Index

Α

-A switch (iptables), 111-112 ACCEPT rules, 106, 149-150 accepting only SMTP connections from specific hosts, 262-263 access filtering to forwarded servers, 278 restricting with firewall rules (FTP), 291-292 action plans, creating, 67 adding rules, 112 AIDE (Advanced Intrusion Detection Environment), 60 AIM (AOL Instant Messenger), 314-317 ALLOW policy, 164 allowing MySQL connections, 253-255 analyzing risk management, 26-29 solutions, 68 traffic utilization, 157-158 AOL Instant Messenger (AIM), 314-317 application layers, troubleshooting OSI model, 91 application proxies, 17 apt-get, 49 arp cache, network diagnostics, 173-174 assets isolating, 36-37 quantifying value of, 28 AUTH connections, TCP reset for, 146

В

bad flag rules (example firewall), 134-135 bad IP options rules (example firewall), 135 basic masquerading firewalls, 224-226 basic SNAT firewalls, 226-228 blocking AIM traffic, 315-317 clients from accessing websites, 279 ICQ, 318 internal users from sending mail through firewalls, 261-262 MSN messenger traffic at firewalls, 310 outbound DHCP, 328-329 outbound NetMeeting/GnomeMeeting traffic, 308 Yahoo Messenger traffic, 311-314 bridging, 203 building inline transparent bridging firewalls with ebtables, 207-210 common questions, 205-206

С

catch all rule, diagnostic logging, 172 chains creating, 112 default policy, 113 deleting, 113 order of rules, 121-122 renaming, 113 user-defined chains, 241 chkrootkit, 59 chroots, 56 CIA (confidentiality, integrity, and/or availability), 24 clients, blocking from accessing websites, 279 closing connections with TCP, 86 comparing solutions, 68 compatibility issues, IPSEC, 336 computer security, 12-14, 24 configuring software correctly, 60

congestion control, TCP, 84 connection tracking, 340 engine, memory load diagnostics, 182-185 fields, 102 connections accepting SMTP connections from specific hosts, 262-263 to AIM, 315 closing with TCP, 86 connections timeout, SSH, 253 establishing with TCP, 84 forwarding from firewalls to internal web servers, 272-273 FTP, troubleshooting, 299-300 to ICQ, 317 MySQL, allowing, 253-255 to other MSN users, 309-310 redirecting FTP connections to other ports on the server, 293 to remote NetMeeting/GnomeMeeting clients, 304-307 telnet, forwarding to other systems, 253 to Yahoo Messenger, 311 control tools cutter, 160-161 network probes, 161-162 counter measures, securing the enterprise, 35 countertrace, 146 cronjobs, 45, 49 cutter, 160-161

D

-D switch (iptables), 112 Debian, apt-get, 49 default policy, chains, 113 defense in depth (DID), 21, 31 defragmentation, 101 deleting chains, 113 rules, 112, 119 denying large e-mails, 265 deploying security technology and counter measures, 35 DHClient, 327 DHCP blocking outbound, 328-329 dynamically updating firewall rules with IP changes, 327-328 filtering with ebtables, 214-215 redirecting requests to DMZ, 330-332 two addresses on one external interfaces, 329-330 DHCPcd, 327 DHCRelay, 322, 331 diagnostics logging, 169-173, 219-220 memory load, 182-185 network problems, 173-179 sniffers, 179-182

DID (defense in depth), 21, 31 disabling ICMP echo response, 126-127 ICMP redirection, 124-125 ip forwarding, 123 proxyarp, 125 source routing, 124 DMZ (DeMilitarized Zones), 217, 228-230 cannot be reached from the outside, 236-239 segments, forwarding to FTP servers, 293-296 web servers, 245, 267 DNAT rules, PPTP connections, 347 DNS forwarding queries to upstream/remote DNS servers, 322-324 lookups fail, 324-326 rDNS, misleading, 326-327 DNSMasq, 322-324 documentation iptables, 109-111 risk management, 29-30 creating plans, 30-32 creating security policies, 33 creating security procedures, 34 holistic approach, 32-33 domains, 36 down stream liability, 29 drivers, troubleshooting OSI model, 89 dropping packets (example firewall), 143-144 dsniff, 202

