Symbols

- (hyphen), in -net/-host parameters, 418
# (pound sign)
  to introduce comments, 450
  in shell scripts, 61
$ (dollar sign)
  in environmental variables, 51, 52
  grep command and, 276
% macros (RPM)
  %build macro, 332–333
  %clean Macro, 333
  %files macro, 333
* (asterisk)
  grep command and, 277
  wildcard, 53, 56
. (periods), domains and, 563, 564
/ (forward slash) to search text (vi/vim), 305–306
: (colon)
  in scp command, 431
  in vi/vim text editor, 305
; (semi-colons), forwarders and, 560
? (question mark)
  to search text (vi/vim), 305–306
  wildcard, 53
] (brackets), SOA records and, 564
symbol, grep command and, 276
' (backtick), locating binary files and, 323

{} (curly braces), when defining host groups, 549
| (pipe symbol)
  for connecting commands, 54–55
  pipe (|) command (RPMs), 324

Numbers

1-click installation (RPMs), 340–343
64-bit platforms, 663–665

A

a2ps command, 290–291
AbiWord wcl word processor, 216
ACCEPT targets, 604
access
  access control, defined, 456
  restricting (Squid), 645, 650–651
  user, 457–458
access control lists (ACLs)
  attributes and, 496–497
  Cyrus IMAPD settings, 496
  Samba and, 496
  setting on LDAP server, 643–644
  starting Squid and, 647, 648, 649
Access files, 366
access_log (CUPS), 536
ACLs. See access control lists (ACLs)
ACPI (Advanced Configuration and Power Interface), 30
Acronis Disk Director, 390
acroread file viewer, 296
Adams, Douglas, xxxiv
AddHandler directive, 460
Address Resolution Protocol (ARP)
   ARP cache, 422–423
   basics of, 422–423
addresses. See also IP addresses
   address classes and network masks, 419
   address records, 562, 565
   broadcast, 420, 421
   configuring DNS settings and, 36–37
   default gateway, 38
   fixed (DHCP), 548
   loopback, defined, 421
   network, configuring, 420–421
   restricting access (Squid), 650–651
   routable, defined, 420
administrator (LDAP server), configuring, 631–632
administrative tasks (Linux), 62–69
ADSL (asymmetric digital subscriber line) connections, 40–41
Advanced Configuration and Power Interface (ACPI), 30
Advanced Research Projects Agency Network (ARPANET), 160
alias maps (Postfix), 478
aliases
   for root’s mail (Cyrus IMAPD), 498
   shell, 397
Allison, Jeremy, 502
Allman, Eric, 485
all_squash option (NFS), 582
always-on servers (Postfix), 482
AMD
   AMD-V, 701
   Opteron, 664
ANSWER section (dig), 561
antiword package
   basics of, 294
   examining files with, 360
Apache web server
   CGI and, 459–461
   configuration files, 450–451
   configuring with YaST, 464–468
   global directives, 451–453
   group access, 458–459
   main server, 453–454
   overview of, 447–448
   packages in SUSE, 448
   PHP, dynamic content with, 462–464
   security, 436
   starting, 448–450
   user access, 457–458
   virtual hosts, 454–456
application layer, 162, 164
applications
   displaying remotely, 203
   printing from (YaST), 524–525
   SLED and, 729–730
apropos command, 142
apt-get command (Debian), 343
architecture. See also enterprise architecture
   blade, 665
   Postfix, 479–480
   SAN, 671–672
archives
   archiving Linux files, 74–77
   defined, 369
   files and, 369–374
   ark graphical tool, 373–374
ARP. See Address Resolution Protocol (ARP)
Ascher, David, 409
asymmetric digital subscriber line (ADSL) connections, 40–41
async option (NFS), 580
ATI hardware, 220
AuthDBMUserFile directive, 459
authentication. See also Network Information Service (NIS) for authentication;
Pluggable Authentication Modules (PAM)
defined, 456
LDAP and, 642–643
Squid, 648–650
AuthName directive, 458
authoritative keyword, 548
AUTHORITY section (dig), 561
authorization, defined, 456
AuthUserFile directive, 458
autoinstallation module (YaST), 261–266
automatic filesystem mounting, 104
Automatic Repair (YaST), 381–382
automating tasks, 396–410
scripting languages. See scripting languages
shell aliases, 397
shell scripts. See shell scripts
AutoYaST, 4, 261–266
awk command, 283–285
-azrv parameters, 432

B
backing up
data quickly, 394
Linux files, 74–77
backup superblocks, 100
bash shell
aliases, 397, 398–399
connecting commands, 54–55
environment variables, 50–53
input and output, redirecting, 54–55
pattern matching, 53–54
preferences, 67–68
wildcards, 53–54
Basic authentication, 457, 459
Bauer, Bodo, xxxiv
Beagle, finding files with, 357–358
Beazley, David, 409
Beginning Linux Programming (Wrox), 328
Beginning Perl (Apress, 2004), 409
Beginning Python (Wiley, 2005), 409
Behlendorf, Brian, 447
Bellard, Fabrice, 693
Berkeley Internet Name Daemon (BIND)
configuring for caching/forwarding, 559–562
packages, 560
Berners-Lee, Tim, 447
binary files
’ (backtick) and, 323
cat command and, 271–272
changing with hex editors, 360
binary packages
binary RPMs, 320
kernel packages, 713–714
binary representation, 171
BIND. See Berkeley Internet Name Daemon (BIND)
BIOS initialization, 110, 120, 128
Blackbox window manager, 216, 217–218
blade architecture, 665
blank lines, replacing, 271
block devices, 80
Blue Book, 520
Bluetooth, 441–444
bochs PC emulator, 684, 691–692
bonnie/bonnie++ for filesystem testing, 98
Book Package, 150–151
boot loaders
configuration (YaST), 243–245
customizing at installation, 25
selecting at installation, 28–31
boot managers, 110, 120
boot order, defined, 110
boot profiles, defined, 120
boot time, NFS and, 576
booting SUSE
basic concepts, 109–113
boot loader tool, 384
dual booting, 128
GRUB, 122–127
from hard disk, 380
at installation, 5–8
installing Linux on existing Windows systems, 129
installing Windows/Linux on new systems, 128
LILO, 120–122
manually partitioning existing Windows systems, 130–132
into Rescue System, 380–381
runlevels. See runlevels
sharing data on Windows/Linux partitions, 132–133
SUSE Rescue System, 135–137
into System Repair mode, 381–385
brackets [ ], SOA records and, 564
bridged networking, defined, 697
broadcast addresses, 168
browser identification (Konqueror), 211
browsing
Firefox and, 215
for shares, 504–505
with split windows (Konqueror), 210
brute force logins, stopping, 613
Build Service search tool, 340
burning
burning CDs/DVDs using k3b, 394, 395–396
 CDs from command line, 395
 ISO image to CD, 76
Burtch, Ken, 405
bzip2
compressing files with, 367–368
using with tar, 370

