

Index

SYMBOLS AND NUMERICS

| (pipe character), 468

2PC (two-phase commit), 530–531

A

-A argument, SQLCMD utility, 90

access sensitivity, collation settings, 36

accounts

Database Mail feature

creating, 256

deletion guidelines, 268

retry attempts, 258

sysmail_add_account_sp stored procedure, 261–262

sysmail_add_profileaccount_sp stored procedure, 262–263

sysmail_delete_account_sp stored procedure, 268

sysmail_update_account_sp stored procedure, 264

security, 224

acknowledgment, dialog conversations, 509

active/active clustering, 405

active/passive clustering, 405

ActiveX script Task, control flow, 476

Activity Monitor tool, 371–373

Add button (New Database dialog box), 118

Add New Derived Table feature, Query Designer toolbar, 63

Add Related Tables feature, Database Diagram tool, 60

Add Table feature

Database Diagram toolbar, 60

Query Designer toolbar, 63

Add to Help Favorites command, Help toolbar, 61

Add/Remove Group By feature, Query Designer toolbar, 63

addresses, IP, 231

ADF (Application Definition File), 499

Advanced Properties sheet (Agent Service), 278–279

AES (Advanced Encryption Standard), 214

After triggers, 163

Agent Connection Properties, 280–281

Agent Service

Advanced Properties sheet, 278–279

Agent Connection Properties, 280–281

Alert Systems properties, 279–280

alerts

creation, 304

event-based, 304–308

performance condition, 310

sp_add_alert stored procedure, 308

sp_addmessage stored procedure, 306

WMI event, 311–312

configuration, 276–277

General Properties sheet, 278

Job System Properties window, 280

jobs

adding to schedules, 295–297

categories, 287

creation, 283–286

data retrieval tasks, 286

defined, 283

history properties, 282

job step creation, 288–292

Agent Service (continued)

- logins, 285
- multi-server, 316–317
- names, 284
- sp_add_jobstep stored procedure, 289–290
- token replacement, 292–293
- operators
 - creation, 301
 - fail-safe, 304
 - sp_add_operator stored procedure, 302–304
- proxies, 313–316
- schedules
 - adding jobs to, 295–297
 - creation, 294
 - sp_add_schedule stored procedure, 297–300
 - sp_attach_schedule stored procedure, 300–301
- security, 282–283
- SQLAgentOperatorRole permission, 283
- SQLAgentReaderRole permission, 283
- SQLAgentUserRole permission, 283
- agents, replication, 529**
- aggregate functions, 167, 209**
- Alert Systems properties (Agent Service), 279–280**
- alerts**
 - creation, 304
 - event-based, 304–308
 - performance condition, 310
 - sp_add_alert stored procedure, 308
 - sp_addmessage stored procedure, 306
 - WMI event, 311–312
- aligned indexes, 146**
- aligned partitioning, 86**
- All Languages area, Text Editor configuration, 72**
- ALTER APPLICATION statement, 197**
- ALTER CERTIFICATE statement, 220**
- ALTER CREDENTIAL statement, 186**
- ALTER DATABASE statement, 431**
- ALTER INDEX statement, 153**
- ALTER LOGIN statement, 183**
- ALTER ROLE statement, 194**
- ALTER SCHEMA statement, 135**
- ALTER TABLE statement, 156**
- American National Standards Institute. See ANSI**
- AMOs (Analysis Management Objects), 9**
- Analysis Designers area, Designers configuration, 76**
- Analysis Services**
 - Analysis Services DMX Query feature, Standard toolbar, 68
 - Analysis Services Execute DDL Task, control flow, 476

- Analysis Services MDX Query feature, Standard toolbar, 68
- Analysis Services Project template, BI Studio, 79
- mined data, 3
- toolbar, 68

Analysis XMLA Query feature, Standard toolbar, 68

Analyze Query in Database Engine Tuning Advisor feature, SQL Editor toolbar, 67

anonymous authentication, 256

anonymous dialog security, 512

ANSI (American National Standards Institute)

- ANSI NULL Default settings, 123–124
- ANSI NULLS Enabled settings, 124
- ANSI Padding Enabled settings, 124
- ANSI Warnings Enabled settings, 124
- discussed, 2

answers to exercises, 543–546

APIs (application programming interfaces), 465

Application Definition File (ADF), 499

applications

- Notification Service
 - definition file elements, 499–500
 - discussed, 490
 - primitive duration format, 503
 - removing unused, 225
 - roles, fixed database roles, 195

arguments, SQLCMD utility, 89–90

Arithmetic Abort Enabled option (New Database dialog box), 125

arithmetic overflow, 125

Arrange Selection feature, Database Diagram toolbar, 60

Arrange Tables feature, Database Diagram toolbar, 60

Ask a Question command, Help toolbar, 62

assemblies

- Assembly Assisted Editor, 169
- CLR (Common Language Run-Time)
 - adding, 444
 - CREATE ASSEMBLY statement, 444
 - creation, 439–442, 444
 - discussed, 169, 437
 - defined, 167, 169
 - New Assembly dialog box, 169–170
 - permissions, 170

asymmetric keys, 218

audits

- results, triggers, 169
- security, 225

authentication

- anonymous, 256
- AUTHENTICATION argument, 242

bad login/password error message, 34
 Database Mail feature, 256
 discussed, 175
 Mixed Mode configuration, 33–34
 mode configuration, SQL Server 2005 installation,
 33–34
 overview, 18
 trusted connection error message, 34
 Windows Authentication mode changes, 176–178
 Windows Only configuration, 33–34

AUTH_REALM argument, 242

Auto Close option (New Database dialog box), 125

Auto Create Statistics option (New Database dialog box), 125

Auto Shrink option (New Database dialog box), 125

Auto Update Statistics option (New Database dialog box), 125

Auto-Commit transactions, 106–107

auto-grow transaction log behavior, 110

automatic cleanup behavior, log shipping, 408

automation techniques, best practices, 321

auto-start feature, SQL Server 2005 installation, 28

availability. See high-availability

Available Databases feature, SQL Editor toolbar, 66

B

Back Up Database Task, control flow, 477

backups. See also restoration

Bulk Log, 331

Copy Only, 332

devices, 327

Differential, 330

file/filegroup, 330–331

Full

with Differential strategy, 336

overview, 330

with Transaction Log strategy, 337–338

functionality, 328–329

log shipping, 408

Maintenance Plan wizard, 319

mirrored, 333

Partial, 332, 339

Pure Log, 331

restore preparation, 345–347

scheduled, 352

stripes, 332–333

Tail Log, 331

transaction log, 110, 331

WITH clause and, 333–335

Backward Compatibility System views, 165

Ballmer, Steve (Microsoft CEO), 436

baseline creation, performance optimization, 361–362

basic information retrieval, databases, 117–118

BATCHES argument, 243

BCM (Bulk Changed Map) pages, 105

BCP utility

export table to flat file example, 93

import flat file example with format file, 93

non-XML format file example, 92

syntax, 91

XML format file example, 92–93

best practices

automation techniques, 321

security, 224–226

BI Studio (Business Intelligence Development Studio)

Analysis Services Project template, 79

Import Analysis Services 9.0 template, 79

integration services, 463

Integration Services Project template, 79

New Project screen, 78–79

packages, 78

Report Model Project template, 80

Report Server Project template, 79

Report Server Project Wizard template, 80

bigint data type, 98

binary data type, 100

binary sorting, collation settings, 36

bit data type, 98

Bookmarks window (SQL Server Management Studio), 53

Bryant, Todd (Professional SQL Server 2005 Reporting Services), 3, 11

buffer cache

hit ratio measures, performance optimization, 366

overview, 23

Bulk Change Map (BCM) pages, 105

Bulk Insert Task, control flow, 476

Bulk Log backups, 331

bulk update locks, 376

bulkadmin fixed security role, 187

Bulk-Logged recovery model, 122–123, 325

Business Intelligence Development Studio. See BI Studio

bytes counters, performance optimization, 365

C

CA (Certification Authority), 219

cache

buffer, hit ratio measures, 366

log, 23

procedure, 23

Cancel Executing Query feature, SQL Editor toolbar, 66

capacity planning, database, 114–115

cascading constraints, 160–161

case-sensitivity

collation settings, 36

SQLCMD utility, 89

catalog. See databases

categories, Agent Service jobs, 287

CDO (Collaboration Data Object), 461

certificates, public key, 218–221

Certification Authority (CA), 219

Change Connection feature, SQL Editor toolbar, 66

Change Source Control feature, Source Control toolbar, 65

Change Type feature, Query Designer toolbar, 63

char **data type, 99**

CHARACTER_SET **argument, 244**

check constraints, 161

Check Database Integrity Task, control flow, 477

Check In feature, Source Control toolbar, 65

Check Out for Edit feature, Source Control toolbar, 65

Check Question Status command, Help toolbar, 62

CHECKPOINT **event, 109–110**

classes, 438

Clear all bookmarks in all files, Text Editor toolbar, 70

CLEAR_PORT **argument, 242**

client redirection, database mirroring, 420

closed cursor commands, databases, 126

CLR (Common Language Run-Time)

assemblies

adding, 444

CREATE ASSEMBLY statement, 444

creation, 439–442, 444

discussed, 169, 437

compatible data types, 444–445

defined, 435

enabling, 439

functionality, 438

improvements to, 3

safe permission setting, 460

security, 458–461

stored procedures, 446–447

triggers, 447–448

UDAs (user-defined aggregates), 452–454

UDTs (user-defined types), 448–452

user-defined functions, 445–446

clustered indexes, 136–137

clustering

active/active, 405

active/passive, 405

cluster groups

defined, 39

Domain Groups, 41

components, 404–405

failover

discussed, 402

log shipping and, 418–419

manual, 432

majority node, 404

quorum, 403

recommendations, 406

Windows, 402–403

Code Editor (SQL Server Management Studio), 50

code generation features, Visual Studio, 454–457

Collaboration Data Object (CDO), 461

collation settings

database creation, 122

language, 141

SQL Server 2005 installation

accent sensitivity, 36

binary sorting, 36

case sensitivity, 36

default collation, 35

discussed, 34

non-compatible collation issues, 37

width sensitivity, 36

table functions, 141

colors, Environment configuration, 71

column filtering, replication tools, 536

Comingore, Derek (Professional SQL Server 2005 CLR Stored Procedures, Functions, and Triggers), 3

command-line tools

BCP utility

export table to flat file example, 93

import flat file example with format file, 93

non-XML format file example, 92

syntax, 91

XML format file example, 92–93

DACs (Dedicated Administrator Connections), 91

SQLCMD utility

arguments, 89–90

case-sensitivity, 89–91

commands

KILL, 377

RECONFIGURE, 438

SETVAR, 90–91

Comment Out Selected Lines feature

SQL Editor toolbar, 67

Text Editor toolbar, 70

Common Language Run-Time. See CLR

Common Table Expressions (CTE), 2**communication support**

- language support, 8–9
- object models, 9

Compare feature, Source Control toolbar, 65**Compatibility level drop-down list (New Database dialog box), 123****compliance, ANSI, 2**COMPRESSION **argument, 242****computational functions, 446****Concatenate Null Yields Null option (New Database dialog box), 126****configuration**

