Contents at a Glance

Introduction	1
Part I: Making the Desktop Work for You Technique 1: Finding the Power in	5
KDE Protocols	7
Technique 2: Getting GNOME Virtual File Systems to Do the Work for You	13
Technique 3: Streamlining Your Work with File Associations	18
Technique 4: Prompting Yourself with a Custom Prompt	23
Technique 5: Getting There Quick with Dynamic Shortcuts	30
Technique 6: Using cd Shortcuts for Rapid Transit	34
Technique 7: Typing Less and Doing More with Handy Automagic Variables	38
Technique 8: Logging In, Logging Out	45
Technique 9: Making History (Work for You)	50
Technique 10: Keeping Your Life Simple with Aliases and Functions	55
Part II: Getting the Most from	
Your File System	63
Technique 11: Sharing Files and Printers in a Windows World	65
Technique 12: Finding What You Need	73
Technique 13: Moving Made Easy with Archives	82
Technique 14: Downloading and Uploading Files in a Snap	88
Technique 15: Building a Playpen with User Mode Linux	94

Part III: Good Housekeeping with Linux	101
Technique 16: Red-lining RPM Queries	103
Technique 17: Installing Made Easy with RPM	108
Technique 18: Getting Comfortable with RPM	115
Technique 19: Keeping Up-to-Date with apt and Synaptic	119
Technique 20: Setting Up Automatic Services	126
Technique 21: Making Your Inner System Administrator Happy (And Productive)	130
Technique 22: Spring Cleaning Essentials	137
Part IV: Tweaking the Kernel on Your Linux System	149
Technique 23: Taking Good Care of Your Kernel	151
Technique 24: Creating a Custom Kernel	157
Technique 25: Coping with the SELinux Security System	164
Technique 26: Finding Out about Your System with /proc	170
Part V: Securing Your Workspace	177
Technique 27: Closing Those Prying Eyes	179
Technique 28: Using Encryption for Extra Security	184
Technique 29: Securing a Large Network with Custom Authentication	194
Technique 30: Customizing Authentication with PAM	203
Technique 31: Gaining Privileges	209
Technique 32: sudo Pseudonyms	213
Technique 33: Securing Your Connections with SSH	218

Part VI: Networking Like a	
Professional	227
Technique 34: Protecting Yourself with a Firewall	229
Technique 35: Using VNC to Connect to Remote Desktops	239
Technique 36: Streamlining Your Network Surveillance	247
Technique 37: Evaluating Your Network Security with Nessus	255
Technique 38: Person-to-Person Networking with IRC	265
Part VII: Monitoring Your System	271
Technique 39: Controlling Troublesome Processes at the Command Line	273
Technique 40: Taking Care of New (And Old) Users	282
Technique 41: Keeping an Eye on Your System	291
Part VIII: Serving Up the Internet	
and More	305
Technique 42: Keeping an Apache Server in Top Form	307
Technique 43: Keeping an Eye on Your Servers	317
Technique 44: Making a MySQL Server Your SQL Server	328
Technique 45: Safeguarding Your Apache Server with SSL Certificates	340
Technique 46: Retrieving HTTPMail Using hotway and Evolution	349
Technique 47: Stopping Spam with SpamAssassin	356
Technique 48: Using Webmin to Simplify Sendmail Configuration	364

Part IX: Backing Up Means Never	
Having to Say You're Sorry	369
Technique 49: Getting Ready to Back Up Your Data	371
Technique 50: Backing Up Your Data	377
Technique 51: Quick Backup to Remote Storage	386
Technique 52: Archiving Changes with CVS	391
Part X: Programming Tricks	401
Technique 53: Using Open-Source APIs to Save Time	403
Technique 54: Timesaving PHP Tricks	414
Technique 55: Using the DDD Graphical Debugger with Perl	422
Part XI: The Scary (Or Fun!) Stuff	429
Technique 56: Burning CD-Rs without Getting Burned	431
Technique 57: Search and Destroy setuid and setgid Programs	437
Technique 58: Quarantining Suspicious Programs with UML	443
Technique 59: Troubleshooting Persnickety Programs	448
Technique 60: Securing the Fort with Bastille	455
Technique 61: Creating a Second Line of Defense with LIDS	467
Technique 62: Getting Graphical with Shell Scripts	474
Index	479

