

【故障处理】DBCA 建库诡异问题处理--rac 环境不能创建 rac 库

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1.2 前言部分

1.2.1 导读和注意事项

各位技术爱好者，看完本文后，你可以掌握如下的技能，也可以学到一些其它你所不知道的知识，~o(∩_∩)o~：

- ① dbca 静默创建 rac 库
- ② Inventory 目录作用及其 2 种重建方法（重点）
- ③ rac 环境 dbca 工具不能创建 rac 库的解决办法
- ④ dbca 静默建库常见问题处理
- ⑤ 重建 CRS 集群环境执行 root.sh 脚本

Tips：

- ① 本文在 ITpub (<http://blog.itpub.net/26736162>) 和博客园 (<http://www.cnblogs.com/lhrbest>) 有同步更新
- ② 文章中用到的所有代码，相关软件，相关资料请前往小麦苗的云盘下载 (<http://blog.itpub.net/26736162/viewspace-1624453/>)
- ③ 若文章代码格式有错乱，推荐使用搜狗、360 或 QQ 浏览器，也可以下载 pdf 格式的文档来查看，pdf 文档下载地址：<http://blog.itpub.net/26736162/viewspace-1624453/>
- ④ 本篇 BLOG 中命令的输出部分需要特别关注的地方我都用灰色背景和粉红色字体来表示，比如下边的例子中，thread 1 的最大归档日志号为 33，thread 2 的最大归档日志号为 43 是需要特别关注的地方；而命令一般使用黄色背景和红色字体标注；对代码或代码输出部分的注释一般采用蓝色字体表示。

```
List of Archived Logs in backup set 11
Thrd Seq      Low SCN      Low Time      Next SCN      Next Time
-----
1      32          1621589      2015-05-29 11:09:52 1625242      2015-05-29 11:15:48
1      33          1625242      2015-05-29 11:15:48 1625293      2015-05-29 11:15:58
2      42          1613951      2015-05-29 10:41:18 1625245      2015-05-29 11:15:49
2      43          1625245      2015-05-29 11:15:49 1625253      2015-05-29 11:15:53

[ZHLHRDB1:root]:/>lsvg -o
T_XDESK_APP1_vg
rootvg
[ZHLHRDB1:root]:/>
00:27:22 SQL> alter tablespace idxtbs read write;

====> 2097152*512/1024/1024/1024=1G
```

本文如有错误或不完善的地方请大家多多指正，ITPUB 留言或 QQ 皆可，您的批评指正是我写作的最大动力。

1.3 故障分析及解决过程

1.3.1 故障环境介绍

项目	source db
db 类型	RAC
db version	11.2.0.4
db 存储	ASM
OS 版本及 kernel 版本	AIX 64 位 6.1.0.0

1.3.2 故障发生现象及报错信息

小麦苗采用 dbca -silent+nodeinfo 创建 rac 库，原来用的好好的命令，结果在这个 rac 环境上创建出来的库成了单实例的，很是郁闷，，，，且看故障发生的现象：

```
[ZFZHLHRDB1:oracle]:/oracle>dbca -silent -createDatabase -templateName General_Purpose.dbc -responseFile
NO_VALUE \
> -gdbname rac1hr -sid rac1hr \
> -sysPassword oracle -systemPassword 1hr \
> -datafileDestination 'DATA/' -recoveryAreaDestination 'DATA/' \
> -redoLogFileSize 50 \
> -storageType ASM -asmsnmpPassword 1hr -diskGroupName 'DATA' \
> -characterSet ZHS16GBK -nationalCharacterSet AL16UTF16 \
> -sampleSchema true \
> -automaticMemoryManagement true -totalMemory 2048 \
> -databaseType OLTP \
> -emConfiguration NONE \
> -nodeinfo ZFZHLHRDB1,ZFZHLHRDB2
Copying database files
1% complete
3% complete
10% complete
17% complete
24% complete
35% complete
Creating and starting Oracle instance
37% complete
42% complete
47% complete
52% complete
53% complete
56% complete
58% complete
Registering database with Oracle Restart
64% complete
Completing Database Creation
68% complete
71% complete
75% complete
85% complete
96% complete
100% complete
Look at the log file "/oracle/app/oracle/cfgtoollogs/dbca/rac1hr/rac1hr.log" for further details.
[ZFZHLHRDB1:oracle]:/oracle>more /oracle/app/oracle/cfgtoollogs/dbca/rac1hr/rac1hr.log
Copying database files
DBCA_PROGRESS : 1%
DBCA_PROGRESS : 3%
DBCA_PROGRESS : 10%
DBCA_PROGRESS : 17%
DBCA_PROGRESS : 24%
DBCA_PROGRESS : 31%
DBCA_PROGRESS : 35%
Creating and starting Oracle instance
DBCA_PROGRESS : 37%
DBCA_PROGRESS : 42%
DBCA_PROGRESS : 47%
DBCA_PROGRESS : 52%
DBCA_PROGRESS : 53%
DBCA_PROGRESS : 56%
DBCA_PROGRESS : 58%
Registering database with Oracle Restart
DBCA_PROGRESS : 64%
Completing Database Creation
DBCA_PROGRESS : 68%
DBCA_PROGRESS : 71%
DBCA_PROGRESS : 75%
```

```
DBCA_PROGRESS : 85%
DBCA_PROGRESS : 96%
DBCA_PROGRESS : 100%
Database creation complete. For details check the logfiles at:
/oracle/app/oracle/cfgtoollogs/dbca/rac1hr.
Database Information:
Global Database Name:rac1hr
System Identifier(SID):rac1hr
[ZFZHLHRDB1:oracle]:/oracle>
[ZFZHLHRDB1:oracle]:/oracle>ORACLE_SID=rac1hr
[ZFZHLHRDB1:oracle]:/oracle>sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Tue Jul 5 17:17:42 2016

Copyright (c) 1982, 2013, Oracle. All rights reserved.

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SYS@rac1hr> show parameter cluster
```

NAME	TYPE	VALUE
cluster_database	boolean	FALSE
cluster_database_instances	integer	1
cluster_interconnects	string	

大家看到这里的安装百分比是 1%->3%->10%-17%.....,而 rac 库创建的时候进度百分比应该是 1%->3%->9%-15%.....,如下图所示:

