Index

A
Administration notification log, 163–164
AIX and DB2 UDB, 4
AIX5.2B support, 172
ALLOW READ ACCESS, 103–104
ALTER TABLESPACE statement, 141, 142f
and rebalancer, 162
ANDing, 40–42
APIs (administrative application programming inter-
faces), 149
snapshot functions, 191–194
Apply enhancements
program optimization, 343–344
target-key columns (replicating changes), 342
transaction commit frequency, 342
ARAM (Automatic Relationship and Association), 94
ASNLOAD exit routine, 343

B
BCP (Bulk Copy Program)/Sybase text file format
and data movement utilities, 169
BERNOULLI sampling, 209–211
BI (business intelligence), 3
IBM’s direction, 8
see also DB2 UDB Data Warehouse Edition
BID (Block ID), 30
BIND command, 260
Bit-filters selection, 95
Block-based buffer pools, 92–93
Buffer pools see Dynamic memory allocation/online
reconfiguration

C
CA (Configuration Assistant), 115–118
CALL statement, 200–201
Capture enhancements
concurrent, 340
multiple instances, 340–342
operational parameters overrides, 337–338
program control, 337
pruning data, 340
recapturing control from replicas, 339
replication definitions/source tables and col-
umns dynamic update, 338–339
row capture (individual replication sources), 339
start modes, 338
CIM (Common Information Model), 298
Clustering index, 24
Compression, 57–58
COMPRESS SYSTEM DEFAULT option, 58
example, 60–63
identification of, 65
NULL, 57
row record format, 59–60
savings estimation, 66
supported data types, 64
VALUE COMPRESSION, 58–59
Configuration see DB2 database project/project con-
figuration and properties
Connection concentrator, 6
  activation, 76
  and connection management, 75–76
  max_connections, 76
  max_coordagents, 76
  num_poolagents, 76
  operation, 76–77
Consistency token, 259
Container operations, 141
  adding containers/no rebalancing, 145–146
  dropping containers from DMS table space, 143–144
  size reduction in DMS table space, 144–145
  table space maps, 141–143
CREATE INDEX statement, 52–54
CREATE/ALTER TABLE commands, 33, 58–59, 70, 80, 173
CRM (customer relationship management), 3
Cube Views, 10–11
CURSOR file type, 109

D
DADX (Document Access Definition Extension)
  files, 320, 322
  SQL operations, 320
  XML operations, 321
DAS (DB2 Administration Server), configuration
  parameters (online), 150
Data Connections folder see DB2 Data Connections folder
Data movement utilities, and OEM products, 169
Database monitoring, 83
  collection of timestamps issues, 83
  and Control Center performance monitor capability, 89
CREATE EVENT MONITOR statement, 84–85
  deadlock monitoring, 84
  SQL access to event monitor data, 84–85
  SQL access to snapshot monitor data, 86–88
Database project see DB2 database project
DATABASE_MEMORY (dynamic memory allocation/
  online reconfiguration), 148
DB2 Connect ASE (DB2 Connect Application Server Edition), 12
DB2 Data Connections folder, 270–271
  procedures and functions, 272
  and ADO.NET code, 272–273
  tables and views folder, 271
  and ADO.NET code, 272
DB2 database project, 268–269, 282, 296–297
  adding a database project, 283
  advanced scripting/script options, 290
  data grid output options, 291
  ignoring error options, 291
  platform restriction option, 292
  scripts and database transactions, 290
  statement separator option, 292
  test scripts, 290
build order, 296
  project items build order, 296
DB2 project scripts, 284–285
  procedure scripts, 285
DB2 reference section for a project, 283–284
  function scripts, 287–289
  generic scripts, 289–290
  project configuration and properties, 292–293
  file extensions, 294
  item properties, 294
  persisting properties, 294–295
  project properties, 293
  project dependencies, 295–296
  script template files, 269
  procedure script templates, 286
  script wizards, 269–270
  procedure script wizard, 287
DB2 UDB Data Warehouse Edition, 8
  BI platform, 8
  EE and SE editions, 11
  infrastructure, 9–10
  see also Cube Views; MOLAP
DB2 UDB Enterprise Server Edition, 8
  Connect component, 12–13
DB2 UDB Express, 5–6
  capabilities and benefits, 6–7
DB2 UDB Personal Edition, 5
DB2 UDB V8.1.2, 3
  extensibility features changes, 14
  DB2 Information Integrator (II), 15–16
  Query Patroller, 16–17
  Spatial Extender, 15
  text searching extenders, 14
  XML Extender, 14
  licensing and packaging changes, 5, 6f, 12,
    13–14, 17
  operating systems, 4, 4t–5
  release-specific data, 4
see also Container operations; Development Center; Dynamic memory allocation/online reconfiguration; Information Integrator; Package version identifiers; Replication enhancements; Tools; Utilities (online); Web services