Table of Contents

Introduction	1
Saving Time with This Book	1
Foolish Assumptions	2
What's in This Book	2
Part I: Making the Desktop Work for You	2
Part II: Getting the Most from Your File System	3
Part III: Good Housekeeping with Linux	3
Part IV: Tweaking the Kernel	
on Your Linux Šystem	3
Part V: Securing Your Workspace	3
Part VI: Networking Like a Professional	3
Part VII: Monitoring Your System	3
Part VIII: Serving Up the Internet and More	3
Part IX: Backing Up Means Never	
Having to Say You're Sorry	3
Part X: Programming Tricks	4
Part XI: The Scary (Or Fun!) Stuff	4
Icons Used in This Book	4
Nove 1. Making the Nachton	

Part 1: Making the Desktop Work for You

Technique 1: Finding the Power in KDE Protocols

Discovering Your Protocols	7
Working with CD Audio Tracks Using audiocd:	8
Managing Snapshots with the camera: Protocol	9
Remote File Management with fish:	10
Getting Help with help:, info:, and man:	10
Viewing Your Local Network with the smb:	
Protocol	11
Other KDE Protocols	11
Technique 2: Getting GNOME Virtual File	
Systems to Do the Work for You	13
Systems to Do the Work for You Using GNOME VFS Modules	13 13
•	
Using GNOME VFS Modules	13
Using GNOME VFS Modules Stacking VFS Modules	13 15
Using GNOME VFS Modules Stacking VFS Modules Working with Packages: rpm and rpms	13 15 15
Using GNOME VFS Modules Stacking VFS Modules Working with Packages: rpm and rpms Putting VFS to Work at the Command Line	13 15 15 17

Technique 3: Streamlining Your Work with	
File Associations	18
Classifying Data with MIME	18
Creating KDE File Associations	19
Creating New MIME Types with GNOME	20
Technique 4: Prompting Yourself with a	
Custom Prompt	23
Making Basic Prompt Transformations	23
Adding Dynamically Updated Data	
to Your Prompt	24
Colorizing Your Prompt	26
Seeing a Red Alert When You Have Superuser	07
Privileges	27
Saving Your Work	28
Technique 5: Getting There Quick with	
Dynamic Shortcuts	30
Completing Names Automatically	30
Using the Escape Key to Your Advantage	31
Customizing Completion for Maximum Speed	32
Technique 6: Using cd Shortcuts for	
Rapid Transit	34
Using cd and ls to Navigate through bash	34
Setting Your CDPATH Variables to Find	
Directories Fast	35
Remembering Where You've Been with pushd	
and popd	36
Manipulating Your Stack with dirs	36
Technique 7: Typing Less and Doing More	
with Handy Automagic Variables	38
Show Me the \$\$: Giving Temporary Files	
Unique Names	39
Streamlining Archive Searches	39
Turning the Output of a Command into a Variable with \$()	40
Using \$UID and \$EUID in Shell Scripts	41
Getting Quick Access to Programs with \$PATH	42
Customizing Variables for Rapid Transit	43

Technique 8: Logging In, Logging Out	45
Finding the Right Shell Script	45
Choosing your victims	46
Timing is everything	46
Cleaning up made easy	47
Changing prototype scripts	48
Customizing Your Autostart File	48
Technique 9: Making History (Work for You)	50
Navigating the History List	50
Scrolling	50
Summoning a command by number	51
Searching through history	51
Customizing the History List	52
Adjusting key default settings	52
Filtering the history list	52
Executing Commands Quickly with History Variables	53
Technique 10: Keeping Your Life Simple	
with Aliases and Functions	55
Viewing Your Aliases	55
Creating Simple Timesaving Aliases	56
Using Aliases for Complex Commands	57
Automating Tedious Tasks with Functions	58
Filtering file searches by file type	58
Automatic downloading	58
Monitoring Your System in a Snap	59
Un-tarring the Easy Way	60
Part 11: Getting the Most from	
Your File System	63
	vj
Technique 11: Sharing Files and Printers in a Windows World	C.L.
	65
What Is Samba?	65
Getting Up and Running with Samba	66
Checking whether Samba is installed	66
Enabling Samba	66

