

Index

Note to the Reader: Throughout this index **boldfaced** page numbers indicate primary discussions of a topic. *Italicized* page numbers indicate illustrations.

A

- A (address) records, 310
- Accept All Routes setting, 487
- Accept Unsecured
 - Communication, But Always Respond Using IPSec action, 196, 215
- Access This Computer From The Network right, 133
- access to remote access services, 416
 - connection security in, 418
 - exam essentials for, 447–448
 - policies for, 440
 - review questions for, 449–459
 - server security in, 436–440, 436, 439
 - summary, 447
 - troubleshooting, 443–447, 443–446
 - user access in. *See* profiles; user access
- Account Lockout Duration policy, 129
- account lockout policies, 129–130, 528
- Account Lockout Threshold policy, 129
- Account Logon Events policies, 132
- Account Policies option, 146
- Accounting Requests option, 389
- accounts, 528
 - group and user, 114–117
 - policies for, 126–131, 146
 - security options for, 137
- acknowledgments in DHCP leases, 248
- Acquire Failures statistic, 223
- Acquire Heap Size statistic, 223
- Act As Part Of The Operating System right, 133
- actions, 532
 - for IPSec filters, 209, 210, 211–216, 212–215
 - for RIP, 487
 - for security filters, 196
- Activate Authentication option, 485
- activating DHCP scopes, 260, 268–269
- Active Acquire statistic, 223
- Active Directory (AD), 117, 528
 - authorizing DHCP for, 254–255
 - for DNS, 313–314
 - domains in, 115, 117–121
 - group policies for. *See* group policies and GPOs
 - for user accounts, 115
 - with WSUS clients, 166–169, 166–169
- Active Directory account, 528
- Active Directory-Integrated (ADI) zones, 313–314, 528
- Active Directory Users and Computers (ADUC) utility, 115, 117, 528
- Active Policy, 222, 222
- Active Receive statistic, 223
- Active Security Associations statistic, 224
- Active Tunnels statistic, 225
- AD. *See* Active Directory (AD)
- Adapter Properties dialog box, 73
- Add A User Account So A Remote Router Can Dial In option, 481
- Add Counters dialog box, 85–88, 85
- Add Exclusion dialog box, 264, 264
- Add Exclusions screen, 256, 257
- Add IP Filter dialog box, 503–505, 503, 511–513, 511–513
- Add Workstations To Domain right, 133
- Added Cost For Routes setting, 485
- address (A) records, 310
- Address Leases view, 253
- address pools, 252–253, 528
- addresses. *See* IP addresses
- ADI (Active Directory-Integrated) zones, 313–314, 528
- adjacency, 468, 528
- Adjust Memory Quotas For A Process right, 133
- administrative templates, 124
- Administrator account, 115, 528
- Administrator Properties dialog box, 427
- ADUC (Active Directory Users and Computers) utility, 115, 117, 528
- advanced properties
 - for DHCP servers, 263, 263
 - for DNS servers, 319
 - for OSPF, 492–493, 492
 - for profiles, 432, 432
 - for RIP, 488–490, 489
 - for TCP/IP, 65–71, 66–67, 70
- Advanced Research Projects Agency (ARPA), 19–20
- Advanced Security Settings dialog box, 398–400
- Advanced Settings dialog box, 73, 73
- Advanced TCP/IP Settings dialog box, 59, 59, 65–71, 66–67, 70
- advertisements, 478
- AHs (authentication headers), 191, 194, 528
- alias records, 310
- all 1s broadcasts, 25
- All Counters option, 85
- All Instances option, 87
- /all switch in ipconfig, 91–92, 92, 345
- Allow Dynamic Updates setting, 325
- Allow IP-Based Remote Access And Demand-Dial Connections option, 377
- Allow IPX-Based Remote Access And Demand-Dial Connections option, 378
- Allow Log On Locally right, 133
- Allow Log On Through Terminal Services right, 134
- Allow Remote Clients To Request IPX Node Number option, 378
- Allow Unsecured Communication With Non-IPSec Aware Computers action, 196, 216
- Allow Zone Transfers option, 327
- Always Dynamically Update DNS A And PTR Records option, 273
- And operations for routing tables, 60
- ANI information, 419
- Announce All Routes setting, 487
- Announce All Routes In The Ranges Listed setting, 487
- APIPA (Automatic Private IP Addressing), 62
- Append Parent Suffixes Of The Primary DNS Suffix setting, 68

544 Append Primary And Connection – Compression Control Protocol (CCP)

- Append Primary And Connection
 - Specific DNS Suffixes setting, 67–68
 - Append These DNS Suffixes (In Order) setting, 68
 - AppleTalk connections for RRAS, 379
 - Application layer
 - in IP model, 3
 - in OSI model, 12, 12
 - application policies, 117
 - Apply Group Policy For Users
 - Asynchronous During Startup policy, 141
 - Apply Policy To Removable Media policy, 141
 - Apply Static Routes option, 421
 - area border routers, 469, 469, 528
 - Area ID setting, 491
 - area properties for OSPF, 498
 - ARPA (Advanced Research Projects Agency), 19–20
 - Assign A Static IP Address option, 421
 - attributes
 - defunct, 120
 - for remote access policies, 423–425
 - AU domain, 300
 - audit policies, 131–133, 528
 - Audit security options, 137
 - AUOptions key, 165
 - authentication, 528
 - in IPsec, 191, 197–198, 210, 211
 - in Kerberos, 130
 - in profiles, 429–430, 430
 - in remote access services, 416–418, 436–440
 - in user access. *See* user access
 - Authentication Bytes Received statistic, 225
 - Authentication Bytes Sent statistic, 225
 - Authentication Failures statistic, 223
 - authentication headers (AHs), 191, 194, 528
 - Authentication Methods dialog box, 438–439, 439
 - Authentication Requests option, 389
 - authorization, 254–255, 529
 - auto-static update mode, 468, 529
 - automatic notification
 - triggers, 328
 - Automatic option for demand dialing, 480
 - Automatic Private IP Addressing (APIPA), 62
 - automatic TCP/IP settings, 61–64, 63
 - Automatic Updates, 153–155, 154, 164–165, 529
 - Automatically download the updates and install them on the schedule that I specify option, 155
 - Automatically Use My Windows Logon Name And Password option, 398
 - Average setting, 85
 - AXFR (full zone transfers), 306
-
- B**
- b-node (broadcast) type, 69
 - Back Up Files And Directories right, 134
 - backbones, 529
 - Background Intelligent Transfer Services (BITS), 153
 - BACP (Bandwidth Allocation Control Protocol), 375
 - Bad SPI Packets statistic, 225
 - BAP (Bandwidth Allocation Protocol), 375
 - Basic Encryption (MPPE 40-Bit) option, 430
 - Berkeley Internet Name Domain (BIND) software, 302–303
 - binary notation, 23
 - BIND files, 314–315
 - binding, 529
 - in DNS, 314–315
 - in network protocols, 16–17
 - for TCP/IP, 71–74, 73
 - BITS (Background Intelligent Transfer Services), 153
 - Block action, 196
 - Block Inheritance option, 123
 - Boolean operators, 60
 - boot files in DNS, 315–316
 - Boot Threshold (Seconds) setting, 394
 - border routing, 469–470, 470, 529
 - broadcast addresses, 25
 - broadcast (b-node) type, 69
 - broadcast routers, 491, 529
 - Browse For A Group Policy Object dialog box, 203
 - buffers, capture, 75, 79, 529
 - burned-in addresses, 8
 - Bypass Traverse Checking right, 134
 - Bytes Received in Tunnels statistic, 226
 - Bytes Sent in Tunnels statistic, 225
-
- C**
- CA domain, 300
 - cable modems, 363
 - cache command, 315
 - cache files in DNS, 305, 315
 - caching-only DNS servers, 319, 319
 - Callback Control Protocol (CBCP), 364, 418
 - Callback Options settings, 421
 - Called-Station-Id attribute, 423
 - caller ID, 419
 - Calling-Station-Id attribute, 423
 - capture buffers, 75, 79, 529
 - Capture Filter dialog box, 80, 81
 - capture filters, 75, 80, 81, 529
 - capturing data in Network Monitor, 78
 - CBCP (Callback Control Protocol), 364, 418
 - CCP (Compression Control Protocol), 364, 375
 - certificates, 198, 381, 529
 - chained installation, 151
 - Change The System Time right, 134
 - changes, troubleshooting, 88–89
 - CHAP (Challenge Handshake Authentication Protocol), 364, 399–400, 417, 439, 529
 - Check For Policy Changes Every setting, 206
 - Class A networks, 24–26
 - characteristics in, 43
 - subnetting, 41
 - Class B networks, 24–26
 - characteristics in, 42–43
 - subnetting, 39–41
 - Class C networks, 24–27
 - characteristics in, 42
 - subnetting, 35–39
 - class options for DHCP scopes, 266–268
 - Client-Friendly-Name attribute, 424
 - Client-IP-Address attribute, 424
 - Client (Respond Only) policy, 197
 - Client-Vendor attribute, 424
 - clients
 - DHCP
 - problem correction for, 282–283, 283
 - scope options for, 266
 - DNS, 303, 531
 - IPsec, 191
 - policies for, 124
 - WINS settings for, 68–71, 70
 - WSUS, 164–169, 166–169
 - CNAME records, 310
 - Com domain, 299
 - Common.adm template, 124
 - communication between OSI stacks, 13, 13–14
 - Compatible (Compatws.inf) template, 145
 - Compression Control Protocol (CCP), 364, 375