E

-E switch (iptables), 113 ebtables, 206, 331 building inline transparent bridging firewalls, 207-210 filtering, 211, 214-215 ECN (Explicit Congestion Notification), 128, 278 ECN flag, diagnostics, 180-181 effective security, 9 egress filtering example firewall, 145 securing the enterprise, 39 email. See also SMTP blocking internal users from sending mail through firewalls, 261-262 large e-mail, deny, 265 small e-mail, send/receive correctly, 265 SMTP server timeouts/failures/numberous processes, 264-265 emerge, 47-49 enabling ip dynaddr, 124 ip forwarding, 150 enclaves, 36 end state, defining, 67 enforcement rules (example firewall), 144

ESTABLISHED (netfilter), 100

establishing connections with TCP, 84 eth0, 242 eth1, 242 etherape, 157-158 ethereal, 155, 304, 338 example firewall, 122-123 ACCEPT rules, 149-150 bad flag rules, 134-135 bad IP options rules, 135 egress filtering rules, 145 enforcement rules, 144 firewall rules, 130 fragments rules, 140 invalid packets rules, 139 IP spoofing rules, 145 iptables modules, loading, 129-130 kernal options, 123-129 odd port detection rules, 142-143 polite rules, 142 port scan rules, 132-134 quality of service rules, 130-132 shunning packets rules, 148-149 silently dropping packets, 143-144 small packets rules, 135-136 state tracking rules, 147 STEALTH rules, 147-148 string-matching rules, 136-139 SYN floods rules, 140-142 TCP reset for AUTH connections, 146 TTL values rules, 146-147 Explicit Congestion Notification (ECN), 128, 278 Explicit Congestion Notification (ECN) flag, diagnostics, 180-181 external IPSEC servers, connections from internal systems, 338-340 F

-F switch (iptables), 119 facts, gathering, 66-67 failures, SMTP, 264-265 file services, 283. See also FTP; NFS file systems, restricting, 56-57 File Transfer Protocol. See FTP file transfers, troubleshooting, 240 filtering access to forwarded servers, 278 DHCP with ebtables, 214-215 incoming web servers to specific hosts, 270-271 MAC addresses, 211-214 port 80, 267 securing the enterprise, 39 specific ports with ebtables, 211 filtering tools, ebtables, 206 FIN scan, 198-199

Firewall Builder (fwbuilder), 165 firewall rules example firewall, 130 protecting services, 51-55 firewalls, 189. See also example firewall; iptables firewalls DMZ, 228-230 forwarding connections from firewalls to internal web servers, 272-273 IP forwarding firewalls, 284-290 local firewall security. See local firewall security managing building rules, 163-166 masquerading firewalls, 224-226 NAT, 284-290 packet filtering firewalls, 190 reasons for having, 16-17 recommendations for, 15-16 securing the enterprise, 36 SMTP, allowing through firewalls, 258 SNAT firewalls, 226-228 stealth firewalls, 207-210 testing, 190 with three interfaces and corresponding devices, 242 transparent firewalls, 203-204 types of, 17-19 flow control, TCP, 83 forcing mail server traffic to use specific IP address with SNAT rule, 260 FORWARD, 98 forwarded servers filtering access to, 278 restricting FTP access to, 298-299 forwarding connections from firewalls to internal web servers, 272-273 DNS queries to upstream/remote DNS servers, 322-324 filtering access to forwarded servers, 278 FTP servers behind firewalls on DMZ segments, 293-295 from one Internet server to another Internet server, 297-298 local port 80 to local port 8080, 271-272 to multiple FTP servers behind firewalls on DMZ segments, 295-296 to multiple internal servers, 273-275 packets from some other host to some other host, 96 to remote servers on the Internet, 275-277 restricting FTP access to forwarded servers, 298-299 SMTP to internal mail servers, 258-260 SSH to another system, 248-253 telnet connections to other systems, 253 fragment reassembly, memory load diagnostics, 185 fragmentation, 101-102 fragments rules (example firewall), 140

