Note Language: English   **Version: 38 Validity:**   Valid Since 11.09.2012

Summary

Symptom

You want to set DB2 database and database manager configuration parameters for all SAP releases that are running on DB2 V9.7 for Linux, UNIX, and Windows (in the following referred to as DB2 V9.7).

Other terms

EarlyWatch, GoingLive, DB2, ESE, DPF, Cobra, DB6, DBM, DB, registry, STMM, configuration

Reason and Prerequisites

This note contains recommendations for parameter settings for DB2 V9.7, valid for all SAP releases running on DB2 V9.7 for Linux, UNIX and Windows.

History of Changes (Descending ordered list of changes since December 2009):

2012/09/11: CATALOGCACHE_SZ from 2560 to 8000
2012/06/12: ASLHEAPSZ from 16 to 15
2012/05/10: DB_MEM_THRESH from 10 to 100
2011/05/26: added DB2_PMODEL_SETTINGS for 9.7 FP4 only
2011/04/26: MON_ACT_METRICS from NONE to BASE
2011/02/09: mark DISCOVER_DB as customizable
2010/10/28: Add BLOCKNONLOGGED reference to SAP Note 1523227 1
2010/10/01: CUR_COMMIT: Inserted reference to SAP Note 1514016
2010/09/08: Updated log recommendations
2010/08/13: LOGPRIMARY from 20 to 60 (due to LOGSECOND change below)
2010/07/30: Updated STMM recommendations
2010/07/30: LOGSECOND from 40 to 0
2010/07/15: BLOCKNONLOGGED added
2010/04/20: AGENT_STACK_SZ >= 4096 for BW on UNIX
2009/12/14: CHNGPGS_THRESH from 40 to 20

Solution

>!Version=1.1

This SAP Note is valid for the following system workload classes:

    o   OLTP (for example, SAP ERP and SAP CRM)

    o   OLAP (for example, SAP NetWeaver BW)

Specific settings that are required for only one workload type are documented in separate sections at the end of this note.

You can achieve optimal system performance and optimal usability with a correct setup of the DB2 database and of the database manager parameters. Do **not** deviate from the standard recommendations below unless you feel experienced enough to understand the impact of your changes.

In some cases, SAP Active Global Support might advise you to temporarily deviate from the settings documented in this SAP Note to solve a specific problem. In this case, follow the advice from SAP Active Global Support. After the problem has been finally solved by an SAP or DB2 code correction, apply the code correction as soon as possible and re-establish the original settings.

Most of the parameters below are dynamic. Changes to the parameters become effective immediately if you use an existing database connection. This means that you are connected to the database (<DBSID>) first and then change the parameters using this existing connection. You can view currently active parameters using the following command:
db2 get db cfg for <dbsid> show detail

As of DB2 Version 9.1, the "Self Tuning Memory Manager" (STMM) was introduced. STMM is a memory-tuning feature that simplifies the task of memory configuration by automatically setting values for several memory configuration parameters. When enabled, the memory tuner dynamically adapts the sizes of consumers in the database shared memory (DATABASE_MEMORY). You can run your DB2 V9.7 database either with fixed memory settings or with STMM enabled. The STMM-relevant settings are marked with [STMM=YES] and [STMM=NO], respectively. For more information, see the section about DB2 STMM later in this SAP Note. Generally, we recommend that you use DB2 STMM for single partition systems.

The following markers are used in the parameter recommendation sections:

   o   [CUST]: Customer individual setting

       There is no particular setting required by SAP. The values listed for these parameters are typical default values that you should start with. If required, you can set the parameter differently.

   o   [DEPR]: Deprecated

       The parameter has become obsolete or deprecated with DB2 V9.7 and is ignored by DB2.

   o   [STMM=YES], [STMM=NO]: Related to the use of DB2's Self Tuning Memory Manager (STMM)

       -   If you want to use STMM, follow the recommendations marked with [STMM=YES]. Generally we recommend the use of DB2 STMM for single partition systems.

