Table 1172	- SMI Referenced Properties/Methods for CIM_MediaAccessDevice .....	1383
Table 1173	- SMI Referenced Properties/Methods for CIM_PackagedComponent .....	1383
Table 1174	- SMI Referenced Properties/Methods for CIM_PhysicalMedia.....	1384
Table 1175	- SMI Referenced Properties/Methods for CIM_PhysicalMediaInLocation.....	1384
Table 1176	- SMI Referenced Properties/Methods for CIM_ProtocolControllerForUnit.....	1384
Table 1177	- SMI Referenced Properties/Methods for CIM_Realizes.....	1385
Table 1178	- SMI Referenced Properties/Methods for CIM_SCSIProtocolController.....	1385
Table 1179	- SMI Referenced Properties/Methods for CIM_SoftwareIdentity.....	1386
Table 1180	- SMI Referenced Properties/Methods for CIM_StorageLibraryCapabilities.....	1386
Table 1181	- SMI Referenced Properties/Methods for CIM_StorageMediaLocation.....	1387
Table 1182	- SMI Referenced Properties/Methods for CIM_SystemDevice.....	1387
Table 1183	- Related Standards for Storage Library .....	1387
Table 1184	- CIM Server Requirements for Storage Library Element Counting.....	1392
Table 1185	- CIM Elements for Storage Library Element Counting.....	1392
Table 1186	- SMI Referenced Properties/Methods for CIM_ConfigurationReportingService.....	1392
Table 1187	- SMI Referenced Properties/Methods for CIM_HostedService .....	1393
Table 1188	- Related Standards for Storage Library Element Counting.....	1393
Table 1189	- CIM Server Requirements for Storage Library InterLibraryPort Connection .....	1395
Table 1190	- CIM Elements for Storage Library InterLibraryPort Connection .....	1396
Table 1191	- SMI Referenced Properties/Methods for CIM_InterLibraryPort.....	1396
Table 1192	- SMI Referenced Properties/Methods for CIM_LibraryExchange.....	1397
Table 1193	- Related Standards for Storage Library InterLibraryPort Connection.....	1397
Table 1194	- CIM Server Requirements for Storage Library Partitioned Library .....	1399
Table 1195	- CIM Elements for Storage Library Partitioned Library .....	1399
Table 1196	- SMI Referenced Properties/Methods for CIM_Container .....	1400
Table 1197	- SMI Referenced Properties/Methods for CIM_DeviceServicesLocation .....	1400
Table 1198	- SMI Referenced Properties/Methods for CIM_Magazine .....	1400
Table 1199	- Related Standards for Storage Library Partitioned Library.....	1401
Table 1200	- CIM Server Requirements for Storage Library Capacity .....	1403
Table 1201	- CIM Elements for Storage Library Capacity .....	1403
Table 1202	- SMI Referenced Properties/Methods for CIM_ConfigurationCapacity .....	1403
Table 1203	- SMI Referenced Properties/Methods for CIM_ElementCapacity.....	1404
Table 1204	- Related Standards for Storage Library Capacity .....	1404
Table 1205	- LibraryAlert Property Settings.....	1405
Table 1206	- Vendor Specific Properties of LibraryAlert.....	1406
Table 1207	- Variable Alert Properties for LibraryAlert .....	1406
Table 1208	- SCSI TapeAlert-based Properties .....	1406
Table 1209	- LibraryAlert AlertIndication Properties .....	1407
Table 1210	- CIM Server Requirements for SML_Events.....	1424
Table 1211	- CIM Elements for SML_Events.....	1424
Table 1212	- SMI Referenced Properties/Methods for CIM_AlertIndication.....	1424
Table 1213	- Related Standards for SML_Events .....	1425
Table 1214	- Media Movement Standard Messages .....	1427
Table 1215	- CIM Server Requirements for Storage Library Media Movement.....	1430