Sharing Linux Resources with Other Computers (SMB Clients)	67
Adjusting the workgroup name and creating user accounts	67
Giving a Windows machine access to your home directory	68
Sharing Linux files and directories	
with other computers	69
Hooking Everyone Up to the Printer	69
Sharing Linux printers with SWAT	69 70
Using a Windows printer from Linux	70
Plugging In to Remote Data with Linux Programs Quickly	71
Technique 12: Finding What You Need	73
1 5	
Finding Files with locate	73
Finding Files with find	74
Qualifying Your Search	76
with the find Command	75
Doing updated filename searches	75 75
Adding time-based qualifications Filtering by file size	75 76
Joining qualifications with	10
AND and OR operators	77
Perusing commonly used qualifications	77
Acting on What You Find	78
Cracking open a file's info with -ls	78
Displaying specific info with -printf	79
Checking disk usage by user	79
Executing commands with find	80
Building Complex Commands with xargs	81
Technique 13: Moving Made Easy	
with Archives	82
Creating Archives with File Roller	82
Inspecting and Extracting Archives	
with File Roller	84
Adding Functionality to tar	
with Complex Commands	85
Building archives from the command line	85
Archiving complex search results	86
Backing up an installed package	86
Uprooting Entire Directory Trees with scp	86
Splitting Big Files into Manageable Chunks	87

Technique 14: Downloading and Uploading Files in a Snap

Building Software from Downloaded tarballs	88
Compiling a tarball: The basic steps	89
Downloading and compiling SuperKaramba	89
Versatile Downloading with wget	91
Mirroring sites with wget	91
Verifying your bookmarks with wget	92
Downloading files with wget	92
Downloading and unpacking in one quick step	92
wget's optional flags	92
Downloading and Uploading with curl	93

Technique 15: Building a Playpen with User Mode Linux

Choosing the ADIOS Version of User Mode Linux	94
Setting Up ADIOS	95
Downloading ADIOS	95
Burning ADIOS to CD	96
Installing ADIOS	96
Finding Your Way around UML	97
Connecting to the Internet from an ADIOS VM	98
Using a GUI with UML	98
Installing Software into UML	98
Merging Changes to Your Prototype	99

Part 111: Good Housekeeping with Linux

vith Linux	101
Technique 16: Red-lining RPM Queries	103
Querying RPM Packages for Content	104
Digesting Information	105
Creating a Package Index	105
Querying for Prerequisites	106
Don't Put That in Your Drive; You Don't Know Where That's Been!	106
Technique 17: Installing Made Easy	
with RPM	108
Dissecting an RPM Package	108
Using RPM at the Command Line	109
Removing RPMs	110
Flagging Down RPM	110

Getting Graphic with RPM	110
Quick installations from distribution media	
with Fedora's Package Manager	110
Using SuSE's package manager to	
your advantage	112
Using Rpmdrake to install from media Installing from your Konqueror browser	113 114
	114
Technique 18: Getting Comfortable	
with RPM	115
Saving Time withupgrade	115
Verifying Your System	116
Reading the Tamper-Proof Seal	117
Technique 19: Keeping Up-to-Date	
with apt and Synaptic	119
Setting Up Synaptic and apt in a Snap	119
	119
Keeping Up-to-Date with apt and Synaptic: The Basics	120
Upgrading Your Entire Computer	120
Handy Hints about Synaptic	123
Changing repositories	123
Viewing package details	123
Installing new packages with Synaptic	124
Importing the Keys to the Repository	124
Technique 20: Setting Up Automatic	
Services	126
Letting Task Scheduler Work for You	126
Scheduling a new task	127
Editing a task	128
Adding environment variables	128
Technique 21: Making Your Inner System	
Administrator Happy (And Productive)	130
Reining In Resources with Disk Quotas	130
Installing the quota RPM package	131
Enabling file system quotas	131
Getting your files together	132
Setting quotas	132
Reviewing your quotas	134
Using System Accounting to Keep Track of Users	134
Setting up system accounting	134
Looking up user login hours	135
Checking out command and program usage	135