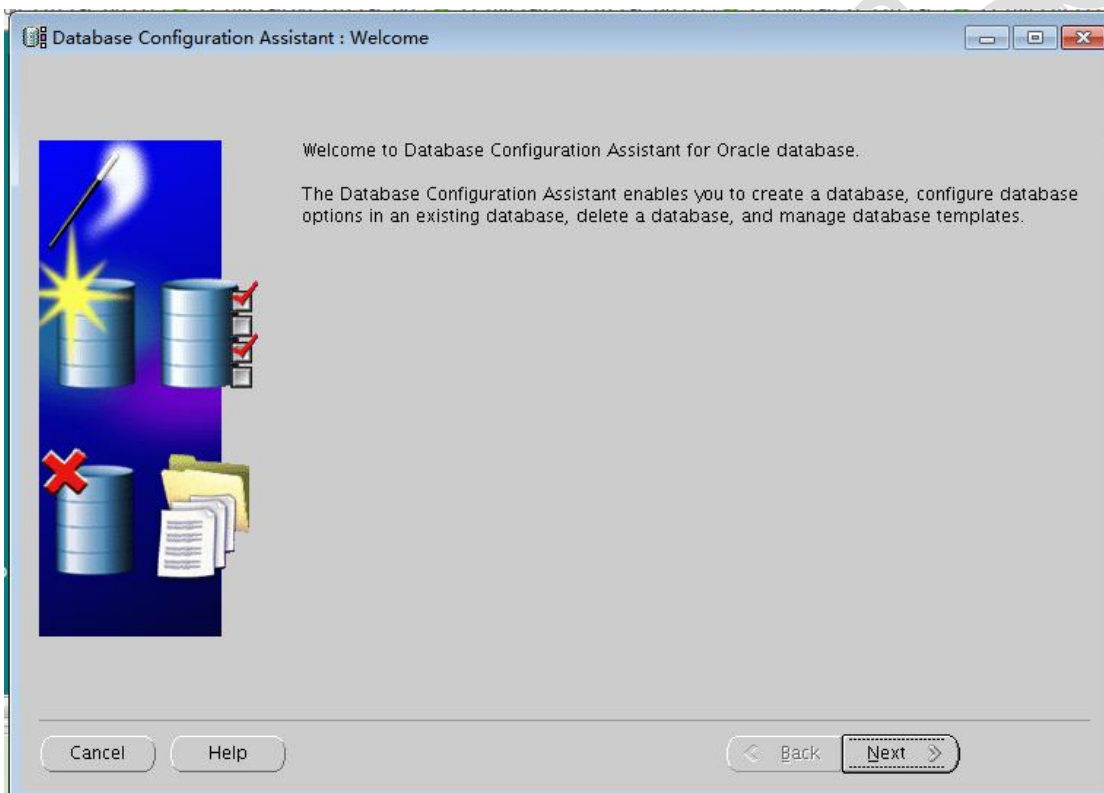
```
Copying database files
1% complete
3% complete
9% complete
15% complete
21% complete
30% complete
Creating and starting oracle instance
32% complete
36% complete
40% complete
44% complete
45% complete
48% complete
50% complete
Creating cluster database views
52% complete
70% complete
Completing Database Creation
73% complete
76% complete
85% complete
94% complete
100% complete
```

```
Copying database files
1% complete
3% complete
9% complete
15% complete
21% complete
30% complete
Creating and starting Oracle instance
32% complete
36% complete
40% complete
```

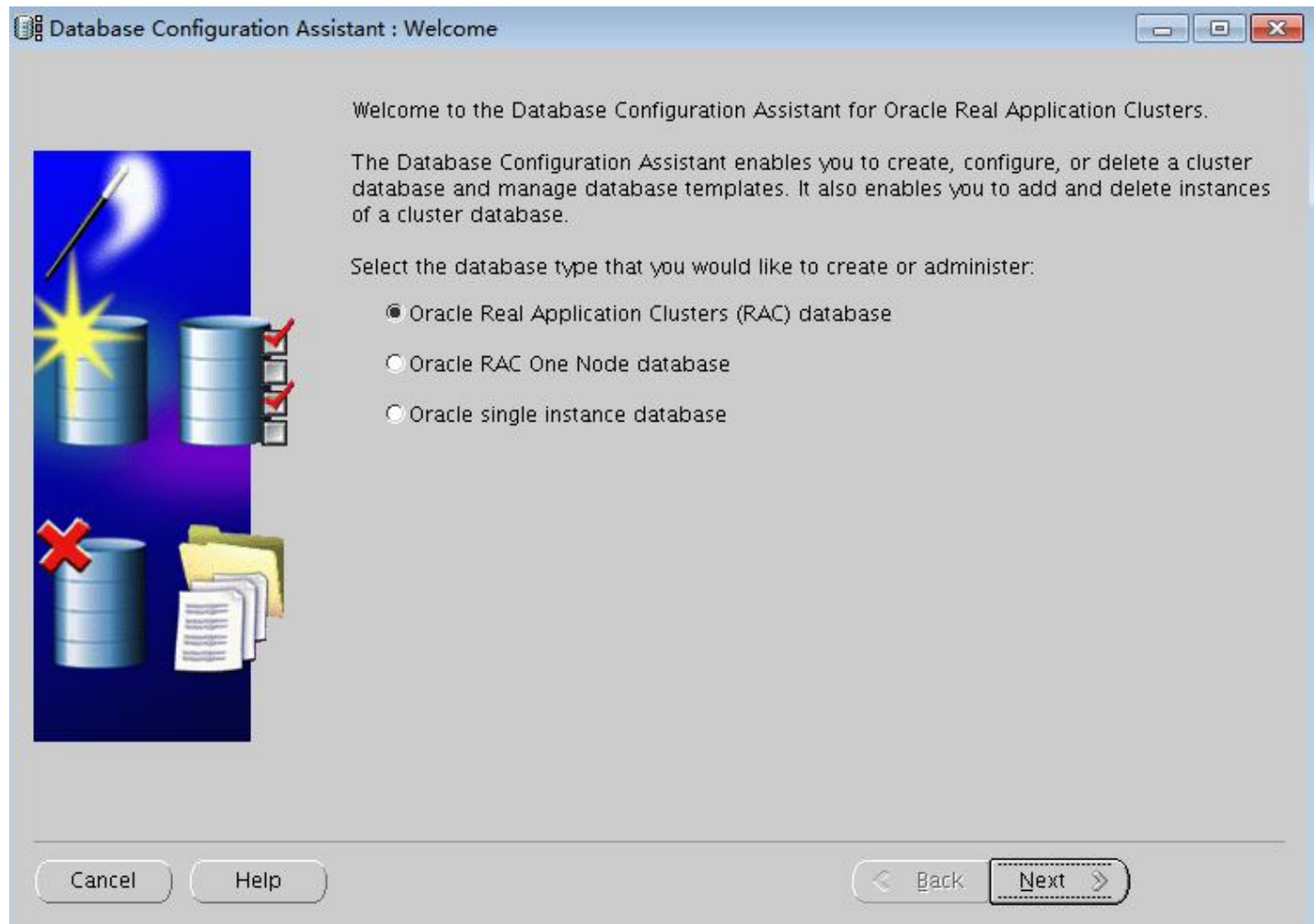
```
44% complete
45% complete
48% complete
50% complete
Creating cluster database views
52% complete
70% complete
Completing Database Creation
73% complete
76% complete
85% complete
94% complete
100% complete
Look at the log file "/oracle/app/oracle/cfgtoollogs/dbca/rac1hr/rac1hr.log" for further details.
```