- Confidential Bytes Received statistic, 225
 - Confidential Bytes Sent statistic, 225
 - Configure A DNS Server Wizard, 324
 - Configure Automatic Updates Properties dialog box, 167, 167
 - Configure Device dialog box, 384, 384
 - conflicts, MAC address, 8
 - Connection List Size statistic, 224
 - connection-oriented protocols, 17–18
 - Connection Type dialog box, 483
 - connectionless protocols, 17
 - connections
 - for demand-dial interfaces, 480
 - IPSec policies for, 210, 211
 - in network protocols, 17–18
 - in remote access service security, 418
 - costs
 - in OSPF, 491
 - in routing tables, 465
 - counters in System Monitor, 84–86
 - adding, 86–88
 - key, 87
 - CRCs (cyclic redundancy checks), 6, 529
 - Create A New Log File option, 389
 - Create A Pagefile right, 134
 - Create A Token Object right, 134
 - Create Permanent Shared Objects right, 134
 - credentials for demand dialing, 481–483, 482
 - cryptographic master keys, 192
 - Custom Security Method Settings dialog box, 217
 - cyclic redundancy checks (CRCs), 6, 529
-
- D**
- Data Encryption Standard (DES), 196
 - data in network packets, 16, 16
 - Data-Link layer in OSI model, 6–7, 6–7
 - Database Options dialog box, 157, 158
 - databases
 - for DHCP, 279–281, 282
 - in DNS
 - migrating, 316
 - resource records in, 307–312, 332–334, 332–333
 - zone records in, 314–316
 - with Security Configuration and Analysis tool, 143–144, 144, 149–150
 - datagrams, 368, 533
 - Day-And-Time Restrictions attribute, 424
 - DDNS (Dynamic DNS) standard, 531
 - integrating with DHCP, 273–274, 274
 - purpose of, 312–313
 - deactivating scopes, 268–269
 - Dead Interval (Seconds) setting, 493
 - Debug Programs right, 134
 - Dedicated domain controller (DC Security.inf) template, 146
 - Default Gateway setting, 64
 - default gateways, 530
 - and DNS settings, 58–61
 - settings for, 66
 - Default Quota Limit And Warning Level policy, 141
 - default response rules, 201–202, 201, 530
 - default routes, 25, 465, 530
 - Default security (Setup security.inf) template, 145
 - default subnet masks, 32, 530
 - default traffic exemptions, 193
 - Default: Use NetBIOS Setting From The DHCP Server option, 70
 - delegation, 530
 - of administrative control, 121–122
 - of zones, 330–331, 331
 - Delete Cached Copies Of Roaming Profiles policy, 139
 - Demand-Dial Interface Wizard, 479–483, 482
 - demand-dial IP routing, 473, 479–483, 482, 530
 - Demand-Dial Routing Connections (Inbound And Outbound) option, 384
 - Deny Access To This Computer From The Network right, 134
 - Deny Log On Through Terminal Services right, 134
 - Deny Logon As A Batch Job right, 134
 - Deny Logon As A Service right, 134
 - Deny Logon Locally right, 134
 - dependencies in services, 175–176, 176
 - DES (Data Encryption Standard), 196
 - destination addresses
 - in IP filters, 212–213, 213
 - in TCP/IP filters, 503
 - Detail pane in Network Monitor, 79
 - device drivers and OSI model, 14–15
 - Devices security options, 137
 - DHCP (Dynamic Host Configuration Protocol), 244
 - for Active Directory, 254–255
 - advantages and disadvantages of, 245
 - configuring for, 63–64, 63
 - database files for, 279–281, 282
 - exam essentials for, 284–285
 - installing, 252–253, 253
 - integrating with dynamic DNS, 273–274, 274
 - lease process in, 245–250
 - logging activity in, 276–279, 530
 - relay agents in, 252, 530
 - assigning to interfaces, 394–395, 394
 - installing, 392
 - properties of, 392–394, 393
 - reservations and exclusions in, 251
 - review questions for, 286–295
 - RRAS integration with, 391–395, 393–394
 - scopes in. *See* scopes in DHCP
 - on segmented networks, 246
 - in static IP environments, 275
 - summary, 284
 - DHCP authorization, 530
 - DHCP discover messages, 247, 530
 - DHCP integration, 530
 - Dhcp.mdb file, 279
 - DHCP Relay Agent Properties dialog box, 392, 393
 - DHCP request messages, 249, 530
 - DHCP Server Log Event Codes, 277–278
 - Dhcp.tmp file, 279
 - DHCP User Classes dialog box, 267
 - DHCPACK messages, 248, 530
 - DHCPNACK messages, 248, 531
 - dial-in access, user profiles for, 427
 - Dial In Credentials screen, 481, 482
 - Dial-in settings, 420–421, 420
 - Dial Out Credentials screen, 482, 482
 - Dial-Up Connection Properties dialog box, 395–401
 - Dial-Up Networking. *See* DUN (Dial-Up Networking)
 - dialing options and rules, 396–397
 - Diffie-Hellman key exchange, 192
 - directory command, 315
 - directory service access audit policies, 132
 - Directory setting, 389
 - Disable Event Logging option, 494

546 Disable NetBIOS Over TCP/IP option – Enable Fragmentation Checking option

- Disable NetBIOS Over TCP/IP option, 71
 - Disable Subnet Summarization option, 490
 - Discard A And PTR Records When Lease Is Deleted option, 273
 - discovery stage in DHCP leases, 247, 531
 - discrepancies, security, 148–149, 148
 - disk quota policies, 140–141, 531
 - Disk Quota Policy Processing policy, 142
 - Display Filter dialog box, 81–82, 81
 - display filters in Network Monitor, 81–83, 81–82
 - Display Progress While Connecting option, 396
 - /displaydns option in ipconfig, 345
 - distribution groups, 116, 531
 - DNS (Domain Name Service), 298–299
 - Active Directory for, 313–314
 - advanced settings for, 66–67, 67–68
 - clients, 303, 531
 - databases in
 - migrating, 316
 - resource records in, 307–312, 332–334, 332–333
 - zone records in, 314–316
 - in DHCP scopes, 258, 259
 - dynamic, 531
 - integrating with DHCP, 273–274, 274
 - purpose of, 312–313
 - dynamic update events in, 278
 - exam essentials for, 347–348
 - installing, 323–324
 - log files for, 346
 - monitoring, 335
 - with DNS snap-in, 335–337, 335–337
 - with Event Viewer, 338–339
 - with Replication Monitor, 339–341, 340
 - with System Monitor, 337–338
 - name resolution in, 303–305, 304
 - operation of, 299–302, 301
 - politics of, 334
 - queries, 303
 - resolvers, 303
 - review questions for, 349–358
 - servers, 302, 531
 - configuring, 318–320, 319
 - installing, 317–318, 318
 - zones for, 320–321, 322
 - settings and default gateways, 58–61
 - summary, 347
 - troubleshooting, 341–346
 - in Windows Server 2003, 312
 - zones in. *See* zones
 - DNS proxy, 531
 - DNS Server Addresses, In Order Of Use list, 67
 - DNS snap-in, 335–337, 335–337
 - DNS Suffix For This Connection setting, 68
 - Do Not Announce All Routes In The Ranges Listed setting, 487
 - Do Not Detect Slow Network Connections policy, 139
 - Do Not Log Any Events option, 387
 - DoD model, 3
 - Domain Controller security options, 137
 - domain controllers, 531
 - domain local groups, 116, 531
 - Domain Member security options, 137
 - Domain Name Service. *See* DNS (Domain Name Service)
 - domain user accounts, 531
 - domains, 531
 - in Active Directory, 115, 118–119
 - in DNS, 299–302, 301, 314
 - enabling IPsec for, 203–204
 - policies for, 117, 531
 - renaming, 120
 - in VPNs, 386
 - dotted-decimal notation, 23
 - Download the updates
 - automatically and notify me when they are ready to be installed option, 154
 - Drop All packets Except Those That Meet the Criteria Below setting, 505–506, 512
 - DSL services, 363
 - DUN (Dial-Up Networking), 360–362
 - dialing options for, 396–397
 - general properties for, 396
 - infrastructure for, 362–363
 - multilink for, 365
 - networking options for, 400–401
 - operation of, 362
 - Point-to-Point Protocol for, 363–365, 364
 - redialing options for, 397
 - security options for, 397–398
 - sharing options for, 401
 - Duration setting, 85
 - Dynamic DNS (DDNS)
 - standard, 531
 - integrating with DHCP, 273–274, 274
 - purpose of, 312–313
 - Dynamic Host Configuration Protocol. *See* DHCP (Dynamic Host Configuration Protocol)
 - Dynamic Host Configuration Protocol option, 61–62
 - dynamic routing, 466–469, 467, 469, 531
 - dynamic updates, zones for, 328–330
 - Dynamically Update DNS A And PTR Records For DHCP Clients That Do Not Request Updates option, 273
 - Dynamically Update DNS A And PTR Records Only If Requested By The DHCP Clients option, 273
-
- ## E
- EAP (Extensible Authentication Protocol), 367, 417–418, 532
 - EAP-MD5 CHAP (Extensible Authentication Protocol-Message Digest 5 Challenge Handshake Authentication Protocol), 399–400
 - EAP-TLS (Extensible Authentication Protocol-Transport Layer Security), 399–400
 - EAP type, 417, 532
 - Edit Dial-in Profile dialog box, 427–432, 428–432, 446, 446
 - Edit IP Filter dialog box, 513, 513
 - Edit Properties option, 202
 - Edit Rule Properties dialog box, 208, 209–210, 216, 218, 219
 - Edu domain, 299
 - EFS (Encrypting File System), 138
 - EFS Recovery Policy Processing policy, 142
 - 80/20 rule, 275
 - Enable Autonomous System Boundary Router option, 498–499
 - Enable Broadcast Name Resolution option, 377
 - Enable Computer And User Accounts To Be Trusted For Delegation right, 134
 - Enable Disk Quotas policy, 141
 - Enable DNS Dynamic Updates According To The Settings Below option, 273
 - Enable Fragmentation Checking option, 479