Technique 22: Spring Cleaning Essentials 137

Running Down the Runlevels	137
Runlevel basics	138
Customizing runlevels in Fedora	138
Customizing runlevels in SuSE	139
Customizing runlevels in Mandrake	140
Customizing runlevels at the command line	141
Switching to a new runlevel	141
Disabling Unused Services	141
Removing Unneeded Services	143
Removing Old Users and Their Files	144

Part 1V: Tweaking the Kernel on Vour Linux Sustem

on	Your Linux System	149
----	-------------------	-----

Technique 23: Taking Good Care	
of Your Kernel	151
Adding and Removing Kernel Modules	152
Learning about modules	152
Installing a module with insmod	152
Taking care of dependencies automatically with modprobe and depmod	152
Loading a module for a slightly different kernel with insmod and modprobe	153
Removing modules with rmmod	154
Manipulating Boot Time Parameters	154

Technique 24: Creating a Custom Kernel 157

Reconfiguring Your Kernel — Ready, Set, Go!	158
Step 1: Making an Emergency Plan, or Boot Disk	158
Step 2: Finding the Source Code	160
Step 3: Configuring a New Kernel	160
Step 4: Customizing the Kernel	161
Step 5: Building the Kernel	162

Technique 25: Coping with the SELinux Security System

Understanding the Principles of SELinux	164
Everything is an object	165
Identifying subjects in SELinux	165
Understanding the security context	165
Disabling or Disarming SELinux	166
Playing the Right Role	167
Finding Out about Your SELinux Policy	168

Technique 26: Finding Out about Your System with /proc

Exploring the Process-Related Entries in /proc	170
Surveying Your System from /proc	172
Closing Down Security Gaps with /proc	174
Popping the Cork: Speeding Up WINE with /proc	175

Part V: Securing Your Workspace 177

Technique 27: Closing Those Prying Eyes	179
Reading and Understanding File Permissions	179
Controlling Permissions at the Command Line	181
Changing File Permissions from a Desktop	182
Technique 28: Using Encryption for Extra Security	184

_ma coounty	
Encryption Made Easy with kgpg and	
the KDE Desktop	185
Creating keys with kgpg	185
Sharing your key with the world	186
Importing a public key from a public-key server	187
Encrypting and decrypting documents	
with drag-and-drop ease	188
Encrypting Documents with gpg	
at the Command Line	189
Sharing a secret file	189
Creating a key pair and receiving	
encrypted documents	189
Encrypting documents on your home system	190
Encrypting E-Mail for Added Security	191
Encrypting with Ximian Evolution	191
Setting up Mozilla e-mail for encryption	192
Sending and receiving encrypted messages	
with Mozilla mail	193
Technique 29: Securing a Large Network	
with Custom Authentication	194

	134
Using Cross-Platform Authentication with	
Linux and Windows	195
Prepping for cross-platform authentication	195
Setting up cross-platform authentication	196