- Agent Service, 276–277
- Database Mail feature, 255–259
- database mirroring, 422–426
- ICF (Instance Configuration File), 497
- log shipping, 407–411
- Reporting Services Configuration Manager, 87–89
- SQL Server Configuration Manager, 87, 232
- SQL Server Management Studio
 - Designers section, 76–77
 - Environment section, 71–72
 - Query Execution section, 72–74
 - Query Results section, 74–76
 - Source Control section, 72
 - Text Editor section, 72

conformity, key, 159**Connect feature, SQL Editor toolbar, 66****Connections project folder, 52****constraints**

- cascading, 160–161
- check, 161
- default, 162–163
- schema scope permissions, 209

containers, control flow tasks, 475**Contents command, Help toolbar, 61****contracts, Server Broker service, 510****control flow, integration services, 465, 475–477****conversations, Server Broker service, 509–510****Copy Only backups, 332****Counihan, James (*Professional SQL Server 2005 Reporting Services*), 3, 11**

CREATE APPLICATION **statement, 196**
 CREATE ASSEMBLY **statement, 444**
 CREATE CERTIFICATE **statement, 220**
 CREATE CREDENTIAL **statement, 186**
 CREATE ENDPOINT **statement, 241**

CREATE FUNCTION **statement, 445**CREATE INDEX **statement, 153**CREATE LOGIN **statement, 181, 183–184**CREATE ROLE **statement, 194**CREATE SCHEMA **statement, 134**CREATE TABLE **statement, 155–156**CREATE USER **statement, 190, 192****creation scripts, database, 131–132****credentials, 185–186****cross-database ownership, 126****CTE (Common Table Expressions), 2****cursor**

- closed cursor commands, 126
- cursor data type, 102

D**DACs (Dedicated Administrator Connections)**

- endpoints, 236
- overview, 91

Data Copy phase, restoration, 339**Data Definition Language (DDL)**

- database creation scripts, 132
- event notifications, 275
- performance optimization, 396, 398–399
- trigger functions, 2

Data Encryption Standard (DES), 214**data files**

- primary, 17–18
- storage architecture, 102–104

data flow, integration services

- data destinations, 481
- overview, 465
- sources, 479
- transformations, 480–481

Data Flow Task, control flow, 476**data manipulation data types, physical database structure, 101–102****Data Manipulation Language (DML) triggers, 163, 167–169****Data Mining Query Task, control flow, 476****data pages, 103–104****Data Protection API (DPAPI), 214****data retrieval tasks, Agent Service jobs, 286****Data Source Views (DSVs), 474****data tier**

- objects, 4
- Web services, 246

data transformation, integration services, 472–475

Data Transformation Services (DTS), 4

data types

- bigint, 98
- binary, 100
- bit, 98
- char, 99
- CLR compatible, 444–445
- cursor, 102
- data manipulation, 101–102
- datetime, 99
- decimal, 98
- fixed-length, 98–100
- float, 99
- image, 101
- improvements to, 2
- int, 98
- large object, 100–101
- money, 99
- nchar, 99
- ntext, 101
- numeric, 98
- nvarchar, 100
- real, 99
- rowversion, 100
- smalldatetime, 99
- smallint, 98
- smallmoney, 99
- sql_varian, 101
- table, 101
- text, 100
- timestamp, 100
- tinyint, 98
- uniqueidentifier, 100
- user-defined, 170–171
- varbinary, 100
- varchar, 100
- variable-length, 100–101
- XML, 101

database administrators (DBAs), 45

DATABASE argument, 244

Database Consistency Checker (DBCC)

- fragmented indexes, 151–152
- overview, 97

Database Diagram toolbar, 59–60

Database Engine components, 2–3

Database Engine Query feature, Standard toolbar, 68

Database files section (New Database dialog box), 118–119

Database Mail feature

- accounts
 - creating, 256
 - deletion guidelines, 268
 - retry attempts, 258
 - sysmail_add_account_sp stored procedure, 261–262
 - sysmail_add_profileaccount_sp stored procedure, 262–263
 - sysmail_delete_account_sp stored procedure, 268
 - sysmail_update_account_sp stored procedure, 264
- advantages of, 254
- authentication method selection, 256
- configuration, 255–259
- enabling, 255
- file attachment size, 258
- functionality, 254
- logging levels, 258
- mail message example, 272–273
- MAPI-compliant mail server, 254
- message queue, timeout value, 258
- messages, managing, 274–275
- overview, 5
- port numbers, 256
- private profiles, 256
- profiles
 - creation, 260
 - deletion guidelines, 268
 - naming, 255
 - sysmail_add_principalprofile_sp stored procedure, 265–267
 - sysmail_add_profile_sp stored procedure, 260
 - sysmail_delete_principalprofile_sp stored procedure, 268
 - sysmail_delete_profileaccount_sp stored procedure, 268
 - sysmail_delete_profile_sp stored procedure, 268
 - sysmail_update_principalprofile_sp stored procedure, 267
 - sysmail_update_profileaccount_sp stored procedure, 264–265
 - sysmail_update_profile_sp stored procedure, 263–264
- public profiles, 256–257
- sending mail, 269–271

Database Read Only option (New Database dialog box), 126**database scope permissions, 206–209****Database Setup area, Reporting Services Configuration Manager, 88****Database State option (New dialog box), 126–127****Database Tuning Advisor (DTA)**

- end-of-quarter analysis, 391
- General tab, 84–85
- Profiler tool and, 391–392
- recommendations, 389
- script analysis, 386–387
- session creation, 84
- sessions, starting new, 387–388
- tuning option selection, 389
- Tuning Options tab, 86–87

database_id parameter, 149**databases. See also New Database dialog box; tables**

- ALTER DATABASE statement, 431
- arithmetic overflow, 125
- basic information retrieval, 117–118
- capacity planning, 114–115
- closed cursor commands, 126
- collation settings, 122
- creation scripts, 131–132
- cross-database ownership, 126
- date statistics, 127
- defaults, 172
- diagrams, 163–164
- distribution, 16–17, 113
- file growth, 120–121
- file size considerations, 120
- filegroups, 118
- file-shrink operations, 125
- isolating, 345
- maintenance, 120
- names, 116
- numeric rounding, 128
- page write verification, 128–129
- performance, 120
- rules, 172
- scope, 12
- Shiloh, 20
- size requirement calculation, 115
- Sphinx system, 20
- state, 126–127
- statistics, missing, 125
- system
 - default location, 17
 - distribution databases and, 113

- Master, 14
- Model, 14–15
- MSDB, 15
- recovery, 353–354
- restricted activity, 17
- TempDB, 15–16
- system views, 164–165
- test, 115
- user, 16, 113, 347–349
- user security
 - CREATE USER statement, 190, 192
 - default schemas, 188–189
 - guest accounts, 190
 - naming conventions, 188
- views, 164

Date Correlation Optimization Enabled option (New Database dialog box), 127**date statistics, database, 127****datetime data type, 99****DBAs (database administrators), 45****DBCC (Database Consistency Checker)**

- fragmented indexes, 151–152
- overview, 97

dbcreator fixed security role, 187**DCM (Differential Changed Map) pages, 105****DDL (Data Definition Language)**

- database creation scripts, 132
- event notifications, 275
- performance optimization, 396, 398–399
- trigger functions, 2

deadlocks

- analyzing with Profiler tool, 379
- exposing process participated in, 383
- performance optimization, 367–368

decimal data type, 98**Decrease feature, SQL Editor toolbar, 67****Decrease Indent feature, Text Editor toolbar, 70****Dedicated Administrator Connections (DACs)**

