

Index

I.x methods, security, 530

A

AAT (Application Assembly Tool), 169, 189, 435

Access

- Administrative Console, 170–173
- databases, 212. *See also* JDBC
- directories, 174–179
 - MVS, 184–185
 - z/OS, 179–184
- First Steps utility, 166–169
- histories, 785
- intent, 442
- previous versions, 245
- RACF, 709
- RSS, 707
- servers, 186–187
- thread pools, 206
- UDDI Registry, 333–338
- user id, 140

Accounting reports, 735

ACID (Atomicity, Consistency, Isolation, and Durability), 238

Activity logs, 752, 755

Adding

- security roles (ATK), 472
- servers, 96–97
- variables, 819

Addnode scripts, running, 97

Addresses

- servant region address space output, 806

spaces

- Controller, 730
- output, 814
- policies, 610
- sections, 810
- Servants, 720
- z/OS, 32–36

z/OS

- diagnostics, 813–814
- reviewing output, 805–813

Admin trace, 766. *See also* Tracing

Administration

- administration services, 22
- Administrative Console. *See* Administrative Console

- clustering, 30–31

- Deployment Manager, 14

- agents, 17
- cells, 17–18

- nodes, 148–156, 158–163
- distributed management models, 27–30

- ikeyman utility, 269–271

- installation, 62

- JMS, 285–290, 292–298

- MQ Connection Pooling, 301

- optimization, 300

- security, 298–300

- troubleshooting, 302

- z/OS, 303–310, 313–325

- JMX, 628–634

- plug-ins, 253–255. *See also* Plug-ins

- preinstallation, 105

- privilege restrictions, 784

- RMF, 705

- security, 362

- authentication configuration, 370–375

- authentication protocol configuration, 383–385

- files, 391

- global security configuration, 377–379

- JAAS configuration, 386–388

- overriding global security, 389

- performance, 390

- SSL configuration, 380–382

- user registry configuration, 363–370

- z/OS, 422–427

- services, 22

- sessions, 223–231, 233–240

- System Administrator (J2EE), 433

- TCM, 616

- tools, 188–195

- backupConfig, 191

- dumpNameSpace, 192

- restoreConfig, 191

- UDDI User Console, 192

- VersionInfo, 191

- wsadmin, 191

- XML_SOAP Administrative, 192

- topologies, 41

- variables, 222

- workload management (WLM),

- 14, 545. *See also* Workload management (WLM)

- capabilities of, 551

- clusters, 546–557, 562–571

- EJB, 571–577

- EJB/HTTP client comparisons, 551–556

- z/OS, 717–725, 727–735. *See also*

- z/OS

- Administrative Console, 19, 168–173

- Base applications, 147–149

- binding configuration, 245–247

- HTTP plug-ins, 26

- tracing, 762–770

- viewing, 84–85, 95

- Web server plug-ins

- communication security, 268–274

- configuration, 259–268

- Administrative roles, security, 394

- Administrative Scripting Tool. *See* Wsadmin tool
- Advantages of clusters, 550
- Affinity, sessions, 226, 267
- Agents, nodes, 17
- Aliases
 - Host Aliases link, 261
 - hosts, 220
- Allocation of target data sets, 118–119
- American Standard Code for Information Exchange (ASCII), 8
- Analysis
 - APAR, 800
 - application view, 678–679
 - end user view, 665–666
 - installation, 62
 - administration, 62
 - application prerequisites, 65
 - hardware prerequisites, 65
 - performance, 64–65
 - security, 62–64
 - Log Analyzer, 775–778
 - records, 777
 - system view, 667–675, 678
 - Thread Analyzer, 11
 - Tivoli Performance Viewer, 663–665
 - topologies, 38, 43
 - administration, 41
 - availability, 42
 - costs, 40–41
 - performance, 41
 - scalability, 42
 - security, 39
 - session state, 42–43
 - z/OS, 53–59
- Ant, 437, 624–627
- Apache, monitoring, 675
- APAR (Authorized Program Analysis Report), 800
- APF (authorized program facility), 321
- APIs (Application Programming Interfaces). *See also* Interfaces
 - JavaMail, 25
 - JDBC, 21
 - JTA, 20
- Application Assembler (J2EE), 432–433
- Application Assembly Tool (AAT), 169, 434–435
- Application Client Container, 26
- Application Client Resource Configuration tool, 190
- Application Component Provider (J2EE), 432
- Application Response Measurement. *See* ARM
- Application server facility (ASF), 283
- Application Server Toolkit (ASTK), 436–437
- Application Servers. *See also* Servers
 - automation, 614
 - Ant tasks, 624–627
 - code, 640–648
 - command line scripts, 623–624
 - installation response files, 616–617
 - JMX, 628–634
 - shell scripts, 618–623
 - wsadmin tool, 635–640
 - configuration, 203–208
 - creating, 199–200
 - JMS, 281–283
 - memory, 231
 - node configuration, 117
 - ORB, 208
 - performance, 681–699, 701–703
 - plug-ins, 268–274
 - templates, 201
 - transaction services, 209–211
 - Web server plug-ins, 253–255
- Applications
 - administration services, 22
 - Administrative Console, 23–25
 - availability, 504
 - Base, 147–149
 - best practices
 - change control policies, 784–785
 - fix packs/interim fixes, 787
 - problem determination methodologies, 788–796
 - support, 797–800
 - testing, 780–783
 - white papers, 786
 - clustering, 30–31
 - configuration repository, 22–23
 - default installations, 168
 - deployment
 - checklists, 508
 - installation, 510–517, 521–531
 - planning, 502–508
 - postinstallation, 532–539
 - testing, 539
 - tools, 509
 - uninstallation, 542
 - updating, 539–541
 - distributed management models, 27–28, 30
 - editors, 8
 - EJBs
 - containers, 20
 - performance tuning, 697
 - security, 470–478, 483–493
 - Enterprise Applications, 25
 - environments, 604
 - configuration, 219
 - monitoring, 653–657
 - variables definition, 222–223
 - virtual hosts, 220
 - WLM policies, 610
 - executable locations, 139
 - failover, 504
 - footprinting, 740
 - HTTP
 - performance tuning, 699–701
 - plug-ins, 26
- installation
 - administration, 41
 - availability, 42
 - costs, 40–41
 - performance, 41
 - planning, 38, 43
 - prerequisites, 65
 - scalability, 42
 - security, 39
 - session state, 42–43
- IVT, 82
- J2EE
 - AAT, 434–435
 - Ant, 437
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - assembly, 433–434, 451–456
 - ASTK, 436–437
 - Deployer, 433
 - development roles, 431–432
 - EAR files, 433–434
 - packaging, 438–442, 444–451
 - Product Provider, 432
 - security, 451
 - System Administrator, 433
 - Tool Provider, 432
 - WebSphere Studio, 435
 - workload management (WLM)
- JavaMail services, 25
- JCA, 20, 212
- JDBC, 21
- JMS, 21, 280
 - Application Server providers, 281–283
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - performance tuning, 692–693
 - queues, 281
 - security, 298–300
 - topics, 281
 - topologies, 284
 - troubleshooting, 302
 - Web services, 284
 - z/OS, 303–310, 313–323, 325
- JTA/JTS services, 20
 - login configuration, 387
 - monitoring, 653
 - naming service, 21
 - ORB, 694–696
 - paths, 804
 - performance, 681. *See also* Optimization
 - application view, 678–679
 - end user view, 665–666
 - JVMPI, 663
 - PMI, 657–659
 - Request Metrics, 659–662
 - system view, 667–675, 678
 - Tivoli Performance Viewer, 663–665
 - preinstallation, 107

- rollbacks, 507
 - security, 458, 504
 - constraint creation, 464–466
 - declarative, 458
 - Deployment Descriptor, 459
 - mapping, 495–499
 - performance, 500
 - policy file configuration, 493–495
 - programmatic, 458
 - references (roles), 467–468
 - roles, 460–464, 468–469
 - services, 22
 - servers, 144–146, 161–162
 - session management, 223–231, 233–240
 - SoapEarEnabler tool, 343
 - tools
 - AAT, 189
 - Application Client Resource Configuration, 190
 - ATK, 190
 - Ejbdeploy, 190
 - upgrading, 504, 507
 - views, 678–679
 - Web Container, 19–20, 698
 - Web services, 25, 326–328
 - implementation, 329–330
 - installation, 332
 - Web applications. *See* Web applications
 - WLM. *See* Workload management (WLM)
 - Appserversetupuddi.jacl script
 - parameters, 339
 - Architecture, 12–13
 - applications
 - checklists, 508
 - deployment, 502–508
 - installation, 510–517, 521–531
 - postinstallation, 532–539
 - testing, 539
 - tools, 509
 - uninstallation, 542
 - updating, 539–541
 - components, 19
 - administration services, 22
 - Administrative Console, 23–25
 - Application Client Container, 26
 - clustering, 30–31
 - configuration repository, 22–23
 - distributed management models, 27–28, 30
 - EJB Container, 20
 - Enterprise Applications, 25
 - HTTP plug-ins, 26
 - JavaMail services, 25
 - JCA services, 20
 - JDBC, 21
 - JMS, 21
 - JTA/JTS services, 20
 - naming services, 21
 - security services, 22
 - Web Container, 19–20
 - Web services, 25
 - JCA, 212
 - naming
 - bindings, 245–247
 - bootstrap ports, 243–244
 - distributed namespace bindings, 244
 - dumpName Space tool, 247–251
 - interoperability, 244–245
 - namespace partitions, 242–243
 - Network Deployment, 14
 - Base Topology, 15
 - cells, 17–18
 - distributed management models, 27–30
 - nodes, 17
 - server processes, 16
 - PMI, 657–659
 - Request Metrics, 659–662
 - versions, 14
 - z/OS, 31–36
 - Archives, EAR files, 25
 - Arguments, command line (JVM), 689
 - ARM (Application Response Measurement), 657
 - ASCII (American Standard Code for Information Exchange), 8
 - ASF (application server facility), 283
 - Assemblers, 432–433
 - Assembly
 - AAT, 189
 - Application Client Resource Configuration tool, 190
 - ATK, 190
 - Ejbdeploy tool, 190
 - J2EE applications, 433–434, 451–456
 - AAT, 434–435
 - Ant, 437
 - ASTK, 436–437
 - packaging, 438–442, 444–451
 - security, 451
 - WebSphere Studio, 435
 - Assembly Toolkit (ATK), 169
 - Assignment of ports, 75, 90
 - ASTK (Application Server Toolkit), 436–437
 - ATK (Assembly Toolkit), 169, 190, 472
 - Atomic updates, 209–211
 - Atomicity, Consistency, Isolation, and Durability (ACID), 238
 - Attributes
 - CB service class, 592
 - ConnectTimeout, 255, 276
 - LoadBalance, 266–267
 - LoadBalanceWeight, 267
 - MaxConnections, 268
 - RetryInterval, 255, 275
 - Authentication, 22, 361
 - configuration, 370–375
 - protocol configuration, 383–385
 - JMS, 298–300
 - Authorization, 22
 - data sets, 138
 - JMS, 298–300
 - SAF, 402–403
 - Authorized Program Analysis Report (APAR), 800
 - Authorized program facility (APF), 321
 - Automation, 614
 - Ant tasks, 624–627
 - code, 640–648
 - command line scripts, 623–624
 - disabling startup, 536
 - installation response files, 616–617
 - JMX, 628–634
 - shell scripts, 618–623
 - wsadmin tool, 635–640
 - Availability
 - applications, 504
 - topologies, 42
- B**
- Backing up configurations, 785
 - Backup server configurations, 268
 - BackupConfig
 - commands, 102
 - tools, 191
 - Base applications. *See also* Applications
 - configuration, 117
 - creating, 136
 - customization jobs, 823
 - federating, 159
 - Network Deployment, 15
 - JMS, 284
 - starting, 147–149
 - Best practices, 780–783. *See also* Optimization
 - change control policies, 784–785
 - fix packs/interim fixes, 787
 - problem determination methodologies, 788–796
 - support, 797–800
 - white papers, 786
 - Bin folders, 175
 - Binaries, application reinstallation, 540
 - Bindings
 - configuration, 245–247
 - connection factory, 516
 - default, 512
 - distributed namespaces, 244
 - EJB 1.1 CMP, 516
 - files, 517
 - Boolean custom properties, 207
 - Bootstrap ports, 243–244
 - Bottlenecks, 684. *See also* Troubleshooting
 - BPXPRMxx members, updating, 139