fragrouter, testing firewalls, 200-201

INDEX

FTP (File Transfer Protocol), 283 forwarding from one Internet server to another Internet server, 297-298 FTP servers behind firewalls on DMZ segments, 293-295 to multiple FTP servers behind firewalls on DMZ segments, 295-296 restricting FTP access to forwarded servers, 298-299 redirecting connections to other ports on the server, 293 restricting access with firewall rules, 291-292 running local FTP servers (basic rules), 290-291 troubleshooting, 299-300 full duplex, TCP, 83 fwbuilder (Firewall Builder), 165

G

fwsnort, 138

gathering facts, 66-67 Gentoo, emerge, 47-49 glibc, 45 GnomeMeeting, 304-308 GNU Gatekeeper, 304 grsecurity, 61

н

-h switch (iptables), 109-111 hardened kernels, 61 hardening, 62 highly structured threats, 10 holistic approach, documenting risk management, 32-33 host intrusion detection, 58-60 hostnames versus IP addresses, 321 hosts, filtering incoming web servers to specific hosts, 270-271 hosts.allow, 52-53 hosts.deny, 52 hybrids, 18

I.

-I switch (iptables), 111-112
ICMP (Internet Control Message Protocol), 79-80 echo response, disabling, 126-127 redirection, disabling, 124-125
ICQ, 317-318 identd, 264 iftop, 158
IM (Instant Messaging), 303 AIM, 314-317 GnomeMeeting, 304-308 ICQ, 317-318 MSN, 309-310 NetMeeting, 304-308 questions/problems, 303 Yahoo Messenger, 311-314 improving risk management, 41 inaccessible websites, 278 inbound creating rules for new TCP services, 243-246 filtering incoming web servers to specific hosts, 270-271 running local web servers, 269 SSH as a local system, 246-248 incoming web servers, filtering to specific hosts, 270-271 ingress filtering, securing the enterprise, 39 inline transparent bridging firewalls building with iptables, 211-213 creating with ebtables, 207-210 INPUT, 98 INSIDE-OUT test, 190 interpreting from output, 194-195 testing with nmap and iplog, 190-193 installing DNSMasq, 324 Instant Messaging. See IM Integrated Secure Communications System (ISCS), 163 integration, risk management, 41 internal mail servers, forwarding SMTP, 258-260 internal systems communication with external systems, 236-240 connections to external IPSEC servers, 338-340 internal users, blocking from sending mail through firewalls, 261-262 internal VPN routing, 342-344, 348-351 Internet, forwarding to remote servers on, 275-277 Internet Control Message Protocol. See ICMP Internet protocol. See IP interpreting output from INSIDE-OUT tests, 194-195 intrusion detection, snort signatures, 138 INVALID (netfilter), 100 invalid packets rules (example firewall), 139 inventory, analyzing risk management, 26-27 IP (Internet Protocol), 77. See also ICMP; TCP; UDP addresses, 211, 321 packets, 78 spoofing rules (example firewall), 145 ip dynaddr, enabling, 124 ip forwarding disabling, 123 enabling, 150 firewalls, troubleshooting, 284-290 iplog, testing, 190-193 IPSEC, 335-336 common problems, 336-338 connections to external IPSEC servers, 338-340 internal VPN routing, 342-344 NAT/MASQ firewall connections, 340-342 securing wireless networks, 351-358 \$IPTABLES, 241 iptables, 93, 241. See also rules building inline transparent bridging firewalls, 211-213 filtering MAC addresses, 213-214

fragmentation, 101-102

syntax, 109-120

163-165

J-K-L

TRACE patch, 173

listing current NAT entries, 221-222

iptables firewalls, connecting to remote

iptables policies, order of rules, 121-122

NetMeeting/GnomeMeeting clients, 304

ip_conntrack, memory load diagnostics, 183-184

ip_conntrack_max, memory load diagnostics, 184

iptables modules, loading (example firewall), 129-130

multiplexing, TCP, 83 MySQL, allowing connections, 253-255 myths, trustworthy or secure software, 19-20

