### Index

Note: Page numbers followed by f and t indicate figures and tables, respectively.

```
AIX
abandon_time setting, for SMTP Security
                                                        FireWall-1 on, 30
      Server, 303
                                                        packet sniffer in, 355
Accept action, in rules, 86
accept short circuit, in INSPECT, 523t
                                                        about, 133-136
account names, in Windows NT, 555-556
                                                        on Client Authentication, 229
account policies, in Windows NT, 555-556
                                                        defining, 115-116, 116f
                                                        by e-mail, 136
Action, in rules, 86
action properties
                                                     aliases, in SIC policy, 187, 188
   for Client Authentication, 227–229, 228f,
                                                     anti-spoofing
      266f, 267f
                                                        defining, 80-81, 81f
                                                        in INSPECT, 534
   for encryption, in VPN, 396–397, 396f
                                                        local interface, error on, 145
   for Session Authentication, 225–226, 226f,
      264f
                                                        for NAT, 350, 350t
   for URI resource, 275–276, 276f
                                                            in double-blind network, 376
   for User Authentication, 222–223, 222f, 262,
                                                            in network migration, 372
      262f
                                                            in simple network, 367, 367t
address range objects, about, 73
                                                        in Office Mode, 445
                                                        packet checked against, 342
address space. See also IP address
   adding, for firewalls, 15
                                                     AOL Instant Messenger, blocking, 149, 150t
   breakdown of, 337t
                                                     application(s), Check Point
   sharing, in VPN, 405-406
                                                        alerts defined for, 115
address translation, introduction to, 335-338
                                                        queried with cpstat, 119t-121f
address translation policy. See NAT rules
                                                        states of, 114, 114t–115t
                                                     application(s), in OS security, 37, 38
address translation tables, remote viewing of, 167
Administrative notifications, 134
                                                     application layer gateways. See application proxies
administrative user
                                                     application proxies
   adding, in management console installation,
                                                        authenticated requests forwarded to, 249
      45, 46f
                                                        filtering traffic through, error on, 257
   creating, 210
                                                        in FireWall-1, 8–9
   logging actions of, 122
                                                        FireWall-1 as, 250
Administrator account, in Windows NT, 555
                                                        vs. NAT, 336
administrators, in operating system selection, 27,
                                                        overview of, 4-5
      29 - 30
                                                        Passive FTP handled by, 6
aggressive mode, for IKE, 392
                                                        Stateful Inspection and, 5
```

application proxies (cont.)	authentication services. See also specific services
traceroute handled by, 8	unavailable, 256
URI resource applied with, 273	Automatic ARP Configuration, 341–342
<apply-to>, in SIC policy rules, 187</apply-to>	
ARPs, for NAT	В
in double-blind network, 375, 375f	Backward Compatibility package, installation of,
in network migration, 370–371	42–43, 43 <i>f</i>
setting up, 345–347	banner, removal of, 250
in simple network, 366	buffer, HTTP, increasing size of, 293–294
troubleshooting, 356–357	buffer, log, full, 148
assets, in security policy, 16	buffer, sync, error on, 516, 517–519
asymmetric connections, gateway cluster options	_
for, 496–497	C
asymmetric encryption, definition of, 381	caching proxy server, requests forwarded to, 286
asymmetric routing	central gateway, in Star Community, 398
dynamic load balancing and, 507	central license, 24
in High Availability, 500–501	certificate(s)
Office Mode and, 444	for authentication, 163–164
in State Synchronization, 498–499, 500–501 VPN and, 443	configuring, for management users, 62–63, 63f
attributes, of dynamic tables, 528, 529 <i>t</i>	defining, for SecuRemote user, 430–431, 430 <i>f</i>
authentication	expiration of, 220
certificates for, 163	generating, for user, 217–218, 217 <i>f</i>
configuring, for management users, 62–63, 62 <i>f</i>	in L2TP, 447
custom message on, 249	on management station, deletion and, 175
DLL for, SecureClient and, 460–461	vs. pre-shared secrets, 387
expiration of, 229	reserved, 430–431, 431 <i>f</i>
failure of, settings for, 221, 223, 242	in Windows, 447–449
gateway support for, error on, 255	certificate authority. <i>See also</i> ICA definition of, 383
Global Properties for, 220–221, 220 <i>f</i>	
in OS security, 39	SecureClient options for, 462, 462 <i>f</i>
prompt for, absence of, 257	certificate authority keys
purpose of, 193	exchanging, 392, 393 <i>f</i>
rule processing and, 90	in VPN, 387
in SecureClient, 439–441, 440 <i>f</i> , 441 <i>f</i>	certificate key, for licenses, 24
in SecuRemote	Certificate Revocation List (CRL), in LDAP, 236
timeout on, 433	characters, in naming, illegal, 104, 105 <i>t</i>
in user creation, 429	Check Point applications
settings for, for user, 212–218, 213 <i>f</i> –216 <i>f</i>	alerts defined for, 115
setting up, 208–221	queried with cpstat, 119t-121f
troubleshooting, 255–259	states of, 114, 114 <i>t</i> –115 <i>t</i>
in VPN, 379	Check Point banner, removal of, 250
of VPN, changing FQDN and, 175	Check Point Express, license for, 23
Authentication Header, in IPSec, 385	Check Point gateway object
authentication servers	about, 67–69, 67 <i>f</i>
firewall and, 37–38	configuring, for High Availability managemen
integrating, 230–243	modules, 180–181, 181 <i>f</i>
users in, FireWall-1 use of, 247	defining, 92, 94, 94 <i>f</i>

ClusterXL externally managed, about, 70 log forwarding with, 138–139, 138f error messages with, 514-520 log rotation with, 137–138, 137*f* license for, 494 SecuRemote behind, 470, 470f load balancing with, 503-504 for VPN, 394, 394f, 417 command line Check Point host object blocking connections from, 129–131, 129t - 130tfor remote management, with NAT, 165 firewall configuration from, 190-191 for secondary management module, 178-179, 178f fw monitor options from, 541t Check Point licenses. *See* license(s) license update from, 169–171 Check Point Management Interface (CPMI), logs accessed from, 124-126 190-191 object created with, 143-145 Check Point modules for policy control, remote, 166 connections between, 162, 162f state tables viewed from, remotely, 167-169 states of, 114, 114t system status accessed from, 116-118 Check Point node objects, about, 69 command-line interface (CLI) Check Point objects, 70-73, 92. See also Check in AIX, 30 Point gateway object in IPSO, 31, 32 checksum, from hash functions, 382 for SecureClient, 474–475, 474*t*–475*t* Cisco PIX, VPN issues with, 409 in SPARC Solaris, 29 Class E addresses, 335–336 in Windows NT/2000, 29 Cleanup rule, 88, 88f, 99 Comment, in rules, 87 CLI. See command-line interface compiler, for INSPECT, 529-531 Client Authentication compressed connection, for SmartDashboard/ in cleartext, 256 Policy Editor, 108 explanation of, 202-205 compression method, for VPN, selecting, 397 conditions, in INSPECT, 524-526 over HTTP custom pages for, 254-255 connection debugging, 320t accepting based on previous connection, limitations of, 207 INSPECT for, 537-538 redirect on, 257 blocking rule for, 227, 227f from command line, 129–131, 129t-130terror on, 256 with fw sam, 143 sample configuration for, 265 security policy installation and, 257 passwords erased and, 460 in SmartView Tracker, 128-129 setting up, 227-230 over Telnet, 202, 203-204 sync buffer and, 518 debugging, 320t disconnecting, at specific time, 143 option for, 228 firewall bypassed by, NAT and, 352-355 usage guidelines for, 207t hiding, IP address for, 340 Client Encrypt action, for SecuRemote, 432, to HTTP Security Server, number of, 293 432f for L2TP, creating, 449–450 Clientless VPN outbound, for SecuRemote, 536–537 enabling, 243-244 to Security Servers, origin of, 318 in FireWall-1, 243-247 to SMTP Security Server, number of, 305 issues with, 246-247 successful, packet sniffer output for, 356 client/server model, application proxies in, 4 unidirectional, 152-153 clients file, for RADIUS, adding firewall to, 231 connection mode, for SecureClient, 458f, 459