- Buffers
 - CTRACE, 126
 - TCP, 687
- Business types, 588
- C**
- C++, tracing, 821
- Caching
 - dynamic, 440
 - Dynamic Cache services, 204, 696
 - EJBs, 441, 697
 - PreparedStatement, 702
- Capabilities of workload management (WLM), 551–556. *See also* Workload management (WLM)
- CB service class attributes, 592
- CBSTC service class, 606
- CCF (Cryptographic Coprocessor Facilities), 425
- CEEDUMP, 810–811
- Cells
 - Deployment Manager, 17–18, 159
 - multicell topologies, 48–49
 - naming, 91, 150
 - partitions, 242
 - servers
 - adding, 96–97
 - viewing, 95
 - z/OS
 - address spaces, 36
 - servers, 709–711
- Certificates, security, 269–271
- CF (Coupling Facility), 707
- Change control policies, 784–785
- Channels, deployment, 345–346
- Checklists
 - deployment, 508
 - tools, 509
- CICS transactions, 595
- Classes
 - EJBROLE, 424
 - folder, 175
 - reloading, 523
 - reports, 606–607
 - services, 591–592
 - CBSTC, 606
 - resource groups, 601–603
 - TSOPRD, 596
- Classification
 - groups, 601, 604
 - non-enclave work, 719
 - rules, 601
 - WLM, 717–720
- Classloaders, 445, 503–504, 817
- Classpath requirements, 503
- Cleanup Interval, 697
- Clients
 - Application Client Container, 26
 - Application Client Resource Configuration tool, 190
 - J2EE application assembly, 452
 - JMS, 692–693
 - JMX, 628–634
 - memory, 231
 - non-WebSphere, 245
 - PMI, 657–659–662
 - previous versions, 244
 - timeouts, 210
 - workload management (WLM)
 - capabilities of, 551
 - clusters, 546–548, 550–560, 562–571
 - EJBs, 551–556, 571–577
- ClientUpgrade tool, 188
- CLOSE_WAIT state, 686
- Cloudscape folder, 175
- Clusters, 30–31
 - deployment, 507
 - EJB requests, 555–556
 - server configuration, 260
 - workload management (WLM), 546, 557–564
 - advantages of, 550
 - configuration, 564–565
 - disadvantages of, 550–551
 - optimization, 567–569
 - runtime controls, 565–567
 - troubleshooting, 569–571
 - types of, 547–548
 - z/OS address spaces, 36
- Code
 - automation, 640–648
 - J2EE deployment, 444–451
 - reviews, 787
 - sharing, 505
- Coefficient configuration, 608, 612
- Coexisting applications
 - configuration, 75
 - installation, 59
- Collector tool, 194
- Command-line
 - arguments (JVM), 689
 - scripts, 623–624
 - tools, 23–25
- Commands
 - backupConfig, 102
 - D WLM,APPLENV=*, 813
 - D WLM,SYSTEMS, 580
 - Modify, 581
 - ndd -get, 686
 - ndd set, 686
 - oping, 130
 - ps, 9
 - startManager, 186
 - startNode, 187
 - stopManager, 186
 - stopNode, 187
 - TCL, 635
 - updateSilent, 101
 - updateWizard, 101
 - WebSphere, 10
- Common code, 444–451. *See also* Code
- Common Object Request Broker Architecture (CORBA), 241
- performance tuning, 694–696
- naming service (CosNaming), 21, 244
- Common Object Services Naming Protocol. *See* COS Naming
- Common utility jar deployment, 505
- Communication
 - plug-ins, 253–255
 - security, 268–274
 - z/OS, 805–813
- Compilers
 - JIT, 689
 - JVM, 715
- Component trace (CTRACE), 126, 144, 811
- Components
 - Administrative Console, 23–25
 - administration services, 22
 - Application Client Container, 26
 - Application Servers
 - configuration, 203–208
 - ORB, 208
 - transaction services, 209–211
 - clustering, 30–31
 - configuration repository, 22–23
 - cooperation, 804
 - distributed management models, 27–30
 - EJB Container, 20
 - Enterprise Applications, 25
 - HTTP plug-ins, 26
 - installation, 76, 90
 - J2EE applications
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - Deployer, 433
 - development roles, 431–432
 - Product Provider, 432
 - System Administrator, 433
 - Tool Provider, 432
 - JavaMail services, 25
 - JCA services, 20
 - JDBC, 21
 - JMS, 21, 280
 - Application Server providers, 281–283
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - queues, 281
 - security, 298–300
 - topics, 281
 - topologies, 284
 - troubleshooting, 302
 - Web services, 284
 - z/OS, 303–307, 309–325
 - JTA/JTS services, 20
 - naming services, 21
 - security, 360–362
 - administration, 362
 - administrative roles, 394
 - authentication configuration, 370–375

- authentication protocol configuration, 383–385
 - files, 391
 - global security configuration, 377, 379
 - JAAS configuration, 386–388
 - naming, 395
 - operations, 392
 - overriding global security, 389
 - performance, 390
 - permissions, 394
 - SSL configuration, 380–382
 - trace specifications, 396–399
 - UNIX operations, 392–393
 - user registry configuration, 363–370
- security service, 22
- Web Container, 19–20
- Web services, 25, 332
- WebSphere Component, 774
- WebSphere Edge, 737
- z/OS, 31–36
- Config folder, 175
- Configuration
 - administration, 41
 - Administrative Console, 170–173
 - Application Client Resource Configuration tool, 190
 - Application Servers, 199–200
 - components, 203–208
 - ORB, 208
 - templates, 201
 - transaction services, 209–211
 - applications
 - checklists, 508
 - installation, 510–517, 521–531
 - logins, 387
 - postinstallation, 532–539
 - testing, 539
 - tools, 509
 - uninstallation, 542
 - updating, 539–541
 - availability, 42
 - backing up, 102, 785
 - backup servers, 268
 - backupConfig tool, 191
 - base applications. *See* Base applications
 - bindings, 245, 247
 - bootstrap ports, 243–244
 - clusters, 564–565
 - optimization, 567–569
 - runtime controls, 565–567
 - troubleshooting, 569–571
 - coefficient, 608, 612
 - coexisting, 75
 - costs, 40–41
 - data sources, 211–219
 - database sessions, 228
 - disk speed, 684
 - distributed namespace bindings, 244
 - dumpNameSpace tool, 192
 - EJBs, 571
 - containers, 208, 697
 - workload management (WLM), 572, 575
 - environments, 219
 - variables, 222–223
 - virtual hosts, 220
 - generic JMS providers, 296–298
 - heaps, 715
 - HTTP, 699–701
 - sessions, 223–231, 233–240
 - Transports, 205
 - ISPF panels, 114–118
 - JDBC, 211–219
 - JMS, 284, 692–693
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - security, 298–300
 - troubleshooting, 302
 - z/OS, 303–310, 313–325
 - job customization, 133–135
 - JVM
 - initial heap sizes, 688
 - maximum heap sizes, 689
 - Listener Ports, 287
 - LoadBalance attribute, 266–267
 - LoadBalanceWeight attribute, 267
 - log files, 745
 - HTTP Servers, 759–762
 - installation, 756
 - JVM, 746–750
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - updates, 756–757
 - utilities, 762
 - LPARs, 9
 - manual system changes, 137–147
 - MaxConnections attribute, 268
 - MBeans, 523
 - message listener service, 286
 - method permissions, 474–476
 - MIME types, 220
 - namespaces, 344
 - network deployment, 148–150, 152–163
 - options, 116
 - ORB, 694–696
 - overriding, 514
 - performance, 41
 - primary servers, 268
 - providers, 289
 - queues, 291
 - replication, 234
 - repositories, 22–23
 - restoreConfig tool, 191
 - RSS, 707
 - Run-As role, 481
 - saving, 291
 - scalability, 42
 - security
 - administration, 362
 - authentication configuration, 370–375
 - authentication protocol configuration, 383–385
 - certificates, 269–271
 - constraints, 464–466
 - customization, 132–133
 - files, 391
 - global security configuration, 377–379
 - JAAS configuration, 386, 388
 - mapping, 495–499
 - overriding global security, 389
 - performance, 390, 500
 - planning, 39
 - policy files, 493–495
 - references, 467–468, 477–478
 - roles, 461–464
 - Run-As roles, 468–469
 - SSL configuration, 380–382
 - user registry configuration, 363–370
 - servers
 - clusters, 260
 - customization, 127–131
 - session state, 42–43
 - SSL, 271–274
 - startup, 535
 - system environment customization, 122
 - target data set allocation, 118–119
 - TCM, 616
 - TCP, 685–688
 - thread pools, 206, 288
 - tracing, 762–774
 - UDDI
 - Registry, 333–338
 - User Console tool, 192
 - URIs, 263
 - Use Binary Configuration, 522
 - variables
 - definition, 118–127
 - saving, 136
 - VersionInfo tool, 191
 - view the generated instructions option, 135–136
 - virtual hosts, 261–263
 - Web containers, 698
 - Web module security, 460–469
 - Web server plug-ins
 - communication security, 268–274
 - failover, 275–278
 - files, 259–268
 - logging, 278
 - tracing, 278
 - WebSEAL, 375
 - WebSphere MQ JMS Provider, 293–296
 - wsadmin tool, 191
 - XML_SOAP Administrative tool, 192
 - z/OS
 - logging, 823–825, 828–838

- Configuration (*cont.*)
 - planning, 53–59
 - troubleshooting, 805, 817–822
- Connection Factory
 - bindings, 516
 - Connection Pools, 282
 - Web Sphere MQ, 294
- ConnectionPoolDataSource attribute, 212
- Connections
 - databases, 701–703
 - HTTP performance tuning, 699–701
 - JCA, 212
 - JDBC, 21, 211–219
 - MaxConnections attribute, 268
 - MQ Connection Pooling, 301
 - pooling, 21, 212
 - TCP/IP, 686–688
 - TcpTimedWaitDelay values, 685
 - Tivoli Performance Viewer, 663
 - ConnectTimeout attribute, 255, 276
- Constraints, creating, 464–466
- Containers
 - EJB, 208
 - performance tuning, 697
 - service policies, 587
 - tracing, 739
 - Web
 - performance tuning, 698
 - properties, 204
 - WLM policies, 610
 - z/OS topologies, 709, 711
- Control
 - change control policies, 784–785
 - deployment manager, 152
 - loss of (z/OS), 802–803
 - runtime clusters, 565–567
- Controllers
 - address space, 730
 - Controller Service Class (MC5CTRL), 727
 - HTTP/HTTPS transports directed to, 736
 - z/OS runtime, 711
- Cooperation, z/OS, 803–805
- CORBA (Common Object Request Broker Architecture), 241
 - performance tuning, 694–696
 - naming service (CosNaming), 21, 244
- Core system performance, 667
- COS Naming (Common Object Services Naming Protocol), 21, 241
- Costs, planning, 40–41
- Coupling Facility (CF), 707
- CPU utilization, 725
- Cross-System Coupling Facility (XCF), 708
- Cryptographic Coprocessor Facilities (CCF), 425
- CSlv2 protocol, 384
- CTRACE (component trace), 126, 144, 811
- Custom properties, Application Servers, 207
- Customization
 - base customization jobs, 136, 823
 - clusters, 566
 - configuration files, 263–268. *See also* Configuration
 - federation customization jobs, 824
 - HTTP properties, 699–701
 - integrated JMS provider customization jobs, 824
 - ISPF panels, 114–118
 - JMS, 300
 - jobs, 133–135
 - executing, 141
 - JMS, 323
 - LoadBalance attribute, 266–267
 - LoadBalanceWeight attribute, 267
 - manual system changes, 137–147
 - MaxConnections attribute, 268
 - network deployment jobs, 824
 - security, 132–133
 - servers, 127–131, 312
 - Session Management, 224
 - SMP/e installation, 113
 - system environment, 122
 - target data set allocation, 118–119
 - user registry, 367
 - variables
 - definition, 118–127
 - saving, 136
 - view the generated instructions
 - option, 135–136
 - Web services, 351–359
- Cycles (development)
 - Application Assembler (J2EE applications), 432–433
 - Application Component Provider (J2EE applications), 432
 - Deployer (J2EE applications), 433
 - J2EE applications, 431–432
 - Product Provider (J2EE applications), 432
 - System Administrator (J2EE applications), 433
 - Tool Provider (J2EE applications), 432
- D**
- D WLM.APPLENV=* command, 813
- D WLM.SYSTEMS command, 580
- Daemons
 - control process information, 153
 - z/OS topologies, 55
- DASD (Direct Access Storage Devices), 32, 815
- Data sets
 - allocation, 118–119
 - authorization, 138
- Data sources
 - configuration, 211–219
 - mapping, 526
- Data store restoration, 706
- Databases
 - connection pooling, 701–703
 - JDBC, 21, 211–219
 - memory, 238–240
 - sessions, 227–228, 231–240
 - threads, 675
 - UDDI registry access, 333–338
- DB2
 - data store restoration, 706
 - tracing, 733–735
- DB2SQLJ_TRACE_FILENAME directive, 731
- Debugging wsadmin scripts, 639
- Declarative security, 458
- Default application installation, 168
- Default bindings, generating, 512
- Default dataSource mappings, 525
- Default tools, 188–195
- Default Virtual Host menu, 262
- Default virtual hosts, 222
- Definitions
 - services, 584–586
 - variables, 118–223
- Demilitarized zones (DMZs), 39
- Deployer (J2EE), 433
- Deployment
 - applications
 - checklists, 508
 - installation, 510–517, 521–531
 - planning, 502–508
 - postinstallation, 532–539
 - testing, 539
 - tools, 509
 - uninstallation, 542
 - updating, 539–541
 - channels, 345–346
 - common code (J2EE), 444–451
 - Deployer (J2EE), 433
 - EJBs, 523
 - filters, 346–347
 - hot, 541
 - Network Deployment, 14
 - Base Topology, 15
 - cells, 17–18
 - distributed management models, 27–30
 - JMS, 284
 - nodes, 17
 - server processes, 16
 - troubleshooting, 100–102
 - WebSphere Application Server
 - Base Edition, 69–74, 76–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–100
 - networks, 824
 - tools
 - AAT, 189
 - Application Client Resource Configuration, 190
 - ATK, 190
 - Ejbdeploy, 190
 - UDDI references, 347–350
 - utility jars, 505
 - Web services, 523