       -   If you want to run your database with fixed memory settings, follow the recommendations marked with [STMM=NO].

   o   [BI=YES], [BI=NO]: Differs depending if your workload is primarily OLAP or OLTP

       -   If your workload is primarily OLAP-dominated (originating from SAP NetWeaver BW, SAP SRM or SAP SCM), follow the settings marked with [BI=YES].

       -   In all other cases, follow the recommendations marked with [BI=NO].

  o [OS=WINDOWS], [OS=UNIX]: Requires different settings on Windows or UNIX based database servers

      -   If your database server is running on Windows, apply the settings marked with [OS=WINDOWS].

      -   If your database server is running on Linux, HP-UX, Solaris or AIX, apply the recommendation marked with [OS=UNIX].

  o [FP>=nn.nn.nnnn], [FP<=nn.nn.nnnn]: Recommendation is valid for the given range of DB2 levels only

Multiple markers in one line are to be read as logical "AND", that is, the setting is recommended for configurations where all conditions are true.

For example, PARAM1 = 99 [FP<=09.05.0002], [OS=WINDOWS] means that you should set PARAM1=99 **only** if your DB2 level is up to and including 09.05.0002 (9.7FP2) **AND** your database server is running on Windows. If your database server is not running on Windows or if you are using DB2 9.7 FP3 or higher, do not apply the setting.

Database Manager Configuration Parameters (STMM Not Enabled)

The following database configuration parameters are grouped according to the output that you receive if you use the following command:

db2 GET DBM CFG

To update the parameters, enter the following command:
db2 UPDATE DBM CFG USING <parameter> <value>

List of Parameters:
===================

```
> CPUSPEED              = <value>                [CUST]
> COMM_BANDWIDTH        = <value>                [CUST]
```

Note:
CPUSPEED and COMM_BANDWIDTH settings are generated by DB2 during instance creation based on hardware characteristics of your database server. To indicate that DB2 should regenerate the value, you can set the parameters to -1.

```
> NUMDB                 = 1                      [CUST]
> FEDERATED             = NO                     [CUST]
> TP_MON_NAME           = <empty>                [CUST]
> DFT_ACCOUNT_STR       = <empty>                [CUST]
> JDK_PATH              = <path to JDK>          [CUST]

> DIAGLEVEL             = 3
> NOTIFYLEVEL           = 3

> DIAGPATH      = /db2/<DBSID>/db2dump           [OS=UNIX]
  DIAGPATH      = <drive>:\db2\<DBSID>\db2dump [OS=WINDOWS]
```

```
> DIAGSIZE                = 0                        [CUST]
```

Note:
Change this setting to activate rotating write to diag- and notify-log
files.

```
> DFT_MON_BUFPOOL         = ON
> DFT_MON_LOCK            = ON
> DFT_MON_SORT            = ON
> DFT_MON_STMT            = ON
> DFT_MON_TABLE           = ON
> DFT_MON_TIMESTAMP       = ON
> DFT_MON_UOW             = ON
> HEALTH_MON              = OFF                      [CUST]


> SYSADM_GROUP            = DB<DBSID>ADM
> SYSCTRL_GROUP           = DB<DBSID>CTL
> SYSMAINT_GROUP          = DB<DBSID>MNT
> SYSMON_GROUP            =                          [CUST]


> CLNT_PW_PLUGIN          =                          [CUST]
> CLNT_KRB_PLUGIN         =                          [CUST]
> GROUP_PLUGIN            =                          [CUST]
> LOCAL_GSSPLUGIN         =                          [CUST]
> SRV_PLUGIN_MODE         = UNFENCED                 [CUST]
> SRVCON_GSSPLUGIN_LIST   =                          [CUST]
> SRVCON_PW_PLUGIN        =                          [CUST]
> SRVCON_AUTH             = NOT_SPECIFIED            [CUST]
> CLUSTER_MGR             =                          [CUST]


> AUTHENTICATION          = SERVER_ENCRYPT           [CUST]
> CATALOG_NOAUTH          = NO
> TRUST_ALLCLNTS          = YES                      [CUST]
> TRUST_CLNTAUTH          = CLIENT                   [CUST]
> FED_NOAUTH              = NO                        [CUST]


> DFTDBPATH               = /db2/<DBSID>             [CUST]


> MON_HEAP_SZ             = AUTOMATIC
> JAVA_HEAP_SZ            = 2048                      [CUST]
> AUDIT_BUF_SZ           >= 0
```