Enable Internet Connection Sharing For This Connection option, 401

Enable IP Router Manager option, 478

Enable IP Routing option, 377

Enable NetBIOS Over TCP/IP option, 71

Enable Network Access For Remote Clients And Demand-Dial Connections option, 378

Enable On-Demand Dialing option, 401

Enable OSPF For This Address option, 491

Enable Poison-Reverse Processing option, 489

Enable Router Discovery Advertisements option, 478

Enable Split-Horizon Processing option, 489

Enable Triggered Updates option, 489

Encapsulating Security Payload (ESP), 192, 194, 194, 532

encapsulation, 365, 368, 369, 532

Encrypting File System (EFS), 138

encryption, 532

- in IPSec, 191
- in profiles, 430–431, 431

End IP Address setting, 262, 264

end-to-end mode, 191, 532

End-User License Agreement screen, 157

Enforce Disk Quota Limit policy, 141

Enforce Password History option, 127–128

Enforce User Logon Restrictions policy, 131

ESP (Encapsulating Security Payload), 192, 194, 194, 532

Event Log option, 147

event logs. *See also* monitoring

- for DHCP logs, 277–278
- for IPSec, 227
- for RRAS, 390
- for security templates, 147

Event Properties dialog box, 443, 443

Event Viewer

- for DHCP, 279
- for DNS, 338–339

exam essentials

- for DHCP, 284–285
- for DNS, 347–348
- for IP addresses, 44
- for IP routing, 515
- for IPSec, 231–232
- for OSI model, 44
- for remote access service access, 447–448
- for remote access services, 402–403

- for security, 178
- for TCP/IP, 100–101

exclusions in DHCP, 251, 256, 257, 264, 264, 532

experts, 508

Expires After setting, 326

Extensible Authentication Protocol (EAP), 367, 417–418, 532

Extensible Authentication Protocol-Message Digest 5 Challenge Handshake Authentication Protocol (EAP-MD5 CHAP), 399–400

Extensible Authentication Protocol-Transport Layer Security (EAP-TLS), 399–400

external routing options for OSPF, 499, 499

F

file deployment policies, 117

file formats for DHCP logs, 277

File System option, 147

filter lists, 195, 208, 209, 211–216, 212–215, 503, 532

filters

- actions for, 196, 532
- in IPSec, 195–196, 208–209, 210, 211–216, 212–215
- for LAN interfaces, 478–479
- in Network Monitor, 75, 80–83, 81–82
- in RIP, 487
- in TCP/IP, 501–504, 502–503
- in VPNs, 504–506

flat addressing schemes, 23

/flushdns option in ipconfig, 345

Folder Redirection Policy Processing policy, 142

Force Shutdown From A Remote System right, 134

forcing policy updates, 205

forest trusts, 120

Format controls for RRAS logging, 389

forward lookup zones, 320–321, 322, 532

forwarding addresses, 465

FQDNs (fully qualified domain names), 300

Frame Viewer, 78–79, 81

Framed Protocol attribute, 424

FreeRadius package, 443

From setting, 487

full zone transfers (AXFR), 306

fully qualified domain names (FQDNs), 300

functional levels, domain, 118–120

G

gateways, default, 530

- and DNS settings, 58–61
- settings for, 66

GeForce drivers, 78

general properties

- for DHCP scope, 262, 262
- for DHCP server properties, 263, 263
- for DUN, 396
- for IPSec policies, 206, 207
- for LAN interfaces, 477–479, 478
- for multicast scopes, 271, 272
- for OSPF, 490–491, 490, 497–498, 498
- for RIP, 484–485, 484, 496, 497
- for RRAS, 373–374, 374
- for services, 174, 174
- for zones, 324–325, 325

Generate Security Audits right, 135

Generic Routing Encapsulation (GRE) headers, 368, 369

Get Help And Support option, 151

Get SPI Failures statistic, 224

Global Catalog, replication enhancements to, 120

global groups, 116, 532

Gov domain, 300

GPOs (Group Policy Objects). *See* group policies and GPOs

Graph pane, 77

GRE (Generic Routing Encapsulation) headers, 368, 369

group accounts, 114, 116–117

group policies and GPOs, 117, 141–142, 532

- within Active Directory, 117–124
- application of, 122
- for delegation of administrative control, 121–122
- with IPSec, 192, 203–204
- for local computers, 124–126, 125
- for network clients, 124

Group Policy Refresh Intervals For Computers policy, 141

Group Policy Refresh Intervals For Domain Controllers policy, 141

Group Policy Slow Link Detection policy, 142

Guest account, 115, 533

Guests group, 533

548 h-node (hybrid) type – IP routing

H

- h-node (hybrid) type, 69
 - hands-on lab for IPSec, 232–233, 232–233
 - headers
 - AH, 191, 194, 528
 - GRE, 368, 369
 - in network packets, 16, 16
 - Hello Interval (Seconds)
 - setting, 493
 - Help And Support Center, 151, 152
 - hexadecimal notation, 23
 - Hide the File Scan Progress
 - Window policy, 143
 - hiding information, 533
 - hierarchical addresses, 23–25, 533
 - Highly secure (Hisec*.inf)
 - template, 146
 - Hop-Count Threshold setting, 394
 - host addresses, 24–26, 29, 30
 - host records, 310, 533
 - host routes, 465, 533
 - Host to Host layer in IP model, 3
 - hybrid (h-node) type, 69
-
- I**
 - IANA (Internet Assigned Numbers Authority), 21
 - IAS (Internet Authentication Service), 440–441, 443–447, 443–446, 533
 - IAS Management console, 444, 444
 - iasparse utility, 390, 533
 - ICANN (Internet Corporation for Assigned Names and Numbers), 301
 - ICMP (Internet Control Message Protocol), 92–93, 533
 - Idle Time Before Hanging Up
 - setting, 397
 - IGMP (Internet Group Management Protocol), 473
 - Ignore All Routes In The Ranges
 - Listed setting, 487
 - IIS (Internet Information Services), securing, 144
 - IKE Main Mode statistic, 224
 - IKE Quick Mode statistic, 224
 - Import Template dialog box, 144, 150
 - importing security templates, 145–147, 150
 - inbound filters
 - in IP routing, 502, 502
 - for LAN interfaces, 478–479
 - Inbound Filters dialog box, 502, 502, 511–512, 511–512, 514, 514
 - Include Default Routes In Sent
 - Announcements option, 490
 - Include Host Routes In Sent
 - Announcements option, 490
 - Include Windows Logon Domain
 - option, 397
 - Incoming Packet Protocol
 - setting, 485
 - Increase Scheduling Priority
 - right, 135
 - incremental zone transfers (IXFR), 306
 - Inetres.adm template, 124
 - information hiding, 533
 - inheritance, 122, 533
 - input filters in L2TP, 505
 - installing
 - DHCP, 252–253, 253
 - DHCP relay agents, 392
 - DNS, 323–324
 - DNS servers, 317–318, 318
 - IPSec, 200, 200
 - Network Monitor, 76
 - Replication Monitor, 339
 - RIP and OSPF, 495
 - RRAS, 370–373, 371–373, 474–475, 475
 - WSUS, 157–163, 157–163
 - instances in System Monitor, 85
 - Int domain, 300
 - Integrated Services Digital
 - Network (ISDN), 363
 - integrating with DHCP
 - dynamic DNS, 273–274, 274
 - RRAS, 391–395, 393–394
 - Interactive Logon security
 - options, 137
 - Interface Properties dialog box, 394, 394
 - internal routing, 469, 533
 - Internet Assigned Numbers
 - Authority (IANA), 21
 - Internet Authentication Service (IAS), 440–441, 443–447, 443–446, 533
 - Internet Authentication Service
 - console, 441, 441
 - Internet Control Message Protocol (ICMP), 92–93, 533
 - Internet Corporation for Assigned
 - Names and Numbers (ICANN), 301
 - Internet Explorer Maintenance
 - Policy Processing policy, 142
 - Internet Group Management
 - Protocol (IGMP), 473
 - Internet Information Services (IIS),
 - securing, 144
 - Internet Protocol (IP), 19–20, 365, 533
 - Internet Protocol Security
 - Extensions. *See* IPSec (Internet Protocol Security Extensions)
 - Internet Protocol (TCP/IP)
 - Properties dialog box, 58, 59, 61–65, 63, 71
 - Internet Security Association and
 - Key Management Protocol (ISAKMP), 193–194
 - Internet service providers (ISPs),
 - dial-up at, 361
 - interoperability, network, 83
 - intervals for database backups, 280
 - Invalid Cookies Received
 - statistic, 223
 - Invalid Packets Received
 - statistic, 224
 - inverse DNS queries, 305
 - IP (Internet Protocol), 19–20, 365, 533
 - IP Address setting, 64
 - IP Address Assignment
 - settings, 377
 - IP addresses, 534
 - Class A networks, 26
 - Class B networks, 26
 - Class C networks, 27
 - DHCP for. *See* DHCP (Dynamic Host Configuration Protocol) for DHCP scopes, 256, 256
 - exam essentials for, 44
 - hierarchical, 23–25
 - in IP filters, 212–213, 213
 - in ipconfig, 91–92
 - review questions for, 45–56
 - settings for, 66
 - subnetting. *See* subnetting networks summary, 44
 - in TCP/IP filters, 503
 - IP-based RRAS connections, 376–378, 376
 - IP Control Protocol (IPCP), 365
 - IP datagrams, 368, 534
 - IP Filter List dialog box, 212–213, 212
 - IP Filter Properties dialog box, 213–214, 213–214
 - IP model, 3
 - IP-related profile settings, 428, 428
 - IP routing, 462
 - border, 469–470, 470
 - configuring, 475–476
 - demand-dial interfaces for, 479–483, 482
 - dynamic, 466–469, 467, 469
 - exam essentials for, 515
 - interfaces for, 476–479, 476, 478–479
 - logging properties for, 493–494, 494

