


| | | | |
|--|----------------------------------|-----------------------|--|
|  | No. Hoja de Servicio: | T20220609.0005 | |
|--|----------------------------------|-----------------------|--|

| | |
|-------------------|--|
| Cliente: | Toyota de Venezuela |
| Contacto: | Yeimmy E Matheus Hernandez |
| Consultor: | Israel León Rodríguez – Consultor de Infraestructura |
| Asunto: | RE: Monitor diario 09/06/2022 - Ambiente 12c |
| Tipo: | Seleccionar... |
| Categoría: | Consultoría |
| Fecha: | 09/06/2022 |

| Hora Inicio | Hora Final | Horas |
|--------------------|------------|----------|
| 9:00 | 13:00 | 4 |
| 14:00 | 15:00 | 1 |
| TOTAL HORAS | | 5 |

Labores Realizadas:

Se revisa incidente en el que se reinicia la base de datos CDBPROD el 08/06/2022.

Se valida la instancia de ASM observando que esta se cayó abruptamente

```

2022-06-08T03:35:29.612258-06:00
Errors in file /u01/base/diag/asm/+asm/+ASM/trace/+ASM_mmon_2090.trc (incident=165949):
ORA-00445: background process "M000" did not start after 120 seconds
Incident details in: /u01/base/diag/asm/+asm/+ASM/incident/incdir_165949/+ASM_mmon_2090_i165949.trc
2022-06-08T03:35:29.746130-06:00
ERROR: terminating instance because ASMB is stuck for 6616 seconds
2022-06-08T03:35:30.017536-06:00
System state dump requested by (instance=1, osid=2039 (GEN0)), summary=[system state dump request (ksudss)].
System state dumped to trace file /u01/base/diag/asm/+asm/+ASM/trace/+ASM_diag_2052_20220608033530.trc
GEN0 (ospid: 2039): terminating the instance due to ORA error 15082
System state dump requested by (instance=1, osid=2039 (GEN0)), summary=[abnormal instance termination].
2022-06-08T03:35:30.234488-06:00
Dumping diagnostic data in directory=[cdmp_20220608033530], requested by (instance=1, osid=2039 (GEN0)), summary=[abnormal instance termination].
2022-06-08T05:35:30.599967-04:00
ORA-1092 : opitsk aborting process
2022-06-08T03:35:31.406030-06:00

```

Lo que a su vez causó que las bases de datos CDBPROD y CATRMAN se cayeran también.

```

2022-06-08T03:35:27.092266-06:00
ERROR: terminating instance because ASMB is stuck for 6523 seconds
GEN0 (ospid: 2449): terminating the instance due to ORA error 15082
2022-06-08T03:35:28.287190-06:00
Process termination requested for pid 2531 [source = rdbms], [info = 2] [request issued by pid: 2398, uid: 54323]
2022-06-08T03:35:28.288272-06:00
AWR automatic snapshot ID (4770) has failed: DBID = 4178234919, CON_DBID = 4178234919, ERROR = 13509.
2022-06-08T03:35:28.527806-06:00
System state dump requested by (instance=1, osid=2449 (GEN0)), summary=[abnormal instance termination].
System state dumped to trace file /u01/base/diag/rdbms/cdbprod/CDBPROD/trace/CDBPROD_diag_2462.trc
2022-06-08T03:35:29.528546-06:00
ORA-1092 : opitsk aborting process
2022-06-08T05:35:30.380768-04:00
ORA-1092 : opitsk aborting process
2022-06-08T03:35:30.739974-06:00
License high water mark = 291
2022-06-08T03:35:33.670689-06:00

```

```
2022-06-08T03:35:28.614889-06:00
NOTE: ASMB process state dumped to trace file /u01/base/diag/rdbms/catrman/CATRMAN/trace/CATRMAN_gen0_2193.trc
ERROR: terminating instance because ASMB is stuck for 5678 seconds
GEN0 (ospid: 2193): terminating the instance due to ORA error 15082
2022-06-08T03:35:28.787009-06:00
System state dump requested by (instance=1, osid=2193 (GEN0)), summary=[abnormal instance termination]. error - 'Instance is terminating.
System State dumped to trace file /u01/base/diag/rdbms/catrman/CATRMAN/trace/CATRMAN_diag_2226.trc
2022-06-08T03:35:29.614145-06:00
ORA-1092 : opitsk aborting process
2022-06-08T03:35:30.152563-06:00
```

