Oracle Quick Reference

Sizing the Shared Pool

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Estimate Shared Pool Size

1. v$shared_pool_advice:
SELECT shared_pool_size_for_estimate "Size of Shared Pool in MB",shared_pool_size_factor "Size Factor", estd_lc_time_saved "Time Saved in sec" FROM v$shared_pool_advice;

2. Minimum suggested shared pool size :
SQL> @/home/oracle/ysun/minshpool.sql

3. Another way to estimate the shared pool size
A) OBJECTS STORED IN THE DATABASE:
the amount of shared pool that needs to be allocated for objects that are
stored in the database like packages and views
SQL> select sum(sharable_mem)/1024/1024 from v$db_object_cache;

B) SQL
The amount of memory for the shared sql can be approximated by the following (5 just an example):
SQL> select sum(sharable_mem) from v$sqlarea where executions > 5

C) PER-USER PER-CURSOR MEMORY
* The per-user per-cursor memory is one of the classes of memory that shows up as 'library cache' in v$sgastat
* You will need to allow around 250 bytes of memory in the shared pool per concurrent user for each open cursor that the user has whether the cursor is shared or not
* During the peak usage time of the production system:
SQL> select sum(250 * users_opening)/1024/1024 from v$sqlarea;

D) OVERHEAD
Add a minimum of 20-30% overhead to the values calculated above to allow for unexpected and unmeasured usage of the shared pool other than object memory, shared sql or cursor memory

ORA-4031 Reason:

Query

1. REQUEST_FAILURES
SQL> select REQUEST_FAILURES, LAST_FAILURE_SIZE from V$SHARED_POOL_RESERVED;

2. To get SHARED_POOL_RESERVED_MIN_ALLOC:
select nam.ksppinm NAME,val.KSPPSTVL VALUE from x$ksppi nam,x$ksppsv val where
nam.indx = val.indx and nam.ksppinm like '%shared%' order by 1;

Inadequate Sizing

- if
  - – REQUEST_FAILURES > 0 and LAST_FAILURE_SIZE <
    SHARED_POOL_RESERVED_MIN_ALLOC
  - – REQUEST_FAILURES = 0 and LAST_FAILURE_SIZE <
    SHARED_POOL_RESERVED_MIN_ALLOC

- Solution:
  - 1) lowering SHARED_POOL_RESERVED_MIN_ALLOC (allow the database putting
    more objects into the shared pool reserved space);
  - 2) THEN increase the SHARED_POOL_SIZE if the problem is not resolved.

Fragmentation:

- if: – REQUEST_FAILURES > 0 and
  LAST_FAILURE_SIZE>SHARED_POOL_RESERVED_MIN_ALLOC.

- * Solution:
  - 1) increasing SHARED_POOL_RESERVED_MIN_ALLOC (lower the number of objects
    being cached into the shared pool reserved space)
  - 2) increase SHARED_POOL_RESERVED_SIZE and SHARED_POOL_SIZE

For "Small Shared Pool Size"

- Library Cache Hit Ratio
  - SELECT SUM(PINS) "EXECUTIONS", SUM(RELOADS) "CACHE MISSES WHILE
    EXECUTING" , SUM(RELOADS)/SUM(PINS) FROM V$LIBRARYCACHE;
  - If the ratio of misses to executions is more than 1%, then try to reduce the library
    cache misses by increasing the shared pool size.

- * Check above session 'Estimate Shared Pool Size' for calculating shared pool's size

For "Shared Pool Fragmentation"

- Library Cache Hit Ratio
    - SELECT SUM(PINS) "EXECUTIONS", SUM(RELOADS) "CACHE MISSES WHILE EXECUTING" , SUM(RELOADS)/SUM(PINS) FROM V$LIBRARYCACHE;
        - If the ratio of misses to executions is more than 1%, then try to reduce the library cache misses by increasing the shared pool size.
- Check above session 'Estimate Shared Pool Size' for calculating shared pool's size

Shows What Is In The Shared Pool Larger Than A Specified Number Of Bytes

SQL> set serveroutput on
SQL> exec dbms_shared_pool.sizes(&minsize);

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