Note:
If you are not using the DB2 Audit facility, AUDIT_BUF_SZ = 0 is
sufficient. If you would like to use the DB2 audit facility, read SAP Note
1474404.

```
> INSTANCE_MEMORY         = AUTOMATIC                [STMM=NO]


> AGENT_STACK_SZ         >= 128                      [OS=WINDOWS]
> AGENT_STACK_SZ         >= 1024                     [OS=UNIX],[BI=NO]
> SHEAPTHRES              = 0                        [STMM=NO],[CUST]


> DIR_CACHE               = NO


> ASLHEAPSZ               = 15
> RQRIOBLK                = 65000
> UTIL_IMPACT_LIM         = 10                       [CUST]
```

```
> AGENTPRI          = SYSTEM
> NUM_POOLAGENTS    = AUTOMATIC

> NUM_INITAGENTS    = 5                  [CUST]
> MAX_COORDAGENTS   = AUTOMATIC
> MAX_CONNECTIONS   = AUTOMATIC

> KEEPFENCED        = YES
> FENCED_POOL      >= 10
> NUM_INITFENCED    = 0

> INDEXREC          = RESTART

> TM_DATABASE       = 1ST_CONN           [CUST]
> RESYNC_INTERVAL   = 180                [CUST]

> SPM_NAME          =                    [CUST]
> SPM_LOG_FILE_SZ   = 256                [CUST]
> SPM_MAX_RESYNC    = 20                 [CUST]
> SPM_LOG_PATH      =                    [CUST]

> SVCENAME          = sapdb2<DBSID>      [CUST]
> DISCOVER          = SEARCH             [CUST]
> DISCOVER_INST     = ENABLE             [CUST]

> SSL_SVR_KEYDB     =                    [CUST]
> SSL_SVR_STASH     =                    [CUST]
> SSL_SVR_LABEL     =                    [CUST]
> SSL_SVCENAME      =                    [CUST]
> SSL_CIPHERSPECS   =                    [CUST]
> SSL_VERSIONS      =                    [CUST]
> SSL_CLNT_KEYDB    =                    [CUST]
> SSL_CLNT_STASH    =                    [CUST]

> MAX_QUERYDEGREE   = 1                  [BI=NO]
> INTRA_PARALLEL    = NO                 [BI=NO]

> FEDERATED_ASYNC   = 0

> FCM_NUM_BUFFERS   = AUTOMATIC
> FCM_NUM_CHANNELS  = AUTOMATIC
> CONN_ELAPSE       = 10                 [OS=UNIX]
> MAX_CONNRETRIES   = 5                  [OS=UNIX]
> MAX_TIME_DIFF     = 60                 [OS=UNIX]

> START_STOP_TIME   = 10                 [CUST]
```

Database Configuration Parameters (STMM Not Enabled)

The following database configuration parameters are grouped according to the output that you receive if you use the following command:

```
db2 get db cfg for <dbsid>
```

To update the parameters, enter the following command:

```
db2 UPDATE DB CFG FOR <DBSID> USING <parameter> <value>
```

```
List of Parameters:
===================
```

```
> ALT_COLLATE            = IDENTITY_16BIT      [CUST]
```