Ν

-N switch (iptables), 112, 115 name length, DNS lookups, 325 name servers, running, 325-326 NAT (Network Address Translation), 217-218 common questions about, 218-219 connections, viewing with netstat-nat, 220-221 current NAT and rule packet counters, listing, 222-224 current NAT entries with iptables, listing, 221-222 firewalls, troubleshooting, 284-290 and IPSEC, 336 rules, 340-342, 348-351 NAT Traversal Mode, 339 NAT/MASQ firewalls connections between internal systems and external IPSEC servers, 338-340 IPSEC VPN connections, 340-342 PPTP VPN connections, 347-348 netfilter, 93, 268 firewalls, connecting to remote NetMeeting/GnomeMeeting clients, 305-307 fragmentation, 101-102 how it works, 93-94 iptables. See iptables packets forwarding for some other host to some other host (FORWARD), 96 sent by firewall from a local process to a remote system (OUTPUT), 96 sent to service running on firewall from remote host (INPUT), 94 parsing rules, 94-100 states, 100-101 TCP connections, 121 UDP connections, 120 website, 110 NetMeeting, 304-308 netstat-nat, viewing NAT connections, 220-221 Network Address Translation. See NAT network diagnostics, 173-179 network performance settings (kernal options), 127-129 network traffic analyzers, 159-160 NEW, netfilter, 100 NFS (Network File System), 283-290 ngrep, 155 NIDS (Network Intrustion Detection System), 58 nmap, 162-163 network diagnostics, 175-176 reading output from, 197-198 testing, INSIDE-OUT, 190-193

ISCS (Integrated Secure Communications System), isolating assets, securing the enterprise, 36-37 -j switch (iptables), 119-120 kernel options (example firewall), 123-129 kernels, 61, 294, 300 -L switch (iptables), 113-119 Layer 2 transparent firewalls. See transparent firewalls length of names, DNS lookups, 325 liability, down stream liability, 29 libpcap library, 155

Linux, ECN, 278 loading iptables modules (example firewall), 129-130 local firewall security, 43-44 local systems, SSH, 246-248 local web servers, running, 269 log monitoring tools, 57-58 logcheck, 58 logging, diagnostic logging, 169-173, 219-220 logwatch, 58 lookup failures, DNS, 324-326

Μ

MAC addresses, filtering with iptables, 213-214 mail server traffic, forcing to use a specific IP address with SNAT rule, 260 managing firewalls, building rules, 163-166 martian addresses, detecting, 126 masquerading firewalls, 224-226 Maximum Transmission Unit. See MTU memory load diagnostics, 182-183, 185 methodologies, 6-8, 64-66. See also troubleshooting, methodologies misleading rDNS, 326-327 models. See OSI model monitoring, implementing, 40 MSN, 309-310 MTU (Maximum Transmission Unit), 77 path discovery and VPNs, 337 settings IPSEC, 336, 340 PPTP, 346

0

odd port detection rules (example firewall), 142-143 Open System Interconnection. *See* OSI model openswan, 336-338, 351-358 order of rules, 121-122 OSI (Open System Interconnection) model, 75-76, 89-91 outbound blocking clients from accessing websites, 279 blocking DHCP, 328-329 FTP, troubleshooting, 299-300 inaccessibility of websites, 278 web traffic, transparent proxy servers, 279-281 OUTSIDE-IN tests, 190, 195-198