cable modem connections, configuring, 41
Cache Manager (Squid), 653
caching
configuring BIND for, 559–562
DNS and, 559
web proxies. See Squid
calendar
Evolution and, 215
calendar function (emacs), 314–315
cancel command, 527
canonical maps (Postfix), 474
cards (network), 34–36, 419–420
Carrier Grade Linux (CGL), xi
case statement, shell scripts and, 403–404
cat command, 59, 270–272
ccsm (Compiz Config Settings Manager), 222–224
cd (change directory) command, 58
CDs/DVDs
  basics of working with, 392–396
  CD creator (Nautilus), 353
  for installation, 4, 5
  Live CDs/DVDs, 390, 391
  mounting, 102–103
certification
  EAL certifications, xi
  for hardware and software, 666
cfdisk, 78
CGI (Common Gateway Interface), 459–461
CGL (Carrier Grade Linux), xi
classification
  caching, kernel filtering, 602
  character devices, 80
chmod command, 66–67
chown (change ownership) command, 66
Christiansen, Tom, 410
chroot scripts (AutoYaST), 265–266
CIDR. See Classless Interdomain Routing (CIDR)
CIFS (Common Internet File System), 501
Citrix server, SLED and, 729–730
classes
  address classes and network masks, 419
  in CUPS, 532–534
  IP addresses and, 166, 167, 168
Classless Interdomain Routing (CIDR), 172
  configuring for NIS, 625–627
  DHCP, interaction with servers, 540
  DHCP, starting and stopping, 550–551
  DHCP, troubleshooting, 551–553
  graphical mail clients, 499–500
  mail clients, selecting, 498–500
  NFS, defined, 575
  NFS (YaST), 578–579
  setup to print to CUPS servers (Windows), 529–530
  clients (Samba), 503–509
  accessing Windows printers with, 506–509
  basics of, 503–505
  YaST for client services, 505–506
clustering, defined, 657
cmp command, 291–292
CNAME records (DNS)
  defined, 562
  servers and, 565–566
code. See source code
code listings
  %files Macro for logcheck, 333
  %install Section for Logcheck, 332
  /var/log, 176–177
  ACLs, Setting on Shared Mailbox, 497
  Apache logrotate Entry, 185
  ARP Cache, Viewing, 422
  Authenticating to LDAP Servers, 633
  Connectivity, Checking with l2ping, 441
  Destination (logging), 183
  DHCP Servers, Retrieving Information from, 552
dig for Testing DNS Servers, 561
  Downloading Files over HTTP to Local Server, 433
  EXT2 Filesystem, Creating, 93–94
  EXT2 Filesystem, Mounting, 98–99
  EXT2 to EXT3, Upgrading, 96
  EXT3 Filesystem, Creating, 94–95
  fdisk -l command Output, 81
  fdisk to Edit /dev/hda, 82
  Files, Getting over Bluetooth, 442
  Filter (syslog-ng), 182–183
  Filtering Rules, Default, 603–604
  Firewall Rules, Setting, 605
code listings  (continued)
Heartbeat.ypm, 342
Host Groups, Defining, 549
ifconfig Command, Output of, 412
Internal DNS Representation, 567
Kernel Build Process Output, 721–722
ldapsearch Output, 638–639
LDIF Entries, Inserting into LDAP, 636
LDIF File, 634
LDIF Listing, 637
lilo.conf Configuration, 121
Local Specification (logging), 180
Log Definition, 184
logcheck Example E-mail, 188
logcheck Log File Entry, 187
Logcheck RPM, Installing, 337
Logcheck RPM, Listing Files in, 336
Logging in to FTP Server as User, 594
menu.lst Configuration File, 123
ndiswrapper Drivers, Installing, 438
ndiswrapper Drivers, Listing, 438
ndiswrapper to Install Windows Network
Drivers, 438
NetWare Servers, Listing, 423
Network Configuration, Viewing, 421
Network Devices Information, Viewing, 420
palmcoder.net Zone, 563
Partition Configuration, Saving, 85
Partitions, Creating Extended, 83
Partitions, Creating Logical, 84
Partnership, Defining in DRBD, 677–678
Perl CGI Script, 460
ping to Test Network Connectivity, 435
Postfix main.cf file, 471–472
PPK Pair, Creating, 429
Public SSH Key, Copying, 430
ReiserFS, creating, 97
Reverse Zone for 192.168.0.0/24, 568
route -n Output, 173
RPM Header, 329–331
RPM Packages, Installing, 321–322
RPM Packages, Listing, 324
RPM Packages, Querying, 322–323
RPM Packages, Removing Dependent, 325
rpmbuild to Compile Logcheck Source,
334–336
Running Kernel Configuration, 715–716
Searching for User and Filtering, 640
Searching for Wireless Networks, 439
SSH to Log in to Remote Servers, 427
syslog Mail Facility Logging, 179
syslog-ng Configuration for
iptables — Source, 182
telnet as Protocol Tester, 426
telnet to Connect to Remote Servers, 425
Testing DNS Zones with dig, 566–567
Testing POP3 Servers with Telnet, 492
trace route Program for Diagnosing Network
Problems, 436
unzip to Unarchive Network Drivers,
437–438
Updated Postfix main.cf Configuration, 482
Updated Routing Table, 417
Uploading Files Successfully, 595–596
Uploading Files to FTP Servers, 594
Using tcpdump with dhcpdump, 553–555
Virtual Host, Defining, 455
Web Site Directories, Synchronizing, 432
CodeWeavers Crossover Office version of Wine
availability of, 687
SLED and, 729–730
Wine and, 691
command completion, 49
command history, 49
command interpreters. See shells (command interpreters)
command line
  burning CDs from, 395
  canceling printing from, 526–527
  NIS servers, setting up from, 623–625
  printing from, 525–526
  starting emacs from, 308–310
command-line tools
  CUPS, 534–536
  installation tools (RPMs), 343–346
  for working with files, 347–351
  Xen hypervisor, 708
command_directory (Postfix), 473
commands. See also specific commands
  completing, 49
  connecting, 54–55
  emacs and, 310–312
  help for, 55–56
commodity
  64-bit servers, 664
  defined, 665
Common Gateway Interface (CGI), 459–461
Common Internet File System (CIFS), 501
Common Unix Print System (CUPS). See printing with CUPS
compiling source code, 328
Compiz Config Settings Manager (ccsm), 222–224
compressing files, 367–368
concatenation
  cat command, 59, 270–272
  concatenating files, 59–60
configuration
  of monitors, changing, 43–44
  network configuration and virtual interfaces, 415
  of partitions, saving, 77
  Postfix, 471–479, 483
  of printers (YaST), 239–242
  troubleshooting, on IP networks, 435–436
configuration files
  Apache Web Server, 450–451
  CUPS, 536
  Samba, 515–516
  Xen hypervisor, 706–708
configuring
  administrator (LDAP server), 631–632
  Apache with YaST, 464–468
  BIND for caching/forwarding, 559–562
  boot loaders (YaST), 243–245
  cable modem connections, 41
  clients for NIS, 625–627
  Cyrus IMAPD user, 495
  default gateway, 37–38
  DHCP servers manually, 547–550
  DHCP servers with YaST. See YaST DHCP server
dial-up servers (Postfix), 483
DNS servers, 34–36
DNS settings, 36–37
firewalls with iptables. See iptable firewalls
hardware at installation, 43–45
ifconfig command, 414–415
installation sources (YaST), 234–236
IP networks. See IP networks, configuring kernels, 715–720
language settings, 8–10
network access. See network access, configuring
  network addresses, 420–421
  networks, 411
  routes, 421
configuring (continued)
   sound cards, 44–45
   user preferences, 67–68
   wireless networking, 439–440
   X Window system, 196
   YaST with DNS, 568–573
connecting commands, 54–55
connection-based protocols, defined, 494
connection updates, testing, 38–39
connection vs. connectionless TCP/IP protocols, 163
connections, network, 73–74
content_filter (Postfix), 476
control sequences, 62
Converse, Tim, 463
copying files, 57
copying/pasting
   text (vi/vim), 304–305
   X Window, 201
corruption of filesystems, 22
Cozens, Simon, 409
cp (copy) command, 57
CPAN (Perl Archive Network), 409
cpio archives, 371–372
CrossOver
   Crossover Office, SLED and, 729
   Windows and Wine and, 691
csplit command, 280–281
CSV (comma-separated values) format,
   importing files from, 363–364
cube, spinning, 220–222
CUPS (Common Unix Printing System).
   See also printing with CUPS
   basics of, 523–524
   CUPS: Common UNIX Printing System (Sams, 2001), 537
CUPS servers
   checking availability of, 529
   setup to print to, 529–530
   starting/stopping, 529
   curly braces {}, when defining host groups, 549
Customized Repair (YaST), 382–383
customizing
   boot loaders, 25
   desktops, 13–14
   emacs, 315
   keyboard layout, 25
   partitions, 25
   runlevel, 25, 119–120
   software, 25–26
   cut command, 282
Cygwin/X software, 207
Cyrus IMAPD
   aliases for root’s mail, 498
   basics of, 494–495
   integrating with Postfix, 497
   shared mailboxes, creating, 496–497
   users, adding, 495–496
   users, configuring, 495
D
daemon_directory (Postfix), 473
Dalitz, Christoph, 313
data
   backing up, 394
   sharing on Windows/Linux partitions, 132–133
   user data, adding (LDAP), 636–640
data link layer, 161, 162, 164
data partitions, 21–22
datacenters, Linux and, 659
dd command, 392
debug_peer_level (Postfix), 473
default_gateway, configuring, 37–38
default-lease-time command, 549–550
default routes, 416–417
defer_transports (Postfix), 476, 483
defining functions, 317
deleting
  files, 58, 351
  partitions, 389
desktop
effects, 222–224
  environments. See GNOME; KDE (K Desktop Environment)
desktops. See also SUSE Linux Enterprise Desktop (SLED)
    customizing at installation, 13–14
    multiple (KDE), 212
    sharing, 207
Destination NAT (DNAT), 610–611
detex command, 295
/dev/sda, editing with fdisk, 82
device independent files (DVI)
  basics of, 361–362
  defined, 295
devices (partitions), names of, 79–80
DHCP. See Dynamic Host Configuration Protocol (DHCP) services
dhcpcd-test utility, 552
dhcpledump, 553–555
dial-up servers, configuring (Postfix), 483
diff command, 292–293
dig, 560–561, 566–567
Digest authentication type, 458
directives (logrotate), 185–186
directories. See also files and directories (Linux)
  cron process and, 185
  LDAP, 631
  logrotate and, 184
  RPM source, 329
  Squid, 646
<Directory>; containers, 453–454
directory trees
  archiving, 369
  backing up, 371
disable_dns_lookups (Postfix), 476
disaster recovery (DR), 676–680. See also
distributed replicated block device (DRBD)
  basics of, 676–677
disk-by-ID nomenclature, 125
Disk Defragmenter, Windows, 129
diskless X terminals, 207–208
disks
  disk images, 392–394
  disk space, checking, 353
  partitioning. See partitions
DISPLAY environment variable, 202–204
display manager (X Window), 204
displaying applications remotely, 203
Distinguished Name (LDAP), 630
distributed replicated block device (DRBD)
  hosts, defining, 679–680
  pairs, 677–678
  protocols, 678–679
  using, 680
distribution RPMs, 327
DMZ, 667, 668
DNAT (Destination NAT), 610–611
DNS servers. See Domain Name System (DNS) servers
Index

documentation (SUSE)
  FAQ, unofficial, 153
  find command, 61
  Google Linux "special search", 157
  hard-to-find documents, 154
  help sites, unofficial, 153–154
  IBM Linux materials, 156
  info pages, 144–146
  IRC (openSUSE), 157
  KDE help center, 146
  LDP. See Linux Documentation Project (LDP)
  Linux. See Linux Documentation Project (LDP)
  Linux news sites, 157
  manuals, 140–141
  miscellaneous packages, 147
  Novell Customer Center, 152–153
  online help, 55–56, 306
  open source software, finding, 156
  openSUSE public mailing lists, 153
  openSUSE web site, 151–152
  printing, 537–538
  system documentation, 110
  topic-specific sites, 154–155
  user groups, 157
  /usr/share/doc/packages/ directory, 146–147
DoD model, 165
  domain controllers, primary (PDCs), Samba and, 512–513
  Domain Name System (DNS) servers, 557–573
    BIND, configuring for caching/forwarding, 559–562
    configuring, 34–36
    DNS basics, 557–559
    record types, 562
    reverse zones, 567–568
    YaST, configuring with, 568–573
    zones, 563–567
domain names
  NIS, 621, 623–624, 627
  setting, 33–34
  DOS, Linux and, 683
dos2unix, newline characters and, 288–289
dosbox emulation, 684, 685–686
dosemu emulation, 683, 684–686
dotted decimal numbers, defined, 166
  Dougherty, Dale, 285
downloads. See also web sites for downloading
    anonymous (FTP), 588–592
    HTTP (code listing), 433
dpkg package management system (Debian), 343
  DRBD. See distributed replicated block device (DRBD)
drbdsetup command, 680
drivers
  adding at installation, 8
  filesystem, 87
  DROP targets, 604
  dropped packets, logging, 613–614
  DSL (Damn Small Linux), 391
du command, 353
dual booting
  basics of, 128
  dual-boot systems, 16
DVDs
  DVD provided with this book, xxx, 4
  for installation, 4, 5
  Live CDs/DVDs, 390, 391
  mounting, 102–103
  working with, 392–396
DVI (device independent files)
   basics of, 361–362
   defined, 295
   dvi2tty command, 295
Dynamic Host Configuration Protocol (DHCP)
   services, 539–555
   basics of, 539–540
   clients, starting and stopping, 550–551
   clients, troubleshooting, 551–553
   DHCP Server Configuration Wizard, 543
   packages on SUSE, 540
   servers, configuring manually, 547–550
   servers, configuring with YaST. See YaST
   DHCP server
   servers, troubleshooting, 553–555
dynamic routing, defined, 419
Dyroff, Roland, xxxiii

