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
authorization, principle of least
privileges, 46-47
authentication, principle of least
privileges, 46-47
BACKUP, 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
authorization, principle of least
privileges, 46-47
authentication, principle of least
privileges, 46-47
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
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

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

cell-level security, 70

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, 265

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 (DOBs), 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
data warehousing, 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
encrypt all with password, 74
encrypt all with userkey, 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

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

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
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
Intelllicube, 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
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
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
NSEventWriteEventClass Name, 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
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
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
PROTECTION index, 162
PUBLIC key encryption, 54, 57
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
cryptography, 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
cryptography, 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 environ-
    ments, 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
### 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
- **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
- **Transaction 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
  - turning off database features, **Transaction 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
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