

Index

Symbols

64-bit Enterprise Edition, 8

**64-bit support, SQL Server
Express, 192**

A

accessing managed provider, 153

Accumulate(), 153

**ACID (Atomicity, Consistency,
Isolation, Durability), 15**

activation, SQL Service Broker, 171

actual value, 215

ADF (application definition file), 64

ADO.NET, 153

advancements in SQL Server 2005, 8

aggregate functions, 295

ALTER LOGIN, 269

AMD, 8

Analysis Services, 2, 66-69, 197-199

architecture, 199-201

authorization, 68

Business Intelligence Wizard, 207-208

cell-level security, 70

comparing components, 198

Cube Wizard, 206

cube-level security, 70

data mining, 33, 220-222

dimension-level security, 70

DSV, 204-206

Intellicube, 199

KPIs, 215

localization of data representation, 208

MDX language, 216

metadata, 209

mining structures and mining
models, 70

OLAP data access models, 209-210

overview of, 30-32

proactive caching, 210-211, 213

real-time BI, 210-211, 213

relational features for data warehousing,
34, 217

CTE (Common Table

Expressions), 217

online index operations, 219-220

PIVOT/UNPIVOT, 218-219

SI (snapshot isolation), 220

table partitioning, 219

TOP operator, 218

security, 216-217

SQL Server 2000, 30

storage, 208

storage considerations, 213-215

stored procedures, 71

UDM, 33, 201-204

**Analysis Services Scripting Language
(ASSL), 209**

analytic functions, 247-249

ANONYMOUS, end points, 63

**API (application programming
interface), 176**

AppDomain, 65, 149

application definition file (ADF), 64

**application programming interface
(API), 176**

application servers, 167-169

- databases as, 15-18
 - Notification Services, 173-174
 - custom event providers*,
 - EventLoaderClass*, 178
 - deployment scenarios*, 175-176
 - event and scheduled notification generation*, 179
 - event submission SQL Server stored procedures*, 178
 - fall behind recovery handling*, 179
 - FileSystemWatcherProvider*, 177
 - notification application state management*, 179
 - notification digest*, 180
 - notification multicast*, 180
 - SQL Server Event Provider*, 177
 - Subscriber Management API*, 176
 - SubscriberDevice Management API*, 177
 - TimeZone class*, 180
 - XSLT content formatter*, 180
 - SQL Service Broker, 169, 181
 - in SQL Server 2004, 168
 - application services, Notification Services, 181**
 - applications and database encryption, 61**
 - APPLY, 250-251**
 - architecture**
 - Analysis Services, 199-201
 - Reporting Services, 232-234
 - SSIS, 223-224
 - assemblies, 274-275**
 - ASSL (Analysis Services Scripting Language), 209**
 - asymmetric keys, 54, 57**
 - Atomicity, 15**
 - authentication, principle of least privileges, 46-47**
 - authorization**
 - Analysis Services, 68
 - principle of least privileges, 47-51
 - automatic client-side redirect, 135**
 - automatic MOLAP, 211**
 - availability, 18, 126**
 - general data availability. *See* general data availability
 - high-availability, 126, 129
 - comparing solutions*, 128
 - database mirroring*, 131-136
 - failover clustering*, 130
 - SQL Server Replication, 122
- B**
- BAB (Binary Adjacent Broker), 171**
 - backup and restore enhancements, 28**
 - VLDB, 119
 - checksum integrity checks*, 119
 - fast recovery*, 120
 - full-text catalog inclusion*, 121
 - mirrored backups*, 120
 - online restore*, 120
 - Backup Database Wizard, 90**
 - backward compatibility, SSIS, 230-231**
 - BCP (bulk copy program), 182**
 - benefits of SQL Server 2005, 1-2**
 - BI (business intelligence), 1, 66, 197**
 - database administrators, 242-243
 - DBAs and, 143
 - features of, 198
 - overview of SQL Server 2005, 29-30
 - real-time BI, 210-211, 213
 - SQL Server Replication, 122
 - bidirectionality (bidi) of text, 183**
 - Binary Adjacent Broker (BAB), 171**
 - blocks, TRY/CATCH blocks, 246**
 - Books Online Internet search, 93**
 - bulk copy program (BCP), 182**
 - Business Intelligence Development Studio, 147, 241-242**
 - Business Intelligence Wizard, Analysis Services, 207-208**
- C**
- CA (certificate authority), 58**
 - caching**
 - interval settings, 212
 - proactive caching, Analysis Services, 200, 210-211, 213

