

Ejercicio 1 - tema 5

Administración de procesos

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I. OBJETIVO

EL objetivo es comprender y practicar el uso del modo dedicado y compartido empleado para crear conexiones hacia una instancia de base de datos. Revisar y familiarizarse con el uso de las vistas del diccionario de datos asociadas con sesiones, procesos de background y procesos foreground.

II. DESARROLLO

A. C1. s-01-config-compartido.sql y respuesta del inciso C

```
1  whenever sqlerror exit rollback
2  set serveroutput on
3  connect sys/system2 as sysdba
4  -- A
5  alter system set dispatchers='(dispatchers=2) (
6    PROTOCOL=tcp)' scope=memory;
7  alter system set shared_servers=4 scope=memory;
8  show parameter;
9  --B
10 alter system register;
11 --C
12 select program,pid,pname
13    from v$process
14    where pname like 'S0%' or pname like 'D0%'
15    order by program;
16
17 whenever sqlerror continue
```

Código 1. s-01-config-compartido.sql

ID	SID	LOGON TIME	USERNAME	STATUS	SERVER	OSUSER	PROCESS	PORT
1	2	182 2021-07-20 13:43:49	VRA0501	ACTIVE	DEDICATED	oracle	4642	27714

Figure 1. respuesta inciso C

B. C2. s-02-conexiones.sql y tnsnames.ora

```
1  whenever sqlerror exit rollback
2  set serveroutput on
3  connect sys@vrabda2_dedicated/system2 as sysdba
4
5  declare
6    v_count number;
7    v_username varchar2(30) := 'VRA0501';
8    v_table varchar2(30) := 'T01_SESSION_DATA';
9  begin
10     --Verificar si la table existe
11     select count(*) into v_count
12       from all_tables
13      where table_name = v_table
14      and owner = v_username;
15     --Si existe la tabla, entonces se borra
16     if v_count > 0 then
17       execute immediate 'drop table ' || v_username
18         || '.' || v_table;
19     end if;
20     execute immediate 'create table ' || v_username
21       || '.' || v_table || ' (
22         id number,
23         sid number,
```

```
22     logon_time date,
23     username varchar2(20),
24     status varchar2(8),
25     server varchar2(20),
26     osuser varchar2(30),
27     process varchar2(12),
28     port number
29   );
30 end;
31 /
32 -- A
33 insert into vra0501.t01_session_data (
34   id,sid,logon_time,username,status,server,
35   osuser,process,port)
36   select 1,sid,logon_time,username,status,server,
37     osuser,process,port from v$session where
38     username = 'SYS';
39 commit;
40 --B
41 connect sys@vrabda2_shared/system2 as sysdba
42
43 insert into vra0501.t01_session_data (
44   id,sid,logon_time,username,status,server,
45   osuser, process,port)
46   select 2,sid,logon_time,username,status,server,
47     osuser, process,port from v$session where
48     username = 'SYS';
49 commit;
50 --C
51 connect VRA0501@vrabda2_dedicated/VRA0501
52
53 insert into vra0501.t01_session_data (
54   id,sid,logon_time,username,status,server,
55   osuser, process,port)
56   select 3,sid,logon_time,username,status,server,
57     osuser, process,port from v$session where
58     username = 'VRA0501';
59 commit;
60 --D
61 connect VRA0501@vrabda2_shared/VRA0501
62
63 insert into vra0501.t01_session_data (
64   id,sid,logon_time,username,status,server,
65   osuser, process,port)
66   select 4,sid,logon_time,username,status,server,
67     osuser, process,port from v$session where
68     username = 'VRA0501';
69 commit;
70
71 whenever sqlerror continue
```