Ρ

-P switch (iptables), 113 package management tools, 45-49 packet filtering, 17 packet filtering firewalls, 189-190 packet sniffers. See sniffers packets forwarding for some other host to some other host (FORWARD), 96 invalid packets rules (example firewall), 139 IP packets, 78 sent by firewall from a local process to a remote system (OUTPUT), 96 sent to service running on firewall from remote host (INPUT), 94 shunning (example firewall), 148-149 silently dropping packets (example firewall), 143-144 small packets rules (example firewall), 135-136 string-matching rules (example firewall), 136-139 TCP, 82 troubleshooting packets that do not pass in or out of a firewall, 230-235 parsing rules, netfilter, 94-100 patch maintenance, 45 patching iptables, TRACE patch, 173 reliance on, 50 physical connectivity, troubleshooting OSI model, 89 ping, 152-154, 174-175 PKI (Public Key Infrastructure), 163 plans, documenting risk management, 30-32 Point to Point Tunneling Protocol. See PPTP policies, implementing, 35 polite rules (example firewall), 142 port 80, filtering out, 267 port scan rules (example firewall), 132-134 PORT STATE SERVICE, 199-200 POSTROUTING chains, 222 PPTP (Point to Point Tunneling Protocol), 345 connections through firewall, 345-347 internal VPN routing, 348-351 NAT/MASQ firewall connections, 347-348

pptpclient, 346 PREROUTING, 98, 101 presentation layers, troubleshooting OSI model, 91 preventing networks from being added to routes, 243 privilege, running services with least privilege, 55-56 probing tools, 162-163 problem solving methodology, 64-65 /proc, 102 procedures, implementing, 35 processes, SMTP, 264-265 protecting services with TCP wrappers and firewall rules, 51-55 protocols. See ICMP; IP; TCP; UDP proxyarp, disabling, 125 proxys, 304, 307-308 Public Key Infrastructure (PKI), 163

Q-R

quality of service rules (example firewall), 130-132 quantifying value of assets, analyzing risk management, 28 -R switch iptables, 112 ping, 174 Rash, Michael, 138 rDNS, misleading, 326-327 reading output from nmap, 197-198 ReAIM, 304 recognizing, defining, and isolating the problem, 65-66 red carpet, 46-47 redirecting DHCP requests to DMZ, 330-332 disabling ICMP redirection, 124-125 FTP connections to other ports on the server, 293 local port 80 to local port 8080, 271-272 RELATED, netfilter, 100 reliability, TCP, 83 reliance on patching, 50 remote DNS servers, forwarding DNS queries to, 322-324 remote logging, 60 remote servers, forwarding to remote servers on the Internet, 275-277 renaming chains, 113 replacing rules, 112 restricting access with firewall rules (FTP), 291-292 file systems, 56-57 FTP access to forwarded servers, 298-299 risk, 8 risk management, 9-12, 23-24 computer security, 12-14, 24 elements of, 24-25 steps for, 25 analyze, 26-29 documentation, 29-34 implementing monitoring, 40

improving, 41 integration, 41 securing the enterprise, 34-39 testing, 40 rkhunter, 59 routers, 189 routing, internal VPN routing, 342-344, 348-351 Rowland, Craig, 58 RPC Bind, 197 rsync, 50 rule packet counters, listing, 222-224 rules. See also example firewall; iptables adding, 112 building, 163-166 catch all, diagnostic logging, 172 creating for new TCP services, 243-246 deleting, 112, 119 internal VPN routing, 344, 349-351 IPSEC connections, 340-342 order of, 121-122 parsing with netfilter, 94-100 PPTP connections, 346-347 PPTP VPN connections, 348 replacing, 112 wireless network security, 355-357 running local FTP servers (basic rules), 290-291 local web servers, 269 services with least privilege, 55-56