- Deployment Descriptor
 - EJBs, 474
 - security, 459
 - Deployment Manager, 14
 - agents, 17
 - cells, 17–18
 - nodes, 148–150, 152–163
 - topologies, 41
 - Deploytool folder, 177
 - Design, 13. *See also* Configuration
 - administration, 41
 - availability, 42
 - components, 19
 - administration services, 22
 - Administrative Console, 23–25
 - Application Client Container, 26
 - clustering, 30–31
 - configuration repository, 22–23
 - distributed management models, 27–30
 - EJB Container, 20
 - Enterprise Applications, 25
 - HTTP plug-ins, 26
 - JavaMail services, 25
 - JCA services, 20
 - JDBC, 21
 - JMS, 21
 - JTA/JTS services, 20
 - naming services, 21
 - security services, 22
 - Web Container, 19–20
 - Web services, 25
 - costs, 40–41
 - Network Deployment, 14
 - Base Topology, 15
 - cells, 17–18
 - distributed management models, 27–30
 - nodes, 17
 - server processes, 16
 - performance, 41
 - scalability, 42
 - security, 39
 - session states, 42–43
 - versions, 14
 - z/OS, 53–59
 - Destinations
 - JMS topics, 292
 - WebSphere MQ Queue, 294
 - Development (J2EE applications)
 - AAT, 434–435
 - Ant, 437
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - assembly, 433–434, 451–456
 - ASTK, 436–437
 - Deployer, 433
 - EAR files, 433–434
 - packaging, 438–442, 444–451
 - Product Provider, 432
 - roles, 431–432
 - security, 451
 - System Administrator, 433
 - Tool Provider, 432
 - WebSphere Studio, 435
 - Diagnostic trace, 764. *See also* Tracing
 - Diagnostics. *See also* Troubleshooting
 - table of environment variables, 825
 - Thread Analyzer, 11
 - z/OS, 813–814
 - Direct Access Storage Devices (DASD), 32, 815
 - Directives, DB2SQLJ_TRACE_FILENAME, 731
 - Directories. *See also* Files
 - installation, 77, 521
 - JNDI, 21
 - SMP/e, 111–113
 - structures, 174–179
 - MVS, 184–185
 - z/OS, 179–184
 - transactions, 210
 - Disadvantages of clusters, 550–551
 - Discretionary goals, 594
 - Disk speed, tuning, 684
 - DISK utilization monitoring, 669
 - Display Active Users option, 9
 - Distributed DVIPA, 737
 - Distributed HTTP/HTTPS plug-in
 - forwarding, 737
 - Distributed management models, 27–28, 30
 - Distributed namespace bindings, 244
 - Distributed platforms, 7
 - directories, 174–179
 - MVS, 184–185
 - z/OS, 179–184
 - z/OS
 - comparing, 8–9
 - QoS, 9
 - WebSphere on, 10–11
 - Distributed session parameters, 238
 - Distribution. *See also* Workload management (WLM)
 - capabilities of, 551
 - clusters, 546–557, 559–560, 562–571
 - EJB, 571–572–577
 - EJB/HTTP client comparisons, 551–556
 - DMZs (demilitarized zones), 39
 - Documentation
 - First Steps utility, 166–169
 - installation, 109
 - procedures, 786
 - Domains, replication of, 233–234
 - Downloading view the generated instructions option, 135–136
 - DumpNameSpace tool, 192, 247–251
 - Duration of service classes, 595
 - DVIPA (Dynamic Virtual IP Addressing), 737
 - Dynamic Cache services, 204, 696–703
 - Dynamic caching, 440
 - Dynamic Java tracing, 716
 - Dynamic reloading, 541
 - Dynamic Virtual IP Addressing (DVIPA), 737
 - Dynamic Web content, packaging, 438–442, 444–451
- E**
- EAR (enterprise application archive) files, 25
 - assembly, 456
 - J2EE applications, 433–434
 - SOAP installation, 344–347
 - EBCDIC (Extended Binary Coded Decimal Interchange Code), 8
 - Edge Components, 737
 - Editing
 - configuration files, 263–268
 - links, 111
 - Editors, 8
 - EJB 1.1 CMP bindings, 516
 - Ejbdeploy tool, 190, 524
 - EJBROLE class, 423–424
 - EJBs (Enterprise Java Beans), 3
 - caching, 441
 - containers, 20, 208, 697
 - data source mapping, 526
 - deployment, 523
 - Excludes List, 488–493
 - JNDI names, 525
 - levels, 480–486
 - lookups, 552–554
 - modules, 454, 505
 - monitoring, 672
 - naming services, 21
 - PMI Request Metrics, 661
 - requests, 555–556, 572
 - security, 470–478, 483–493
 - workload management (WLM), 551–556, 571
 - configuration, 572, 575
 - optimization, 575–576
 - troubleshooting, 576–577
 - Electronic Service Request (ESR) tool, 797
 - Enabling
 - SoapEarEnabler tool, 343
 - SOAPenabled EAR files, 344–347
 - tracing, 762–771
 - Enclaves (MCCLUST1), 727
 - End user view, 665–666
 - Enterprise application archive. *See* EAR files
 - Enterprise Applications, 25. *See also* Applications
 - Enterprise Java Beans. *See* EJBs
 - Environments
 - applications, 604
 - automation, 614
 - Ant tasks, 624, 627

- Environments (*cont.*)
 - code, 640–648
 - command line scripts, 623–624
 - installation response files, 616–617
 - JMX, 628–634
 - shell scripts, 618–623
 - wsadmin tool, 635–640
- best practices
 - change control policies, 784–785
 - fix packs/interim fixes, 787
 - problem determination methodologies, 788–796
 - support, 797–800
 - testing, 780–783
 - white papers, 786
- cluster deployment, 507
- configuration, 219
- isolated test, 782
- table of environment variables, 825
- variables
 - creating, 223
 - management, 222
 - views, 653–657
 - virtual hosts, 220
 - WLM policies, 610
- Errors. *See also* Troubleshooting
 - locating, 788–789
 - logs, 814–816
 - validation, 789–794
- ESR (Electronic Service Request) tool, 797
- Etc folder, 177
- Event timelines, 816
- Excludes List, 488, 492–493
- Executable program locations, 139
- Execution
 - jobs, 141
 - Log Analyzer, 776–778
 - previous versions, 244
- Extended Binary Coded Decimal Interchange Code (EBCDIC), 8
- Extensible Markup Language. *See* XML
- Extensions
 - IBM Extensions, 439
 - JMX, 628–634
- F**
- Failover
 - applications, 504
 - Web server plug-ins, 275–278
- Federating base nodes, 159
- Federation customization jobs, 824
- FFDC (first failure data capture), 778
- Files
 - bindings, 517
 - configuration, 259–268
 - EAR, 25
 - assembly, 456
 - J2EE applications, 433–434
 - SOAPenabled, 344–347
 - htpd.conf configuration, 78
 - installation responses, 616–617
 - log, 745
 - formatting, 772–774
 - HTTP Servers, 759–762
 - installation, 756
 - JVM, 746–750
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - troubleshooting, 792
 - updates, 756–757
 - utilities, 762
 - permissions, 394
 - plug-in log, 278
 - resources.xml, 23
 - security, 391
 - SoapEarEnabler tool, 343
- Filters
 - deployment, 346–347
 - EJBs, 661
 - PMI Request Metrics, 661
 - URI, 661
- FIN_WAIT_2 state, 686
- Firewalls, 105–106. *See also* Security
- First failure data capture (FFDC), 778
- First Steps utility, 166–169, 177
- Fix packs, 100–102, 787. *See also* Troubleshooting
- Flow
 - ISPF panels, 114–118
 - requests, 674
- Folders, 174. *See also* Directories; Files
- Footprinting applications, 740
- Formatting. *See also* Configuration
 - log files, 772–774
 - plug-in log, 278
 - tracing, 772–774
- Forwarding distributed HTTP/HTTPS plug-ins, 737
- Frameworks, 545. *See also* Workload management (WLM)
- Front-end handlers, 736–737, 740
- Fully qualified names, 244
- G**
- Garbage collection
 - JVM, 689, 712–715
 - monitoring, 676
 - tracing (JVM), 817–822
- Generating
 - customization jobs, 133–135
 - default bindings, 512
- Generic JMS providers, 281–283, 296–298
- GetHostByName() method, 130
- Global security. *See also* Security
 - configuration, 377, 379
 - overriding, 389
- Global security, 362. *See also* Security
- Goals
 - discretionary, 594
 - velocity, 593–594
- Graphical installations, 616–617
- Graphical installer, 67
- Groups
 - classification, 601–604
 - resources, 601–603
 - roles, 495–499
 - security, 529
 - service policies, 587
 - transactions, 587–590
- H**
- HandleNotification() method, 634
- Hardware
 - installation prerequisites, 65
 - performance tuning, 684
 - preinstallation, 107–108
 - zSeries, 8
- Heaps
 - configuration, 715
 - JVM, 688–689
- Help, 795–796. *See also* Troubleshooting
- Heterogeneous work, service classes, 595
- HFSs (hierarchical file systems), 110
- High volume period snapshots, 739
- HIS (IBM HTTP Server), 736, 824
- Histories
 - access, 785
 - logs, 786
- HME* prefixes, 806
- Horizontal clusters, 548
- Hostnames
 - deployment manager, 153
 - selection of, 91, 150
- Hosts
 - Aliases link, 261
 - naming, 78
 - virtual
 - configuration, 220, 261–263
 - installation, 516
 - mapping, 528
- Hot deployments, 541
- HotSpots, JVM, 692
- HTTP (Hypertext Transfer Protocol)
 - front-end handlers, 736–740
 - log files, 759–762
 - optimization, 699–701
 - performance tuning, 699–701
 - plug-ins, 26
 - ports, 131
 - session management, 223–231, 233–240
 - transports, 205, 271–274
 - Web services, 330
 - workload management (WLM), 551–556
- Httpd.conf configuration file, 78
- I**
- IBM Extensions, 439
- IBM HTTP Server (IHS), 736, 824
- IBM Key Management Utility (ikeyman), 269, 271

