

Ejercicio 1 - tema 4

Administración de las estructuras de Memoria

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I. OBJETIVO

EL objetivo es, Conocer y familiarizarse con las principales vistas y parámetros de la base de datos que muestran o contienen información relevante acerca del uso de las diferentes áreas de la SGA.

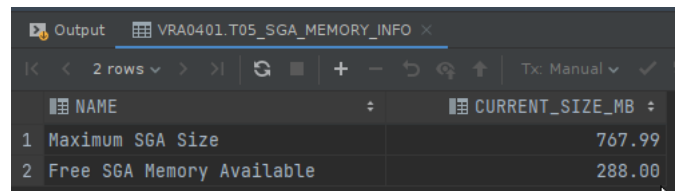
II. DESARROLLO

A. C1. Código empleado para crear y poblar la tabla t01_sga_components

```
1 declare
2   v_count number;
3   v_username varchar2(30) := 'VRA0401';
4 begin
5   select count(*) into v_count
6   from all_tables
7   where table_name='T01_SGA_COMPONENTS'
8   and owner = v_username;
9   if v_count > 0 then
10    execute immediate 'drop table '|| v_username ||
11    '||'t01_sga_components';
12  end if;
13  execute immediate 'create table '|| v_username ||
14  '||'t01_sga_components(
15    memory_target_param number,
16    fixed_size number,
17    variable_size number,
18    database_buffers number,
19    redo_buffers number,
20    total_sga number
21  )';
22 /
23 insert into vra0401.t01_sga_components(
24   memory_target_param_mb,
25   fixed_size_mb,
26   variable_size_mb,
27   database_buffers_mb,
28   redo_buffers_mb,
29   total_sg_mba
30 )
31 values (
32   (select trunc(value/1048576,2) from v$parameter
33   where name='memory_target'),
34   (select trunc(value/1048576,2) from v$sga where
35   name = 'Fixed Size'),
36   (select trunc(value/1048576,2) from v$sga where
37   name = 'Variable Size'),
38   (select trunc(value/1048576,2) from v$sga where
39   name = 'Database Buffers'),
40   (select trunc(value/1048576,2) from v$sga where
41   name = 'Redo Buffers'),
42   (select SUM(trunc(value/1048576,2)) from v$sga)
43 );
```

Código 1. t01_sga_components

B. C2. Respuesta del inciso E del punto 1.2



NAME	CURRENT_SIZE_MB
1 Maximum SGA Size	767.99
2 Free SGA Memory Available	288.00

Figure 1. captura

C. C3. Descripción de los ajustes de memoria

```
realizar una consulta para provocar carga de datos en BD Buffer cache

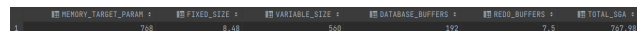
COUNT(*)
-----
300000

Elapsed: 00:00:01.12
```

Figure 2. tiempo de conteo

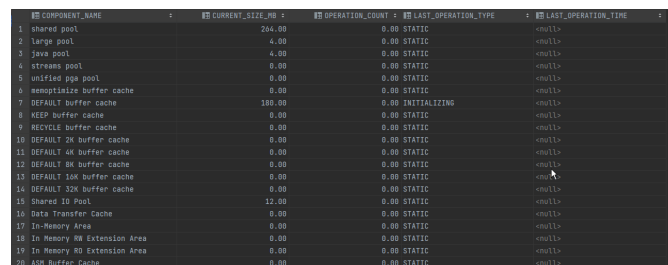
No existio reajuste ya que existia un valor de db buffer cache adecuado para la operación a realizar.