接下来小麦苗尝试了如下的几种方式：①dbca 采用响应文件的形式，②dbca 图形界面的方式，都是同样的情况。

我的环境 dbca 图形界面的第一张图：



而正常 rac 环境下 dbca 图形界面的第一步图应该是：



以上都是目前出现的问题，初步预估是哪个配置文件出错了，dbca 不能判断集群环境。

1.3.3 故障分析及解决过程

起初小麦苗以为是集群出现了问题，在万般无奈的情况下执行 `root.sh` 重建了集群，按照以前的经验，这个终极大招执行后集群肯定可以恢复到正常的情况下，结果呢？结果还是令小麦苗很伤心，情况依旧没有解决。重新执行 `root.sh` 的命令如下（注：重新执行 `root.sh` 并不会清掉 db 的数据）：

```
ocrconfig -showbackup
ocrconfig -manualbackup
```

```
$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose
ls -l $ORACLE_BASE/Clusterware/ckptGridHA*
find $ORACLE_HOME/gpn/* -type f
find $ORACLE_HOME/gpn/* -type f -exec rm -rf {} \;
```

```
$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose -lastnode -keepdg
ls -l $ORACLE_BASE/Clusterware/ckptGridHA*
find $ORACLE_HOME/gpn/* -type f
find $ORACLE_HOME/gpn/* -type f -exec rm -rf {} \;
```

```
ipcs
```

```
$ORACLE_HOME/root.sh
/oracle/app/11.2.0/grid/perl/bin/perl -I/oracle/app/11.2.0/grid/perl/lib
-I/oracle/app/11.2.0/grid/crs/install /oracle/app/11.2.0/grid/crs/install/rootcrs.pl

ipcs
$ORACLE_HOME/root.sh

---crs 的配置文件
---$ORACLE_HOME/crs/install/crsconfig_params
-- GRID
export DISPLAY=22.188.216.132:0.0
$ORACLE_HOME/crs/config/config.sh
```

这个终极大招已经使用过了，问题没有解决只能说明不是权限的问题，也不是集群的问题，而是 DB 环境的问题。于是硬着头皮分析分析 dbca 的日志，dbca 创建库的时候日志在：11g:\$ORACLE_BASE/cfgtoollogs/dbca，10g:\$ORACLE_HOME/cfgtoollogs/dbca

```
[ZFZHLHRDB1:oracle]:/oracle>cd /oracle/app/oracle/cfgtoollogs/dbca/rac1hr
[ZFZHLHRDB1:oracle]:/oracle/app/oracle/cfgtoollogs/dbca/rac1hr>l
total 15592
-rw-r----- 1 oracle dba 1454 Jul 05 16:56 CloneRmanRestore.log
-rw-r----- 1 oracle dba 182 Jul 05 16:52 DetectOption.log
-rw-r----- 1 oracle dba 43191 Jul 05 16:59 cloneDBCcreation.log
-rw-r----- 1 oracle dba 48 Jul 05 16:59 lockAccount.log
-rw-r----- 1 oracle dba 18557 Jul 05 16:59 mkplug_v3_rac1hr.log
-rw-r----- 1 oracle dba 1630 Jul 05 16:59 postDBCcreation.log
-rw-r----- 1 oracle dba 16 Jul 05 16:59 postScripts.log
-rw-r----- 1 oracle dba 718 Jul 05 16:51 rac1hr.log
-rw-r----- 1 oracle dba 738 Jul 05 17:00 rac1hr0.log
-rw-r----- 1 oracle dba 1476 Jul 05 17:00 rac1hr_creation_checkpoint.xml
-rw-r----- 1 oracle dba 1454 Jul 05 16:55 rmanRestoreDatafiles.sql
-rw-r----- 1 oracle dba 7716864 Jul 05 16:56 tempControl.ctl
-rw-r----- 1 oracle dba 155662 Jul 05 17:00 trace.log
-rw-r----- 1 oracle asmadmin 2258 Jul 05 16:57 tts_example_imp.log
```

里边有 trace.log 文件，拿到手，搜了下 cluster，发现一个错误：



trace.log

```
[main] [ 2016-07-05 17:37:30.694 GMT+08:00 ] [HAUtils.getDefaultListenerProperties:1666] PRCR-1001 :
Resource ora.LISTENER.lsnr does not exist
PRCR-1001 : Resource ora.LISTENER.lsnr does not exist
at oracle.cluster.impl.common.SoftwareModuleImpl.crsResource(SoftwareModuleImpl.java:776)
at oracle.cluster.impl.nodeapps.ListenerImpl.crsResource(ListenerImpl.java:1107)
```

ora.LISTENER.lsnr 该资源不存在，那就手动创建该资源：

```
[ZFZHLHRDB1:grid]:/home/grid>netca -silent -responsefile $ORACLE_HOME/assistants/netca/netca.rsp

Parsing command line arguments:
  Parameter "silent" = true
  Parameter "responsefile" = /oracle/app/11.2.0/grid/assistants/netca/netca.rsp
Done parsing command line arguments.
Oracle Net Services Configuration:
Profile configuration complete.
ListenerException: Could not create Listener: TNS-04414: File error
Error: null
Check the trace file for details: /oracle/app/grid/cfgtoollogs/netca/trace_GridHome1-1607055PM5133.log
Oracle Net Services configuration failed. The exit code is 1
```