- calculated measures, UDM, 204**
- catalog views**
 - database catalog views, 106-107
 - partition function catalog views, 106
 - server-wide configuration catalog views, 106
- cell-level security, 70**
- certificate authority (CA), 58**
- certificates, 53-54**
 - asymmetric keys, 54
 - CREATE, 274
 - RESTORE, 274
 - signing packages with, 73
 - symmetric keys, 55-56
 - Transact-SQL security, 273-274
- change management, 94**
- characters, surrogate characters, 184**
- CHECK constraints, 260**
- checksum, 28, 119**
- checksum integrity checks, 119**
- classes**
 - Subscriber class, 176
 - Subscriber Enumeration class, 176
 - SubscriberDevice class, 177
 - SubscriberDeviceEnumeration class, 177
 - TimeZone class, 180
- client initiated, 213**
- CLOSE ALL KEYS, 59**
- CLR (Common Language Runtime), 18, 145**
 - DBA and, 140
 - integration, 140-143
- CLR integration, .NET Framework, 148**
- columns, persisted computed columns (Transact-SQL), 265-266**
- combining characters, 183**
- commands**
 - CLOSE ALL KEYS, 59
 - OPEN MASTER KEY DDL, 59
 - SETUSER, 269
- Common Language Runtime. *See* CLR**
- Common Table Expressions (CTE), 217, 253**
- comparing**
 - Analysis Services components, 198
 - event notifications and triggers, 114
 - HA solutions, 20
 - high-availability solutions, 128
 - relational and OLAP reporting in SQL Server 2000, 31
 - user and schema ownership, 49
- compatibility, backward compatibility (SSIS), 230-231**
- complex script enabling, 184**
- components, comparing (Analysis Services components), 198**
- configuring SQL Server Express, 192-194**
- connection dialog, 87**
- Consistency, 15**
- constrained XML data types, 161**
- CONTAINSTABLE query, 186**
- contextual shaping, 183**
- control flow, SSIS, 227-228**
- conversation groups, SQL Service Broker, 170**
- CREATE certificate, 274**
- Create Database dialog, SQL Server Management Studio, 88-89**
- CREDENTIAL, 268**
- CROSS APPLY, 250**
- CTE (Common Table Expressions), 217, 253**
- Cube Wizard, Analysis Services, 206**
- cube-level security, 70**
- Current Activity window, 113**
- custom delivery protocol, 181**
- custom event providers, 178**
- customizable installation path, 98**
- customizing SQL Server Management Studio, 91**

D

DAC (Dedicated Administrator Connection), 37

data access interfaces, 2

data availability, 19

Data Definition Language (DDL), 27, 149

data destination adapters, 227

data flow, SSIS, 224, 226-227

Data Flow Engine, 224

Data Flow Pipeline (DFP), 224

data guardians, 41

Data Manipulation Language (DML), 17, 164

Data Manipulation Language (DML) trigger, 260

data mining, 33, 220-222

data mining dimension, 202

data partition tuning, 112

data source adapters, 225

Data Source View Wizard, 206

data source view. *See* DSV

Data Transformation Services (DTS), 2, 34, 222

data warehousing, relational features, 34, 217

CTE (Common Table Expressions), 217

online index operations, 219-220

PIVOT/UNPIVOT, 218-219

SI (snapshot isolation), 220

table partitioning, 219

TOP operator, 218

database administrator. *See* DBA

database alerts, 109

database catalog views, 106-107

database data encryption, 60-61

database encryption and applications, 61

database engine enhancements, 1

Database Mail, 115

Database Mail Configuration Wizard, 116

database master key, 58-59

database mirroring, 19-23, 64, 131-134

automatic client-side redirect, 135

database states, 134-135

scenarios, 22

database objects (DBOs), 47-48

database roles, Analysis Services, 69-70

database scalability. *See* scalability

Database Snapshot, 95-96

database states, 134-135

database system availability, 19

Database Tuning Advisor (DTA), 112-113

database-level roles in SSIS, 72

databases

as application servers, 15-18

creating in SQL Server Management Studio, 88-89

relational databases, 156-157

datawarehousing, SQL Server Replication, 122

DBA (database administrator), 41, 83

BI and, 143, 242-243

CLR and, 140

integration, 140-143

role of, 84

DBCS (double-byte character system), 184

DBO (database object), 47

DCOM (Distributed Component Object Model), 16

DDL (Data Definition Language), 27, 149

DDL triggers, 258-261

deadlock traces, 108-109

Dedicated Administrator Connection (DAC), 37

default trace, 37

DENSE_RANK, 248

deployment, Reporting Services, 240

deploying packages, SSIS, 229
designing reports, Reporting Services, 234
destinations, 224
DFP (Data Flow Pipeline), 224
dialog security, 65
 SQL Service Broker, 172
dialogs, SQL Service Broker, 170
dimension-level security, 70
dimensions, UDM, 202
disk I/O errors, 119
Distributed Component Object Model (DCOM), 16
Distributed Partition Views (DPVs), 13, 117
Distributed Transaction Coordinator (DTC), 100
DML (Data Manipulation Language), 17, 164
DML (Data Manipulation Language) triggers, 260-262
DML with results, 262
DMVs (Dynamic Management Views), 37, 110-111, 277-279
DontSaveSensitive, 74
double-byte character system (DBCS), 184
DPVs (Distributed Partition Views), 13, 117
Dr. Watson integration, 99
DSV (data source view), 32, 38, 200
 Analysis Services, 204-206
DTA (Database Tuning Advisor), 112-113
DTC (Distributed Transaction Coordinator), 100
DTS (Data Transformation Services), 2, 34, 222
Durability, 15
Dynamic Management Views (DMVs), 37, 110-111, 277-279

