

VIJAY MUKHI'S

Working with

UNIX



T-6429
MUK

Kaushal Thakker
Ramesh Mirchandani
Kiran Dattani
Ashish Malani



BPB PUBLICATIONS

Table of Contents

1 Unix: The Fundamental Principles	1
Multitasking Capability:	6
Multiuser Capability:	7
System Portability:	8
Communications:	8
System Security:	9
The Bourne Shell :	16
The C Shell:	16
The Korn Shell:	17
2 Getting Started With Unix.....	25
Logging Into the System :	26
Entering a Command :	29
Confirming Your Login :	30
The "finger" command:	31
The Current Working Directory :	33

Creating Your First File :	34
The Golden Rule :	35
Displaying the Contents of a File :	35
Directory Listing: The "ls" command	37
Creating a directory: "mkdir"	39
File-Play: More File-Related Commands:	44
Copying Files: The "cp" Command :	45
Moving Files: The "mv" Command :	46
Deleting Files: The "rm" Command	48
3 Learning The Ropes	51
The "date" Command:	52
The "echo" and "banner" Commands:	52
The Unix Calendar: The "cal" Command	54
The Unix On-line Calculator: "bc"	56
The Unix Manual:	57
Unix Commands: The Inside Story	59
The Second Phase:	62
The Final Phase:	63
Metacharacters: VIPs of Unix	63
More Metacharacters: Ranges []	65

Unraveling Files and Directories:	67
File Permissions:	70
Some Important "ls" Options:	73
The Unix Environment:	77
4 Gaining Momentum	81
What's In A File? The "file" Command:	82
The Date Command Formats:	84
User: The "su" command	86
Creating Empty Files:	88
Command Grouping:	91
Other Command Grouping Operators:	92
Input Output Redirection:	95
Appending to a File: The ">>" Operator	98
Input Re-direction: The "<" Operator:	99
5 Using The vi Editor	103
Why vi is difficult to learn?	106
Salient Features of vi:	107
vi: The Basics	108
Starting With vi: Say Your Prayers	111

	113
Repeating a Command:	114
Undoing A Command:	115
Moving the Cursor:	116
More Cursor Movement Commands:	118
Screen Commands:	119
Deleting Data:	125
Text Insertion:	126
Joining Lines Of Text:	127
Line Numbering:	129
Copy, Move and Delete Multiple Lines:	131
More Alternatives:	
6 Advanced vi Techniques	137
Replacing Existing Text:	138
Case Flipping:	142
Yankee Doodle Doo:	143
The Cat's Nine Lives:	145
User Defined Registers:	149
Marking And Yanking Text:	151
Pattern Searching:	153
Global And Substitute Commands:	154

Abbreviations Or Macros:	156
Mapping Keys to Commands:	157
To Run Shell Commands From vi:	161
Reading the Output of a Unix Command Into vi:	162
Editing Multiple Files Simultaneously:	163
To Read and Write Across Files:	166
The "set" Options: Top Twenty on the Charts:	167
The .exrc file:	172
 7 Pipes, Filters and Pattern Searching.....	 175
 The "cat" Command Re-visited:	 176
The "wc" command:	177
Introduction to Pipes:	178
Filters: The Pipe's Best Friend	182
Heads Or Tails?	182
The "pg" Filter:	186
More 'n More:	188
The "nl" filter:	190
Displaying files in Non-ASCII Formats:	193
The Great Divide: "split" and "csplit":	194
Spotting the Ten Differences:	197

Sorting Files:	199
The "uniq" command:	205
Art & Craft With Files:	208
The "tr" filter: Translates Characters	213
Grappling for patterns? The "grep" command:	215
Extended "grep": The "egrep" command	221
Debugging Pipes: The "tee" command:	224
File Compression/Decompression:	226
8 COMMUNICATING WITH OTHER USERS	231
Terminal write permissions:	233
Broadcasting A Message To All Users	240
What's New? The "news" command:	241
Got the Message? Message of the day: motd	243
Mail: The heart of Unix Communications	244
Sending Mail to Other Users:	246
Receiving Mail:	248
9 PROCESSES AND HOW UNIX HANDLES THEM	253
States of a Process:	254

Process Status: The "ps" command	256
Spying on Other Users:	258
System Processes:	260
Running A Process in the Background:	263
No Hangups: The "nohup" command	264
Parents And Children: One Happy Unix Family	266
The Killing Fields: How to Kill Processes	267
Scheduling Tasks For Future Execution:	273
The "cron" Daemon:	273

10 USEFUL GENERAL PURPOSE COMMANDS287

The System Name: uname	288
Your Real Identity: The "id" command	289
Your Terminal Name: The "tty" command	290
Copying groups of files: The "copy" command	291
Creating Links To Files:	295
Properties Of Linked Files:	298
The "link" and "unlink" Commands:	300
Looking for something?	301
Finding Links To Files:	304

	305
Finding Files Using Owners And Groups:	307
Take A Break: Go To Sleep	308
The Speller Checker:	310
Synchronize with "sync":	311
Screen Magic:	312
Setting Terminal Options:	315
Searching For A Command?	317
Talking To DOS:	
11 SYSTEM SECURITY	323
Password: The Shield	324
How To Change Your Password:	326
How File Permissions are Assigned:	330
Default Permissions For File Creation :	332
Changing File Permissions:	335
Changing Owners and Groups of Files:	337
Changing groups:	338
Files and Directory Permissions:	338
Directory Permissions Dissected:	339
The read(r) Permission:	340
The write(w) Permission:	340

The execute(x) Permission :	341
Read And Execute Permission:	342
Read and Write Permission:	343
The Ideal Directory Permission:	344
The Ultimate Protection for a Directory:	344
The "su" command: Superuser Privileges	346
The "su-id" bit: A Temporary Privilege	349
The Restricted Shell "rsh": Life Imprisonment	351

12 FILE SYSTEMS AND DEVICE MANAGEMENT355

Disk Blocks and Inodes:	356
Inodes, Inode Tables And Super Blocks:	357
File Systems: The User's Perspective	359
Check For Free Disk Space:	360
The "dfspace" Shell Script: Sleeker and Smarter	361
Size Of Files:	365
Taking Backups of Files:	384
Restoring "cpio" archives:	402
More Options For "cpio -i":	403

Printer Management:	408
13 SHELL PROGRAMMING	421
The Basics of Shell Programming:	422
Unix Shells Revisited:	423
14 SYSADM.....	477