AIX 安装 11gR2 RAC_LHR

1.1 BLOG 文档结构图

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 基于 aix 安装 rac（重点）

② 静默安装 rac 软件

③ dbca 静默创建 rac 数据库

Tips：

① 若文章代码格式有错乱，推荐使用 QQ、搜狗或 360 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://yunpan.cn/cdEQedhCs2kFz**（提取码：ed9b）

② 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



[ZFXXDB1:root]:/>lsvg -o
T_XDESK_APP1_vg
rootvg
[ZFXXDB1: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。

1.2.2 相关参考文章链接

linux 环境下 rac 的搭建：

一步一步搭建 oracle 11gR2 rac + dg 之前传（一） http://blog.itpub.net/26736162/viewspace-1290405/

一步一步搭建 oracle 11gR2 rac+dg 之环境准备(二) http://blog.itpub.net/26736162/viewspace-1290416/

一步一步搭建 oracle 11gR2 rac+dg 之共享磁盘设置(三) http://blog.itpub.net/26736162/viewspace-1291144/

一步一步搭建 oracle 11gR2 rac+dg 之 grid 安装(四) http://blog.itpub.net/26736162/viewspace-1297101/

一步一步搭建 oracle 11gR2 rac+dg 之 database 安装(五) http://blog.itpub.net/26736162/viewspace-1297113/

一步一步搭建 11gR2 rac+dg 之安装 rac 出现问题解决(六) http://blog.itpub.net/26736162/viewspace-1297128/

一步一步搭建 11gR2 rac+dg 之 DG 机器配置(七) http://blog.itpub.net/26736162/viewspace-1298733/

一步一步搭建 11gR2 rac+dg 之配置单实例的 DG(八) http://blog.itpub.net/26736162/viewspace-1298735/

一步一步搭建 11gR2 rac+dg 之 DG SWITCHOVER 功能(九) http://blog.itpub.net/26736162/viewspace-1328050/

一步一步搭建 11gR2 rac+dg 之结尾篇(十) http://blog.itpub.net/26736162/viewspace-1328156/

【RAC】如何让 Oracle RAC crs_stat 命令显示完整 http://blog.itpub.net/26736162/viewspace-1610957/

如何创建 ASM 磁盘 http://blog.itpub.net/26736162/viewspace-1401193/

linux 下 rac 的卸载： http://blog.itpub.net/26736162/viewspace-1630145/

【RAC】 RAC For W2K8R2 安装--总体规划 （一） ： http://blog.itpub.net/26736162/viewspace-1721232/

【RAC】 RAC For W2K8R2 安装--操作系统环境配置 （二）：
http://blog.itpub.net/26736162/viewspace-1721253/

【RAC】 RAC For W2K8R2 安装--共享磁盘的配置(三)：
http://blog.itpub.net/26736162/viewspace-1721270/

【RAC】 RAC For W2K8R2 安装--grid 的安装(四)：
http://blog.itpub.net/26736162/viewspace-1721281/

【RAC】 RAC For W2K8R2 安装--RDBMS 软件的安装(五)：
http://blog.itpub.net/26736162/viewspace-1721304/

【RAC】 RAC For W2K8R2 安装--创建 ASM 磁盘组(六)：
http://blog.itpub.net/26736162/viewspace-1721314/

【RAC】 RAC For W2K8R2 安装--dbca 创建数据库(七)：
http://blog.itpub.net/26736162/viewspace-1721324/

【RAC】 RAC For W2K8R2 安装--卸载(八)：
http://blog.itpub.net/26736162/viewspace-1721331/

【RAC】 RAC For W2K8R2 安装--安装过程中碰到的问题(九)：
http://blog.itpub.net/26736162/viewspace-1721373/

【RAC】 RAC For W2K8R2 安装--结尾篇(十)： http://blog.itpub.net/26736162/viewspace-1721378/

【推荐】 【DBCA -SILENT】静默安装之 rac 数据库安装
http://blog.itpub.net/26736162/viewspace-1586352/