Table 1216	- CIM Elements for Storage Library Media Movement.....	1430
Table 1217	- SMI Referenced Properties/Methods for CIM_HostedService .....	1430
Table 1218	- SMI Referenced Properties/Methods for SNIA_MediaMovementService .....	1431
Table 1219	- Related Standards for Storage Library Media Movement.....	1431
Table 1220	- CIM Server Requirements for Storage Library Limited Access Port Elements.....	1434
Table 1221	- CIM Elements for Storage Library Limited Access Port Elements.....	1435

Table 1222 - SMI Referenced Properties/Methods for CIM_Container .....	1436
Table 1223 - SMI Referenced Properties/Methods for CIM_LimitedAccessPort .....	1436
Table 1224 - SMI Referenced Properties/Methods for CIM_Magazine .....	1436
Table 1225 - SMI Referenced Properties/Methods for CIM_Realizes .....	1437
Table 1226 - SMI Referenced Properties/Methods for CIM_SystemDevice .....	1437
Table 1227 - Related Standards for Storage Library Limited Access Port Elements .....	1438
Table 1228 - Functional Profiles .....	1495
Table 1229 - Message Types .....	1502
Table 1230 - Required Configuration Properties for SA as DA .....	1507
Table 1231 - Required Configuration Properties for SA .....	1508

## List of Figures

Figure 1 - Interface Functions.....	50
Figure 2 - Large SAN Topology.....	53
Figure 3 - Example Client Server Distribution in a SAN .....	54
Figure 4 - Object Model/Server Relationship.....	58
Figure 5 - Canonical Inheritance .....	59
Figure 6 - Sample CIM-XML Message .....	60
Figure 7 - Operational Environment .....	66
Figure 8 - Transport Stack.....	69
Figure 9 - Reference Model.....	70
Figure 10 - Server Profile Instance Diagram .....	76
Figure 11 - iSCSI Qualified Names (iqn) Examples.....	86
Figure 12 - iSCSI EUI Name Examples.....	87
Figure 13 - iSCSI 64-bit NAA Name Examples .....	87
Figure 14 - iSCSI 128-bit NAA Name Examples .....	87
Figure 15 - Basic Fault Detection .....	89
Figure 16 - Health Lifecycle .....	92
Figure 17 - Continuum.....	93
Figure 18 - Application Fault Region .....	94
Figure 19 - Array Instance .....	95
Figure 20 - Switch Example.....	97
Figure 21 - Use of Results as Context in the Execution of a Policy Rule .....	101
Figure 22 - System-wide Remote Access Point .....	154
Figure 23 - Access Point Instance Diagram .....	155
Figure 24 - Instance Diagram for Logical Topology.....	160
Figure 25 - Instance Diagram for Resource Allocation/Deallocation .....	162
Figure 26 - Cascading Server Topology.....	164
Figure 27 - Instance Diagram for Cascading with Resource Ownership.....	166
Figure 28 - Instance Diagram for Cascading with Credential Management Subprofile .....	167
Figure 29 - Modeling of Cascading Capabilities .....	168
Figure 30 - Device Credentials Subprofile Model .....	189
Figure 31 - Job Control Subprofile Model.....	203
Figure 32 - Storage Configuration .....	209
Figure 33 - Location Instance .....	216
Figure 34 - Two Redundant Systems Instance Diagram .....	219
Figure 35 - Multiple Redundancy Tier Instance Diagram .....	221
Figure 36 - System Level Numbers .....	222
Figure 37 - Physical Package Package Mandatory Classes .....	231
Figure 38 - Physical Package Package with Optional Classes .....	232
Figure 39 - Basic Policy Package Instance Diagram.....	239
Figure 40 - Policy Package QueryCondition Support Instance Diagram.....	241
Figure 41 - Policy Package MethodAction Support Instance Diagram .....	243
Figure 42 - Policy Package for Static Rules Instance Diagram .....	245