x

Using PAM and Kerberos to Serve Up	
Authentication	197
Establishing synchronized system times	197
Testing your domain name server (DNS)	199
Setting up a Key Distribution Center	199
Setting up automatic ticket management	201
with Kerberos and PAM Adding users to the Key Distribution Center	201 202
0	202
Technique 30: Customizing Authentication	
with PAM	203
Understanding Modules and Configuration Files:	
The Basics of PAM Authentication	204
Finding a Module and Customizing Its Rules	204
Building Good Rules with PAM	204
Phase	205
Control level	205
Module pathname	205
Arguments	205
Dissecting a Configuration File	206
	000
Skipping a Password with PAM	208
Skipping a Password with PAM Technique 31: Gaining Privileges	208 209
Technique 31: Gaining Privileges	209
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges	209 209
Technique 31: Gaining Privileges Feeling the Power	209 209 210
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users	209 209 210 210
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms	209 209 210 210 211
Technique 31: Gaining PrivilegesFeeling the PowerGaining Superuser PrivilegesPretending to Be Other UsersLimiting Privileges with sudoTechnique 32: sudo PseudonymsInstalling sudo	 209 209 210 211 213
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases	 209 209 210 210 211 213 214 214
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File	 209 209 210 210 211 213 214
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias	 209 209 210 211 213 214 214 214
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias Creating a User_Alias	 209 209 210 211 213 214 214 214 214 215
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias	 209 209 210 211 213 214 214 214 215 215
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias Creating a User_Alias Simplifying group managment with a Host_Alias	 209 209 210 211 213 214 214 214 215 215
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias Creating a User_Alias Simplifying group managment with a Host_Alias Mounting and unmounting CDs without	209 209 210 210 211 213 214 214 214 214 215 215 215 215 216
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias Creating a User_Alias Simplifying group managment with a Host_Alias Mounting and unmounting CDs without the superuser password	 209 209 210 211 213 214 214 214 215 215 215 215
Technique 31: Gaining Privileges Feeling the Power Gaining Superuser Privileges Pretending to Be Other Users Limiting Privileges with sudo Technique 32: sudo Pseudonyms Installing sudo Adding Up the Aliases Adding Aliases to the sudo Configuration File Defining the Alias Creating a User_Alias Simplifying group managment with a Host_Alias Mounting and unmounting CDs without	209 209 210 210 211 213 214 214 214 214 215 215 215 215 216

Technique 33: Securing Your Connections	
with SSH	218
Using SSH for Top-Speed Connections	219
Setting Up Public-Key Authentication to	
Secure SSH	219
Generating the key pair	219
Distributing your public key	220
Passing on your passphrase	220
Logging In with SSH and Key Authentication	221
Starting from the command line	221
<i>Getting graphic</i> Creating Shortcuts to Your Favorite	222
SSH Locations	222
Copying Files with scp	223
Secure (And Fast) Port Forwarding with SSH	223
Part VI: Networking Like	
a Professional	227
•	<i>441</i>
Technique 34: Protecting Yourself	
with a Firewall	229
Finding Your Firewall	229
Setting up a simple firewall in Mandrake Linux	230
Setting up a simple firewall in Fedora Linux	231
Setting up a simple firewall in SuSE Linux	232
Editing the Rules with Webmin	233
Starting a Webmin session	234
Reading the rules with Webmin	234
Changing the rules	236
Editing existing rules	236
Adding a new rule with Webmin	237
Technique 35: Using VNC to Connect to	
Remote Desktops	239
Sharing Desktops with VNC	239
Inviting Your Friends to Use Your Desktop	240
Serving Up a New Desktop with VNC Server	241
Using tsclient to View Remote Desktops	
from Linux	242
Using tsclient with a VNC server	243
Using tsclient with an RDP server	243

Making Cut and Paste Commands Work on a	
Remote Desktop	244
Creating New VNC Desktops on Demand	245
Switching display managers in SuSE Linux	245
Switching display managers in Mandrake Linux	245
Connecting gdm and VNC	246
Technique 36: Streamlining Your Network	
Surveillance	247
Exploring Your Network with lsof	247
Running lsof	248
Interpreting the lsof output	248
Reading file types	249
Discovering Network Connections	249
Other Timesaving lsof Tricks	250
Packet Sniffing with the Ethereal Network	
Analyzer	251
Starting Ethereal	251
Capturing packets	251
Applying filters to screen packets	252
Peeking in packets	253
Color-coding packets coming	050
from your network	253
Technique 37: Evaluating Your Network	
Security with Nessus	255
Getting Up and Running with Nessus	256
Installing programs Nessus needs to run	256
Installing Nessus	256
Adding a user to Nessus	257
Generating a certificate	258
Using Nessus to Scan Your Network	258
Starting the daemon and the interface	259
Reading the grim results	262
Keeping Your Plug-ins Up-to-Date	263
Technique 38: Person-to-Person	
Networking with IRC	265
Finding the Answers You Seek	
in a Linux Chat Room	265
	205
Chatting in the Fedora Chat Room	267
Chatting in the Fedora Chat Room Looking for Answers in the SuSE Chat Room	