1.2.3 本文简介

虽然之前已经多次安装过 rac 了，但都是基于 linux 或 windows 的，基于 aix 的还没有安装过，最近有空就学学基于 aix 的安装 rac，并且对于我而已，rac 安装很熟悉了，所以就抛弃图形界面，全程采用命令模式来安装。另外，文章中的脚本下载地址：

http://yunpan.cn/cdEQedhCs2kFz （提取码：ed9b ）

第 2 章　安装准备

2.1 软件环境

数据库：

p10404530_112030_AIX64-5L_1of7.zip、

p10404530_112030_AIX64-5L_2of7.zip

集群软件（11G 中的 clusterware）：

p10404530_112030_AIX64-5L_3of7.zip

操作系统：

7100-03-03-1415

注意： 解压时 p10404530_112030_AIX64-5L_1of7.zip、p10404530_112030_AIX64-5L_2of7.zip 这两个包要解到同一个目录下，p10404530_112030_AIX64-5L_3of7.zip 包解到另一个不同的目录下。

2.2 网络规划及/etc/hosts

vi /etc/hosts

```
22.188.187.148   ZFFR4CB1101
222.188.187.148  ZFFR4CB1101-priv
22.188.187.149   ZFFR4CB1101-vip

22.188.187.158   ZFFR4CB2101
222.188.187.158  ZFFR4CB2101-priv
22.188.187.150   ZFFR4CB2101-vip

22.188.187.160   ZFFR4CB2101-scan
```

配置私网

```
HOST=`hostname`;IP=`host $HOST | awk '{print "2"$NF}'`;chdev -l 'en1' -a netaddr=$IP -a
netmask='255.255.255.0' -a state='up'
[ZFPRMDB2:root]:/>smitty tcpip

     Minimum Configuration & Startup

* Internet ADDRESS (dotted decimal)              [222.188.187.148]
```

```
 Network MASK (dotted decimal)                  [255.255.255.0]
```

节点一：

```
[ZFFR4CB1101:root]/]> ifconfig -a
en0:
flags=1e084863,480<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,CHECKSUM_OFFLOAD(ACTIVE),
CHAIN>
        inet 22.188.187.148 netmask 0xffffff00 broadcast 22.188.187.255
         tcp_sendspace 262144 tcp_recvspace 262144 rfc1323 1
en1:
flags=1e084863,480<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,CHECKSUM_OFFLOAD(ACTIVE),
CHAIN>
        inet 222.188.187.148 netmask 0xffffff00 broadcast 222.188.187.255
         tcp_sendspace 262144 tcp_recvspace 262144 rfc1323 1
lo0: flags=e08084b,c0<UP,BROADCAST,LOOPBACK,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,LARGESEND,CHAIN>
        inet 127.0.0.1 netmask 0xff000000 broadcast 127.255.255.255
        inet6 ::1%1/0
         tcp_sendspace 131072 tcp_recvspace 131072 rfc1323 1
[ZFFR4CB1101:root]/]>
[ZFFR4CB1101:root]/]>
```

节点二：

```
[ZFFR4CB2101:root]/]> ifconfig -a
en0:
flags=1e084863,480<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,CHECKSUM_OFFLOAD(ACTIVE),
CHAIN>
        inet 22.188.187.158 netmask 0xffffff00 broadcast 22.188.187.255
         tcp_sendspace 262144 tcp_recvspace 262144 rfc1323 1
en1:
flags=1e084863,480<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,CHECKSUM_OFFLOAD(ACTIVE),
CHAIN>
        inet 222.188.187.158 netmask 0xffffff00 broadcast 222.188.187.255
         tcp_sendspace 262144 tcp_recvspace 262144 rfc1323 1
lo0: flags=e08084b,c0<UP,BROADCAST,LOOPBACK,RUNNING,SIMPLEX,MULTICAST,GROUPRT,64BIT,LARGESEND,CHAIN>
        inet 127.0.0.1 netmask 0xff000000 broadcast 127.255.255.255
        inet6 ::1%1/0
         tcp_sendspace 131072 tcp_recvspace 131072 rfc1323 1
[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]>
```