Figure 43 - Policy Package Support for Static Conditions and Actions Instance Diagram .....	247
Figure 44 - Policy Package support for Dynamic Conditions and Actions Instance Diagram.....	248
Figure 45 - Policy Package support for Trigger Conditions Instance Diagram .....	250
Figure 46 - Policy Package support for Time Periods Instance Diagram .....	251
Figure 47 - Policy Package support for Compound Conditions Instance Diagram.....	253
Figure 48 - Policy Package support for Compound Actions Instance Diagram.....	255
Figure 49 - Policy Package support for Policy Capabilities Instance Diagram .....	257
Figure 50 - Software Installation Service Overview .....	306
Figure 51 - Example Instance Diagram .....	307
Figure 52 - Software Instance Diagram.....	313
Figure 53 - Software Repository Instance Diagram.....	319

Figure 54 - Generic Storage Target.....	325
Figure 55 - Port Class Hierarchy .....	327
Figure 56 - SPI Target Port Instance Diagram .....	328
Figure 57 - FC Target Port Instance Diagram .....	333
Figure 58 - iSCSI Target Ports Subprofile Instance Diagram.....	339
Figure 59 - DA Port Instance Diagram .....	374
Figure 60 - Generic Initiator Port Model .....	379
Figure 61 - Logical Port Hierarchy .....	380
Figure 62 - SPI Initiator Port Instance Diagram.....	381
Figure 63 - Fibre Channel Initiator Instance Diagram.....	386
Figure 64 - iSCSI Initiator Port Instance Diagram.....	393
Figure 65 - Back-end Ports Instance .....	400
Figure 66 - Server Model.....	406
Figure 67 - Indications Subprofile and Namespaces.....	436
Figure 68 - Indications Subprofile Instance Diagram.....	438
Figure 69 - QueryCapabilities for Client Defined Filters .....	441
Figure 70 - ObjectManagerAdapter Subprofile Model .....	464
Figure 71 - Identity.....	471
Figure 72 - Authorization .....	482
Figure 73 - Policy Rules .....	484
Figure 74 - Security Resource Ownership.....	499
Figure 75 - Service Associations .....	501
Figure 76 - AuthorizedPrivilege .....	502
Figure 77 - Role-Based Access Control .....	517
Figure 78 - Policy Rule .....	519
Figure 79 - Service Associations .....	520
Figure 80 - AuthorizedPrivilege .....	521
Figure 81 - Identities .....	532
Figure 82 - IPNetworkIdentity .....	533
Figure 83 - Account Management .....	534
Figure 84 - OrganizationalEntities .....	535
Figure 85 - Organizations and OrgUnits.....	536
Figure 86 - People .....	538
Figure 87 - Groups and Roles .....	539
Figure 88 - Credential Management.....	559
Figure 89 - 3rd Party Authentication for the CIM Service .....	569
Figure 90 - Fabric Instance Diagram .....	582
Figure 91 - Zoning Instance Diagram (AdminDomain).....	583
Figure 92 - Zoning Instance Diagram (ComputerSystem).....	584
Figure 93 - FDMI Instance Diagram .....	636
Figure 94 - Instance Diagram .....	649
Figure 95 - Switch Instance Diagram .....	656
Figure 96 - Trunking Instance Diagram .....	658
Figure 97 - Switch Configuration Data Instance Diagram.....	693
Figure 98 - Switch Blade Instance Diagram .....	698
Figure 99 - FC Extender Node Instance Diagram .....	705
Figure 100 -FC Extender Group Instance Diagram .....	706
Figure 101 -FC HBA Instance Diagram .....	736
Figure 102 -HBA Card with Two Ports .....	737
Figure 103 -Persistent Binding Model .....	738
Figure 104 -iSCSI Product and Package Model.....	767
Figure 105 -iSCSI Sessions and Connections Model.....	768
Figure 106 -iSCSI Initiator Node.....	768
Figure 107 -Host Discovered Resources Block Diagram .....	779