Finding Fellow Mandrake Users in the Mandrake Chat Room	268
Customizing KSirc — Who Do You Want	200
to Be Today?	268
Part VII: Monitoring Your System	271
Technique 39: Controlling Troublesome	
Processes at the Command Line	273
Processing Processes with procps	273
Keeping Track of Process Status with ps,	
pstree, and pgrep	274
Using ps to filter process status information	274
Viewing ps output the way you want to see it	275
Making parent-child relationships	
stand out in a ps listing	277
Climbing the family tree with pstree	277
Finding processes with pgrep	278 280
Killing Processes with pkill	
Killing Processes with killall	280
Closing Windows with xkill	280
Getting Your Processes' Priorities Straight	281
Technique 40: Taking Care of New (And	
Old) Users	282
Managing Users and Groups with the Fedora/	
Mandrake User Manager	283
Adding new users	283
Modifying user accounts	284
Adding groups	285
Filtering users and groups	286
Managing Users and Groups with the SuSE	
User Administrator	286
Adding new users	287
Modifying user accounts	289 289
Adding groups Filtering users and groups	289 290
	230
Technique 41: Keeping an Eye	
on Your System	291
Keeping an Eye on the System Logs	292
Viewing and filtering log files with Fedora	
and Mandrake	292
Adding and deleting log files from the viewer	293

Setting up alerts and warnings	294
Viewing your log files from SuSE	295
Monitoring your log files from SuSE	295
Customizing Your Log Files	296
Keeping an Eye on Resources with	
KDE System Guard	298
Finding and killing runaway processes	298
Prioritizing processes to smooth	
a network bottleneck	300
Watching your system load	300
Creating a new worksheet	301
Creating system resource logs	302
Displaying network resources	303

Part VIII: Serving Up the Internet and More

Technique 42: Keeping a	n Apache Server
in Top Form	

Setting Up Apache — Quick!	307
Using Synaptic to download and install Apache	308
Installing Apache from disc	309
Starting the Apache Service	310
Building a Quick Web Page with OpenOffice.org	312
Taking Your Site Public with Dynamic DNS	313
Understanding how dynamic DNS works	313
Setting up dynamic DNS	313
Updating your IP address	314
Keeping Your Apache Server Up-to-Date	
the Easy Way	314
Installing the Fedora HTTP Configuration tool	315
Putting the HTTP Configuration tool to work	315

Technique 43: Keeping an Eye on Your Servers

Watching Your Web Server Traffic	
with apachetop	318
Installing apachetop	318
Running and exiting apachetop	318
Navigating apachetop	319
Switching among the log files (or watching	
several at once)	319
Changing the display time of apachetop	
statistics	320

Monitoring MySQL Server with the MySQL	
Control Center	320
Downloading and installing the MySQL	
Control Center	320
Accessing MySQL Control Center features	321
Viewing, managing, and repairing a database	
with the Databases controls	321
Putting the Server Administration controls to work	323
	323 324
<i>Adding a new user</i> Watching Your MySQL Traffic with mtop	324 325
Gathering all the packages that mtop needs	325
Installing mtop	325 326
Monitoring traffic	326
	020
Technique 44: Making a MySQL Server	
Your SQL Server	328
Building a MySQL Server	329
Installing the necessary packages	329
Starting the MySQL server	329
Replicating MySQL Data	330
Configuring replication: The three topologies	330
Setting up replication for a single slave	
and master	331
Choosing a Method to Back Up MySQL Data	332
Backing Up and Restoring with mysqldump	332
mysqldump backup options	332
Backing up multiple databases	333
Compressing the archive	333
Restoring a mysqldump archive	334
Backing Up with File System Tools	334
Making a mysqlhotcopy of Your Database	334
Archiving a Replication Slave	335
Taking Care of Business with	00 -
MySQL Administrator	335
Installing MySQL Administrator	335
Starting MySQL Administrator	336
Exploring MySQL Administrator's tools	336
Technique 45: Safeguarding Your Apache	
Server with SSL Certificates	340
Understanding the Basics	
of How Certificates Work	340
Choosing an SSL Certificate	341

