

Contents

Preface	xiii
Chapter 1: Introduction to Qshell	1
Unix and Linux Shells	1
Qshell	3
Summary	7
Chapter 2: Running Qshell	9
Qshell in an Interactive Job	9
Qshell in Batch Jobs	14
Redirecting Qshell Output	15
Summary	20
Chapter 3: The EDTF Text Editor	21
Starting EDTF	21
Introducing the Stream-File Exercises	27
Creating a New Stream File	29
Revising a Stream File	30
Summary	32
Chapter 4: Scripting	33
Naming a Script File	34
Running a Script File	34
Comments	36
The Magic Number	36
Executable Commands	36
Special Scripts	37
Your First Script	38
Summary	39

Chapter 5:	Parameters and Variables, Defined	41
	Command-Line Arguments	41
	Retrieving Parameter Values	42
	Special Parameters	46
	Qshell Variables	49
	Predefined Variables	56
	Summary	58
Chapter 6:	Using Parameters and Variables	59
	Variable Expansion	59
	Pattern Modifiers	64
	Substrings	66
	Substitution Expressions	67
	Finding the Length of a Value	69
	Concatenating Strings	70
	Numeric Constants	71
	Arithmetic Expressions	73
	Summary	79
Chapter 7:	The Exit Status and Decision-Making	81
	Setting the Exit Status	82
	The True, False, and Null Utilities	83
	The If Command	84
	The Test Utility	87
	Conditional Execution	97
	Looping Structures Governed by the Exit Status	100
	Break and Continue	102
	Summary	104
Chapter 8:	Additional Control Structures	105
	The For Loop	105
	The Select Construct	107
	The Case Construct	110
	Summary	113

Chapter 9:	The Integrated File System	115
	Organization	115
	Paths	121
	Links	126
	Displaying the Contents of IFS Files	132
	Authority	135
	Permissions	137
	CCSIDs	146
	Summary	152
Chapter 10:	Input and Output	153
	Standard Files	153
	Redirection	155
	The “Noclobber” Option	159
	Pipes and Pipelines	161
	Redirection Operators and Pipes	162
	Tee	163
	Overriding Redirection	165
	“Here” Documents	166
	Filters	167
	I/O Utilities	168
	File Descriptors	185
	Summary	195
Chapter 11:	Command-Line Arguments	197
	Conventional Rules	197
	Extracting Argument Values	199
	Summary	206
Chapter 12:	Commands	207
	Regular and Special Built-in Utilities	208
	Dual Implementations	209
	Script Interpreters	210
	External Utilities and the Magic Number	212
	Aliases	214

Reserved Words	216
Functions	216
Simple and Compound Commands	217
The CMD Parameter	217
Processes	219
Locating Commands	224
Running Commands in the Background	228
Command Substitution	230
The Source (Dot) Utility	231
The Xargs Utility	233
The Exec Utility	235
Command Interpretation	235
The Eval Utility	237
Summary	238
Chapter 13: Functions	239
Function Syntax	239
Displaying Function Definitions	241
Deleting Function Definitions	242
Parameters	243
Variables	245
Invoking Functions	251
Return and the Exit Status	253
Retrieving Output from Functions	254
Summary	255
Chapter 14: Path-Name Expansion	257
Globbing	257
Preventing Globbing	263
When Globbing Fails	265
Summary	266
Chapter 15: Scripts—Debugging, Signals, and Traps	267
Debugging Using Option Settings	267
Signals	270

The Trap Utility	273
The Kill Utility	280
Summary	284
Chapter 16: Archives and Compression	285
Example Data	286
Tar	286
The Jar Utility	296
The Pax Utility	296
Compress and Uncompress	300
Summary	303
Chapter 17: Grep	305
Regular Expressions	306
Options	315
Extended Regular Expressions (Egrep)	318
Fgrep	319
Exit Status	320
Summary	322
Chapter 18: Sed	323
Forms of the Sed Command	325
Sed Options	326
Sed Commands	327
Examples	331
Sed Scripts	356
Summary	358
Chapter 19: Writing Programs for Qshell	359
Running Programs within Qshell	360
Writing RPG Programs for Qshell	362
Writing COBOL Programs for Qshell	374
Writing C and C++ Programs for Qshell	378
Writing Java Programs for Qshell	386
Option Parameters	391
Summary	400

Chapter 20:	Accessing OS/400-Specific Objects	401
	System	401
	Liblist	406
	Sysval	409
	Dataarea	410
	Dataq	414
	Db2	417
	Sql Scripts	421
	Db2 in Interactive Mode	423
	Rfile	426
	Summary	431
Chapter 21:	Application Development Tools	433
	The ISeries Tools for Developers	434
	Qshell and ASCII Data	436
	Graphical Utilities	438
	The Ez Utility	443
	Summary	457
Chapter 22:	The Perl Utility	459
	Running Perl	460
	Perl Syntax	462
	Perl Examples	470
	Summary	480
Chapter 23:	Java Development Tools	481
	The Java Utility	481
	The Javac Utility	485
	The Javadoc Utility	487
	The Jar Utility	494
	Java Examples	496
	Summary	511
Chapter 24:	C and C++ Development Tools	513
	Compiling C and C++	513

Examples.....	521
Summary.....	541
Appendix A: Summary of Changes by Release.....	543
V5R2.....	543
V5R1.....	546
V4R4.....	547
V4R3.....	549
Appendix B: Qshell Versus DOS.....	551
Case-Sensitivity.....	551
Options (Switches).....	551
Separation of Tokens.....	552
Comparison of Commands.....	552
Appendix C: Qshell and CL Commands for the IFS.....	555
Qshell Commands for IFS Objects.....	555
CL Commands for the IFS.....	557