- IBM Tivoli Monitoring for Transaction Performance (ITMTP), 666
- IIOP (Internet Inter-ORB Protocol), 551
- Image partitions, 705
- Implementation. *See also* Configuration
 - EJB containers, 697
 - HTTP, 699, 701
 - JMS, 692–693
 - ORB, 694–696
 - Web containers, 698
 - Web services, 329–330
- Importance of service classes, 595
- Inactivity timeouts, clients, 210
- Indexes, 317
- InfoCenter, installation of, 167
- Infrastructure, 657. *See also* PMI
- Initial heap sizes (JVM), 688
- Initial verification tests, 147
- InstallableApps folders, 177
- Installation, 109
 - administration, 41, 62
 - application prerequisites, 65
 - Application Servers, 199
 - applications, 168, 510–517, 521–531
 - availability, 42
 - Base applications, 284
 - coexisting, 59
 - components, 76, 90
 - costs, 40–41
 - directories, 77, 521
 - documentation, 109
 - First Steps utility, 166–169
 - fix packs, 102
 - graphical installer, 67
 - hardware prerequisites, 65
 - HTTP Server, 77
 - InfoCenter, 167
 - Linux, 69
 - WebSphere Application Server Base Edition, 69–76, 78–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–100
 - logs, 756, 823
 - migration, 65–67
 - paths, 91
 - performance, 41, 64–65
 - planning, 38, 43, 62
 - preinstallation, 105
 - administration, 105
 - applications, 107
 - hardware, 107–108
 - migration, 108–109
 - performance, 107
 - security, 105–106
 - registration, 93
 - response files, 616–617
 - scalability, 42
 - security, 39, 62–64
 - session state, 42–43
 - shell scripts, 618–623
 - silent installer, 68
 - SMP/e, 109–110
 - customization, 113
 - HFSSs, 110
 - link editing, 111
 - program directories, 111–113
 - SOAPenabled EAR files, 344–347
 - status of, 80
 - summaries, 79, 92
 - testing, 83
 - tools, 188–195
 - backupConfig, 191
 - ClientUpgrade, 188
 - dumpNameSpace, 192
 - restoreConfig, 191
 - UDDI User Console, 192
 - VersionInfo, 191
 - WasPostUpgrade, 189
 - WasPreUpgrade, 188
 - wsadmin, 191
 - XML_SOAP Administrative, 192
 - troubleshooting, 100–102, 791
 - types, 44
 - mixed servers, 50–53
 - multicell/multitier, 48–49
 - single servers, 45–46
 - three-tier, 46–47
 - verification, 82
 - Verify Installation utility, 167
 - virtual hosts, 516
 - Web server plug-ins, 256–259
 - Web services, 332
 - Network Deployment, 333
 - UDDI Registry access, 333–338
 - Web Services Gateway, 338–343
- Installation Verification Test (IVT), 82, 618
- Integrated JMS provider customization jobs, 824
- Integrated System Productivity Facility (ISPF), 8
- Integration
 - Web servers, 253–255
 - Web services, 326–328
 - implementation, 329–330
 - installation, 332
- Interactive problem control system (IPCS), 126, 137, 811
- Interactive System Productivity Facility (ISPF), 806
- Interfaces
 - graphical installer, 67
 - JavaMail, 25
 - JDBC, 21
 - JMS, 692–693
 - JNDI, 21
 - JTA, 20
 - JVMPI, 657
 - ORB, 694–696
 - silent installer, 68
- Interim fixes, 100–102, 787
- Internal buffers, 126
- Internal JMS server configuration, 285, 291
- Internet Inter-ORB Protocol (IIOP), 551
- Interoperability
 - bindings, 245, 247
 - naming architecture, 244–245
 - Web services, 329
- Interpreting WebSphere Component messages, 774
- Intervals
 - Cleanup Interval, 697
 - reloading, 523
 - Sun Solaris, 686
 - TCP_ABORT_CINTERVAL, 687
 - TCP_KEEPALIVE_INTERVAL, 686
 - TCP_TIME_WAIT_INTERVAL, 686
- Introductory text, installation of, 72
- IPCS (interactive problem control system), 126, 137, 811
- Is-growable option, 699
- Isolated test environments, 782
- Isolation levels, 530
- ISPF (Interactive System Productivity Facility), 8, 114–116, 351–359, 806
- Item segregation, 611
- ITMTP (IBM Tivoli Monitoring for Transaction Performance), 666
- IVT (Installation Verification Test), 82, 618
- J**
 - J2EE (Java 2 Enterprise Edition), 3
 - applications, 545
 - assembly, 433–434, 451–456
 - AAT, 434–435
 - Ant, 437
 - ASTK, 436–437
 - packaging, 438–442, 444–451
 - security, 451
 - WebSphere Studio, 435
 - development
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - Deployer, 433
 - Product Provider, 432
 - roles, 431–432
 - System Administrator, 433
 - Tool Provider, 432
 - EAR files, 433–434
 - JMS, 280
 - Application Server providers, 281–283
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300

- J2EE (*cont.*)
- queues, 281
 - security, 298–300
 - topics, 281
 - topologies, 284
 - troubleshooting, 302
 - Web services, 284
 - z/OS, 303–310, 313–325
 - roles, 805
- J2EE Connector Architecture (JCA), 20, 212
- JAAS (Java Authentication and Authorization Service), 362, 386–388
- Java
- folders, 177
 - stacks, 716
 - tracing, 716, 819
- Java 2 Enterprise Edition. *See* J2EE
- Java Authentication and Authorization Service (JAAS), 362, 386–388
- Java Database Connectivity. *See* JDBC
- JavaMail services, 25
- Java Management Extensions. *See* JMX
- Java Message Service. *See* JMS
- Java Naming and Directory Interface (JNDI), 21, 525
- Java Secure Socket Extension (JSSE), 362
- Java Server Pages. *See* JSPs
- Java Transaction API (JTA), 20
- Java Transaction Services (JTS), 20
- Java Virtual Machine. *See* JVM
- Java Virtual Machine Profiler Interface. *See* JVMPi
- JCA (J2EE Connector Architecture), 20, 212
- JCL (job control language), 10, 114, 810
- JDBC (Java Database Connectivity), 3, 21
- configuration, 211–219
 - trace, 817
 - tracing, 730
- JES (Job Entry Subsystem), 588, 806
- JESJCL, printing JCL, 810
- Jinsight output, 740
- JIT (just in time) compilers, 689, 715
- JMS (Java Message Service), 3, 21, 280
- Application Server providers, 281–283
 - integrated provider customization jobs, 824
 - management, 285–290, 292–298
 - MQ Connection Pooling, 301
 - optimization, 300, 692–693
 - queues, 281
 - security, 298–300
 - topics, 281
 - topologies, 284
 - troubleshooting, 302
- Web services, 284, 331
- z/OS, 303–310, 313–325
- JMX (Java Management Extensions), 3, 628–634
- JNDI (Java Naming and Directory Interface), 21, 525
- JOB cards, 134. *See also* Jobs
- Job control language (JCL), 10, 114, 810
- Job Entry Subsystem (JES), 588, 806
- Jobs
- customization, 133–135
 - execution, 141
 - JMS, 323
 - ordering, 141
- JSPs (Java Server Pages), 3
- EJB containers, 20
 - precompilation, 442, 521
 - Web Container, 19–20
- JSSE (Java Secure Socket Extension), 362
- JTA (Java Transaction API), 20
- JTrace, 732
- JTS (Java Transaction Services), 20
- Just in time (JIT) compilers, 689
- JVM (Java Virtual Machine)
- garbage collection, 689–691, 712–715
 - HotSpot, 692
 - JIT, 715
 - log files, 746–750, 823
 - Maximum Heap Size parameter, 202
 - optimization, 688–691
 - tracing, 817–822
 - z/OS, 711–716
- JVMPi (Java Virtual Machine Profiler Interface), 657, 663
- K**
- Keapalives
- MaxKeepAliveRequests, 700
 - TCP, 686
- L**
- Languages
- installation, 72, 87
 - TCL, 635
- LaunchPad, starting, 86
- LDAP (Lightweight Directory Access Protocol), 365
- Leaks, memory, 715
- Levels, EJBs, 480–486
- Lib folder, 175, 177
- Licenses
- agreements, 73, 88
 - information, 116
- Lifetimes, transactions, 210
- Lightweight Directory Access Protocol (LDAP), 365
- Lightweight Third Party Authentication (LTPA), 361, 370–375
- Link Pack Area (LPA), 709
- Linkage indexes(LX), 317
- Links
- editing, 111
 - Host Aliases, 261
 - Verify Installation, 167
 - Web server plug-in security, 268–274
- Linux
- installation, 69
 - monitoring, 671
 - WebSphere Application Server Base Edition, 69–76, 78–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–102
- Listener Ports, 282
- configuration, 287
 - Messaging Beans, 525
- Lists, Excludes List (EJB), 488, 492–493
- LoadBalance attribute, 266–267
- LoadBalanceWeight attribute, 267
- Loading properties tables, 137
- Local OS user registry, 363
- Local server partitions, 242
- Locating errors, 788–789. *See also* Troubleshooting
- Locations
- executable programs, 139
 - system, 150
- Log Analyzer, 194
- Log files, 745
- FFDC, 778
 - formatting, 772–774
 - histories, 786
 - HTTP Servers, 759–762
 - installation, 756
 - JVM, 746, 748–750
 - Log Analyzer, 775–778
 - merging, 777
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - troubleshooting, 792
 - updates, 756–757
 - utilities, 762
- Logger, 814–816
- Logging Web server plug-ins, 278. *See also* Execution; Starting
- Logical Partition. *See* LPAR
- Logical roles, 467. *See also* Roles
- Login configuration, 387
- Logs
- error, 814, 816
 - files. *See* Files
 - folders, 177
 - installation, 823
 - JVM, 823
 - plug-ins, 824
 - processes, 823
 - SDSF, 816
 - startup, 823
 - transactions, 210
 - Web servers, 824

- Lookups, EJB, 552–554
- Loss of control, 802–803
- LPA (Link Pack Area), 709
- LPAR (Logical Partition), 705
 - configuration, 9
 - CPU utilization, 725
- LTPA (Lightweight Third Party Authentication), 361, 370–375
- LX (linkage indexes), 317

- M**
- Management
 - administration services, 22
 - Administrative Console. *See* Administrative Console
 - clustering, 30–31
 - Deployment Manager, 14
 - agents, 17
 - cells, 17–18
 - nodes, 148–156, 158–163
 - distributed management models, 27–30
 - ikeyman utility, 269–271
 - installation, 62
 - JMS, 285–290, 292–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - security, 298–300
 - troubleshooting, 302
 - z/OS, 303–310, 313–325
 - JMX, 628–634
 - plug-ins, 253–255. *See also* Plug-ins
 - preinstallation, 105
 - privilege restrictions, 784
 - RMF, 705
 - security, 362
 - authentication configuration, 370–375
 - authentication protocol configuration, 383–385
 - files, 391
 - global security configuration, 377–379
 - JAAS configuration, 386–388
 - overriding global security, 389
 - performance, 390
 - SSL configuration, 380–382
 - user registry configuration, 363–370
 - z/OS, 422–427
 - services, 22
 - sessions, 223–231, 233–240
 - System Administrator (J2EE), 433
 - TCM, 616
 - tools, 188–195
 - backupConfig, 191
 - dumpNameSpace, 192
 - restoreConfig, 191
 - UDDI User Console, 192
 - VersionInfo, 191
 - wsadmin, 191
 - XML_SOAP Administrative, 192
 - topologies, 41
 - variables, 222
 - workload management (WLM), 14, 545. *See also* Workload management (WLM)
 - capabilities of, 551
 - clusters, 546–557, 562–571
 - EJB, 571–577
 - EJB/HTTP client comparisons, 551–556
 - z/OS, 717–725, 727–735. *See also* z/OS
- Manual system changes, 137–147
- Mapping
 - data sources, 525–526
 - Run-As roles, 498–499, 529
 - security roles, 529
 - server modules, 529
 - virtual hosts, 528
- MaxConnectBacklog parameter, 276
- MaxConnections attribute, 268
- Maximum heap sizes (JVM), 689
- Maximum Pool Size, 701
- MaxKeepAliveRequests, 700
- Mbeans, creating, 523
- MDBs (message-driven beans), 21, 470, 280
- Measurements, 657. *See also* ARM; Monitoring
- Member clusters, 565
- Memory
 - database replication comparisons, 238–240
 - leaks, 715
 - monitoring, 669
 - optimization, 685
 - persistence, 235
 - Session management, 231
 - vmstat tool, 671
- Menus, Default Virtual Host, 262
- Merging log/trace files, 777
- Message listener service, 286, 692
- Message-driven beans (MDBs), 21, 280, 470
- Messages
 - JMS, 21, 692–693
 - listener ports, 525
 - RACF, 816
 - start, 99
 - WebSphere Component, 774
- Methods
 - 1.x, 530
 - getHostByName(), 130
 - handleNotification, 634
 - permissions, 474–476
 - reload, 706
 - unload, 706
- Metrics, 657. *See also* Request Metrics
- Microsoft Windows performance tuning, 685
- Migration, 65–67
 - folders, 175
 - preinstallation, 108–109
- MIME (Multi-Purpose Internet Mail Extensions), 220, 261
- Minimum Pool Size, 702
- Mixed server topologies, 50–53
- Models
 - distributed management, 27–28, 30
 - scale, 781
- Modification. *See also* Customization
 - Administrative Console, 170–173
 - Application Client Resource Configuration tool, 190
 - Application Servers, 199–200
 - components, 203–208
 - ORB, 208
 - templates, 201
 - transaction services, 209–211
 - applications
 - checklists, 508
 - installation, 510–517, 521–531
 - logins, 387
 - postinstallation, 532–539
 - testing, 539
 - tools, 509
 - uninstallation, 542
 - updating, 539–541
 - availability, 42
 - backing up, 102, 785
 - backup servers, 268
 - backupConfig tool, 191
 - base applications. *See* Base applications
 - bindings, 245, 247
 - bootstrap ports, 243–244
 - clusters, 564–565
 - optimization, 567–569
 - runtime controls, 565–567
 - troubleshooting, 569–571
 - coefficient, 608, 612
 - coexisting, 75
 - costs, 40–41
 - data sources, 211–219
 - database sessions, 228
 - disk speed, 684
 - distributed namespace bindings, 244
 - dumpNameSpace tool, 192
 - EJBs, 571
 - containers, 208, 697
 - workload management (WLM), 572, 575
 - environments, 219
 - variables, 222–223
 - virtual hosts, 220
 - generic JMS providers, 296–298
 - heaps, 715
 - HTTP, 699–701
 - sessions, 223–231, 233–240
 - Transports, 205
 - ISPF panels, 114–118