- endpoints, 236
- overview, 91

default collation, 35**default constraints, 162–163****Default Cursor option (New Database dialog box), 127****default instances, SQL Server 2005 installation, 31****DEFAULT_LOGON_DOMAIN argument, 242****defaults, standalone, 172****Delete Tables From Database feature, Database****Diagram toolbar, 60****deletes, undoing, 359**

deleting

- Database Mail accounts and profiles, 268
- Database Mail messages, 274
- delivery channels, Notification Services, 495–496**
- denying permissions, 198–200**
- DES (Data Encryption Standard), 214**
- Design Query in Editor feature, SQL Editor toolbar, 67**
- Designers section, SQL Server Management Studio configuration, 76–77**
- Developer Edition, software requirements, 27–28**
- development environment, integration services, 473–475**
- diagrams, database, 163–164**
- dialog boxes**
 - Concatenate Null Yields Null option, 126
 - New Assembly, 169–170
 - New Database
 - accessing, 116
 - Add button, 118
 - ANSI NULL Default settings, 123–124
 - ANSI NULLS Enabled settings, 124
 - ANSI Padding Enabled settings, 124
 - ANSI Warnings Enabled settings, 124
 - Arithmetic Abort Enabled option, 125
 - Auto Close option, 125
 - Auto Create Statistics option, 125
 - Auto Shrink option, 125
 - Auto Update Statistics Asynchronously option, 125–126
 - Auto Update Statistics option, 125
 - Compatibility level drop-down list, 123
 - Database files section, 118–119
 - Database Read Only option, 126
 - Database State option, 126–127
 - Date Correlation Optimization Enabled option, 127
 - Default Cursor, 127
 - discussed, 49
 - Numeric Round-Abort option, 128
 - Owner field, 117
 - Page Verify option, 128–129
 - Parameterization option, 129
 - Path column, 121
 - Quoted Identifiers Enabled option, 130–131
 - Recovery model section, 122–123
 - Recursive Triggers Enabled option, 131
 - Restrict Access option, 131
 - Script Action options, 131–132
 - Select a page section, 121
 - Trustworthy option, 131
 - New Database Reference, 441
 - New Login, 180
 - New Maintenance Plan, 319–320
 - Restoration, 346
 - Trace Properties
 - discussed, 80
 - Events Extraction Settings tab, 83
 - Events Selection tab, 82–83
 - General tab, 81–82
- dialog conversations, Server Broker service, 509**
- dialog security, Server Broker service, 512**
- Differential backups, 330**
- Differential Changed Map (DCM) pages, 105**
- Differential strategy, Full backups with, 336**
- digital signatures, 223–224**
- Disconnect feature, SQL Editor toolbar, 66**
- disk counters, performance optimization, 364–365**
- Disk Usage report, 394**
- diskadmin fixed security role, 187**
- Display Estimated Execution Plan feature, SQL Editor toolbar, 66**
- Display on Object Member List feature, Text Editor toolbar, 70**
- Display Parameter Info feature, Text Editor toolbar, 70**
- Display Quick Info feature, Text Editor toolbar, 70**
- Display Word Completion feature, Text Editor toolbar, 70**
- distributed transactions, replication, 530–531**
- Distribution Agent, 529**
- distribution databases**
 - overview, 16–17
 - system databases and, 113
- DML (Data Manipulation Language) triggers, 163, 167–169**
- DMVs (Dynamic Management Views), 367–368**
- dockable windows, 47**
- Domain Groups, cluster groups, 41**
- DPAPI (Data Protection API), 214**
- dragging windows, 47**
- DROP APPLICATION ROLE statement, 197**
- DROP CERTIFICATE statement, 220**
- DROP ROLE statement, 194**
- DROP_EXISTING statement, 153–154**
- DSVs (Data Source Views), 474**
- DTA (Database Tuning Advisor)**
 - end-of-quarter analysis, 391
 - General tab, 84–85
 - Profiler tool and, 391–392
 - recommendations, 389
 - script analysis, 386–387

session creation, 84
 sessions, starting new, 387–388
 tuning option selection, 389
 Tuning Options tab, 86–87

DTS (Data Transformation Services), 4

DuVarney, Dave (*Professional SQL Server 2005 Reporting Services*), 3, 11

Dynamic Management Views (DMVs), 367–368

Dynamic System views, 165

dynamic views and functions, Resource database, 97

E

–E argument, SQLCMD utility, 89

EFS (Encrypting File System), 219

email. *See* Database Mail feature

Email Settings area, Reporting Services Configuration Manager, 89

Enabled property, TCP/IP protocol, 230

encryption

AES (Advanced Encryption Standard), 214
 asymmetric keys, 218
 certificates, 218–221
 data columns, 221–222
 DES (Data Encryption Standard), 214
 discussed, 213
 EFS (Encrypting File System), 219
 hierarchy, 215
 symmetric keys, 216–217

Encryption Keys area, Reporting Services Configuration Manager, 88

end-of-quarter analysis, DTA, 391

endpoints

CREATE ENDPOINT statement, 241
 creation, 246–250
 DAC, 236
 Local Machine, 236
 mirroring, 238–239
 Named Pipes, 236
 security, 246
 Service Broker, 245–246
 SOAP, 240–244
 started state, 234
 stopped state, 234
 TSQL Default TCP, 234–235
 TSQL TCP, 236–237
 types, 233
 VIA, 236

Enterprise Data Platform, 1

Enterprise Edition

features, 5–6
 flexibility in, 7
 software requirements, 27–28

enumerations, 438

Environment section

Source Control configuration, 72
 SQL Server Management Studio configuration, 71–72

errors

bad login/password message, 34
 error handling, improvements to, 2
 error reporting screen, SQL Server 2005 installation, 37
 trusted connection message, 34

ETL (Extract-Transform-Load) solutions, 79

event collection process, Notification Services

code, 492–494
 discussed, 491
 generation, 494
 SQL Server API, 492
 XML API, 492

event handlers, integration service, 465, 481

event notifications, 275–276

Event Object API, event collection process, 491

event-based alerts, 304–308

EVENTDATA function, 396–397

Events Extraction Settings tab (Trace Properties dialog box), 83

Events Selection tab

Profiler tool, 380
 Trace Properties dialog box, 82–83

exclusive locks, 376

Execute DTS 2000 Package Task, control flow, 476

Execute feature, SQL Editor toolbar, 66

Execute Package Task, control flow, 476

Execute Process Task, control flow, 476

Execute SQL feature, Query Designer toolbar, 63

Execute SQL Server Agent Job Task, control flow, 477

Execute SQL Task, control flow, 476

Execute T-SQL Statement Task, control flow, 477

Execution Account area, Reporting Services Configuration Manager, 89

exercises, answers to, 543–546

explicit permissions, 211–213

Explicit transactions, 108–109

Express Edition

features, 6–7
 software requirements, 27–28

Extensible Markup Language (XML)

discussed, 2
 overview, 9

Extensible Markup Language (XML) (continued)

XML API, event collection process, 492

XML data type, 101

XML indexes

primary, 138–140

secondary path, 140

secondary property, 141

secondary value, 141

XML Schema Definition (XML), 244

XML section, Text Editor configuration, 72

XML Task, control flow, 477

Extensible Markup Language for Analysis (XMLA), 9

extents, mixed/uniform, 102

external access permission setting, CLR, 460

Extract-Transform-Load (ETL) solutions, 79

F

failover clustering

discussed, 402

log shipping and, 418–419

manual, 432

fail-safe operators, 304

Features tool, SQL Server Surface Area Configuration feature, 43

File extensions area, Text Editor configuration, 72

file growth, database, 120–121

File System Task, control flow, 476

filegroups

advantages of, 119

backups, 330–331

names, 119

primary, 17–18, 119

read-only, 119

restoration, 350–351

table partitions, 143

user-defined, 119

files

attachment size, Database Mail feature, 258

backups, 330–331

monitoring, 393–395

restoration, 350–351

size considerations, databases, 120

file-shrink operations, database, 125

fill factor, mitigating fragmentation with, 152–153

filters

filtering tools, replication, 535–536

settings, Log File Viewer, 77

traced events, 83

five nines rule, high-availability concept, 402

fixed database roles

ALTER APPLICATION statement, 197

ALTER ROLE statement, 194

application roles, 195

built-in principals, 193

CREATE APPLICATION statement, 196

CREATE ROLE statement, 194

creation, 193

DROP APPLICATION ROLE statement, 197

DROP ROLE statement, 194

list of, 192–193

fixed-length data types, 98–100

float data type, 99

floating windows, 47

fonts

Environment configuration, 71

Font Size command, Help toolbar, 61

forced services, database mirroring, 433

foreign keys, 158–160

formatting, Notification Services, 495–496

fragmentation

checking for, 148–149

leaf-level, 150–151

mitigating with fill factor, 152–153

page splits, 147

removing, 153

free space, in transaction logs, 110–111

FROM clause, restoration and, 342

FTP Task, control flow, 476

Full backups

with Differential strategy, 336

overview, 330

with Transaction Log strategy, 337–338

full dialog security, 512

full partitioning, 86

Full recovery model, 122, 325

functions

aggregate, 167, 209

computational, 446

CREATE FUNCTION statement, 445

EVENTDATA, 396–397

LTrim, 15

RTrim, 15

scalar, 167, 446

schema scope permissions, 210

system, 167

table-valued, 167, 446

Trim, 15

user-defined, 167, 445–446

G**GAM (Global Allocation Map) pages, 105****general area, Environment configuration, 71****General Properties sheet (Agent Service), 278****General tab**

DTA, 84–85

Trace Properties dialog box, 81–82

Generate Change Script feature

Database Diagram toolbar, 60

Table Designer toolbar, 69

Get feature, Source Control toolbar, 65**Get Latest Version feature, Source Control toolbar, 65****Global Allocation Map (GAM) pages, 105****GRANT SELECT statement, 134–135****granting permissions, 198–200****guest accounts, database user security, 190****H****hardware considerations, SQL Server 2005**

installation, 22

Harinath, Sivakumar (Professional SQL Server Analysis**Services 2005 with MDX), 3****hashing logarithm, 181–182****HEADER_LIMIT argument, 244****help options**

