

Subject: **Database Initialization Parameters for Oracle Applications Release 12**

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Database Initialization Parameter Settings for Oracle Applications Release 12

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In This Document

This document describes the database initialization parameter settings required for Oracle E-Business Suite Release 12. The document consists of a *common section*, which provides a common set of database initialization parameters used for all releases of the Oracle Database, followed by several *release-specific sections*, which list parameters and settings required for a particular release of the Oracle Database. Together, the common section and appropriate release-specific section formulate a complete database initialization parameter file.

Parameters that appear on a *removal list* are those for which the default value should be used. Removing such parameters from the database initialization file ensures that the default values will be used automatically.

Note: In the various parameter lists, check for comments giving any platform-specific exceptions. Such comments will apply only to the exact platform mentioned: for example, a reference to HP-UX (PA-RISC) will not apply to HP-UX (Itanium IA-64).

The "X" notation used in the release-specific section denotes all patchset releases within that major version. For example, "10.2.0.X" refers to all releases of 10.2.0, such as 10.2.0.2 and 10.2.0.3.

Note: Oracle E-Business Suite Release 12 requires Oracle Database 10g Release 2 (10.2.0.2) Enterprise Edition as a minimum release level and edition. No earlier releases, or other editions of any release, may be used.

- [Section 1: Common Database Initialization Parameters For All Releases](#)
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The most current version of this document can be obtained in My Oracle Support Knowledge Document [396009.1](#).

There is a [change log](#) at the end of this document.

Section 1: Common Database Initialization Parameters For All Releases

This section lists the database initialization parameters that are common across all applicable releases of the Oracle Database. Release-specific database initialization parameters are included in the respective release sections. The release-specific parameters should be appended to the common database initialization parameters.

The parameter values provided in this document reflect a small instance configuration (see Section 6). You should adjust the relevant parameters based on the number of active Oracle Applications users. In addition, you should investigate any

parameters that are set but not mentioned in this note.

```
#####
#
# Oracle E-Business Suite Release 12
# Common Database Initialization Parameters
#
# The following represents the common database initialization
# parameters file for Oracle E-Business Suite Release 12.
# Release-specific parameters are included in the respective release
# section. The release-specific parameters should be appended to the
# common database initialization parameter file.
#
# There are numerous mandatory database initialization parameters.
# Their settings must not be altered. The use of values other than
# those provided in this document will not be supported unless Oracle
# Support has specifically instructed you to alter these parameters
# from their mandatory settings.
#
# Mandatory parameters are denoted with the (MP) symbol as a
# comment. This includes parameters such as NLS and optimizer
# related parameters.
#
# The remaining (non-mandatory) parameters relate to either sizing or
# configuration requirements that are specific to customer environments
# or system capacity. A sizing table provides recommendations and
# guidelines based on the number of deployed and active Applications
# users. Customers can adjust these parameters as per their
# environment and system resource capacity.
#
#####

#####
#
# Database identification parameters
#
# The database identification parameters define the name of the
# database and the names of the database control files.
#
# The database name is established when the database is built, and
# for most customers it matches the instance name. It should not
# normally be necessary to change the database name, except for
# the purposes of database cloning.
#
# There should be at least two control files, preferably three,
# located on different volumes in case one of the volumes fails.
# Control files can expand, hence you should allow at least 20M
# per file for growth.
#
#####

db_name = prodr12
control_files = ('/disk1/prodr12_DB/cntrlprodr12_1.dbf',
                '/disk2/prodr12_DB/cntrlprodr12_2.dbf',
                '/disk3/prodr12_DB/cntrlprodr12_3.dbf')

#####
#
# Database block size parameter
#
# The required block size for Oracle Applications is 8K. No other value may be used.
#
#####

db_block_size = 8192      #MP

#####
#
# Compatibility parameter
#
```

Section 2: Release-Specific Database Initialization Parameters For Oracle 10g Release 2

This section discusses database initialization parameters and specific releases of Oracle Database 10g Release 2, first describing required parameters, then listing any parameters that should not be used.

