

Index

A

Active log, 7, 49-53, 55-60, 163, 166, 169, 170, 263, 265

Address spaces, 10-22

- ADMF, 8
- allied, 10-12
- classifying, 78
- database services, 8
- dumps and, 68, 72
- enclave and, 17
- DDF, 8, 17, 18
- DBAS, 8, 63
- DBM1, 35, 58
- GTF trace in, 72

MSTR, 12, 68

non-allied, 10

private, 12

registration and SVM with, 19

shared memory and, 86

System Service (SSAS), 9, 48, 51

shared memory objects and, 19

virtual storage and, 16, 18

Administrative tasks, 81

Agent control element (ACE), 13

ALTER commands

- to add volumes, 265
- auditing table and, 154, 155
- audit trace and, 197
- buffer pools and, 58, 61, 62, 210, 214-218, 221-224, 270-272
- compression and, 41, 46

deferred, 15

privileges, 145, 146

schema changes and, 24, 41

trusted context and, 140

used to establish DB2 objects, 5

Application abend, 172

Asymmetrical splitting, 49

Attachment facility, 12, 15, 16

Authentication, 137

Authorities, 138, 145-152

SYSCTRL, 75, 116, 139, 146-148, 158-160, 260

Authorization, 144-148, 151, 157, 240

B

Backup, 159-191

BSDS and, 57-58

COPY utility and, 254

data from DSNJU004 utility, 56

RECOVER utility and, 255

for SMP/E distribution libraries, 94

SMS data sets and, 75

system-level, 167

utilities, 74

BACKUP SYSTEM utility, 89, 164, 174-182

RECOVER utility and, 166, 171

tape support, 183

Base table, 43, 45

DSN1LOGP and, 55

Bit (space) map, 38-41, 44

- Bootstrap data set. *See* BSDS
BSDS, 47-51, 53-58
 active logs and, 168-169
 BACKUP SYSTEM utility and, 179-180
 catalog and, 57-58
 conditional restarts and, 173
 DB2 maintenance and, 106
 dual-mode restore, 168
 recovering with ARCHIVE LOG command, 164
 REPORT utility information for, 160
 use in determining recovery baseline, 161
 utilities that affect, 261-263
- Buffer pools, 59-64
 BP0, 27, 30
 definition, 59, 61
 group, 76, 271-274
 hit ratio, 62-63, 211, 219-221
 management, 60, 62, 223
 performance and, 193, 197, 202, 211-218, 223-228
 privileges, 143, 149
 sequential prefetch and, 212-215
 size for index creation, 46-47
 statistics, 222
 thresholds, 213-218
 virtual, 5, 58, 210
 WLM, 60-61, 77-80
- Buffer Pool Analyzer for z/OS, 62
- C**
- Caching, 27
 data sharing and, 269
 dynamic statement, 29, 36, 137, 201, 228-229
 EDM in, 27-28, 33, 206-208
 full, 30
 global dynamic statement, 28-29
 local statement, 29
 MAXKEEPD and, 36
 refresh, 136-137
 sort pool, 64
 types, 29-30
- Call Attachment Facility, 110, 13
- Catalog, 23-25
 backup/recovery and, 159, 161-164, 166-167, 176
 BP0 buffer pool and, 210, 223
 CATMAINT utility, 267
 data security and, 140, 143-145
 directory access methods, 33
 EDM and, 27-28
 management of, 25-26
 migration/installation and, 108, 117-121, 126
 Parallel Sysplex and, 76
 REPORT utility and, 259
 sizing, 107
 VCAT names, 267
- Catalog tables, 3, 24-26, 28, 43, 107, 118, 120
 for authorization, 143, 145
 disk space and, 265-266
 DSNDB06, 163
 indexes and, 24
 new in V11, 24
 supporting trusted context, 140
 SYSCOPY, 164, 167
 SYSIBM.SYSCOPY, 162
 SYSIBM.SYSSTATSFEEDBACK, 24
 SYSOBDS, 41, 162
 SYSTABLEPART, 45
- CATMAINT utility, 267
- Certification exam 317, 1
 objectives, 2
 installation topics covered on, 86
 security and auditing topics covered on, 131
- CHECK INDEX utility, 19, 89
- Checkpoint, 49-57, 62, 270-271
 BACKUP SYSTEM utility and, 180
 DSN1LOGP formatted data, 172
 log records, 49, 261
 in point-in-time recovery, 184-185
 in troubleshooting, 262, 270-271
 Recovery Manager and, 167
- CICS
 DB2 commands and, 236-237
 DB2 libraries and, 100, 109
 in DB2 installation and migration, 117-119
 knowledge of for Exam 317, 4
 performance trace and, 195, 199, 203
 RACF ID and, 149
 secondary subsystem, 86
- CLIST, 31
 EDM sizing and, 33
 in installation/migration, 48, 59-60, 65, 102, 110, 112-113, 117, 121-127, 207
- Clone table, 43, 55, 258