connections table	dbedit
creating, with INSPECT, 528	documentation of, 190
of firewall module, remote viewing of, 167-169	object creation with, 143–145
kbuf pointer in, incorrect, 519–520	rulebase edited with, 103
manipulating, in INSPECT, 527-528	defaultfilter.pf, sample of, 581–582
Connect Mode, for SecureClient, 443	Defender, about, 196–197
constants, in INSPECT, 526	Defender users, FireWall-1 use of, 247
content, CVP for scanning, 270, 282-284	defragmentation, virtual, error on, 146
Content Security	delivery failure, e-mail stuck on, 313
e-mail error messages for, 305	demilitarized zone (DMZ)
for FTP, 299–302	group for, 93, 93 <i>f</i>
for HTTP, 271–298	need for, 14
with Session Authentication, 256, 319	denial-of-service (DoS) attacks
for SMTP, 302–316, 303f	ACK packets in, vanish action for, 523
sample configuration for, 322-326	traceroute packets in, 8
for TCP, 316–318	Desktop Policy Server
third-party software for, 269	installation of, on IPSO, 40
with User Authentication, 319	no response for, 480
Content Vectoring Pool. See CVP	Desktop Security
cpconfig, user configuration with, 58	policy for
cpd, 183	for client-to-site VPN, 484, 484f
CPMI (Check Point Management Interface),	defining, 436–438, 436f, 437f
190–191	for SecuRemote, setting up, 434–438
CPRID connections, accepting, 83, 96, 97f	destination, in rules, 86
cprlic, 170-171	destination port static NAT, 340
cpstat, 118, 118 <i>t</i> -121 <i>t</i>	destination static NAT, 340
CPVP-VSC, license for, 426	detailed_av_err_mail setting, for SMTP Securit
CPVP-VSR, license for, 426	Server, 305
critical updates	detailed_rb_err_mail setting, for SMTP Securit
for Windows 2000, 557	Server, 305
for Windows NT, 556	detailed_smtp_err_mail setting, for SMTP
CRL (Certificate Revocation List), in LDAP, 236	Security Server, 305
cryptography, definition of, 380	DHCP server
CVP (Content Vectoring Protocol)	link-local addresses and, 339
about, 270	for Office Mode, 445
with FTP Security Server, 300, 300f, 316–317,	DHCP traffic, accepting, 83, 98
317 <i>f</i>	DH (Diffie-Hellman) keys, definition of,
sample configuration for, 328-329, 328f	383
with HTTP Content Security, 282-284	dial-up adapters
sample configuration for, 330, 333f	installing SecureClient on, 439, 464
with SMTP Security Server, 312, 325, 325f	mixing with NICs, SecuRemote and, 479
in URI resource, 276–277, 277f	dial-up networking
	VPN integrated with, 443
D	WINS server and, 456
data, protection of, in security policy, 16-17	Diffie-Hellman (DH) keys, definition of,
data integrity methods, for VPN	383
selecting, 397	DLL, for authentication, SecureClient and,
settings for, 390	460–461

DMZ (demilitarized zone)	e-mail headers, rewriting, 308-309
group for, 93, 93f	e-mail recipients, number of, under SMTP
need for, 14	Security Server, 313–316
DNS, split-horizon, 159	embedded device objects, about, 70
DNS domain, defining, for Office Mode, 445	Encapsulating Security Payload (ESP)
DNS lookup	in IPSec, 385
domains and, 71	rules for, 407, 407 <i>f</i>
enabling, 106	Encrypt/Client Encrypt action, in rules, 86
HTTP Security Server and, 297–298	Encrypt DNS Traffic, in Global Properties, 456
service connection slowed by, 158	encryption
DNS registration, disabling, in Windows 2000, 558	asymmetric, definition of, 381
DNS server, defining, for Office Mode, 445	concepts in, 380–383
DNS traffic, encrypting	definition of, 380
Global Properties for, 456	for LDAP server, 239–240, 239f
in SecureClient, 434	licensing for, 383–384, 384t, 426
domain. See Windows NT domain	NAT and, 405
domain name	of Session Authentication, 256
for external user group, 211	symmetric, definition of, 381
in INSPECT, 526	User Authentication with, 406
domain objects, about, 71	in user properties, 218, 218f
DoS (denial-of-service) attacks	in VPN, 379
ACK packets in, vanish action for, 523	configuring, 386–402
traceroute packets in, 8	load balancing and, 510
downloads	VPN rules for, 396, 396 <i>f</i>
policy on, 563–564	for SecuRemote access, 431–432
preventing, 287–288	encryption algorithm, for VPN, selecting, 397
Drop action, in rules, 86	encryption domain
drop short circuit, in INSPECT, 523, 523t	address space shared in, 405-406
Dst, in rule enforcement, 87	for client-to-site VPN, 482–483, 483f
dual NAT, 353–354, 353f	compiled, in INSPECT, 531
dynamic load balancing, 507–508, 508f	definition of, 383
with NAT, 509, 509f	issues with, 410
dynamic object	determining, 387
resolution failure for, log/alert on, 135	for simplified mode, 397
on ROBO Gateway, 190	for traditional mode, 389, 390f
dynamic tables, creating, with INSPECT, 528	disconnection from, issues with, 443
	DNS requests forwarded inside, in Microsoft
E	Networking, 453–456
Early Version Compatibility, for SecureClient,	downloading to SecuRemote client, 427
438, 438 <i>f</i>	incorrect, 407-408
education, in network security, 18	limiting access to, 403
ELA (Event Log API), 270	multiple entry points to, 450–453
e-mail	NIC IP address in, 479
alerts by, 136	SecuRemote used within, 443
in SMTP Security Server, 305	selecting, 394, 395 <i>f</i>
settings for, 303, 306	for site addition, 417
size of, 312	for three-site VPN, 413-414
stuck, 313–316	unencrypted traffic in, 459

encryption keys, definition of, 380	firewall. See also FireWall-1; firewall module
encryption schemes, defining, for SecuRemote	access to, by SecureClient with NAT, 469
user, 428–430, 428 <i>f</i> , 429 <i>f</i>	adding to RADIUS, 231
End User License Agreement, IP address limits	authentication enabled on, 218–219, 219f
in, 22	authentication servers and, logon with, 37-38
end-user support, for SecuRemote, 426	connections bypassing, NAT and, 352-355
entropy, in pseudo-random number generators,	definition of, 1–2
380–381	in encryption domains, 383
entry points	gateway cluster and, switching to, 419-422,
to encryption domain, multiple, 450-453	420f
SecureClient with multiple, 488–491, 488f	limitations of, 2–3
in security, 14	as MX, 310
error messages	network logon to, 37–38
via e-mail, 305	number of, issues with, 189
from security policy installation, 100-101,	Passive FTP handled by, 5-6
101 <i>f</i>	without security policy, 18
in system log, 145–148	security policy enforced with, 16
ESP (Encapsulating Security Payload)	Telnet to, error on, 258
in IPSec, 385	traceroute handled by, 6–8
rules for, 407, 407 <i>f</i>	virtual, gateway clusters as, 401–402
evaluation licenses	FireWall-1
about, 24–25	alerts defined for, 116, 116f
installation of, 45	Clientless VPN in, 243–247
removal of, 170–171	components of, 161–163, 162 <i>f</i>
Event Log API (ELA), 270	configuration of, common questions about,
excessive log grace period, 135	141–145
exclusion, grouping by, 72, 73f	flexibility of, 10–11
expiration date	installation of, 39–52
for management users, 62	directory for, 43, 43f
for users, 212	planning, 13–26
externally managed gateway objects, about, 70	integration with Windows NT domain,
externally managed node objects, about, 70	247–248
external user profile, 210, 211f	interoperability with, of third-party VPN
	products, 403
F	kernel variables in, modifying, 141–142
file descriptors, adjusting, for HTTP Security	L2TP clients and, 446–450
Server, 295–296	large-scale use of, management issues with,
file downloads	188–191
policy on, 563–564	NAT in, 336, 339–343
preventing, 287–288	need for, 9–11
filter, default	operating system for
changing, 539–540	installing, 34–39
sample of, 581–582	securing, 37–39, 545–561
fingerprints	selecting, 27–34
in encryption, 382	order of operations in, 341–343
validating, in SecureClient, 441, 441 <i>f</i>	packet sniffer in, 355
FIN packets, out of sequence, 157	as proxy, 250