- Modification (*cont.*)
 - JDBC, 211–219
 - JMS, 284, 692–693
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - security, 298–300
 - troubleshooting, 302
 - z/OS, 303–310, 313–325
 - job customization, 133–135
 - JVM
 - initial heap sizes, 688
 - maximum heap sizes, 689
 - Listener Ports, 287
 - LoadBalance attribute, 266–267
 - LoadBalanceWeight attribute, 267
 - log files, 745
 - HTTP Servers, 759–762
 - installation, 756
 - JVM, 746–750
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - updates, 756–757
 - utilities, 762
 - LPARs, 9
 - manual system changes, 137–147
 - MaxConnections attribute, 268
 - MBeans, 523
 - message listener service, 286
 - method permissions, 474–476
 - MIME types, 220
 - namespaces, 344
 - network deployment, 148–150, 152–163
 - options, 116
 - ORB, 694–696
 - overriding, 514
 - performance, 41
 - primary servers, 268
 - providers, 289
 - queues, 291
 - replication, 234
 - repositories, 22–23
 - restoreConfig tool, 191
 - RSS, 707
 - Run-As role, 481
 - saving, 291
 - scalability, 42
 - security
 - administration, 362
 - authentication configuration, 370–375
 - authentication protocol configuration, 383–385
 - certificates, 269–271
 - constraints, 464–466
 - customization, 132–133
 - files, 391
 - global security configuration, 377–379
 - JAAS configuration, 386, 388
 - mapping, 495–499
 - overriding global security, 389
 - performance, 390, 500
 - planning, 39
 - policy files, 493–495
 - references, 467–468, 477–478
 - roles, 461–464
 - Run-As roles, 468–469
 - SSL configuration, 380–382
 - user registry configuration, 363–370
 - servers
 - clusters, 260
 - customization, 127–131
 - session state, 42–43
 - SSL, 271–274
 - startup, 535
 - system environment customization, 122
 - target data set allocation, 118–119
 - TCM, 616
 - TCP, 685–688
 - thread pools, 206, 288
 - tracing, 762–774
 - UDDI
 - Registry, 333–338
 - User Console tool, 192
 - URIs, 263
 - Use Binary Configuration, 522
 - USS, 140
 - variables
 - definition, 118–127
 - saving, 136
 - VersionInfo tool, 191
 - view the generated instructions
 - option, 135–136
 - virtual hosts, 261–263
 - Web containers, 698
 - Web module security, 460–469
 - Web server plug-ins
 - communication security, 268–274
 - failover, 275–278
 - files, 259–268
 - logging, 278
 - tracing, 278
 - WebSEAL, 375
 - WebSphere MQ JMS Provider, 293–296
 - wsadmin tool, 191
 - XML_SOAP Administrative tool, 192
 - z/OS
 - logging, 823–825, 828–838
 - planning, 53–59
 - troubleshooting, 805, 817–822
- Modify command, 581
- Modify Trace, 764. *See also* Tracing
- Modules
 - clients, 452
 - EJB assembly, 454
 - installation, 512
 - separating, 505
 - servers, 529
- Web
 - assembly, 453
 - security configuration, 460–469
- Monitoring
 - EJBs, 576, 672
 - Garbage Collection, 676
 - memory, 669
 - performance, 653
 - application view, 678–679
 - end user view, 665–666
 - environments, 653–657
 - JVMPI, 663
 - PMI, 657–659
 - Request Metrics, 659–662
 - system view, 667–678
 - Tivoli Performance Viewer, 663–665
 - z/OS, 717–725, 727–735
 - servers, 675
 - servlets, 672
 - sessions, 673
 - threads, 675
 - tools
 - Tivoli Performance Viewer, 193
 - vmstat tool, 671
 - Web servers, 675
- MQ Connection Pooling, 301
- Multi-Purpose Internet Mail Extensions (MIME), 220, 261
- Multicell topologies, 48–49
- Multiple hostnames, 220
- Multiple logical partitions, 9. *See also* LPARs
- Multiple log/trace files, merging, 777
- Multiprocessed Web servers, 277
- Multithreaded Web servers, 277
- Multitier topologies, 48–49
- MVS
 - directories, 184–185
 - z/OS, 10–11
- N**
- Namespaces
 - configuration, 344
 - distributed namespace bindings, 244
 - dumpName Space tool, 247–251
 - partitions, 242–243
- Naming
 - architecture
 - bindings, 245–247
 - bootstrap ports, 243–244
 - distributed namespace bindings, 244
 - dumpName Space tool, 247–251
 - interoperability, 244–245
 - namespace partitions, 242–243
 - cells, 91, 150
 - hostnames, 91
 - hosts, 78
 - JNDI, 525
 - nodes, 78, 91, 150
 - SDSF, 130
 - security, 395
 - servers, 150
 - services, 21
 - variable management, 222

- NAS (network attached storage), 38
- Native JMS providers, 282
- Native logs, 750, 752
- Navigation. *See also* Interfaces
 - Administrative Console, 172–173
 - directories, 174–179
 - MVS, 184–185
 - z/OS, 179–184
 - license information, 116
 - splash screens, 116
- ND (Network Deployment)
 - Base Topology, 15
 - cells, 17–18
 - distributed management models, 27–30
 - installation
 - WebSphere Application Server Base Edition, 69–74, 76–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–100
 - nodes, 17
 - server processes, 16
 - troubleshooting, 100–102
 - Web services, 332
 - installation, 333
 - UDDI Registry access, 333–338
 - Web Services Gateway installation, 338–3343
 - z/OS, 32
- Ndd -get command, 686
- Ndd set command, 686
- Network attached storage (NAS), 38
- Network deployment. *See* ND
- Networks
 - deployment. *See also* ND
 - configuration, 148–156, 158–163
 - customization jobs, 824
 - optimization, 685
 - upstream queuing, 683
- Node-persistent partitions, 242
- Nodes, 17
 - application server configuration, 117
 - commands, 187
 - deployment manager, 148–156, 158–163
 - federating, 159
 - naming, 78, 91, 150
 - z/OS address spaces, 35
- Non-enclave work, classification of, 719
- Non-WebSphere clients, 245
- O**
- Object Management Group (OMG), 383
- Object Request Broker. *See* ORB
- Oedit program, 8
- OMG (Object Management Group), 383
- Operating systems, 7
 - JVM settings, 690
- Linux
 - installation, 69
 - WebSphere Application Server Base Edition, 69–76, 78–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–102
- performance, 685
 - Microsoft Windows, 685
 - Sun Solaris, 686–688
- z/OS, 31
 - address spaces, 32–36
 - comparing distributed operating systems, 8–9
 - QoS, 9
 - WebSphere on, 10–11
- Operations (security), 392
 - administrative roles, 394
 - file permissions, 394
 - UNIX, 392–393
- Operations and Administration manual*, 717
- Oping command, 130
- Optimization. *See also* Configuration; Performance; Troubleshooting
 - applications, 681
 - clusters, 567–569
 - EJBs
 - containers, 697
 - workload management (WLM), 575–576
 - HTTP, 699, 701
 - installation
 - application prerequisites, 65
 - hardware prerequisites, 65
 - planning, 64–65
 - JMS, 300, 692–693
 - JVM, 688–691
 - memory, 685
 - networks, 685
 - ORB, 694–696
 - plug-ins, 275–278
 - preinstallation, 107
 - security, 390, 500
 - testing, 783
 - tools, 193
 - topologies, 41
 - web containers, 698
 - z/OS, 704–705, 801–802
 - communication practices, 805–813
 - configuration, 805, 817–822
 - container, 709–711
 - cooperation, 803–805
 - diagnostics, 813–814
 - error logs, 814–816
 - HTTP front-end handlers, 736–737, 740
 - JVM, 711–716
 - logging, 823–832, 834–838
 - loss of control, 802–803
 - monitoring, 717–725, 727–735
 - RACF, 816
 - separation of J2EE roles, 805
 - subsystems, 707–708
 - system consoles, 816
 - testing, 705–706
 - timeline of events, 816
 - WLM policies, 583–592, 594–601, 603–612
- Optional command line arguments (JVM), 689
- Options. *See also* Optimization
 - base applications, 136, 823
 - clusters, 566
 - configuration files, 263–268. *See also* Configuration
 - federation customization jobs, 824
 - integrated JMS provider customization jobs, 824
 - is-growable, 699
 - ISPF panels, 114–118
 - jobs, 133–135
 - manual system changes, 137–147
 - network deployment customization jobs, 824
 - security, 132–133
 - servers, 127–131, 312
 - Session management, 224
 - SMP/e customization, 113
 - system environment, 122
 - target data set allocation, 118–119
 - variables
 - definitions, 118–127
 - saving, 136
 - view the generated instructions, 135–136
- ORB (Object Request Broker), 208
 - EJBs
 - configuration, 572, 575
 - optimization, 575–576
 - troubleshooting, 576–577
 - optimization, 694–696
 - pass by references, 694
 - Request Timeout value, 695
 - thread pools, 695
- Ordering jobs, 141
- Output
 - addresses spaces, 814
 - error logs, 816
 - Jinsight, 740
 - servant region address space references, 806
 - z/OS, 805–813
- Overriding
 - configuration, 514
 - default EJB requests, 556
 - global security, 389
- P**
- Packaging, 438–442, 444–451
- PAM (Pluggable Authentication Module), 362
- Panels, ISPF customization, 114–118
- Parameters
 - appserversetupuddi.jacl script, 339
 - distributed sessions, 238
 - JVM Maximum Heap Size, 202

- Parameters (*cont.*)
 - MaxConnectBacklog, 276
 - SoapEarEnabler tool, 344
 - system reports, 734
 - thread pools, 206
 - WSGW.jacl script, 341
- Partitioned data set extended (PDSE), 110
- Partitions
 - cell-persistent, 242
 - configuration, 9
 - dumpName Space tool, 247–251
 - local server, 242
 - LPARs, 705
 - namespaces, 242–243
 - node-persistent, 242
 - reports, 723
 - system, 242
 - transient, 242
- Pass by references, 694
- Passwords, 383. *See also* Security
- Paths
 - applications, 804
 - errors, 788–789
 - installation, 91
- PDSE (partitioned data set extended), 110
- Peer-to-Peer mode, 231
- Perfmon, 667
- Performance. *See also* Configuration; Customization; Troubleshooting
 - application view, 678–679
 - core systems, 667
 - end user view, 665–666
 - environments, 653–655, 657
 - installation
 - application prerequisites, 65
 - hardware prerequisites, 65
 - planning, 64–65
 - JMS, 300
 - JVMPI, 663
 - monitoring, 653
 - optimization, 680
 - Application Server, 681–699, 701–703
 - types of, 681
 - PMI, 657–659
 - Request Metrics, 659–662
 - preinstallation, 107
 - security, 390, 500
 - system view, 667–678
 - testing, 783
 - Tivoli Performance Viewer, 193, 663–665
 - topologies, 41
 - z/OS, 704–705, 801–802
 - communication practices, 805–806, 808–813
 - configuration, 805, 817–822
 - containers, 709–711
 - cooperation, 803–805
 - diagnostics, 813–814
 - error logs, 814–816
- HTTP front-end handlers, 736–740
- JVM, 711–716
- logging, 823–832, 834–838
- loss of control, 802–803
- monitoring, 717–728, 730–735
- RACF, 816
- separation of J2EE roles, 805
- subsystems, 707–708
- system console, 816
- testing, 705–706
- timeline of events, 816
- WLM policies, 583–592, 594–604, 606–612
- Performance Monitoring Infrastructure. *See* PMI
- Period aging for service classes, 595
- Permissions
 - file security, 394
 - methods, 474–476
- Persistence
 - memory, 235
 - sessions, 227–234, 238–240
- Planning
 - applications, 502–508
 - installation, 62
 - administration, 62
 - application prerequisites, 65
 - hardware prerequisites, 65
 - performance, 64–65
 - security, 62–64
 - topologies, 38, 43
 - administration, 41
 - availability, 42
 - costs, 40–41
 - performance, 41
 - scalability, 42
 - security, 39
 - session states, 42–43
 - z/OS, 53–59
- Platforms, 7. *See also* Operating systems
 - directories, 174–175, 177–179
 - MVS, 184–185
 - z/OS, 179–184
 - JVM settings, 690
 - z/OS, 31
 - address spaces, 32–36
 - comparing distributed operating systems, 8–9
 - QoS, 9
 - WebSphere on, 10–11
- Plug-ins
 - distributed HTTP/HTTPS forwarding, 737
 - HTTP, 26
 - log files, 758–759, 824
 - tracing, 771
 - updating, 273–274
 - Web server, 253–255
 - communication security, 268–274
 - configuration, 259–268
 - failover, 275–278
 - installation, 256–258
 - logging, 278
 - preinstallation, 256
 - tracing, 278
 - verification, 258–259
- Pluggable Authentication Module (PAM), 362
- PMI (Performance Monitoring Infrastructure), 657–662
- PMR (Problem Management Record), 797
- Policies
 - change control, 784–785
 - garbage collection (JVM), 689
 - security configuration, 493–495
 - workload management (WLM), 583–592, 594–604, 606–612
- Pools
 - connections, 21, 212
 - databases, 701–703
 - MQ Connection Pooling, 301
 - threads, 206
 - configuration, 288
 - ORB, 695
- Ports. *See also* Connections; Networks
 - Application Servers, 205
 - assignments, 75, 90
 - bootstrap, 243–244
 - coexisting configurations, 75
 - deployment manager, 153
 - firewall preinstallation, 105–106
 - HTTP, 131
 - Listener Ports, 282
 - configuration, 287
 - Messaging Beans, 525
 - reservations, 139
 - Postinstallation of applications, 532–539. *See also* Installation
 - Precompilation of JSPs, 442, 521
 - Prefixes, HME*, 806
 - Preinstallation, 105. *See also* Installation
 - administration, 105
 - applications, 107
 - hardware, 107–108
 - migration, 108–109
 - performance, 107
 - security, 105–106
 - Web server plug-ins, 256
 - PreparedStatement, 702
 - Prerequisites, checking for, 89
 - Previous versions
 - access, 245
 - clients, 244
 - Primary server configuration, 268
 - Printing
 - dumpName Space tool, 247–251
 - JCL, 810
 - Private UDDI Registries, 333–338
 - Privileges, administrative restrictions, 784