E
   EAL certifications, xi
   Eckert, Jason, 733
   ECN (Enhanced Congestion Notification), 609
   editing
      partitions, 389
      text, with vi and emacs, 61–62
      users and groups with YaST, 249–253
   editor macros. See emacs (editor macros)
   effective roots, defined, 332
   EHLO (Postfix), 477
   emacs (editor macros)
      calendar function, 314–315
      command completion/history, 312
      commands, 310
      correction commands, 311
      customizing, 315
      defining functions, 317
      file associations, 317
      help and support, 318
      installing, 308
      key bindings, changing, 315–316
      modes, 312–314, 316
      navigating, 310–311
      overview of, 307–308
      replacing text, 311
      searching, 311
      setting variables, 316
      starting from command line, 308–310
      text editor, 61–62, 265
      undo command, 311
      word completion, 311–312
      XML files and, 365
   email. See also mail; mail servers
      MDAs, 467. See also IMAP, POP3
      MUAs, 467
   embedded systems, Linux and, 660
   emulation and virtualization. See also
      virtualization
      bochs emulation, 691–692
      dosemu and dosbox emulation, 684–686
      emulation, defined, 683
      emulation vs. virtualization, 683–684
      other emulators, 709–710
      wine and emulation, 686–691
   encapsulation, defined, 163
   Enhanced Congestion Notification (ECN), 609
   enscript command, 291
   enterprise architecture, 657–681
      defined, 657
      disaster recovery. See disaster recovery (DR)
      example of, 658
      failover, 680–681
      hardware for. See Linux enterprise hardware
      Linux, deploying, 660–661
enterprise architecture, *(continued)*
   Linux, where to use, 659–660
   placement of services, 666–670
   staff requirements, 661
   storage area networks. See storage area networks (SAN)
   virtualization, 675–676
   –environment variable, 51
   environment variables, 50–53
   error log (CUPS), 536
   error messages
      output stream, 55
      Squid, 647
   escape sequences, 62
   ESTABLISHED connection packet, 606
   evince file viewer, 296
   Evolution
      basics of, 499, 729
      mail client (GNOME), 215
   Excel files, 366
   Exim, 491
   expand command, 273
   expert mode (Runlevel Editor), 247–248
   Expert Tools (YaST), 383–384, 390
   expiration time (DNS servers), 565
   Explore2fs utility, 133
   exportfs command (NFS), 582–583
   exports file (NFS), 580–582
   EXT2 filesystem
      background, 88–89
      creating, 93–94
      mounting, 98–100
      standard, 89
      upgrading to EXT3, 95–96
   EXT3 filesystem
      creating, 94–95
      mount options, 99–100
   standard, 89
   upgrading EXT2 to, 95–96
   extended partitions
      basics of, 17–18, 78
      creating, 83–84
      extended regular expressions, 277–278
   Extensible Markup Language. See XML
      (Extensible Markup Language)
   extracting files from packages, 71–72

F
   failover, 680–681
   FAQs (LDP), 148–149
   FAT/FAT32 filesystems, 132
   fdisk
      creating partitions with, 80–85
      to edit /dev/hda, 82
      fdisk -l command output, 81
      for partitioning, 387–388
   Fehr, Thomas, xxxiii
   Fetchmail, 493–494
   fields
      PAM, configuring and, 641–642
      text manipulation and, 281–285
   file associations
      emacs, 317
      KDE, 212
   file command, 358–359
   file managers
      basics of, 352–353
      Konqueror as, 211
   file services, 670
   File Transfer Protocol (FTP) server, 587–597
      FTP basics, 587
      FTP security, 587–588
      moving files and, 74
files. See also lines from files
archives and, 369–374
attributes, 374–375
attributes and ACLs, 376–377
comparing, 291–293
compressing, 367–368
configuration files (Samba), 515–516
examining. See files and file types
fields from, working with, 281–285
file managers, 352–353
finding, 354–358
finding packages that own, 323
inserting/saving (vi/vim), 307
listing, 322–323, 347
moving/re-naming, 350
removing, 351
replacing text from, 285–289
sharing. See Network File System (NFS)
testing for, 402–403
text files, formatting, 289–291
files and directories (Linux)
archiving files, 74–77
changing directories, 58
concatenating files, 59–60
copying files, 57
deleting, 58
editing text with vi and emacs, 61–62
extracting files from packages, 71–72
file ownership and permissions, 64–67
file systems, mounting and unmounting, 68–69
finding files with find and locate, 61
listing files, 56–57
making directories, 58
making links to, 59
moving and renaming files, 57
overview of, 56
removing directories, 59
searching files with grep, 60
viewing files with more and less commands, 60
viewing start/end of files, 60
files and file types, 358–367
antiword package and, 360
CSV files, 363–364
DVI and, 361–362
file command, 358–359
ghex or khexedit and, 360
graphics formats and, 362–363
HTML and, 362
office formats, 364–367
PDF and, 361
PostScript and, 360–361
sound and multimedia formats, 363
strings command, 360
TeX and LaTeX files, 362
XML files, 364
<Files>; containers, 453–454
filesystems
comparing, 97–98
creating, overview of, 92
defined, 77
defining at installation, 18–22
EXT2, creating, 93–94
EXT2/EXT3 standards, 89
EXT3, creating, 94–95
JFS system, 90–91
journaling, 21, 88
metadata, 88
filesystems (continued)
  mounting. See mounting filesystems
  NTFS, 91
  overview of, 87–89
  partitioning and, 391–392
  ReiserFS, 89–90, 96–97
  upgrading EXT2 to EXT3, 95–96
  VFAT, 91
  XFS system, 91
filters
  logging and, 181, 182–183
  squidGuard, 654
find command, 61, 354
finding files, 61, 354–358
Firefox, 215, 729
firewalls
  brute force logins, stopping, 613
  configuring with iptables. See iptable
    firewalls
defined, 599
DNAT, 610–611
enterprise architecture and, 668
ICMP traffic, allowing, 612
logging dropped packets, 613–614
loopback, allowing, 612
NAT, 607–611
overview of, 599–600
packets, allowing forwarding of, 609–610
reasons for using, 600–601
redirecting traffic, 611
SNAT, 607–609
Squid and, 645
SuSEfirewall2 script, 614–618
SuSEfirewall2, Squid and, 652
Firmware Test option, 7
fish (Konqueror), 74
floppies, 392–393
fmt command, 290
fold command, 289
formats, getting text from various, 293–296
formatting text files, 289–291
FORWARD chains, 602–603
forwarders
  configuring BIND, 559–562
defined, 560
setting, 569
Foy, Brian D., 410
framebuffer graphics, 198–200
free desktop project, 214
FreeNX package, 208
fsck (file system consistency check), 88,
  99–100
fstab files, 104
FTP. See File Transfer Protocol (FTP) server
full stops (periods), domains and, 563, 564
full virtualization, defined, 701
Fundamental mode (emacs), 317
fuser (find user) command, 105–106
FVWM2 window manager, 217
G
gateways, IP addresses, 547
gDI printers, 524
General Public License (GPL), 226
generic boot code, 127
ghex, 360
“ghosting” approach (image copying),
  261
GIMP, 362
global directives (Apache web server), 451–453
global regular expression printer (grep
  command)
  extracting files from lines and, 275–277
  searching files with, 60
Global Settings screen (YaST DHCP Server wizard), 542

GNOME
browsing for shares and, 504–505
Control Center, 227
desktop, 103
desktop environment, 212–216
finding files in, 356
history and background, 195–196
Nautilus and, 352
print tools, 525
selecting at installation, 13
Gnucash finance application, 215
Gnumeric spreadsheet program, 216
Google "special search" (Linux), 157
gparted live CD, 132, 391
GPL (General Public License), 226
Grand Unified Boot Loader (GRUB), 29, 122–127, 133–135
grandfather process (init process), 115
graphical login, remote (X Window), 205–206
graphical mail clients, 499–500
graphical splash screen, 8, 9
graphics
configuring at installation, 43–44
formats, opening files and, 362–363
framebuffer graphics, 198–200
sound card, configuring, 44–45
support, 155
grep command
extracting files from lines and, 275–278
searching files with, 60
grepmail command, 278–279
groff -Tascii, 290
groups. See also users and groups
adding/editing with YaST, 252–253
setting up access, 458–459
GRUB (Grand Unified Boot Loader), 29, 122–127, 133–135
grubonce command, 127
Gruenbacher, Andreas, 722
gtklp package, 537
Gupta, Rashi, 409
Gwyn, Doug, 58
gzip
compressing files with, 367–368
gzipped tar archives, 75
using with tar, 73, 369–370

H
hard disks, booting SUSE from, 6, 380
hard mounts (NFS), 577
hardware. See also Linux enterprise hardware
configuring at installation, 43–45
for desktop effects, 220–221
detection (X Window), 196–197
emulation and, 684. See also emulation and virtualization
hardware addresses, restricting access and (Squid), 650–651
hardware-assisted virtualization, 684, 701, 703–706
modules (YaST), 229
hardware abstraction layer (HAL), 103
Hazel, Philip, 491
head command, 60, 273
headers (RPM), 329–331
Heartbeat, 681
Heartbeat High Availability software, 338
HELO/EHLO (Postfix), 477
help. See also documentation (SUSE)
for commands, 55–56
emacs, 318
help (continued)
  at installation, 7
  KDE, 146–147
  vim, 306
hierarchy (LDAP), 630–631
high availability, 657, 680–681
history
  command completion/history (emacs), 312
  of commands, 49
  of GNOME, 195–196
  of KDE, 195–196
  of Linux, xxxii–xxxiii
  of SUSE, xxxiii–xxxvi
  of X Window system, 193–194
Hoffman, Paul, 409
/home partitions, 19
host, DNS servers and, 561–562
Host Management screen (DHCP configuration), 545–546
host-only networking, defined, 697
host routes, 418
hostmasters, 564
hostname, 202–203
hosts
  defining (DRBD), 679–680
  host allocation, 168
  host component, defined, 166
  host groups, defining (DHCP), 549
  host name of Linux machines, 33–34
  NIS servers and, 622, 623
HOWTO collection on Samba, 515–516
HOWTO documents, 149
HP computing
  defined, 657
  pSeries and, 663
  HP platforms, 663
HTML (HyperText Markup Language), files and, 362
html2text command, 296
HTTP authentication method, 649
Hummingbird Communications Exceed, 207
IBM Linux materials, 156
IBM platforms, 662–663
IceWM window manager, 216, 218
ICMP (Internet Control Message Protocol) traffic, 604, 612
ifconfig command
  interfaces, configuring with, 414–415
  output of, 412–414
  virtual interfaces and, 415
ImageMagick package, 362–363
images, installation of SUSE from, 25
IMAP, 491
immutable attribute, 374–375
inetd module (YaST), 492, 517
inet_interfaces (Postfix), 476
info command, 55–56, 145
info pages, 144–146
init command/process, 115–117
initrd (initial ramdisk), 111, 726
inodes (filesystems), 90
INPUT chains, 602–603
input/output, redirecting (commands), 54–55
installation servers, 258–261
installation service module (YaST), 258–261
installation sources
  configuring (YaST), 234–236
  RPMs, 337–338
installing
  emacs, 308
  open-click installers, 483
RPM Packages, 320–322
RPMs, 1-click installation, 340–343
RPMs, command-line installation tools, 343–346
RPMs, installation sources, 337–338
sendmail, 485–486
software with YaST, 253–255
SUSE. See SUSE installation; SUSE
  installation, customizing; SUSE
  installation, running
Windows and Linux, 128–129
Intel hardware, 220–221
Intel Itanium, 664
interfaces
  ifconfig command and, 522–523
  naming of network interfaces, 522
web. See web interface (CUPS)
International Organization for Standardization’s
  (ISO). See ISO OSI model
Internet
  basics of, 159–161
  Postfix and, 481
  testing connection to, 38–39
Internet Control Message Protocol (ICMP), 604, 612
intr option, 577
IP addresses, 165–172
  basics of, 165–166
  classes and, 166, 167, 168
  NAT, 169
  non-routable, 168–170
  restricting range of (DHCP), 547
  routes to, 418
  special, 167–168
specifying, for NIS servers, 623
subnetting, 170–172
ip command, 421
IP forwarding, 602
IP networks, configuring, 412–421
  ARP, 422–423
  Bluetooth, 441–444
  ifconfig command, 412–416
  ip route command, 421
  iproute2, 419–421
  IPX networks and, 423–424
  naming of network interfaces, 414
  routes, setting up, 416–419
tools. See network tools
troubleshooting, 435–436
  wireless networking, 436–440
IPP, printing on Windows and, 529–530
iptable firewalls
  adding rules, 606–607
  implementing, 603–605
  iptables command, 181, 183
  kernel chains, 602–603
  order of rules, 607
  overview of, 601–602
  setting initial rules, 605–606
  to stop brute force attacks, 613
IPX networks, 423–424
IRC, 157
iSCSI, 671–672
ISDN connections, 40–41
ISO 9660 filesystem, CD/DVD images and, 394–395
ISO images (archiving), 76
ISO OSI model, 161–164
ISOLINUX boot loader, 110, 112
IT infrastructure, Linux and, 659, 666–667
Index