Figure 108 - Host Discovered Resources Class Diagram .....	781
Figure 109 - Single SPI Disk Model.....	781
Figure 110 - Three FC Logical Unit Instance Diagram .....	782
Figure 111 - Non-SCSI Discovered Resource Model.....	782
Figure 112 - Multipath Management Class Diagram .....	792
Figure 113 - Four Path Instance Diagram .....	793
Figure 114 - Disk Partition Class Hierarchy.....	806
Figure 115 - Disk Partition Class Diagram.....	806
Figure 116 - Disk MBR Partition Example .....	807
Figure 117 - MBR Partition Instance Diagram .....	808
Figure 118 - MBR and VTOC Partition Instance Diagram .....	809
Figure 119 - Partition Instance Diagram for Size/Address Rules .....	810
Figure 120 - Array Profile Instance Diagram .....	822
Figure 121 - Storage Virtualizer Package Diagram .....	829
Figure 122 - Storage Virtualizer System Instance .....	830
Figure 123 - Volume Management Instance Diagram.....	838
Figure 124 - NAS Head Profiles and Subprofiles .....	848
Figure 125 - NAS Head Instance Diagram.....	850
Figure 126 - NAS Storage Instance Diagram .....	852
Figure 127 - NAS Filesystem Instance Diagram.....	853
Figure 128 - NAS File Share Instance Diagram .....	854
Figure 129 - NAS Head Cascading Support Instance Diagram.....	856
Figure 130 - Self-Contained NAS Profile and Subprofiles .....	889
Figure 131 - Self-Contained NAS Instance Diagram.....	891
Figure 132 - NAS Storage Instance Diagram .....	893
Figure 133 - NAS Filesystem Instance Diagram.....	894
Figure 134 - NAS File Share Instance Diagram .....	895
Figure 135 - LocalFilesystem Creation Instance Diagram .....	927
Figure 136 - Capabilities and Settings for Filesystem Creation Diagram .....	929
Figure 137 - File Export Manipulation Subprofile Instance Diagram .....	964
Figure 138 - Basic Pool Management Instance Diagram .....	995
Figure 139 - Resource Ownership for Block Services.....	1014
Figure 140 - ServiceAffectsElement associations for ResourceOwnership.....	1019
Figure 141 - AuthorizedPrivilege associations for ResourceOwnership.....	1019
Figure 142 - Storage Capacity State .....	1022
Figure 143 - Pool Manipulation Instance Diagram .....	1024
Figure 144 - Volume Creation Instance Diagram .....	1027
Figure 145 - Storage Configuration .....	1028
Figure 146 - Extent Conservation, Step 1 .....	1033
Figure 147 - Extent Conservation, Step 2 .....	1034
Figure 148 - Extent Conservation, Step 3 .....	1035
Figure 149 - Representative Block Service Instance Diagram .....	1046
Figure 150 - Pool Creation, Initial State.....	1047
Figure 151 - Pool Creation - Step 2.....	1048
Figure 152 - Pool Creation - Step 3.....	1049
Figure 153 - Pool Creation - Step 4.....	1050
Figure 154 - Volume Creation - Initial State .....	1050
Figure 155 - Volume Creation - Step 1 .....	1051
Figure 156 - Volume Creation - Step 2.....	1052
Figure 157 - Volume Creation - Step 3.....	1053
Figure 158 - Block Server Performance Subprofile Summary Instance Diagram.....	1093
Figure 159 - Base Array Profile Block Server Performance Instance Diagram .....	1096
Figure 160 - Base Storage Virtualizer Profile Block Server Performance Instance Diagram .....	1098
Figure 161 - Base Volume Management Profile Block Server Performance Instance Diagram.....	1099
Figure 162 - Multiple Computer System Subprofile Block Server Performance Instance Diagram.....	1102

Figure 163 - Fibre Channel Initiator Port Subprofile Block Server Performance Instance Diagram .....	1103