En el log del sistema operativo se observa a la hora en la que se caen las bases de datos y el ASM estuvo registrando estrés de memoria.

```
Jun 8 03:35:30 proddb rtkit-daemon[6939]: Demoted 0 threads.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: The canary thread is apparently starving. Taking action.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: Demoting known real-time threads.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: Demoted 0 threads.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: The canary thread is apparently starving. Taking action.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: Demoting known real-time threads.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: Demoted 0 threads.
Jun 8 03:35:30 proddb rtkit-daemon[6939]: The canary thread is apparently starving. Taking action.
```

Matando algunos procesos para liberar memoria.

```
[root@proddb log]# grep -i kill messages
Jun 7 01:33:28 proddb abrt-hook-ccpp: Process 109025 (systemd-journald) of user 0 killed by SIGABRT - dumping core
Jun 8 01:31:49 proddb kernel: ? __dentry_kill+0x135/0x18d
Jun 8 03:35:30 proddb abrt-hook-ccpp: Process 74047 (systemd-journald) of user 0 killed by SIGABRT - dumping core
[root@proddb log]#
```

El estrés en la memoria se confirma utilizando la herramienta sar en la que se observa que el equipo requiere más del 100% de la memoria asignada.

| Time | kbmemfree | kbmemused | %memused | kbbuffers | kbcached | kbcommit | %commit | kbactive | kbinact | kbdirty |
|-------------|-----------|-----------|----------|-----------|----------|----------|---------|----------|----------|---------|
| 12:00:01 AM | 399344 | 46694040 | 99.15 | 12 | 39642448 | 68327028 | 123.16 | 17807152 | 26576216 | 52 |
| 12:10:01 AM | 389672 | 46703712 | 99.17 | 12 | 39648260 | 68326412 | 123.16 | 17812520 | 26579204 | 40 |
| 12:20:01 AM | 704372 | 46389012 | 98.50 | 12 | 39652944 | 68028340 | 122.62 | 17620752 | 26476452 | 52 |
| 12:30:01 AM | 683560 | 46409824 | 98.55 | 12 | 39653692 | 68035600 | 122.64 | 17633688 | 26474980 | 68 |
| 12:50:01 AM | 685384 | 46408000 | 98.54 | 12 | 39655388 | 68017968 | 122.60 | 17632816 | 26473852 | 56 |
| 01:00:01 AM | 645112 | 46448272 | 98.63 | 12 | 39659180 | 68057508 | 122.68 | 17659932 | 26476196 | 60 |
| 01:10:01 AM | 475836 | 46617548 | 98.99 | 12 | 39809888 | 68098884 | 122.75 | 17755420 | 26539632 | 52 |
| 01:20:01 AM | 448292 | 46645092 | 99.05 | 12 | 39815060 | 68075308 | 122.71 | 17784980 | 26528496 | 44 |
| 01:30:02 AM | 452540 | 46640844 | 99.04 | 12 | 39816080 | 68090576 | 122.73 | 17778340 | 26529112 | 40 |
| 01:40:01 AM | 472368 | 46621016 | 99.00 | 12 | 39818560 | 68041588 | 122.65 | 17815780 | 26472608 | 52 |
| 01:50:01 AM | 478784 | 46614600 | 98.98 | 12 | 39821504 | 68012900 | 122.59 | 17820296 | 26473040 | 40 |
| 02:00:01 AM | 462048 | 46631336 | 99.02 | 12 | 39822848 | 68063580 | 122.69 | 17830584 | 26473588 | 48 |
| 02:10:01 AM | 452920 | 46640464 | 99.04 | 12 | 39827376 | 68105680 | 122.76 | 17837312 | 26473388 | 48 |
| 02:20:01 AM | 512056 | 46581328 | 98.91 | 12 | 39830156 | 68018252 | 122.60 | 17797240 | 26465840 | 52 |
| 02:30:01 AM | 524984 | 46568400 | 98.89 | 12 | 39831300 | 67985360 | 122.54 | 17786220 | 26463584 | 44 |
| 02:40:01 AM | 526916 | 46566468 | 98.88 | 12 | 39834048 | 67981188 | 122.54 | 17782520 | 26464308 | 40 |
| 02:50:01 AM | 516048 | 46577336 | 98.90 | 12 | 39836552 | 67965076 | 122.51 | 17798172 | 26463708 | 60 |
| 03:00:02 AM | 462104 | 46631280 | 99.02 | 12 | 39839272 | 68039196 | 122.64 | 17834272 | 26464960 | 80 |
| 03:10:01 AM | 7964424 | 39128960 | 83.09 | 12 | 31881860 | 68531656 | 123.53 | 13494420 | 23275708 | 447556 |
| 03:20:01 AM | 3304684 | 43788700 | 92.98 | 12 | 36426260 | 68513120 | 123.50 | 13484932 | 27818420 | 408460 |
| 03:30:01 AM | 354796 | 46738588 | 99.25 | 12 | 39249892 | 68475696 | 123.43 | 13484660 | 30641452 | 658108 |
| 03:40:01 AM | 262716 | 46830668 | 99.44 | 12 | 39292724 | 68429940 | 123.35 | 13448812 | 30654812 | 264144 |
| 03:50:02 AM | 1100004 | 45993380 | 97.66 | 12 | 38296364 | 68379796 | 123.26 | 13437828 | 29665332 | 197620 |
| 04:00:01 AM | 638416 | 46454968 | 98.64 | 12 | 39128060 | 68015740 | 122.60 | 13112344 | 30418720 | 72 |
| 04:10:01 AM | 606980 | 46486404 | 98.71 | 12 | 39164844 | 67980576 | 122.54 | 13120316 | 30441556 | 48 |
| 04:20:01 AM | 575468 | 46517916 | 98.78 | 12 | 39167640 | 67997756 | 122.57 | 13145348 | 30441968 | 36 |
| 04:30:01 AM | 569132 | 46524252 | 98.79 | 12 | 39168836 | 67994524 | 122.56 | 13149112 | 30442628 | 52 |
| 04:40:01 AM | 551404 | 46541980 | 98.83 | 12 | 39171344 | 67995196 | 122.56 | 13163080 | 30441936 | 56 |
| 04:50:01 AM | 543924 | 46549460 | 98.85 | 12 | 39175392 | 68023220 | 122.61 | 13166012 | 30442556 | 56 |
| 05:00:01 AM | 968492 | 46124892 | 97.94 | 12 | 39177776 | 67614356 | 121.88 | 12919760 | 30430860 | 76 |
| 05:10:01 AM | 918200 | 46175184 | 98.05 | 12 | 39197940 | 67586416 | 121.83 | 12942856 | 30440912 | 56 |