- Problem determination. *See also* Troubleshooting
 - methodologies, 788–796
 - z/OS, 801–802
 - communication practices, 805–813
 - configuration, 805, 817–822
 - cooperation, 803–805
 - diagnostics, 813–814
 - error logs, 814–816
 - logging, 823–832, 834–838
 - loss of control, 802–803
 - RACF, 816
 - separation of J2EE roles, 805
 - system console, 816
 - timeline of events, 816
- Problem Management Record (PMR), 797
- Procedures, documentation, 786
- Processes
 - log files, 750–752, 823
 - servers, 16
- Product Provider (J2EE), 432
- Production
 - scale models, 781
 - troubleshooting, 795
- Profiles, WSAD, 740
- Program directories, 111–113. *See also* Directories
- Programmatic security, 458
- Programming
 - automation, 640–648
 - code. *See also* Code reviews, 787
 - sharing, 505
- Programs. *See* Applications
- Propdefaults folder, 175
- Properties
 - Application Servers
 - configuration, 203–208
 - transaction services, 209–211
 - HTTP, 699, 701
 - Queue Connection Factory, 290
 - replication, 234
 - servers, 285
 - Session Management, 224
 - tables, 137
 - Web containers, 204
- Protocols
 - authentication, 361
 - COS Naming, 241
 - HTTP, 699–701
 - IOP, 551
 - LDAP, 365
 - TCP
 - buffers, 687
 - configuration, 685–688
 - keepalives, 686
 - z/OS, 707
 - TCP/IP, 382, 686–688
- Providers
 - Application Component Provider (J2EE), 432
 - JDBC configuration, 211–219
 - JMS configuration, 289
 - Product Provider (J2EE), 432
 - Tool Provider (J2EE), 432
- Ps command, 9
- Q**
- QoS (quality of service), 9, 705
- Queue Connection Factory properties, 290
- Queue Manager, 313
- Queues
 - internal JMS servers configuration, 291
 - JMS, 281, 291
 - performance tuning, 682–683
 - requests, 674
 - upstream queuing networks, 683
 - WebSphere MQ JMS configuration, 294
- R**
- RACF (Resource Access Control Facility), 403–413, 415–422, 709
 - JMS, 323
 - messages, 816
- Records
 - analyzing, 777
 - JES, 806
 - SMF, 138
- Recovery, 707
- Reduction, JDBC, 730
- Redundancy, 42
- References
 - J2EE, 443
 - log files, 745
 - HTTP Servers, 759–762
 - installation, 756
 - JVM, 746–750
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - updates, 756–757
 - utilities, 762
 - pass by, 694
 - resources, 528
 - security roles, 467–478
 - servant region address space output, 806
 - soft, 715
 - UDDI deployment, 347–350
 - Web server plug-ins, 263
- Registration, 93, 165
- Registries (UDDI)
 - access, 333–338
 - installation, 332
- Reinstallation. *See also* Installation
 - applications, 540
 - interim fixes, 102
- Relative names, 244
- Reloading
 - classes, 523
 - dynamic, 541
 - intervals, 523
 - methods, 706
 - servlets, 440
- Remote objects, 208
- Replication
 - databases, 238–240
 - domains, 233–234
 - memory, 235
- Reports
 - accounting, 735
 - APAR, 800
 - classes, 606–607
 - partitions, 723
 - RMF, 705, 723
 - segregation of data, 611
 - statistics, 734
 - summary, 723
 - system parameters, 734
 - workload activity, 727
- Repositories, 22–23
- Request Metrics, 657–662
- Requests
 - EJB, 555–556, 572
 - flows, 674
 - LoadBalanceWeight attribute, 267
 - MaxKeepAliveRequests, 700
 - ORB, 208, 695
 - performance
 - Application Server, 681–699, 701–703
 - optimization, 680
 - types of tuning, 681
 - virtual hosts, 220
- Requirements
 - classloaders, 503
 - classpath, 503
- Reservations, ports, 139
- Resource Access Control Facility (RACF), 403–413, 415–422, 709
 - JMS, 323
 - messages, 816
- Resource Management Facility (RMF), 705
 - testing, 739
 - z/OS, 722–733
- Resource Management Facility Report Analysis*, 722
- Resource Monitoring Facility (RMF), 667
- Resource Recovery Services (RRS), 158
 - starting, 143–144
 - z/OS performance, 707
- Resources
 - groups, 601, 603–604
 - references, 528
 - troubleshooting, 795
- Resources.xml files, 23
- Responses, 657. *See also* ARM
- Restoration of data stores (DB2), 706
- RestoreConfig tool, 191
- Restriction of administrative privileges, 784. *See also* Security

- RetryInterval attribute, 255, 275
- Reviewing. *See also* Viewing
 - code, 787
 - z/OS output, 805–813
- Revisions. *See also* Editing; Modification
 - configuration files, 263–268
 - links, 111
- RMF (Resource Management Facility), 705
 - testing, 739
 - z/OS, 722–733
- RMF (Resource Monitoring Facility), 667
- Roles
 - J2EE development, 431–432
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - Deployer, 433
 - Product Provider, 432
 - separation of, 805
 - System Administrator, 433
 - Tool Provider, 432
 - mapping, 495–497
 - Run-As roles, 498–499, 529
 - security, 460
 - creating, 461–464
 - EJB, 472
 - mapping, 529
 - references, 467–478
 - Run-As roles, 468–469, 479–481
- Rollbacks, clustered environments, 507
- Routes, Web server plug-ins, 264–265
- RRS (Resource Recovery Services), 158
 - starting, 143–144
 - z/OS performance, 707
- Rules, classification, 601
- Run-As roles, 479
 - configuration, 481
 - mapping, 498–499, 529
 - security, 468–469
- Running. *See also* Execution
 - addnode scripts, 97
 - Log Analyzer, 776–778
- Runtime
 - C++, 821
 - cluster controls, 565–567
 - code sharing, 505
 - Java, 819
 - z/OS controllers, 711
- S**
- SAF (System Authorization Facility), 402–403
- Samples Gallery (First Step utility), 168
- Saving
 - configurations, 291, 785
 - tracing, 769
 - variables, 136
- Scalability of topologies, 42
- Scale models, production tests, 781
- Scaling testing, 780
- Scenarios, test, 782
- Scripts
 - addnode, 97
 - appserversetupuddi.jacl parameters, 339
 - command line, 623–624
 - shell, 618–623
 - startServer, 624
 - wsadmin tool, 191, 635, 639
 - WSCP, 635
 - WSGW.jacl parameters, 341
 - z/OS, 706
- SDSF (System Display and Search Facility), 9, 130, 806, 816
- Searching
 - logs, 823–832, 834–838
 - names, 130
- Sections, address space output, 810
- Secure Sockets Layer (SSL), 362
 - certificates, 269–271
 - configuration, 271–274, 380–382
 - Repertoire, 426
- Security, 360–362
 - 1.x methods, 530
 - administration, 362
 - authentication configuration, 370–375
 - authentication protocol configuration, 383–385
 - files, 391
 - global security configuration, 377–379
 - JAAS configuration, 386–388
 - overriding global security, 389
 - performance, 390
 - SSL configuration, 380–382
 - user registry configuration, 363–370
 - applications, 458, 504
 - declarative, 458
 - Deployment Descriptor, 459
 - mapping, 495–499
 - performance, 500
 - policy file configuration, 493–495
 - programmatic, 458
 - roles, 460
 - communication, 268–274
 - constraints, 464–466
 - customization, 132–133
 - EJB applications, 470–478, 483–493
 - installation, 62–64
 - J2EE applications, 451
 - JMS, 298–300
 - naming, 395
 - operations, 392
 - administrative roles, 394
 - file permissions, 394
 - UNIX, 392–393
 - planning, 39
 - preinstallation, 105–106
 - Queue Manager, 313
 - roles
 - creating, 461–464
 - EJB, 472
 - mapping, 529
 - references, 467–478
 - Run-As roles, 468–469, 479–481
 - services, 22
 - trace specifications, 396–399
 - Web applications, 460–469
 - Web containers, 271–274
 - z/OS, 402
 - administration, 422–427
 - RACF, 403–413, 415–422
 - SAF, 402–403
 - started task procedures, 409–410
 - UNIX, 407–409
- Segregation of data reports, 611
- Selection
 - of components, 76, 90
 - of hostnames, 91
 - of installations, 76
 - of languages, 72, 87
 - of topologies, 38
- Separation
 - of J2EE roles, 805
 - of modules, 505
- Servant region address space output, 806
- Servant Service Class (MC5SVNT), 727
- Servants
 - addresses spaces, 720
 - JVM, 711–716
 - processes, 152
 - threads, 720
- ServerCluster attribute, 255
- Servers
 - adding, 96–97
 - Apache, 675
 - Application Servers
 - configuration, 203–208
 - creating, 199–200
 - JMS, 281–283
 - ORB, 208
 - templates, 201
 - transaction services, 209–211
 - Web services, 284
 - applications
 - deployment, 503
 - environments, 604
 - starting, 144–146, 161–162
 - ASTK, 436–437
 - automation, 614
 - Ant tasks, 624, 627
 - code, 640–648
 - command line scripts, 623–624
 - installation response files, 616–617