S

-s switch (ping), 175 samhain, 59 scripts, diagnostic logging, 170-172 search engines, troubleshooting methodologies, 69 Secondary Exploitation, 37 Secure Shell. See SSH securing enterprise, risk management, 34-39 wireless networks with openswan VPN, 351-358 security, 8-9, 17 computer security, 12-14 effective security, 9 security policies, 21, 33 security procedures, 34 security technology, securing the enterprise, 35 security tools, 57-60 selecting solutions, 68 SELinux, 45, 61 server timeouts, SMTP, 264-265 servers DNS servers. See DNS forwarded servers, filtering access to, 278 FTP servers, running local FTP servers (basic rules), 290-291 remote servers. See remote servers

transparent proxy servers, squid, 279-281 services protecting with TCP wrappers and firewall rules, 51-55 running with least privilege, 55-56 turning off, 50 session layers, troubleshooting OSI model, 91 shunning packets rules (example firewall), 148-149 silently dropping packets (example firewall), 143-144 slabinfo, memory load diagnostics, 182-183 Small Office/Home Office (SOHO), 217 small packets rules (example firewall), 135-136 SMTP, 257 accepting SMTP connections from specific hosts, 262-263 allowing through firewalls, 258 forwarding to internal mail servers, 258-260 large email, deny, 265 questions about, 257 server timeouts/failures/numerous processes, 264-265 small e-mail send/receive correctly, 265 smurf attacks, detecting, 126-127 SNAT firewalls, 226-228 SNAT rule, forcing mail server traffic to use specific IP address, 260 sniffers, 155-156, 179-182, 304, 338 Snort, 258, 313 snort signatures, 138 software configuring correctly, 60 importance of updating, 44-45 myths of trustworthy or secure software, 19-20 SOHO (Small Office/Home Office), 217 solutions analyzing and comparing, 68 developing, 67 selecting and implementing, 68 source routing, disabling, 124 -sP switches (nmap), 175 spoof protection, 125 spoofing rules (example firewall), 145 squid, 268-269, 279-281 SSH (Secure Shell), 246 connections timeout, 253 forwarding to another system, 248-253 as local system, 246-248 ssh service, protecting, 54 SSLdump, 156 state engine, 102-106 state tracking rules (example firewall), 147 stateful inspection, 18 states of netfilter, 100-101 stealth firewalls, 207-210 STEALTH rules (example firewall), 147-148 steps for risk management. See risk management, steps for Stevens, W. Richard, 76 string-matching rules (example firewall), 136-139

structured threats, 10

SYN cookies, 128

SYN flood attacks example firewall, 140-142 preventing, 128 SYN scan, 198 syntax, iptables, 109-120 т TCP (Transmission Control Protocol), 82-83 closing connections, 86 congestion control, 84 creating rules for new TCP services, 243-246 establishing connections, 84 flow control, 83 full duplex and multiplexing, 83 reliability, 83 TCP ABORT, 87-88 TCP CLOSE, 86 TCP connections, netfilter engine, 121 TCP FIN timeout network setting, 127 TCP layers, troubleshooting OSI model, 90 TCP packets, 82 tcp ping, 176 TCP reset for AUTH connections (example firewall), 146 TCP wrappers, protecting services, 51-55 tcp-window-tracking modification, 106 tcpdump, 155-156, 179 tcptraceroute, 161-162, 178-179 telnet, 151, 253, 267 testing application layers, OSI model, 91 drivers, OSI model, 89 firewalls, 190-201 presentation layers, OSI model, 91 risk management, 40 session layers, OSI model, 91 TCP layers, OSI model, 90 tetheral, diagnostics, 179-180 threat analysis, analyzing risk management, 29 threats, 10 Three-Way Handshake (TWH), 85 TIGER, 59 TIME WAIT state, 104 timeouts, UDP connection timeout setting, 128 TITAN, 59 tools cutter, 160-161 dsniff, 202 ebtables, 206 etherape, 157 iftop, 158 network traffic analyzers, 159-160 nmap, 162-163 package management tools, 45-49 ping, 152-154

probing tools, 162-163 security tools, 57-60 sniffers, 155-156, 338 tcprack, 158 tcptraceroute, 161-162 telnet, 151 top, 158 vnstat, 159 top, 158 TRACE patch (iptables), 173 traceroute, 146-147, 154, 161-162, 176-179 traffic, analyzing utilization, 157-158 training, 21 Transmission Control Protocol. See TCP transparent firewalls, 203-204 transparent proxy servers, 279-281 tripwire, 59 troubleshooting. See also diagnostics internal and external systems communication, 230-240 large file transfer failures, 240 methodologies, 63-64, 69 analyzing and comparing solutions, 68 defining end state, 67 developing solutions and creating action plans, 67 gathering facts, 66-67 implementing solutions, 68 problem solving methodology, 64-65 recognizing, defining, and isolating the problem, 65-66 websites for, 69-70 with search engines, 69 OSI model, 89-91 TTL values rules (example firewall), 146-147 tunneling. See VPNs turning off services, 50 TWH (Three-Way Handshake), 85