报错了，应该是监听已经存在了，重新添加进 crs 中：

```
[ZFZHLHRDB1:grid]:/oracle/app/11.2.0/grid/network/admin>crsctl stat res -t
```


NAME	TARGET	STATE	SERVER	STATE_DETAILS
Local Resources				
ora.DATA.dg				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.LISTENER_LHRDG.lsnr				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.asm				
	ONLINE	ONLINE	ZFZHLHRDB1	Started
	ONLINE	ONLINE	ZFZHLHRDB2	Started
ora.gsd				
	OFFLINE	OFFLINE	ZFZHLHRDB1	
	OFFLINE	OFFLINE	ZFZHLHRDB2	
ora.net1.network				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.ons				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.registry.acfs				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	

Cluster Resources				
ora.LISTENER_SCAN1.lsnr				
1	ONLINE	ONLINE	ZFZHLHRDB1	
ora.cvu				
1	ONLINE	ONLINE	ZFZHLHRDB2	
ora.myrac.db				
1	ONLINE	ONLINE	ZFZHLHRDB1	Open
ora.oc4j				
1	ONLINE	ONLINE	ZFZHLHRDB2	
ora.oraesdb.db				
1	ONLINE	OFFLINE		Instance Shutdown
2	ONLINE	OFFLINE		
ora.oraeskd.db				
1	ONLINE	ONLINE	ZFZHLHRDB1	Open, Readonly
2	OFFLINE	OFFLINE		Instance Shutdown
ora.scan1.vip				
1	ONLINE	ONLINE	ZFZHLHRDB1	
ora.ZFZHLHRDB1.vip				
1	ONLINE	ONLINE	ZFZHLHRDB1	
ora.ZFZHLHRDB2.vip				
1	ONLINE	ONLINE	ZFZHLHRDB2	
[ZFZHLHRDB1:grid]:/oracle/app/11.2.0/grid/network/admin>				
[ZFZHLHRDB1:grid]:/oracle/app/11.2.0/grid/network/admin>				
[ZFZHLHRDB1:grid]:/oracle/app/11.2.0/grid/network/admin>				
[ZFZHLHRDB1:grid]:/oracle/app/11.2.0/grid/network/admin>				

NAME	TARGET	STATE	SERVER	STATE_DETAILS
Local Resources				
ora.DATA.dg				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.LISTENER.lsnr				
	OFFLINE	OFFLINE	ZFZHLHRDB1	
	OFFLINE	OFFLINE	ZFZHLHRDB2	
ora.LISTENER_LHRDG.lsnr				
	ONLINE	ONLINE	ZFZHLHRDB1	
	ONLINE	ONLINE	ZFZHLHRDB2	
ora.asm				
	ONLINE	ONLINE	ZFZHLHRDB1	Started
	ONLINE	ONLINE	ZFZHLHRDB2	Started


```

ora.gsd
      OFFLINE OFFLINE      ZFZHLHRDB1
      OFFLINE OFFLINE      ZFZHLHRDB2
ora.net1.network
      ONLINE  ONLINE      ZFZHLHRDB1
      ONLINE  ONLINE      ZFZHLHRDB2
ora.ons
      ONLINE  ONLINE      ZFZHLHRDB1
      ONLINE  ONLINE      ZFZHLHRDB2
ora.registry.acfs
      ONLINE  ONLINE      ZFZHLHRDB1
      ONLINE  ONLINE      ZFZHLHRDB2
-----
Cluster Resources
-----
ora.LISTENER_SCAN1.lsnr
  1      ONLINE  ONLINE      ZFZHLHRDB1
ora.cvu
  1      ONLINE  ONLINE      ZFZHLHRDB2
ora.oc4j
  1      ONLINE  ONLINE      ZFZHLHRDB2
ora.oraesdb.db
  1      ONLINE  OFFLINE
  2      ONLINE  OFFLINE      Instance Shutdown
ora.oraesdb.db
  1      ONLINE  ONLINE      ZFZHLHRDB1      Open, Readonly
  2      OFFLINE OFFLINE      Instance Shutdown
ora.scan1.vip
  1      ONLINE  ONLINE      ZFZHLHRDB1
ora.ZFZHLHRDB1.vip
  1      ONLINE  ONLINE      ZFZHLHRDB1
ora.ZFZHLHRDB2.vip
  1      ONLINE  ONLINE      ZFZHLHRDB2
[ZFZHLHRDB1:grid]:/home/grid>crsctl stop res ora.LISTENER.lsnr
CRS-2673: Attempting to stop 'ora.LISTENER.lsnr' on 'ZFZHLHRDB2'
CRS-2673: Attempting to stop 'ora.LISTENER.lsnr' on 'ZFZHLHRDB1'
CRS-2677: Stop of 'ora.LISTENER.lsnr' on 'ZFZHLHRDB1' succeeded
CRS-2677: Stop of 'ora.LISTENER.lsnr' on 'ZFZHLHRDB2' succeeded
[ZFZHLHRDB1:grid]:/home/grid>crsctl start res ora.LISTENER.lsnr
CRS-2672: Attempting to start 'ora.LISTENER.lsnr' on 'ZFZHLHRDB2'
CRS-2672: Attempting to start 'ora.LISTENER.lsnr' on 'ZFZHLHRDB1'
CRS-2676: Start of 'ora.LISTENER.lsnr' on 'ZFZHLHRDB1' succeeded
CRS-2676: Start of 'ora.LISTENER.lsnr' on 'ZFZHLHRDB2' succeeded

```

原本以为就是这个原因导致的，结果添加完 ora.LISTENER.lsnr 后还是单实例的，郁闷。。。更郁闷的是第二次创建后，trace 文件中已经没有任何错误了，无论搜 error 或 fail 都搜不到，但是创建的数据库还是单实例，，，第二次创建的日志：



trace.log

有种深深的挫败感，于是解决同事碰到的那个 DG 问题，参考：

<http://blog.itpub.net/26736162/viewspace-2121688/>。时间就这样过了 2 天，到了 7 月 8 号，手头又没什么事情了，想起来 dbca 这个问题，想来想去还是得从日志入手，老子一行一行的看，总能看出点东西来，但这次我比对的看，就是找一个 dbca 可以创建 rac 的环境，生成日志来分析差异，结果令我震惊了。