- managing, 506–507
 - multicast, 471–473
 - multihomed computers
 - for, 472
 - operation of, 462–464, 464
 - OSPF for, 490–493, 490, 492, 496–499, 498–499
 - preference properties for, 494, 495
 - review questions for, 516–525
 - RIP for, 483–490, 484, 487–489, 495, 497
 - routing tables in, 465
 - RRAS for, 474–475, 475
 - static, 465–466, 500–501, 500
 - summary, 514–555
 - TCP/IP packet filters in, 501–504, 502–503
 - troubleshooting, 507–514
 - VPN packet filters in, 504–506
 - in Windows Server 2003, 473–474
- IP Security Filter Action Wizard, 209, 214
- IP Security Monitor, 192, 220–226, 221–222
- IP Security Policy Management snap-in, 199
- IP Security Policy Processing policy, 142
- IP Security Policy Wizard, 201–202, 201–202
- ipconfig tool, 534
 - for DNS, 345
 - lease options in, 249–250
 - for network protocols, 91–92, 92
- IPCP (IP Control Protocol), 365
- IPSec (Internet Protocol Security Extensions), 190, 534
 - authentication in, 191, 198, 210, 211
 - clients, 534
 - configuring, 201
 - event logging in, 227
 - exam essentials for, 231–232
 - filters in, 195–196, 208–209, 210, 211–216, 212–215
 - hands-on lab for, 232–233, 232–233
 - installing, 200, 200
 - IP Security Monitor for, 220–226, 221–222
 - negotiation process in, 193–194, 194
 - netsh for, 226–227
 - Network Monitor in, 228–229
 - operation of, 190–192
 - policies in. *See* policies
 - review questions for, 234–242
 - in security architecture, 205–206
 - security methods in, 195–196
 - servers, 534
 - summary, 230–231
 - troubleshooting, 229–230
 - tunnel mode in, 191, 217–220, 218–219
 - in Windows Server 2003, 192–193
 - working with, 198–199
- IPSec Policy Agents, 197, 534
- IPSec SA, 534
- IPX-based connections, 378
- IPX/SPX protocol, 18–19
- ISADB List Size statistic, 224
- ISAKMP (Internet Security Association and Key Management Protocol), 193–194
- ISDN (Integrated Services Digital Network), 363
- ISPs (Internet service providers), dial-up at, 361
- iterative DNS queries, 303–304, 304
- IXFR (incremental zone transfers), 306
-
- J**
- J50.chk file, 279
- J50.log file, 279
- Jp domain, 300
-
- K**
- KDCs (key distribution centers), 130, 534
- Keep My Computer Up To Date option, 154–155
- Kerberos protocol, 534
 - in IPSec, 198
 - policies in, 131–132, 534
- Key Addition Failures statistic, 224
- Key Additions statistic, 223, 225
- Key Deletions statistic, 225
- key distribution centers (KDCs), 130, 534
- Key Exchange Settings dialog box, 206, 207
- Key Update Failures statistic, 224
- Key Updates statistic, 224
-
- L**
- L2TP (Layer 2 Tunneling Protocol), 367, 534
 - for demand dialing, 480
 - packet filters in, 505–506
 - pitfalls in, 381
 - for VPNs, 369–370
- Lab Properties dialog box, 444, 446
- LAN interfaces for IP routing, 476–479, 478–479
- Last setting, 85
- LCP (Link Control Protocol), 364, 375
- leases in DHCP, 245–246, 535
 - acknowledgment in, 248
 - discovery stage in, 247
 - duration of, 257, 257
 - monitoring, 276
 - offers in, 247–248
 - releases, 249
 - renewals, 248–249
 - selecting, 248
- lifetimes of multicast scopes, 272, 272
- Limit Windows File Protection Cache Size policy, 143
- Link Control Protocol (LCP), 364, 375
- Link layer in IP model, 3
- link-state maps, 468, 535
- linked value replication, 120
- LLC (Logical Link Control) layer, 6, 7, 535
- LMHOSTS file, 70, 535
- LMHOSTS settings, 70
- Load And Unload Device Drivers right, 135
- load balancing in DNS, 313
- Local Area Connection Properties dialog box, 63–65, 63, 323, 477–479, 478–479
- Local Area Connection Status dialog box, 283, 283
- Local Area Network Properties dialog box, 502
- Local Computer Policy MMC, 138
- local computers
 - group policies for, 124–126, 125
 - IPSec on, 200, 216–217
 - system policies for, 138–143
- Local File Properties dialog box, 388–389, 388–389, 444, 445, 447
- local groups, 116, 535
- local policies, 117, 131–138, 146, 535
- Local Policies option, 146
- Local Security Policy Setting dialog box, 136, 228
- local users, 115, 535
- Local Users and Groups utility, 117, 535
- Lock Pages In Memory right, 135
- lockout policies, 130–131, 528
- Log Additional Routing And Remote Access Information option, 387

