



## Header Data

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Component	BC-DB-SDB MaxDB
Other Components	BW-SYS-DB BW Database Platforms
Priority	Recommendations / Additional Info
Category	Customizing

## Symptom

This note provides recommendations for setting the database parameters for SAP MaxDB Version 7.9 for OLTP systems, CRM systems, BW systems and OneDB systems.

When configuring **OneDB systems**, refer also to **SAP Note [1147936](#)**.

BEFORE the upgrade, you must use the Product Availability Matrix (PAM) to check whether the SAP application that you use is released for SAP MaxDB Version 7.9.

## Other Terms

Database parameters

## Reason and Prerequisites

You are using SAP MaxDB Version 7.9.

Internal information about splitting the versions:

7.8.00.12 = 7.9.00.00 (DEV/COR, CL 202776) FEB/02/2009

7.9.00.02 = 7.9.01.00 (DEV, CL 211772) MAY/11/2009

7.9.01.03 = 7.9.02.00 (DEV, CL 216194) JUL/03/2009

## Solution

You can check the correct setting of the database parameters using the most recent version of the Database Analyzer configuration file with the help of SAP Note [1111426](#).

If you use the database studio, database assistant (transaction DB50), or DBA Cockpit (transaction DBACOCKPIT) to perform database parameter changes, we recommend that you enter the reason for the database parameter change (for example, the SAP Note number, customer incident number, or PTS number) into the comment field.

The database parameters are entered in alphabetical order.

### 1. EnableCommandMonitor

Make sure that the database parameter EnableCommandMonitor is set to the value YES. The command monitor is NOT activated by setting the database parameter value EnableCommandMonitor=YES, but this setting enables the activation of the command monitor when required (if the database parameter value is EnableCommandMonitor=NO, you cannot activate the command monitor).

### 2. EnableJoinHashTableOptimization

SAP MaxDB Version 7.9.00 and < 7.9.01.03

The error -1 Duplicate key in index occurs in your system. You can avoid this problem by setting the database parameter EnableJoinHashTableOptimization to the value NO (SAP Note [1359705](#), PTS 1184071).

### 3. EnableQueryRewrite

Following an upgrade from SAP MaxDB Version 7.6, 7.7, or 7.8 to SAP MaxDB Version 7.9, query rewrite must be activated (EnableQueryRewrite=YES).

### 4. EnableSharedSQLForInternalSQL

The database parameter EnableSharedSQLForInternalSQL should be set to the value NO as of SAP MaxDB Version 7.9.08.14 (PTS 1250919).

### 5. HashJoinTotalMemorySize, HashJoinSingleTableMemorySize

The memory available for hash joins is restricted by the database parameters HashJoinTotalMemorySize and HashJoinSingleTableMemorySize.

## BW Systems

Experience in the BW environment shows that the default settings of both database parameters in BW systems are not sufficient. Therefore, set both database parameters in the BW environment as follows:

HashJoinTotalMemorySize = 24000 KB

HashJoinSingleTableMemorySize = 4000 KB

### 6. IOTicketQueueSynchronizationMode

You can use this database parameter to configure the synchronization mechanism of the I/O ticket queue. Set this parameter to the value LOCKING for SUN, AIX and Linux PowerPC to [1398450](#) and described in SAP Note [1698867](#) avoid problems (LINUX PowerPC: PTS 1253467).

### 7. JoinSearchTableThreshold

If the database parameter JoinSearchTableThreshold is set to a value < 8 in your system, set it to the recommended value of 8 to ensure the optimal strategy search for joins.

If JoinSearchTableThreshold already has a value > 8, do NOT decrease this value.

The new value is not activated until the database is restarted.

### 8. LoadBalancingCheckInterval

**You can use this database parameter to activate load balancing.**

In SAP MaxDB/liveCache versions < 7.8, you are only allowed to activate load balancing if extremely specific prerequisites are met (for more information about load balancing, see SAP Note [695721](#)).

As of Version 7.8, you can activate load balancing without restrictions (default setting for new installations). After you upgrade from a version lower than 7.8 to Version 7.8 or higher, the system transfers the previous setting and does not automatically adjust it. If required, you **must carry out the activation manually**.

You must not set the database parameter to a value greater than 4.

### 9. LogQueues

You use the database parameter LogQueues to configure the number of log I/O queues. If you set the database parameter LogQueues to 0, the value MaxCPUs always determines the number of log I/O queues. If MaxCPUs > 1, the system also implicitly configures more log I/O queues accordingly.

### 10. MaxExclusiveLockCollisionsOnLoops

The default value (-1) for this database parameter ensures that the optimum setting is automatically made by SAP MaxDB in accordance with the database parameter MaxCPUs. For systems with MaxCPUs<8, the value 1000 is set implicitly. For systems with MaxCPUs>=8, the value 100000 is set implicitly.