Itanium, 664
iwconfig command, 439–440

J
join command, 283
journal journaling mode (EXT3), 89
journaling filesystems
  basics of, 88
  defined, 21
  JFS, 90–91
journals, defined, 88
Joy, Bill, 298
jumbo frames, defined, 419
-k option, fuser command, 106

K
k3b
  burning CDs/DVDs using, 394, 395–396
  K3b handbook, 396
kaffeine, 363
kbluetooth tools, 442
KDE (K Desktop Environment)
  browsing for shares and, 504–505
  vs. GNOME, 212–216
  history and background, 195–196
  KDE-compliant applications, 212–213
  KDE Control Center, 211–212
  KDE help center, 146–147
  Konqueror and, 209–211, 352
  on-screen alert, 103
  overview and features, 208–209
  selecting at installation, 13–14
  kernel chains (firewalls), 602–603
  kernel space, defined, 601
kernels
  binary kernel packages, 713–714
  building, 720–722
  configuration of, 715–720
  initrd, 726
  kernel module packages (KMPs), 722–725
  kernel of the day, 724
  overview of, 711–712
  parameters at boot time, 725
  SUSE vs. vanilla kernels, 712
  tainting, 723–724
  upgrading kernel packages, 714
  version numbers, 712–714
Kerry, Beagle and, 357–358
key bindings (emacs)
  changing, 315–316
  modes and, 312
keyboard shortcuts (info command), 145
keyboards, customizing layout at installation, 25
keys, public and private, and SSH, 428–430
keywords
  authoritative keyword, 548
  searching for, 397
khexedit, 360
Kill scripts (runlevels), 115–117
kinternet program, 40
kiwi image building tool, 731
kmail, 499
KMPs (kernel module packages), 722–725
Knoppix, 391
Knoppix Hacks, 2nd edition (O'Reilly, 2007), 391
Knuth, Donald, 295
KOffice programs, 213
Konqueror
  basics of, 209–211
  browsing for shares and, 504
  as file manager, 352
finding files with, 355
  fish and, 74
  as man page viewer, 143–145
  as web browser, 729
konsole terminal emulator, 213
kpdf file viewer, 296
kprinter, 524–525, 537
krfb desktop sharing program, 207
kvm, 710
kwin window manager, 215
kwrite graphical text editor, 212

L
l2ping command, 441
LAMP software stack, 463
languages
  configuring at installation, 8–10
  printers and, 520
  selecting for installation, 7
LaRoche, Florian, xxxiv
LaTeX
  detex and, 375
  DVI files and, 361
dvi2tty and, 375
  files, 362
LDAP server, 631–640
  ACL, setting on, 643–644
  administrator, configuring, 631–632
  enterprise architecture and,
    669–670
  information, adding, 633–636
  testing, 632–633
  user data, adding, 636–640
  ldapadd command, 636
  ldapssearch command, 632, 633
LDIF files
  basics of, 634–635
  inserting, 635–636
LDP. See Linux Documentation Project (LDP)
Learning Perl, 4th edition (O'Reilly, 2005), 410
Learning Python, 3rd edition (O'Reilly, 2007), 409
Learning the bash Shell (O'Reilly, 1998), 405
leases
  on IP addresses, 540
  specifying, 549–550
Lee, James, 409
Lerdorf, Rasmus, 462
less command, 60
lguest, 710
libzypp library, 343
  basics of, 628–629, 643–644
  hierarchy of, 630–631
  integrating into Linux, 642–643
  LDAP objects, 629–630
server. See LDAP server
  user management and, 41
  working with, 627–628
LILO (Linux Loader), 29, 120–122, 133–135
lines from files, 270–281
  blank lines, replacing, 271
  cat command, 270–272
csplit command, 280–281
  expand command, 273
grep command, 275–278
grepmail command, 278–279
  head command, 272
  nl command, 273–274
  sgrep command, 279
  sort command, 274–275
lines from files, (continued)
  split command, 280
  tac command, 272
  tail command, 272–273
  uniq command, 274
  zcat command, 272
  zgrep command, 278
links to files and directories, 59
Linspire, 730
Linux. See also enterprise architecture
  basics of, xxxi–xxxii
  bootup process, 8. See also booting SUSE
  command references, 47
  commands, help for, 55–56
  as desktop operating system, 727–728. See
    also SUSE Linux Enterprise Desktop
    (SLED)
  files and directories. See files and directories
    (Linux)
  history of, xxxii–xxxiii
  installing, 128–129
  KDE, 47
  LDAP, integrating into, 642–643
  licensing, xli–xlii
  Linux Standards Base, xi
  mail systems on, 500
  network connections, 73–74
  networking. See networking (Linux)
  networks. See networks (Linux)
  news sites, 157
  Opera for Windows under Wine, 689
  partitions and Windows, 86
  PostScript, printing and, 520
  printing from to remote printers, 530–531
  QEMU and, 693, 694
  RPM packages, 69–71
  Samba, running on. See Samba
security and, 470, 660
sharing data with Windows partitions,
  132–133
sharing with Windows. See clients (Samba)
shells. See shells (command interpreters)
software for other systems and, 683
source packages, compiling, 72–73
source RPMs, 72
Ubuntu installation, 697, 698
user preferences, configuring, 67–68
users and groups, 62–64
VMware Server and, 696–697, 698
YaST to install packages, 69
Linux Documentation Project (LDP)
  FAQs, 148–149
  guides and books, 149
  HOWTO documents, 149
  Linux commands, 55
  Linux information, 56
  overview of, 148
  SUSE Book Package, 150–151
Linux enterprise hardware, 661–666
  64-bit platforms, 663–665
  basics of, 661–662
  blade architecture, 665
  certification and support, 666
  HP and, 661, 662, 663
  IBM and, 662–663
Linux Gazette, 47
Linux Gazette/LinuxFocus, 148
Linux Kernel Development pattern, 715
Linux Loader (LILO), 29, 120–122, 133–135
Linux Shell Scripting with Bash (Sams, 2004), 405
Linux Terminal Server Project (LTSP), 208, 731
listen.conf file (Apache web server), 451
listing files, 56–57, 347
listings, code. See code listings
Live CDs/DVDs
non-SUSE, 391
openSUSE, 390
Live Linux CDs (Prentice Hall, 2006), 391
`ln` command, 59
local filesystems, defined, 98
`locate` command, 61, 354–355
logcheck, 186–188, 330
logging, 175–191
in `/var/log`, 176–177
basics of, 175–176
facilities, 178–179
log definition, 183–184
log destination, 181, 183
log files, reading, 190–191
log levels, 179
log source, 181–182
logcheck, 186–188
managing with logrotate, 184–186
with syslog, 177–180
with syslog-ng, 181–184
Webalizer, 188–190
logging dropped packets (firewalls), 613–614
Logical Partition (LPAR) technology, 662
logical partitions, 78–79, 84–85, 662–663
logical unit numbers (LUNs)
basics of, 672–673
defined, 671
sharing, 674
logical volume management (LVM), 86–87
logical volumes (partitions), 86–87
login
Login Manager (KDE), 212
remote graphical, 205–206
secure, 73–74
stopping brute force, 613
logrotate, 184–186
logs
CUPS, 536
log definition, 183–184
log destination basics, 181, 183
log files, reading, 190–191
log levels, 179
Squid, 651–652
loopback addresses, defined, 169
loopback traffic (firewalls), 612
`lpadmin` command, 534, 535
LPAR (Logical Partition) technology, 662
`lpoptions` command, 534, 535
`lpq` command, 526–527
`lprm` command, 527
`lpstat` command, 536
`ls` command, 347–350
`ls` (list) command, 56–57
LSB (Linux Standards Base), xi
`lsof` (list open files) command, 105
LTSP (Linux Terminal Server Project), 208, 731
LUNs. See logical unit numbers (LUNs)
Lutz, Mark, 409
LVM (logical volume management), 86–87