Note:
This setting applies **only** to non-Unicode databases!

```
> DYN_QUERY_MGMT         = DISABLE
> STMT_CONC              = OFF
> DISCOVER_DB            = ENABLE              [CUST]

> DFT_QUERYOPT           = 5
> DFT_DEGREE             = 1
> DFT_SQLMATHWARN        = NO
> DFT_REFRESH_AGE        = 0
> DFT_MTTB_TYPES         = SYSTEM
> NUM_FREQVALUES         = 10
> NUM_QUANTILES          = 20

> DECFLT_ROUNDING        = ROUND_HALF_EVEN

> SELF_TUNING_MEM        = OFF                 [STMM=NO]
> DATABASE_MEMORY        = COMPUTED            [STMM=NO]
> DB_MEM_THRESH          = 100
```
Note:
Set DB_MEM_THRES=100 to reduce memory fragmentation if one of the following
is true:
1) DATABASE_MEMORY is set to COMPUTED
2) DATABASE_MEMORY is set to a fixed value
3) INSTANCE_MEMORY is set to a fixed value.
If both DATABASE_MEMORY and INSTANCE_MEMORY are set to AUTOMATIC (not
recommended), set DB_MEM_THRES to 10

```
> LOCKLIST              >= 40000              [STMM=NO];[BI=NO]
> MAXLOCKS               = 90                 [STMM=NO];[CUST]
> PCKCACHESZ            >= 7000               [STMM=NO]
> SHEAPTHRES_SHR        >= 20000              [STMM=NO];[BI=NO]
```

Note:
Set SHEAPTHRES_SHR to the number of your SAP work processes multiplied with
SORTHEAP but not lower than 20000.

```
> SORTHEAP              >= 2048               [STMM=NO];[BI=NO]

> DBHEAP                 = AUTOMATIC
> CATALOGCACHE_SZ       >= 8000
> LOGBUFSZ              >= 1024
> UTIL_HEAP_SZ          >= 50000
> BUFFPAGE              >= 10000
> STMTHEAP               = AUTOMATIC
> APPLHEAPSZ             = AUTOMATIC
> APPL_MEMORY            = AUTOMATIC
> STAT_HEAP_SZ           = AUTOMATIC
```

```
> DLCHKTIME              = 10000              [CUST]
> LOCKTIMEOUT            = 3600               [CUST]

> CHNGPGS_THRESH         = 20                 [CUST]
> NUM_IOCLEANERS         = AUTOMATIC          [CUST]
> NUM_IOSERVERS          = AUTOMATIC          [CUST]
> INDEXSORT              = YES
> SEQDETECT              = YES
> DFT_PREFETCH_SZ        = AUTOMATIC

> TRACKMOD               = ON                 [CUST]
> DFT_EXTENT_SZ          = 2                  [CUST]

> MAXAPPLS               = AUTOMATIC
> AVG_APPLS              = AUTOMATIC
> MAXFILOP              >= 61440              [CUST]

> LOGFILSIZ              = 16380              [CUST]
> LOGPRIMARY             = 60                 [CUST]
> LOGSECOND              = 0
```

Note:
If you want to configure LOGSECOND to a value other than zero, see SAP Note 1493587 and related SAP FAQ note 1497040.

The primary log files are created at the time of the first database activation or after any change to the log configuration.

We recommend that you do not configure less than 4GB log space. If you change any of the parameters LOGFILSIZ, LOGPRIMARY or LOGSECOND you must ensure that you have enough space allocated in your LOGPATH.

```
> OVERFLOWLOGPATH        =                    [CUST]
> MIRRORLOGPATH          =                    [CUST]
> BLK_LOG_DSK_FUL        = YES                [CUST]
> BLOCKNONLOGGED         = NO
```

Note:
If you want to set parameter BLOCKNONLOGGED to YES, read SAP Note 1523227 for more information.

```
> MAX_LOG                = 0                  [CUST]
> NUM_LOG_SPAN           = 0                  [CUST]
```

Note:
After every change of LOGFILSIZ, LOGPRIMARY or LOGSECOND you should check your settings of MAX_LOG and NUM_LOG_SPAN.

```
> MINCOMMIT              = 1
> SOFTMAX                = 300                [CUST]
```

Note:
SOFTMAX is the threshold for the LSN gap page cleaner trigger. The value unit is percent, based on the size of one log file (LOGFILSIZ).