Help area, Environment configuration, 72

Help Favorites command, Help toolbar, 61

Help toolbar, 61–62

high-availability

clustering

active/active, 405

active/passive, 405

components, 404–405

failover, 402

majority node, 404

recommendations, 406

Windows, 402–403

database mirroring

client redirection, 420

configuration, 422–426

failover, manual, 432

forced services, 433

high-performance mode, 421

high-safety with/without automatic failover, 421

monitoring, 428–430

partner roles, 424

removing, 433

server roles, 419

service account specification, 424–425

sessions, pausing, 430–431

sessions, resuming, 431

T-SQL commands, 426–427

witness roles, 424

five nines rule, 402

log shipping

automatic cleanup behavior, 408

backup settings, 408

discussed, 406, 409

failover considerations, 418–419

heavy transaction processing load caution, 409

history retention value configuration, 412

preparation for, 407

secondary server configuration, 409–411

T-SQL and, 413–417

rule on nines, 401–402

SLAs (Service Level Agreements), 401

high-performance database mirroring mode, 421**high-safety with/without automatic failover mode,
database mirroring, 421****History Cleanup Task, control flow, 477****history of SQL Server, 19–20****history retention value configuration, log shipping, 412****How Do I command, Help toolbar, 61****I****-i argument, SQLCMD utility, 89****IAM (Index Allocation Map) pages, 105****ICF (Instance Configuration File), 497****IDE (Integrated Development Environment), 45****identity impersonation, programming support, 458****IIS (Internet Information Services), 3****image data type, 101****image pages, 105****impersonation, programming support, 458****Implicit transactions, 107–108****Import Analysis Services 9.0 template (BI Studio), 79****Include Actual Execution Plan feature, SQL Editor
toolbar, 67****Increase Indent feature**

SQL Editor toolbar, 67

Text Editor toolbar, 70

Index Allocation Map (IAM) pages, 105**Index command, Help toolbar, 61****index pages, 105****indexes**

aligned, 146

clustered, 136–137

indexes (continued)

- fragmentation
 - checking for, 148–149
 - leaf-level, 150–151
 - mitigating with fill factor, 152–153
 - page splits, 147
 - removing, 153
- non-clustered, 137
- rebuilding, 153–154
- reorganization, 154
- XML
 - primary, 138–140
 - secondary path, 140
 - secondary property, 141
 - secondary value, 141

`index_id` parameter, **149**

Information Schema views, 164

Initialization tool, Reporting Services Configuration Manager, 88

Initiator Only contract, 510

initiators, dialog conversations, 509

in-row data, physical database structure, 101

installation, SQL Server 2005

- authentication mode configuration, 33–34
- auto-start feature, 28
- collation settings
 - accent sensitivity, 36
 - binary sorting, 36
 - case sensitivity, 36
 - default collation, 35
 - discussed, 34
 - non-compatible collation issues, 37
 - width sensitivity, 36
- error reporting screen, 37
- hardware considerations, 22
- inspecting/reviewing, 43
- instance options, 31
- memory considerations, 23
- planning considerations, 21–22
- post-installation considerations, 41–43
- processor considerations, 23
- SCC (System Configuration Checker), 29–30
- service options, 32–33
- setup progress screen, 38
- SETUP . EXE file, 28
- software requirements, 27
- storage considerations
 - discussed, 23
 - efficiency, maximizing, 24
 - local attached disk array, 26
 - optimal installation, 23–24
 - SAN and NAS versus local disk storage, 25
 - Virtual Server name configuration, 39–41
 - to Windows cluster, 38

Instance Configuration File (ICF), 497

instance of classes, 438

instance options, SQL Server 2005 installation, 31

instances, Notification Service

- configuration and behaviors, 497–498
- discussed, 490
- multiple services, 499

Instead Of triggers, 163

int data type, 98

Integrated Development Environment (IDE), 45

integration services

- control flow, 465, 476–477
- data, importing/exporting, 466–470
- data flow
 - data destinations, 481
 - overview, 465
 - sources, 479
 - transformations, 480–481
- data transformation, 472–475
- data type option, setting, 469
- destination table creation, 470
- development environment, 473–475
- event handlers, 465, 481
- object model, 465
- packages
 - control flow, 475
 - discussed, 465
 - execution, 486–487
 - simple package creation, 482–485
- precedence constraints, 478
- run-time, 465
- SSIS (SQL Server Integration Services)
 - components, 463–464
 - MSDB database, 15
 - overview, 4
- tasks, 465, 475–478

Integration Services Project template (BI Studio), 79

integrity checks, Maintenance Plan wizard, 319

intent exclusive locks, 376

intent shared locks, 376

intent update locks, 376

interface

- Reporting Services Configuration Manager, 87
- SQL Server Management Studio, 46

Internet Information Services (IIS), 3

IP addresses, 231

IPC (Inter-Process Communication) channels, 230

ISO (Organization for International Standards), 35

J

jobs, Agent Service

- adding to schedules, 295–297
- categories, 287
- creation, 283–286
- data retrieval tasks, 286
- defined, 283
- history properties, 282
- job step creation, 288–292
- Job System Properties window, 280
- logins, 285
- multi-server, 316–317
- names, 284
- `sp_add_jobstep` stored procedure, 289–290
- token replacement, 292–294

join filters, replication tools, 536

K

Keep Alive property, TCP/IP protocol, 230

keyboards, Environment configuration, 72

keys

- conformity, 159
- foreign, 158–160
- primary, 155–156
- unique, 156–158

L

language collation settings, 141

large object data types, 100–101

leaf-level fragmentation, 150–151

Listen All property, TCP/IP protocol, 230

local attached disk array, storage considerations, 26

local disk storage, 25–26

Local Machine endpoint, 236

lockable resource type stored procedures, 375–378

Locks by Object page (Activity Monitor tool), 371

Locks by Process page (Activity Monitor tool), 371

log cache, 23

Log File Viewer tool. See also transaction logs

- filter settings, 77
- opening, 77
- performance optimization, 370

Log Reader Agent, 529

Log Sequence Number (LSN), 110, 342

log shipping

- automatic cleanup behavior, 408
- backup settings, 408
- configuration, 407–411
- discussed, 406
- failover considerations, 418–419
- heavy transaction processing load caution, 409
- history retention value configuration, 412
- preparation for, 407
- secondary server configuration, 409–411
- T-SQL and, 413–417

logging levels, Database Mail feature, 258

logins

- adding to fixed server role, 187
- Agent Service jobs, 285
- `ALTER LOGIN` statement, 183
- `CREATE LOGIN` statement, 181, 183
- creation, 180, 182–183
- managing, 183
- New Login dialog box, 180
- password name criteria, 179–180
- stored procedures for, 184

LOGIN_TYPE argument, 244

LSN (Log Sequence Number), 110, 342

LTrim function, 15

M

mail. See Database Mail feature

maintenance

- database, 120
- schema, 135
- table, 147

Maintenance Cleanup Task, control flow, 477

Maintenance Plan wizard, 318–319

Maintenance Plans area, Designers configuration, 76

majority node clustering, 404

Manage Check Constraints feature

- Database Diagram toolbar, 60
- Table Designer toolbar, 69

Manage Full-Text Indexes feature

- Database Diagram toolbar, 60
- Table Designer toolbar, 69

Manage Indexes and Keys feature

- Database Diagram toolbar, 60
- Table Designer toolbar, 69

Manage XML Indexes feature

- Database Diagram toolbar, 60
- Table Designer toolbar, 69

manual failover, 432

MAPI (Messaging Application Programming Interface)

MAPI (Messaging Application Programming Interface)

- Database Mail feature and, 254
- discussed, 5

MARS (Multiple Active Result Sets)

- functionality, 2
- TempDB database, 16

Master database, 14

master server, 317

MCBA (Microsoft Certified Database Administrator) certification, 45

MDX (Multidimensional Expressions), 9

memory

- hardware considerations, 22
- SQL Server 2005 installation, 23

memory counters, performance optimization, 365–366

Merge Agent, 529

merge replication, 532–533

message conversations, Server Broker service, 509

message queue

- Message Queue Task, control flow, 476
- timeout value, 258

messages

- Database Mail feature, 274–275
- SOAP, 240

Messaging Application Programming Interface (MAPI)

- Database Mail feature and, 254
- discussed, 5

methods, 438

Microsoft CEO (Ballmer), 436

Microsoft Certified Database Administrator (MCBA) certification, 45

Microsoft Desktop Edition (MSDE), 6

Microsoft Distributed Transaction Coordinator (MS DTC), 530

Microsoft Management Console (MMC)

- discussed, 45
- SQL Server Configuration Manager, 87

Microsoft Message Queuing (MSMQ), 4

mined data, Analysis Services, 3

mirrored backups, 333

mirroring

- client redirection, 420
- configuration, 422–426
- endpoints, 238–239
- failover, manual, 432
- forced services, 433
- high-performance mode, 421
- high-safety with/without automatic failover mode, 421
- monitoring, 428–430
- partner roles, 424

- removing, 433
- server roles, 419
- service account specification, 424–425
- sessions
 - pausing, 430–431
 - resuming, 431
- T-SQL commands, 426–427
- witness roles, 424

Miscellaneous project folder, 52

mixed extents, 102

Mixed Mode

- authentication, 33–34
- server security, 19

MMC (Microsoft Management Console)

- discussed, 45
- SQL Server Configuration Manager, 87

Mobile Edition features, 6

Mobile Editor toolbar options, 67

mode parameter, 149

Model database, 14–15

money data type, 99

Move the caret features, Text Editor toolbar, 70

MS DTC (Microsoft Distributed Transaction Coordinator), 530

MSDB database, 15

MSDE (Microsoft Desktop Edition), 6

MSDTC service, 12

MSDTSServer service, 11

MSFTESQL service, 11

MSMQ (Microsoft Message Queuing), 4

MSSQLServer service, 9

MSSQLServerADHelper service, 10

MSSQLServerOLAPService service, 10

Multidimensional Expressions (MDX), 9

multidimensional queries, 50

Multiple Active Result Sets (MARS)

- functionality, 2
- TempDB database, 16

multiple instances, 5

multiple publishers/multiple subscribers replication model, 534

multiple publishers/single subscriber replication model, 534

multi-server Agent Service jobs, 316–317

N

- name resolution, schemas and, 133
- named instances, SQL Server 2005 installation, 31
- Named Pipes protocol, 230, 236

names

- Agent Service jobs, 284
- database, 116
- Database Mail profiles, 255
- filegroup, 119
- object, 13–14
- password, 179–180
- session, 84–85

namespaces

- defined, 437
- NAMESPACE argument, 244
- schema, 133
- URL, 245

naming conventions, database user security, 188**NAS (Network Attached Storage), 25–26****native client configuration**