当小麦苗看到第 5 行的日志的时候，发现一个 null 的问题，Current Version From Inventory: null，截图如下：

错误环境截图：

```

initialize:182] SilenstHost-> initialize: m_tempLogFile = /oracle/app/oracle/cfgtoollogs/dbca/sile
getVersion:892] OracleHome.getVersion called. Current Version: null
il.getOUIInvSession:347] setting OUI READ level to ACCESSLEVEL_READ_LOCKLESS
getVersion:960] Current Version From Inventory: null
getVersion:967] using sqlplus: /oracle/app/oracle/product/11.2.0/db/bin/sqlplus
getVersion:999] adding oracle home to sqlplus env
getVersion:1003] LIBPATH=/oracle/app/oracle/product/11.2.0/db/lib:/oracle/app/oracle/product/11.2
getVersion:1003] ORACLE_HOME=/oracle/app/oracle/product/11.2.0/db
getVersion:1008] /oracle/app/oracle/product/11.2.0/db/bin/sqlplus Banner:

```

而正常环境的 rac 是这个样子的：

```

initialize:182] SilenstHost-> initialize: m_tempLogFile = /oracle/app/oracle/cfgtoollogs/d
getVersion:892] OracleHome.getVersion called. Current Version: null
il.getOUIInvSession:347] setting OUI READ level to ACCESSLEVEL_READ_LOCKLESS
getVersion:911] Homeinfo /oracle/app/oracle/product/11.2.0/db,1
getVersion:939] OracleHome.server.getVersion Version: 11.2.0.4.0
getVersion:960] Current Version From Inventory: 11.2.0.4.0
getVersion:892] OracleHome.getVersion called. Current Version: 11.2.0.4.0
getVersion:960] Current Version From Inventory: 11.2.0.4.0
.createPasswordFile:609] calling new orapwd for 11.1 or higher
.execProg:2183] beginning execProg with input array.
.execProg:2220] finished execProg with input array. Status:0
initOptions:1239] Initializing Database Options with for dummy sid=DBUA5357107 using init
getVersion:892] OracleHome.getVersion called. Current Version: 11.2.0.4.0
getVersion:960] Current Version From Inventory: 11.2.0.4.0

```

可以看到正常环境下,可以获取到 Homeinfo 和 Current Version From Inventory 的值,当看到 Inventory 这个词的时候我就想我已经找到问题的答案了。应该是 Inventory 这个目录出现了问题,标准点的说法应该是 /oracle/app/oraInventory/ContentsXML/inventory.xml 这个文件的内容有问题了。Inventory 目录存放的是 Oracle 软件安装的目录信息,Oracle 升级也需要这个目录,执行 opatch lspatches 也需要这个目录。oraInventory 目录的位置在/etc/oraInst.loc 中记录,11g 中我们可以通过 \$ORACLE_HOME/oui/bin/attachHome.sh 来重建这个目录。

在其中的 1 个节点上分别用 oracle 和 grid 来执行：

```

[ZFLHRDB1:root]:/oracle/app/oraInventory>$ORACLE_HOME/oui/bin/attachHome.sh

The user is root. Oracle Universal Installer cannot continue installation if the user is root.
: A file or directory in the path name does not exist.
[ZFLHRDB1:root]:/oracle/app/oraInventory>su - grid
[ZFLHRDB1:grid]:/home/grid>$ORACLE_HOME/oui/bin/attachHome.sh
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB. Actual 8192 MB Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
[ZFLHRDB1:grid]:/home/grid>cd /oracle/app/oraInventory/ContentsXML
[ZFLHRDB1:grid]:/oracle/app/oraInventory/ContentsXML>more inv*
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="Orallg_gridinfracome1" LOC="/oracle/app/11.2.0/grid" TYPE="O" IDX="1" CRS="true">
  <NODE_LIST>

```

```
<NODE NAME="ZFLHRDB1"/>
<NODE NAME="ZFLHRDB2"/>
</NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>
[ZFLHRDB1:grid]:/oracle/app/oraInventory/ContentsXML>exit
[ZFLHRDB1:root]:/oracle/app/oraInventory>su - oracle
[ZFLHRDB1:oracle]:/oracle>$ORACLE_HOME/oui/bin/attachHome.sh
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 8192 MB       Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
[ZFLHRDB1:oracle]:/oracle>cd /oracle/app/oraInventory/ContentsXML
[ZFLHRDB1:oracle]:/oracle/app/oraInventory/ContentsXML>more inv*
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="Orallg_gridinfrahome1" LOC="/oracle/app/11.2.0/grid" TYPE="0" IDX="1" CRS="true">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
<HOME NAME="DbHome1" LOC="/oracle/app/oracle/product/11.2.0/db" TYPE="0" IDX="2">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>
```

重建 Inventory 这个目录后重新执行建库脚本：

```
[ZFZHLHRDB1:oracle]:/oracle>dbca -silent -createDatabase -templateName General_Purpose.dbc -responseFile
NO_VALUE \
> -gdbname racdb -sid racdb \
-gdbname racdb -sid racdb \
> -sysPassword lhr -systemPassword lhr \
> -datafileDestination 'DATA/' -recoveryAreaDestination 'DATA/' \
> -redoLogFileSize 50 \
> -storageType ASM -asmnmpPassword lhr -diskGroupName 'DATA' \
> -characterSet ZHS16GBK -nationalCharacterSet AL16UTF16 \
> -sampleSchema true \
> -automaticMemoryManagement true -totalMemory 2048 \
> -databaseType OLTP \
> -emConfiguration NONE \
> -nodelist ZFZHLHRDB1,ZFZHLHRDB2
Copying database files
1% complete
3% complete
9% complete
15% complete
21% complete
```

```

30% complete
Creating and starting Oracle instance
32% complete
36% complete
40% complete
44% complete
45% complete
48% complete
50% complete
Creating cluster database views
52% complete
70% complete
Completing Database Creation
73% complete
76% complete
85% complete
94% complete
100% complete
Look at the log file "/oracle/app/oracle/cfgtoollogs/dbca/racdb/racdb.log" for further details.