In case you have set LOGFILSIZ to a large value, you may consider to lower the value of SOFTMAX accordingly. For example, if you have LOGFILSIZ set to 50000 or higher, you may want to reduce SOFTMAX from 300 to 100.

```
> LOGRETAIN              = OFF               [DEPR]
> USEREXIT               = OFF               [DEPR]


> HADR_LOCAL_HOST        =                   [CUST]
> HADR_LOCAL_SVC         =                   [CUST]
> HADR_REMOTE_HOST       =                   [CUST]
> HADR_REMOTE_SVC        =                   [CUST]
> HADR_REMOTE_INST       =                   [CUST]
> HADR_TIMEOUT           = 120               [CUST]
> HADR_SYNCMODE          = NEARSYNC          [CUST]
> HADR_PEER_WINDOW       = 0                 [CUST]


> LOGARCHMETH1           = OFF               [CUST]
```

Note:

For information about the DB2 log manager, see SAP Note 913481.

```
> LOGARCHOPT1            =                   [CUST]
> LOGARCHMETH2           = OFF               [CUST]
> LOGARCHOPT2            =                   [CUST]
> FAILARCHPATH           =                   [CUST]
> NUMARCHRETRY           = 5                 [CUST]
> ARCHRETRYDELAY         = 20                [CUST]
> VENDOROPT              =                   [CUST]
```

Note:

You must enable recovery for production databases. For more information about the DB2 log manager, see SAP Note 913481.

```
> AUTORESTART            = ON
> INDEXREC               = RESTART
> LOGINDEXBUILD          = OFF               [CUST]
```

Note:

If you are using HADR, set LOGINDEXBUILD=ON.

```
> DFT_LOADREC_SES        = 1                 [CUST]
> NUM_DB_BACKUPS         = 12                [CUST]
> REC_HIS_RETENTN        = 60                [CUST]
> AUTO_DEL_REC_OBJ       = OFF               [CUST]


> TSM_MGMTCLASS          =                   [CUST]
> TSM_NODENAME           =                   [CUST]
> TSM_OWNER              =                   [CUST]
> TSM_PASSWORD           =                   [CUST]


> AUTO_MAINT             = ON
> AUTO_DB_BACKUP         = OFF               [CUST]
> AUTO_TBL_MAINT         = ON
> AUTO_RUNSTATS          = ON
> AUTO_STMT_STATS        = ON
> AUTO_STATS_PROF        = OFF
> AUTO_PROF_UPD          = OFF
> AUTO_REORG             = OFF               [CUST]
```

Note:
For more information about parameter AUTO_REORG, see SAP Note 975352.

```
> AUTO_REVAL          = DEFERRED
> CUR_COMMIT          = DISABLED
```

Note:
Read SAP Note 1514016 if you want to use isolation level "currently committed".

```
> DEC_TO_CHAR_FMT     = NEW             [CUST]
> ENABLE_XMLCHAR      = YES
> WLM_COLLECT_INT     = 0

> MON_REQ_METRICS     = BASE            [CUST]
> MON_ACT_METRICS     = BASE            [CUST]
> MON_OBJ_METRICS     = BASE            [CUST]
> MON_UOW_DATA        = NONE            [CUST]
> MON_LOCKTIMEOUT     = WITHOUT_HIST    [CUST]
> MON_DEADLOCK        = WITHOUT_HIST    [CUST]
> MON_LOCKWAIT        = NONE            [CUST]
> MON_LW_THRESH       = 5000000         [CUST]

> SMTP_SERVER         =                 [CUST]
```