550 Log All Events option – MX (mail exchange) records

- Log All Events option, 387
 - Log Errors and Warnings option, 387, 493
 - Log Errors Only option, 387, 493
 - Log Event When Quota Warning Level Exceeded policy, 141
 - Log On As A Batch Job right, 135
 - Log On As A Service right, 135
 - log on properties for services, 175, 175
 - Log The Maximum Amount Of Information option, 494
 - Log Users Off When Roaming Profile Fails policy, 139
 - Logical Link Control (LLC) layer, 6, 7, 535
 - logons, 535
 - monitoring, 228
 - policies for, 132, 140, 535
 - logs. *See also* monitoring
 - for DHCP, 276–279
 - for DNS, 346
 - in IP routing, 493–494, 494
 - in IPSec, 227
 - for remote access, 374, 387–390, 388–389
 - for RRAS, 390
 - for security templates, 147
 - for WSUS, 163, 163
 - loopback tests, 25
-
- M**
- m-node (mixed) type, 69
 - MAC addresses with routing tables, 60
 - MAC (Media Access Control) layer, 7–8, 7, 535
 - machine certificates, 198, 381, 535
 - MADCAP (Multicast Address Dynamic Client Allocation Protocol), 270, 536
 - mail exchange (MX) records, 311
 - main mode in IPSec, 193, 222–224, 222
 - Manage Auditing And Security Log right, 135
 - Manage IP Filter Lists And Filter Actions dialog box, 208, 211, 212, 214, 215
 - manageability, Active Directory for, 122
 - manual TCP/IP settings, 64–65
 - mapping in DNS, 60
 - masked bits, 33
 - master DNS servers, 302
 - Master Key Perfect Forward Secrecy (PFS) option, 206
 - Maximum Lifetime For Service Ticket policy, 131
 - Maximum Lifetime For User Ticket policy, 131
 - Maximum Lifetime For User Ticket Renewal policy, 131
 - Maximum Password Age option, 127–128
 - Maximum Ports setting, 384
 - Maximum Retries To Unload And Update User Profile policy, 140
 - Maximum setting in System Monitor, 85
 - Maximum Strength Encryption option, 398
 - Maximum Tolerance For Computer Clock Synchronization policy, 131
 - Maximum Transmission Unit (MTU) Size (Bytes) setting, 493
 - Maximum Wait Time For Group Policy Scripts policy, 140
 - MBSA (Microsoft Baseline Security Analyzer), 169–170, 535
 - GUI version of, 170–171, 171–172
 - Mbsacl.exe, 172–173
 - Mbsacl.exe utility, 172–173
 - MD5-CHAP, 417–418
 - Media Access Control (MAC) layer, 7–8, 7, 535
 - Memory > Pages/Sec counter, 84
 - metrics, 465, 535
 - Microsoft Baseline Security Analyzer (MBSA), 169–170, 535
 - GUI version of, 170–171, 171–172
 - Mbsacl.exe, 172–173
 - Microsoft CHAP (MS-CHAP), 417, 535–536
 - Microsoft Management Console (MMC), 126–127, 536
 - Microsoft Network Client security options, 137
 - Microsoft Network Server security options, 137
 - Microsoft Point-to-Point Encryption (MPPE) algorithm, 369
 - Microsoft Software Update Services. *See* WSUS (Windows Software Update Services)
 - migrating DNS database files, 316
 - Mil domain, 300
 - Minimum (Default) TTL setting, 326
 - Minimum Password Age option, 127–128
 - Minimum Password Length option, 127–128
 - Minimum setting in System Monitor, 85
 - Mirror Update Settings screen, 159, 159
 - mirrored filters, 213, 536
 - mirroring on tunnel rules, 217
 - mixed (m-node) type, 69
 - MMC (Microsoft Management Console), 126–127, 536
 - modem settings, 396
 - modems, 362
 - Modify Firmware Environment Variables right, 135
 - monitoring
 - DHCP leases, 276
 - DNS
 - with DNS snap-in, 335–337, 335–337
 - with Event Viewer, 338–339
 - with Replication Monitor, 339–341, 340
 - with System Monitor, 337–338
 - IP routing, 506–507
 - network traffic, 74–75, 76
 - Network Monitor for. *See* Network Monitor
 - System Monitor for. *See* System Monitor
 - RRAS, 386–390, 388–389, 391
 - moving DHCP database files, 280–281
 - MPPE (Microsoft Point-to-Point Encryption) algorithm, 369
 - MS-CHAP (Microsoft CHAP), 417, 535–536
 - MS-CHAPv1 protocol, 399–400
 - MS-CHAPv2 protocol, 399–400
 - _msdcs domain, 314
 - Multicast Address Dynamic Client Allocation Protocol (MADCAP), 270, 536
 - multicast routing, 471–474, 536
 - multicast scopes, 536
 - building, 270–271, 271
 - creating, 269–270
 - MADCAP for, 270
 - properties for, 272, 272
 - multicasts, 536
 - multihomed computers, 66, 472, 536
 - multilink
 - for DUN, 365
 - in profiles, 429, 429
 - multiple DHCP servers, scope in, 275, 282
 - multiple protocols, efficiency of, 72
 - mutual authentication, 130, 536
 - MX (mail exchange) records, 311

N

- name server (NS) records, 309, 327, 327, 536
- name servers, 301–302, 536
- names
 - for demand-dial interfaces, 480
 - in DNS. *See* DNS (Domain Name Service)
- NAS-Identifier Protocol
 - attribute, 424
- NAS-IP-Address attribute, 424
- NAS-Port-Type attribute, 424–425
- NAT (Network Address Translation), 537
 - with IPSec, 193
 - support for, 474
- NBMA (non-broadcast multiple access), 492, 492, 537
- NBT (NetBIOS over TCP/IP), 68
- NDIS (Network Driver Interface Specification), 15, 72, 537
- Negotiation Failures statistic, 223
- negotiation process in IPSec, 193–194, 194
- neighbor properties for RIP, 488, 488
- NetBEUI (NetBIOS Extended User Interface), 379, 536
- NetBIOS over TCP/IP (NBT), 68
- NetBIOS setting, 70
- netmask ordering, 313
- netsh utility, 193, 226–227
- Network Access layer in IP model, 3
- Network Access security
 - options, 137
- Network Address Translation (NAT), 537
 - with IPSec, 193
 - support for, 474
- network addresses, 536
 - vs. host, 29, 30
 - in IP addresses, 24–26
 - in routing tables, 465
- network binding, 71–74, 73, 537
- Network Connections folder, 73
- Network Driver Interface Specification (NDIS), 15, 72, 537
- Network Interface > Bytes Total/Sec counter, 87
- network interfaces in routing tables, 465
- Network Interfaces node, 476
- network interoperability, 83
- Network layer
 - in IP model, 3
 - in OSI model, 7–9, 9
- Network Monitor, 74–75, 76
 - capturing data in, 78
 - filters in, 75, 80–83, 81–82
 - installing, 76
 - for IPSec, 228–229
 - viewing data in, 78–79, 79–80
 - working with, 76–78
- network packets, 16, 16, 538
- Network problems with VPNs, 386
- network protocols, 15
 - binding in, 16–17
 - connections in, 17–18
 - network packets in, 16, 16
 - NWLink, 18–19
 - operation of, 15–16
 - and PPP, 365
 - TCP/IP, 19–21
 - troubleshooting. *See* troubleshooting
 - troubleshooting in Windows Server 2003, 18–19, 19
- network redirector, 10
- network routes, 465, 537
- Network Security security options, 137
- network traffic, monitoring
 - Network Monitor for. *See* Network Monitor
 - System Monitor for. *See* System Monitor
- Network Type settings for OSPF, 491
- networking options for DUN, 400–401
- New Delegation Wizard, 331, 331
- New Filter Action Properties dialog box, 214–215, 215
- New Interface For DHCP Relay Agent dialog box, 394
- New Multicast Scope Wizard, 271, 271
- New RADIUS Client dialog box, 441–442, 442
- New Remote Access Policy Wizard, 422, 422–423, 425, 434
- New Reservation dialog box, 264–265, 265
- New Resource Record dialog box, 332–333, 332–333
- New Scope Wizard, 256–260, 256–260
- New Security Method dialog box, 217
- New Superscope Wizard, 268–269
- New Zone Wizard, 320–321, 322
- No Auto-Restart For Scheduled Automatic Updates Installations dialog box, 169, 169
- No Encryption option, 430
- No Encryption Allowed option, 398
- No Override option, 123
- NoAutoUpdate key, 165
- node addresses, 24–26, 537
- node types in TCP/IP, 69
- non-Active Directory networks, WSUS clients on, 164–165
- non-broadcast multiple access (NBMA), 492, 492, 537
- Notify me before downloading any updates and notify me again before installing them on my computer option, 154
- NS (name server) records, 309, 327, 327, 536
- nslookup tool, 537
 - for DNS, 342–345
 - for network protocols, 96–99
- Nvidia video cards, 78
- nview.dll file, 78
- NWLink IPX/SPX/NetBIOS Compatible Transport, 537
- NWLink protocol, 18–19

O

- object access audit policies, 132
- Obtain An IP Address
 - Automatically option, 62
- Obtain DNS Server Address
 - Automatically option, 62
- ODI (Open Datalink Interface), 15, 537
- offers in DHCP leases, 247–248
- Offloaded Bytes Received
 - statistic, 226
- Offloaded Bytes Sent statistic, 226
- Offloaded Security Associations
 - statistic, 224
- Only To Servers Listed On The Name Servers Tab
 - option, 328
- Only To The Following Servers
 - setting, 328
- Open Database dialog box, 144, 149
- Open Datalink Interface (ODI), 15, 537
- Open Shortest Path First protocol. *See* OSPF (Open Shortest Path First) protocol
- Open Systems Interconnection model. *See* OSI (Open Systems Interconnection) model
- opening security templates, 147
- Operation Mode setting, 485
- Optional Encryption option, 398
- Options screen, 160–161, 161
- Org domain, 300
- organizational units (OUs), 120–122, 537