Y los errores ORA-700 que según la nota de MOS **Getting ORA-00700 Message when Starting the Database (Doc ID 2610312.1)**, se muestran cuando la memoria asignada supera el 80% de la RAM física del servidor.

```
SGA_MAX_SIZE specified is high
Errors in file /u01/base/diag/rdbms/cdbprod/CDBPROD/trace/CDBPROD_ora_68390.trc (incident=174431):
ORA-00700: soft internal error, arguments: [sms physmem limit], [38654705664], [38578900172], [], [], [], [], [], [], [], []
Incident details in: /u01/base/diag/rdbms/cdbprod/CDBPROD/incident/incdir_174431/CDBPROD_ora_68390_i174431.trc
PGA_AGGREGATE_TARGET specified is high
Errors in file /u01/base/diag/rdbms/cdbprod/CDBPROD/trace/CDBPROD_ora_68390.trc (incident=174432):
ORA-00700: soft internal error, arguments: [pga physmem limit], [3221225472], [2373278515], [], [], [], [], [], [], [], []
Incident details in: /u01/base/diag/rdbms/cdbprod/CDBPROD/incident/incdir_174432/CDBPROD_ora_68390_i174432.trc
```

Se valida la configuración de SGA y PGA de las bases de datos en el servidor encontrando que la suma de la memoria asignada a las instancias es de 57.99 GB.

| Instancia ▼ | SGA (GB) ▼ | PGA (GB) ▼ | TOTAL (GB) ▼ |
|--------------|------------|------------|--------------|
| +ASM | 0 | 0 | 1 |
| CATRMAN | 13.5 | 4.49 | 17.99 |
| CDBPROD | 36 | 3 | 39 |
| Total | | | 57.99 |

No se está usando HugePages por lo que la tabla de páginas ocupa 2.43 GB

```
[root@proddbns log]# grep Huge /proc/meminfo
AnonHugePages:          0 kB
ShmemHugePages:         0 kB
HugePages_Total:        0
HugePages_Free:          0
HugePages_Rsvd:          0
HugePages_Surp:          0
Hugepagesize:           2048 kB
[root@proddbns log]# grep PageTables /proc/meminfo
PageTables:             2557140 kB
```

Con lo anterior el servidor está necesitando 60.42GB de RAM, lo que supera ampliamente la recomendación en la nota de MOS **2610312.1**, de no exceder el 80% de la memoria asignada al equipo.