2.1 Required Parameters

The following list describes database initialization parameters required for this specific release of the Oracle Database. These parameters should be added to the common database initialization parameters provided in Section 1, so that the final database initialization parameters file includes the common section plus the contents of this release-specific section.

```
#####
#
# Oracle E-Business Suite Release 12
# Release-Specific Database Initialization Parameters for 10gR2
#
#####

#####
#
# Compatibility parameter
#
# Compatibility should be set to the current release.
#
#####

compatible = 10.2.0          #MP

#####
#
# System-managed undo parameters
#
# Oracle E-Business Suite Release 12 requires the use of system managed undo.
# This is much more efficient than rollback segments, and reduces the chances
# of snapshot too old errors. In addition, it is much easier to manage and
# administer system managed undo than manually managing rollback segments.
#
#####

undo_management = AUTO          #MP
undo_tablespace = APPS_UNDOTS1 #MP

#####
#
# PL/SQL parameters
#
# The following parameters are used to enable the PL/SQL global
# optimizer as well as native compilation.
#
# PL/SQL native compilation is recommended for Oracle Database 10g-based
# Applications environments such as Release 12. Interpreted mode is supported,
# and can be used with Oracle Applications. However, native compilation is
# recommended in order to maximize runtime performance and scalability.
# Compiling PL/SQL units with native compilation takes longer than using
# interpreted mode, because of the need to generate and compile the native
# shared libraries.
#
#####

plsql_optimize_level = 2          #MP
plsql_code_type = native
plsql_native_library_dir = /ebiz/prodr12/plsql_nativelib
plsql_native_library_subdir_count = 149

#####
#
# Other parameters
#
# _kks_use_mutex_pin
#
# 10gR2 facilitates the use of mutexes to lock resources in a lightweight
# fashion with higher granularity.
#
# On the HP-UX (PA-RISC) platform only, this parameter must be set to FALSE if using 10gR2.
#
#####

_kks_use_mutex_pin=FALSE # Set to FALSE on HP-UX (PA-RISC) only otherwise remove this
parameter
```

2.2 Parameter Removal List for Oracle Database 10g Release 2

If they exist, you should remove the following parameters from your database initialization parameters file for Oracle Database 10g Release 2.

```

_always_anti_join
_always_semi_join
_complex_view_merging
_index_join_enabled
_kks_use_mutex_pin           # Unless using HP-UX (PA-RISC) - see "Other parameters"
section above.
_new_initial_join_orders
_optimizer_cost_based_transformation
_optimizer_cost_model
_optimizer_mode_force
_optimizer_undo_changes
_or_expand_nvl_predicate
_ordered_nested_loop
_push_join_predicate
_push_join_union_view
_shared_pool_reserved_min_alloc
_sortmerge_inequality_join_off
_table_scan_cost_plus_one
_unnest_subquery
_use_column_stats_for_function
always_anti_join
always_semi_join
db_block_buffers
db_file_multiblock_read_count
db_cache_size
enqueue_resources
event="10932 trace name context level 32768"
event="10933 trace name context level 512"
event="10943 trace name context forever, level 2"
event="10943 trace name context level 16384"
event="38004 trace name context forever, level 1"
hash_area_size
java_pool_size
job_queue_interval
large_pool_size
max_enabled_roles
optimizer_dynamic_sampling
optimizer_features_enable
optimizer_index_caching
optimizer_index_cost_adj
optimizer_max_permutations
optimizer_mode
optimizer_percent_parallel
plsql_compiler_flags
query_rewrite_enabled
row_locking
sort_area_size
undo_retention
undo_suppress_errors

```

Section 3: Release-Specific Database Initialization Parameters for Oracle 11g Release 1

3.1 Required Parameters

The following list describes database initialization parameters required for this specific release of the Oracle Database. These parameters should be added to the common database initialization parameters provided in Section 1, so that the final database initialization parameters file includes the common section plus the contents of this release-specific section.

```
#####
#
# Oracle E-Business Suite Release 12
# Release-Specific Database Initialization Parameters for 11gR1
#
#####

#####
#
# Compatible
#
# Compatibility should be set to the current release.
#
#####

compatible = 11.1.0

#####
#
# Diagnostic Parameters
#
# As of Oracle Database 11g Release 1, the diagnostics for each database
# instance are located in a dedicated directory that can be specified
# via the DIAGNOSTIC_DEST initialization parameter. The format of
# the directory specified by DIAGNOSTIC_DEST is as follows:
#
# <diagnostic_dest>/diag/rdbms/<dbname>/<instname>
#
# Diagnostic files are located in their own subdirectories of the
# DIAGNOSTIC_DEST directory, according to type:
#
# Trace files - <diagnostic_dest>/diag/rdbms/<dbname>/<instname>/trace
# Alert logs - <diagnostic_dest>/diag/rdbms/<dbname>/<instname>/alert
# Core files - <diagnostic_dest>/diag/rdbms/<dbname>/<instname>/cdumd
# Incident dump files - <diagnostic_dest>/diag/rdbms/<dbname>/<instname>/incident/<incdir#>

diagnostic_dest = ?/prod12

# System-Managed Undo Parameters
#
# Oracle Applications requires the use of System Managed Undo (SMU).
# This is more efficient than manually managed rollback segments,
# and reduces the chances of "snapshot too old" errors. It is also
# easier to manage SMU than the rollback segments it replaces.
#
#####

undo_management=AUTO          #MP
undo_tablespace=APPS_UNDOTS1  #MP

#####
# PL/SQL parameters
#
# The following parameters are used to enable the PL/SQL global
# optimizer as well as native compilation.
#
# PL/SQL native compilation is recommended for Oracle Database 10g or 11g based
# Applications environments such as Release 12. Interpreted mode is supported,
# and can be used with Oracle Applications. However, native compilation is
# recommended in order to maximize runtime performance and scalability.
# Compiling PL/SQL units with native compilation takes longer than using
# interpreted mode, because of the need to generate and compile the native
# shared libraries.
#
# If native compilation is to be used, uncomment the plsql_code_type = NATIVE
# line below. Note that in 11g, the parameters plsql_native_library_dir and
# plsql_native_library_subdir_count have no effect and are not needed, as
# natively compiled code is now stored in the database, not a filesystem.
#
#####
```