Código 2. s-02-conexiones.sql

```
1  # tnsnames.ora Network Configuration File: /u01/
2  app/oracle/product/19.0.0/dbhome_1/network/admin
3  /tnsnames.ora
4  # Generated by Oracle configuration tools.
5
6  VRABDA1 =
7    (DESCRIPTION =
8      (ADDRESS = (PROTOCOL = TCP) (HOST = pc-vra.fi.
9        unam) (PORT = 1521))
10     (CONNECT_DATA =
```

```

8      (SERVER = DEDICATED)
9      (SERVICE_NAME = vrabda1.fi.unam)
10     )
11  )
12
13  LISTENER_VRABDA1 =
14  (ADDRESS = (PROTOCOL = TCP) (HOST = pc-vra.fi.
15    unam) (PORT = 1521))
16
17  VRABDA2 =
18  (DESCRIPTION =
19    (ADDRESS = (PROTOCOL = TCP) (HOST = pc-vra.fi.
20      unam) (PORT = 1521))
21    (CONNECT_DATA =
22      (SERVER = DEDICATED)
23      (SERVICE_NAME = vrabda2)
24    )
25  )
26
27  VRABDA2_DEDICATED =
28  (DESCRIPTION =
29    (ADDRESS_LIST =
30      (ADDRESS = (PROTOCOL = TCP
31        ) (HOST = pc-vra.fi.unam) (PORT = 1521))
32    )
33    (CONNECT_DATA =
34      (SERVICE_NAME = vrabda2)
35      (SERVER=DEDICATED)
36    )
37  )
38
39  VRABDA2_SHARED =
40  (DESCRIPTION =
41    (ADDRESS_LIST =
42      (ADDRESS = (PROTOCOL = TCP
43        ) (HOST = pc-vra.fi.unam) (PORT = 1521))
44    )
45    (CONNECT_DATA =
46      (SERVICE_NAME = vrabda2)
47      (SERVER=SHARED)
48    )
49  )
50
51  --Si existe la tabla, entonces se borra
52  if v_count > 0 then
53    execute immediate 'drop table '|| v_username ||'
54      .'||v_table2;
55  end if;
56
57  --Verificar si la table existe
58  select count(*) into v_count
59  from all_tables
60  where table_name = v_table3
61  and owner = v_username;
62  --Si existe la tabla, entonces se borra
63  if v_count > 0 then
64    execute immediate 'drop table '|| v_username ||'
65      .'||v_table3;
66  end if;
67
68  --Verificar si la table existe
69  select count(*) into v_count
70  from all_tables
71  where table_name = v_table4
72  and owner = v_username;
73  --Si existe la tabla, entonces se borra
74  if v_count > 0 then
75    execute immediate 'drop table '|| v_username ||'
76      .'||v_table4;
77  end if;
78
79  --Verificar si la table existe
80  select count(*) into v_count
81  from all_tables
82  where table_name = v_table5
83  and owner = v_username;
84  --Si existe la tabla, entonces se borra
85  if v_count > 0 then
86    execute immediate 'drop table '|| v_username ||'
87      .'||v_table5;
88  end if;
89
90  end;
91  /
92  create table vra0501.t02_dispatcher_config as (
93    select 1 as id,dispatchers,connections,sessions,
94    service from v$dispatcher_config
95  );
96
97  create table vra0501.t03_dispatcher as (
98    select 1 as id,name,network,status,messages,
99    trunc(bytes/(1024*1024),2) messages_mb,
100    (select count(*) from v$circuit) circuits_created,
101    trunc(idle/(60*60),2) idle_min
102    from v$dispatcher
103  );
104
105  create table vra0501.t04_shared_server as (
106    select 1 as id,name,status,messages,
107    trunc(bytes/(1024*1024),2) messages_mb,
108    requests,trunc(idle/(60*60),2) idle_min,
109    trunc(busy/(60*60),2) busy_min
110    from v$shared_server
111  );
112
113  create table vra0501.t05_queue as (
114    select 1 as id,queued,wait,totalq from v$queue
115  );
116
117  create table vra0501.t06_virtual_circuit as (
118    select 1 as id,c.circuit,dp.name,c.server,c.status
119    ,c.queue
120    from v$dispatcher dp join v$circuit c on(
121      dp.paddr=c.dispatcher)
122  );
123
124  whenever sqlerror continue

```

Código 3. tnsname.ora

C. C3. s-03-consultas.sql

```

1  whenever sqlerror exit rollback
2  set serveroutput on
3  connect sys/system2 as sysdba
4
5  declare
6    v_count number;
7    v_username varchar2(30) := 'VRA0501';
8    v_table1 varchar2(30) := 'T02_DISPATCHER_CONFIG';
9    v_table2 varchar2(30) := 'T03_DISPATCHER';
10   v_table3 varchar2(30) := 'T04_SHARED_SERVER';
11   v_table4 varchar2(30) := 'T05_QUEUE';
12   v_table5 varchar2(30) := 'T06_VIRTUAL_CIRCUIT';
13  begin
14    --Verificar si la table existe
15    select count(*) into v_count
16    from all_tables
17    where table_name = v_table1
18    and owner = v_username;
19    --Si existe la tabla, entonces se borra
20    if v_count > 0 then
21      execute immediate 'drop table '|| v_username ||'
22        .'||v_table1;
23    end if;
24
25    --Verificar si la table existe
26    select count(*) into v_count
27    from all_tables
28    where table_name = v_table2
29    and owner = v_username;