- Native Client Configuration node (SQL Server Configuration Manager), 87

overview, 232

nchar data type, 99**NET SEND statement, 301****NET STOP statement, 277****Network Attached Storage (NAS), 25–26****Network Configuration node (SQL Server Configuration Manager), 87****network counters, performance optimization, 366****network interface cards (NICs), 404****network protocols, removing unused, 225****New Assembly dialog box, 169–170****New Database dialog box**

- accessing, 116
- Add button, 118
- ANSI NULL Default settings, 123–124
- ANSI NULLS Enabled settings, 124
- ANSI Padding Enabled settings, 124
- ANSI Warnings Enabled settings, 124
- Arithmetic Abort Enabled option, 125
- Auto Close option, 125
- Auto Create Statistics option, 125
- Auto Shrink option, 125
- Auto Update Statistics Asynchronously option, 125–126
- Auto Update Statistics option, 125
- Compatibility level drop-down list, 123
- Concatenate Null Yields Null option, 126
- Database files section, 118–119
- Database Read Only option, 126
- Database State option, 126–127
- Date Correlation Optimization Enabled option, 127
- Default Cursor option, 127

discussed, 49

Numeric Round-Abort option, 128

Owner field, 117

Page Verify option, 128–129

Parameterization option, 129

Path column, 121

Quoted Identifiers Enabled option, 130–131

Recovery model section, 122–123

Recursive Triggers Enabled option, 131

Restrict Access option, 131

Script Action options, 131–132

Select a page section, 121

Trustworthy option, 131

New Database Reference dialog box, 441**New Login dialog box, 180****New Maintenance Plan dialog box, 319–320****New Project screen, BI Studio, 78–79****New Query feature, Standard toolbar, 68****New Subscription Wizard, 538–540****New Table feature, Database Diagram toolbar, 60****New Text Animation feature, Database Diagram toolbar, 60****NICs (network interface cards), 404****No Delay property, TCP/IP protocol, 230****non-clustered indexes, 137****Notification Services**

applications

definition file elements, 499–500

overview, 490

primitive duration format, 503

architecture, 490

delivery channels, 495–496

event collection process

code, 492–494

Event Object API, 491

generation, 494

SQL Server API, 492

XML API, 492

formatting, 495–496

instances

configuration and behaviors, 497–498

creation, 504–505

discussed, 490

multiple services, 499

overview, 4, 489

SMI (subscription management interface), 490–491

subscription processing, 495

Notify Operator Task, control flow, 477**ntext data type, 101****NTFS (NT File System), 102**

NTLM (NT Lan Manager)

NTLM (NT Lan Manager), 176

numeric data type, 98

Numeric Round-Abort option (New Database dialog box), 128

nvarchar data type, 100

O

-o argument, SQLCMD utility, 90

Object Explorer (SQL Server Management Studio)

functionality, 48

script creation, 49

object models

communication support, 9

integration services, 465

object names, 13–14

object_id parameter, 149

OEM (original equipment manufacturer) file, 278

OLTP (Online Transaction Processing), 2

ON DELETE CASCADE statement, 160

ON DELETE SET DEFAULT statement, 161

ON DELETE SET NULL statement, 160

ON UPDATE CASCADE statement, 160

ON UPDATE SET DEFAULT statement, 161

ON UPDATE SET NULL statement, 160

Online Transaction Processing (OLTP), 2

operators, Agent Service

creation, 301

fail-safe, 304

sp_add_operator stored procedure, 302–304

optimization strategies, performance, 361–362

Oracle replication, 533

organization, index, 154

Organization for International Standards (ISO), 35

original equipment manufacturer (OEM) file, 278

orphaned users, recovery, 354

Owner field (New Database dialog box), 117

ownership, schema, 133

P

-P argument, SQLCMD utility, 89

packages, integration services

control flow, 475

discussed, 465

execution, 486–487

simple package creation, 482–486

Page Free Space (PFS) pages, 105

page life expectancy measures, performance

optimization, 366

page splits

fragmentation, 147

performance optimization, 367

Page Verify option (New Database dialog box), 128–129

pages

BCM, 105

data, 103–104

DCM, 105

GAM, 105

IAM, 105

image, 105

index, 105

PFS, 105

SGAM, 105

storage architecture, 103–105

text, 105

Parameterization option (New Database dialog box), 129

parameterized row filters, replication tools, 535–536

parameters, sending mail, 269–271

Parse feature, SQL Editor toolbar, 66

Partial backups, 332, 339

partitioning

aligned, 86

full, 86

improvements to, 2

table

discussed, 141

filegroup creation, 143

multiple files, 142

Partition Functions, 144–145

Partition Schemes, 145–146

statistic reporting, 143

Partition_number parameter, 149

partner roles, database mirroring, 424

passwords

hashing logarithm, 181–182

name criteria, 179–180

policies, 225

PATH argument, 242

Path column (New Database dialog box), 121

pausing mirror sessions, 430–431

PDS (Physical Design Structure), 86

peer-to-peer transactional replication, 532

performance condition alerts, 310, 389

performance optimization

Activity Monitor tool, 371–373

available bytes counters, 365

baseline creation, 361–362

- buffer cache hit ratio measures, 366
 - DDL (Data Definition Language) triggers, 396, 398–399
 - deadlocks, 367–368
 - disk counters, 364–365
 - Disk Usage report, 394
 - DMVs (Dynamic Management Views), 367–369
 - DTA (Database Tuning Advisor)
 - end-of-quarter analysis, 391
 - Profiler tool and, 391–392
 - recommendations, 389–390
 - script analysis, 386–387
 - sessions, starting new, 387–388
 - EVENTDATA function, 396–397
 - files, monitoring, 393–395
 - KILL command, 377
 - lockable resource types stored procedures, 375–378
 - Log File Viewer tool, 370
 - memory counters, 365–366
 - modifications, monitoring, 395
 - network counters, 366
 - optimization strategies, 361–362
 - page life expectancy measures, 366
 - page splits, 367
 - performance counters, 395
 - processor counters, 363–364
 - Profiler tool
 - deadlock graph, 382
 - deadlocks, exposing process participated in, 383
 - discussed, 377
 - DTA and, 391–392
 - Events Selection tab, 380
 - limiting data returned to, 380
 - query analysis, 384–385
 - query windows, 381
 - transaction load considerations, 379
 - queue length counters, 364
 - sp_lock stored procedure, 375
 - sp_spaceused stored procedure, 394–395
 - sp_who stored procedure, 373–375
 - sp_who2 stored procedure, 373–375
 - SQL Server-specific counters, 367
 - sys.sysfiles parameter, 395
 - user connection counters, 367
 - wait time counters, 367
 - working sets counters, 365
- permissions**
- Agent Service, 283
 - assembly, 170
 - CLR (Common Language Run-Time), 460
 - database scope, 206–209
 - denying, 198–200
 - explicit, 211–213
 - granting, 198–200
 - managing, 211–213
 - principle of least privilege, 200
 - revoking, 198–200
 - schema scope, 209–210
 - security levels, 201
 - server, 202–206
- PFS (Page Free Space) pages, 105**
- physical database structure**
- data manipulation data types, 101–102
 - discussed, 97
 - fixed-length data types, 98–100
 - in-row data, 101
 - large object data types, 100
 - variable-length data types, 100–101
- Physical Design Structure (PDS), 86**
- physical disk statistics, disk counters, 365**
- pipe character (|), 468**
- PKI (Public Key Infrastructure), 219**
- Plain Text area, Text Editor configuration, 72**
- planning considerations, SQL Server 2005 installation, 21–22**
- Plug-In Selection area, Source Control configuration, 72**
- point-in-time restoration, 352**
- policies, password, 225**
- POP3 (Post Office Protocol) server, 253**
- port numbers, Database Mail feature, 256**
- PORTS argument, 242**
- post-installation considerations, SQL Server 2005, 41–43**
- precedence constraints, 478**
- primary data files, 17–18**
- primary filegroups, 17–18, 119**
- primary keys, 155–156**
- primary XML indexes, 138–140**
- primitive duration format, applications, 503**
- principals, security, 178**
- principle of least privilege, permissions, 200**
- private profiles, Database Mail feature, 256**
- procedure cache, 23**
- procedures, schema scope permissions, 210**
- Process Info page (Activity Monitor tool), 371**
- processadmin fixed security role, 187**
- processor considerations, SQL Server 2005 installation, 23**
- processor counters, performance optimization, 363–364**

Professional SQL Server Analysis Services 2005 with MDX (Harinath and Quinn), 3

Professional SQL Server 2005 CLR Stored Procedures, Functions, and Triggers (Comingore), 3

Professional SQL Server 2005 Reporting Services (Turley, Bryant, Counihan, and DuVarney), 3, 11