E

e-commerce applications, 14
EE (Enterprise Edition), 4
EFS (Encrypted File System), 60
EncryptAllWithPassword, 74
EncryptAllWithUserKey, 74
encrypting SSIS packages, 74-75
encryption, 44, 56-57
 database data encryption, 60-61
 database master key, 58-59
 key management in SQL Server 2005, 60
 service key, 59
 SSL and SQL Server Encryption, 61-62
 Transact-SQL security, 273-274
EncryptSensitiveWithPassword, 74
EncryptSensitiveWithUserKey, 74
end points, HTTP, 165-166
end-point security, 62
 database mirroring, 64
 Notification Services, 63
 SQL Service Broker, 65
 Web Services, 63
Enterprise Edition (EE), 4
error capturing and manipulation, 226
error handling, SSIS, 228-229
errors, disk I/O errors, 119
ETL (extraction, transformation, and loading), 71
ETL tools, 223
event notifications
 reactive monitoring and, 113-115
 versus triggers, 114
event providers, 175
event submission, Notification Services, 177-178
event submission SQL Server stored procedures, 178
event subscriptions, 179
EventLoaderClass, 178
events, Notification Services, 174
execute as caller, 52

execute as owner, 52
execute as principal, 52
execute as self, 52
execution context, 44, 48, 51-52
explicit impersonation, 53
exposed state, 135
extending HA to all database applications, 22
Extensible Markup Language.
 See XML
Extensible Stylesheets Language Transformation (XSLT), 180
extensions for queuing support (Transact-SQL), 262-264
External_Access, 149
extraction, transformation, and loading (ETL), 71

F
fact dimension, 202
failover clustering, 19-21
 HA (high-availability), 130
failure reporting, 98-99
fall behind recovery handling, 179
fast recovery, 120
File delivery protocol, 181
FILE path, 274
filegroups, creating, 118
FileSystemWatcherProvider, 177
FOR XML, 162-163
full-text catalog inclusion, 121
Full-Text Search, 37, 185
 indexing XML data types, 187
 linked server queries, 185
 queries versus views, 187
 searching across multiple columns, 186
 specifying language of queries, 186

functions
 aggregate functions, 295
 string functions, 296
fuzzy lookup and grouping, 226

G
GB18030, 184
general data availability
 materialized views, 27
 online indexing, 27
 Snapshot isolation, 24-25
 table partitioning, 26
GLBA (Gramm-Leach-Bliley Act), 29
goal value, 215
GRANT EXECUTE, 271
granular permission control, 44
greater parallelization of data flow, 226
groups, partition groups, 127

H
HA (high-availability), 19, 21, 126, 129
 comparing solutions, 20, 128
 comparing Standard Edition and Enterprise Edition for HA solutions, 21
 database mirroring. *See* database mirroring
 extending to all database applications, 22
 failover clustering. *See* failover clustering
 log backup shipping. *See* log backup shipping

help, SQL Server Management Studio, 93
heterogeneous data targeting after transformation, 226
high availability. *See* HA
High-Protection mode, 134
HIPAA (Health Insurance Portability and Accountability Act), 29
HOLAP (hybrid OLAP), 213
 storage, 215
horizontal data partitioning, 26
HTTP, end points, 165-166
HTTP Extensions delivery protocol, 181