公网、私网共 4 个 IP 可以 ping 通，其它 3 个不能 ping 通才是正常的。

2.3 硬件环境检查

以 ZFFR4CB2101 为例：

```
[ZFFR4CB2101:root]/]> getconf REAL_MEMORY
4194304
[ZFFR4CB2101:root]/]> /usr/sbin/lsattr -E -l sys0 -a realmem
realmem 4194304 Amount of usable physical memory in Kbytes False
[ZFFR4CB2101:root]/]> lsps -a
Page Space      Physical Volume   Volume Group    Size %Used Active  Auto  Type Chksum
hd6             hdisk0            rootvg       8192MB     0   yes   yes    lv     0
[ZFFR4CB2101:root]/]> getconf HARDWARE_BITMODE
64
[ZFFR4CB2101:root]/]> bootinfo -K
64
[ZFFR4CB2101:root]/]>
```

```
[ZFFR4CB2101:root]/]> df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
/dev/hd4           4.25      4.00    6%    12709     2% /
/dev/hd2          10.00      4.57   55%   118820    11% /usr
/dev/hd9var        4.50      4.24    6%     1178     1% /var
/dev/hd3           4.25      4.23    1%      172     1% /tmp
/dev/hd1           1.00      1.00    1%       77     1% /home
/dev/hd11admin     0.25      0.25    1%        7     1% /admin
/proc                 -         -    -         -     -  /proc
/dev/hd10opt       4.50      4.37    3%     2567     1% /opt
/dev/livedump      1.00      1.00    1%        6     1% /var/adm/ras/livedump
/dev/Plv_install      1.00      1.00    1%        4     1% /install
/dev/Plv_mtool      1.00      1.00    1%        4     1% /mtool
/dev/Plv_audit      2.00      1.99    1%        5     1% /audit
/dev/Plv_ftplog      1.00      1.00    1%        5     1% /ftplog
/dev/Tlv_bocnet     50.00     49.99    1%        4     1% /bocnet
/dev/Tlv_WebSphere     10.00      5.71   43%    45590     4% /WebSphere
/dev/TLV_TEST_DATA    100.00     99.98    1%        7     1% /lhr
/dev/tlv_softtmp     30.00     20.30   33%     5639     1% /softtmp
ZTDNETAP3:/nfs    1240.00     14.39   99%   513017    14% /nfs
/dev/tlv_u01      50.00     32.90   35%    51714     1% /u01
[ZFFR4CB2101:root]/]> cat /etc/.init.state
2
[ZFFR4CB2101:root]/]> oslevel -s
7100-03-03-1415
[ZFFR4CB2101:root]/]> lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.perfstat
bos.perf.libperfstat bos.perf.proctools
  Fileset                      Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  bos.adt.base              7.1.3.15  COMMITTED  Base Application Development
                                                 Toolkit
  bos.adt.lib               7.1.2.15  COMMITTED  Base Application Development
                                                 Libraries
  bos.adt.libm               7.1.3.0  COMMITTED  Base Application Development
                                                 Math Library
  bos.perf.libperfstat      7.1.3.15  COMMITTED  Performance Statistics Library
                                                 Interface
  bos.perf.perfstat         7.1.3.15  COMMITTED  Performance Statistics
                                                 Interface

Path: /etc/objrepos
  bos.adt.base              7.1.3.15  COMMITTED  Base Application Development
                                                 Toolkit
  bos.perf.libperfstat      7.1.3.15  COMMITTED  Performance Statistics Library
                                                 Interface
  bos.perf.perfstat         7.1.3.15  COMMITTED  Performance Statistics
                                                 Interface
lslpp: 0504-132  Fileset bos.perf.proctools   not installed.
```