Creating a Certificate Signing Request	341
Creating a Self-Signed Certificate	344
Creating a Signing Authority with openssl	345
Creating a certificate authority	345
Signing a CSR	346
Trusting in Trusted Certification Authorities	347
Exploring Your Certificate Collection	
with Mozilla	347
Technique 46: Retrieving HTTPMail	
Using hotway and Evolution	349
Introducing hotway	349
Getting Started with hotway	350
Setting Up Evolution to Read HTTPMail	
Accounts with hotway	350
Ringing the Bells and Blowing the Whistles:	
Your Evolution Summary Page	353
Technique 47: Stopping Spam with	
SpamAssassin	356
•	
Installing SpamAssassin	356
Installing from the distribution media	357 358
Installing from RPM downloads Starting the service	358 358
Fine-Tuning SpamAssassin to Separate	550
the Ham from the Spam	358
Customizing settings	359
Saving your settings	360
Adding a New Filter to Evolution	361
Serving Up a Big Bowl of the RulesDuJour	363
Technique 48: Using Webmin to Simplify	
Sendmail Configuration	364
•	
Registering Your Address	364
Taming a Sendmail Server	364
Tweaking Your Configuration Files with Webmin	365
Serving up mail for multiple domains	366
Relaying e-mail	366 367
Using aliases to simplify mail handling	507

Part IX: Backing Up Means Never	
Having to Say You're Sorry	369
Technique 49: Getting Ready to Back Up	
Your Data	371
Deciding What to Archive	372
Choosing Archive Media	372
Tape drives	372
Removable and external disk drives	373
Removable media	373
Optical media (CDs and DVDs)	374
Online storage	374
Choosing an Archive Scheme	374
Full backups	374
Differential backups	374 275
Incremental backups Incremental versus differential backups	375 375
Choosing an Archive Program	375
5 5	
Technique 50: Backing Up Your Data	377
Estimating Your Media Needs	377
Creating Data Archives with tar	378
Backing up files and directories	378
Backing up account information	270
and passwords Targeting bite-sized backups	378
for speedier restores	379
Rolling whole file systems into a tarball	379
Starting a Differential Backup Cycle	380
Starting an Incremental Backup Cycle	381
Restoring from Backup with tar	382
Backing Up to CD (Or DVD) with cdbackup	383
Creating the backup	383
Restoring from a CD or DVD backup	384
Restoring from a disc containing	
multiple archives	384
Technique 51: Quick Backup	
to Remote Storage	386
Combining the Power of tar with ssh	
for Quick Remote Backups	387
Testing the ssh connection to the remote host	387
Creating a tar archive over the ssh connection	387
Backing up to tape drives on remote machines	388

Backing Up to a Remote Computer with rdist	
and ssh	388
Testing the ssh connection to the remote host	388
Creating the distfile	389
Backing up	390
Technique 52: Archiving Changes with CVS	391
Getting Started with CVS	392
Checking whether CVS is installed	<i>392</i>
Discovering what to use CVS for	<i>392</i>
Creating a CVS Repository	392
Populating Your Repository with Files	393
Checking Files In and Out (Or Playing in Your	
Sandbox)	394
Simplifying CVS with cervisia	395
Installing cervisia	395
Putting files in your sandbox	395
Adding more files to your repository	396
Committing your changes	396
Diplomacy 101 — resolving conflicts	397
Browsing your log files	397
Marking milestones with tags	398
Branching off with cervisia	399
Part X: Programming Tricks	401
Technique 53: Using Open-Source APIs	
to Save Time	403
Using the libcurl Library (C Programming)	404
Uploading a File with a Simple Program	
Using libcurl	404
Line 7: Defining functions and data types	405
Line 14: Calling the initialization function	405
Lines 18–21: Defining the transfer	405
Line 23: Starting the transfer	407
Line 26: Finishing the upload	407
Installing the Ming Library	407
Building a Simple Flash Movie with Ming	408
Examining the program	
	408
Compiling the program	408 410