HTTP/S (Hypertext Transfer Protocol/Secure), 125

I-J

IIS (Internet Information Services), 125

impersonation, 44, 52-53

implicit impersonation, 52

incremental MOLAP, 211

index partitioning, VLDB, 118

Index Tuning Wizard, 112

**indexed view, 139-140. *See also*
materialized views**

Transact-SQL, 264-265

indexing

online index operations, 219-220

online indexing, 27

XML data type columns, 161-162

XML data types, Full-Text Search, 187

infrastructure management, 94-95

Database Snapshot, 95-96

Dr. Watson integration, 99

Setup, 97

Consistency Checker, 98

customizable installation path, 98

failure reporting, 98-99

Windows Installer, 97

Init(), 153

**installing SQL Server Express,
192-194**

integrating

CLR, 140-143

.NET Framework, 147-148

*choosing between Transact SQL and
managed code, 150*

SQL Server as a runtime host, 149

UDAggs, 152-153

UDTs, 150-151

user-defined functions, 152

Visual Studio, 146-147

SQL Server Express, 188-189

Intellicube, 199

interapplication communication, 15

international features, 183-185

**international support, SQL Server
Express, 192**

**Internet Information Services
(IIS), 125**

**Internet Server Application
Programming Interface
(ISAPI), 125**

IPSec (Internet Protocol Security), 62

**ISAPI (Internet Server Application
Programming Interface), 125**

**ISO SQL-2003 standard XML data
types, 160**

isolated state, 135

Isolation, 15

isolation levels, 25

K

Kerberos 5.0, 62

**key management in SQL
Server 2005, 60**

Key Performance Indicators. *See* KPIs

keyboard schemes, changing, 91

keys

asymmetric keys, 54, 57

database master key, 58-59

service key, 59

symmetric keys, 55-57

keywords, MAX, 246-247

**KPIs (key performance indicator),
32, 215**

Analysis Services, 201, 215

L

**languages supported in SQL Server
2005, 289-290**

large object (LOB), 246-247

**limitations of SQL Server Express,
191-192**

**linked server queries, Full-Text
Search, 185**

LOB (large object), 246-247

Local Security Authority (LSA), 46

**localization of data representation,
Analysis Services, 208**

304 Index

log backup shipping, 19-20, 24
 automatic client-side redirect, 136
login, 269
LSA (Local Security Authority), 46

M

mail, Database Mail, 115
maintaining VLDB, 28
manageability, SQL Server
 Replication, 122
managed code, 65-66
 versus Transact-SQL, 150
managed provider, 153
 accessing, 153
 Managed SQL types, 154-155
Managed SQL types, 154-155
management
 infrastructure management. *See*
 infrastructure management
 operations management, 100-101
 remote management. *See* remote
 management
management tools, 2
managing reports, Reporting
 Services, 238
many-to-many, 202
materialized views, 27
MAX keyword, 246-247
MDX (Multidimensional Expression),
 32, 201
MDX (multidimensional expression)
 language, 216
measure groups, UDM, 204
Merge Agent, 127
merge replication, 127
Merge(), 153
message transport, SQL Service
 Broker, 171
messaging, SQL Service Broker,
 169-171
 in databases, 171-172
metadata, Analysis Services, 209
metadata security, 53

Microsoft Association, 221
Microsoft clustering, 221
Microsoft Decision Trees, 221
Microsoft Desktop Engine
 (MSDE), 4, 187
Microsoft Management Console
 (MMC), 54
Microsoft Naïve Bayes, 221
Microsoft Sequence Clustering, 221
Microsoft Time Series, 221
Microsoft.SQLServer.Notification
 Services.dll-NSService.exe, 174
mining models, 70
mining structures, 70
mirror, 133
mirrored backups, 120
MMC (Microsoft Management
 Console), 54
mobility, SQL Server Replication, 122
MOLAP, 211
 storage, 214
MOLAP (multidimensional OLAP),
 12, 210
monitor server, 24
monitoring, server monitoring. *See*
 server monitoring
MSDE (Microsoft Desktop Engine), 4,
 187-188
 versus SQL Server Express, 190
MSSearch, 185
multidatabase tuning, 112
Multidimensional Expression
 (MDX), 32, 201
multidimensional expression (MDX)
 language, 216
multidimensional OLAP (MOLAP),
 12, 210
multiple valued dimensions, 202
MySQL, 187

N

name resolution, 47
named pipes, SQL Server Express, 195

- native XML data types, 158**
 - Native XML Web Services, 17, 164-166**
 - .NET, managed code, 65**
 - .NET Framework, integrating, 147-148**
 - choosing between Transact-SQL and managed code, 150
 - SQL Server as a runtime host, 149
 - UDAggs, 152-153
 - UDTs, 150-151
 - user-defined functions, 152
 - nonmodal dialogs, 37, 90-91**
 - Nonuniform Memory Architecture (NUMA), 10**
 - notification application state management, 179**
 - notification digest, 180**
 - notification distributors, 176**
 - notification formatting, 180**
 - notification generation, 179-180**
 - notification generators, 176**
 - notification multicast, 180**
 - Notification Services (NS), 2, 16, 63, 168, 173-174**
 - custom delivery protocol, 181
 - custom event providers,
 - EventLoaderClass, 178
 - deployment scenarios, 175-176
 - event and scheduled notification generation, 179
 - event submission SQL Server stored procedures, 178
 - fall behind recovery handling, 179
 - File delivery protocol, 181
 - FileSystemWatcherProvider, 177
 - HTTP Extensions delivery protocol, 181
 - notification application state management, 179
 - notification digest, 180
 - notification multicast, 180
 - SMTP delivery protocol, 181
 - SQL Server Broker, 181
 - SQL Server Event Provider, 177
 - Subscriber Management API, 176
 - SubscriberDevice Management API, 177
 - TimeZone class, 180
 - XSLT content formatter, 180
 - notifications, Notification Services, 174**
 - NS\$instance name, 63**
 - NS. *See* Notification Services**
 - NSControl.exe, 174**
 - NSEventBeginBatchEventClass Name, 178**
 - NSEventFlushBatchEventClass Name, 178**
 - NSEventSubmitBatchEventClass Name, 178**
 - NSEventWriteEventClassName, 178**
 - NSService.exe, 174**
 - ntext, 247**
 - NTILE, 248**
 - NUMA (Nonuniform Memory Architecture), 10**
 - numeric expressions, 218**
 - nvarchar, 246**
- O**
- Object Explorer, 87-88**
 - object-oriented programming (OOP), 17**
 - OLAP (Online Analytical Processing), 1**
 - OLAP cubes, 197**
 - OLAP data access models, Analysis Services, 209-210**
 - OLE DB, 209**
 - OLTP (Online Transaction Processing), 1**
 - overview of, 3
 - online index operations, 219-220**
 - online indexing, 27**
 - online restore, 120**
 - OOP (object-oriented programming), 17**