DB2 Registry Variables

You can list the DB2 registry settings by entering the following command:

db2set -all

To alter the DB2 registriy variables, use the following command:

db2set <PARAMETER> = <VALUE>

To delete existing settings, enter the following command:

db2set <PARAMETER> =

You must set the following registry variable(s) unless you receive different instructions from SAP support:

```
> DB2_WORKLOAD        = SAP
```

Note:
Make sure that you do not overwrite DB2_WORKLOAD settings unless SAP support explicitly requests you to do so. Check that the output of the "db2set -all" command does not show any lines that end with "[O]".

```
> DB2_PARALLEL_IO     = *               [CUST]
```

Note:
Only set DB2_PARALLEL_IO=* if the following conditions are **both** met:

    o   RAID devices are used for the database

o   All tablespaces in the database consist of one single container per stripe set

> DB2_PMODEL_SETTINGS=MAX_BACKGROUND_SYSAPPS:500   [FP=09.07.0004]
Set this parameter as a workaround for APAR IC76118 in FP4 only.

Settings with DB2's Self-Tuning Memory Manager (STMM) Enabled

DB2 "Self Tuning Memory Manager" (STMM) simplifies the task of memory configuration by automatically setting values for several memory configuration parameters. When enabled, the memory tuner dynamically distributes available memory resources among the following memory consumers:

o   Buffer pools

o   Locking memory

o   Package cache

o   Sort memory.

STMM works within the memory limits that are defined by the DATABASE_MEMORY configuration parameter. The value of this parameter can be automatically tuned as well by setting the value of the DATABASE_MEMORY configuration parameter to AUTOMATIC. If the database_memory configuration parameter is set to a numeric value, the database uses the amount of memory that has been specified distributing it across the memory consumers as required. If DATABASE_MEMORY is set to COMPUTED, the total amount of DATABASE_MEMORY is computed on the sum of the initial values of the database memory heaps at database startup time.

You can enable the memory consumers for self tuning as follows:

o   For buffer pools, use the ALTER BUFFERPOOL statement (specifying the AUTOMATIC keyword) to enable the bufferpool for self tuning

o   For locking memory, set LOCKLIST and MAXLOCKS to AUTOMATIC

o   For the package cache, set PCKCACHESZ to AUTOMATIC

o   For sort memory, set SHEAPTHRES_SHR and SORTHEAP to AUTOMATIC

Changes that result from self-tuning operations are recorded in memory tuning log files , which are located in the "stmmlog" subdirectory. These log files contain summaries of the resource demands from each memory consumer during specific tuning intervals, which are determined by timestamps in the log entries.

When the self-tuning memory manager (STMM) is active and DATABASE_MEMORY is set to AUTOMATIC, STMM checks the free memory available on the system and automatically determines how much memory to dedicate to performance heaps for optimal performance. All the performance heaps contribute to the overall DATABASE_MEMORY size. The difference between INSTANCE_MEMORY and DATABASE_MEMORY is available for application memory (APPL_MEMORY) use and is allocated as needed.

When using STMM, we recommend that you do the following:

- o   Set INSTANCE_MEMORY to a fixed value to assign a dedicated portion of memory to DB2.

- o   Set DATABASE_MEMORY to AUTOMATIC to enable self tuning of database shared memory. Alternatively, you can set DATABASE_MEMORY to a numeric value to assign a fixed region for database shared memory. **Do not use DATABASE_MEMORY=COMPUTED with STMM.**

STMM is globally controlled by the database parameter SELF_TUNING_MEM. If at least two tuneable consumers are available, you activate STMM by setting parameter SELF_TUNING_MEM to ON. Setting parameter SELF_TUNING_MEM to OFF deactivates STMM, regardless if any memory consumers are still enabled for STMM. The consumers remain at their current size if STMM is turned off.