- Commands, 236, 239-270
 output, 237
 in recovery and restarting, 172
 scope, 271
 to restrict access to data, 240
- Compression, 41, 57
 dictionaries and, 26, 41
 index, 46
- Conditional restart, 167, 169, 172-174
 control record (CRCR), 50, 55-57, 174, 184-185, 189, 191, 261-262
- Consolidated Service Test. *See* CST
- Control Section (CSECT). *See* CSECT
- Conversion mode, 49, 60, 77, 120
 of V11, 105, 120-121
 migration job, 118
- Conversion mode*, 107, 119-120
- Copy pools, 175-184
- COPY utility, 40-41, 162, 254
 standalone DSN1COPY, 260, 262
 as system backup method, 164
- Coupling facility, 76, 268-272
 purging, 174
 SCA structure and, 107
- CREATE statement, 28, 31, 43, 143, 180, 263
- Cross-memory services (CMS), 18
- CSECT, 7-23
- CST, 102-104
- D**
- Data pages, 42
 dictionary, 41
 list sequential prefetch and, 213
 RIDs and, 36-37
- Data sharing
 backup/recovery and, 166-169, 174-175, 178, 180, 182, 184
 concepts, 270
 coupling and, 76
 DB2 log records and, 50
 DSNZPARM settings for, 113
 installation and, 127
 migration and, 118, 120-121, 125
 non-, 185-187, 217, 227
 Parallel Sysplex and, 76
- REFRESH command and, 109
 statistics trace and, 196, 199
 in troubleshooting, 239, 242, 245, 249-250, 264, 267-272
 useful data-collection commands for, 67
 work file database and, 226
- Database access thread. *See* DBAT
- Database descriptor (DBD), 25-28, 31-35
 calculating EMD pool space for, 207
 lock, 209
 record (DBDR), 32-33
 repairing, 250, 258
 size, 268
 structures, 229
- DB2
 commands. *See* Commands
 directory, 23, 26-28, 30, 32
 directory database. *See* DSNDB01
 restart, 56, 163, 171, 174
 structure, 12
 tracker, 187-188
- DB2 Utilities Suite for z/OS V11 Program Directory, 87-89
- DBAT, 15, 17, 22
 inactive, 21, 198
 thread processing and, 21-23, 246
- Database exception table (DBET), 49, 170-171, 173
 DBET status and, 170
- DBM1 address space, 12, 14-15, 18-19, 20-22, 28, 58-81
 MAXKEEPD and, 36
 storage pools and, 35
- DDF, 7-8
 address spaces, 12, 17
 DB2 Administration Tool for tasks, 273
 DISPLAY DDF DETAIL command and, 203
 DSNZPARM parameters for, 21-23, 116
 DSNZPARM settings for, 113
 dump, 68
 enclave and, 17-18, 79
 print log map information for, 55
 SECPORT parameter, 134
 z/OS shared virtual memory and, 18-20
- Dictionary pages, 41
- Disaster recovery, 2, 160
 BACKUP SYSTEM and, 175
 data sharing and, 174