OPEN MASTER KEY DDL, 59
OPENXML, 163
 operating systems, support for SQL Server 2005 64-bit Edition, 10
 operational environments, securing, 73
 operations management, 100-101
 operators
 APPLY, 250-251
 CROSS APPLY, 250
 OUTER APPLY, 250
 PIVOT, 218-219, 251-253
 TOP, 218, 257-258
 UNPIVOT, 218-219, 251-252
Opteron chipset, 8
Oracle Publishing, 125
OUTER APPLY, 250
 ownership chaining, 52
P-Q
package-level security, 72
packages
 deploying in SSIS, 229
 signing with certificates, 73
PARTITION FUNCTION, 283
partition function catalog views, 106
partition groups, 127
partition scheme, 117, 283
partitioning
 horizontal data partitioning, 26
 index partitioning, VLDB, 118
 table partitioning, 26, 137, 219
 VLDB, 117-118
 vertical partitioning, 137
partitioning columns, 117
partitions, 248
password complexity, 45
password expiration, 46
password policy enforcement, 44-46
PATH index, 162
peer-to-peer replication, 124
performance, SQL Server Replication, 122, 125
permissions, 51

persisted computed columns,
 Transact-SQL, 265-266
perspectives, UDM, 202-203
PIVOT, 218-219, 251-253
polling, 213
ports, used by SQL Server, 77
primary database, log backup shipping, 24
PRIMARY KEY, 265
principal, 133
principals, 50
principle of least privileges, 44, 46
 authentication, 46-47
 authorization, 47-51
proactive caching, 32, 38, 200
 Analysis Services, 210-211, 213
proactive monitoring, 105, 111-112
 Current Activity window, 113
 Database Mail, 115-116
 Database Tuning Advisor, 112-113
 event notifications and reactive monitoring, 113-115
processors, support for SQL Server 2005, 289
programmability, SQL Server Replication, 121
projects, SQL Server Management Studio, 92-93
PROPERTY index, 162
ProtectionLevel property, 74
protocols
 custom delivery protocol, 181
 File delivery protocol, 181
 File Extensions delivery protocol, 181
 SMTP delivery protocol, 181
 SQL Server Express, 194-195
public key encryption, 54, 57
QE (Query Editor), 85, 89-90
queries
 recursive queries, 253-257
 specifying language of, Full-Text Search, 186
 versus views, Full-Text Search, 187
queues, SQL Service Broker, 170

R**RANK, 247-248****RDBMS (Relational Database Management System), 16, 167****RDL (Report Definition Language), 237****rea, 26****reactive monitoring, 105**

- database catalog views, 106-107
- DMVs (Dynamic Management Views), 110-111
- event notifications, 113-115
- exportable showplans and deadlock traces, 108-109
- SQL Server Profiler, 107-108

read committed, 25**read uncommitted, 25****READ-COMMITTED, 280****reading order, international features, 184****READPAST for UPDATE/DELETE, 262****real-time ROLAP, 211****Really Simple Syndication (RSS), 18, 156****recursive queries, 253-257****reference dimension, 202****Relational Database Management System (RDBMS), 16, 167****relational databases, XML, 156-157****relational features for data warehousing, 34****relational OLAP (ROLAP), 210****remote management, 102**

- SMO, 102, 104
- SQLCMD, 102-104
- WMI (Windows Management Instrumentation), 102, 104-105

repeatable read, 25**Replication, 16, 168****replication**

- merge replication, 127

peer-to-peer replication, 124

snapshot replication, 127

transaction replication, 127

replication enhancements, 2**replication management in complex topology, 123****Replication Monitor, 123****replication specifications, 288****replication support, SQL Server Express, 191****replication. *See* SQL Server Replication****Report Builder, 36, 38, 235-236, 240****Report Definition Language (RDL), 237****report execution, Reporting Services, 237-238****Report Model Designer, 235****Report Model Wizard, 235****Report Viewer, 237****reporting, 29****Reporting Services, 2, 35-36, 75, 168, 197, 240-241**

- architecture, 232-234
- component dependencies, 232
- configuration manager, 239-240
- deployment, 240
- designing reports, 234
- managing reports, 238
- RDL, 237
- Report Builder, 235-236
- report execution, 237-238
- Report Model Designer, 235
- Report Viewer, 237

reports, managing with Reporting Services, 238**RESTORE, certificates, 274****restore processing, 28****restore verification, 28****ROLAP (relational OLAP), 210**