You can enable all memory consumers or a subset for STMM. You can deactivate STMM for an individual memory consumer or for all memory consumers at any point in time. For STMM to be active, a minimum of two consumers must be eligible. **In general, you should enable all consumers for self-tuning when you activate STMM.** This allows DB2 to best distribute the available memory to all consumers.

You can enable individual memory consumers for STMM tuning by setting them to AUTOMATIC. Some consumers are controlled by configuration parameters (DATABASE_MEMORY, LOCKLIST, MAXLOCKS, PCKCACHESZ, SHEAPTHRES_SHR, SORTHEAP). Buffer pools, however, must be explicitly enabled using the following statement:

ALTER BUFFERPOOL <bp_name> SIZE AUTOMATIC

In a distributed database server (DPF), tuning by STMM works uniformly. That is, STMM runs on one partition only and propagates parameter changes to all other partitions that have parameter SELF_TUNING_MEM enabled. The partition that STMM runs on is determined via the "update stmm tuning dbpartitionnum" command. You can query the currently active STMM partition using the "get stmm tuning dbpartitionnum" command.

Uniform STMM tuning with DPF is typically not suitable for SAP workloads. We recommend that **in a distributed database server you only enable STMM on the catalog partition** (partition 0). All other partitions should be tuned manually. For more information about STMM and DPF, see SAP Note 1132282.

How you activate STMM:

1.   Set INSTANCE_MEMORY to a fixed value of least 125000 pages or more using the following command:

     db2 update dbm cfg using INSTANCE_MEMORY <value>

2.   Update your database manager and database configuration to enable self-tuning for all consumers using the following command:

     db2 update dbm cfg using SHEAPTHRES 0
     db2 update db cfg for <DBSID> using DATABASE_MEMORY AUTOMATIC LOCKLIST AUTOMATIC MAXLOCKS AUTOMATIC PCKCACHESZ AUTOMATIC SORTHEAP AUTOMATIC

```
SHEAPTHRES_SHR AUTOMATIC
```

3. Enable STMM for all your buffer pools using the following command:

    db2 alter bufferpool <bp_name> size AUTOMATIC

4. To activate STMM, enter the following command:

    db2 update db cfg for <DBSID> using SELF_TUNING_MEM ON

How you deactivate STMM:

1. To deactivate STMM, enter the following command:

    db2 update db cfg for <DBSID> using SELF_TUNING_MEM OFF

2. After you changed SELF_TUNING_MEM to value 'OFF', your database continues to use the settings that were active at the time when STMM was switched off. You can either continue to use these settings or update your configuration to fixed values as needed.

Recommended Database Manager Configuration with STMM Enabled:
===

```
> INSTANCE_MEMORY        >= 125000            [STMM=YES]
```

Recommended Database Configuration with STMM Enabled:
===

```
> SELF_TUNING_MEM        = ON                 [STMM=YES]
> DATABASE_MEMORY        = AUTOMATIC          [STMM=YES]
> LOCKLIST               = AUTOMATIC          [STMM=YES]
> MAXLOCKS               = AUTOMATIC          [STMM=YES]
> PCKCACHESZ             = AUTOMATIC          [STMM=YES]
> SHEAPTHRES_SHR         = AUTOMATIC          [STMM=YES]
> SORTHEAP               = AUTOMATIC          [STMM=YES]
```

Typical Parameter Settings for SAP NetWeaver Business Warehouse (SAP NetWeaver BW) and All SAP Systems Based on SAP NetWeaver BW:

Database Manager Configuration Parameters for OLAP workloads:
===

```
> SHEAPTHRES_SHR         >= 40000             [STMM=NO];[BI=YES]
```