3.2 Parameter Removal List for Oracle Database 11g Release 1

If they exist, you should remove the following parameters from your database initialization parameters file for Oracle Database 11g Release 1 (11.1.X).

```
_always_anti_join
_always_semi_join
_complex_view_merging
_index_join_enabled
_kks_use_mutex_pin
_new_initial_join_orders
_optimizer_cost_based_transformation
_optimizer_cost_model
_optimizer_mode_force
_optimizer_undo_changes
_or_expand_nvl_predicate
_ordered_nested_loop
_push_join_predicate
_push_join_union_view
_shared_pool_reserved_min_alloc
_sortmerge_inequality_join_off
_sqllexec_progression_cost
_table_scan_cost_plus_one
_unnest_subquery
_use_column_stats_for_function
always_anti_join
always_semi_join
background_dump_dest
core_dump_dest
db_block_buffers
db_cache_size
db_file_multiblock_read_count
enqueue_resources
event="10932 trace name context level 32768"
event="10933 trace name context level 512"
event="10943 trace name context forever, level 2"
event="10943 trace name context level 16384"
event="38004 trace name context forever, level 1"
hash_area_size
java_pool_size
job_queue_interval
large_pool_size
max_enabled_roles
nls_language
optimizer_dynamic_sampling
optimizer_features_enable
optimizer_index_caching
optimizer_index_cost_adj
optimizer_max_permutations
optimizer_mode
optimizer_percent_parallel
plsql_compiler_flags
plsql_native_library_dir
plsql_native_library_subdir_count
plsql_optimize_level
query_rewrite_enabled
rollback_segments
row_locking
sort_area_size
sql_trace
timed_statistics
undo_retention
undo_suppress_errors
user_dump_dest
```

Section 4: Using System Managed Undo (SMU)

As mentioned for the parameters related to system undo, the database releases certified for use with Oracle Applications Release 12 only support the use of system managed undo (SMU). SMU is more efficient than traditional rollback segments and reduces the possibility of “snapshot too old” (ORA-1555) errors.

Several points apply to the `undo_retention` parameter:

- The values given for `undo_retention` are for guidance only. This parameter should be adjusted according to the elapsed times of the concurrent jobs, and corresponding commit windows.
- There is no need to specify a value for `undo_retention` on Oracle 10g or 11g based systems, because it is set automatically as part of automatic undo tuning.
- This parameter may be safely removed if you are using a value of 900 or less.
- Setting this parameter to a value higher than 900 (the default) is recommended if you experience "ORA-1555: Snapshot too old" errors.
- Automatic undo is not supported for LOBS.

Section 5: Temporary Tablespace Setup

It is recommended that the temporary tablespace for Oracle Applications users be created using locally managed temp files with uniform extent sizes of 128K. The 128K extent size is recommended because numerous modules, such as Pricing and Planning, make extensive use of global temporary tables which also reside in the temporary tablespace. Since each user instantiates a temporary segment for these tables, large extent sizes may result in space allocation failures.