- JMX, 628–634
 - shell scripts, 618–623
 - wsadmin tool, 635–640
- backup configuration, 268
- clustering, 30–31, 260
- customization, 127–131, 312
- HTTP
 - installation, 77
 - log files, 759–762
 - plug-ins, 26
- IHS, 736
- JMS
 - management, 285–287, 289–298
 - MQ Connection Pooling, 301
 - optimization, 300
 - security, 298–300
 - troubleshooting, 302
 - z/OS, 303–310, 313–325
- JVM, 711–716
- local partitions, 242
- memory, 231
- modules, 529
- naming, 150
- performance tuning, 681–698
- plug-ins, 758–759
- PMI, 657–662
- primary configuration, 268
- processes, 16
- properties, 285
- start messages, 99
- starting, 82, 99, 167, 186–187
- STC, 583
- stopping, 167, 186–187
- topologies
 - mixed servers, 50–53
 - multicell/multitier, 48–49
 - single servers, 45–46
 - three-tier, 46–47
- viewing, 95
- Web servers
 - logs, 824
 - monitoring, 675
 - plug-ins, 253–255
- workload management (WLM)
 - capabilities of, 551
 - clusters, 546–551, 557–560, 562–571
 - EJB, 571–572, 575–577
 - EJB/HTTP client comparisons, 551–556
- z/OS
 - address spaces, 34
 - cells, 709, 711
- Service Level Agreements (SLA), 201
- Services
 - administration, 22
 - classes, 591–592
 - CBSTC, 606
 - resource groups, 601–603
 - TSOPRD, 596
 - definitions, 584–586
 - Dynamic Caching, 204, 696
 - JavaMail, 25
 - JCA, 20
 - JMS, 21. *See also* JMS
 - JTA/JTS, 20
 - log files, 752, 755
 - message listener, 286, 692
 - naming, 21
 - policies, 587
 - security, 22
 - transactions, 209–211
 - Web services, 25, 326–330
- Servlets
 - EJBs
 - configuration, 572, 575
 - containers, 20
 - optimization, 575–576
 - troubleshooting, 576–577
 - monitoring, 672
 - naming services, 21
 - reloading, 440
 - Web Container, 19–20
- Session Pools, 282
- Sessions
 - affinity, 267
 - JMS, 693
 - management, 223–228, 231–240
 - monitoring, 673
 - persistence, 238
 - pools, 282
 - shared, 504
 - state, 42–43
- Sharing
 - code, 505
 - sessions, 504
- Shell scripts, 618–623
- Showlog tool, 195
- Silent installations, 616–617
- Silent installer, 68
- Simple Object Access Protocol. *See* SOAP
- Simple paths, applications, 804
- Simple WebSphere Authentication Mechanism (SWAM), 361, 370
- Single server topologies, 45–46
- Single Signon (SSO), 375
- Sizes, heaps (JVM), 688–689
- SLA (Service Level Agreements), 201
- SMP (symmetric multiprocessor)
 - machines, 41. *See also* Clusters
- SMP/e installation, 109–110
 - customization, 113
 - HFSs, 110
 - link editing, 111
 - program directories, 111–113
- Snapshots, high volume periods, 739
- SOAP (Simple Object Access Protocol), 3
 - EAR file installation, 344–347
 - SoapEarEnabler tool, 343
 - Web services
 - implementation, 329–330
 - installation, 332
 - XML_SOAP Administrative tool, 192
- SoapEarEnabler tool, 343
- Soft references, 715
- Software. *See* Applications
- Solaris (Sun) performance tuning, 686–688
- Spaces, addresses, 32–36. *See also* Addresses
- Specialty log files, 755
- Specifications
 - J2EE
 - Application Assembler, 432–433
 - Application Component Provider, 432
 - Deployer, 433
 - development roles, 431–432
 - Product Provider, 432
 - System Administrator, 433
 - Tool Provider, 432
 - values, 686
- Speed, disk, 684
- Splash screens, navigation, 116
- SSL (Secure Sockets Layer), 362
 - certificates, 269–271
 - configuration, 271–274, 380–382
 - Repertoire, 426
- SSO (Single Signon), 375
- Stacks, Java traces, 716
- Standard logs, JVM, 746–750
- Started Task Control (STC), 583
- Started task procedures, 409–410
- Starting. *See also* Execution; Installation
 - Administrative Console, 163, 170–173
 - application servers, 144–146, 161–162
 - Base applications, 147–149
 - CTRACE writer, 144
 - First Steps utility, 166–169
 - LaunchPad, 86
 - Log Analyzer, 776–778
 - RRS, 143–144
 - servers, 82, 99, 167, 186–187
 - start messages, 99
 - weights, 537
- StartManager command, 186
- StartNode command, 187
- StartServer script, 624
- Startup
 - configuration, 535
 - logs, 823
- Statements, STEPLIB DD, 709
- States
 - CLOSE_WAIT, 686
 - FIN_WAIT_2, 686
 - TIME_WAIT, 685
- Static Web content, packaging, 438–442, 444–451
- Statistics, reports, 734

- Status
 - installation, 80
 - SDSF, 806
- STC (Started Task Control), 583
- STEPLIB DD statements, 709
- STI (Synthetic Transaction Investigator), 666
- StopManager command, 186
- StopNode command, 187
- Stopping servers, 167, 186–187
- Structure of directories, 174–179
 - MVS, 184–185
 - z/OS, 179–184
- Subsystems
 - classification, 602
 - JES, 588, 806
 - workloads, 588. *See also* Workload management (WLM)
 - z/OS
 - performance, 707
 - RRS, 707
 - TCP, 707
 - USS, 707
 - WLM, 708
 - XCF, 708
- Summaries
 - installation, 79, 92
 - z/OS, 723
- Sun Solaris performance tuning, 686–688
- Support, 137, 797–800. *See also* Resources; Troubleshooting
- SUT (system under test), 707
- SWAM (Simple WebSphere Authentication Mechanism), 361, 370
- Symbolic names, 222
- Symmetric multiprocessor machine (SMP), 41. *See also* Clusters
- Symptoms database, analyzing, 777
- Synchronization, 23, 423
- Synthetic Transaction Investigator (STI), 666
- Sysplex Distributor, 737
- SYSPRINT, 811, 814
- System Administrator (J2EE), 433
- System Authorization Facility (SAF), 402–403
- System console, z/OS, 816
- System Display and Search Facility (SDSF), 9, 130, 806, 816
- System environment customization, 122
- System locations, 122–123, 150
- System memory optimization, 685
- System output (SYSOUT), 810
- System parameter reports, 734
- System partitions, 242
- System resources, troubleshooting, 795
- System under test (SUT), 707
- System view, 667–678. *See also* Views
- T**
- Tables
 - environment variables, 825
 - properties, 137
- TAI (Trust Association Interceptor), 374
- Target data sets, 118–119
- Tasks, Ant automation, 624, 627
- TCL (Tool Command Language), 635
- TCM (Tivoli Configuration Manager), 616
- TCP (Transmission Control Protocol)
 - buffers, 687
 - configuration, 685–688
 - keepalives, 686
 - z/OS performance, 707
- TCP/IP (Transmission Control Protocol/Internet Protocol)
 - connections, 686–688
 - JMS, 322
 - TcpTimedWaitDelay value, 685
 - TCP_ABORT_CINTERVAL, 687
 - Tcp_conn_request_max value, 688
 - TCP_KEEPALIVE_INTERVAL, 686
 - TCP_TIME_WAIT_INTERVAL, 686
- Temp folder, 178
- Templates, Application Servers, 201
- Testing
 - applications, 539
 - best practices, 780–783
 - change control policies, 784–785
 - fix packs/interim fixes, 787
 - problem determination methodologies, 788–796
 - support, 797–800
 - white papers, 786
 - hardware performance tuning, 684
 - initial verification tests, 147
 - installation, 83
 - IVT, 618
 - RMF, 739
 - scale models of production, 781
 - z/OS, 705–706
- Tex, installation of, 72
- ThinkDynamic Orchestrator (TIO), 616
- Thread Analyzer, 11
- Threads
 - monitoring, 675
 - pools, 206
 - configuration, 288
 - ORB, 695
 - security synchronization, 423
 - Servants, 720
 - Web containers, 698
- Three-tier topologies, 46–47
- Time Sharing Option (TSO), 9
- Timelines, 816
- Timeouts
 - ORB, 695
 - transactions, 210
- TIME_WAIT state, 685
- TIO (ThinkDynamic Orchestrator), 616
- Tivoli Configuration Manager (TCM), 616
- Tivoli Performance Viewer, 193, 576, 663–665
- Tool Command Language (TCL), 635
- Tool Provider (J2EE), 432
- Tools, 188–195
 - AAT, 169, 189, 434–435
 - Administrative Console, 23–25, 170–173
 - Ant, 437
 - Application Client Resource Configuration, 190
 - ASTK, 436–437
 - ATK, 190
 - backupConfig, 191
 - ClientUpgrade, 188
 - Collector, 194
 - deployment, 509, 524
 - dumpNameSpace, 192, 247–251
 - Ejbdeploy, 190
 - end user view monitoring, 666
 - ESR, 797
 - First Steps, 166–169
 - ikeyman, 269–271
 - IPCS, 126, 811
 - ITMTP, 666
 - Log Analyzer, 194
 - restoreConfig, 191
 - Showlog, 195
 - SoapEarEnabler, 343
 - table of environment variables, 825
 - test, 705–706
 - Thread Analyzer, 11
 - Tivoli Performance Viewer, 193, 663–665
 - Topaz Real User Monitor, 666
 - UDDI User Console, 192
 - UpdateInstaller, 101
 - Verify Installation, 167
 - VersionInfo, 191
 - vmstat, 671
 - WasPostUpgrade, 189
 - WasPreUpgrade, 188
 - WebSphere Studio, 435
 - wsadmin, 191, 510
 - automation, 635–640
 - debugging, 639
 - XML_SOAP Administrative, 192
- Topaz Real User Monitor, 666
- Topics (JMS), 281
 - configuration, 292
 - destinations, 292
- Topologies
 - administration, 41
 - availability, 42
 - Base Topology, 15
 - costs, 40–41
 - JMS, 284
 - performance, 41

- planning, 38, 43
- scalability, 42
- security, 39
- selection, 38
- session state, 42–43
- types, 44
 - mixed servers, 50–53
 - multicell/multitier, 48–49
 - single servers, 45–46
 - three-tier, 46–47
- z/OS, 53–59, 709–711
- TPV. *See* Tivoli Performance Viewer
- Trace specifications, 396–399
- Tracebacks, 811
- Tracing, 126
- C++, 821
 - configuration, 762–771
 - containers, 739
 - DB2, 733–735
 - FFDC, 778
 - formatting, 772–774
 - Garbage Collection (JVM), 817–822
 - Java, 716, 819
 - JDBC, 730, 817
 - JVM, 817–822
 - merging, 777
 - Web server plug-ins, 278
- Tranlog folder, 178
- Transactions
 - CICS, 595
 - ITMTP, 666
 - JTS, 20
 - services, 209–211
 - TSO, 596
 - z/OS, 587–590
- Transforms folder, 175
- Transient partitions, 242
- Transmission Control Protocol. *See* TCP
- Transmission Control Protocol/Internet Protocol. *See* TCP/IP
- Transports
 - configuration, 273–274
 - HTTP Transports, 205
 - Web containers, 271–274
- Troubleshooting
 - best practices, 780–783
 - change control policies, 784–785
 - fix packs/interim fixes, 787
 - problem determination methodologies, 788–796
 - support, 797–800
 - white papers, 786
 - clusters, 569–571
 - EJB, 576–577
 - installation, 83, 100–102, 791
 - JMS, 302
 - Linux, 100–102
 - log files, 745, 792
 - HTTP Server, 759–762
 - installation, 756
 - JVM, 746–750
 - Log Analyzer, 775–778
 - plug-ins, 758–759
 - process, 750–752
 - service, 752–755
 - specialty, 755
 - update, 756–757
 - utility, 762
 - production, 795
 - system resources, 795
 - Thread Analyzer, 11
 - tools
 - Collector, 194
 - dumpName Space tool, 247–251
 - Log Analyzer, 194
 - Showlog, 195
 - wsadmin scripts, 639
 - z/OS, 801–802
 - communication practices, 805–813
 - configuration, 805, 817–822
 - cooperation, 803–805
 - diagnostics, 813–814
 - error logs, 814–816
 - logging, 823–825, 828–838
 - loss of control, 802–803
 - RACF, 816
 - separation of J2EE roles, 805
 - system console, 816
 - timeline of events, 816
- Trust Association Interceptor (TAI), 374
- TSO (Time Sharing Option), 9, 596
- TSOPRD service class, 596
- Tuning. *See also* Optimization
 - applications, 681
 - clusters, 567–569
 - EJB
 - containers, 697
 - workload management (WLM), 575–576
 - HTTP, 699–701
 - JMS, 300, 692–693
 - JVM, 688–691
 - ORB, 694–696
 - performance, 680–699, 701–703
 - tools, 193
 - Web containers, 698
 - z/OS, 704–705
 - containers, 709–711
 - HTTP front-end handlers, 736–737, 740
 - JVM, 711, 713–716
 - monitoring, 717–725, 727–735
 - subsystems, 707–708
 - testing, 705–706
- Types
 - of businesses, 588
 - of clusters, 547–548
 - of installation, 76
 - of log files, 745
 - HTTP Server, 759–762
 - JVM, 746–750
 - plug-ins, 758–759
 - processes, 750–752
 - services, 752–755
 - specialty, 755
 - updates, 756–757
 - of MIME, 220, 261
 - of performance tuning, 681
 - of queues, 682–683
 - of topologies, 44
 - mixed servers, 50–53
 - multicell/multitier, 48–49
 - single servers, 45–46
 - three-tier, 46–47
 - tests, 783
- U**
- UDDI (Universal Description, Discovery, and Integration), 3
 - reference deployment, 347–350
 - Registry
 - access, 333–338
 - installation, 332
 - User Console tool, 192
- UDDIReg folder, 179
- Uniform Resource Indicators. *See* URIs
- Uninst folder, 174
- Uninstallation of applications, 542. *See also* Installation
- Universal Description, Discovery, and Integration. *See* UDDI
- UniversalDriver folder, 178
- UNIX
 - monitoring, 671
 - security, 392–393
 - z/OS, 407–409
- Unix System Services (USS), 8, 110, 707
- Unload methods, 706
- UpdateInstaller tool, 101
- UpdateSilent command, 101
- UpdateWizard command, 101
- Updating
 - applications, 539–541
 - atomic updates, 209–211
 - BPXPRMxx members, 139
 - configuration files, 259
 - log files, 756–757
 - plug-ins, 273–274
 - security, 460
 - WLM, 137, 159
- Upgrading
 - applications, 504, 507
 - ClientUpgrade tool, 188
 - WasPostUpgrade tool, 189
 - WasPreUpgrade tool, 188
- Upstream queuing networks, 683
- URIs (Uniform Resource Indicators)
 - configuration, 263
 - namespaces, 344
 - PMI Request Metrics, 661
- Use Binary Configuration, 522
- User defined workloads, 589
- User ID
 - access, 140
 - security, 409–410