as reverse proxy, 250	sample configuration for, 326-329
technologies in, 8–9	site access through, 301–302
upgrading, 52–53	FTP service
firewall-1.conf, 567–569	Client Authentication over, 228
FireWall-1 control connections, accepting, 83,	ident required by, 157
96, 96 <i>f</i>	ports for, problems with, 157
FireWall-1 host, license for, 22	problems with, 156–158
FireWall-1 Password	User Authentication for, 198–201
about, 194	rule order and, 224
enabling, on firewall, 219	FTP traffic, Content Security for, 299–302
settings for, for user, 215, 215f	sample configuration for, 326-329
firewall-1.schema, 571–573	full sync
firewall Internet gateway. See single-gateway	definition of, 494
products	error on, 514
firewall module	fully qualified domain name (FQDN), changing,
dynamic addressing used by, SIC and, 184	48, 48 <i>f</i> , 175
in FireWall-1, 161	fw, vs. fwm, 167
installation of, 49–52	fw fetch, 167
license for, 20–26	fw log, 124–126, 126 <i>t</i>
updating remotely, 169–171	fwlogswitch, 136-137
logging on, local, 164–165	fwm
one-time password for, 163–164, 164f	<i>vs.</i> fw, 167
security policy on, remotely controlling,	user configuration with, 58–59, 59t
166–167	fwm load, 166
state tables of, remote viewing of, 167–169	fw monitor
synching clock of, to management station, 184	example code for, 542
firewall object	guidelines for use of, 543
for NAT implementation, 350, 351t	INSPECT used with, 540–542, 541 <i>t</i>
in double-blind network, 376, 376t	NAT issues and, 355
in network migration, 372, 373t	fwm unload, 167
in simple network, 367, 368t	fw parameter, of costat, application flavors
for SecuRemote, configuring, 427	for, 120 <i>t</i>
floating evals, 24–25	fw putkey, 163
FQDN (fully qualified domain name), changing,	fw sam, 129–131, 129 <i>t</i> –130 <i>t</i>
48, 48 <i>f</i>	connection blocking with, 143
FTP commands, FTP Security Server and, 300–301	FWZ, about, 384–385
FTP connections	
with random source port, 157	G
over SSL, 157–158, 158 <i>t</i>	gateway
FTP proxy, FireWall-1 as, 250	IP addresses for, in INSPECT, 534
FTP resource, for Content Security, 299–300, 299f, 300f	management module moved from, 176–178
sample configuration for, 327–329, 327 <i>f</i> , 328 <i>f</i> , 329 <i>f</i>	management of, with ROBO Gateway Profile 189–190
FTP Security Server	packets from, accepting, 83, 97, 97f
about, 299–302	rule enforcement by, specifying, 87
debugging, 320 <i>t</i>	in VPN Communities, 401, 407
	, 11, 50,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

gateway cluster	configuring, for management users, 62, 62f
creating, 421, 421 <i>f</i>	creating, with dbedit, 144
firewall switching to, 419–422, 420f	defining, 92, 93, 93 <i>f</i>
for High Availability VPNs, 401–402	for DMZ, 93, 93 <i>f</i>
IP address for, 495–496	for VPN domain, 390
IP Pool NAT in, 452	GUIdbedit tool, rulebase edited with, 103,
policies installed in, inconsistencies in, 514–515, 516	103 <i>f</i>
SecureClient with, sample configuration for,	Н
484–487, 485 <i>f</i>	HA. See High Availability
SecuRemote failover with, 450	hackers, firewall design and, 3
sample configuration for, 488–491, 490f	hard drive partitioning
software mismatch within, 519–520	for Linux, 559
for State Synchronization	for SPARC Solaris, 545
configuration of, 495–497, 495 <i>f</i> , 496 <i>f</i> ,	hardware support, in SPARC Solaris, 29
497 <i>f</i>	hardware token
working mode of, error on, 514	in Defender, 196–197
third-party, interoperability with, 403	in SecurID, 196, 196 <i>f</i>
gateway cluster objects	hash functions
about, 70	for dynamic load balancing, 507, 508 <i>f</i> , 509
configuring, 495–497, 495 <i>f</i> , 496 <i>f</i> , 497 <i>f</i>	with VPN, 510
Gateway Components, installation of, 40	in encryption, 382
gateway object. <i>See also</i> Check Point gateway	High Availability (HA), 270
object	asymmetric routing in, 500–501
for gateway cluster creation, 419–420, 485	hardware-based solutions for, 502
IP Pool NAT settings for, 452, 452 <i>f</i>	implementation of, 499–512
Office Mode configured on, 444–446, 444 <i>f</i>	licensing for, 494
for SecuRemote, configuring, 427–428	load balancing in, 503–512
User Authentication configured on, 223	SecuRemote in, 450–453
GINA DLL, enabling, for SecureClient, 465	S/Key and, 196
Global Properties	software-based solutions for, 502
for authentication, 220–221, 220 <i>f</i>	solution providers for, 502–503
for High Availability management modules,	State Synchronization in, 493–499
179–180	High Availability management modules. See als
IP Pool NAT in, 451, 451 <i>f</i>	secondary management module
for LDAP, 235–236, 235 <i>f</i>	about, 178–183
for rulebase	certificate authority errors in, 184–185
about, 82–85, 82 <i>f</i> , 84 <i>f</i> , 85 <i>f</i>	
alerts settings in, 133–136, 133 <i>f</i> , 134 <i>f</i>	failover in, 182–183, 182 <i>f</i>
application of, 106	synchronizing, 179, 179 <i>f</i> High Availability VPNs, gateway clusters for,
* *	401–402
tweaking, 96–98	host
for SecuRemote, 432–434, 433 <i>f</i>	
encryption in, 429–430, 429 <i>f</i>	grouping, for load balancing, 504
VPN modes in, 388–389, 388 <i>f</i>	for Management GUIs
Gnutella, blocking, 288–289	configuring, 63–64
group, user. <i>See</i> user groups	fetching, 108
group objects	number of, error on, 146–147
about, 72, 72 <i>f</i>	specification of, in rules, 86

hostid, license based on, 24 HTTPS service Client Authentication over, 202 host objects. See also node host objects User Authentication for, 198-199 creating, with dbedit, 144 hosts file, in Windows NT, 554 HTTPS traffic, outbound hotfix accumulators, about, 145 authenticating, 251 hotfixes, for Windows 2000, 557 Content Security for, 288 hot standby, definition of, 494 HTTP traffic HTML, weeding, 276 Content Security for, 271-298 HTTP buffer, increasing size of, 293–294 sample configuration for, 330-333 HTTP connection filtering, 272–278 authenticated, logging on, 135 on other ports, 285-286 file descriptors for, 295–296 UFP for, 271, 278–282 tunneled, blocking, 288-289 hub-and-spoke model, for VPN, 404-405 HTTP proxy, FireWall-1 as, 250 **HTTP Security Server** about, 271-298 IANA (Internet Assigned Numbers Authority), CVP with, 282-284 debugging, 319–320, 320t ICA (Internal Certificate Authority) enabling, 271–272 in High Availability management configuraerror messages in, 292-293 tion, 184–185 instances of, increasing, 294 random number generator for, 47, 47f memory for, 295, 298 SIC for, 163 ICA certificates performance tuning, 293–296 port for, 297-298 exporting, 392 requests forwarded by, to caching proxy on management station, deletion and, 175 server, 286 revoking, 185-186 sample configuration for, 330–333 ICANN (Internet Corporation for Assigned schemes permitted by, 291-292 Names and Numbers), 335 troubleshooting, 297–298 ICMP packets UFP with, 278-282 blocking, 150 Web site access through NAT support for, 352 issues with, 290, 290t-291t ICMP Redirect, dual NAT and, 353-354, 354f troubleshooting, 298 ICMP requests, accepting, 83, 98, 98f HTTP server, user authentication properties ICMP service object, about, 77 for, 223 ICMP traceroute, firewall handling of, 7–8 HTTP service identifiers, in INSPECT, 525, 525t authenticating over different ports, 251 ident packets authentication with, on remote site, 253 accepting, 99-100, 99f Client Authentication over, 202, 204, 204f, rejecting, 158-159 required by FTP, 157 228 custom pages for, 254-255 If Via, in rules, 86 IGMP packets, accepting, 99, 99f debugging, 320t for Clientless VPN, 244–246, 245*f*, 246*t* **IKE** connections dropped with, 258 about, 386 User Authentication for, 198–199, 199f aggressive mode for, 392 rule order and, 224 debugging with, 408 maximum concurrent connections for, 408 HTTPS server, internal, authenticating access to, 251–252, 253*f* rules for, 407, 407*f* 