Profiler tool

deadlocks

analyzing, 379

exposing process participated in, 383

graph, 382

DTA and, 391–392

Events Selection tab, 380

limiting data returned to, 380

query analysis, 384–385

query windows, 381

transaction load considerations, 379

profiles, Database Mail feature

creation, 260

deletion guidelines, 268

naming, 255

sysmail_add_principalprofile_sp stored procedure, 267

sysmail_add_profile_sp stored procedure, 260

sysmail_delete_principalprofile_sp stored procedure, 268

sysmail_delete_profileaccount_sp stored procedure, 268

sysmail_delete_profile_sp stored procedure, 268

sysmail_update_principalprofile_sp stored procedure, 267

sysmail_update_profileaccount_sp stored procedure, 264–265

sysmail_update_profile_sp stored procedure, 263–264

programming support

impersonation, 458

threading, 457–458

project and solution association, 51

project folders, Solution Explorer, 52

properties, 438

Properties feature, Source Control toolbar, 65

Properties Window feature, Standard toolbar, 68

Properties window (SQL Server Management Studio), 52

proxies, Agent Service, 313–316

public key certificates, 218–221

Public Key Infrastructure (PKI), 219

public profiles, Database Mail feature, 256–257

publication, New Publication Wizard, 536–538

Pure Log backups, 331

Q

queries

analysis, Profiler tool, 384–385

multidimensional, 50

Queries project folder, 52

Query Designer toolbar, 50, 62–63

Query Execution section, SQL Server Management Studio configuration, 72–74

Query Results section, SQL Server Management Studio configuration, 74–76

Queue Reader Agent, 529

queues

length counters, performance optimization, 364

schema scope permissions, 210

Server Broker service, 511

Quinn, Stephen R. (Professional SQL Server Analysis Services 2005 with MDX), 3

quorum, cluster-aware applications, 403

Quoted Identifiers Enabled option (New Database dialog box), 130–131

R

RAID (Redundant Array of Inexpensive Disks), 120

RDBMS (Relational Database Management System), 1

read-only filegroups, 119

real data type, 99

Rebuild Index Task, control flow, 477

Recalculate Page Breaks feature, Database Diagram toolbar, 60

recommendations, DTA, 389

RECONFIGURE command, 438

recording transactions, 109–110

recovery. See also snapshots

Bulk-Logged model, 122–123, 325

Full model, 122, 325

orphaned users, 354

Simple model, 123, 326

snapshots and, 358–359

system databases, 353–354

Recovery model section (New Database dialog box), 122–123

Recursive Triggers Enabled option (New Database dialog box), 131

Redo phase, restoration, 339

- Redundant Array of Inexpensive Disks (RAID), 120**
 - Refresh Status feature, Source Control toolbar, 65**
 - Registered Servers feature**
 - SQL Server Management Studio, 52
 - Standard toolbar, 68
 - Relational Database Management System (RDBMS), 1**
 - Relationships feature**
 - Database Diagram toolbar, 60
 - Table Designer toolbar, 69
 - remote connections, enabling/disabling, 41**
 - Remove From Diagram feature, Database Diagram toolbar, 60**
 - Reorganize Index Task, control flow, 477**
 - reorganizing indexes, 154**
 - replication**
 - column filtering, 535
 - distributed transactions, 530–531
 - Distribution Agent, 529
 - filtering tools, 535–536
 - join filters, 536
 - Log Reader Agent, 529
 - merge, 532–533
 - Merge Agent, 529
 - multiple publishers/multiple subscribers model, 534
 - multiple publishers/single subscriber model, 534
 - New Publication Wizard, 536–538
 - New Subscription Wizard, 538–540
 - Oracle, 533
 - overview, 4, 527
 - parameterized row filters, 535–536
 - peer-to-peer transactional, 532
 - Queue Reader Agent, 529
 - Replication Monitor service, 540–541
 - replication type, 529
 - single publisher/multiple subscribers model, 534
 - snapshot, 532
 - Snapshot Agent, 529
 - standard transactional publication, 531
 - static row filters, 535
 - strategies, 528
 - transactional, 531–532
 - Replication Management Objects (RMOs), 9**
 - Report Manager Virtual Directory area, Reporting Services Configuration Manager, 88**
 - Report Model Project template (BI Studio), 80**
 - Report Server Project template (BI Studio), 79**
 - Report Server Project Wizard template (BI Studio), 80**
 - Report Server Virtual Directory area, Reporting Services Configuration Manager, 88**
 - Reporting Services Configuration Manager**
 - configuration areas, 88–89
 - interface, 87
 - reports, Disk Usage, 394**
 - ReportServer service, 11**
 - Resource database**
 - dynamic views and functions, 97
 - SYS schema, 96
 - resource managers, distributed transactions, 530**
 - restoration. See also backups**
 - Data Copy phase, 339
 - database name specified, 341–342
 - database preparation, 345–347
 - files and filegroups, 350–351
 - FROM clause and, 342
 - point-in-time, 352
 - Redo phase, 339
 - Restoration dialog box, 346
 - RESTORE command, 340–341
 - from snapshots, 359
 - Undo phase, 339
 - user databases, 347–349
 - WITH clause and, 342–345
 - Restrict Access option (New Database dialog box), 131**
 - Results to File feature, SQL Editor toolbar, 67**
 - Results to Grid feature, SQL Editor toolbar, 67**
 - Results to Text feature, SQL Editor toolbar, 67**
 - resuming mirror sessions, 431**
 - retry attempts, Database Mail accounts, 258**
 - revoking permissions, 198–200**
 - RMOs (Replication Management Objects), 9**
 - routes, Server Broker service, 511–512**
 - rowversion data type, 100**
 - RTrim function, 15**
 - rule of nines, high-availability concept, 401–402**
 - rules, database, 172**
 - run-time integration services, 465**
- ## S
- S argument, SQLCMD utility, 89**
 - safe permission setting, CLR, 460**
 - SAM (Security Accounts Manager), 176**
 - SAN (Storage Area Network)**
 - communication support, 8
 - local disk storage versus, 25–26
 - network infrastructure, 25
 - Save All feature, Standard toolbar, 68**
 - Save feature, Standard toolbar, 68**

Save Search command, Help toolbar, 61

scalar functions, 167, 446

SCC (System Configuration Checker), 29–30

scheduled backups, 352

schedules

adding jobs to, 295–297

creation, 294

sp_add_schedule stored procedure, 297–300

sp_attach_schedule stored procedure, 300–301

SCHEMA argument, 244

schema modification locks, 376

schema scope permissions, 209–210

schemas

creation, 134–135

defined, 13, 132

maintenance, 135

name resolution and, 133

namespaces, 133

ownership, 133

security scope, 133

Script Action options (New Database dialog box), 131–132

Script Task, control flow, 476

scripts

analysis, performance optimization, 386–387

creation, 49

SCSI (Small Computer Systems Interface), 25, 403

Search command, Help toolbar, 61

Secondary Global Allocation Map (SGAM) pages, 105

secondary server configuration, log shipping, 409–411

secondary XML path indexes, 140

secondary XML property indexes, 141

secondary XML value indexes, 141

Secure Sockets Layer (SSL), 225

security

account, 224

Agent Service, 282–283

applications, removing unused, 225

audits, 225

authentication

anonymous, 256

AUTHENTICATION argument, 242

bad login/password error message, 34

Database Mail feature, 256

discussed, 175

Mixed Mode configuration, 33–34

mode configuration, SQL Server 2005 installation, 33–34

overview, 18

trusted connection error message, 34

Windows Authentication mode changes, 176–178

Windows Only configuration, 33–34

best practices, 224–226

CA (Certification Authority), 219

CLR (Common Language Run-Time), 458–461

credentials, 185–186

database users

CREATE USER statement, 190, 192

default schemas, 188–189

guest accounts, 190

naming conventions, 188

digital signatures, 223–224

DPAPI (Data Protection API), 214

encryption

AES (Advanced Encryption Standard), 214

asymmetric keys, 218

certificates, 218–221

data columns, 221–222

DES (Data Encryption Standard), 214

discussed, 213

EFS (Encrypting File System), 219

hierarchy, 215

symmetric keys, 216–217

endpoints, 246

fixed database roles

ALTER APPLICATION statement, 197

ALTER ROLE statement, 194

application roles, 195

built-in principals, 193

CREATE APPLICATION statement, 196

CREATE ROLE statement, 194

creation, 193

DROP APPLICATION ROLE statement, 197

DROP ROLE statement, 194

list of, 192–193

improvements to, 2

logins

adding to fixed server role, 187

ALTER LOGIN statement, 183

CREATE LOGIN statement, 181, 183–184

creation, 180, 182–183

managing, 183

password name criteria, 179–180

stored procedures for, 184

Mixed Mode, 19

network protocols, removing unused, 225

permissions

database scope, 206–209

denying, 198–200

explicit, 211–213

- granting, 198–200
- managing, 211–213
- principle of least privilege, 200
- revoking, 198–200
- schema scope, 209–210
- security levels, 201
- server, 202–206
- PKI (Public Key Infrastructure), 219
- principals, 178
- SAM (Security Accounts Manager), 176
- schemas, 133
- Server Broker service, 512
- server roles, 186–187
- SID (Security Identifier), 182
- SSL (Secure Sockets Layer), 225
- Security Accounts Manager (SAM), 176**
- Security Identifier (SID), 182**
- securityadmin fixed server role, 186
- Select a page section (New Database dialog box), 121**
- Send Feedback command, Help toolbar, 62**
- Send Mail Task, control flow, 476**
- sending mail, parameters associated with, 269–271**
- Server Management Studio**
 - Activity Monitor tool, 371–373
 - Bookmarks window, 53
 - Code Editor, 50
 - configuration
 - Designers section, 76–77
 - Environment section, 71–72
 - Query Execution, 72–74
 - Query Results section, 74–76
 - Source Control section, 72
 - Text Editor section, 72
 - Database Diagram node, 163–164
 - default view, 46
 - dockable windows, 47
 - Help toolbar, 61–62
 - interface, 46
 - Object Explorer
 - functionality, 48
 - New Database dialog box, 49
 - script creation, 49
 - Properties window, 52
 - Registered Servers window, 52
 - Solution Explorer
 - discussed, 50
 - project and solution association, 51
 - project folders, 52
 - solution folders, 52
 - ssmssl extension, 51
 - Summary window, 54
 - Template Explorer, 55–56
 - toolbars
 - Analysis Services, 68
 - custom creation, 58–59
 - Database Diagram, 59–60
 - Mobile Editor, 67
 - Query Designer, 62–63
 - Source Control, 63–65
 - SQL Editor, 66–67
 - Standard, 68
 - Table Designer, 69
 - Text Editor, 69–70
 - Toolbars menu, 56–57
 - View Designer, 71
 - Toolbox windows, 53
 - Web browser window, 54
- Server Network Interface (SNI), 8**
- server roles, security, 186–187**
- Server Status area, Reporting Services Configuration Manager, 88**
- serveradmin fixed server role, 186
- servers**
 - master, 317
 - permissions, 202–206
 - Registered Servers window, 52
 - scope, 12
 - target, 317
- service account specification, database mirroring, 424–425**
- Service Broker**
 - contracts, 510
 - conversation groups, 510
 - dialog conversions, 509–510
 - dialog security, 512
 - message conversations, 509
 - overview, 4, 508
 - queues, 511
 - routes, 511–512
 - sample application
 - database preparation, 514
 - discussed, 513
 - object creation, 514–516
 - stored procedures, 519–521
 - table creation, 516–519
 - testing, 522–524
 - services, 511
 - transport security, 513