U

UDP (User Datagram Protocol), 88 UDP connections, 120, 128 unstructured threats, 10 up2date, 47 updating firewall rules with IP changes, 327-328 software, importance of, 44-45 upstream DNS servers, forwarding DNS queries to, 322-324 User Datagram Procol. *See* UDP user-defined chains, 241

v

-v switch (iptables), 116 viewing NAT connections with netstat-nat, 220-221 VLANs, 201-202 vnstat, 159 VPNs (virtual private networks), 335

common problems, 336-338 IPSEC, 335-344 NAT/MASQ firewall connections, 340-342, 351-358 PPTP, 345-351 sniffers, 338 vulnerabilities, 20 -vv switch (iptables), 117

W

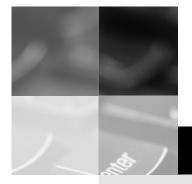
web servers DMZ, 267 filtering incoming web servers to specific hosts, 270-271 forwarding connections from firewalls to internal web servers, 272-273 forwarding to multiple internal servers, 273-275 local web servers, running, 269 redirecting local port 80 to local port 8080, 271-272 web services, squid. See squid websites blocking clients from accessing, 279 inaccessibility of, 278 for troubleshooting methodologies, 69-70 wireless networks, securing with openswan VPN, 351-358 wrenchin', 7 Wright, Gary R., 76

X-Z

-X switch (iptables), 113 xinetd, 51

Yahoo Messenger, 311-314 yum, 45-46

-Z switch (iptables), 113 Zeroconf route, 243



inform

www.informit.com

YOUR GUIDE TO IT REFERENCE



Articles

Keep your edge with thousands of free articles, indepth features, interviews, and IT reference recommendations – all written by experts you know and trust.



Online Books

Answers in an instant from **InformIT Online Book's** 600+ fully searchable on line books. For a limited time, you can get your first 14 days **free**.





Catalog

Review online sample chapters, author biographies and customer rankings and choose exactly the right book from a selection of over 5,000 titles.

Wouldn't it be great

if the world's leading technical publishers joined forces to deliver their best tech books in a common digital reference platform?

They have. Introducing InformIT Online Books powered by Safari.

Specific answers to specific questions.

InformIT Online Books' powerful search engine gives you relevance-ranked results in a matter of seconds.

Immediate results.

With InformIT Online Books, you can select the book you want and view the chapter or section you need immediately.

Cut, paste and annotate.

Paste code to save time and eliminate typographical errors. Make notes on the material you find useful and choose whether or not to share them with your work group.

Customized for your enterprise.

Customize a library for you, your department or your entire organization. You only pay for what you need.

Get your first 14 days FREE!

For a limited time, InformIT Online Books is offering its members a 10 book subscription risk-free for 14 days. Visit **http://www.informit.com/onlinebooks** for details.



informit.com/onlinebooks

Register Your Book

at www.awprofessional.com/register

You may be eligible to receive:



- Related book recommendations
- Chapter excerpts and supplements of forthcoming titles
- Information about special contests and promotions throughout the year
- Notices and reminders about author appearances, tradeshows, and online chats with special guests

Addison-Wesley

Contact us

If you are interested in writing a book or reviewing manuscripts prior to publication, please write to us at:

Editorial Department Addison-Wesley Professional 75 Arlington Street, Suite 300 Boston, MA 02116 USA Email: AWPro@aw.com

Visit us on the Web: http://www.awprofessional.com