IKE (cont.)	in domain objects, 71
over TCP, SecureClient options for, 460	for gateway cluster, 402, 402f
in traditional mode, settings for, 390-392,	more than four, 515
391 <i>f</i>	in State Synchronization configuration,
IKE pre-shared secrets	495–496
encryption key for, 242	in INSPECT, 526
with L2TP, 447	Internet, in internal network, 443
simplified mode and, 388	license based on, 24–25
for VPN gateways, 401	for Management GUIs, configuring, 63-64
IKE rekey, VPN failure after, 409–410	for management station, moving management
incremental sync, definition of, 494	module and, 174–176
individuals, in security policy, 17	for MX records, in SMTP Security Server, 306,
information confidentiality, policy on, 564	308
INSPECT	for NAT
definition of, 521	binding to loopback interface, 354-355
documentation of, 521	determining, 345
purpose of, 522	in double-blind network, 375
rulebase converted to, 529–536, 530 <i>f</i>	in network migration, 370
sample of, 536–543	in simple network, 366
syntax for, 522–529	of NIC, in encryption domain, 479
installation image, for SecureClient, 465–468	in node-limited license, 21–22, 147
Install On	for remote management, installation of, 46,
in rules, 87	46 <i>f</i>
in S/Key, 214	virtual, for High Availability, 499–500
Insufficient Information problem, 223–225	for VPN clients
interface	assigned in Office Mode, 443–444, 445
definition of, 143	conflicting, 442
different rules for, INSPECT for, 538-539	IP Options
fetching, 108	dropping, logging on, 134
support for, 143	enabling, 84
Internal Certificate Authority. See ICA	packet checked against, 342
Internet, DNS definitions for, 159	IP Pool NAT
Internet Assigned Numbers Authority (IANA),	allocating to Office Mode clients, 446
335	asymmetric routing and, 443
Internet connection, sharing, SecuRemote and,	determining IP address with, 477
473	for SecuRemote connections, 451, 451f
Internet Corporation for Assigned Names and	in VPN, 397
Numbers (ICANN), 335	IP routing, enabling
Internet Explorer, HTTP Security Server and,	in Windows 2000, 558
298	in Windows NT, 553
Internet Relay Chat (IRC), ident used by, 100	IPSec
Internet Service Providers, policy on, 565	about, 385–386
interoperable device objects, about, 72	starting, for L2TP, 449
Intranet, DNS definitions for, 159	UDP encapsulation for
IP address	fragmentation with, 477–478
for connection hiding, 340	SecureClient option for, 460
determining, with IP Pool NAT, 477	IPSec rekey, IKE rekeys and, 409-410

IPSO	LDAP server
FireWall-1 on, 31–32	adding to account unit, 237–238, 237f
installation of, 40	branches of, specifying, 240, 240f
firewall module on, installation of, 49-52	encryption properties for, 239–240, 239f
packet sniffer in, 355	properties of, 238–239, 238f
preinstallation of, 35–36	schema checking for, 234–235
proxy ARP on, 347	SecureClient options for, 462
static routes on, 348–349	LDAP users, FireWall-1 use of, 247
tweaking, 577	LEA (Log Export API), 270
IPv4 address space, 335–336	license(s)
IPv6 address space, 336	adding, 171
IPxxx. See IPSO	for evaluation, 24–25
IRC (Internet Relay Chat), ident used by, 100	for firewall module, installation of, 50–51
ISPs (Internet Service Providers), policy on, 565	for High Availability, 494
,,,	for High Availability management modules,
J	178
JAVA code, blocking, 276	installation of, 171
j11/11 code, 610cming, 2, 0	issues with, 24–25, 109
K	for management console, installation of, 45, 45
KaZaA, blocking, 288–289	obtaining, 24–26
kernel URL logging, HTTP Security Server and,	for planning and installation, 20–26
295	for State Synchronization, error on, 516
kernel variables, modifying, 141–142	third-party software and, 269
KEY, in connections table, 527	updating, remotely, 169–171
key exchange, for VPN, settings for, 390	license key, for licenses, 24
ney exemmige, for \$114, seetings for, 570	Lightweight Directory Access Protocol. See LDA
L	link-local addresses, 339
L2TP clients, configuring for, 446–450	Linux
label, in domain names, 454–456	FireWall-1 on, 32–34
lab network, for testing OS configuration, 36	packet sniffer in, 355
Large Scale Manager	securing, 559–561
gateway management with, 189	tweaking, 560–561
purpose of, 56	load balancing
LDAP (Lightweight Directory Access Protocol)	dynamic, 507–508, 508 <i>f</i>
about, 197–198	with NAT, 509, 509 <i>f</i>
Global Properties for, 235–236, 235 <i>f</i>	in High Availability, 503–512
integrating, 234–243	static, 504–505, 505 <i>f</i>
license for, 24	with switches, 506, 507 <i>f</i>
LDAP account unit	localhost, connection to Management GUIs, 64
authentication properties for, 241–242,	local interface anti-spoofing, error on, 145
	local license, 24
241 <i>f</i>	location, in user properties, 216, 216 <i>f</i>
properties of, 236–237, 237 g	
server added to, 237–238, 237 <i>f</i>	log
LDAP group	on Client Authentication, 229
properties for, 242–243, 242 <i>f</i>	grace period in, 135
rule for, 243	for High Availability management modules,
in user creation, setting for, 210	181, 181 <i>f</i>

log (cont.)	Management GUI applications. See also specific
location of, 139–140, 139 <i>f</i>	applications
maintenance of, 136–140	about, 55–66
number of, issues with, 190	administrator accounts for, 39
rule viewed from, 126–127	backward compatibility of, 106
log, system, error messages in, 145-148	demonstration mode of, 66
log buffer, full, 148	hosts for, configuring, 63-64
Log Export API (LEA), 270	installation of, 44, 44f
logging	license for, 23
enabling	error on, 109
for Linux, 560–561	purpose of, 21
in SPARC Solaris, 551	reliance on, issues with, 190–191
on firewall module, local, 164-165	over slow connections, 107–108
guidelines for, 123–124	status of, 113, 113 <i>f</i>
of implied rules, 84, 98	users for, configuring, 58
in OS security, 38–39	management module
in rules, 86–87	in FireWall-1, 162
to syslog, 142–143	highly available (See High Availability
in usage policy, 565	management modules)
login accounts, generic, issues with, 39	moving, 172–178
login name, for management users, 61	from standalone gateway, 176–178
Log Manager. See SmartView Tracker	NAT on, remote management from, 165
logon, SecureClient options for, 464–465, 464f	one-time password for, 163–164, 164f
Log Viewer. See SmartView Tracker	testing, after migration, 176
Lumeta, for network topology, 14	management object
1 6,	deleting, after moving, 175
M	IP address of, moving management module
MAC address	and, 174–176
for ARP	log rotation with, 137
determining, 345–347	management station. See also management
in double-blind network, 375	console
in network migration, 370–371	fingerprint of, 48, 48f
in simple network, 366	installation of, 40–49
verifying, 357–359	limitations on moving, 176
for State Synchronization, changing,	synching clock of, to firewall module, 184
512–513	management users
machine name	configuring
for Windows 2000, 557	in Policy Editor, 60–63, 60 <i>f</i> , 61 <i>f</i> , 62 <i>f</i> , 63
for Windows NT, 553	in SmartDashboard, 58
mail alerts, 136	manual rules, for NAT, 339
management (organizational), security policy	max_conns_per_site setting, for SMTP Security
supported by, 16, 18	Server, 305
management console. See also management	max_conns setting, for SMTP Security Server,
station; SmartConsole installation of, 40–49	305 max_ips_per_mx_node setting, for SMTP Secu
license for, 22	
	rity Server, 306
purpose of, 20–21	max_mail_size setting, for SMTP Security Serve
in single-gateway products, 22	305