- DB2 tracker site used for, 187
process, 163
objectives, 159
traditional approach, 163
- DISPLAY BUFFERPOOL, 212, 215, 222, 224, 227, 242-243
- DISPLAY THREAD, 14, 67, 173, 190, 203, 237, 240, 245-247, 250, 264
- DISPLAY TRACE, 145, 194, 203-205, 271
- Distributed connections, 139
- Distributed Data Facility. *See DDF*
- Distributed Relational Data Architecture (DRDA), 8, 18, 22-23
authentication, 135
data encryption, 134
- DSN1COMP utility, 41, 47, 260
- DSN1LOGP, 55, 57, 170, 171, 174, 186, 187, 192, 193, 263, 265
- DSNDB01 table space, 25-26, 31, 161
in recovery, 163, 166
REPORT utility and, 265
running LOAD utility on, 256
starting, 250
- DSNHDECP parameter, 107
- DSNJU003 utility, 55, 58, 129-130, 134, 169, 174, 182, 187, 235, 261, 267
- DSNJU004 utility, 55-57, 262
for conditional restart reporting, 173
for backup/recovery data, 178, 183, 185-186
to list BSDSs, 185
to print or copy BSDS, 70, 129, 164
to retrieve VCAT information, 267
- DSNTIJCV job, 33-34
- DSNTIPL, 49, 50, 53, 56, 127, 265
- DSNTIPL installation panel, 51, 56
- DSNZPARMs, 2
for administrative authorities, 144
buffer pool settings, 59, 64, 74
DDF parameters, 21. *See also DDF*
DSNTIPL installation panel settings, 51-53
for EDMPOOL, 34
hidden, 115-116
installation/migration and, 108, 112-115, 125-126
logging and, 47, 51
storage pools and, 35
statistics tracing and, 195-196, 199, 207-208
- DSVCI parameter, 74
- Dumps, 68-72
diagnosis using IPCS, 73
to tape with BACKUP SYSTEM, 175-176, 180-183, 186
types of in z/OS, 69, 72
- DUMP command, 69, 72
- dynamic cache, 29, 75, 228-229
- E**
- Early code, 100, 109-110, 119
- Extended common service area (ECSA), 9, 15, 19, 87
- Environmental descriptor manager (EDM) pool, 19, 27, 29, 33
full, 35
skeleton package table and, 30
storage, 27, 34
- Enable New Function Mode (ENFM), 108, 117-120, 121, 123-125
- Enclave, 17-18, 23, 76-80, 230
- Encryption, 132-134
column-level, 151
hardware-level, 1, 152-153
setting password as key, 151-153
- Exam 317, 1-3
practice exam, 281-296
- Execution block (EB), 11
- Execution unit, 11, 79
- Exit point, 136, 147, 150
- F**
- Falling back to DB2 V10, 119-120
- Fixes, 101-103
acquiring, 103
APAR, 101-102
DSNTIPL Installation Panel PTF, 101
- FlashCopy, 176-177, 188
used with backup/recover utilities, 174-175, 180, 182-184
for system backup, 121, 125
- G**
- Global statement cache. *See Caching*

H

Header page, 38, 178-180
 Hit ratio, *See* Buffer pools
 HVSHARE parameter, 19-20, 86, 108

I

IARV64 macro, 19-20
 IBM Certification website, 2
 IBM DB2 for z/OS Value Unit Edition (VUE), 87-88
 IBMLink, 97, 104
 IBM Support Center, 104
 IBM TotalStorage Enterprise Storage, 74, 174
 IFCIDs, 17, 22, 31, 36, 67, 89, 195, 202-203, 205-206,
 229, 233-234, 236, 273

Index

asymmetrical splitting on pages, 47
 buffer pools and, 61-62, 74, 76, 223, 242-244, 249
 cleanup, 24
 compression, 46-47, 53
 DSNTIJCV installation job for conversion to
 extended RBA/LRSN format, 34
 encryption and, 133
 header page in, 38
 prefetch and, 195, 211-213
 reorganization to improve performance, 25
 recovery and, 162-163, 164, 166, 170-171, 174, 176,
 184, 187-188, 254-256
 REORG utility for, 256-258
 REPAIR utility for, 258
 REPORT utility and, 259
 RID pool and, 36-37
 security and, 137, 145-146
 space, 23, 41
 structure, 44
 SYSLGRNX log range and, 33
 utility, 26

Internal resource lock manager. *See* IRLM
 IRLM, 9, 86, 90-91, 96-100, 112, 196, 236
 address space, 12, 18, 68, 238, 260
 commands, 244-245
 ISPF panel, 113