Make sure that you have set the overall SGA+PGA to any values less than 80% of the overall physical memory. The OS processes need sufficient amount of memory.

Se recomienda aumentar la memoria asignada al servidor a 74G o disminuir la memoria asignada a las bases de datos.

En los logs del clusterware se ve cuando este detecta la caída de las bases de datos y automáticamente las reinicia.

```
2022-06-08 03:35:27.161 : CLSDYNAM:3859416832: [ ora.asm]{0:27:2} [check] ConnectionPool::removeConnection 999 exit } this:0x7fe1a8069fd0 m_dbPool:0x7fe1a806e1e0 freed:0 freeCount:2
2022-06-08 03:35:27.504 : AGFW:3865720576: [ INFO] {0:0:28132} Agent received the message: AGENT_HB[Engine] ID 12293:1647027
2022-06-08 03:35:27.504 : AGFW:3865720576: [ INFO] {0:0:28132} Command : check for resource: ora.LISTENER.lsnr proddb1 has been successfully aborted
2022-06-08 03:35:28.160 : USRTHRD:3844699904: [ INFO] {0:27:2} Ginh::check condition changes to (GIMH_NEXT_NUM) 0(Abnormal Termination) exists
2022-06-08 03:35:28.160 : USRTHRD:3844699904: [ INFO] {0:27:2} Thread:GimhThread GimhThread::run AgentInitiatedCheck
2022-06-08 03:35:28.160 : USRTHRD:3844699904: [ INFO] {0:27:2} Check action requested by agent entry point for ora.cdbprod.db
2022-06-08 03:35:28.160 : AGFW:3865720576: [ INFO] {0:27:2} Agent received the message: RESOURCE_PROBE[ora.cdbprod.db 1 1] ID 4097:1782
2022-06-08 03:35:28.160 : AGFW:3865720576: [ INFO] {0:27:2} Preparing CHECK command for: ora.cdbprod.db 1 1
2022-06-08 03:35:28.161 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] (:CLSN00007:) DbAgent::checkCbk 100 failed gimh state[0]Abnormal Termination
2022-06-08 03:35:28.161 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::isNonRecoverableFailure ENABLED:1, GEN_USR_ORA_INST_NAME:CDBPROD
2022-06-08 03:35:28.161 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::checkCbk 100 gimh:0 return failed
2022-06-08 03:35:28.161 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] InstAgent::stopTha 100 stopTha resName:ora.cdbprod.db
2022-06-08 03:35:28.163 : CLSDYNAM:3863619328: [ ora.asm]{0:27:2} [check] ConnectionPool::removeConnection 999 exit } this:0x7fe1a8069fd0 m_dbPool:0x7fe1a806e1e0 freed:0 freeCount:2
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::checkCbk 400 planned offline or failed ret 5
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgentEventModule::stop fast stop - breaking connections
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] InstConnection::breakCallsRegistered agent:0x7fe1a4038540
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::checkCbk 420 removeDb
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::releaseInstConnection
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::releaseInstConnection end
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] CheckCbk DbAgent::releaseInstConnection
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] CheckCbk DbAgent::releaseInstConnection end
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::checkCbk 780 shutdown reset s DbPdbStatusMap ret:5
2022-06-08 03:35:28.375 : USRTHRD:3874125568: [ INFO] {0:27:2} InstConnection::InstConnection constructor this:0x7fe1c0097170 entry
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] DbAgent::getConnection oracleHome:/u01/db/19.0.0.0 oracleSid:CDBPROD usrOr
aEnv:ORA_SERVER_THREAD_ENABLED=FALSE ORA_SERVER_BROKER_MODE=BEO resVersion:19.0.0.0
2022-06-08 03:35:28.375 : CLSDYNAM:3874125568: [ora.cdbprod.db]{0:27:2} [check] InstConnection::InstConnection: init:0x7fe1c0097170 oracleHome:/u01/db/19.0.0.0 oracleSid:CDBPROD instanceType:1 instanceVersion:19.0.0.0
```

Para poder ampliarla la RAM asignada al servidor **proddb** es necesario disminuir la asignada a la VM **proddb**.