- User registry security configuration, 363–370
 - Users
 - roles, 495–499
 - security roles, 529
 - Using test tools, 707
 - USS (Unix System Services), 8, 110
 - directories, 180
 - modification, 140
 - z/OS performance, 707
 - Util folder, 178
 - Utilities, 188–195
 - AAT, 169, 189, 434–435
 - Administrative Console, 23–25, 170–173
 - Ant, 437
 - Application Client Resource Configuration, 190
 - ASTK, 436–437
 - ATK, 190
 - backupConfig, 191
 - ClientUpgrade, 188
 - Collector, 194
 - deployment, 509, 524
 - dumpNameSpace, 192, 247–251
 - Ejbdeploy, 190
 - end user view monitoring, 666
 - ESR, 797
 - First Steps, 166–169
 - keyman, 269, 271
 - IPCS, 126, 811
 - ITMTP, 666
 - Log Analyzer, 194
 - restoreConfig, 191
 - Showlog, 195
 - SoapEarEnabler, 343
 - table of environment variables, 825
 - Thread Analyzer, 11
 - Tivoli Performance Viewer, 193, 663–665
 - Topaz Real User Monitor, 666
 - UDDI User Console, 192
 - UpdateInstaller, 101
 - Verify Installation, 167
 - VersionInfo, 191
 - vmstat, 671
 - WasPostUpgrade, 189
 - WasPreUpgrade, 188
 - WebSphere Studio, 435
 - wsadmin, 191, 510
 - automation, 635–640
 - debugging, 639
 - XML_SOAP Administrative, 192
 - Utility jar deployment, 505
 - Utility log files, 762
 - Utilization
 - CPU, 725
 - DISK monitoring, 669
- V**
- Validation, errors, 789–794
 - Values
 - ORB Request Timeout, 695
 - specification, 686
 - TcpTimedWaitDelay, 685
 - tcp_conn_request_max, 688
 - tcp_keepinit value, 687
 - Xverify:none, 689
- Variables**
- adding, 819
 - defining, 118–223
 - deployment manager nodes, 150
 - management, 222
 - saving, 136
 - table of environment, 825
- Velocity goals, 593–594**
- Verbose garbage collection (VerboseGC), 689, 712–715**
- Verification**
- First Steps utility, 166–169
 - initial verification tests, 147
 - installation, 82
 - IVT, 618
 - Web server plug-in installation, 258–259
- Verify Installation utility, 167**
- VersionInfo tool, 191–192**
- Versions, 14**
- installation
 - WebSphere Application Server Base Edition, 69–76, 78–85
 - WebSphere Application Server Network Development Edition, 85–96, 98–100
 - migration, 65–67, 108–109
 - Network Deployment, 14
 - Base Topology, 15
 - cells, 17–18
 - distributed management models, 27–30
 - nodes, 17
 - server processes, 16
 - previous
 - access, 245
 - executing clients, 244
 - troubleshooting, 100–102
- Vertical clusters, 547**
- Vi editor, 8**
- View the generated instructions**
- option, 135–136
- Viewing**
- Administrative Console, 84–85, 95
 - fix packs, 102
 - JVM log files, 750
 - process log files, 752
 - servers, 95
- Views, 653–657**
- Virtual hosts, 254**
- configuration, 220, 261–263
 - installation, 516
 - mapping, 528
- Vmstat tool, 671**
- W**
- WasPostUpgrade tool, 189
 - WasPreUpgrade tool, 188
 - WDSL URI namespaces, 344
 - Web applications
 - module configuration, 460–469
 - security, 460
 - Web Container, 19–20
 - optimization, 698
 - properties, 204
 - security, 271–274
 - Web folders, 178
 - Web modules
 - assembly, 453
 - separating, 505
 - Web servers
 - logs, 824
 - monitoring, 675
 - plug-ins, 253, 255
 - communication security, 268–274
 - configuration, 259–268
 - failover, 275–278
 - installation, 256–258
 - logging, 278
 - preinstallation, 256
 - tracing, 278
 - verification, 258–259
 - Web services, 25, 326–328
 - deployment, 523
 - implementation, 329–330
 - installation, 332
 - JMS, 284
 - Network Deployment
 - installation, 333
 - UDDI Registry access, 333–338
 - Web Services Gateway installation, 338–343
 - SOAP, 344–347
 - SoapEarEnabler tool, 343
 - UDDI reference deployment, 347–350
 - z/OS customization, 351–359
 - Web Services Description Language. *See* WSDL
 - Web Services Gateway
 - installation, 332, 338–343
 - z/OS, 351–359
 - Web Services Invocation Framework (WSIF), 328
 - Web sites, Help, 795–796
 - WebSEAL, 375
 - WebSphere Application Monitor (WSAM), 663
 - WebSphere Application Server Base Edition installation, 69–76, 78–85
 - WebSphere Application Server Network Deployment Edition
 - installation, 85–96, 98–100
 - troubleshooting, 100–102
 - WebSphere Control Program (WSCP), 635
 - WebSphere JMS Provider, 282
 - WebSphere MQ JMS Provider, 283, 293–296

- WebSphere Studio, 435
 - Weights
 - clusters, 565
 - starting, 537
 - White papers, best practices, 786
 - Windows (Microsoft)
 - performance tuning, 685
 - PerfMon, 667
 - Wizards
 - installation, 74. *See also* Installation
 - UpdateInstaller, 101
 - WLM. *See* Workload management (WLM)
 - WLM application environment definitions, 137
 - Workload activity reports, 727
 - Workload management (WLM), 14, 137, 159, 545
 - capabilities of, 551
 - clusters, 546, 557–564
 - advantages of, 550
 - configuration, 564–565
 - disadvantages of, 550–551
 - optimization, 567–569
 - runtime controls, 565–567
 - troubleshooting, 569–571
 - types of, 547–548
 - EJB, 571
 - configuration, 572, 575
 - optimization, 575–576
 - troubleshooting, 576–577
 - EJB/HTTP client comparisons, 551–556
 - z/OS, 579–583
 - classification, 717–720
 - performance, 708
 - policies, 583–587, 589–597, 600–612
 - Workload policies, 587–590
 - Workstations, 135–136
 - WSAD profiles, 740
 - Wsadmin tool, 191, 510
 - automation, 635–640
 - debugging, 639
 - WSAM (WebSphere Application Monitor), 663
 - WSCP (WebSphere Control Program), 635
 - WSDL (Web Services Description Language), 3
 - WSGW folders, 179
 - WSGWjacl script, parameters, 341
 - WSIF (Web Services Invocation Framework), 328
 - Wsinstance folders, 175
 - Wstemp folders, 179
- X**
- XCF (Cross-System Coupling Facility), 708
 - XML (Extensible Markup Language)
 - resources.xml files, 23
 - tracing, 770–771
 - Xverify:none value, 689
- Z**
- z/OS, 7
 - address spaces, 32–36
 - architecture, 31
 - directories, 179–184
 - distributed operating systems, 8–9
 - JMS, 303–310, 313–325
 - performance, 704–705
 - containers, 709–711
 - HTTP front-end handlers, 736–740
 - JVM, 711–716
 - monitoring, 717–725, 727–735
 - subsystems, 707–708
 - testing, 705–706
 - QoS, 9
 - security, 402
 - administration, 422–427
 - RACF, 403–413, 415–422
 - SAF, 402–403
 - started task procedures, 409–410
 - UNIX, 407–409
 - topologies, 53–59
 - troubleshooting, 801–802
 - communication practices, 805–813
 - configuration, 805, 817–822
 - cooperation, 803–805
 - diagnostics, 813–814
 - error logs, 814–816
 - logging, 823–832, 834–838
 - loss of control, 802–803
 - RACF, 816
 - separation of J2EE roles, 805
 - system console, 816
 - timeline of events, 816
 - Web service customization, 351–359
 - WebSphere on, 10–11
 - workload management (WLM), 579–583
 - z/SAS protocol, 427
 - zSeries hardware, 8

Prentice Hall PTR InformIT InformIT Online Books Financial Times Prentice Hall ft.com PTG Interactive Reuters

PRENTICE HALL PTR

TOMORROW'S SOLUTIONS FOR TODAY'S PROFESSIONALS

Prentice Hall Professional Technical Reference

Browse Book Series What's New User Groups Alliances Special Sales Contact Us

Search | Help | Home

Quick Search

PTR Favorites

- Find a Bookstore
- Book Series
- Special Interests
- Newsletters
- Press Room
- International
- Best Sellers
- Solutions Beyond the Book
- Shopping Bag

Keep Up to Date with
PH PTR Online

We strive to stay on the cutting edge of what's happening in professional computer science and engineering. Here's a bit of what you'll find when you stop by www.phptr.com:

- ! What's new at PHPTR?** We don't just publish books for the professional community, we're a part of it. Check out our convention schedule, keep up with your favorite authors, and get the latest reviews and press releases on topics of interest to you.
- @ Special interest areas** offering our latest books, book series, features of the month, related links, and other useful information to help you get the job done.
- 👤 User Groups** Prentice Hall Professional Technical Reference's User Group Program helps volunteer, not-for-profit user groups provide their members with training and information about cutting-edge technology.
- ↔ Companion Websites** Our Companion Websites provide valuable solutions beyond the book. Here you can download the source code, get updates and corrections, chat with other users and the author about the book, or discover links to other websites on this topic.
- 📖 Need to find a bookstore?** Chances are, there's a bookseller near you that carries a broad selection of PTR titles. Locate a Magnet bookstore near you at www.phptr.com.
- ✉ Subscribe today! Join PHPTR's monthly email newsletter!** Want to be kept up-to-date on your area of interest? Choose a targeted category on our website, and we'll keep you informed of the latest PHPTR products, author events, reviews and conferences in your interest area.

Visit our mailroom to subscribe today! http://www.phptr.com/mail_lists

Wouldn't it be great
 if the world's leading technical
 publishers joined forces to deliver
 their best tech books in a common
 digital reference platform?

They have. Introducing
InformIT Online Books
 powered by Safari.

■ **Specific answers to specific questions.**

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

■ **Immediate results.**

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

■ **Cut, paste and annotate.**

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

■ **Customized for your enterprise.**

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

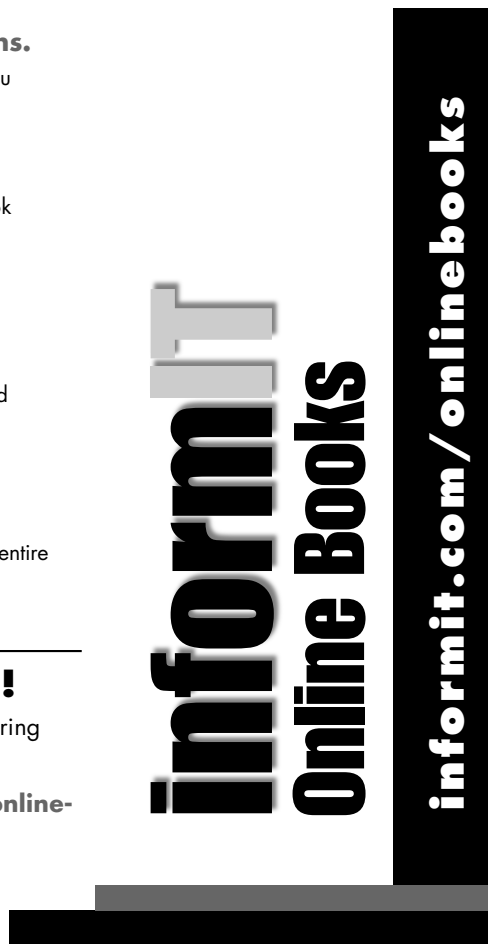
Get your first 14 days FREE!

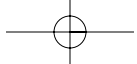
For a limited time, InformIT Online Books is offering its members a 10 book subscription risk-free for 14 days. Visit <http://www.informit.com/online-books> for details.



informIT
Online Books

informit.com/onlinebooks





informIT

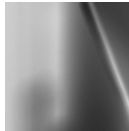
www.informit.com

YOUR GUIDE TO IT REFERENCE



Articles

Keep your edge with thousands of free articles, in-depth 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**.

POWERED BY
Safari
TECH BOOKS ONLINE



Catalog

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