552 OSI (Open Systems Interconnection) model – preference properties for IP

- OSI (Open Systems Interconnection) model, 2–3, 537
 - Application layer in, 12, 12
 - communication between stacks in, 13, 13–14
 - Data-Link layer in, 6–7, 6–7
 - device drivers in, 14–15
 - exam essentials for, 44
 - Network layer in, 7–9, 9
 - network protocols in, 14–22, 16, 19
 - Physical layer in, 5–6, 5
 - Presentation layer in, 10, 11
 - protocol stacks in, 4, 5
 - review questions for, 45–56
 - Session layer in, 10, 11
 - summary, 44
 - Transport layer in, 9–10, 10
 - in troubleshooting, 22
 - OSPF (Open Shortest Path First) protocol, 466, 468–471, 469, 537
 - advanced properties for, 492–493, 492
 - area properties for, 498
 - external routing options for, 499, 499
 - general properties for, 490–491, 490, 497–498, 498
 - installing, 495
 - managing, 506
 - NBMA neighbor properties for, 492, 492
 - virtual interface properties for, 498
 - OSPF Properties dialog box, 490–493, 490, 492, 496–499, 498–499
 - OUs (organizational units), 120–122, 537
 - outbound filters for LAN interfaces, 478–479
 - Outgoing Packet Protocol setting, 485
 - output filter in L2TP, 506
-
- P**
- p-node (peer-peer node) type, 69
 - packet filters, 538
 - support for, 473
 - in TCP/IP, 501–504, 502–503
 - in VPNs, 504–506
 - packet payload, 16, 538
 - packets, 16, 16, 538
 - Packets Not Authenticated
 - statistic, 225
 - Packets Not Decrypted
 - statistic, 225
 - Packets With Replay Detection
 - statistic, 225
 - PAP (Password Authentication Protocol), 399–400, 416, 538
 - parent-child relationships in OUs, 121–122
 - passthrough action, 196, 538
 - Password Authentication Protocol (PAP), 399–400, 416, 538
 - passwords
 - characters in, 116
 - in OSPF, 491
 - policies for, 127–128, 538
 - in RIP, 485–486
 - Passwords Must Meet Complexity Requirements option, 127–128
 - pathping tool, 95, 96
 - payload, 538
 - peer filters, 467, 538
 - peer-peer node (p-node) type, 69
 - Pending Key Operations
 - statistic, 224
 - per-user access, 433
 - perfect forward secrecy (PFS), 196
 - Perform Analysis dialog box, 148, 150
 - Perform Volume Maintenance
 - Tasks right, 135
 - performance, subnets for, 27
 - performance objects, 85
 - Periodic Announcement Interval
 - setting, 489
 - Periodic Status option, 389
 - periodic update mode, 468, 538
 - Permit actions, 196
 - persistent policies, 193
 - Personalize Windows Update
 - option, 151
 - PFS (perfect forward secrecy), 196
 - physical connections, troubleshooting, 90–91
 - Physical layer in OSI model, 5–6, 5
 - PhysicalDisk > Avg. Disk Queue
 - Length counter, 84
 - Pick A Computer To Scan dialog box, 170, 171
 - Pick Updates To Install option, 151
 - ping tool, 93–94, 94, 538
 - plain old telephone service (POTS), 362
 - Point-to-Point Protocol (PPP), 363–365, 364, 375–376, 375, 538
 - point-to-point routers, 491, 538
 - Point-to-Point Tunneling Protocol (PPTP), 367, 538
 - for demand dialing, 480
 - packet filters in, 504–505
 - in VPNs, 369
 - pointer (PTR) records, 310–311, 538
 - policies
 - account lockout, 130–131
 - audit, 131–133, 528
 - for disk quotas, 140–141, 531
 - for domains, 117, 532
 - for groups. *See* group policies and GPOs
 - in IPSec, 193, 197
 - assigning and unassigning, 204
 - creating, 201–202, 201–202
 - features of, 205
 - filter lists and actions in, 211–216, 212–215
 - general properties for, 206, 207
 - rules for, 207–210, 208–211
 - storing, 203–204
 - troubleshooting, 229–230
 - Kerberos, 131–132, 534
 - local, 117, 131–138, 146, 535
 - for logons, 132, 140, 535
 - options for, 540
 - for passwords, 127–128, 538
 - public key, 138
 - for remote access, 419, 440, 538
 - for user access, 421–426, 422–423, 426
 - for VPNs, 385, 433–435
 - for Windows file protection, 142–143
 - policy changes, audit policies
 - for, 132
 - politics of DNS, 334
 - Poll Interval (Seconds) setting, 493
 - pop-up menus for policies, 205
 - Port Status dialog box, 391, 391
 - ports
 - for IP filter lists, 213
 - for RRAS, 391, 391
 - for VPNs, 383–384, 383–384
 - well-known, 21
 - Ports Properties dialog box, 383, 383
 - POTS (plain old telephone service), 362
 - PPP (Point-to-Point Protocol), 363–365, 364, 375–376, 375, 538
 - PPTP (Point-to-Point Tunneling Protocol), 367, 538
 - for demand dialing, 480
 - packet filters in, 504–505
 - in VPNs, 369
 - predefined options for DHCP
 - scopes, 266
 - preference levels for LAN interfaces, 478
 - preference properties for IP routing, 494, 495

Presentation layer in OSI model, 10, 11

presared keys, 198, 538

primary command in DNS, 315

primary DNS servers, 302, 538

Primary Server setting, 326

privilege use audit policies, 132

Process Default Routes In Received Announcements option, 490

Process Host Routes In Received Announcements option, 490

process tracking audit policies, 132

Processor > % Processor Time counter, 84

Profile Single Process right, 135

Profile System Performance right, 135

profiles, 419–421, 420, 427, 542

advanced properties for, 432, 432

authentication methods in, 429–430, 430

dial-in constraints in, 427, 427

encryption settings in, 430–431, 431

IP-related settings in, 428, 428

multilink settings for, 429, 429

policies for, 139–140

promiscuous mode, 74, 539

Prompt For Name And Password, Certificate, Etc option, 396

Prompt For Phone Number option, 397

Prompt User When Slow Link Is Detected policy, 139

properties for servers, 262–263, 263

protocol stacks, 4, 5, 539

protocols

- binding, 71–74, 73
- for IP filter lists, 213–214, 214
- network. *See* network protocols
- for RAS, 398–400
- for RRAS, 374

Protocols and Security settings, 480–481, 481

proxy mode in IGMP, 473

PTR (pointer) records, 310–311, 538

public key policies, 138

Q

queries, DNS, 303–304, 304, 314

quick mode in IPSec, 193, 224–226

quota policies, 140–141, 531

R

RADIUS (Remote Authentication Dial-In User Service), 432, 539

- configuring, 440–442
- for remote access, 436–438
- servers for, 418
- troubleshooting, 443–447, 443–446

RADIUS Authentication dialog box, 438

RAS. *See* remote access services

Ready To Install screen, 159, 159

Receive Failures statistic, 223

Receive Heap Size statistic, 223

recent changes, troubleshooting, 88–89

Reconcile dialog box, 281, 282

reconciling DHCP scopes, 281–282, 282

records in DNS database, 307–312, 332–334, 332–333

Recovery Console security options, 137

recovery properties for services, 175, 176

recursive DNS queries, 303–304, 304

Redial Attempts setting, 397

Redial If Line Is Dropped option, 397

redialing options for DUN, 397

redirector, 10

reduced network traffic, subnets for, 27

Refresh Interval setting, 326

Register This Connection's Addresses In DNS setting, 68

/registerdns option in ipconfig, 345

Registry

- for Automatic Updates, 164–165
- for security templates, 147

Registry Policy Processing policy, 142

Rekeys statistic, 225

relay agents in DHCP, 252, 530

- assigning to interfaces, 394–395, 394
- installing, 392
- properties of, 392–394, 393
- /release option in ipconfig, 250

releases, DHCP leases, 249

Remote Access Connections (Inbound Only) option, 384

Remote Access Permission (Dial-in Or VPN) settings, 420

remote access policies, 539

remote access profiles, 539

remote access services, 360, 539

- access to. *See* access to remote access services
- DUN, 360–365
- exam essentials for, 402–403
- review questions for, 404–413
- RRAS for. *See* RRAS (Routing and Remote Access Services)
- servers as clients for, 402
- summary, 402
- VPNs. *See* VPNs (Virtual Private Networks)

Remote Authentication Dial-In User Service (RADIUS), 432, 539

- configuring, 440–442
- for remote access, 436–438
- servers for, 418
- troubleshooting, 443–447, 443–446