```

已经正常了，唉，o(╯╰╯)o 唉，折腾了这么久原来是这个文件的问题，至于新环境为啥这个目录的配置文件不全，这个估计得追溯到 rac 的安装过程了，这个就不去纠结了。

1.3.3.1 模拟让故障重现

我们再来看看 `/oracle/app/oraInventory/ContentsXML/inventory.xml` 文件的内容：

```

[ZFZHLHRDB1:oracle]:/oracle>more /oracle/app/oraInventory/ContentsXML/inventory.xml
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="GridHome1" LOC="/oracle/app/11.2.0/grid" TYPE="O" IDX="1" CRS="true">
  <NODE_LIST>
    <NODE NAME="ZFZHLHRDB1"/>
    <NODE NAME="ZFZHLHRDB2"/>
  </NODE_LIST>
</HOME>
<HOME NAME="DbHome1" LOC="/oracle/app/oracle/product/11.2.0/db" TYPE="O" IDX="2">
  <NODE_LIST>
    <NODE NAME="ZFZHLHRDB1"/>
    <NODE NAME="ZFZHLHRDB2"/>
  </NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>

```

对了，看仔细了，文件中有 2 个部分，若把蓝色字体的部分删掉，或者把

`/oracle/app/oraInventory/ContentsXML/inventory.xml` 的权限修改为 root 用户，那么执行 dbca 的时候将又回到单库的时代，原来 dbca 会从这里去获取是否集群环境，小麦苗阅读了 dbca 这个 shell 脚本，无奈最后发现是调用的 java，但 java 这是个二进制文件不是 shell 脚本，所以就无法知道到底从哪里获取的集群环境信息。

小麦苗已亲自测试过，各位朋友测试过了吗？？？

1.3.3.2 关于重建 Inventory 目录的 2 种办法

重建 Inventory 目录的时候，生成的 log 文件在 /oracle/app/oraInventory/logs 下。

一、 方法一：\$ORACLE_HOME/oui/bin/attachHome.sh

这篇文档中提到有一个脚本 \$ORACLE_HOME/oui/bin/attachHome.sh 可以重建 Inventory 目录，但是我们可以看到在不同的用户下（grid 和 oracle），其 OHOME 的变量值不同，所以若单独创建可以执行该脚本即可。

```
[ZFLHRDB1:grid]:/home/grid>more $ORACLE_HOME/oui/bin/attachHome.sh
#!/bin/sh
OHOME=/oracle/app/11.2.0/grid
OHOMENAME=Orallg_gridinfracome1
CUR_DIR=`pwd`
cd $OHOME/oui/bin
./runInstaller -detachhome ORACLE_HOME=$OHOME ORACLE_HOME_NAME=$OHOMENAME $* > /dev/null 2>&1
./runInstaller -attachhome ORACLE_HOME=$OHOME ORACLE_HOME_NAME=$OHOMENAME $*
cd $CUR_DIR
[ZFLHRDB1:grid]:/home/grid>exit
[ZFLHRDB1:root]:/oracle/app>su - oracle
[ZFLHRDB1:oracle]:/oracle>more $ORACLE_HOME/oui/bin/attachHome.sh
#!/bin/sh
OHOME=/oracle/app/oracle/product/11.2.0/db
OHOMENAME=DbHome1
CUR_DIR=`pwd`
cd $OHOME/oui/bin
./runInstaller -detachhome ORACLE_HOME=$OHOME ORACLE_HOME_NAME=$OHOMENAME $* > /dev/null 2>&1
./runInstaller -attachhome ORACLE_HOME=$OHOME ORACLE_HOME_NAME=$OHOMENAME $*
cd $CUR_DIR
[ZFLHRDB1:oracle]:/oracle>
```

备份 2 个节点的 Inventory 目录，并重建空的 Inventory 目录，然后分别在 grid 和 oracle 用户下执行 \$ORACLE_HOME/oui/bin/attachHome.sh 命令即可，注意只需要在其中的一个节点上执行即可。

```
[ZFLHRDB1:root]:/oracle/app/oraInventory>$ORACLE_HOME/oui/bin/attachHome.sh

The user is root. Oracle Universal Installer cannot continue installation if the user is root.
: A file or directory in the path name does not exist.
[ZFLHRDB1:root]:/oracle/app/oraInventory>su - grid
[ZFLHRDB1:grid]:/home/grid>$ORACLE_HOME/oui/bin/attachHome.sh
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 8192 MB       Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
[ZFLHRDB1:grid]:/home/grid>cd /oracle/app/oraInventory/ContentsXML
[ZFLHRDB1:grid]:/oracle/app/oraInventory/ContentsXML>more inv*
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="Orallg_gridinfracome1" LOC="/oracle/app/11.2.0/grid" TYPE="0" IDX="1" CRS="true">
```



```

<NODE_LIST>
  <NODE NAME="ZFLHRDB1"/>
  <NODE NAME="ZFLHRDB2"/>
</NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>
[ZFLHRDB1:grid]:/oracle/app/oraInventory/ContentsXML>exit
[ZFLHRDB1:root]:/oracle/app/oraInventory>su - oracle
[ZFLHRDB1:oracle]:/oracle>$ORACLE_HOME/oui/bin/attachHome.sh
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 8192 MB       Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
[ZFLHRDB1:oracle]:/oracle>cd /oracle/app/oraInventory/ContentsXML
[ZFLHRDB1:oracle]:/oracle/app/oraInventory/ContentsXML>more inv*
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="Ora11g_gridinfrahome1" LOC="/oracle/app/11.2.0/grid" TYPE="0" IDX="1" CRS="true">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
<HOME NAME="DbHome1" LOC="/oracle/app/oracle/product/11.2.0/db" TYPE="0" IDX="2">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>

```

二、 方法二：集群下统一创建

可以去小麦苗的云盘下载该文档：



文档 413939.1 Steps to Recreate Central Inventory in Real Applications Clusters (文档 ID 413939.1).mhtml

根据 MOS (MOS:413939.1) 的介绍，重建 Inventory 的步骤：

```

[ZFLHRDB2:oracle]:/oracle>more /etc/oraInst.loc
inventory_loc=/oracle/app/oraInventory
inst_group=dba