DB2 UDB Workgroup Server/Workgroup Server Unlimited Editions, 7
db2fm, 139
db2Inspect API see INSPECT
db2stop, 138
DEADLOCKS, 84
Debugging/testing see Development Center
DECLARE GLOBAL TEMPORARY TABLE statement, 51
DECLARE statement, 55
Deferred binding, 259
Development Center, 217–218
areas, 234–235
debugging/testing, 236–238
Java stored procedures, 239–240
SQL PL debugging, 239
launching, 218–219
Project View, 219–224
object creation/manipulation, 235–236
stored procedure creation, 231
steps, 232–234
UDF creation, 224–225
definition panel, 226–228
function name panel, 225
options panel, 229–230
parameters panel, 228–229
return value panel, 228
summary panel, 230–231
see also SQL Assist tool
DGTT (declared global temporary table), 51–52
creating a temporary index, 53–54
default logging for rollback support, 54–55
index restrictions, 52–53
index support, 52
statistics support, 55
Distributed catalog cache, 91–92
DMTF (Desktop Management Task Force), 298
DPF (database partitioning feature), see DB2 UDB Enterprise Server Edition
DROP utility, 80
DSD (Dynamic System Domain) support, 172–173
Dynamic memory allocation/online reconfiguration, 147
configuration parameters (online), 149–150
CREATE/ALTER BUFFERPOOL statement, 147–148
memory customization, 148–149
E
ERP (enterprise resource planning), 3
F
Fault Monitor facility, 138–139
Federated Data Server, 307
Federated systems enhancements
Control Center administration of federated objects, 310, 311f
data manipulation (on data sources), 308
MQTs for data sources, 310
supported federated server platforms, 311
table manipulation (on data sources), 308
altering tables, 309–310
dropping tables, 310
table creation, 308–309
transparent DDL transaction restrictions, 310
see also WebSphere MQ integration enhancements
FLUSH PACKAGE CACHE, 261
FMC (fault monitor coordinator), 138
G
GRANT package privilege, 260
H
Health Center, 118–119
health indicator thresholds, 119–119
recommended actions, 123t–124t
recommended actions/example, 121–122
health monitor, 119
health snapshots, 194–196
High-water mark, 143
HISTORY command, 173–174
HP-UX and DB2 UDB, 4
IBM.Data.DB2, 278
Identity column support, 196
    identity column, 196–198
    sequences, 198–199
    uniqueness considerations, 199–200
Impact policy, 162
IMPORT utility, 80
Index reorganization, 153
    renaming existing indexes, 153
    see also Clustering index; MDC tables/indexes
Indoubt Transaction Manager, 135
    actions available, 137
    container, 136–137
    user interface, 135–136
Information Integrator, 307–308
    data sources available, 311–312
    see also Federated systems enhancements
Informational constraints, 67, 70
    and complex queries, 70
    considerations, 73
    example, 70–72
    redundancies, 69
    Star Schema, 68–69
    usage, 67–68
INSERT operator, with UNION ALL, 177–180
INSPECT, 153–154
    authority requirements, 154
    and customized error reporting, 155
    example, 155–156
    syntax, 154
INSTANCE_MEMORY (dynamic memory allocation/online reconfiguration), 148
INSTEAD OF triggers, 183–185
Java
    debugging/testing Java stored procedures, 239–240
    enhancements, 257–258
    Java-based routines/multithreading, 93–94
JDBC Universal Driver, 257–258
    and Type 2 connectivity, 258
    and Type 4 connectivity, 258
Join variations (new), 95