- Service Broker endpoints, 245–246**
- Service Level Agreements (SLAs), 401**
- service options, SQL Server 2005 installation, 32–33**
- Service Oriented Architecture (SOA)**
 - overview, 4, 507–508
 - Service Broker endpoints, 245
- Services and Connections tool, 41–42**
- Services node (SQL Server Configuration Manager), 87**
- services, Server Broker service, 511**
- sessions**
 - database mirroring
 - pausing, 430–431
 - resuming, 431
 - DTA, 387–388
 - names, 84–85
 - SESSIONS argument, 244
 - SESSION_TIMEOUT argument, 244
- Set Primary Key feature, Database Diagram toolbar, 60**
- Set/Remove Primary feature, Table Designer toolbar, 69**
- setup progress screen, SQL Server 2005 installation, 38**
- setupadmin fixed security role, 187**
- SETUP.EXE file, SQL Server 2005 installation, 28**
- SETVAR command, 90–91**
- SGAM (Secondary Global Allocation Map) pages, 105**
- Share feature, Source Control toolbar, 65**
- shared intent locks, 376**
- shared locks, 376**
- Shared Memory protocol, 230**
- shared schema locks, 376**
- shared with intent exclusive locks, 376**
- Shiloh database version, 20**
- Show Criteria feature, Query Designer toolbar, 63**
- Show Diagram Pane feature, Query Designer toolbar, 63**
- Show Relationship Labels feature, Database Diagram toolbar, 60**
- Show Results Pane feature, Query Designer toolbar, 63**
- Show SQL Pane feature, Query Designer toolbar, 63**
- Shrink Database Task, control flow, 477**
- SID (Security Identifier), 182**
- Simple Mail Transfer Protocol (SMTP), 5, 253**
- Simple Object Access Protocol (SOAP)**
 - communication support, 8
 - endpoints, 240–244
 - messages, 240
- Simple recovery model, 123, 326**
- single publisher/multiple subscribers replication model, 534**
- SITE argument, 242**
- size requirement calculation, database, 115**
- SLAs (Service Level Agreements), 401**
- Small Computer Systems Interface (SCSI), 25, 403**
- small works database example, 323–325**
- smalldatetime data type, 99**
- smallint data type, 98**
- smallmoney data type, 99**
- SMI (subscription management interface), 490–491**
- SMOs (SQL Management Objects), 9**
- SMTP (Simple Mail Transfer Protocol), 5, 253**
- Snapshot Agent, 529**
- snapshot replication, 532**
- snapshots. See also recovery**
 - creation, 355–357
 - defined, 355
 - deletes, undoing, 359
 - drops, undoing, 359
 - limitations, 358
 - recovery and, 358–359
 - restoring from, 359
 - updates, undoing, 358
- SNI (Server Network Interface), 8**
- SOA (Service Oriented Architecture)**
 - overview, 4, 507
 - Service Broker endpoints, 245
- SOAP (Simple Object Access Protocol)**
 - communication support, 8
 - endpoints, 240–244
 - messages, 240
- software requirements, SQL Server 2005 installation, 27**
- Solution Explorer (SQL Server Management Studio)**
 - discussed, 50
 - project and solution association, 51
 - project folders, 52
 - solution folders, 52
 - .ssmssl extension, 51
- Source Control Manager feature, Source Control toolbar, 65**
- Source Control section, SQL Server Management Studio configuration, 72**
- Source Control toolbar, 63–65**
- sp_add_alert stored procedure, 308**
- sp_addmessage stored procedure, 306**
- sp_add_operator stored procedure, 302–304**
- sp_add_schedule stored procedure, 297–300**
- sp_addumpdevice stored procedure, 327**
- sp_attach_schedule stored procedure, 300–301**
- Specify Values for Template Parameters feature, SQL Editor toolbar, 67**

Sphinx database system, 20

- `sp_lock` stored procedure, 375
- `sp_spaceused` stored procedure, 394–395
- `sp_who` stored procedure, 373–375
- `sp_who2` stored procedure, 373–375

SQL Editor toolbar, 66–67**SQL Management Objects (SMOs), 9****SQL Server Agent Service**

- Advanced Properties sheet, 278–279
- Agent Connection Properties, 280–281
- Alert Systems properties, 279–280

alerts

- creation, 304
- event-based, 304–308
- performance condition, 310
- `sp_add_alert` stored procedure, 308
- `sp_addmessage` stored procedure, 306
- WMI event, 311–312

configuration, 276–277

General Properties sheet, 278

Job System Properties window, 280

jobs

- adding to schedules, 295–297
- categories, 287
- creation, 283–286
- data retrieval tasks, 286
- defined, 283
- history properties, 282
- job step creation, 288–292
- logins, 285
- multi-server, 316–317
- names, 284
- `sp_add_jobstep` stored procedure, 289–290
- token replacement, 292–293

operators

- creation, 301
- fail-safe, 304
- `sp_add_operator` stored procedure, 302–304

proxies, 313–316

schedules

- adding jobs to, 295–297
- creation, 294
- `sp_add_schedule` stored procedure, 297–300
- `sp_attach_schedule` stored procedure, 300–301

security, 282–283

SQLAgentOperatorRole permission, 283

SQLAgentReaderRole permission, 283

SQLAgentUserRole permission, 283

SQL Server API, event collection process, 492**SQL Server Configuration Manager**

- client protocol configuration, 232
- nodes, 87

SQL Server history, 19–20**SQL Server Integration Services (SSIS)**

- components, 463–464
- MSDB database, 15
- overview, 4

SQL Server Management Studio

Activity Monitor tool, 371–373

Bookmarks window, 53

Code Editor, 50

configuration

- Designers section, 76–77
- Environment section, 71–72
- Query Execution, 72–74
- Query Results section, 74–76
- Source Control section, 72
- Text Editor section, 72

Database Diagram node, 163–164

default view, 46

dockable windows, 47

Help toolbar, 61–62

interface, 46

Object Explorer

- functionality, 48
- New Database dialog box, 49
- script creation, 49

Properties window, 52

Registered Servers window, 52

Solution Explorer

- discussed, 50
- project and solution association, 51
- project folders, 52
- solution folders, 52
- .ssmssl extension, 51

Summary window, 54

Template Explorer, 55–56

toolbars

- Analysis Services, 68
- custom creation, 58–59
- Database Diagram, 59–60
- Mobile Editor, 67
- Query Designer, 62–63
- Source Control, 63–65
- SQL Editor, 66–67
- Standard, 68
- Table Designer, 69
- Text Editor, 69–70

SQL Server Management Studio (continued)

- Toolbars menu, 56–57
 - View Designer, 71
 - Toolbox windows, 53
 - Web browser window, 54
- SQL Server Mobile Query feature, Standard toolbar, 68**

SQL Server Profiler

- SQL Server Traces, 80
- Trace Properties dialog box
 - discussed, 80
 - Events Extraction Settings tab, 83
 - Events Selection tab, 82–83
 - General tab, 81–82

SQL Server Resolution Protocol (SSRP), 11

SQL Server Surface Area Configuration feature

- Features tool, 43
- Services and Connections tool, 41–42

SQL Server-specific counters, performance optimization, 367

- SQLAgentOperatorRole permission, 283
- SQLAgentReaderRole permission, 283
- SQLAgentUserRole permission, 283
- SQLBrowser service, 10–11

SQLCMD utility

- arguments, 89–90
- case-sensitivity, 89

SQLCMD Mode feature, SQL Editor toolbar, 67

- SQLServerAgent service, 10
- sql_variant data type, 101
- SQLWriter service, 11

SSIS (SQL Server Integration Services)

- components, 463–464
- MSDB database, 15
- overview, 4

SSL (Secure Sockets Layer), 225

- SSL_PORT argument, 242
- .ssmssl extension, 51

SSRP (SQL Server Resolution Protocol), 11

standalone defaults, 172

Standard Edition

- availability and scalability enhancements, 7
- features, 5–6
- software requirements, 27–28

Standard toolbar, 68

standard transactional publication replication, 531

started endpoint state, 234

statements

- ALTER APPLICATION, 197
- ALTER CERTIFICATE, 220
- ALTER CREDENTIAL, 186

- ALTER DATABASE, 431
 - ALTER INDEX, 153
 - ALTER LOGIN, 183
 - ALTER ROLE, 194
 - ALTER SCHEMA, 135
 - ALTER TABLE, 156
 - CREATE APPLICATION, 196
 - CREATE CERTIFICATE, 196
 - CREATE CREDENTIAL, 196
 - CREATE ENDPOINT, 196
 - CREATE FUNCTION, 445
 - CREATE INDEX, 153
 - CREATE LOGIN, 181, 183–184
 - CREATE ROLE, 194
 - CREATE SCHEMA, 134
 - CREATE TABLE, 155–156
 - CREATE USER, 190, 192
 - DROP APPLICATION ROLE, 197
 - DROP CERTIFICATE, 220
 - DROP EXISTING, 153–154
 - DROP ROLE, 194
 - GRANT SELECT, 134–135
 - NET SEND, 301
 - NET STOP, 277
 - ON DELETE CASCADE, 277
 - ON DELETE SET DEFAULT, 161
 - ON DELETE SET NULL, 160
 - ON UPDATE CASCADE, 160
 - ON UPDATE SET DEFAULT, 161
 - ON UPDATE SET NULL, 160
 - UPDATE STATISTICS, 168
- static row filters, replication tools, 535**
- Static System views, 164**
- statistic reporting, table partitions, 143**
- statistics**
- Maintenance Plan wizard, 319
 - missing, 125
 - schema scope permissions, 210
- stopped endpoint state, 234**
- storage**
- data files, 102–104
 - pages, 103–105
 - Resource database, 96
 - SQL Server 2005 installation
 - discussed, 23
 - efficiency, maximizing, 24
 - local attached disk array, 26
 - optimal installation, 23–24
 - SAN/NAS versus local disk storage, 25–26