| Name | Status | Tag(s) | Event Severity | Server | Max. Memory (M) | Memory (MB) | Max. Processor | Processor | Keymap | Oper System |
|-------------|----------|--------|----------------|---------|-----------------|-------------|----------------|-----------|--------|-------------|
| OL6_Testing | Stopped | | Informational | prod-db | 512 | 512 | 1 | 1 | es | Orac |
| proddb | Running | | Informational | prod-db | 124000 | 124000 | 16 | 16 | es | Orac |
| proddb1 | Runni... | | Informational | prod-db | 47104 | 47104 | 16 | 16 | es | Orac |

Debido al que el host físico solo tiene 191.67 GB de RAM y necesitaría más de 200GB para asignar la memoria adicional a la vm proddb.

| | |
|---------------------------|---|
| Perspective: Info | |
| Server Name: prod-db | |
| Host Name: | prod-db |
| Status: | Running |
| Processors: | 24 |
| Ethernet Ports: | 3 |
| Maintenance Mode: | Off |
| Inbound Migration Locked: | No |
| Ownership: | Owned by You |
| Server Pool: | cluster-toyota |
| Roles: | Utility, Vm |
| IP Address: | 10.16.9.132 |
| Processor Speed (GHz): | 3.39 |
| Memory (GiB): | 191.67 |
| Bond Port Count: | 1 |
| CPU Compatibility Group: | Default_Intel_F6_M85 [Default_Intel_Family:6_Model:85] |
| Processor Type: | x86-64b |
| Hypervisor Type: | XEN |
| Up To Date: | Yes |
| Version: | 3.4.6-2105 |

| | | | |
|--|--------------------------|-----------------------|--|
|  | No. Hoja de Servicio: | T20220609.0005 | |
|--|--------------------------|-----------------------|--|

Se nos indica que la base de datos fue parchada sin autorización, porque se muestra el siguiente mensaje:

```
PROD(3):Closing Resource Manager plan via scheduler window
PROD(3):Clearing Resource Manager plan via parameter
2022-06-08T03:44:29.572642-06:00
=====
Dumping current patch information
=====
Patch Id: 29585399
Patch Description: OCW RELEASE UPDATE 19.3.0.0.0 (29585399)
Patch Apply Time: 2019-04-18T01:21:33-06:00
Bugs Fixed: 3,27222128,27572040,27604329,27760043,27877830,28302580,28470673,
28621543,28642469,28699321,28710663,28755846,28772816,28785321,28800508,
28808652,28815557,28847541,28847572,28870496,28871040,28874416,28877252,
28881191,28881848,28888083,28911140,28925250,28925460,28935956,28940472,
28942694,28951332,28963036,28968779,28980448,28995287,29003207,29003617,
29016294,29018680,29024876,29026154,29027933,29047127,29052850,29058476,
29111631,29112455,29117337,29123444,29125708,29125786,29129476,29131772,
29132456,29139727,29146157,29147849,29149170,29152603,29152752,29154631,
29154636,29154829,29159216,29159661,29160462,29161923,29169540,29169739,
29170717,29173618,29181568,29182920,29183298,29186091,29191827,29201143,
29201695,29209545,29210577,29210610,29210624,29210683,29213641,29219627,
29224294,29225861,29229839,29235934,29242906,29243749,29244495,29244766,
29244968,29248723,29249583,29251564,29255616,29260224,29261695,29271019,
29273360,29282090,29282666,29285453,29285621,29290235,29292232,29293806,
```

Sin embargo, esta interpretación no es correcta, ya que como lo describe la nota de MOS **12c Alert Log Appears To Show Unexpected Instance Restart (Doc ID 2049516.1)** a partir de 12c es un comportamiento normal que la base de datos registre en el alert log la información sobre los parches que tiene aplicado durante el inicio.

This is new behaviour in 12c, and does not reproduce in 11.2.0.4 or older versions. What happened here was that the XML alert log log.xml file reached 10MB in size. At that time it is segmented and a new log_<n>.xml file is created. Every time that log.xml is segmented information about all startup parameters and patch information is dumped to the alert.log.

| Acuerdo | Responsable | Fecha de Entrega | Estado | % Ejecutado |
|-------------------------|-----------------------|------------------|-----------|-------------|
| | Israel León Rodríguez | 09/06/2022 | Ejecutado | |
| Firmas Conformes | | | | |
| Por ENTRUST: | | Por el Cliente: | | |
| Identificación: | 186201428304 | Identificación: | | |