- real-time ROLAP, 211
- storage, 214

role playing dimension, 202

ROW_NUMBER, 248

RSS (Really Simple Syndication),
18, 156

runtime hosts, SQL Server as, 149

S

SAC (Surface Area Configuration)
tool, 76

SAFE, 149

Sarbanes-Oxley (SOX) Act, 29

scalability, 12-14

SQL Server Replication, 122, 125

scale-out, 4

scale-up, 4

scaling SSIS, choosing between 32-bit
and 64-bit hardware platforms,
229-230

SCC (Setup Consistency Checker), 98

scheduled MOLAP, 211

scheduled subscriptions, 179

schemas, 47

scripts, 183

searching across multiple columns,
Full-Text Search, 186

secondary server, 24

securables, 50-51

Secure by Default, 43

Secure by Design, 43

Secure in Deployment, 43

securing servers, 76

SQL Browser Service, 77

SQL Server Configuration Manager, 78

SQL Server Surface Area Configuration
tool, 79-81

securing operational environments, 73

security

Analysis Services, 66-69, 216-217

authorization, 68

cell-level security, 70

CLR stored procedures, 71

cube-level security, 70

dimension-level security, 70

mining structures and mining
models, 70

database-level roles in SSIS, 72

end-point security, 62

database mirroring, 64

Notification Services, 63

SQL Service Broker, 65

Web Services, 63

managed code, 65-66

metadata security, 53

package level security (SQL Server
Integration Services), 72

Reporting Services, 75

signing packages with certificates, 73

SQL Service Broker, 172-173

SSIS packages, encrypting, 74-75

Transact-SQL, 268-272

certificates, 273-274

encryption, 273-274

logins, 269

use of roles, 272

security features (SQL Server
Engine), 44

certificates and SSL, 53-54

asymmetric keys, 54

symmetric keys, 55-56

encryption, 44, 56-57

database data encryption, 60-61

database master key, 58-59

key management in SQL Server
2005, 60

service key, 59

SSL and SQL Server Encryption,
61-62

execution context, 44, 51-52

granular permission control, 44

impersonation, 44, 52-53

password policy enforcement, 44-46

principle of least privileges, 44, 46

authentication, 46-47

authorization, 47-51

- separation of users and schema, 44
- security features (SQL Server Integration Services), 71**
 - database-level roles in SSIS, 72
 - encrypting SSIS packages, 74-75
 - package-level security, 72
 - Reporting Services, 75
 - securing operation environments, 73
 - signing packages with certificates, 73
- security principals, 50**
- separation of users and schema, 44**
- serializable, 25**
- server monitoring, 105**
 - proactive monitoring, 105, 111-112
 - Current Activity window, 113*
 - Database Mail, 115-116*
 - Database Tuning Advisor, 112-113*
 - event notifications and reactive monitoring, 113-115*
 - reactive monitoring, 105
 - database catalog views, 106-107*
 - DMVs (Dynamic Management Views), 110-111*
 - exportable showplans and deadlock traces, 108-109*
 - SQL Server Profiler, 107-108*
- server roles, Analysis Services, 69**
- Server Surface Area Configuration (SSAC) tools, 194**
- server-wide configuration catalog views, 106**
- servers**
 - monitor server, log backup shipping, 24
 - secondary server, log backup shipping, 24
 - securing, 76
 - SQL Browser service, 77*
 - SQL Server Configuration Manager, 78*
 - SQL Server Surface Area Configuration tool, 79-81*
- ServerStorage, 75**
- service key, 59**
- Service Oriented Database application (SODA), 167**
- Service-Oriented Architecture (SOA), 16, 167**
- Setup, 96-97**
 - Consistency Checker, 98
 - customizable installation path, 98
 - failure reporting, 98-99
 - Windows Installer, 97
- Setup Consistency Checker (SCC), 98**
- Setup Wizard, 97**
- SETUSER command, 269**
- shared memory, SQL Server Express, 195**
- shared secret keys, 55-57**
- showplans, 108-109**
- SI (snapshot isolation), 24-25, 137-139, 220**
- signing packages with certificates, 73**
- SMO (SQL Server Management Objects), 86, 102, 104**
- SMTP delivery protocol, 181**
- snapshot replication, 127**
- SOA (Service-Oriented Architecture), 16, 167**
- SODA (Service-Oriented Database application), 167**
- source control, 95**
- source control systems, SQL Server Management Studio, 92-93**
- sources, 224**
- SOX (Sarbanes-Oxley) Act, 29**
- specifications**
 - maximum size and number for objects
 - in SQL Server 2005 or Transact-SQL statements, 285-286
 - replication specifications, 288
 - for SQL Server Mobile Edition, 288
- SQL Browser, 194**
- SQL Browser service, 77**
- SQL Computer Manager, 100-101**
- SQL Native Client, SQL Server Express, 195**

