

Table of Contents

Preface	ix
1. bash Basics	1
What Is a Shell?	2
Scope of This Book	2
History of UNIX Shells	3
Getting bash	5
Interactive Shell Use	6
Files	7
Input and Output	14
Background Jobs	17
Special Characters and Quoting	20
Help	26
2. Command-Line Editing	27
Enabling Command-Line Editing	28
The History List	28
emacs Editing Mode	29
vi Editing Mode	36
The fc Command	45
History Expansion	47
readline	49
Keyboard Habits	53
3. Customizing Your Environment	55
The .bash_profile, .bash_logout, and .bashrc Files	56
Aliases	57

Options	60
Shell Variables	62
Customization and Subprocesses	75
Customization Hints	79
4. Basic Shell Programming	81
Shell Scripts and Functions	81
Shell Variables	86
String Operators	91
Command Substitution	99
Advanced Examples: pushd and popd	103
5. Flow Control	107
if/else	108
for	122
case	128
select	131
while and until	134
6. Command-Line Options and Typed Variables	137
Command-Line Options	137
Typed Variables	145
Integer Variables and Arithmetic	146
Arrays	157
7. Input/Output and Command-Line Processing	162
I/O Redirectors	162
String I/O	168
Command-Line Processing	180
8. Process Handling	197
Process IDs and Job Numbers	198
Job Control	198
Signals	201
trap	207
Coroutines	214
Subshells	217
Process Substitution	219

9. Debugging Shell Programs	221
Basic Debugging Aids	221
A bash Debugger	230
10. bash Administration	251
Installing bash as the Standard Shell	251
Environment Customization	254
System Security Features	258
11. Shell Scripting	261
What's That Do?	261
Starting Up	263
Potential Problems	265
Don't Use bash	266
12. bash for Your System	267
Obtaining bash	267
Unpacking the Archive	268
What's in the Archive	268
Who Do I Turn to?	273
A. Related Shells	275
The Bourne Shell	276
The IEEE 1003.2 POSIX Shell Standard	278
The Korn Shell	280
pdksh	281
zsh	282
Shell Clones and Unix-like Platforms	282
B. Reference Lists	285
Invocation	285
Prompt String Customizations	287
Built-In Commands and Reserved Words	288
Built-In Shell Variables	290
Test Operators	294
set Options	295
shopt Options	297
I/O Redirection	298
emacs Mode Commands	300
vi Control Mode Commands	302