```

Código 4. s-03-consultas.sql

DISPATCHER	DISPATCHERS	CONNECTIONS	SESSIONS	SERVICE
1	2	1022	1022	vra0501

Figure 2. T02_DISPATCHER_CONFIG

ID	NAME	NETWORK	STATUS	MESSAGES	MESSAGES_NO	CIRCUITS_CREATED	DISPATCHER
1	0000	(ADDRESS=(PROTOCOL=TCP)(HOST=vra-f1.unn))	WAIT	154	0.00	1	25.91
2	0001	(ADDRESS=(PROTOCOL=TCP)(HOST=vra-f1.unn))	WAIT	54	0	1	25.91

Figure 3. T03_DISPATCHER

ID	NAME	STATUS	MESSAGES	MESSAGES_NO	REQUESTS	DISPATCHER	DISPATCHER
1	0000	WAIT(RECEIVE)	102	0.04	9	5.28	22.42
2	0001	WAIT(COMMON)	56	0.01	20	25.9	8
3	0002	WAIT(COMMON)	0	0	0	25.91	0
4	0003	WAIT(COMMON)	56	0.01	17	25.9	0

Figure 4. T04_SHARED_SERVER

ID	STATUS	WAIT	DISPATCHER
1	1	0	0
2	1	0	0
3	1	0	0
4	1	0	0

Figure 5. T05_QUEUE

ID	CIRCUIT	NAME	SERVICE	STATUS	QUEUE
1	00000000	00 00 00 00 00 00 00 00	0001	00000000	00 00 00 00 00 00 00 00

Figure 6. T06_VIRTUAL_CIRCUIT

D. C4. Respuesta inciso A y s-04-procesos.sql

```

1 whenever sqlerror exit rollback
2 set serveroutput on
3 connect sys/system2 as sysdba
4
5 declare
6     v_count number;
7     v_username varchar2(30) := 'VRA0501';
8     v_table1 varchar2(30) := 'T07_SESSION_INFO_CONTEXT';
9     v_table2 varchar2(30) := 'T08_SESSION_INFO_VIEW';
10    v_table3 varchar2(30) := 'T09_PROCESS_INFO';
11    v_table4 varchar2(30) := 'T10_BACKGROUND_PROCESS';
12    v_table5 varchar2(30) := 'T11_FOREGROUND_PROCESS';
13 begin
14     --Verificar si la table existe
15     select count(*) into v_count
16     from all_tables
17     where table_name = v_table1
18     and owner = v_username;
19     --Si existe la tabla, entonces se borra
20     if v_count > 0 then
21         execute immediate 'drop table ' || v_username || '
22         .'||v_table1;
23     end if;
24
25     --Verificar si la table existe
26     select count(*) into v_count
27     from all_tables
28     where table_name = v_table2
29     and owner = v_username;
30     --Si existe la tabla, entonces se borra
31     if v_count > 0 then
32         execute immediate 'drop table ' || v_username || '
33         .'||v_table2;
34     end if;
35
36     --Verificar si la table existe
37     select count(*) into v_count
38     from all_tables
39     where table_name = v_table3
40     and owner = v_username;
41     --Si existe la tabla, entonces se borra