- SQL Server 2000, Analysis Services, 30**
- SQL Server 2000 64-bit Edition versus SQL Server 2005 64-bit support, 8-12**
- SQL Server 2000 64-bit Enterprise Edition, 7-8**
- SQL Server 2005**
 - advancements in, 8
 - data mining, 220-222
 - key management, 60
 - overview of BI, 29-30
- SQL Server 2005 64-bit Edition**
 - operating system support for, 10
 - versus SQL Server 2000 64-bit Edition, 8-12
- SQL Server 2005 Enterprise Edition, 4**
- SQL Server Agent, 101**
- SQL Server Analysis Services. *See* Analysis Services**
- SQL Server Broker, notification delivery, 181**
- SQL Server Business Intelligence Development Studio, 197-198**
- SQL Server Compact Edition (SSCE), 6**
- SQL Server Configuration Manager, 78**
- SQL Server Encryption and SSL, 61-62**
- SQL Server Enterprise Edition versus SQL Server Standard Edition, 4-5**
- SQL Server Event Provider, 177**
- SQL Server Express, 187-188**
 - installation and setup, 192-194
 - limitations of, 191-192
 - versus MSDE, 190
 - protocols, 194-195
 - sizing up, 189-191
 - Visual Studio integration, 188-189
- SQL Server Expression, 5-6**
- SQL Server Integration Services. *See* SSIS**
- SQL Server Management Objects. *See* SMO**
- SQL Server Management Studio, 85, 147, 198, 241**
 - connection dialog, 87
 - Create Database dialog, 88-89
 - creating tables, 89
 - customizing, 91
 - help, 93
 - nonmodal dialogs, 90-91
 - Object Explorer, 87-88
 - projects, 92-93
 - Query Editor, 89-90
 - SMO, 86
 - source control systems, 92-93
- SQL Server Management Objects, 102**
- SQL Server Mobile Edition, 6-7, 87, 181-183**
 - specifications, 288
- SQL server native types, 154**
- SQL Server Profiler, 107-108**
- SQL Server Replication, 121, 123**
 - availability, 122
 - business intelligence/
datawarehousing, 122
 - manageability, 122
 - mobility, 122
 - Oracle Publishing, 125
 - peer-to-peer replication, 124
 - performance, 122
 - performance and scalability, 125
 - programmability, 121
 - scalability, 122
 - web-based replication, 125
- SQL Server Reporting Services. *See* Reporting Services**
- SQL Server Security Configuration Manager tool, 76**
- SQL Server Standard Edition versus SQL Server Enterprise Edition, 4-5**

- SQL Server Surface Area Configuration tool, 79-81**
- SQL Server Workgroup Edition, 5**
- SQL Service Broker, 17, 65, 168-169**
 - messaging, 169-171
 - in databases, 171-172*
 - security, 172-173
 - SQL Server Express, 191
- SQL Service Broker (SSB), 16, 169**
- SQL types, 37**
- SQL-99**
 - isolation levels, 25
- SQLCMD, 102-104**
- SQLMail, 115**
- SQLTypes mappings, 155**
- SQLXML, 164**
- SSAC (Server Surface Area Configuration) tools, 194**
- SSB (SQL Service Broker), 16, 169**
- SSCE (SQL Server Compact Edition), 6**
- SSIS (SQL Server Integration Services), 34-35, 42, 198, 222-223**
 - architecture, 223-224
 - backward compatibility, 230-231
 - control flow, 227-228
 - data flow, 224, 226-227
 - deploying packages, 229
 - error handling, 228-229
 - scaling, choosing between 32-bit and 64-bit hardware platforms, 229-230
 - security features, 71
 - database-level roles in SSIS, 72*
 - encrypting SSIS packages, 74-75*
 - package-level security, 72*
 - Reporting Services, 75*
 - securing operational environments, 73*
 - signing packages with certificates, 73*
 - SSIS clients, 224
 - SSIS Run-time, 223
 - SSIS Service, 223
 - SSL, 53-54
 - asymmetric keys, 54
 - SQL Server Encryption and, 61-62
 - symmetric keys, 55-56
 - status, 215
 - storage, Analysis Services, 213-215
 - stored procedures, Analysis Services, 71
 - string functions, 296
 - Subscriber class, 176
 - Subscriber Enumeration class, 176
 - Subscriber Management API, 176
 - SubscriberDevice class, 177
 - SubscriberDevice Management API, 177
 - SubscriberDeviceEnumeration class, 177
 - subscription management application, Notification Services, 175
 - subscriptions
 - event subscriptions, 179
 - Notification Services, 174
 - scheduled subscriptions, 179
 - support for download-only articles, 182
 - support for partitioned articles, 183
 - Surface Area Configuration (SAC) tool, 76
 - surrogate characters, 184
 - suspended state, 135
 - symmetric keys, 55-57
 - synchronizing state, 135
 - synonyms, 37, 267-268
 - system maintenance, 18
 - system tables and views in SQL Server 2005, 291-293