M
mail
clients, selecting, 498–500
Evolution and, 215
Fetchmail, 493–494
GNOME mail client, 215
kmail, 499
mail exchangers (DNS), 565
parameters, specifying, 489
public mailing lists, 153
Receive System Mail option, 23
from scripts, 404–405
mail command
  basics, 497–498
  shell scripts and, 404–405
Mail Delivery Agents (MDAs), 467. See also
  IMAP; POP3
mail servers, 467–500
  basics of, 467
  Cyrus IMAPD. See Cyrus IMAPD
  exim, 491
  Fetchmail, 493–494
  mail client, selecting, 498–500
  mail systems on Linux, 500
Postfix. See Postfix
  Qpopper, 491–493
  sending and receiving, 468–469
  sendmail. See sendmail
  specifying, 487–488
Mail Transfer Agents (MTAs). See also Postfix;
  sendmail
  basics of, 467
  Exim, 491
  testing from command line, 468–470
Mail User Agents (MUAs), 467
  mailbox_size_limit (Postfix), 478
  mailbox_command (Postfix), 477
  mailboxes, shared, creating, 496–497
  mailbox_transport (Postfix), 477
  mail_owner (Postfix), 473
  mail_path (Postfix), 474
  mail_spool_directory (Postfix), 474
  main server (Apache), 453–454
  make gconfig option, 720
  Makefile, 721
  Making Use of Python (Wiley, 2005), 409
  man command, 55–56, 142
  man (manual) pages, 141–144
  manipulating text. See text, manipulating
  manpage_directory (Postfix), 474
  Mansfield, Niall, 173
  Mantel, Hubert, xxxiii
  manual installation of SUSE, 4
  manual mounting of file systems, 98
  manuals (SUSE), 140–141
maps
  NIS, 621, 622
  partition maps, 82
  Marowski-Brée, Lars, 338
  masking (LUN), 673
  masks. See network masks; subnet masks
  masquerade_classes (Postfix), 475
  masquerade_domains (Postfix), 476
  masquerade_exceptions (Postfix), 475,
  481
  masquerading outgoing connections, 616
  Master Boot Record (MBR), 120
  Mastering UNIX Shell Scripting (Wiley, 2003),
  405
  Matthew, Neil, 328
  max-lease-time command, 549–550
  Maximum Apache Security (Sams), 459
  MBR (Master Boot Record), 120
  mc (midnight commander). See midnight
  commander (mc)
  McCool, Robert, 447
MDAs. See IMAP; Mail Delivery Agents (MDAs);
  POP3
  Memory Test when booting, 7
  Merlino, Joe, 409
  message_size_limit (Postfix), 479
  Metacity window manager, 215
  metadata (filesystems), 88
  Michael, Randal K., 405
midnight commander (mc)
  extracting files from packages and, 71
  as file manager, 353
  finding files with, 356–357
migration, Xen hypervisor and, 708–709
mkdir (make directory) command, 58
mke2fs utility, 92–93
mkfs command, 392
mkfs scripts, 92
mkinitrd command, 113
modems
  cable modem connections, 41
  configuring, 39–40
modes (emacs), 312–314, 316
modules (YaST), 228–234
monitors, changing configuration, 43–44
Moody, Glyn, xxxii
more command, 60
Morgan, Clark, 463
mount command, 68–69
mounting CDs/DVDs, 102–103
mounting filesystems
  automatic, 104
  basics of, 68–69, 98
  mount options, 99–102
  NFS, 575–579
  unmounting filesystems, 105–106
moving files, 57, 350
mp3 files, support for, 363
mpage, 291
mplayer package, 363
MS-DOS, Linux and, 683
MTAs. See Mail Transfer Agents (MTAs); Postfix; sendmail
MUAAs (Mail User Agents), 467
multi-processing modules (MPMs), 448, 453
multiboot
  defined, 128
  multiboot systems, 16
multimedia formats, opening files and, 363
multiple desktops (KDE), 212
mutt command, 497, 498
mv (move) command, 57, 350
MX records (DNS), defined, 562
mydestination (Postfix), 476, 480–481
myhostname (Postfix), 476
mynetworks (Postfix), 479, 480
-n option
  default routes and, 416
  sorting lines numerically and, 275

N
name-based virtual hosting, 455
name server (NS)
  entries, 565
  records, 562, 569, 570
Name Service Cache Daemon (NSCD), 642–643
named.conf, adding zones to, 566
naming
  configuring names (DHCP), 548
  domain names, setting, 33–34
  host name of Linux machines, 33–34
  of network interfaces, 414
  renaming files, 350
NAS (Network Attached Storage), 671
NAT. See Network Address Translation (NAT)
Nautilus
  basics of, 215
  browsing for shares and, 505
  as file manager, 352–353
  finding files in, 356
navigating
  text, 300–302
  using emacs, 310–311
NBD (network block device), 208
ndiswrapper, 41, 437–439
Negus, Christopher, 391
netfilter firewalling code, 604
netfilter targets, 604
NetWare, IPX and, 423
network access, configuring, 33–45
  basics of, 33–37
  cable modem connections, 41
  connection/online updates, testing, 38–39
  default gateway, 37–38
  hardware, configuring, 43–45
  ISDN/ADSL connections, 40–41
  modems, configuring, 39–40
  release notes, configuring, 42
  SuSEconfig, 42
  user management, 41
  wireless networking, 41
Network Address Translation (NAT)
  basics of, 169
  DNAT, 610–611
  NAT option, defined, 697
  SNAT, 607–609
Network Attached Storage (NAS), 671
network block device (NBD), 208
network cards, 34–36, 419–420
network component (IP addresses), defined, 166
Network File System (NFS), 573–585
  basics of, 575
  clients, defined, 575
  mounting, 575–579
  NFS servers. See servers (NFS)
  security, 585
Network Information Service (NIS) for authentication, 619, 620–627
  basics of, 620
  clients, configuring for, 625–627
  NIS servers, setting up manually, 622–625
  NIS servers, setting up with YaST, 620–622
  user management and, 41
network layer, 161, 162, 164
network masks
  address classes and, 167
  defined, 166
  NIS servers and, 622, 623
  vs. subnet masks, 171–172
network modules (YaST), 230
network printer types, 241
network service modules (YaST), 230–231
Network Time Protocol (NTP) services, 237–239
network tools, 424–434
  basics of, 424–425
  packets, tracing, 433–434
  rsync, 431–432
  SSH, 427–431
  Telnet, 425–427
  wget, 432–433
networking (Linux), 411–444
  IP networks, configuring. See IP networks, configuring
  network configuration, 411
types of, 697
NetworkManager, for network configuration, 440
networks
  basics of, 159–160
  connections, 73–74
  printer server setup on local, 527–529
  printing to network printers, 530–531
networks (Linux), 159–173
  basics of, 159–160
  cards. See cards (network)
  Internet basics, 160–161
  routing, 172–173
  specifying mail connections, 487
  TCP/IP. See TCP/IP
  troubleshooting, 435–436
NEW connection packet, 606
New Technology File System (NTFS), 91, 132
newaliases path (Postfix), 474
Newham, Cameron, 405
newline characters conventions, 288
news sites (Linux), 157
NFS. See Network File System (NFS)
NIS. See Network Information Service (NIS) for authentication
nl command, 273–274
NLD (Novell Linux Desktop) 9, 732
noatun, 363
noht/noacpi kernel parameters, 30
non-routable IP addresses, 168–170
Norton, Peter C., 409
Novell
  AppArmor modules (YaST), 232
  Customer Center, 152–153
  Linux and, 660
  NetWare, IPX and, 423
  Novell Linux Desktop (NLD) 9, 732
  tech support and, 666
NS. See name server (NS)
NSCA HTTPd web server, 447
NSCD (Name Service Cache Daemon), 642–643
nslookup, dig and, 561
NSS, 633, 642
ntfs-3g user-space driver, 91
NTFS (New Technology File System), 91, 132
NTP (Network Time Protocol) services, 237–239
numbers
  line numbers, adding, 273–274
  numbering lines from files, 270–271
numerical permissions, 66
NVIDIA hardware, 220–221
NX software, 208
-o loop option, disk images and, 392, 393

O
obexftp command, 442
objects (LDAP), 629–630, 635
office formats, opening files and, 364–367
online help. See also documentation (SUSE)
  for Linux commands, 55–56
  vim, 306
online updates, testing, 38–39
open protocols, defined, 161
open relays, defined, 471
open source software, finding, 156
Open Systems Interconnect (OSI) model. See
  ISO OSI model
Openbox window manager, 217
OpenOffice.org
  basics of, 728
  file formats, 366–367
  Microsoft and, 729
  opening files and, 364–365
openSUSE. See SUSE
openSUSE Reference, 140–141
Opera for Windows (Wine and), 687–688
operating systems
  partitions, resizing, 16
  security of, 660
operating systems (continued)
    selecting for virtual machines, 703
    tech support and, 470
Opteron, 664
Oracle, Linux and, 659
ordered journaling mode (EXT3), 89
Orwant, Jon, 410
OUTPUT chains, 602–603
output/input, redirecting (commands), 54–55
ownership, file, 64–67

P
packages
    compiling source, 72–73
    defined, 319
    extracting files from, 71–72
    installing with YaST, 69
    package manager (YaST), 26–28
    RPM, 69–71
packets (firewalls)
    forwarding, 609–610
    logging dropped, 613–614
    packet filters, 600
packets (IP), tracing on networks, 433–434
PADL, 633
page log (CUPS), 536
pager commands, 60
palmcoder.net Zone, 563
PAM. See Pluggable Authentication Modules
    (PAM)
parameters
    global (SWAT), 517–518
    kernel, at boot time, 725
    positional, defined, 401
    paravirtualization, defined, 684, 701
Park, Joyce, 463
parted command, 386, 390
parted (Partition Editor) utility (Linux), 78,
    130–131
PartitionMagic, 390
partitions, 385–392
    basics of, 385–386
    changing types of, 85–86
    commercial utilities for, 390
    configuration, saving, 77
    creating, 80–82
    customizing at installation, 25
    data partitions, 21–22
    defined, 77
    extended partitions, creating, 83–84
    fdisk for, 78, 387–388
    filesystems, creating, 391–392
    logical partitions, creating, 84–85
    logical volume management, 86–87
    manually partitioning existing Windows
        systems, 130–132
naming, 125
non-SUSE Linux Live CDs/DVDs, 391
openSUSE Live CDs, 390
OS partitions, resizing, 16
overview of, 77
parted command, 390
partition maps, 82
partition tables, master boot record and, 78
partition tables, updating, 85
partitioning disks, 14–16
primary and extended, 17–18
root, 19–21, 125
sharing data on Windows/Linux, 132–133
swap partitions, 18–19
types of, 78–80
YaST's partitioning module, 78, 386, 387,
    388–390
Partner Linux Driver Process, 723
passphrases, defined, 428
passwords
  ACL on LDAP servers and, 643
  booting and, 380
  creating users and, 23
  for Cyrus users, 495
  encrypted (LDAP), 632
  LDAP, 632
  NIS and, 621, 626–627
  PAM, 641, 642
  `passwd` command, 380
  password files (Samba), 513–514
  resetting root, 136
  Squid and, 650
  for system administrators, 23
`paste` command, 282–283
`patch` command, 292–293
PATH environment variable, 51
pattern matching in Linux shells,
  53–54
patterns and products (RPMs), 346
`pax` tool
  basics of, 75
  for unpacking archives, 372–373
PDCs (primary domain controllers), Samba and,
  512–513
PDF format, opening files and, 361
`pdftotext` command, 294
periods (.), domains and, 563, 564
Perl
  basics of, 405–406
  Perl Archive Network (CPAN), 409
  Perl CGI script, 460
  resources, 409–410
  Squid log reading and, 407–408
`Perl For Dummies` (Wiley, 2003), 409
`Perl Weekend Crash Course` (Wiley, 2001),
  409
permissions, file, 64–67
person Object Class (LDAP), 637
Phoenix, Tom, 410
PHP (PHP Hypertext Preprocessor) for dynamic content, 462–464
`PHP5 and MySQL Bible`, 463
physical layer, 161, 162, 164
physical volumes (partitions), 86–87
ping, 435
piping command output, 60
Pluggable Authentication Modules (PAM)
  basics of, 190–191, 640–642
  LDAP and, 633
  PAM/NSS, 633
pointers
  Pointer records, defined, 562
  reverse zones and, 567
POP3, 491, 492, 494
port scanning, 601
portmap, NFS and, 576
positional parameters, defined, 401
post-install scripts (AutoYaST), 265–266
Postfix, 470–485
  always-on servers, configuring, 482
  basics of, 470–471
  configuring, 471–479
  dial-up server configuration, 483
  HELO/EHLO, 477
  integrating with Cyrus IMAPD, 497
  Internet-friendliness and, 497
  relay policy, 479–480
  spam, combating, 484–485
  virtual domains, creating, 480–481
postfix daemon, 63
POSTROUTING chain, 607–609
Index