```

```
[ZFLHRDB2:oracle]:/oracle>cd /oracle/app/oraInventory
[ZFLHRDB2:oracle]:/oracle/app/oraInventory>ls
total 24
drwxrwx---  2 grid    dba          256 Jul 08 13:42 ContentsXML
drwxrwx---  2 grid    dba          4096 Jul 08 10:41 logs
-rw-rw----  1 grid    dba           54 Jul 01 10:45 oraInst.loc
-rwxrwx---  1 grid    dba         1630 Mar 05 2012 orainstRoot.sh
[ZFLHRDB2:oracle]:/oracle/app/oraInventory>cd ContentsXML
[ZFLHRDB2:oracle]:/oracle/app/oraInventory/ContentsXML>ls
total 24
-rw-rw----  1 grid    dba          329 Jul 08 10:42 comps.xml
-rwxrwxrwx  1 oracle  dba          757 Jul 08 12:45 inventory.xml
-rw-rw----  1 grid    dba          292 Jul 08 10:42 libs.xml
[ZFLHRDB2:oracle]:/oracle/app/oraInventory/ContentsXML>more inventory.xml
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="GridHome1" LOC="/oracle/app/11.2.0/grid" TYPE="0" IDX="1" CRS="true">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
<HOME NAME="DbHome1" LOC="/oracle/app/oracle/product/11.2.0/db" TYPE="0" IDX="2">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>
```

接下来分别备份 2 个节点的 Inventory 目录，并重建空的 Inventory 目录：

```
[ZFLHRDB2:root]:/oracle/app>mv oraInventory oraInventory.orig
[ZFLHRDB2:root]:/oracle/app>echo $ORACLE_HOME
/oracle/app/11.2.0/grid
[ZFLHRDB2:root]:/oracle/app>
[ZFLHRDB2:root]:/oracle/app>ls
total 0
drwxr-xr-x  3 root    dba          256 Jul 01 10:29 11.2.0
drwxr-xr-x  7 grid    dba          256 Jul 07 18:20 grid
drwxrwx---  4 grid    dba          256 Jul 08 10:42 oraInventory.orig
drwxr-xr-x  9 oracle  dba          256 Jul 07 19:19 oracle
[ZFLHRDB2:root]:/oracle/app>cp -R oraInventory.orig oraInventory
[ZFLHRDB2:root]:/oracle/app>cd oraInventory
[ZFLHRDB2:root]:/oracle/app/oraInventory>ls
total 24
drwxr-x---  2 root    system       256 Jul 11 14:43 ContentsXML
drwxr-x---  2 root    system      4096 Jul 11 14:43 logs
-rw-r-----  1 root    system       54 Jul 11 14:43 oraInst.loc
-rwxr-x---  1 root    system     1630 Jul 11 14:43 orainstRoot.sh
[ZFLHRDB2:root]:/oracle/app/oraInventory>rm -rf *
[ZFLHRDB2:root]:/oracle/app/oraInventory>cd ..
[ZFLHRDB2:root]:/oracle/app>ls
total 0
drwxr-xr-x  3 root    dba          256 Jul 01 10:29 11.2.0
drwxr-xr-x  7 grid    dba          256 Jul 07 18:20 grid
```



```
drwxr-x--- 2 root system 256 Jul 11 14:43 oraInventory
drwxrwx--- 4 grid dba 256 Jul 08 10:42 oraInventory.orig
drwxr-xr-x 9 oracle dba 256 Jul 07 19:19 oracle
[ZFLHRDB2:root]:/oracle/app>chown grid.dba oraInventory
[ZFLHRDB2:root]:/oracle/app>ls
total 0
drwxr-xr-x 3 root dba 256 Jul 01 10:29 11.2.0
drwxr-xr-x 7 grid dba 256 Jul 07 18:20 grid
drwxr-x--- 2 grid dba 256 Jul 11 14:43 oraInventory
drwxrwx--- 4 grid dba 256 Jul 08 10:42 oraInventory.orig
drwxr-xr-x 9 oracle dba 256 Jul 07 19:19 oracle
[ZFLHRDB2:root]:/oracle/app>chmod 775 oraInventory
[ZFLHRDB2:root]:/oracle/app>ls
total 0
drwxr-xr-x 3 root dba 256 Jul 01 10:29 11.2.0
drwxr-xr-x 7 grid dba 256 Jul 07 18:20 grid
drwxrwxr-x 2 grid dba 256 Jul 11 14:43 oraInventory
drwxrwx--- 4 grid dba 256 Jul 08 10:42 oraInventory.orig
drwxr-xr-x 9 oracle dba 256 Jul 07 19:19 oracle
```

以下命令用 grid 用户在节点一执行即可，节点二自动创建：

```
[ZFLHRDB1:grid]:/home/grid>$ORACLE_HOME/oui/bin/runInstaller -silent -ignoreSysPrereqs \
> -attachHome ORACLE_HOME="/oracle/app/11.2.0/grid" ORACLE_HOME_NAME="GridHome1" \
> LOCAL_NODE="ZFLHRDB1" CLUSTER_NODES="{ZFLHRDB1,ZFLHRDB2}" CRS=true
Starting Oracle Universal Installer...
```

```
Checking swap space: must be greater than 500 MB. Actual 8192 MB Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
```

====》GRID_HOME 创建成功，接下来创建 ORACLE_HOME

```
[ZFLHRDB1:grid]:/home/grid>$ORACLE_HOME/oui/bin/runInstaller -silent -ignoreSysPrereqs \
> -attachHome ORACLE_HOME="/oracle/app/oracle/product/11.2.0/db" ORACLE_HOME_NAME="DbHome1" \
> LOCAL_NODE="ZFLHRDB1" CLUSTER_NODES="{ZFLHRDB1,ZFLHRDB2}"
Starting Oracle Universal Installer...
```

```
Checking swap space: must be greater than 500 MB. Actual 8192 MB Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /oracle/app/oraInventory
'AttachHome' was successful.
[ZFLHRDB1:grid]:/home/grid>
```

====》2 个节点均创建成功

```
[ZFLHRDB2:root]:/oracle/app/oraInventory/ContentsXML>more inv*
<?xml version="1.0" standalone="yes" ?>
<!-- Copyright (c) 1999, 2013, Oracle and/or its affiliates.
All rights reserved. -->
<!-- Do not modify the contents of this file by hand. -->
<INVENTORY>
<VERSION_INFO>
  <SAVED_WITH>11.2.0.4.0</SAVED_WITH>
  <MINIMUM_VER>2.1.0.6.0</MINIMUM_VER>
</VERSION_INFO>
<HOME_LIST>
<HOME NAME="GridHome1" LOC="/oracle/app/11.2.0/grid" TYPE="0" IDX="1" CRS="true">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
</HOME>
<HOME NAME="DbHome1" LOC="/oracle/app/oracle/product/11.2.0/db" TYPE="0" IDX="2">
  <NODE_LIST>
    <NODE NAME="ZFLHRDB1"/>
    <NODE NAME="ZFLHRDB2"/>
  </NODE_LIST>
```

```

</HOME>
</HOME_LIST>
<COMPOSITEHOME_LIST>
</COMPOSITEHOME_LIST>
</INVENTORY>
[ZFLHRDB2:root]:/oracle/app/oraInventory/ContentsXML>