### 11. MaxMemoryAllocationSize

This parameter is set to the value 0 by default, which means that there is no memory limit. Do NOT change this setting.

### 12. MaxSQLLocks

The optimum setting for the database parameter MaxSQLLocks depends on the application and configuration. For the correct setting for the database parameter, see SAP Note [65946](#).

### 13. ParallelJoinServerTasks

By default, this parameter has the value 0. In the case of the setting ParallelJoinServerTasks > 0, the database can crash (PTS 1252913).

### 14. ReadAheadTableThreshold

As of SAP MaxDB Version 7.8, an enhanced version of the feature Prefetch/ReadAhead is available. This feature is always activated for new installations. You can activate Prefetch/ReadAhead by setting the database parameter ReadAheadTableThreshold to a value > 0.

Following a migration from a version < 7.9 to 7.9, the database parameter ReadAheadTableThreshold should be set to the value 100.

### 15. SharedSQLCleanUpThreshold

The database parameter must be set to the value 75% (also see SAP Note [1497862](#)).

### 16. UseDataCacheScanOptimization (LRU\_FOR\_SCAN)

This database parameter controls whether the entire I/O buffer cache should be used for table scans or only a part thereof.

The default setting is NO, and the entire cache is not used for scans.

#### Only BW Systems

For BW systems, SAP recommends that you set the database parameter UsedataCacheScanOptimization to the value YES, contrary to the default value.

### 17. UpdateStatParallelServerTask

You can use this database parameter to increase the number of server tasks that are to be used for a parallel UPDATE STATISTICS. The default value 0 means that the number of configured data volumes determines the number of server tasks that are used for the parallel UPDATE STATISTICS. This default value should not be changed without the recommendation of SAP MaxDB support.

## 18. UseHashedResultset

You can use this database parameter to control whether hashed results sets are to be used for aggregates (UseHashedResultset=YES).

- SAP MaxDB Version < 7.6:  
Deactivate the use of the hashed result set by setting the database parameter UseHashedResultset to the value NO (PTS 1251546).

## 19. UpdateStatSampleAlgorithm

This parameter controls the algorithm used to calculate the SQL optimizer statistics. Make sure that the value is set to 1.

For more information about UPDATE STATISTICS, see SAP Note [927882](#).

## 20. UseLobClustering

You can use the database parameter UseLobClustering to control whether large LOBs (> 8 KB) are saved in blocks (UseLobClustering=YES) and can thus be read with fewer I/Os.

Make sure that the database parameter value UseLobClustering=YES is set after a migration to 7.9.

## 21. UseSelectFetchOptimization

SELECT-FETCH optimization is activated with this database parameter (UseSelectFetchOptimization=YES). The select-fetch optimization should always be activated.

## 22. UseSystemTrigger

UseSystemTrigger should always be set to YES (default value). You can deactivate the system trigger only if errors occur when you restart the database while executing the system trigger, and these errors prevent the restart from being successful.

In this case, **contact the SAP MaxDB/LiveCache development support team (component: BC-DB-SDB)**.

## Unix (all):

### 1. UseFileSystemCacheForVolume

Ensure that the database parameter UseFileSystemCacheForVolume is set to NO. If the value of the database parameter on Linux and Unix is set to YES, and if file systems are used for volumes, the file systems must be mounted with direct I/O. The mount options vary depending on the type of file system.

### 2. UseVectorIOSimulation

The database parameter should be set to NEVER.

You can change the database parameter value for the running database session for database parameters with the property CHANGE=RUNNING. Changes to the values of database parameters with the property CHANGE=OFFLINE take effect only after a database restart.

For example:

```
dbmcli> param_getfull SHAREDSQL
...
CHANGE RUNNING
...
dbmcli> param_put -running -permanent SHAREDSQL <value>
OK
```

You can use the DBM command param\_getfull to check the current value of the database parameter. This is displayed in the row ACTIVEVALUE.

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## Validity

This document is not restricted to a software component or software component version

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## References

### This document refers to:

#### SAP Notes

- 1800396 [-7069: POS\(1\) Outer/Semi join with bushy trees not allowed](#)
- 1492467 [Supplementary information about SAP MaxDB version change to 7.9](#)
- 1147936 [Parameter recommendations for OneDB systems](#)

### This document is referenced by:

#### SAP Notes (3)

- 1147936 [Parameter recommendations for OneDB systems](#)

1492467 [Supplementary information about SAP MaxDB version change to 7.9](#)

1800396 [-7069: POS\(1\) Outer/Semi join with bushy trees not allowed](#)