```

```

42 if v_count > 0 then
43     execute immediate 'drop table ' || v_username || '
44     .'||v_table3;
45 end if;
46
47 --Verificar si la table existe
48 select count(*) into v_count
49 from all_tables
50 where table_name = v_table4
51 and owner = v_username;
52 --Si existe la tabla, entonces se borra
53 if v_count > 0 then
54     execute immediate 'drop table ' || v_username || '
55     .'||v_table4;
56 end if;
57
58 --Verificar si la table existe
59 select count(*) into v_count
60 from all_tables
61 where table_name = v_table5
62 and owner = v_username;
63 --Si existe la tabla, entonces se borra
64 if v_count > 0 then
65     execute immediate 'drop table ' || v_username || '
66     .'||v_table5;
67 end if;
68 end;
69
70 create table vra0501.t07_session_info_context (
71     host varchar2(20),
72     os_user varchar2(30),
73     user_id number,
74     session_id number
75 );
76
77 insert into vra0501.t07_session_info_context (host,
78     os_user, user_id, session_id)
79 select sys_context('USERENV','HOST') as host,
80     sys_context('USERENV','OS_USER') as os_user,
81     sys_context('USERENV','SESSION_USERID') as
82     user_id,
83     sys_context('USERENV','SID') as session_id
84 from dual;
85
86 create table vra0501.t08_session_info_view as (
87     select s.sid as session_id, s.paddr as
88     process_address,
89     s.username as bd_username, s.status as session_status,
90     s.port as client_port, s.process as
91     os_client_process_id,
92     s.program as client_program from v$process p
93 join gv$session s on p.addr=s.paddr
94 join (select sys_context('USERENV','SID') as
95     session_id
96 from dual) c on c.session_id=s.sid where s.
97     username = 'SYS'
98 );
99
100 create table vra0501.t09_process_info as (
101     select sosid, pname, background, tracefile from
102     v$process
103 join gv$session s on addr=s.paddr join (
104     select sys_context('USERENV','SID') as
105     session_id
106 from dual) c on s.sid = c.session_id
107 );
108
109 create table vra0501.t10_background_process as (
110     select addr, sosid, pname, username as
111     os_username, background
112 from v$process where background='1'
113 );
114
115 create table vra0501.t11_foreground_process as (
116     select p.addr, p.sosid, p.pname, p.username as
117     bd_username, s.osuser as os_username, p.
118     background

```

```
103         from v$process p left outer join v$session s
104         on(p.addr=s.paddr) where p.background is null
105     );
106
107 whenever sqlerror continue
```

Código 5. s-04-procesos.sql

	HOST	OS_USER	USER_ID	SESSION_ID
1	pc-vra.fi.unan	oracle	0	182

Figure 7. T07_SESSION_INFO_CONTEXT

SQL_SESSION_ID	SQL_PROCESS_ADDRESS	SQL_USERNAME	SQL_SESSION_STATUS	SQL_CLIENT_PORT	SQL_CLIENT_PROCESS_ID	SQL_CLIENT_PROGRAM
1	162 00 00000000 00 00 00 71 34 09 38	SYS	ACTIVE	0 4642		sqlplus@pc-wra.fi.unim (TNS V1-V3)

Figure 8. T08_SESSION_INFO_VIEW

	SOSID	PNAME	BACKGROUND	TRACEFILE
1	7325	<null>	<null>	/u01/app/oracle/diag/rdbms/vrabda2/vrabda2/trace/vrabda2_ora_7325.trc

Figure 9. T09_PROCESS_INFO

#	IP ADDR	IP HOST	IP NAME	IP OS_VERSION	#	MAC ADDR
1	00000000	00 00 00 71 2f 71 99	...	...	...	...
2	00000000	00 00 00 71 2f 68 8a	...	...	...	...
3	00000000	00 00 00 71 2f 81 83	...	...	...	...
4	00000000	00 00 00 71 2f 7f 13	...	...	...	...
5	00000000	00 00 00 71 2f 0c 78	...	...	...	...
6	00000000	00 00 00 71 2f 03 08	...	...	...	...
7	00000000	00 00 00 71 2f 07 35	...	...	...	...
8	00000000	00 00 00 71 2f 3e 25	...	...	...	...
9	00000000	00 00 00 71 2f 3e 40	...	...	...	...
10	00000000	00 00 00 71 2f 31 f8	...	...	...	...
11	00000000	00 00 00 71 2f 47 58	...	...	...	...
12	00000000	00 00 00 71 2f 5c 8c	...	...	...	...
13	00000000	00 00 00 71 2f 71 71	...	...	...	...
14	00000000	00 00 00 71 2f 69 72	...	...	...	...
15	00000000	00 00 00 71 2f 9c 08	...	...	...	...
16	00000000	00 00 00 71 2f 82 82	...	...	...	...
17	00000000	00 00 00 71 2f 07 69	...	...	...	...
18	00000000	00 00 00 71 2f 0e 64	...	...	...	...
19	00000000	00 00 00 71 2f 20 52	...	...	...	...
20	00000000	00 00 00 71 2f 07 88	...	...	...	...
21	00000000	00 00 00 71 2f 12 18	...	...	...	...
22	00000000	00 00 00 71 2f 12 79	...	...	...	...
23	00000000	00 00 00 71 2f 01 29	...	...	...	...
24	00000000	00 00 00 71 2f 15 39	...	...	...	...