Linux, LDAP (Lightweight Directory Access Protocol) support, 171–172
Linux and DB2 UDB, 4
Load functions
    data loading from cursor, 109
    data loading into partitioned databases, 106–108
    LOAD IN PROGRESS table state, 105
    LOAD QUERY command, 106
    LOAD utility, 80
    online load, 103–104
    Load wizard, 109–114
    LOCK WITH FORCE, 105
Logging, 99
    diagnostic (improvements in), 102
    log chaining, 173
    transactional (improvements in), 99
    infinite active log space, 99–100
    log space, 99
    log space consumption, 100
    mirroring, 101
    performance improvements, 100
    transaction blocking (full logs), 101–102
    see also Administration notification log
    LPAR/DLPAR (dynamic) support, 172
MDC (multidimensional clustering) tables, 21–22, 31–33, 32f, 48–49
    benefits, 22
    creation, 33–34
    and DELETE operations, 46–47
    dimensions, 22
    selection of, 47–48
    and indexes, 35
    ANDing, 40–42
    composite block indexes, 38–40
    dimension block indexes, 35, 36f, 37–38
    operations, 40
    ORing, 42
    and INSERT operations, 44–46
    organization, 24–25, 25f
    and query SELECT operations, 43–44
    terminology, 26, 27f
    block, 29
    Block ID (BID), 30
block index, 29–30
block size/blocking factor, 29
cell, 28, 29f
dimension, 26, 28f
generated column, 30–31
MDC table, 26
monotonicity, 31
and OLAP, 22
slice, 26, 28, 28f
vs. traditional tables, 23–26
and UPDATE operations, 46
utilities, 48
Memory Tracker, 127–128
Memory Visualizer, 124–125
history view, 127
tree view, 126–127
MERGE SQL, 201–203
authorization, 208–209
error conditions, 207–208
IGNORING records, 206
MERGE syntax, 203–205
WHEN MATCHED logic, 205–206
Microsoft environment and DB2, 4, 263–264, 303;
Windows process model for replication enhancements, 335
ADO.NET sample code, 279
DB2 managed provider ADO.NET objects, 278
DB2 managed provider tools, 280
Command text editor, 281–282
Data Adapter Configuration Wizard, 280–281
Data Connection editor, 280
native managed .NET providers, 278
Visual Studio .NET, 265–266, 278
DB2 objects, 278–279
development overview, 267–268
development tools customization, 275–276
dynamic help, 274
launch (development and administrative tools), 276–277
output views, 274–275
product availability, 266
registering Add-Ins, 266–267
Server Explorer, 270–273
Solution Explorer, 268–270
SQL editor, 273
Windows 2003 support, 264–265
see also DB2 Data Connections folder; DB2 database project; WMI; XA interface
MIGRATE DATABASE command, 323
MOLAP (multidimensional online analytical processing), 9–10, 21
see also MDC tables
Monotonicity, 31
Moore’s law, 21
MQT (materialized query table), 79, 156
creation, 80
for data sources, 310
incremental refresh, 157–159
performance considerations, 81
populating, 80
restrictions, 79–80
see also Summary table
Nicknames, 308
NOT LOGGED, 54–55
NULL compression see Compression
Object creation/manipulation see Development Center
OLE DB Provider, 301
enhancements, 301–302
restrictions, 302
ORDER BY enhancements, 186
FETCH FIRST clause, 186, 187–188
ORDER BY ORDER OF clause, 186–187
ORing, 42
Package version identifiers, 259
FLUSH PACKAGE CACHE, 261
package overview, 259
package privileges, 260
VERSION example, 260
Page cleaner I/O improvements, 93
PARTITIONED DB CONFIG, 107–108
Performance enhancements, 91
prefetching see Block-based buffer pools
see also ARAM; Bit-filters selection; Distributed catalog cache; Java-based routines/multithreading; Join variations (new); Page cleaner I/O improvements; 64-bit support
PLM (planning and logistics management), 3
Pool relative addressing, 141
PRECOMPILE command, 260

Q
QUIESCE command, 166–167

R
READ ACCESS table state, 105–106
Rebalancing, 143
Reconfiguration see Dynamic memory allocation/online reconfiguration
REFRESH TABLE statement, 79
Relational databases
and complex queries, 209
multidimension issues, 21
and SQL, 177
see also MDC tables; MOLAP
REORG INDEXES command, 151
REORG TABLE command, 151
REORGCHK utility, 151
REPEATALE sampling, 214–215
Replication enhancements, 329
64-bit support, 336
and data links values, 336
migration utility, 336
monitoring, 332
   current status (replication programs), 333–334
   historical data analysis (replication programs), 334–335
   Replication Alert Monitor, 332–333
name length extension, 336
password encryption, 336
performance, 343
Replication Center, 329
    Launchpad, 330
    Operations folder, 331
    Replication Definitions folder, 330, 331f
    starting, 329–330
Replication Server, 307
    trace facility, 336
    Windows process model, 335
see also Apply enhancements; Capture enhancements
REVOKE package privilege, 260
ROLLFORWARD DATABASE command, 168
RUNCMD command, 173–174
RUNSTATS, 55
enhancements, 167–168
RUNSTATS utility, 151