Building Interactive Movies with Ming

Examining the program

Compiling the program

Running the program

411

411

413

413

Technique 54: Timesaving PHP Tricks	414
Doing the curl E-shuffle with PHP	415
Combining PHP with curl and XML:	
An overview	415
Checking out the XML file	415
Downloading and displaying the XML file	
with a PHP script (and curl)	416
Sending E-Mail from PHP When Problems	490
Occur	420
Technique 55: Using the DDD Graphical	
Debugger with Perl	422
Debugging Perl Code with DDD	423
Installing and starting DDD	423
Examining the main window	423
Reviewing and stepping through source code	424
Making Stop Signs: Using Breakpoints	
to Watch Code	425
Setting a breakpoint	425
Modifying a breakpoint	425
Tracking Variable Values in the Data Window	426
Opening the data window	426
Adding a variable to the data window	426
Changing the display to a table	427
Using the Backtrace feature	428
Using the Help menu	428
Part X1: The Scary (Or Fun!) Stuff	429
Technique 56: Burning CD-Rs without	
Getting Burned	431
Making Fedora Distribution CDs	432
Downloading the ISO images	432
Verifying the checksums	433
Burning an ISO File to Disc	
at the Command Line	433
Finding the identity of your drive	433
Running a test burn	433
Burning the distribution discs	434
Creating an ISO Image at the Command Line	434
Burning CDs without Making an ISO First	435

Technique 57: Search and Destroy setuid and setgid Programs Exploring How setuid and setgid Can Be Dangerous Identifying the Potential Troublemakers — Fast

Finding setuid quickly and easily with kfind

Finding setuid and setgid programs	
at the command line	440
Deciding to Turn Off setuid or setgid	441
Changing the setuid or setgid Bit	441
Technique 58: Quarantining Suspicious	
Programs with UML	443
Who Belongs in Jail?	444
Using UML to Jail Programs	444
Changing the Default Password to the Jail	446
Installing New Software and Resolving Conflicts	446
Technique 59: Troubleshooting Persnickety	
Programs	448
Using lsof to Find Out Which Files Are Open	449
Debugging Your Environment with strace	450
Investigating Programs with ltrace	451
Handy strace and ltrace Options	452
Recording Program Errors with valgrind	453
Technique 60: Securing the Fort	
with Bastille	455

Hardening Your Hat with Bastille	455
Downloading and installing Bastille and	100
its dependencies	456
Welcome to the Bastille	456
Addressing file permission issues	457
Clamping down on SUID privileges	457
Moving on to account security	458
Making the boot process more secure	459
Securing connection broker	460
Limiting compiler access	460
Limiting access to hackers	460
Logging extra information	460

Keeping the daemons in check	461
Securing sendmail	461
Closing the gaps in Apache	461
Keeping temporary files safe	462
Building a better firewall	462
Port scanning with Bastille	464
You're almost done!	465
Keeping Abreast of Security Issues	466
Technique 61: Creating a Second Line	
of Defense with LIDS	467
Turning LIDS On and Off	467
Testing LIDS before Applying It to Your System	468
Understanding the LIDS Access Control List	468
Controlling File Access with LIDS	469
Hiding Processes with LIDS	470
Running Down the Privilege List	471
Technique 62: Getting Graphical	
with Shell Scripts	474
Getting Graphical at the Command Line	475
Getting graphical in GNOME	475
Getting graphical with KDE	477
Staying desktop neutral	478
Index	479