max\_mails\_per\_conn setting, for SMTP Security network migration with, 369–373, 369f Server, 305 network objects for, 349, 349t max\_mx\_node\_per\_mail setting, for SMTP proxy ARPs for, setting up, 345–347 Security Server, 305 purpose of, 336 maxrecipients setting, for SMTP Security Server, remote management with, 165 SecureClient with, firewall access by, 469 MD5 Challenge, authentication with, 447 SecuRemote with, 468-469 memory simple network with, sample of, 365–369, 365f for HTTP Security Server, 295, 298 State Synchronization and, 499 used for state tables, 576, 576f static host routes for, setting up, 348–349 Meshed Community, creating, 397-401, 398f, troubleshooting, with packet sniffer, 355-364 399*f*, 400*f* types of, 339-340 <methods>, in SIC policy rules, 188 with VPN, 405-406 Microsoft Internet Explorer, HTTP Security IP conflicts with, 442 Server and, 298 in VPN Community, disabling, 400–401 Microsoft Networking, SecureClient and, 453-457 NAT rules compiled, in INSPECT, 532-534, 532f Microsoft Visio, for network topology, 14 MIME type, filtering on, 309–310 creating, 350–351, 351f modules. See also specific modules in double-blind network, 377, 377f connections between, 162, 162f dual, 353–354, 353f states of, 114, 114t encryption and, 405, 405f Motif GUI, license for, 23 manual, 339 MTA, connection failure at, 312 in network migration, 373, 373f MTU Adjuster, 478, 478*f* packet checked against, 342 multicast addresses, 335-336 in simple network, 368, 368f MX records, under SMTP Security Server **NetBIOS** firewall as, 310 name resolution in, SecuRemote and, 456-457 IP address of, 306, 308 over TCP, disabling, in Windows 2000, 558 number of, 305-306 network subject of, 310 double-blind, NAT for, 374-377, 374f Internet IP addresses routed through, 443 migrating, with NAT, 369–373, 369f NAT (Network Address Translation) size of, security needs and, 9-11 disadvantages of, 337-338 unsecured operating systems on, 36 Network Address Translation. See NAT for double-blind network, 374–377, 374f network objects dual, 353–354, 353f dynamic load balancing with, 509, 509f about, 70–71, 70*f* encryption and, 405 compiled, in INSPECT, 531 in FireWall-1, 336, 339-343 creating, with dbedit, 144–145 firewall bypassed and, 352–355 defining, 92, 93*f* for firewalls, 15 for encryption domain, 389 implementation of, 343-351, 344f for site addition, 417 samples of, 365–377 for three-site VPN, 413–414 IP addresses for for NAT implementation, 349, 349t binding to loopback interface, 354-355 in double-blind network, 376, 376t determining, 345 in network migration, 371, 371t–372t L2TP and, 450 in simple network, 367, 367t limitations of, 351-355 number of, issues with, 188

network topology	OBSEC Management Interface (OMI), 270
anti-spoofing settings in, 80-81, 81f	Office Mode, for SecureClient, 442–446
for Check Point gateway, 68-69, 69f	anti-spoofing in, 445
creating, 91	configuring, 444–446, 444 <i>f</i>
defining, error on, 148	connections in, 446
in firewall planning, 13–15	issues resolved by, 442-444
for gateway cluster, 486, 486f	limitations of, 446
in rulebase creation, 91–92, 92f	Microsoft Networking and, 453
SecureClient options for, 461, 461f	with multiple interfaces, 445
SecureClient request for, port for, 473	OMI (OBSEC Management Interface), 270
as VPN domain, 389, 390f	one-request method, for UFP caching, 294-295
network traffic, order of operations in, 341–343	one-time password (OTP)
newline characters, FTP problems with, 156-157	for firewall module, 163–164, 164 <i>f</i>
NIC, mixing with dial-up adapters, SecuRemote	for management module, 163–164, 164f
and, 479	vs. static password, 194
node gateway objects, about, 70	OpenLDAP v1, file for, 567–569
node host objects, about, 70	OpenLDAP v2, file for, 571–573
node-limited firewalls	Open Platform for Security (OPSEC), about, 270
in HA configuration, 494	operating system. See OS
host number error in, 146–147	OPSEC (Open Platform for Security), about, 270
license for, 21–22	OPSEC application
in single-gateway products, 22	for CVP server, 283, 283 <i>f</i>
node objects (workstation objects)	for UFP server, 279–280, 279f, 281f
about, 70–73	organization, security needs of, 9-11
defining, 92, 94 <i>f</i>	OS (operating system)
externally managed, about, 70	for FireWall-1
in FireWall-1 upgrade, 52–53	configuration of, 36
for RADIUS server, creating, 232-233	installing, 34–39
for TACACS, 233, 233f	securing, 37–39, 545–561
Nokia Crypto Cluster, VPN issues with, 409	selecting, 27–34
Nokia IP Clustering, load balancing in, 504	firewall limitations and, 2-3
Nokia IP Security Platform. See IPSO	of management module, moving module and,
NT domain. See Windows NT domain	172–173
numbers, in INSPECT, 526	patches for, 38
	OSE device objects, about, 71
0	os parameter, of costat, application flavors for,
objects	119 <i>t</i>
creation of, from command line, 143–145	OS password
defining, 92–94	about, 194
naming, 104, 105 <i>t</i> –106 <i>t</i>	enabling, on firewall, 219
types of, 66–73	Other type services, INSPECT for, 536
viewing, in SmartDashboard, 57	OTP. See one-time password
objects_5_0.C	ownership, in security policy, 17
corruption of, 147–148	_
editing, 102–103	P
in rulebase compiling, 529–530	packages
objects list, in SmartDashboard, 57	for Linux, 559–560
objects tree, in SmartDashboard, 57	for SPARC Solaris, 546–550

policy server, SecureClient and, 434 packet accepting based on previous packet, INSPECT logon to, 459 for, 537-538 <ports>, in SIC policy rules, 187 fragmentation of, in VPN, 411 postmaster, e-mail address for, 306 inspection of, with fw monitor, 541 postmaster setting, for SMTP Security Server, 306 processing of, in FireWall-1, 342 PPPoE, SecuRemote and, 476 virtual defragmentation of, error on, 146 PPTP (Point-to-Point Tunneling Protocol), packet filters INSPECT for, 537 overview of, 3-4 pre-shared secrets Passive FTP handled by, 6 vs. certificates, 387 Stateful Inspection and, 5 for IKE traceroute handled by, 7-8 encryption key for, 242 packet integrity check, in VPN, 379 simplified mode and, 388 packet sniffer for VPN gateways, 401 for NAT troubleshooting, 355–364 privacy, in usage policy, 565 password discovered with, 194 private key, in public-key cryptography, 381 Passive FTP, firewall handling of, 5-6 protocol(s). See also specific protocols password(s) NAT incompatibility with, 351–352 about, 193-198 for State Synchronization, 494 erased, SecureClient and, 460 for Windows 2000, 556-557 for management users, 59 for Windows NT, 552 in S/Key, 214 proxied conns, entries in, increasing, 293 resetting, 253-254 proxies. See application proxies user, changing, 253 proxy ARPs. See also ARPs password, one-time. See one-time password setting up, for NAT implementation, 345-347 (OTP) pseudo-random number generator, in encryption, password number, in S/Key, 195 eers>, in SIC policy rules, 187 public key permissions, defining, for management users, certification of, 383 61, 61*f* in public-key cryptography, 381 public-key cryptography, asymmetric encryption .pf file, in rulebase compiling, 529–531 ping, fragmented packet troubleshooting with, in, 381 477-478 Public Key Infrastructure (PKI), 270 PKI (Public Key Infrastructure), 270 Pnote devices, errors on, 517 Point-to-Point Tunneling Protocol (PPTP), RADIUS (Remote Access Dial-In User Service) about, 197 INSPECT for, 537 Policy Editor. See also SmartDashboard integrating, 231–233 about, 56-58, 57f settings for, for User Authentication, 215, 215f RADIUS server, on NT domain, 248 crashing of, 108–109 demonstration mode of, 66 RADIUS server object, creating, 232–233, 232f NAT rules in, 339 RADIUS service, creating, 232 purpose of, 55 RADIUS users, FireWall-1 use of, 247 restrictions on, 65, 65f random keystrokes on SPARC Solaris, 30 in firewall installation, 51 troubleshooting, 107 in management console installation, 47, 47f policy names, in FireWall-1 upgrade, 53 random number generator, seeding, 47, 47f policy routing, load balancing with, 505, 506f registers, in INSPECT, 526