312 Index**T**

table partitioning, 26, 137, 219, 281-284

VLDB, 117-118

table sample clause, 249

tables

creating in SQL Server Management Studio, 89

system tables and views in SQL Server 2005, 291-293

TCP/IP, SQL Server Express, 195

Terminate(), 153

text, 247

Time-bound tuning, 112

TimeZone class, 180

tools

ETL, 223

SAC tool, 76

SQL Server Security Configuration Manager tool, 76

SSAC tools, 194

TOP, 257-258

TOP operator, 218

topologies, peer-to-peer replication, 124

torn page detection, 119

trace events, 213

traces, deadlock traces, 108-110

Transact-SQL, 245

APPLY operator, 250-251

assemblies, 274-275

database features to turn off, 279-280

DDL triggers, 258-261

DML, 261-262

DMVs, 277-279

extensions for queuing support, 262-264

indexed views, 264-265

LOB, 246-247

versus managed code, 150

new analytic functions, 247-248

persisted computed columns, 265-266

PIVOT operator, 251-253

recursive queries, 253-257

security, 268-272

certificates, 273-274

encryption, 273-274

logins, 269

use of roles, 272

synonyms, 267-268

table partitioning, 281-284

table sample clause, 249

TOP, 257-258

UNPIVOT operator, 251-252

XML, 276

XML Web Services, 277

transaction exception handling, 246

Transaction level, 280

transaction messaging, SQL Service Broker, 171

transaction replication, 127

transformations, 34, 224, 226

transport security, 65

SQL Service Broker, 173

triggers

DDL triggers, 258-261

DML triggers, 260-262

versus event notifications, 114

Trustworthy Computing Initiative, 43

TRY/CATCH blocks, 246

tuning Database Tuning Advisor, 112

turning off database features,

Transact-SQL, 279-280

U

UDAggs (user-defined aggregates), 152

integrating .NET Framework, 152-153

UDM (Unified Dimensional Model), 30, 32

Analysis Services, 33, 201-203

measure groups, 204

perspectives, 203

dimensions, 202

perspectives, 202

UDTs (user-defined data types), 150

integrating .NET Framework, 150-151

Unicode, 184

Unified Dimensional Model. *See* UDM
UNIQUE, 265
UNPIVOT, 218-219, 251-252
UNSAFE, 149
untyped XML data types, 160
use of roles, Transact-SQL
 security, 272
user-defined aggregates (UDAggs), 152-153
user-defined data types (UDTs), 150-151
user-defined functions, integrating .NET Framework, 152
user/schema separation, 49

V
VALUE index, 162
varbinary, 246
varchar, 246
 and XML column comparisons, 159
versioning of BI for SQL Server 2005, 30
vertical partitioning, 137
Very Large Database. *See* VLDBs
views
 indexed views, Transact-SQL, 264-265
 versus queries, Full-Text Search, 187
Visual Basic.NET Express, 189
Visual C# Express, 189
Visual C++ Express, 189
Visual J# Express, 189
Visual Studio, integrating, 146-147
 SQL Server Express, 188-189
Visual Web Developer, 189
VLDBs (Very Large Databases), 116
 backup and restore enhancements, 119
 checksum integrity checks, 119
 fast recovery, 120
 full-text catalog inclusion, 121
 mirrored backups, 120
 online restore, 120
 index partitioning, 118
 maintaining, 28
 table partitioning, 117-118

W

WAITFOR, 262
Web Service Description Languages (WSDLs), 277
Web Services, 63
 native XML Web Services, 164-166
web-based replication, 125
Windows Enterprise Data Center 2003
 64-bit Edition, 8
Windows Installer, 97
Windows Management Instrumentation (WMI), 102
Windows on Windows (WOW), 8, 192
Windows Script Host (WSH), 105
witness, 133
wizards
 Backup Database Wizard, 90
 Business Intelligence Wizard, 207-208
 Cube Wizard, 206
 Data Source View Wizard, 206
 Database Mail Configuration Wizard, 116
 Index tuning Wizard, 112
 Intellicube, 199
 Report Model Wizard, 235
 Setup Wizard, 97
WMI (Windows Management Instrumentation), 102, 104-105
word breaking and justification, international features, 183
Workgroup, 4
WOW (Windows on Windows), 8, 192
WSDLs (Web Service Description Languages), 277
 XML, 166
WSH (Windows Script Host), 105

X-Y-Z
XDR (XML-Data Reduced), 159
XML (eXtensible Markup Language), 3, 146, 156
 choice of XML technology, 158-159
 as a datasource, transformations, 226

314 **Index**

DML, 164
FOR XML, 162-163
native XML Web Services, 164-166
OPENXML, 163
relational databases, 156-157
Transact-SQL, 276
 XML Web Services, 277
WSDL, 166
XQuery, 163

**XML columns and varchar
comparisons, 159**

XML data types, 157, 160
constrained XML data types, 161
indexing XML data type columns,
161-162
untyped XML data types, 160

XML Query (XQuery), 37, 160

XML Query Language, 163

XML schemas, 160

XML view, 159

**XML Web Service, Reporting
Services, 234**

XML Web Services, 17, 168
Transact-SQL, 277

XML-Data Reduced (XDR), 159

XML/A, 38, 209

XQuery (XML Query Language), 163

**XSLT (Extensible Stylesheets
Language Transformation), 180**

XSLT content formatter, 180