D. C4. Mostrar el contenido de cada una de las tablas t0* creadas en este ejercicio excepto la tabla de cadenas aleatorias



MEMORY_TARGET_PARAM	FIXED_SIZE	VARIABLE_SIZE	DATABASE_BUFFERS	REDO_BUFFERS	TOTAL_SGA
768	8.48	500	192	7.5	767.99

Figure 3. tabla t01



COMPONENT_NAME	CURRENT_SIZE_MB	OPERATION_COUNT	LAST_OPERATION_TYPE	LAST_OPERATION_TIME
shared pool	264.00	0.00	STATIC	enull
large pool	4.00	0.00	STATIC	enull
java pool	4.00	0.00	STATIC	enull
streams pool	0.00	0.00	STATIC	enull
unified sga pool	0.00	0.00	STATIC	enull
memory_target	0.00	0.00	STATIC	enull
DEFAULT buffer cache	100.00	0.00	INITIALIZING	enull
KEEP buffer cache	0.00	0.00	STATIC	enull
RECYCLE buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
DEFAULT db buffer cache	0.00	0.00	STATIC	enull
shared IO pool	12.00	0.00	STATIC	enull
Data Transfer Cache	0.00	0.00	STATIC	enull
In-Memory Area	0.00	0.00	STATIC	enull
In-Memory RM Extension Area	0.00	0.00	STATIC	enull
In-Memory RM Extension Area	0.00	0.00	STATIC	enull
ASH Buffer Cache	0.00	0.00	STATIC	enull

Figure 4. tabla t02



COMPONENT_NAME	CURRENT_SIZE_MB
1 shared pool	264.00

Figure 5. tabla t03

COMPONENT_NAME	CURRENT_SIZE_MB
1 large pool	4.00
2 java pool	4.00

Figure 6. tabla t04

NAME	CURRENT_SIZE_MB
1 Maximum SGA Size	767.99
2 Free SGA Memory Available	288.00

Figure 7. tabla t05

NAME
1 Buffer Cache Size
2 Shared Pool Size
3 Large Pool Size
4 Java Pool Size
5 Streams Pool Size
6 Shared IO Pool Size
7 Data Transfer Cache Size

Figure 8. tabla t06

COMPONENT	INITIAL_SIZE_MB	TARGET_SIZE_MB	FINAL_SIZE_MB	INCREMENT_MB	OPER_TYPE	STATUS
ASH Buffer Cache	0	0	0	0	STATIC	COMPLETE
DEFAULT 10K buffer cache	0	0	0	0	STATIC	COMPLETE
DEFAULT 2K buffer cache	0	0	0	0	STATIC	COMPLETE
DEFAULT 32K buffer cache	0	0	0	0	STATIC	COMPLETE
DEFAULT 4K buffer cache	0	0	0	0	STATIC	COMPLETE
DEFAULT 8K buffer cache	0	0	0	0	STATIC	COMPLETE
DEFAULT buffer cache	0	180	180	180	STATIC	COMPLETE
DEFAULT buffer cache	180	180	180	0	INITIALIZING	COMPLETE
Data Transfer Cache	0	0	0	0	STATIC	COMPLETE
In Memory RW Extension Area	0	0	0	0	STATIC	COMPLETE
In Memory RW Extension Area	0	0	0	0	STATIC	COMPLETE
In-Memory Area	0	0	0	0	STATIC	COMPLETE
KEEP buffer cache	0	0	0	0	STATIC	COMPLETE
RECYCLE buffer cache	0	0	0	0	STATIC	COMPLETE
Shared IO Pool	0	12	12	12	STATIC	COMPLETE
java pool	0	4	4	4	STATIC	COMPLETE
large pool	0	4	4	4	STATIC	COMPLETE
memory_resize buffer cache	0	0	0	0	STATIC	COMPLETE
shared pool	0	264	264	264	STATIC	COMPLETE
streams pool	0	0	0	0	STATIC	COMPLETE
unified sga pool	0	0	0	0	STATIC	COMPLETE