Note:
You should set SHEAPTHRES_SHR to "Number SAP WP" x "SORTHEAP". The value should be at least 40000 pages but no more than max 1/4 of the physical memory that is available for one database partition. We also recommend that you read the IBM DB2 Version 9.7 manuals to understand the dependencies between SHEAPTHRES and SORTHEAP.

```
> AGENT_STACK_SZ         >= 4096              [OS=UNIX],[BI=YES]
```

```
> MAX_QUERYDEGREE        >= 1                 [BI=YES]
> MAX_QUERYDEGREE        <= 4                 [BI=YES]
> INTRA_PARALLEL          = NO                [BI=YES];[CUST]
```

Note:
In general, you should run with INTRA_PARALLEL=NO and MAX_QUERYDEGREE=1 and
scale out to multiple database partitions (DPF) to make best use of your
CPU power.

Only in the exceptional case that you have 8 CPU cores or more and **only
one** database partition, you can consider to set INTRA_PARALLEL=YES and
MAX_QUERYDEGREE to a value between 2 and 4.

Database Configuration Parameters for OLAP Workloads:
===

```
> LOCKLIST               >= 80000            [STMM=NO];[BI=YES]
> SORTHEAP               >= 15000            [STMM=NO];[BI=YES]
```

Note:
For SAP APO/SCM systems, a smaller value of 4096 or more might be
sufficient. However, if problems related to sort performance occur or if
large Infocubes with Aggregates are used, you have to increase the
parameter to 15000.

Header Data

Release Status:	Released for Customer
Released on:	11.09.2012 11:38:15
Master Language:	English
Priority:	Correction with high priority
Category:	Consulting
Primary Component:	SV-BO Backoffice Service Delivery

Secondary Components:

BC-DB-DB6 DB2 Universal Database for Unix / NT

The Note is release-independent

Related Notes

Number	Short Text
1724557	Inst. Systems Based on NW 7.0 incl. EHPs: Windows DB2 LUW
1724554	Inst. Systems Based on NW 7.0 incl. EHPs: UNIX DB2 for LUW
1598376	DB6: BACK GROUND SYSTEM APPS GET SQL1226N
1598074	DB6: Adjusting parameter check
1523227	DB6: Use of BLOCKNONLOGGED database configuration parameter
1514016	DB6: DB2 LUW isolation levels used by AS ABAP
1493932	DB6: How to choose the extent size of DB2 tablespaces
1493852	DB6: Use of alternate page cleaning
1493587	DB6: Use of infinite logging or secondary log files
1486779	DB6: CUR_COMMIT=ON with 6.40 SAP kernel
1474404	DB6: Poor database performance with DB2AUDIT
1351160	DB6: Using DB2 9.7 with SAP Software
1332109	DB6: Upgrade to Version 9.7 of DB2
1308895	DB6: File System for Transaction Log is Full
1293475	DB6: Transaction Log Full
1250466	DB6: Perform database administration, keeping SAP AS running
1225540	DB6: 'Out of memory failure ' for STMM on DB2 LUW 9.5
1175547	DB6: DATABASE_MEMORY=AUTOMATIC on SOLARIS
1156578	DB6: Slow reporting performance, especially on DataStore
1138550	DB6: Installing Fix Packs for DB2 V9.5 (Windows)
1138549	DB6: Installation of Fix Packs for DB2 V9.5 (UNIX & Linux)
1132282	DB6: Use of Self Tuning Memory Manager (STMM) for SAP NW BW
1089578	DB6: Using DB2 Version 9.5 with SAP Software
1086130	DB6: DB2 9.5 Standard Parameter Settings
1075118	SAP on HP-UX: FAQ
1056697	DB6: SAP System Inst. with DB2 V9 only - Windows
1056695	DB6: SAP System Inst. with DB2 V9 only - UNIX
899322	DB6: DB2 9.1 Standard Parameter Settings
584952	DB6: DB2 UDB Version 8 Standard Parameter Settings

Attributes

Attribute	Value
Database system	DB2 UDB