registry, hacking, in securing Windows NT,	rule(s). See also NAT rules; VPN rules
554–555	changing, responsibility for, 17
Reject action, in rules, 86	for Client Authentication, 227, 227f, 266f
reject short circuit, in INSPECT, 523t	error on, 256
Remote Access, SCV for, 435–436, 435 <i>f</i>	for Clientless VPN, 244, 244f
Remote Access community, gateway object for,	for client-to-site VPN, 483, 483f
for SecuRemote, 427	conflicting, 101, 101f
Remote Access Dial-In User Service. See RADIUS	defining, 94–95
remote administration	for Desktop Security, 436–438, 436 <i>f</i> , 437 <i>f</i>
IP address for, installation of, 46, 46f	for FTP Content Security, 300, 300f, 329f
in Windows NT/2000, 28–29	for groups, 218
remote management	hierarchical management of, 189
capabilities of, 165–171	for HTTP Content Security, 278, 278f
with NAT, 165	with CVP, 284, 285f
troubleshooting, 183–188	with UFP, 282, 282f
Remote Procedure Call (RPC), support for, 149	implied, logging, 84, 98
Reporting Tool, purpose of, 56	for interfaces, 106–107
resend_period setting, for SMTP Security Server,	for LDAP group, 243
303	for multiple-entry point SecureClient, 491,
resources, definition of, 271, 271t. See also specific	491 <i>f</i>
types	for NAT implementation, 350, 350f
reverse proxy, FireWall-1 as, 250	necessary, 99–100
revision control, for security policy, setting for, 85	number of, issues with, 188
RFC1918 addresses, 338	order of, 88–90, 89 <i>f</i>
RIP, accepting, 97, 97 <i>f</i>	guidelines for, 90
rlogin Security Server, debugging, 320t	Security Servers and, 319
rlogin service	setting, 82
Client Authentication over, 228	in User Authentication, 223–225
User Authentication for, 198–199	parts of, 85–87
rule order and, 224	sample, 87–88, 88 <i>f</i>
Roaming user profiles, with SecureClient, 465	for SecureClient with gateway cluster,
ROBO Gateway Profile, 189–190	486–487, 487 <i>f</i>
routers	for Session Authentication, 225, 225f
firewalls compared to, 1–2	in SIC policy, 187
packet filtering in, 3	for SMTP Content Security, 310f, 326f, 329j
routing	for TCP Content Security, 317, 317f
asymmetric	for User Authentication, 221–223, 222f
Office Mode and, 444	for users, 218
VPN and, 443	rulebase
in firewall OS, 39	about, 85–90
for Office Mode network, 446	components of, 66–85
RPC (Remote Procedure Call), support for, 149	converted to INSPECT, 529–536, 530 <i>f</i>
RPC locator, Windows 2000 and, 558–559	creating, 90–101
RPC service object, about, 77, 77f	network topology in, 91–92, 92f
RST packets	objects in, defining, 92–94
dropping, 155	disappearance of, 107
SYN packets followed by, in NAT trouble-	e-mail directed through, 308
shooting, 359–361	e-mail not allowed by, notification on, 305

S

command line interface for, 474-475, importing, 107 for multiple-entry point SecureClient, 491, 474t-475tconfiguring, 439, 440f for NAT implementation, 350, 350f connection mode for, 458f, 459 in double-blind network, 377, 377f custom prepackaged version of, 442, in network migration, 373, 373f 457-468 DNS traffic encrypted for, 434 in simple network, 368, 368f number of, issues with, 188-189 with gateway clusters, sample configuration order of operations in, 88–90, 89f for, 484–487, 485*f* packet checked against, 342 installation of, 438–442 sample of, 95f image for, 465-468, 466f for SecureClient with gateway cluster, options for, 463–464, 463f 486–487, 487f profiles for, 457, 458f for SecuRemote, 431–432, 432f introduction to, 425-426 for Session Authentication, 264f license for, 24, 426 for User Authentication, 262, 262f Microsoft Networking and, 453-457 with multiple entry points, sample configurarulebasese.fws, editing, 102-103 rundir setting, for SMTP Security Server, 304 tion for, 488–491, 488f with NAT, firewall access by, 469 Office Mode for, 442–446 SA (Security Associations) options for, 459–462, 460f about, 386 policy server and, 434 simplification of subnets in, 410 profiles for installation of, 457, 458f SAA (Secure Authentication API), 270 sample configurations for, 481–491 Safe@ products, license for, 23 vs. SecuRemote, 425-426 third-party VPN and, 473 SAM. See SmartDefense SAMP (Suspicious Activity Monitoring topology request by, port for, 473 Protocol), 270 traceroute with, 411 SANS Institute, security policy documents of, 20 SecureClient Packaging Tool, 56, 457–468 Secure Configuration Verification (SCV), for satellite gateway, in Star Community, 398 scan\_period setting, for SMTP Security Server, Remote Access, 435–436, 435*f* 303 Secure Domain Logon (SDL) scheduled event object, 78, 79f platforms compatible with, 457 schema checking, for LDAP server, 234-235 for SecureClient script, as alert action, 135-136 Microsoft Networking and, 453 SCV (Secure Configuration Verification), for options for, 465 Secure Internal Communication. See SIC Remote Access, 435–436, 435*f* SDL. See Secure Domain Logon SecuRemote. See also SecureClient secondary management module binding to all adapters, 479 failover to, 182–183, 182*f* behind Check Point gateway, 470, 470f installing, 178-179, 178f communication ports blocked in, 476 secret key, in S/Key, 195 configuring, 426–442 settings for, 214 custom adapters and, 476 Secure Authentication API (SAA), 270 disabling at startup, 472 SecureClient encrypted session to, initiating, 469-470 adding site to, 441–442, 441f failover of, gateway cluster for, 450, 488–491, 490f anti-spoofing in, 445 certificate obtained with, 430-431 interface bound to, 439

SecuRemote (cont.)	on gateway cluster, inconsistencies in,
introduction to, 425–426	514–515, 516
IP Pool NAT for, 451, 451 <i>f</i>	setting for, 85
license for, 24, 426	large-scale environment, 188
with NAT, 468-469	management support for, 16
NetBIOS name resolution and, 456-457	reinstallation of, 104
NT file permissions and, 478	remotely controlling, on firewall module,
outbound connections allowed to, code for,	166–167
536–537	responsibility for, 17, 19–20
behind proxy, 471–472, 471 <i>f</i> , 472 <i>f</i>	revision control for, 85
sample configurations for, 481-491	in rule generation, 94–95
vs. SecureClient, 425–426	specifics in, 17–18
site added to, 476	Security Servers. See also specific servers
troubleshooting, 476–480	connections to
user creation for, 428–431, 428 <i>f</i>	failover of, 494
SecuRemote DNS server, 454, 454f, 455f	origin of, 318
Secure Platform (SPLAT), for Linux installation,	debugging, 319–321, 320t
32–34	enabling, 221
secure server, license for, 22	issues with, 318–319
Secure Sockets Layer. <i>See</i> SSL	rule order and, 319
SecureUpdate. <i>See</i> SmartUpdate	State Synchronization and, 499
SecurID	seed value, in S/Key, 195
about, 196, 196 <i>f</i>	settings for, 212
authentication failure with, 258-259	selection criteria, in SmartView Tracker, 123-12
integrating, 230–231	server object
settings for, 216	for LDAP account unit, 236
SecurID users, FireWall-1 use of, 247	for RADIUS, 232–233, 232f
Security Associations (SA)	for TACACS, 233, 233f
about, 386	service(s)
simplification of subnets in, 410	"any," 104, 104 <i>t</i>
Security Focus, 38	Client Authentication for, 202
security policy	common questions about, 148-150
configuring, frequently asked questions about,	disabling
101–107	in SPARC Solaris, 550–551, 551 <i>t</i>
default filter and	in Windows 2000, 557–558
changing, 539-540	in Windows NT, 554
sample of, 581–582	excepting from State Synchronization, 513
developing, 15–20	in FireWall-1 upgrade, 53
enforcement of, 16	not running, RST packets from, 360-361
example of, 19–20	in OS security, 38
files in, 102	of Other type, INSPECT for, 536
firewall implementation and, 18	removing, from Linux, 560
firewall limitations in, 2	Session Authentication for, 201
guidelines for, 16–18	slow, 158
in INSPECT, 534–536	User Authentication for, 198
installation of, 100–101, 100f	through VPN, not encrypting, 399-400
Client Authentication and, 257	in Windows 2000, 556-557
errors on, 147–148	in Windows NT, 553