PostScript
    basics of, 360–361, 520
    files, 290–291, 295
    printing in Linux and, 520
    psnup and mpage, 291
PostScript Description (PPD) files
    defined, 520, 522
    YaST printing and, 522, 523
PostScript Language Reference, 520
PostScript Language Tutorial and Cookbook, 520
PPD files. See PostScript Description (PPD) files
PPK (Public Private Key) pair, 428–429
pr command, 289
Practical TCP/IP (Addison Wesley, 2003), 173
pre-install scripts (AutoYaST), 265–266
Preboot Execution Environment (PXE), 208
preferences (user), configuring, 67–68
Prefork module, 451, 452
%prep section (RPM), 331
presentation layer, 162, 164
primary domain controllers (PDCs), Samba and, 512–513
primary partitions, 17–18, 78
print services, 670
printer types, network, 241
printers
    configuring (YaST), 239–242
    Windows, accessing Samba with, 506–509
printing
    formatting text for, 289–291
    on Linux, 154
printing with CUPS, 519–538
    basics of, 519
    documentation, 537–538
local printer setup with YaST. See YaST for
    printer setup
PostScript and, 520
    printer configuration and, 239
    printing in Linux, 520
    private keys, SSH and, 428–430
    privileges, root/user/group, 582
problems. See also Rescue System; system rescue
    and repair; troubleshooting
    failure to start X Window system, 201
products and patterns (RPMs), 346
profiles, boot, 120
program directory (Postfix), 476
Programming Perl (O’Reilly, 2000), 410
Programming Python, 3rd edition (O’Reilly, 2006), 409
PROMISC flag, 412
proxies
    proxy settings (YaST), 237–239
    transparent (Squid), 651–652
    web proxies. See Squid
ps -p command, 490
PS1 environment variable, 51
ps2ascii command, 294
ps2pdf command, 295
pSeries (IBM), 663
psnup, 291
PTR records, creating, 569, 571
public keys, SSH and, 428–430
public mailing lists, 153
pure-ftpd, 596
PuTTY ssh client, 73, 206
pwd (present working directory) command, 58
PXE (Preboot Execution Environment), 208, 262
Python
  basics of, 405–406
  resources, 409
  Squid log reading and, 407, 408
  *Python Essential Reference, 3rd edition* (Sams, 2006), 409

Q
QEMU
  virtualization and, 684, 692–695
  vs. VMware Server, 697
Qlogic driver, 674–675
Qpopper, 491–493
Qt license, 213
querying RPM packages, 322
QUESTION section (*dig*), 561
queue_directory (*Postfix*), 473

R
ramdisk, initial, 111, 113
Rankin, Kyle, 391
Raymond, Eric, xxxii, 62
renamed command, 560
renfs start/stop commands, 578
renfs_server start command, 579
renfservicename commands, 116–117
rcsquid start command, 646
reading log files, 190–191
readme_directory (*Postfix*), 474
realplay command, 363
*Rebel Code: Linux and the Open Source Revolution*, xxxii
Receive System Mail option, 23
record types (DNS), 562
recovery. See disaster recovery (DR)
*Red Book*, 520
redirecting traffic (firewalls), 611
redo command (*vi/vim*), 303
refresh rate, DNS and, 564
regular expressions, *grep* command and,
  277–278
ReiserFS
  advantages and capabilities, 89–90
  creating, 96–97
  mount options, 101
Reisner, Philip, 676
REJECT targets, 604
RELATED connection packet, 606
relayhost (*Postfix*), 476, 483
release notes, configuring, 42
relocated_maps (*Postfix*), 475
remote filesystems, defined, 98
remote graphical connections (X Window), 206–207
remote graphical login (X Window), 205–206
remote printers, printing to, 530–531
removing. See also deleting
  partitions, 17
renaming files, 57
repar. See system rescue and repair
Repair Installed System at installation, 6, 11
Request for Comment documents (RFCs), 160–161, 539
Require directive, 458
Rescue System
  basics of, 135–137
  booting into, 380–381
  for booting SUSE, 6–7, 113
reset command, 272
resizing partitions, 389
resolutions, switching, 201
resources. See also web sites for downloading; web sites for further information

FTP, 597
Perl, 409–410
Python, 409
shell scripts, 405
SLED, 733
restoring Linux files, 74–77
retry rate, 564
Reveman, Dave, 219–220
reverse zones, DNS servers and, 567–568
RFC 2131, 539
RFCs, 160–161, 539
rm (remove) command, 58, 350, 351
rmdir command, 59
Robbins, Arnold, 285
root (/) partition, 19–21
root, partitions and, 125
root’s mail aliases (Cyrus IMAPD), 498
root_squash option (NFS), 582
Rosenblatt, Bill, 405
totable address, defined, 168
route command, 417
routes
    configuring with ip command, 421
default routes, assigning (DHCP), 547–548
iproute2, 547–549
network routes, 416–418
routed service, 419
to specific IP addresses, 418
routing, Linux networks and, 172–173
rpcinfo command, 584
RPM packages
    1-click installation, 340–343
    basics of, 69–71
    binary RPMs, 320
    checking finished RPMs, 336–337
    command-line installation tools, 343–346
    compiling from spec files, 334–336
    creating, 327
distribution RPMs, 327
    finding packages that own files, 323
    installation sources, 337
    installing, 320–322
    listing files in, 322–323
    listing packages installed on systems, 324
    overview of, 319–320
    patterns and products, 346
    querying, 322
    removing installed, 324–325
    rpmbuild program, 334
    rug command-line tool, 343–345
    source code, compiling, 327–328
    source directories, 329
    source RPMs, 72
    spec files. See spec files (RPMs)
    unpacking, 372
    verifying, 325–326
    YaST installation sources module, 338–340
    zypper command-line tool, 343–346
rsync, 431–432
t (Rich Text Format), 365–366
Ruby scripting language, 405
rug command-line tool (RPMs), 343–345
rules (firewalls), 605–607
runlevel command, 118
Runlevel Editor (YaST), 247–248
runlevels
    basics of, 114
    changing default, 31
    chkconfig commands to control, 118–119
    customizing, 25, 119–120
    fixing problems with, 133–135
    switching manually, 115–118
Russell, Rusty, 600, 710
rw option (NFS), 581

S

Samba, 501–518
  ACLs and, 376
  basics of, 501–502
  configuration file, 515–516
  enterprise architecture and, 670
  packages, 502
  password files, 513–514
  primary domain controllers and, 512–513
  Samba client. See clients (Samba)
  SWAT, 517–518
  Winbind daemon, 514–515
  YaST’s Samba Server module, 509–513
Samba Web Administration Tool (SWAT), 517–518
Samba3 By Example, 502
Samba3 Developers Guide, 502
Samba3 HOWTO, 502
sample_directory (Postfix), 474
SAN. See storage area networks (SAN)
sarg (Squid Analysis Report Generator), 651, 652
saving
  configuration of partitions, 77
  files (vi/vim), 307
Sawfish window manager, 215
sax2 tool, 197–198
scanners
  setup (YaST), 242–243
  support, 154
schema files (LDAP), 636
Schwartz, Randal L., 410
scp, 74
scp command, 431
ScriptAlias directive, 459
scripting languages
  comments and resources, 408–410
  Perl, 405–406
  Python, 405–406
  Squid log reader, 406–408
scripts
  shell. See shell scripts
  YaST, 265–266
searches
  DNS and, 558–559
  grep command and, 276–277
  LDAP, 640
searching
  in emacs, 311
  files, with grep command, 60–61
searching/replacing, with vi/vim text editor, 305–306
secure copy, SSH and, 431
secure shell (ssh)
  integration with Konqueror, 211
  for login, 73
security
  Apache web server, 456
  EAL security certifications, xi
  FTP, 587–588
  Linux and, 470, 660
  NFS server, 585
  Postfix, 471
  security modules (YaST), 232
  SSH and, 425, 427, 428
  Telnet and, 424, 425
  uploads and, 588
  users modules (YaST), 232
sed & awk (O’Reilly, 1997), 285, 287
sed command, 286–287
semi-colons (;), forwarders and, 560
sender_canonical_maps (Postfix), 475
sendmail, 485–491
basics of, 485, 490
configuring, 486–490
installing, 485–486
starting, 490
virtual domains, defined, 481
sendmail_path (Postfix), 473
sentences, separating with spaces, 290
serial numbers (SOA), 564
Server Message Block (SMB). See also Samba
basics of, 501, 502
printing to network servers, 530–531
SMB/CIFS shares, mounting, 503–504
server-tuning.conf file (Apache web server), 451
servers. See also mail servers
CUPS servers, 529–530
DHCP servers, configuring with YaST. See YaST DHCP server
DHCP servers, manually configuring, 547–550
DHCP, troubleshooting, 553–555
hardware and, 662
installation, 258–261
interaction with clients (DHCP), 540
LDAP. See LDAP server
NIS servers, setting up manually, 622–625
NIS servers, setting up with YaST, 620–622
VMware Server, 696–697
YaST's Samba Server module, 509–513
servers (NFS), 579–585
basics of, 579–580
defined, 575
exportfs command, 582–583
exports file, 580–582
problems with mounting shares, 584–585
security and, 585
setting up installation source from, 234–236
showmount command, 583–584
Service Location Protocol (SLP), 258
session layer, 162, 164
setgid_group (Postfix), 474
settings, installation, 24
sfdisk, 78
sftp, 74
grep command, 279
shadow files, defined, 136
shared storage, 674
sharing
desktops, 207
files. See Network File System (NFS)
resources. See Samba
shell scripts, 397–405
basics of, 49, 397–398
case statements, 403–404
defined, 49, 397
file tests, 402–403
limits of, 405
mailing from, 404–405
resources, 405
shell variables, 398–402
shells (command interpreters)
bash shell. See bash shell
basics of, 48–49
showmount command (NFS), 583–584
simple mode (Runlevel Editor), 247–248
SLD (SUSE Linux Desktop), 732
SLED. See SUSE Linux Enterprise Desktop (SLED)
SLES. See SUSE Linux Enterprise Server (SLES)
SLES 10 Storage Administration Guide, 680
slst command, 423
SLP (Service Location Protocol), 258
SMB. See Server Message Block (SMB)
smbclient command, 503
smb.conf default file, 516
smtpd_use_ils (Postfix), 478
smtpd_client_restrictions (Postfix), 477
smtpd_helo_required (Postfix), 477
smtpd_recipient_restrictions (Postfix), 478
smtpd_sender_restrictions (Postfix), 477
smtp_sasl_auth_enable (Postfix), 478
SNAT (Source NAT), 607–609
SOA. See Start of Authority (SOA)
soft mounts (NFS), 577
software
customizing at installation, 25–26
licensing, xli–xlii
maintenance, xlii
for other systems, Linux and, 683
software for installation, 25–28
software modules (YaST), 228
Software Repositories, 338–341
support, xlii
sort command
RPMs, 324
SUSE Linux, 274–275
sound cards, configuring, 44–45
sound/multimedia formats, opening files and, 363
source code
compiling (RPMs), 327–328
downloading, xxx
open source code development model, xxxi
tar archives, 370–371
source directories (RPM), 329
Source NAT (SNAT), 607–609
source packages, compiling, 72–73
source RPMs, 72
spam, combating (Postfix), 484–485
SPCM (SUSE Configuration and Profile Manager), 245–247
spec files (RPMs)
%build macro, 332–333
%clean macro, 333
%files macro, 333
compiling RPMs from, 334–336
defined, 327
RPM header, 329–331
RPM %prep section, 331
spell checking mode (emacs), 316
spinning cube, 220–222
split command, 280
split windows, browsing with (Konqueror), 210
Squid, 645–654
access, restricting, 650–651
basics of, 645
Cache Manager, 653
getting started, 646–648
Squid Analysis Report Generator (sarg), 651, 652
Squid log, 651–652
Squid log reader, 406–408
squidGuard, 654
as transparent proxy, 652–653
user authentication, 648–650
SSH
public and private keys and, 428–430
secure copy and, 431
security and, 425, 427, 428
for virtual terminal services, 427–431
ssh-copy-id command, 430
ssh-keygen command, 429
ssh (secure shell)
integration with Konqueror, 211
for login, 73
staff requirements, Linux and, 661
Index