2.4 操作系统参数调整

shell 脚本：

vi os_pre_lhr.sh

```
_chlimit(){
  [ -f /etc/security/limits.org ] || { cp -p /etc/security/limits /etc/security/limits.org; }
  cat /etc/security/limits.org |egrep -vp "root|oracle|grid" > /etc/security/limits
  echo "root:
```

```
        core = -1
        cpu = -1
        data = -1
        fsize = -1
        nofiles = -1
        rss = -1
        stack = -1
        core_hard = -1
        cpu_hard = -1
        data_hard = -1
        fsize_hard = -1
        nofiles_hard = -1
        rss_hard = -1
        stack_hard = -1

oracle:
        core = -1
        cpu = -1
        data = -1
        fsize = -1
        nofiles = -1
        rss = -1
        stack = -1
        cpu_hard = -1
        core_hard = -1
        data_hard = -1
        fsize_hard = -1
        nofiles_hard = -1
        rss_hard = -1
        stack_hard = -1

grid:
        core = -1
        cpu = -1
        data = -1
        fsize = -1
        nofiles = -1
        rss = -1
        stack = -1
        core_hard = -1
        cpu_hard = -1
        data_hard = -1
        fsize_hard = -1
        nofiles_hard = -1
        rss_hard = -1
        stack_hard = -1" >> /etc/security/limits
}

_chospara(){
  vmo -p -o minperm%=3
  echo "yes"|vmo -p -o maxperm%=90
  echo "yes" |vmo -p -o maxclient%=90
  echo "yes"|vmo -p -o lru_file_repage=0
  echo "yes"|vmo -p -o strict_maxclient=1
  echo "yes" |vmo -p -o strict_maxperm=0
  echo "yes\nno" |vmo -r -o page_steal_method=1;
  ioo -a|egrep -w "aio_maxreqs|aio_maxservers|aio_minservers"
  /usr/sbin/chdev -l sys0 -a maxuproc=16384 -a ncargs=256 -a minpout=4096 -a maxpout=8193 -a
fullcore=true
  echo "check sys0 16384 256"
  lsattr -El sys0 |egrep "maxuproc|ncargs|pout|fullcore" |awk '{print $1,$2}'

  /usr/sbin/no -p -o sb_max=41943040
  /usr/sbin/no -p -o udp_sendspace=2097152
  /usr/sbin/no -p -o udp_recvspace=20971520
```

```
  /usr/sbin/no -p -o tcp_sendspace=1048576
  /usr/sbin/no -p -o tcp_recvspace=1048576
  /usr/sbin/no -p -o rfc1323=1
  /usr/sbin/no -r -o ipqmaxlen=512
  /usr/sbin/no -p -o clean_partial_conns=1

  cp -p /etc/environment /etc/environment.`date '+%Y%m%d'`
  cat /etc/environment.`date '+%Y%m%d'` |awk '/^TZ=/{print
"TZ=BEIST-8"} !/^TZ=/{print}' >/etc/environment
  _chlimit

}

_chlimit
_chospara

stopsrc -s xntpd
startsrc -s xntpd -a "-x"
```

sh os_pre_lhr.sh

2.5 创建文件系统

```
/usr/lpp/EMC/Symmetrix/bin/inq.aix64_51 -showvol -sid
lspv
mkvg -S -y t_u01_vg -s 128   hdisk22

mklv -t jfs2 -y tlv_u01 -x 1024 t_u01_vg 400
crfs -v jfs2 -d tlv_u01 -m /u01 -A yes
mount /u01

mklv -t jfs2 -y tlv_softtmp -x 1024 t_u01_vg 240
crfs -v jfs2 -d tlv_softtmp -m /softtmp -A yes
mount /softtmp
```