S
SELECT statement, TABLESAMPLE clause, 209–215
SIGNAL command, 207–208
64-bit support, 94
Snapshot API functions, 191, 192t–193t
general form, 193–194
Snapshot monitor, 86
   DB2_SNAPSHOT_NOAUTH registry variable, 88
   SNAPSHOT_FILEW file capture, 87–88
   SNAPSHOT_FILEW request types, 86–87
SOAP (Simple Object Access Protocol), 315
   UDF installation, 316
   UDF signatures, 316–317
   UDF tasks, 316
   UDF usage examples, 317–319
Solaris and DB2 UDB, 4
SQL Assist tool, 240, 257
   sample session, 246–257
   start points, 240–241
structure, 241, 242f
   details area, 243–245
   outline view, 242–243
   panel buttons, 246
   SQL Code window, 245–246
SQL (Structured Query Language), 177, 215–216
   editor (Microsoft environment), 273
functions, 188–189
   health snapshots, 194–196
   INSTEAD OF triggers, 183–185
MERGE SQL, 201–203
   authorization, 208–209
   error conditions, 207–208
   IGNORING records, 206
   MERGE syntax, 203–205
   WHEN MATCHED logic, 205–206
   operations, 320
ORDER BY enhancements, 186–188
   sampling, 209, 215
   BERNOULLI sampling, 209–211
   REPEATALE sampling, 214–215
   SYSTEM sampling, 211–213
Index

and snapshot API functions, 191, 192t–193t
  general format, 193–194
  stored procedure debugging, 239
  UNION ALL (insert), 177–180
  and XML publishing functions, 190–191, 190t
  see also CALL statement; Identity column support
Star Schema, 68–69
Storage Management tool, 128
  Storage Management view, 128, 132–133
  columns, 133–135
  Specify Threshold Settings notebook, 128–132
Stored procedure creation see Development Center
Stripe, 141
  stripe set, 145
Summary table, 156–157
  example (with incremental refresh), 157–159
SYSCAT.INDEXES, queries, 152
SYSCAT.TABLES, queries, 152
SYSTABLES, 91
SYSTEM sampling, 211–213

T

Table reorganization, 151
  determination of need, 151–152
  and type-2 indexes, 152–153
  see also Index reorganization
Table space
  adding containers/no rebalancing, 145–146
  ALTER TABLESPACE statement, 141, 142f
  dropping containers from, 143–144
  history file change, 164–166
  maps, 141–143
  rebalancing, 143
  size reduction, 144–145
  with UNION ALL, 180–182
Table states, 105–106
Tables, traditional vs. MDC, 23–26
TABLESAMPLE clause (SELECT statement), 209–215
Throttling utilities, 161–162
TIMESTAMP, 83
  TIMESTAMP_FORMAT function, 188–189
Tivoli focused options, 171
Tools
  Configuration Assistant (CA), 115–118
  Fault Monitor facility, 138–139
  Health Center, 118–124
  Indoubt Transaction Manager, 135–137
  Memory Tracker, 127–128
  Memory Visualizer, 124–127
  Storage Management, 128–133
  see also SQL Assist tool
Trace facility enhancements, 169–170
Transaction log space usage, 173
Transaction support, 297–298
Type-2 indexes, 152–153

U

UDF creation see Development Center
UNION ALL, 177–180
  and table spaces, 180–182
UNION query, 67–68
Universal Driver see JDBC Universal Driver
UNIX, and multiple service level install, 170
User-maintained summary tables see MQT (materialized query table)
util_impact_lim, 162
Utilities (online), 151
  database inspection tool, 153–156
  index reorganization, 153
  table reorganization, 151–153

V

VARCHAR_FORMAT function, 188–189
VARGRAPHIC, 173
VERSION example, 260
Visual Studio .NET see Microsoft environment and DB2

W

WBEM (Web-Based Enterprise Management), 298
Web services, 315
  application server, 322
  DB2 as consumer, 315–319
  DB2 as provider, 319
  architecture, 319–320
  DADX files, 320–322
  Web Tools, 322
  see also XML enhancements
WebSphere MQ integration enhancements, 312
  asynchronous MQ listener utility, 312–313
message queues (transactional support), 313
nontransactional MQ functions, 314
single-phase commit transactional MQ functions, 313–314
Windows and DB2 UDB see Microsoft environment and DB2
WMI (Microsoft) Windows Management Instrumentation, 298–299
architecture, 299
benefits, 300–301
WMI SDK (Software Development Kit), 300
WORF (Web Object Runtime Framework), 319–320
installation/configuration, 322
WSDL (Web Service Definition Language) file, 315

XA interface, 297–298
XBSA (X/Open Backup Services API) support, 168
XML enhancements
  migrating XML-enabled databases, 323
  new UDFs, 324–325
  timestamp normalization, 325
  validating XML documents, 323–324
  XML extender, 322–323
    in partitioned database environments, 325
  XML MQ stored procedures, 327t
  XML MQ UDFs, 326, 326t