Remove Computer From Docking Station right, 135

renaming domains, 120

/renew option in ipconfig, 249

renewals, DHCP leases, 248–249

Replace A Process Level Token right, 135

replay attacks, 191

replication

- Global Catalog, 120
- linked value, 120

Replication indicator for zones, 325

Replication Monitor, 339–341, 340, 539

Reports screen, 163, 163

request messages, DHCP, 249

Require Data Encryption option, 398

Require Encryption option, 398

Reschedule Automatic Updates Scheduled Installations Properties dialog box, 166, 168

reservations in DHCP, 251, 253, 264–265, 265, 539

Reset Account Lockout Counter After policy, 129

resolution, name. *See* DNS (Domain Name Service)

resolvers, 303, 539

resolving security discrepancies, 148–150, 148

Resource Record Type dialog box, 333, 333

resource records (RRs), 307–312, 332–334, 332–333, 539

Responsible Person setting, 326

Restore Files And Directories right, 136

Restricted Groups option, 147

restrictions for RIP interface, 487

554 Resultant Set of Policy (RSoP) – Security Configuration and Analysis tool

Resultant Set of Policy (RSoP), 193
 Retransmit Interval (Seconds) setting, 493
 Retry Interval setting, 326
 reverse lookup files and zones, 315, 322–323, 323, 539
 Review And Install Updates option, 151
 review questions
 for DHCP, 286–295
 for DNS, 349–358
 for IP routing, 516–525
 for IPsec, 234–242
 for OSI and IP addresses, 45–56
 for remote access service access, 449–459
 for remote access services, 404–413
 for security, 179–188
 for TCP/IP, 102–111
 RIP (Routing Information Protocol), 466–468, 483–484, 540
 advanced properties for, 488–490, 489
 general properties for, 484–485, 484, 496
 installing, 495
 managing, 506
 neighbor properties for, 488, 488
 risks in, 485–486
 security properties for, 486–487, 487, 496, 497
 switching to OSPF, 470–471
 RIP Interface Properties dialog box, 484–490, 484, 487–489
 RIP Properties dialog box, 496, 497
 risks in RIP, 485–486
 root node in DNS, 299
 root servers, DNS, 319, 539
 rootsec.inf (System root security) template, 146
 round robin in DNS, 313
 Round Trip Time (RTT) value, 303
 route add command, 500
 route filters, 467, 539
 Route IP Packets On This Interface option, 480
 Route IPX Packets On This Interface option, 480
 route print command, 59, 507
 router discovery, 466, 478, 540
 Router Identification setting, 498
 router mode in IGMP, 473
 router options for DHCP scopes, 258, 258
 Router Priority setting, 491
 routing, IP. *See* IP routing
 Routing and Remote Access console, 509–510, 509–510
 Routing And Remote Access Server Setup Wizard, 474–475, 475

Routing and Remote Access Services. *See* RRAS (Routing and Remote Access Services)
 Routing Information Protocol. *See* RIP (Routing Information Protocol)
 routing tables, 60, 465
 RRAS (Routing and Remote Access Services), 360
 AppleTalk and NetBEUI connections for, 379
 DHCP integration with, 391–395, 393–394
 general properties for, 373–374, 374
 installing, 370–373, 371–373, 474–475, 475
 IP-based connections for, 376–378, 376
 for IP routing, 474–475, 475
 IPX-based connections for, 378
 monitoring, 386–390, 388–389, 391
 ports for, monitoring, 391, 391
 PPP options for, 375–376, 375
 for static routes, 500–501, 500
 as VPN servers, 381–383
 RRAS Setup Wizard, 370–373, 371–373, 382
 RRs (resource records), 307–312, 332–334, 332–333, 539
 RSoP (Resultant Set of Policy), 193
 RTT (Round Trip Time) value, 303
 rules for IPsec policies, 207–210, 208–211
 Run Logon Scripts Synchronously policy, 140
 Run Shutdown Scripts Visible policy, 140
 Run Startup Scripts Asynchronously policy, 140
 Run Startup Scripts Visible policy, 140
 runas command, 116

S

SAPs (Service Access Points), 7, 540
 SAs (security associations), 193–194, 540
 ScheduledInstallDay key, 165
 schema classes, defunct, 120
 Scope Options dialog box, 266–267, 267
 Scope Options view, 253
 Scope Properties dialog box, 262, 262, 273–274, 274
 scopes in DHCP, 250–252, 255, 540
 activating, 260, 268–269
 creating, 255–256, 261

DNS settings for, 258, 259
 exclusions in, 264, 264
 for integrating dynamic DNS and DHCP, 273–274, 274
 IP address ranges for, 256, 256
 lease duration in, 257
 multicast, 269–270, 271–272
 multiple servers in, 275, 282
 options for, 265–268
 properties for, 261–262, 262
 reconciling, 281–282, 282
 reservations in, 264–265, 265
 router options for, 258, 258
 screen names for, 256
 server properties for, 262–263, 263
 WINS settings for, 259–260, 260
 screen names for DHCP scopes, 256
 scripts, 117
 Scripts Policy Processing policy, 142
 secondary command in DNS, 315–316
 secondary DNS servers, 302, 540
 Secure (Secure*.inf) template, 146
 Secure Server (Require Security) policy, 197
 secure updates, 329
 securedc template, 147
 securews template, 147
 security, 114
 account policies for, 126–131
 analyzing. *See* Security Configuration and Analysis tool
 Automatic Updates for, 153–155, 154
 demand dialing options for, 480–481, 481
 DUN options for, 397–398
 exam essentials for, 178
 IP. *See* IPsec (Internet Protocol Security Extensions)
 MBSA for, 169–173
 options categories for, 136–138
 policies for. *See* policies for remote access services.
 See access to remote access services
 review questions for, 179–188
 RIP properties for, 486–487, 487, 496, 497
 for services, 173–176, 173
 summary, 177
 Windows Update for, 151–153, 152
 security associations (SAs), 193–194, 540
 Security Configuration and Analysis tool, 114, 143, 540
 analysis with

- performing, 147–148, 150
- reviewing, 148–150, 148
- importing security templates
 - with, 145–147, 150
- security databases with, 143–144, 144, 149–150
- working with, 149–150
- security filters, 195–196
- security fixes, 151
- security groups, 116, 540
- security methods, 195–196, 540
- Security Policy Processing policy, 142
- Security Rule Wizard, 208
- Security Template Configuration Options, 147
- security templates
 - creating, 145–147, 149–150
 - importing, 145–147, 150
 - opening, 147
- segmented networks, DHCP on, 246
- Select Attribute dialog box, 422–425, 423
- Select Computer dialog box, 126, 216
- Select Computer Or Domain dialog box, 200, 200
- Select Counters From Computer option, 85
- Select Counters From List option, 85
- Select Group Policy Object dialog box, 166, 203, 228
- Select Network Component Type dialog box, 77
- Select Network Protocol dialog box, 77
- Select Update Source dialog box, 157, 157
- Select Users Or Groups dialog box, 136
- Send A Plain-Text Password If That Is The Only Way To Connect option, 481
- Send Clean-Up Updates When Stopping option, 490
- Send Failures statistic, 223
- Serial Number setting, 326
- Server Properties dialog box, 274
- Server (Request Security) policy, 197
- Server (Request Security) Properties dialog box, 216–217
- servers
 - DHCP scope options for, 266
 - DNS, 302, 531
 - configuring, 318–320, 319
 - installing, 317–318, 318
 - zones for, 320–321, 322
 - IPSec, 191
 - properties for, 262–263, 263
 - as remote access clients, 402
 - in remote access service access, 436–440, 436, 439
 - for VPNs, 380–383, 380
 - for WSUS, 156, 161–164
- Service Access Points (SAPs), 7, 540
- service (SRV) records, 311–312, 540
- Service-Type attribute, 424
- services, 173, 173
 - dependencies in, 175–176, 176
 - general properties for, 174, 174
 - logon properties for, 175, 175
 - queries for, 314
 - recovery properties for, 175, 176
 - working with, 177
- session keys, 196
- Session layer in OSI model, 10, 11
- Session Stats pane, 78
- set command in nslookup, 342–343
- Set Windows File Protection Scanning policy, 142
- /setclassid option in ipconfig, 250
- Setup security.inf (Default security) template, 145
- sharing options for DUN, 401
- Shiva Password Authentication Protocol (SPAP), 399–400, 417, 540
- Show Icon In Taskbar When Connected option, 396
- Shut Down The System right, 136
- Shutdown security options, 137
- simplified management, subnets for, 27
- sites, 121, 540
- _sites domain, 314
- slave DNS servers, 302
- Slow Network Connection Timeout For User Profiles policy, 139
- SMS (Systems Management Server), 74
- sniffers, 74
- SOA (Start of Authority) records, 308–309, 326, 326, 540
- Soft Associations statistic, 224
- Software Installation Policy Processing policy, 142
- software policies, 117
- Software Update Services. *See* WSUS (Windows Software Update Services)
- source addresses
 - in IP filters, 212–213, 213
 - in TCP/IP filters, 503
- SPAP (Shiva Password Authentication Protocol), 399–400, 417, 540
- special network addresses, 25
- Specify Intranet Microsoft Update Service Location Properties dialog box, 167, 168
- Specify Windows File Protection Cache Location policy, 143
- spoofing, IPSec for, 192
- SRV (service) records, 311–312, 540
- Start IP Address setting, 262, 264
- Start of Authority (SOA) records, 308–309, 326, 326, 540
- static IP environments, DHCP in, 275
- Static Route dialog box, 500–501, 500
- static routes, 541
 - IP routing for, 465–466, 500–501, 500
 - managing, 506
- Station Stats frame, 78
- statistics in IP Security Monitor, 222–226, 222
- Status indicator for zones, 324
- Store Password Using Reversible Encryption For All Users In The Domain option, 127–128
- Strong Encryption (MPPE 56 Bit) option, 430
- Strongest Encryption (MPPE 128 Bit) option, 430
- stub zones, 321
- subdomains, 299, 301, 541
- subnet addresses, 541
- Subnet Mask setting, 64
- subnet masks, 64, 541
- subnetting networks, 27–28, 541
 - applying, 35
 - Class A, 41
 - Class B, 39–41
 - Class C, 35–39
 - implementing, 28–29, 29–30
 - number of subnets, 33–34, 34, 43
 - subnet characteristics in, 41–43
 - uses for, 31–33, 31–33
- subtasks, 4
- Suggested Value Changes dialog box, 130
- superscopes, 250, 268–269, 541
- SUS. *See* WSUS (Windows Software Update Services)
- synchronization for WSUS, 161, 162
- Synchronization Options screen, 161, 162
- Synchronization Results screen, 163, 163
- Synchronize Directory Service Data right, 136
- System.adm template, 124