L

LOAD command, 3, 19, 26, 41, 43, 55, 89, 92, 160, 217,
 253, 256

Logging, 3, 5, 45, 53-56
 active, 5, 47-48, 107, 125, 164, 167-171, 261
 archive, 5, 56-57, 134, 248, 261
 backup/recovery and, 160-188
 BRF and RRF formats and, 45
 BSDS and, 57-58
 data capture, 49-51
 data security and, 132, 134
 definitions, 48
 DB2 Administration Tool and, 273
 DSNTIPL installation panel values for, 51-53
 DSNZPARM parameters, 113
 dual, 47-48, 54
 errors, 65-67, 69-72
 IBM DB2 Log Analysis Tool for z/OS and, 153
 system utilities for problem solving, 261-263
 thread management and, 230
 tracking with SYSLGRNX, 33

M

Maintenance, 3, 100
 Consolidated Service Test (CST) for, 102-103
 fixes and, 103, 105, 126
 IBM software, 104
 management, 95
 mode, 240
 program directories and, 87-88
 recovery and, 163
 refresh and, 109, 200
 schedule, 102
 SMP/E and, 95, 98-100
 MAXKEEPD parameter, 29-30, 36, 83-84, 115
 MAXRBLK parameter, 36, 83-84, 212
 MAXTEMPS parameter, 36-37, 106, 201, 212
 MEMLIMIT keyword, 16
 Migration, 2, 23, 33, 27, 45, 48-49, 59, 75
 to DB2 V11, 85-127
 jobs, 117-119
 MODIFY RECOVERY, 32, 41, 89, 162-163
 MVS System Resource Manager (SRM), 17

N

Native stored procedures, 80, 82, 84, 230, 266
 New function mode (NFM), 34, 107, 118, 124
 enabling (ENFM), 121

O

Object descriptor (OBD), 25, 28, 32, 41-42, 92, 162
Offloading, 47-48, 54
OMEGAMON, 81, 153, 201-202, 208, 228

P

Page size, 38, 40, 43-44, 46-47, 74, 226
Partition by growth (PBG), 43, 227, 254, 256
Partition by range (PBR), 43-44
Performance
 auditing's effect on, 196
 buffer pools' effect on, 60-61, 210, 219-220, 223-226, 243
 IBM Tivoli OMEGAMON XE for DB2 Performance
 Expert on z/OS to monitor, 202
 locking and, 244
 PBR table spaces' effect on, 44
 query, 25, 64, 217
 thread processing and, 21, 23, 245
 thresholds and, 214, 216
 trace, 35, 37, 50-51, 65, 73, 153, 194-195, 197, 201-206
 work files and, 227
 zIIP and, 80
Precompiler, 10, 11, 124
Prefetch, 37, 195, 211, 217, 221, 230, 257
 dynamic, 211, 220
 list, 37, 195, 211-213, 230, 242
 sequential, 211-215, 218, 220, 242
PREPARE, 28-30, 36, 84, 118, 228
Print log map, 50, 55, 57, 130, 169, 171, 178, 184-186
Problem diagnosis, 67-69, 73, 264
Program directories, DB2, 87-89
 DB2 11 for z/OS, 87-88
 DB2 Accessories Suite for z/OS, 87-89
 DB2 Accessories Suite: DB2 Adapter for z/OS Connect
 V3.3, 87, 89

Q

QUIESCE, 15, 58, 161, 163, 167, 171, 182, 239, 259, 262

R

RACF, 90-91, 105, 130-132, 135-137, 141-142, 146-151
Read methods, 211
Real-time statistics tables, 24-25

Record identifier (RID), 36-37, 44-47, 73, 197, 212-213
 pool, 229-230

RECOVER utility, 164-167, 255
Recovery, 2, 159, 163, 245, 255, 259, 261, 272
 advanced concepts, 167
 commands, 172-173
 disaster, 2, 160, 163, 187
 log, 33, 49, 50
 point, 183-185
 scenarios, 185-187
 traditional approach, 163-164
 unit of, 14, 52, 56, 166, 270
 utilities, 161, 164-167, 174-176, 182

Recovery Log Manager. *See RLM*

Recovery Manager (RM). *See RM*

REFRESH command, 109-110

Relative byte address (RBA), 33, 48, 168

Release information, 85-86

Remigration to CM V11, 120

REORG utility, 15, 19, 23, 26, 41, 43, 45, 80, 107, 124, 161, 217, 254, 256-258, 263, 265