Service, in rules, 86 single-gateway products Service Level Agreement (SLA), violation of, about, 22 log/alert on, 134 in HA configuration, 494 service objects S/Key about, 73-77 about, 195-196 creating, 73 enabling, on firewall, 219 service packs resetting passwords for, 253-254 for Windows 2000, 557 settings for, 212-215, 213f for Windows NT, 556 S/Key generator, 195, 195*f* SLA (Service Level Agreement), violation of, service port, error message about, 145–146 <services>, in SIC policy rules, 187 log/alert on, 134 Session Authentication small-office environments, Check Point Express in cleartext, 256 for, 23 for Client Authentication, 202, 228 SmartCenter. See SmartConsole with Content Security, 256, 319 **SmartClients** encryption for, 256 backward compatibility of, 106 error on, 255 installation of, directory for, 44, 44f explanation of, 201, 201*f*, 202*f* license for, 22–23 limitations of, 207–208 SmartConsole. See also management console rule for, 225, 225f files modified by, 65 sample configuration for, 263-264 in FireWall-1, 162 setting up, 225-227 license for, 22-23 SSL for, 226 reliance on, 190-191 usage guidelines for, 207t SmartDashboard. See also Policy Editor short circuit, in INSPECT, 523, 523t about, 56-58, 57f SIC (Secure Internal Communication) authentication configured in, 163-164 about, 163-164 crashing of, 108-109 debugging, 186-188 purpose of, 55 dynamic addressing and, 184 reliance on, 190-191 failure of, in remote management, 183-184 restrictions on, 65, 65f general failure of, 184 rules viewed in, 126-127 one-time password for, establishing, 51–52 troubleshooting, 107 users created in, 208 for OPSEC application, 280 random number generator for, 47, 47f SmartDefense (SAM) resetting, 185-186 FTP commands enabled in, 301, 301f with secondary management station, 179 log/alert settings for, 134 SIC certificates, clock sync and, 184 SmartDirectory, license for, 24 SIC key, copying, to destination management SmartMap, crashing of, 108-109 "smart" SMTP server, 311, 311*f* module, 173-174 SIC name, in moving management module, SmartUpdate (SecureUpdate) license update with, 169, 171, 172f SIC policy, debugging, 187–188 purpose of, 56 Sign On Method, for Client Authentication, SmartView Monitor, purpose of, 56 228-229, 228f SmartView Status. See also Status Manager silent installation, for SecureClient, 462-463, about, 111–118, 112*f* purpose of, 56 Simple Object Access Protocol (SOAP), for URI SmartView Tracker (Log Viewer) resource, 278, 278f about, 121–131, 121f

SmartView Tracker (cont.)	securing, 545–552
active mode in, 127–131, 127 <i>f</i> , 127 <i>t</i> –128 <i>t</i>	tweaking, 551–552, 577
audit mode in, 131, 132 <i>f</i> , 132 <i>t</i>	specific sign-on, for Client Authentication,
bottleneck in, 190	202–205, 206 <i>f</i> , 227
demonstration mode of, 66	SPLAT (Secure Platform), for Linux installation,
fields in, 122 <i>t</i> –123 <i>t</i>	32–34
IP resolution timeout for, 135	split-horizon DNS, 159
purpose of, 56	NAT and, 352–353
SMTP resources, for Content Security, 306–310,	spool files, in SMTP Security Server,
307f, 308f, 309f	313–316
sample configuration for, 323–326, 324f,	spool_limit_scan_period setting, for SMTP
325f, 326f	Security Server, 304
SMTP Security Server	spool_limit setting, for SMTP Security Server,
about, 302–316, 303 <i>f</i>	304
CVP with, 312, 325, 325 <i>f</i>	Src, in rule enforcement, 87
debugging, 320t	SSH, for Management GUI access, 64
mail stuck in, 313-316	SSL (Secure Sockets Layer)
MX records used by, issues with, 311	FTP over, 157–158, 158 <i>t</i>
parameters for, 302–306, 304 <i>f</i>	for LDAP server, 239–240, 239f
sample configuration for, 322-326	for Session Authentication, 226
spam and, 311–312	in SIC, 163
troubleshooting, 312–316	standard sign-on, for Client Authentication,
SMTP server, "smart," 311, 311 <i>f</i>	202–205, 205 <i>f</i> , 227
SMTP traffic	Star Community, 398, 404–405, 404 <i>f</i>
Content Security for, 302–316, 303f	Stateful ICMP replies, accepting, 98
sample configuration for, 322–326	Stateful Inspection
ident used by, 100	in FireWall-1, 8–9
snoop	overview of, 5
expressions for, 364, 364t	Passive FTP handled by, 6
flags for, 363, 363 <i>t</i>	of TCP connections, problems with,
for NAT troubleshooting, 355–361	150–156
SOAP (Simple Object Access Protocol), for URI	traceroute handled by, 8
resource, 278, 278 <i>f</i>	statements, in INSPECT, 524
social engineering, 2	State Synchronization
SOCKS, ICMP proxied by, 8	asymmetric routing and, 500–501
software, uninstalling, for security, 37	checking, 512
Solaris x86, FireWall-1 on, 29. See also SPARC	configuration of, 495–497
Solaris	definition of, 494
Sonicwall, VPN issues with, 409–410	error messages with, 514–520
source, in rules, 86	frequently asked questions about, 512–513
source hide NAT, 340	in High Availability, 493–499
source static NAT, 339–340	limitations of, 498–499
spam, SMTP Security Server and, 311–312	MAC address used by, changing, 512–513
SPARC Solaris	network used for, 497, 498f
FireWall-1 on, 29–30	platform interoperability in, 513
packet sniffer in, 355	protocol for, 494
patching, 546	service not synchronized with, 513

state tables. See also address translation tables;	TCP connection
connections table	bidirectional, 153-154
of firewall module, remote viewing of, 167–169	conflicting, 154-155
memory used for, 576, 576f	Stateful Inspection of, problems with,
number of entries in, 575–576	150–156
static host routes	timeout on
for load balancing, 504	adjusting, 156
for NAT implementation, 348	disabling, 156
in double-blind network, 375, 375f	issues with, 154–155
in network migration, 371	unidirectional, 153
in simple network, 367	tcpdump
static load balancing, 504–505, 505f	expressions for, 362, 362t
static password, problems with, 194	flags for, 361, 361 <i>t</i>
static tables, creating, with INSPECT, 528	for NAT troubleshooting, 355–361
status information, interval for fetching, 135	TCP/IP stack, SecuRemote bound to, 426
Status Manager, 135. See also SmartView Status	TCP packet
Stealth rule, 99, 99 <i>f</i>	NAT support for, 352
streaming media, preventing access to, 287–288	out of state, 151–152
subnet	TCP port, of management module, 162
firewall and, 15	TCP resource, for Content Security, 316–318, 317
simplification of, in IPSec SAs, 410	TCP Security Server
support, end-user, for SecuRemote, 426	about, 316–318
Suspicious Activity Monitoring Protocol (SAMP),	with CVP, 316–317, 317f
270	debugging, 320t
SVN Foundation	with UFP, 318
alerts defined for, 115–116, 115 <i>f</i>	TCP Sequence Verifier, 154, 155
status of, 113, 113 <i>f</i>	TCP service
switches, load balancing with, 506, 507f	DNS over, accepting, 83, 98, 98f
symmetric encryption, definition of, 381	IKE over, SecureClient options for, 460
SYN-ACK packets, unexpected, 155	NetBIOS over, disabling, in Windows 2000,
sync buffer, error on, 516, 517–519	558
SYN packets	TCP service object, about, 73–75, 74 <i>f</i> , 75 <i>f</i>
dropping, 155	TCP traffic, Content Security for, 316–318
in NAT troubleshooting, 357–359	Telnet Security Server, debugging, 320t
followed by RST, 359-361	Telnet service
syslog, logging to, 142–143	Client Authentication over, 202, 203-204, 228
system log, error messages in, 145–148	debugging, 320t
	User Authentication for, 198–199
T	error on, 258
table, for SecuRemote clients, 469–470	rule order and, 224
TACACS/TACACS+ (Terminal Access Controller	Terminal Access Controller Access Control
Access Control System)	System. See TACACS/TACACS+
about, 197	third-party software
integrating, 233–234	for AIX, 30
settings for, for user, 216, 216f	for Content Security, 269
TACACS users, FireWall-1 use of, 247	for High Availability, 502–503
TCP ACK packet, Stateful Inspection of, 151	for IPSO, 32