Stallman, Richard, 308
standard input/output streams, 55
Start of Authority (SOA)
  SOA records, 562, 563, 564
  SOA servers, 563–564
Start scripts (runlevels), 115–117
Start-Up book, 141
starting
  Apache web server, 448–450
  CUPS servers, 529
  DHCP clients, 550–551
  emacs from command line, 308–310
  installation of SUSE, 5–10
  sendmail, 490
  Squid, 647, 648, 649
  Ubuntu installation, 697, 698
startup configuration (YaSTs Samba Server module), 509–510
stateful firewalls, 600, 604–605
Steinbild, Burchard, xxxiii
storage area networks (SAN), 670–675
  accessing, 672–673
  accessing Windows printers with, 674–675
  architecture of, 671–672
  basics of, 670–671
  iSCSI, 671–672
  LUN, 673
  NAS, 671
  Qlogic driver, 674–675
  shared storage, 674
strict fc821 envelopes (Postfix), 478
strings command
  basics of, 296
  examining files with, 360
strings, variables representing, 400
structured grep, 279
subnet masks, 171–172
subnetting, 170–172
subtree_check option (NFS), 580
suid root (set user ID upon execution), 65
superblocks, defined, 100
support. See tech support
SUSE
  Apache server packages in, 448
  basics of, x–xi
  Book Package, 150–151
  Build Service, 151
  hard-to-find documents, 154
  help sites, unofficial, 153–154
  history of, xxxiii–xxxvi
  IRC, 157
  manuals, 140–141
  opensuse-updater, 256
  public mailing lists, 153
  SUSE FAQs, unofficial, 153
  web site, 151–152
SUSE Configuration and Profile Manager (SPCM), 245–247
SUSE installation, 3–46
  boot options, selecting, 6–8
  completing, 45–46
  customizing. See SUSE installation, customizing
  language settings, configuring, 8–10
  method of, selecting, 4–5
  mode of, 11–12
  running installation. See SUSE installation, running
  starting installation, 5–6
SUSE installation, customizing, 12–31
  basics of, 24–25
  boot loaders, 28–31
  desktop environment, 13–14
  disk partitioning, 14–16
filesystems, defining, 18–22
installation settings, 24
primary and extended partitions, 17–18
resizing operating system partitions, 16
runlevel, 31
software for installation, 25–28
users, creating, 23
SUSE installation, running, 32–45
basics of, 32–33
network access, configuring. See network access, configuring
SUSE Linux Desktop (SLD), 732
SUSE Linux Enterprise Desktop Administration (Delmar, 2008), 733
SUSE Linux Enterprise Desktop (SLED)
aplications and, 729–730
availability of, 727
basics of, xxxviii–xxxix, 727–728, 732
core office functionality, 729
future of, 732–733
installation of, 3
other approaches, 731
other choices, 730
resources, 733
SLD, NLD, SLED, 732
specialist applications and, 729–730
thin client version of, 731
SUSE Linux Enterprise Server (SLES)
basics of, xxxvii–xxxviii
BIND packages and, 560
installation, 3
SLES 10, 671, 674, 675
SLES 10 Storage Administration Guide, 680
YOU on, 255–256
SUSE Rescue System, 135–137
SuSEconfig, 42
SuSEfirewall2, 652
SuSEfirewall2 script, 614–618
swap partitions, 18–19
swap space, 18–19
SWAT (Samba Web Administration Tool), 517–518
Sweet, Michael, 537
symbolic links to files, 59
sync option (NFS), 580, 581
synchronous IO, defined, 180
sysfs, 103
syslog, 177–180
syslog-ng, 177, 181–184
system modules (YaST), 229–230
System Repair mode, booting into, 381–385
system rescue and repair, 379–385
booting from hard disk, 380
booting into Rescue System, 380–381
booting into System Repair mode, 381–385
-t option
finding domain records using, 562
listing archived files with, 369
ls command and, 348
querying with dig and, 560
tables, updating partition, 85
tabs
converting to spaces, 273
replacing, 271
tac command, 60, 272
tail command, 51, 60, 272–273
tainting kernels, 723–724
tar archives, 73, 369–371
targets
iptable, 604
netfilter, 604
Index

-Tascii, groff and, 289
tasks, automating. See automating tasks
Taylor, Dave, 405
TCP/IP. See Transmission Control Protocol/Internet Protocol (TCP/IP)
TCP (Transmission Control Protocol), 163, 577
tcpan command, 553–555
tcpan tool, 433
tech support	emacs, 318
Linux enterprise hardware, 666
Novell, 666
operating systems and, 470
software, xl11i
telinit command, 115
Telnet
security and, 424, 425
Telnet servers, 73
telnet testing, POP3 with, 492
testing with, 426–427
virtual terminal services and, 425
testing
bonnie/bonnie++ for filesystem testing, 98
connection to Internet, 38–39
DHCP, 552
file tests, 402–403
LDAP server, 632–633
MTAs, 468–470
online updates, 38–39
POP3, 492
with Telnet, 426–427
testparm utility (Samba), 516
TeX
basics of, 295
DVI files and, 361
files, 362
text consoles, switching, 201
text editors
emacs. See emacs (editor macros)
overview of, 297–298
variety of, 298
vi/vim. See vi/vim text editor
text, manipulating
copying/pasting (vi/vim), 304–305
deleting (vi/vim), 302–304
editing with vi and emacs, 61–62
fields from text files, working with, 281–285
lines from files. See lines from files
navigating (vi/vim), 300–302
replacing, 285–289, 311
text files, formatting, 289–291
text from other file formats, 293–296
TFTP (Trivial FTP) server, 262
The Cathedral and the Bazaar, xxxii
The Hitchhiker’s Guide to the Galaxy, xxxiv
themes (KDE), 211
thin client version of SLED, 731
Thunderbird, 500
time to live (TTL), 565
time zone, selecting at installation, 12, 25
TLDs. See top-level domains (TLDs)
tools. See also network tools
for booting. See system rescue and repair
command-line tools (CUPS), 534–536
DHCP, 540
PADL migration tools, 633
for partitioning. See partitions
for printer setup (YaST), 537
for text manipulation, 269–270
top-level domains (TLDs)
basics of, 558
Postfix, 484
topic-specific sites, 154–155
Torvalds, Linus, 447
touch command, 67
tr command, 287–288
traceroute, 436
traffic
  allowing ICMP, 612
  loopback (firewalls), 612
  redirecting (firewalls), 611
trailing spaces, LDIF files and, 635
Transmission Control Protocol/Internet Protocol (TCP/IP), 161–172
  ARP and, 422
  basics of, 160–161
  connection vs. connectionless protocols, 163
  DoD model, 165
  IP addresses. See IP addresses
  ISO OSI model, 161–164
  packets, 601–603
  ports, defined, 427
Transmission Control Protocol (TCP), mounting NFS and, 577
transport layer
  basics of, 162
  connection vs. connectionless protocols, 163
  uses of, 164
transport_maps (Postfix), 475
trees
  directory trees, archiving, 369
  directory trees, backing up, 371
  storing information in (LDAP), 628, 629, 630, 631
Tridgell, Andrew, 501–502
Trivial FTP (TFTP) server, 262
Trolltech, 195
troubleshooting
  DHCP clients, 551–553
  DHCP servers, 553–555
  IP networks configuration, 435–436
  Linux networks, 435–436
  logging and, 175
  mounting NFS shares and, 584–585
  runlevels, 133–135
  TTL (time to live), 565
  tune2fs command, 96
U
U, defined, 665
-u option, skipping duplicate lines and, 275
Ubuntu, VMware installation, 697, 698
udev, 103
udev kernel device management subsystem, 414
UDP (User Datagram Protocol), 163, 577
uid.conf file (Apache web server), 451
undo command
  emacs, 311
  vi/vim, 303
uniq command, 274
Unix, enterprise staff requirements and, 661
unix2dos, newline characters and, 288–289
unknown local_recipient_reject_code (Postfix), 473
unmask, user, 67
unmounting filesystems, 68–69, 105–106
unpacking
  archives, 370, 371
  RPM packages, 372
unset command, 52
updates (connection/online), testing, 38–39
updating partition tables, 85
upgrading
  EXT2 to EXT3 (filesystems), 95–96
  kernel packages, 714
uploads
  allowing with FTP, 594–596
  security and, 588
user data, adding to LDAP servers, 636–640
User Datagram Protocol (UDP), mounting NFS and, 577
user preferences
configuring, 67–68
in X Window system, 202
useradd command, 63–64
users
adding/editing with YaST, 249–251
adding to Cyrus IMAPD, 495–496
creating at installation, 23
management of, 41
user access (Apache server), 457–458
user accounts, enterprise architecture and, 669–670
user authentication. See authentication
user FTP, setting up, 593–594
user groups, 157
user space, defined, 601
users modules (YaST), 232
users and groups
creating, 63–64
groupadd and groupmod commands, 64
overview of, 62–63
/usr/share/doc/packages/ directory, 146–147
utilities. See also EXT2 filesystem; EXT3 filesystem
dhcpcd-test, 552
Explore2fs, 133
mke2fs, 92–93
parted utility (Linux), 78, 130–131
for partitioning, 390
psutils package, 291
testparm (Samba), 516
xfs86config, 194
xorgcfg, 194