Resource manager identifier (RMID), 11, 93-94

Resource Measurement Facility (RMF), 15, 80

Resource Recovery Services attachment facility (RRSAF), 10, 13-14, 141-142

Responsibilities of DB2 system administrator, 1

RESTORE SYSTEM utility, 55, 74, 90, 169-171, 174-175, 179, 182-183, 185, 187-188
 restoring to point in time with, 185, 187

REVOKE, 138, 143-144, 146, 148, 154

RLM, 9, 50, 167, 172

RM, 9, 11, 167

RUNSTATS, 3, 19, 37, 43, 90, 193, 213

S

Secure port, 134-135

Security, 2, 23

 audit trace and, 153-154
 authentication in, 135-138
 authorization in, 143-147
 encryption in, 151-152
 methods for DB2, 132
 multi-level, 150-151
 RACF in, 147-150
 REVOKE statement and, 138

- role-based, 137-138
 trusted connections in, 139, 141-142
 trusted context in, 139-140, 142
 vendor products, 152-153
- Service tasks, 11
- SET SYSPARM command, 14, 34, 114, 144, 241
- Shared memory object, 19-20, 87
- Shared memory storage, 20
- Shared virtual memory (SVM). *See* SVM
- ShopzSeries, 90-91, 97, 103
- SKCT, 27, 30, 32, 209, 268
- Skeleton cursor table. *See* SKCT
- Skeleton package table. *See* SKPT
- Skeleton package table parent record. *See* S PTR
- Skeleton pools, 209
- SKPT, 27, 30-32, 209, 228, 268
- SMF, 16, 20, 23, 35-36, 73, 80-81, 154, 194-196, 198
 trace data recording, 201-202
- SMP/E, 4, 85, 88, 90-91, 93-102, 112, 126-127
 jobs, 91, 93, 95-99, 126
 libraries, 94
 maintenance management and, 95-97
- Sort pool, 35, 61, 63-65, 225
- S PTR, 30-31
- START DATABASE command, 249, 251, 253, 265, 271-272
- START DB2 command, 58, 112, 239-241, 270
- START TRACE command, 36, 50, 73, 154-155, 194, 196, 199, 205-206
- STATSINT parameter, 24-25
- STOP DATABASE command, 250
- STOP DB2 command, 167-168, 238-239
- Storage
 for address spaces, 12
 auxiliary, 15, 210
 for buffer pools, 58, 60-61, 64, 210, 226
 capacity planning for, 195
 EDM pool, 27-28, 34-35, 206-208, 268
 groups, 43, 75-76, 107, 117, 122, 143, 149-150, 175-177, 264, 267
 planning for, 108
 pools, 35-37
 real, 15, 210, 214, 221, 225
 reclaiming, 32
 releasing, 15
- SMS-managed, 102
 statistics, 196
 subpools, 15
 thread, 14, 30
 virtual, 14-16, 18-19, 22-23, 36, 60, 72, 86, 210
- Storage Management Subsystem (SMS), 24, 74-76, 86
- Stored procedures, 79, 93, 114, 118, 149-150, 240
 address spaces, 12, 14
 external, 79
 external SQL, 79
 manager, 8
 native SQL, 18, 23
 Workload Manager and, 230, 266-267
 zIIP and, 80
- SVM, 18-19
- SYSIBM.SYSCOPY table, 43, 162, 165, 254, 259
- SYSIBM.SYSTABLESPACE, 23, 42, 53
- SYSIBM.SYSLGRNX table, 32, 162, 166, 259
- SYSMOD, 93-95, 98, 101
- SYSODBS table, 41-42
- Sysplex, 66-67, 69, 77, 268-269
 Parallel, 76, 268-269
 Timer, 174
- System Display and Search Facility (SDSF), 3, 65-67, 260
- System error reporting, 65-68
 SYS1.LOGREC and, 67-68, 70-71, 262
- System log range (SYSLGRNX), 33, 54, 56, 160, 162-163, 171
- System Management Facility. *See* SMF
- System Modification Program Extended. *See* SMP/E
- System page, 37, 41
- System Services Address Space (SSAS), 9, 11-12, 48, 263
- SYSUTIL, 33
- SYSUTILX table space, 32-33, 124, 161, 163, 254

T

- Table row formats, 45
- Table spaces
 partition-by-growth, 43
 partition-by-range, 44
 universal, 43
- Thread, 10, 14-15
 accounting trace and, 197-199
 CTHREAD, 10
 DB2 Administration Tool and, 273