Figure 10. T10_BACKGROUND_PROCESS

[illegible]

Figure 11. T11_FOREGROUND_PROCESS

```
1 ps -ef | grep oracle
```

Código 6. instrucciones SO

E. Validador

```

SESSION_TIME      14/07/2018 10:05:50
USER_HOST         B6469F
OS_USER           oracle
DB_USER          SYS
CON_NAME          CON_VALIDATOR_01
testdb@CONV01B6469F>T7A061d95da8baa0c02D4f99ea263z3dd6e6237 s-sfp-validador-ejercicios.plb

2021-07-14 10:05:50.896-BA69F-FI_P001_OIO1_I001...    OK 2 Registros con id = 1 modo dedicado
2021-07-14 10:05:50.896-BA69F-CR_F002M_F002_F002...    OK 2 Registros con id = 2 modo compartido
2021-07-14 10:05:50.900-B6469F-OY_A003A_YO03S-YO03...    OK 1 Registros con id = 3 modo dedicado
2021-07-14 10:05:50.900-B6469F-QJ_Q004Q_J004L-J004...    OK 1 registros encontrados en T03_VIRTUAL_CIRCUIT
2021-07-14 10:05:50.903-P005P-L0_M005D-M005D-D005...    OK Estructura correcta para T02_DISPATCHER_CONFIG
2021-07-14 10:05:50.904-B6469F-AE_E006G_S006S-S006...    OK 2 dispatchers configurados en T02_DISPATCHER_CONFIG
2021-07-14 10:05:50.907-R007R-L0_L008Y-L008Y-L008...    OK 2 dispatchers encontrados en T03_DISPATCHER
2021-07-14 10:05:50.908-B6469F-UU_A009H_U009S-U009...    OK Estructura correcta para T04_SHARED_SERVER
2021-07-14 10:05:50.910-T010T-H0_H010Z-H010Z-H010...    OK 1 registros encontrados en T04_SHARED_SERVER
2021-07-14 10:05:50.910-B6469F-VY_V011V-V011V-Y011...    OK Estructura correcta para T05_QUEUE
2021-07-14 10:05:50.911-B6469F-NK_R012Z-Z012Z-Z012...    OK 4 registros encontrados en T05_QUEUE
2021-07-14 10:05:50.912-B6469F-MM_R014Z-H014H-H014...    OK 1 registros encontrados en T06_VIRTUAL_CIRCUIT
2021-07-14 10:05:50.914-B6469F-KP_A015H_AD015S_AD01...    OK Estructura correcta para T07_SESSION_INFO_CONTEXT
2021-07-14 10:05:50.915-B6469F-EW_T016N_T016N-T016...    OK 1 registros encontrados en T07_SESSION_INFO_CONTEXT
2021-07-14 10:05:50.916-B6469F-WM_L017M_M017M-M017...    OK Estructura correcta para T08_SESSION_INFO_VIEW
2021-07-14 10:05:50.919-B6469F-AR_R018N_R018N-J018...    OK 1 registros encontrados en T08_SESSION_INFO_VIEW
2021-07-14 10:05:50.919-B6469F-PX_Z019Z-Z019Z-Z019...    OK 1 registros encontrados en T09_PROCESS_INFO
2021-07-14 10:05:50.921-B6469F-FX_X020Z-X020Z-X020...    OK 1 registros encontrados en T10_BACKGROUND_PROCESS
2021-07-14 10:05:50.922-B6469F-LC_Z023R_Z023R_Z023...    OK Estructura correcta para T11_FOREGROUND_PROCESS
2021-07-14 10:05:50.923-B6469F-IU_K024N_K024N-I024...    OK 1 registros encontrados en T11_FOREGROUND_PROCESS
2021-07-14 10:05:50.926-B6469F-NU_R025B_R025B-R025...    OK Probando modo compartido @vbad$2_shared
Connected.
2021-07-14 10:05:50.942-B6469F-NI_D026D_D026D-I026...    OK Test modo compartido @vbad$2_dedicated
2021-07-14 10:05:50.944-B6469F-AP_F027A_F027S_F027...    OK Probando modo compartido @vbad$2_dedicated
Connected.
2021-07-14 10:05:50.972-B6469F-AA_C028A_C028S_C028...    OK Test modo compartido @vbad$2_dedicated
2021-07-14 10:05:50.974-B6469F-PP_L029F_F029F_F029...    OK Validación concluida
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.0.0.0.0
```

Figure 12. salida validador

III. CONCLUSIONES

En ese ejercicio se comprendio mejor la forma en la que los procesos son administrados y creados por el manejador de base de datos. Se puede una apreciar una estructura similar a la de un sistema operativo completo. El ejercicio estuvie bien para ejemplificar todo lo anterior.