556 System Cryptography security options – _udp domain

System Cryptography security options, 137

system event audit policies, 132

System Monitor, 75, 84–85, 84, 541

counters in, 84–86

adding, 86–88

key, 87

for DNS, 337–338

organization of, 85–86, 85

for tuning and upgrading network subsystem, 87

System Objects security options, 137

System policies, 138–139

disk quota, 140–141

group policy, 141–142

logon, 140

user profile, 139–140

Windows file protection, 142–143

System Properties dialog box, 154, 154

System root security (rootsec.inf) template, 146

System Services option, 147

System Settings security options, 137

Systems Management Server (SMS), 74

T

Tag For Announced Routes setting, 485

Take Ownership Of Files Or Other Objects, 136

tampering, IPsec for, 192

tasks in OSI model, 3–4

TCP (Transmission Control Protocol), 18–20, 541

_tcp domain, 314

TCP/IP (Transmission Control Protocol/Internet Protocol), 19–21, 541

exam essentials for, 100–101

monitoring network traffic in, 74–75, 76

Network Monitor for. *See* Network Monitor

System Monitor for. *See* System Monitor

System Monitor

network bindings for, 71–74, 73

packet filters in, 501–504, 502–503

review questions for, 102–111

settings for, 58, 59

advanced, 65–71, 66–67

automatic, 61–64, 63

manual, 64–65

node types in, 69

for WINS clients, 68–71, 70

summary, 100

troubleshooting network protocols. *See* troubleshooting

TCP/IP model, 3

TCP/IP Properties dialog box, 58, 59, 61–65, 63

TCP/IP WINS Server dialog box, 71

TCPv4 > Segments/Sec counter, 87

TDI (Transport Driver Interface), 72

templates

administrative, 124

security

creating, 145–147, 149–150

importing, 145–147, 150

opening, 147

TGSs (ticket-granting services), 130

TGTs (ticket-granting tickets), 130

This Rule Does Not Specify An IPsec Tunnel option, 218

Time Before Route Is Removed (Seconds) setting, 489

Time Before Routes Expire (Seconds) setting, 489

Time Between Redial Attempts setting, 397

Time Of Day Constraints dialog box, 424–425

time to live (TTL)

in DNS, 305–306

with tracert, 94

Timeout For Dialog Boxes policy, 139

TLS (Transport Level Security), 418

To setting, 487

To Any Server setting, 327

top-level domains, 299–302, 301

Total Acquire statistic, 223

Total Get SPI statistic, 223

Total Stats pane, 78

tracert tool, 94–95, 95, 541

traffic exemptions in IPsec, 193

traffic monitoring

Network Monitor for. *See* Network Monitor

Network Monitor

System Monitor for. *See* System Monitor

System Monitor

traffic reduction, subnets for, 27

trailers in network packets, 16, 16

Transit Delay (Seconds) setting, 492

Transmission Control Protocol (TCP), 18–20, 541

Transmission Control Protocol/Internet Protocol. *See* TCP/IP (Transmission Control Protocol/Internet Protocol)

Transport Bytes Received statistic, 225

Transport Bytes Sent statistic, 225

Transport Driver Interface (TDI), 72

Transport layer

in IP model, 3

in OSI model, 9–10, 10

Transport Level Security (TLS), 418

transport mode in IPsec, 191, 216–217, 541

3DES (Triple DES) encryption, 196

Trojan horses, 116

troubleshooting

DHCP, 282–283, 283

DNS, 341–346

IP routing, 507–514

IPsec, 229–230

network protocols, 88

ipconfig for, 91–92, 92

nslookup for, 96–99

pathping for, 95, 96

physical connections in, 90–91

ping for, 93–94, 94

pinpointing problems in, 89–90

recent changes, 88–89

tracert for, 94–95, 95

OSI model in, 22

remote access service access, 443–447, 443–446

VPNs, 387–388

trusts, forest, 120

TTL (time to live)

in DNS, 305–306

with tracert, 94

TTL For This Record setting for zones, 326

tuning network subsystem, 87

Tunnel Endpoint Is Specified By The Following IP Address option, 220

Tunnel Endpoint Is Specified By This IP Address option, 218

tunnel endpoints, 218, 220, 541

tunnel mode in IPsec, 191, 217–220, 218–219, 541

Tunnel-Type attribute, 424

tunnels, 541

IPsec policies for, 210

in VPNs, 366–367, 366, 369–370

Turn Off Background Refresh Of Group Policy policy, 141

Type indicator for zones, 325

U

UDP (User Datagram Protocol), 17, 542

_udp domain, 314

UK domain, 300
 Unauthenticated access method, 399–400
 unicast routing, 474, 541
 Unicast scope, 541
 unicasts, 541
 universal groups, 116, 542
 unmasked bits, 33
 unreachable interfaces, 476–477
 updates
 Automatic Updates, 153–155, 154, 164–165, 529
 dynamic, zones for, 328–330
 Windows Update, 151–153, 152
 WSUS. *See* WSUS (Windows Software Update Services)
 Updates screen, 162, 162
 upgrading
 DNS database files in, 316
 network subsystem, 87
 US domain, 300
 Use Add Wizard option, 208
 Use Broadcast Or Multicast Only option, 488
 Use Local Computer Counters option, 85
 Use Neighbors In Addition To Broadcast Or Multicast option, 488
 Use Neighbors Instead Of Broadcast Or Multicast option, 488
 Use Scripting To Complete The Connection With The Remote Router option, 481
 Use Session Key Perfect Forward Secrecy (PFS) option, 216
 Use The Following DNS Server Addresses option, 64
 Use The Following IP Address option, 65
 Use The Same Network Number For All IPX Clients option, 378
 Use These Security Settings action, 196
 Use This Connection's DNS Suffix In DNS Registration setting, 68
 user access, 418–419
 authentication in, 416–418
 policies for, 421–426, 422–423, 426
 profiles for. *See* profiles
 VPN policies for, 433–435
 user accounts, 115–116

User Datagram Protocol (UDP), 17, 542
 User Group Policy Loopback Processing Mode policy, 142
 user profiles. *See* profiles
 user rights, assigning, 133–136
 user rights policies, 542
 users in troubleshooting, 89–90
 UseWUserver key, 165

V

Validate My Identity As Follows menu, 398
 Variable Length Subnet Masking (VLSM), 467
 Verify Caller-ID option, 420
 View Installation History option, 151
 View Security Report dialog box, 171, 172
 viewing Network Monitor data, 78–79, 79–80
 virtual interface properties, 498
 viruses, 116
 VLSM (Variable Length Subnet Masking), 467
 VPNs (Virtual Private Networks), 366, 542
 dialing options for, 396–397
 encapsulation in, 368, 369
 filters in, 504–506
 function of, 366, 366
 general properties for, 396
 L2TP/IPSec tunneling in, 369–370
 networking options for, 400–401
 operation of, 367–368
 policies for, 385, 433–435
 ports for, 383–384, 383–384
 PPTP tunneling in, 369
 redialing options for, 397
 security options for, 397–398
 server setup for, 380–383, 380
 sharing options for, 401
 troubleshooting, 387–388
 in Windows Server 2003, 367

W

Wait For Remote User Profile policy, 139

Web Site Selection screen, 158, 158
 well-known port numbers, 21
 Windows.adm template, 124
 Windows authentication, 436
 Windows Components Wizard, 77
 Windows file protection policies, 142–143, 542
 Windows-Group attribute, 424
 Windows Software Update Services. *See* WSUS (Windows Software Update Services)
 Windows Software Update Services screen, 160–163, 160–163
 Windows Update, 151–153, 152, 542
 Winnt.adm template, 124
 WINS
 for DHCP scopes, 259–260, 260
 for TCP/IP clients, 68–71, 70
 for zones, 327, 328
 WINS Addresses settings, 70
 WSUS (Windows Software Update Services), 155
 advantages of, 156
 client requirements for, 164–169, 166–169
 installing and configuring, 157–163, 157–163
 server requirements for, 156
 WUserver key, 165
 WUstatusServer key, 165

Z

Zone Properties dialog box, 327–328, 329
 zones, 542
 database files for, 314–316
 delegating, 330–331, 331
 DNS, 302
 for dynamic updates, 328–330
 forward lookup, 320–321, 322
 general properties for, 324–325, 325
 NS records for, 327, 327
 reverse lookup, 315, 322–323, 323, 539
 SOA records for, 326, 326
 transfers, 305–307, 327–328, 542
 WINS for, 327, 328