- DISPLAY THREAD and, 14, 245-248
distributed, 21-23
EDM storage and, 27, 30, 35, 207, 228, 268
enclave and, 17
management, 230
pooled, 22
security roles and, 137
sort pool and, 64
WLM and, 78
Thresholds, 213-219
Trace, 2, 34-35, 194, 203
accounting, 197-199
audit, 153-155, 196-197
automatically started, 199-200
DB2 commands, 203-206
global, 199
IFCIDs, 200-201
monitor, 195
MVS, 72
output, 67, 73
performance, 37, 51, 65, 195, 227
performance effects of, 193-194
in problem diagnosis, 68, 71, 73, 260-261, 271
records, 20, 34, 80, 201-202
START TRACE for, 50, 73
statistics, 35-36, 195-196, 229
storage information in, 35
Trusted connection, 139, 141-142
Trusted context, 139-140, 142
- U**
- Utilities, 2-3, 9-10, 19
BACKUP, 74, 159-160, 164, 171
BACKUP SYSTEM, 174-182
CATMAINT, 107, 120, 144, 240
CATENFM, 120
changes to in V11, 26
CHECK INDEX, 19
COPY, 3, 26, 40-41, 160, 162, 164
DIAGNOSE, 68, 91-92, 240
DISPLAY UTILITY command and, 172
DSN1CHKR, 107, 262
DSN1COMP, 41, 47
DSN1COPY, 26, 45, 262
DSNJCNVT, 106
DSNJLOGF, 53
- DSNJU003, 55, 58, 134, 169, 174, 261
DSNJU004 (print log map), 55, 57, 70, 171, 173, 262
DSNUTILB, 107
IFCEREP1, 70, 262
included in DB2 Utilities Suite for z/OS V11 Program Directory, 89
LOAD, 19, 26, 41, 43, 45, 55, 160
MODIFY, 32, 162
REBUILD, 19, 26
RECOVER, 26, 53, 160, 164-167, 170-172
REORG, 19, 23, 26, 41, 43, 45, 55
REPAIR, 126
REPORT, 160-161
RESTORE, 55, 74, 159, 169, 171, 174
RESTORE SYSTEM, 182-188
RUNSTATS, 19
standalone, 10, 41, 260-264
SYSUTIL table and, 33
SYSUTILX table space and, 32
zIIP benefits for, 77, 80
- V**
- VCAT, 107, 267
changing names, 267
Virtual storage, 10, 15-16, 18-19, 22-23, 36, 60, 77
bar, 86, 207
buffer pools and, 61, 210
controlling with HVSHARE parameter, 86
dumps and, 69, 72
IARV64 macro for, 19
MAXKEPD in conserving usage, 36
reducing usage in DBM1, 14
reporting in Virtual Storage Private Area Report (VSTOR), 15
setting for address space, 16
Shared Virtual Memory (SVM), 18
threads and, 23
- Volume
backing up, 125, 174-176
copy pool for, 177-178, 186-187
extended address (EAV), 74
FlashCopy backup and, 176-177
LOAD and, 256
log, 57, 231, 261
migration and, 118, 125
parallel access, 74

RESTORE SYSTEM and, 182
in SMS, 75, 102, 177
VSAM, 14, 23, 26, 48, 53-54, 57, 74, 94, 107
clusters, 23, 107
data sets, 26, 74, 94, 107, 122, 130, 164, 259, 261-262,
265-266

services and zIIP, 80
stored procedures and, 12, 14, 79, 266-267
threads and, 22
Work file database, 37, 62-63, 105-106, 226-228, 264-265
Work files, 63
Workload Manager (WLM). *See* WLM

W

WLM, 4, 12, 77-79
buffer pools and, 60-61, 80, 223-224
data sharing and, 269
DB2 subsystem priorities and, 260
enclave and, 17-18, 79
RACF and, 148
resources listed on SDSF display, 65

Z

z/OS Application Connectivity to DB2 for z/OS Program
Directory, 90
z/OS dispatcher, 18
z/OS Shared Memory Facility, 15
z/OS skill set, 3
z/System Integrated Information Processor (zIIP). *See* zIIP
zIIP, 18, 23, 76-77, 79-80, 84, 230