Figure 9. tabla t07

COMPONENT	INITIAL_SIZE_MB	TARGET_SIZE_MB	FINAL_SIZE_MB	INCREMENT_MB	OPER_TYPE
ASH Buffer Cache	0	0	0	0	STATIC
DEFAULT 10K buffer cache	0	0	0	0	STATIC
DEFAULT 2K buffer cache	0	0	0	0	STATIC
DEFAULT 32K buffer cache	0	0	0	0	STATIC
DEFAULT 4K buffer cache	0	0	0	0	STATIC
DEFAULT 8K buffer cache	0	0	0	0	STATIC
DEFAULT buffer cache	0	180	180	180	STATIC
DEFAULT buffer cache	180	180	180	0	INITIALIZING
Data Transfer Cache	0	0	0	0	STATIC
In Memory RW Extension Area	0	0	0	0	STATIC
In Memory RW Extension Area	0	0	0	0	STATIC
In-Memory Area	0	0	0	0	STATIC
KEEP buffer cache	0	0	0	0	STATIC
RECYCLE buffer cache	0	0	0	0	STATIC
Shared IO Pool	0	12	12	12	STATIC
java pool	0	4	4	4	STATIC
large pool	0	4	4	4	STATIC
memory_resize buffer cache	0	0	0	0	STATIC
shared pool	0	264	264	264	STATIC
streams pool	0	0	0	0	STATIC
unified sga pool	0	0	0	0	STATIC

Figure 10. tabla t07

E. C5. Resultado del validador

```

SESSION TIME: 12/07/2021 18:19:16
USR_COD HOST: 201844
DB_USER: validr
DB_USER: SYS
CON_NAME: vrbdd2
325451071713648394862e1c2e86df964fa037466672db11f0f4da7 s-04p-validador-ejercicios.plb

Realizando limpieza.
Invocando script s-01-uga-components.sql
Connected.
Connected.
Iniciando validación - Componentes de la SGA
=====
2021-07-12 18:19:16-201844-PE-0001V-00101-0001 --> OK Estructura y registros encontrados para t01_sga_component
2021-07-12 18:19:17-154-201844-CS-A002R-0002V-0002 --> OK Memoria asignada en el parametro memory_target .....768
2021-07-12 18:19:17-154-201844-CS-A003A-A003S-A003 --> OK Memoria fija de la SGA correcta .....8.48
2021-07-12 18:19:17-155-201844-0X-0004B-2004S-2004 --> OK Memoria variable de la SGA correcta .....560
2021-07-12 18:19:17-155-201844-RW-0005D-W005S-W005 --> OK Memoria para DB buffer cache correcta .....192
2021-07-12 18:19:17-155-201844-AE-V006A-0006S-0006 --> OK Memoria del pool los buffer correcta .....7.5
2021-07-12 18:19:17-155-201844-08-A007Z-R007S-R007 --> OK Memoria total de la SGA calculado correcto .....767.98
2021-07-12 18:19:17-155-201844-IC-0008R-C008S-C008 --> OK Estructura y registros encontrados para t04_sga_dynamic_component
2021-07-12 18:19:17-159-201844-0P-0010B-0010S-0010 --> OK Estructura y registros encontrados para t03_sga_max_dynamic_component
2021-07-12 18:19:17-163-201844-US-V011B-S011V-S011 --> OK Estructura y registros encontrados para t05_sga_memory_info
2021-07-12 18:19:17-168-201844-MZ-A012R-0012S-0012 --> OK Memoria SGA size en tabla t05 correcto .....767.99
2021-07-12 18:19:17-168-201844-AM-L013A-R013S-R013 --> OK Free SGA Memory Available en tabla t05 correcto .....288
2021-07-12 18:19:17-168-201844-MR-0014R-0014S-0014 --> OK Estructura y registros encontrados para t06_sga_dynamic_components
2021-07-12 18:19:17-169-201844-MR-0015V-M015S-M015 --> OK Nas. Área de memoria SGA ajustables correcto .....7
2021-07-12 18:19:17-171-201844-CV-V016B-M016S-M016 --> OK Estructura y registros encontrados para t07_sga_resize_ops
2021-07-12 18:19:17-641-201844-0P-A017A-0017V-0017 --> OK Estructura y registros encontrados para t08_random_data .....300000
2021-07-12 18:19:17-643-201844-0P-U018B-R018S-P018 --> OK Estructura y registros encontrados para t09_sga_resize_ops
2021-07-12 18:19:17-646-201844-RS-0019B-0019S-0019 --> OK Validación concluida
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.0.0.0.0

```

Figure 11. resultado validador

III. CONCLUSIONES

En este ejercicio se revisaron las estructuras de memoria dentro de las áreas de SGA, fue interesante ver cuales son las que se pueden consultar usando diccionario de datos, el unico detalle es que no se pudo apreciar la reasignación de memoria.