Figure 164 - Extent Composition Subprofile Block Server Performance Instance Diagram.....	1104
Figure 165 - Disk Drive Lite Subprofile Block Server Performance Instance Diagram.....	1105
Figure 166 - SCSIArbitraryLogicalUnit Block Server Performance Instance Diagram .....	1106
Figure 167 - Remote Mirrors Block Server Performance Instance Diagram .....	1107
Figure 168 - Block Server Performance Manifest Collections .....	1109
Figure 169 - Copy Services Discovery .....	1164
Figure 170 - Local Replica.....	1165
Figure 171 - Remote Mirror Replica .....	1166
Figure 172 - Cascading the Copy Services Subprofile .....	1167
Figure 173 - Peer-to-Peer Connection .....	1168
Figure 174 - Multi-Level Local Replication .....	1169
Figure 175 - Multi-Level Remote Replication.....	1170
Figure 176 - Multi-Level Snapshots.....	1171
Figure 177 - State Transitions for Mirrors.....	1178
Figure 178 - State Transitions for Snapshots .....	1179
Figure 179 - Remote Replication Buffer .....	1193
Figure 180 - Fixed Space Consumption .....	1199
Figure 181 - Variable Space Consumption.....	1200
Figure 182 - Disk Drive Lite Instance Model.....	1278
Figure 183 - Sparing Instance Diagram.....	1285
Figure 184 - Variations of RS per Storage Element .....	1287
Figure 185 - Before Failure.....	1289
Figure 186 - During Fail Over .....	1289
Figure 187 - After Fail Over .....	1290
Figure 188 - Volume Composition from General QOS Pool.....	1305
Figure 189 - Single QOS Pool Composition (RAID Groups) .....	1306
Figure 190 - Single QOS Pool Composition - Two Concretes.....	1307
Figure 191 - Concatenation Composition .....	1309
Figure 192 - RAID 0 Composition.....	1309
Figure 193 - RAID 1 Composition.....	1310
Figure 194 - RAID 10 Composition.....	1311
Figure 195 - RAID 0+1 Composition.....	1312
Figure 196 - RAID 4, 5 Composition.....	1313
Figure 197 - RAID 6, 5DP, 4DP.....	1314
Figure 198 - RAID 15 Composition.....	1315
Figure 199 - RAID 50 Composition.....	1316
Figure 200 - RAID 51 Composition.....	1317
Figure 201 - Generic System with no Configuration Service.....	1333
Figure 202 - Generic System with ControllerConfigurationService .....	1334
Figure 203 - Relationship of Initiator IDs, Endpoints, and Logical Units.....	1335
Figure 204 - StorageClientSettingData Model.....	1338
Figure 205 - Entire Model .....	1339
Figure 206 - Storage Library-centric Instance Diagram.....	1372
Figure 207 - MediaAccessDevice-centric Instance Diagram.....	1373
Figure 208 - ChangerDevice-centric Instance Diagram.....	1373
Figure 209 - Physical View Instance Diagram.....	1374
Figure 210 - StorageMediaLocation Instance Diagram .....	1374
Figure 211 - Instance Diagram .....	1388
Figure 212 - InterLibraryPort Connection Instance Diagram .....	1394
Figure 213 - Virtual ChangerDevices .....	1398
Figure 214 - Library Capacity Instance Diagram .....	1402
Figure 215 - Storage Library Centric View .....	1426
Figure 216 - Media-centric View .....	1427

Figure 217 - LimitedAccessPort Linkages .....	1433
Figure 218 - System Diagram.....	1439
Figure 219 - Host Bus Adapter Model .....	1439
Figure 220 - Switch Model.....	1440
Figure 221 - Array Instance .....	1445
Figure 222 - Virtualization Instance .....	1446
Figure 223 - Logical and Physical Topology Across Components of a Fabric .....	1447
Figure 224 - Complete Reference Model .....	1492
Figure 225 - SA Server Configuration .....	1509
Figure B.1 Provider Migration .....	1523