The following is an example of creating a locally managed temporary tablespace with temp files:

```
SQL> drop tablespace temp;
SQL> create temporary tablespace temp
tempfile '/d2/prodr12/dbf/temp01.dbf' size 2000M reuse
extent management local
uniform size 128K;
```

Section 6: Database Initialization Parameter Sizing

This section provides sizing recommendations based on the active Applications user counts. The following table should be used to size the relevant parameters:

Parameter Name	Development/Test Instance	11 – 100 Users	101 – 500 Users	501 – 1,000 Users	1,001 – 2,000 Users
<code>processes</code>	200	200	800	1200	2500
<code>sessions</code>	400	400	1600	2400	5000
<code>sga_target</code> Footnote 1	1G	1G	2G	3G	14G
<code>shared_pool_size (csp)</code>	N/A	N/A	N/A	1800M	3000M
<code>shared_pool_reserved_size (csp)</code>	N/A	N/A	N/A	180M	300M
<code>shared_pool_size (no csp)</code>	400M	600M	800M	1000M	2000M
<code>shared_pool_reserved_size (no csp)</code>	40M	60M	80M	100M	100M
<code>pga_aggregate_target</code>	1G	2G	4G	10G	20G
Total Memory Required Footnote 2	~ 2 GB	~ 3 GB	~ 6 GB	~ 13 GB	~ 25 GB

Specific Notes on Table

- **Footnote 1** The parameter *sga_target* should be used for Oracle 10g or 11g based environments such as Release 12. This replaces the parameter *db_cache_size*, which was used in Oracle9i based environments. Also, it is not necessary to set the parameter *undo_retention* for 10g or 11g based systems, since undo retention is set automatically as part of automatic undo tuning.
- **Footnote 2** The total memory required refers to the amount of memory required for the database instance and associated memory, including the SGA and the PGA. You should ensure that your system has sufficient available memory in order to support the values provided above. The values provided above should be adjusted based on available memory so as to prevent paging and swapping.

General Notes on Table

- "Development/Test instance" refers to a small instance used only for development or testing, with no more than 10 users.
- The range of user counts provided above refers to *active* Applications users, not total or named users. For example, if you plan to support a maximum of 500 active Oracle Applications users, then you should use the sizing as per the range 101-500 users.
- The parameter values provided in this document reflect a small instance configuration, and you should adjust the relevant parameters based on the Applications user counts as listed in the table above.
- The "csp" and "no csp" options of the shared pool parameters refer to the use of *cursor_space_for_time*, which is documented in the common database initialization parameters section.

Note: Enabling *cursor_space_for_time* can result in significantly larger shared pool requirements.

Change Log

Date	Description
Sep 04, 2009	<ul style="list-style-type: none"> • Made various edits in readiness for re-publication. • Removed Application Upgrade Considerations section. • Added Advanced Queuing (AQ) note to common parameters (Section 1). • Added note to <i>job_queue_processes</i> (Section 1). • Added <i>diagnostic_dest</i> to 11gR1-specific parameters (Section 3). • Added <i>background_dump_dest</i>, <i>user_dump_dest</i>, <i>core_dump_dest</i> to 11gR1 removal list. • Added <i>plsql_native_library_dir</i>, <i>plsql_native_library_subdir_count</i>, <i>plsql_optimize_level</i> to 11gR1 removal list. • Added <i>#MP</i> to <i>_optimizer_autostats_job=false</i>. • Updated <i>undo_retention</i> section (Section 6). • Added <i>Timed_Statistics</i> to Section 1. • Added <i>nls_language</i>, <i>nls_length_semantics</i>, <i>_sqlxexec_progression_cost</i> to Section 1. • Removed <i>nls_length_semantics</i> from Section 3. • Removed <i>SGA_TARGET</i> from Sections 2, 3, and 4, as this is in the common parameters (Section 1) • Removed <i>db_block_buffers</i> row from sizing table (Section 6). • Updated "Specific Notes on Table" (Section 6). • Updated common parameters introduction (Section 1).
Feb 09, 2009	<ul style="list-style-type: none"> • Removed <i>db_cache_size</i> and <i>java_pool_size</i> from Section 1. • Added <i>sga_target</i> to Section 1. • Removed <i>#MP</i> from <i>plsql_code_type</i> in Sections 2.1 and 3.1, as this is a recommended parameter.

Oct 13, 2008	<ul style="list-style-type: none">• Corrected references to parameter name <code>_optimizer_cost_based_transformation</code> by removing extraneous "s" at end.
Aug 21, 2008	<ul style="list-style-type: none">• Added distinction between HP-UX (PA-RISC) and HP-UX (Itanium IA-64).
Aug 20, 2008	<ul style="list-style-type: none">• Added 11gR1 section.
May 13, 2008	<ul style="list-style-type: none">• Added explanatory text regarding purpose of the removal lists.
Mar 27, 2008	<ul style="list-style-type: none">• Added <code>pga_aggregate_target</code> row to table in Section 6.
Mar 18, 2008	<ul style="list-style-type: none">• Added <code>_kks_use_mutex_pin</code> as a required parameter in 9iR2.
Apr 23, 2007	<ul style="list-style-type: none">• Updated for database versions.
Feb 06, 2007	<ul style="list-style-type: none">• Minor edits.
Jan 24, 2007	<ul style="list-style-type: none">• Initial creation.

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