Storage Area Network (SAN)

- communication support, 8
- local disk storage versus, 25–26
- network infrastructure, 25

stored procedures

- CLR (Common Language Run-Time), 446–447
- lockable resource type, 375–378
- login, 184
- purpose of, 167
- system, 167
- user-created, 167

stripes, backup, 332–333**structures, 438****subscription management interface (SMI), 490–491****subscription processing, Notification Services, 495****Summary feature, Standard toolbar, 68****Summary window (SQL Server Management Studio), 54****symmetric keys, 216–217****Sync With Table of Contents command, Help toolbar, 61****synonyms**

- creating, 165–166
- schema scope permissions, 210

SYS schema, 96**sysadmin fixed server role, 186****sysmail_add_account_sp stored procedure, 261–262****sysmail_add_principalprofile_sp stored procedure, 265–267****sysmail_add_profileaccount_sp stored procedure, 262–263****sysmail_add_profile_sp stored procedure, 260****sysmail_delete_account_sp stored procedure, 268****sysmail_delete_principalprofile_sp stored procedure, 268****sysmail_delete_profileaccount_sp stored procedure, 268****sysmail_delete_profile_sp stored procedure, 268****sysmail_update_account_sp stored procedure, 264****sysmail_update_principalprofile_sp stored procedure, 267****sysmail_update_profileaccount_sp stored procedure, 264–265****sys.sysfiles parameter, 395****System Configuration Check (SCC), 29–30****system databases**

- default location, 17
- distribution databases and, 113
- Master, 14

Model, 14–15

MSDB, 15

recovery, 353–354

restricted activity, 17

TempDB, 15–16

system functions, 167**system views, 164–165****system-stored procedures, 167****T****Table and Database Designers area, Designers section configuration, 76**

table data type, 101

Table Designer toolbar, 69**Table View feature, Database Diagram toolbar, 60****tables. See also databases**

architecture, 136

cascading constraints, 160–161

check constraints, 161

collation support, 141

CTE (Common Table Expressions), 2

default constraints, 162–163

discussed, 136

DML triggers, 163

indexes

clustered, 136–137

non-clustered, 137

XML, 138–141

keys

conformity, 159

foreign, 158–160

primary, 155–156

unique, 156–158

maintenance, 147

opening, 62

partitions

discussed, 141

filegroup creation, 143

multiple files, 142

Partition Functions, 144–145

Partition Schemes, 145–146

statistic reporting, 143

schema scope permissions, 210

TRUNCATE TABLE command, 325

table-valued functions, 167, 446**Tabular Data Stream (TDS), 8, 234****Tail Log backups, 331****Target Only contract, 510****target server, 317**

tasks, integration service, 465, 475–478

TB (terabytes), 7

TCP/IP protocol

Enabled property, 230

IP addresses, 231

Keep Alive property, 230

Listen All property, 230

No Delay property, 230

TDS (Tabular Data Stream), 8, 234

TempDB database, 15–16

Template Explorer feature

SQL Server Management Studio, 55–56

Standard toolbar, 68

templates, 79–80

terabytes (TB), 7

test databases, 115

testing triggers, 168–169

text data type, 100

Text Editor section, SQL Server Management Studio configuration, 72

Text Editor toolbar, 69–70

text pages, 105

threading, 457–458

timeout value, message queue, 258

timestamp data type, 100

tinyint data type, 98

Toggle a Bookmark on the Current Line feature, Text Editor toolbar, 70

token replacement, Agent Service jobs, 292–294

toolbars, SQL Server Management Studio

Analysis Services, 68

custom toolbar creation, 58–59

Database Diagram, 59–60

Help, 61–62

Mobile Editor, 67

Query Designer, 62–63

Source Control, 63–65

SQL Editor, 66–67

Standard, 68

Table Designer, 69

Text Editor, 69–70

Toolbars menu, 56–57

View Designer, 71

Toolbox window (SQL Server Management Studio), 53

Trace Properties dialog box

discussed, 80

Events Extraction Settings tab, 83

Events Selection tab, 82–83

General tab, 81–82

traced events, 82–84

transaction load considerations, Profiler tool, 379

transaction logs

Auto-Commit transactions, 106–107

auto-grow behavior, 110

backups, 110, 331

CHECKPOINT event, 109–110

Explicit, 108–109

free space in, 110–111

Implicit transactions, 107–108

inactive portion of, 110

LSN (Log Sequence Number), 110

physical characteristics, 110

purpose of, 105

recording transactions in, 109–110

transactional consistency, 18

transactional replication, 531–532

Transact-Structured Query Language. See T-SQL

Transfer Database Task, control flow, 476

Transfer Error Messages Task, control flow, 477

Transfer Job Task, control flow, 477

Transfer Logins Task, control flow, 477

Transfer Master Stored Procedures Task, control flow, 477

transformations, data flow integration services, 480–481

transport security, Server Broker service, 513

triggers

After, 163

audit results, 169

CLR (Common Language Run-Time), 447–448

DML, 163, 167–169

Instead Of, 163

testing, 168–169

Trim function, 15

TRUNCATE TABLE command, 325

trusted connection error message, authentication, 34

Trustworthy option (New Database dialog box), 131

TSQL Default TCP endpoints, 234–235

TSQL TCP endpoints, 236–237

T-SQL (Transact-Structured Query Language)

database mirroring, 426–427

log shipping and, 413–417

multidimensional queries, 50

overview, 8

Tuning Options tab (DTA), 86–87

Turley, Paul (Professional SQL Server 2005 Reporting Services), 3, 11

two-phase commit (2PC), 530–531

types

- defined, 170
- UDTs, 171–172

U

-U argument, SQLCMD utility, 89

UDAs (user-defined aggregates), 452–454

UDTs (user-defined types)

- CLR (Common Language Run-Time), 448–452
- overview, 171–172

UNC (Universal Naming Convention), 25–26

Uncomment Selected Lines feature

- SQL Editor toolbar, 67
- Text Editor toolbar, 70

Undo Checkout feature, Source Control toolbar, 65

Undo phase, restoration, 339

uniform extents, 102

unique keys, 156–158

uniqueidentifier data type, 100

Universal Naming Convention (UNC), 25–26

unsafe permission settings, CLR, 460–461

update locks, 376

UPDATE STATISTICS statement, 168

Update Statistics Task, control flow, 477

update with intent exclusive locks, 376

updates, undoing, 358

URL namespace, reserving, 245

user connection counters, performance optimization, 367

user databases

- discussed, 113
- overview, 16
- restoration, 347–349

user security. See security

user-created stored procedures, 167

user-defined aggregates (UDAs), 452–454

user-defined data types

- CLR (Common Language Run-Time), 448–452
- overview, 170–171

user-defined filegroups, 119

user-defined functions, 167, 445–446

user-defined types (UDTs), 171–172

V

-v argument, SQLCMD utility, 90

varbinary data type, 100

varchar data type, 100

variable-length data types, 100–101

Verify SQL Syntax feature, Query Designer toolbar, 63

VIA (Virtual Interface Adapter) protocol, 8

VIA endpoints, 236

View Designer toolbar, 71

View History feature, Source Control toolbar, 65

View Page Breaks feature, Database Diagram toolbar, 60

views

- Backward Compatibility System, 165
- database, 164
- Dynamic System, 165
- Information Schema, 164
- schema scope permissions, 210
- Static System, 164
- system, 164–165

Virtual Interface Adapter (VIA) protocol, 8

Virtual Server name configuration, SQL Server 2005 installation, 39–41

Visual Source Safe Explorer, Source Control toolbar, 64

Visual Studio, code generation features, 454–457

VPNs (virtual private networks), 404

W

wait time counters, performance optimization, 367

WANs (wide area networks), 404

WDSL (Web Service Descriptive Language), 241

Web Browser Refresh command, Help toolbar, 61

Web Browser Search command, Help toolbar, 61

Web Browser Stop command, Help toolbar, 61

Web browser window (SQL Server Management Studio), 54

Web Service Descriptive Language (WSDL), 241

Web services

- data tier, 246
- Web Service Identity area, Reporting Services Configuration Manager, 88
- Web Service Task, control flow, 477

WEBMETHOD argument, 243

wide area networks (WANs), 404

width sensitivity, collation settings, 36

window properties, 47

Windows Authentication mode changes, 176–178

Windows cluster

- overview, 402–403
- SQL Server 2005 installation, 38

Windows Only configuration, authentication

Windows Only configuration, authentication, 33–34

Windows Service Identity area, Reporting Services Configuration Manager, 88

WITH clause

- backups and, 333–335
- restoration and, 342–345

witness roles, database mirroring, 424

WMI event alerts, 311–312

Workgroup Edition

- features, 5–6
- flexibility in, 7
- software requirements, 27–28

working sets counters, performance optimization, 365

WSDL argument, 243

X

XLST (XML Stylesheet), 495

XML (Extensible Markup Language)

- discussed, 2
- overview, 9

XML API, event collection process, 492

XML data type, 101

XML indexes

- primary, 138–140
- secondary path, 140
- secondary property, 141
- secondary value, 141

XML Schema Definition (XML), 244

XML section, Text Editor configuration, 72

XML Task, control flow, 477

XML Stylesheet (XLST), 495

XMLA (Extensible Markup Language for Analysis), 9

`xp_instance_regwrite` extended stored procedure, 177

XSD (XML Schema Definition), 244

Z

Zoom feature, Database Diagram toolbar, 60