V
-v (verbose) option, 122
vanilla kernels, 712
/var/log, 176–177
variables
DISPLAY environment variable, 202–204
environment variables, 50–53
setting (emacs), 316
shell variables, 398–402
strings, variables representing, 400
Venema, Witse, 470
verification output (RPM), 326
VFAT (Virtual File Allocation Table) filesystem, 91, 132
VFS (virtual filesystem), 88
vi/vim text editor
basics, 298–300
command mode, 300
copying/pasting, 304–305
deleting, 302–304
exiting, 307
initialization file, 306–307
inserting/saving files, 307
navigating, 300–302
searching/replacing, 305–306
undoing/redoing, 303
vi (visual) text editor, 61–62
viewing
files, 60
formatting text for, 289–291
virtual adapters, 415
virtual domains
defined, 481
Postfix, 480–481
virtual filesystem (VFS), 88
virtual hosts (Apache web server), 454–456
virtual interfaces, network configuration and, 415
Virtual Network Computing (VNC), 206–207
virtual terminal services, 425
VirtualBox, 698–699
virtualization. See also emulation and virtualization
defined, 684
vs. emulation, 683–684
enterprise architecture and, 675–676
modules (YaST), 233
using QEMU, 692–695
with VirtualBox, 698–699
with VMware, 695–698
with Xen hypervisor. See Xen hypervisor
virtual maps (Postfix), 474–475
VMware
migration and, 708
virtualization and, 684, 695–698
VMware Server, 696–698
VMware Server vs. QEMU, 697
Volkerding, Patrick, xxxiv
volume groups (partitions), 86–87
vsftpd
as FTP server, 588–592
setting up user FTP with, 593–594
VT-X, 702

W

Wainwright, Peter, 409
Wall, Larry, 410
Wammu, for viewing phone records, 442–444
warnings, YaST’s partitioning warning, 386
whinfo command, 515
wc command, 285
web interface (CUPS), 531–534
web proxies
enterprise architecture and, 670
setting up with Squid. See Squid
web shortcuts (Konqueror), 210–211
web sites for downloading
antword package, 294
ATI drivers, 220–221
Cygwin/X software, 207
desktop project, 214
diff and patch command manual, 293
GNU awk manual, 285
HOWTO collection on Samba, 515
Hummingbird Communications Exceed, 207
K3b handbook, 396
logcheck RPM, 187
LTSP, 208
mail packages for SLES, 491
NVIDIA drivers, 221
NX software, 208
open-click installers, 363
packages for mplayer, 363
PADL migration tools, 633
PostScript, 520
PuTTY ssh client, 73, 206
QEMU, 693
scanModem, 40
SLED ISO images, 733
source code, xxx
vanilla kernels, 712
Webpin search tool, 346
XConnectPro software, 207
web sites for further information
Acronis Disk Director, 390
ALSA, 45
Apache, 155
Apache web server, 468
AutoYaST, 266
Index

web sites for further information (continued)
  Blackbox window manager, 217
  Build Service search tool, 340–341
certifications, xxxvii, 666
classless addressing, 172
CUPS, 524, 537, 538
Debian, 157
dosbox and games, 685
DRBD on SLES, 680
DSL (Damn Small Linux), 391
emacs, 308, 315, 318
EXT2/EXT3 access utilities, 133
FVWM2 window manager, 217
GDI printers, 524
Gentoo, 157
Gnome, 155
gparted live CD, 132
graphics support, 155
grepmail package, 279
HOWTOs (LDP), 149
IBM Linux materials, 156
IceWM window manager, 218
IPP, 538
iptables, 618
ISOLINUX boot loader, 110
KDE, 155
kernel of the day, 724
kiwi image building tool, 733
Knoppix, 391
LDP, 56, 148
LDP FAQs, 149
licensing, xli–xlii
Linux Documentation Project, 56
Linux for enterprise customers, 665
Linux Gazette, 47
Linux Gazette/LinuxFocus, 148
Linux guides index, 149
Linux news, 157
Linux support, xliii
LSB, xi
LTSP, 731, 733
modems, 40
MySQL, 155
NFS HOWTO document, 585
Novell Customer Center, 151
ntfs-3g user-space driver, 91
open source software, 156
Openbox window manager, 217
OpenDocument Format, 367
OpenLDAP, 155
OpenOffice.org, 155
openSUSE, 151–152, 153
openSUSE 11.0 and SUSE Linux Enterprise
  Server Bible!, xxx
operating systems compared, 62
OSI and DoD models, 165
PartitionMagic, 390
Perl, 409
Postfix, 155, 485
PostScript, 520
PPD files, 522
printers, 524
printing on Linux, 154
pure-ftpd, 597
Python, 409
Qlogic, 672
Red Hat, 157
RFC 2131, 539
RFCs, 161
Samba, 155
scanner support, 154
scanners, 243
security issues, 714
sed command, 287
Index

W

sendmail, 485, 491
shell scripting, 405
SLES, 666, 714
Squid, 155
Squid cache, 653
subnetting, 172
SUSE documents, 154
SUSE FAQ and help sites, 153–154
SUSE printing, 537
Ubuntu, 157
virtual hosts, 456
vsftpd, 597
web server statistics, 447
Window Maker window manager, 218
Windows running on Wine, 690
Wine, 686
winmodems, 40, 154–155
wireless support, 155
Xen virtualization, 709
XFCE window manager, 218
X.org project, 193
web sites, setting up. See Apache web server
Webalizer, 188–190
Weber, Benji, 346
Weber, Stefan, 686
Webpin search tool, 346
weirdx (Java), 207
wget, 432–433
Wicked Cool Shell Scripts (No Starch Press, 2004), 405
wildcards in Linux shells, 53–54
Winbind daemon, Samba and, 514–515
Window Maker window manager, 218–219
window managers
basics of, 194–196
selecting, 216–219
windows
browsing with split (Konqueror), 210
wobbly, 219–220, 222
Windows
Disk Defragmenter, 129
installing as Xen virtual machine, 706
installing Linux on existing systems, 129
installing on new systems, 128
IPP printing on, 529–530
manual partitioning, 130–132
partitions and Linux, 86
printers, accessing with Samba, 506–509
QEMU and, 693, 694
remote graphical connections from, 206–207
sharing data with Linux partitions, 132–133
sharing with Linux. See clients (Samba)
Wine and, 683–684, 686–691
Wine
emulation and, 683, 686–691
SLED and, 729
wineboot command, 687
winecfg configuration tool, 690
winmodems
basics of, 154–155
compatibility with Linux, 39–40
wireless networking
basics of, 436–437
configuring, 439–440
installation and, 41
ndiswrapper, 437–439
wireless support, 155
Wireshark tool, 434
wizards
DHCP Server Configuration Wizard, 543
DHCP Server Wizard (YaST), 541–544
DNS Server module wizard (YaST), 572
wobbly windows, 219–220, 222
Index

word count (wc) command, 285
words
  separating with spaces, 290
word completion (emacs), 311–312
Worker MPM, 453
writeback journaling mode (EXT3), 89

X
-x option, ldapsearch command and, 633
X Window system
  configuring, 196
  copying/pasting in, 201
  diskless X terminals, 207–208
  DISPLAY environment variable, 202–204
  failure to start, 201
  framebuffer graphics, 198–200
  GNOME, 195–196
  GNOME desktop environment, 212–216
  hardware detection, 196–197
  history and overview of, 193–194
  KDE, 195–196
  KDE-compliant applications, 212–213
  KDE Control Center, 211–212
  remote usage of, 202–207
  resolutions, switching, 201
  sax2 tool (SUSE), 197–198
  text consoles, switching to, 201
  user preferences in, 202
  window managers, 194–196, 216–219
x86 systems, 110
Xandros, 730
xclipboard, 201
XConnectPro software, 207
XEmacs, 315, 317
XML (Extensible Markup Language)
  opening/editing files and, 364
  OpenOffice documents and, 367
  XML editors, 265
X.org project, 193
xorgcfg utility, 194
xpdf file viewer, 296
xpp tool, 537

Y
yanks (vi/vim), 304
YaST (Yet another Setup Tool)
  Apache web server, configuring with, 464–468
  AutoYaST (autoinstallation), 261–266
  basics of, xliii, 3, 225–227
  boot loader configuration, 243–245
booting into System Repair mode, 381–385
dependency conflict dialog (sendmail), 486
DNS Server module wizard, 572
DNS servers, configuring with, 568–573
exports file (NFS) and, 582, 583
groups, adding/editing with, 252–253
hardware configuration with, 43
hardware modules, 229
history of, 225–226
inetd module, 517
to install packages, 69
installation service module, 258–261
installation sources, configuring, 234–236
installation sources module (RPMs), 338–340
installing additional software with, 253–255
installing Squid and, 646
miscellaneous modules, 233
modules, accessing, 212
network modules, 230
network service modules, 230–231
NFS client module, 578–579
NIS clients, configuring using, 625, 626
NIS servers, setting up with, 620–622
Novell AppArmor modules, 232
NTP time services, 237–239
package manager, 26–28
partitioning module, 132, 387, 388–390
partitioning utility, 78
printer configuration, 239–242
proxy settings, 237–239
RPMs and, 320–321
Runlevel Editor, 247–248
for Samba client services, 505–506
Samba Server module, 509–513
scanner setup, 242–243
security and users modules, 232
sendmail and, 491
as services manager, 181
software modules, 228
SPCM, 243–247
system modules, 229–230
System Repair mode, booting into, 6
user model, 63–64
users, adding/editing with, 249–251
virtualization modules, 233
xinetd and, 588–589
yast2 dns-server command, 568
YOU dangers, 258
YOU module, 257
YOU on SUSE Professional and SLES, 255–256
YaST DHCP server, 540–547
basics of, 540–541
reconfiguring existing servers, 544–547
wizard, 541–544
YaST for printer setup, 521–537
basics of, 521–523
canceling printing, 526–527
CUPS basics, 523–524
CUPS command-line tools, 534–536
CUPS configuration files, 536
CUPS logs, 536
CUPS web interface, 531–534
on local networks, 527–529
PPD files, 522
printers not listed by YaST, 524
printing from applications, 524–525
printing from command line, 525–526
printing to other remote printers, 530–531
tools, 537
unsupported printers, 524
Windows clients and CUPS servers, 529–530

781
YOU (YaST Online Update)
  dangers of, 258
  module, 257
  on SUSE Professional and SLES, 255–256

Z
zcat command, 272
Zenworks management tools (zmd), 343–344
zgrep command, 278
zip archive format, 372
zipinfo program, 372
zones
  defined, 709
  defining, 569, 570
  DNS, 563–567
zSeries (IBM), 662–663
zVM operating system, 663
zypper command-line tool (RPMs), 343–346