```

注意的 2 点：

a-Do not try attachHome in all the nodes, which may corrupt the inventory and it results in OUI-10197:Unable to create a new Oracle Home at /u01/app/oracle/product/10.2.0/crs_1. Oracle Home already exists at this location. Select another location. Attaching Home in one node will be propagated to other nodes.

b-Make absolutely sure you are have backed up the original inventory before starting this procedure, so that you can revert if necessary.

1.4 故障处理总结

1.4.1 rac 环境不能创建 rac 库

在集群环境中，dbca 不能创建 rac 库，那很可能就是 /oracle/app/oraInventory/ContentsXML/inventory.xml 文件中丢失了 db 部分的内容，我们可以使用 \$ORACLE_HOME/oui/bin/attachHome.sh 来重建该目录，或手动修改该文件。

若执行 attachHome.sh 报如下的错误，那么删除 /oracle/app/oraInventory/ContentsXML 下的 3 个文件后继续执行即可。

```
org.xml.sax.SAXParseException: <Line 1, Column 1>: XML-20108: (Fatal Error) Start of
root element expected.
```

```
at oracle.xml.parser.v2.XMLError.flushErrorHandler(XMLError.java:415)
```

1.4.2 其它 dbca 静默建库常见错误的解决办法

一、The Oracle system identifier(SID) "xxx" already exists. Specify another SID

用 root 用户编辑 /etc/oratab，删除相应的记录：xxx:/u01/oracle:N，保存退出问题解决。

二、The cluster database(DB_NAME) "racdb" already exists. Please specify another DB_NAME.

原因：说明集群环境中已经有 racdb 这个数据库了。

解决办法：若数据库无用了，可以 dbca -silent -deleteDatabase -sourceDB racdb 来删除数据库，若数据库不能启动，则可以直接从 crs 中删除数据库的注册信息：srvctl remove db -d racdb -f 后重新运行

脚本即可。

三、 DBCA 建库报错 CRS-2566 PRCR-1071 PRCR-1006

```
PRCR-1006 : Failed to add resource ora.lhrdg.db for lhrdg
PRCR-1071 : Failed to register or update resource ora.lhrdg.db
CRS-2566: User 'oracle' does not have sufficient permissions to operate on resource
'ora.LISTENER_LHRDG.lsnr', which is part of the dependency specification.
DBCA_PROGRESS : 100%
```

权限不对，应该用 grid 来创建监听：srvctl config listener -l LISTENER_LHRDG -a
具体参考我的 blog：<http://blog.itpub.net/26736162/viewspace-2114484/>

1.5 用到的 SQL 集合

RAC 建库脚本：

```
dbca -silent -createDatabase -templateName General_Purpose.dbc -responseFile NO_VALUE \
-gdbname racdb -sid racdb \
-sysPassword lhr -systemPassword lhr \
-datafileDestination 'DATA/' -recoveryAreaDestination 'DATA/' \
-redoLogFileSize 50 \
-storageType ASM -asmsnmpPassword lhr -diskGroupName 'DATA' \
-characterSet ZHS16GBK -nationalCharacterSet AL16UTF16 \
-sampleSchema true \
-automaticMemoryManagement true -totalMemory 2048 \
-databaseType OLTP \
-emConfiguration NONE \
-nodelist ZFLHRDB1,ZFLHRDB2
```

静默创建监听：netca -silent -responsefile \$ORACLE_HOME/assistants/netca/netca.rsp

添加监听：srvctl add listener -l LISTENER -p 1521 -o \$ORACLE_HOME

oraInventory 目录：/oracle/app/oraInventory/ContentsXML/inventory.xml

重建的话，方法一：备份 2 个节点的 Inventory 目录，并重建空的 Inventory 目录，然后分别在 grid 和 oracle 用户下执行 **\$ORACLE_HOME/oui/bin/attachHome.sh** 命令即可，注意只需要在其中的一个节点上执行即可。方法二，在 grid 用户下执行：

```
$ORACLE_HOME/oui/bin/runInstaller -silent -ignoreSysPrereqs \
-attachHome ORACLE_HOME="/oracle/app/11.2.0/grid" ORACLE_HOME_NAME="GridHome1" \
LOCAL_NODE="ZFLHRDB1" CLUSTER_NODES="{ZFLHRDB1,ZFLHRDB2}" CRS=true

$ORACLE_HOME/oui/bin/runInstaller -silent -ignoreSysPrereqs \
-attachHome ORACLE_HOME="/oracle/app/oracle/product/11.2.0/db" ORACLE_HOME_NAME="DbHome1" \
LOCAL_NODE="ZFLHRDB1" CLUSTER_NODES="{ZFLHRDB1,ZFLHRDB2}"
```

重新执行 root.sh 脚本：

```
ocrconfig -showbackup
ocrconfig -manualbackup

$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose
ls -l $ORACLE_BASE/Clusterware/ckptGridHA*
find $ORACLE_HOME/gpnp/* -type f
find $ORACLE_HOME/gpnp/* -type f -exec rm -rf {} \;

$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose -lastnode -keepdg
ls -l $ORACLE_BASE/Clusterware/ckptGridHA*
find $ORACLE_HOME/gpnp/* -type f
find $ORACLE_HOME/gpnp/* -type f -exec rm -rf {} \;

ipcs
$ORACLE_HOME/root.sh
/oracle/app/11.2.0/grid/perl/bin/perl -I/oracle/app/11.2.0/grid/perl/lib
-I/oracle/app/11.2.0/grid/crs/install /oracle/app/11.2.0/grid/crs/install/rootcrs.pl

ipcs
$ORACLE_HOME/root.sh
```

About Me

本文作者：小麦苗，只专注于数据库的技术，更注重技术的运用

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