third-party software (cont.)	UDP packets
for SPARC Solaris, 29	fragmentation of, troubleshooting, 477–478
for Windows NT/2000, 28	NAT support for, 352
time, in user properties, 217, 217f	UDP service
time objects	DNS over, accepting, 83, 97–98, 97f
about, 77–78, 78 <i>f</i> , 79 <i>f</i>	State Synchronization and, 494
in rules, 87	UDP service object, about, 76, 76f
timeout	UDP traceroute, firewall handling of, 7–8
for Client Authentication, 229, 229f	UFP (URL Filtering Protocol)
on SecuRemote authentication, 433	about, 270
on TCP	caching, 294–295
adjusting, 156	OPSEC application for, 279–280, 279 <i>f</i> , 281 <i>f</i>
disabling, 156	UNIX. See also Linux
issues with, 154–155	command-line mail in, 136
on UDP, adjusting, 156	proxy ARP on, 347
for User Authentication, 223, 262, 263f	static routes on, 348
TIMEOUT, in connections table, 527	
timeout setting, for SMTP Security Server, 303	Upgrade Verification Utilities, 53
token, hardware	URI resources, for Content Security, 272–278, 273 <i>f</i> , 274 <i>f</i> , 275 <i>f</i>
in Defender, 196–197	with CVP, 283–284, 284 <i>f</i> , 285 <i>f</i>
in SecurID, 196, 196 <i>f</i>	rule for, 278, 278 <i>f</i>
topology. See network topology	sample configuration for, 330–333, 331f, 332f
traceroute	with UFP, 280–282, 281 <i>f</i>
firewall handling of, 6–8	URI specification file, 275
through VPN, 410–411	URL, filtering by. <i>See also</i> UFP; URI resources
in Windows, problem with, 148–149	specifying match for, 274
Track, in rules, 86–87	URL Filtering Protocol. See UFP
Traffic Monitoring, purpose of, 56	usage policy
training	redirection to, 286–287
for AIX, 30	sample of, 563–565
for SPARC Solaris, 29–30	user
Translate Destination on Client Side option,	access permissions of, in Windows NT, 555
342–343	adding to RADIUS, 231–232
transparent connection, URI resource applied	in authentication server, FireWall-1 use of,
with, 273	247
trust, levels of, in firewall usage, 1	authentication settings for, 212-218,
trust, zones of. See zones of trust	213 <i>f</i> –216 <i>f</i>
tunnel connection	creation of, 208–218, 208 <i>f</i> –212 <i>f</i>
over HTTP, blocking, 288–289	Office Mode allowed for, 445
URI resource applied with, 273	for SecuRemote, creation of, 428–431, 428f,
two-request method, for UFP caching, 294–295	482
	for VPN, creation of, 417–418
U	Windows usernames for, access based on, 248
UAA (User Authority API), 270	user access, to operating system, securing, 39
UAM (User-to-Address Mapping), 270	User Authentication
UDP connection	in cleartext, 256
timeout on, adjusting, 156	for Client Authentication, 202, 228
unidirectional, 153	with Content Security, 319

on each URL, 256 Visual Policy Editor (VPE) with encryption, 406 crashing of, 108–109 in SecuRemote, 426 in SmartDashboard, 57 explanation of, 198-201 VLANs (virtual LANs), zones of trust in, 15 failure of, settings for, 221, 223 VPE. See Visual Policy Editor VPN (Virtual Private Network). See also Securefile downloads allowed with, 287–288, 287f Client; SecuRemote prompt for, absence of, 257 rule for, 221-223, 222f adding site to, 415-418, 416f rule order in, 223-225 asymmetric routing and, 443 authentication of, changing FQDN and, 175 sample configuration for, 260-262 setup for, 221-225 blocked communication in, 408 usage guidelines for, 207t certificate criteria for, 394–395, 395f in usage policy, 564 client software for (See SecureClient; User Authority API (UAA), 270 SecuRemote) UserAuthority server, for Session Authentication, client-to-site, sample configuration for, 226 481–484, 481*f* User/Client/Session Auth action, in rules, 86 configuration error on, log/alert on, 134 user database with dial-up networking, 443 import/export of, 248-249, 248t, 249t encryption in, configuring, 386-402 failover of, with ClusterXL, 504 in User Authentication, 222 user groups frequently asked questions about, 403-407 adding users to, 212, 213f interoperability issues with, 409 creation of, 210, 218, 219f introduction to, 379-383 Office Mode allowed for, 445 IP addresses for, at different sites, 403–404 for policy server, for Desktop Security, 434, key exchange for, log/alert on, 133, 134 434f license for, 24, 383-384 User Monitor, purpose of, 56 limiting access to, 403 user password, changing, 253 load sharing in, 511f users file, for RADIUS, adding users to, 231–232 with ClusterXL, 504 user template, 209, 210 dynamic, 510-512, 511f with LDAP server, 241 with policy routing, 505, 506f with NAT, 405-406 User-to-Address Mapping (UAM), 270 packet fragmentation in, 411 packet handling errors in, log/alert on, 134 VALUE, in connections table, 527 planning for, 386–387, 387f vanish short circuit, in INSPECT, 523, 523t sample configurations for, 412–422 variables, in INSPECT, 526 sharing address space in, 405–406 virtual defragmentation, error on, 146 simplified mode for virtual IP addresses, for High Availability, configuring, 397–401 499-500 Remote Access community rules for, 431, virtual LANs (VLANs), zones of trust in, 15 Virtual Link, statistics for, logging, 135 SecuRemote configuration in, 427 virtual memory, for HTTP Security Server, 295 vs. traditional mode, 388-389 Virtual Private Network. See VPN status of, 113, 113f Virtual Router Redundancy Protocol (VRRP) third-party products for configuring, 419 interoperability with, 403 SecureClient and, 473 for SecureClient with gateway clusters, 484–487 Visitor Mode, 471–472, 471*f*, 472*f* three-site, configuration for, 412–415, 413f

VPN (Virtual Private Network) (cont.)	VPN client software for (See SecureClient;
traceroute through, 410-411	SecuRemote)
traditional mode for	Windows 9x/ME, Office Mode and, 446
configuring, 389–397	Windows 2000
SecuRemote configuration in, 427, 427f	command-line mail in, 136
vs. simplified mode, 388-389	FireWall-1 on, about, 28–29
VPN-1	management console on, installation of, 40-49
alerts defined for, 116, 116f	packet sniffer in, 355
Pro vs. Net, 384	proxy ARP on, 347
VPN-1 control connections, accepting, 83, 96, 96f	securing, 556–559
VPN-1 Embedded NG, license for, 23	static routes on, 348
VPN Community	traceroute in, problem with, 148-149
creating, 397–401	Windows NT
gateway in multiple, 407	command-line mail in, 136
logging traffic on, 135	file permissions in, SecuRemote issues with,
NAT disabled in, 400–401	478
in simplified mode, 388	FireWall-1 on, about, 28–29
for site addition, 417	management console on, installation of, 40-49
specification of, in rules, 86	packet sniffer in, 355
for three-site VPN, 414, 414 <i>f</i>	proxy ARP on, 347
vpn parameter, of cpstat, application flavors for,	securing, 552–556
120 <i>t</i> –121 <i>t</i>	static routes on, 348
VPN Routing, 404–405	traceroute in, problem with, 148–149
VPN rules	tweaking, 577–579
for client-to-site VPN, 483, 483f	Windows NT domain
for encryption, 396, 396f	FireWall-1 integration with, 247-248
for SecuRemote access, 431–432	in securing Windows 2000, 557
in FireWall-1, 379	in securing Windows NT, 553
for multiple-entry point SecureClient, 491, 491f	Windows NT domain users, FireWall-1 use of, 247
for SecureClient with gateway cluster,	Windows user names, access based on, 248
486–487, 487 <i>f</i>	WINS client, disabling, in Windows NT, 553
in simplified mode, 401, 401f	WINS requests, forwarding in encryption
for site addition, 417, 417 <i>f</i> , 418, 418 <i>f</i>	domain, 456–457
for three-site VPN, 415, 415f	WINS server, defining, for Office Mode, 445
VRRP (Virtual Router Redundancy Protocol)	WINS TCP/IP, disabling, in Windows NT, 553
configuring, 419	wizards, enabling, 84
for SecureClient with gateway clusters, 484–487	words, in naming, reserved, 104, 105 <i>t</i> –106 <i>t</i>
VRRP packets, accepting, 99, 99f	workstation objects. See node objects
	wrapper, for FireWall-1 installation, 40
W	**
wait mode, for Client Authentication, 230	Y
warm standby, definition of, 493	Yahoo Messenger, blocking or enabling, 150, 150t
Web sites, access to, through HTTP Security	
Server, 298	Z
.W file, 529–530	ZeBeDee, for Management GUI access, 64
wildcards, definition of, 271, 271t	zones of trust
Windows	determining, 14–15
ClusterXL failure on, 515	in VLANs, 15



## 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.



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/online-books for details.



# informit.com/onlinebooks

# Register Your Book

at www.awprofessional.com/register

You may be eligible to receive:

- Advance notice of forthcoming editions of the book
- 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

### 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 Addison-Wesley

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