以 ZFFR4CB2101 为例：

```
[ZFFR4CB2101:root]/]> /usr/lpp/EMC/Symmetrix/bin/inq.aix64_51 -showvol -sid
Inquiry utility, Version V7.3-1214 (Rev 0.1)      (SIL Version V7.3.0.1 (Edit Level 1214)
Copyright (C) by EMC Corporation, all rights reserved.
For help type inq -h.

.......................

-------------------------------------------------------------------------------------------------
DEVICE         :VEND    :PROD            :REV   :SER NUM    :Volume  :CAP(kb)         :SYMM ID
-------------------------------------------------------------------------------------------------
/dev/rhdisk0   :AIX     :VDASD           :0001  :hdisk5     :   00000:   134246400  :N/A
/dev/rhdisk1   :EMC     :SYMMETRIX       :5876  :640250a000 :   0250A:        2880  :000492600664
/dev/rhdisk2   :EMC     :SYMMETRIX       :5876  :640250b000 :   0250B:        2880  :000492600664
/dev/rhdisk3   :EMC     :SYMMETRIX       :5876  :640250c000 :   0250C:        2880  :000492600664
/dev/rhdisk4   :EMC     :SYMMETRIX       :5876  :640250d000 :   0250D:        2880  :000492600664
/dev/rhdisk5   :EMC     :SYMMETRIX       :5876  :64026f6000 :   026F6:   134246400  :000492600664
/dev/rhdisk6   :EMC     :SYMMETRIX       :5876  :64026fe000 :   026FE:   134246400  :000492600664
/dev/rhdisk7   :EMC     :SYMMETRIX       :5876  :6402706000 :   02706:   134246400  :000492600664
/dev/rhdisk8   :EMC     :SYMMETRIX       :5876  :640270e000 :   0270E:   134246400  :000492600664
/dev/rhdisk9   :EMC     :SYMMETRIX       :5876  :6402716000 :   02716:   134246400  :000492600664
/dev/rhdisk10  :EMC     :SYMMETRIX       :5876  :640271e000 :   0271E:   134246400  :000492600664
/dev/rhdisk11  :EMC     :SYMMETRIX       :5876  :6402726000 :   02726:   134246400  :000492600664
/dev/rhdisk12  :EMC     :SYMMETRIX       :5876  :640272e000 :   0272E:   134246400  :000492600664
/dev/rhdisk13  :EMC     :SYMMETRIX       :5876  :6402736000 :   02736:   134246400  :000492600664
```

```
/dev/rhdisk14 :EMC     :SYMMETRIX       :5876  :640273e000 :   0273E:   134246400  :000492600664
/dev/rhdisk15 :EMC     :SYMMETRIX       :5876  :6402746000 :   02746:   134246400  :000492600664
/dev/rhdisk16 :EMC     :SYMMETRIX       :5876  :640274e000 :   0274E:   134246400  :000492600664
/dev/rhdisk17 :EMC     :SYMMETRIX       :5876  :6402756000 :   02756:   134246400  :000492600664
/dev/rhdisk18 :EMC     :SYMMETRIX       :5876  :640275e000 :   0275E:   134246400  :000492600664
/dev/rhdisk19 :EMC     :SYMMETRIX       :5876  :6402766000 :   02766:   134246400  :000492600664
/dev/rhdisk20 :EMC     :SYMMETRIX       :5876  :640276e000 :   0276E:   134246400  :000492600664
/dev/rhdisk21 :EMC     :SYMMETRIX       :5876  :6402776000 :   02776:   134246400  :000492600664
/dev/rhdisk22 :EMC     :SYMMETRIX       :5876  :640277e000 :   0277E:   134246400  :000492600664
/dev/rhdisk23 :EMC     :SYMMETRIX       :5876  :6402786000 :   02786:   134246400  :000492600664
/dev/rhdisk24 :EMC     :SYMMETRIX       :5876  :640278e000 :   0278E:   134246400  :000492600664
[ZFFR4CB2101:root]/]> lspv
hdisk0          00c49fc434da2434                    rootvg          active
hdisk1          00c49fc461fc76b2                    None
hdisk2          00c49fc461fc76f5                    None
hdisk3          00c49fc461fc7739                    None
hdisk4          00c49fc461fc777a                    None
hdisk5          00c49fc461fc77bd                    None
hdisk6          00c49fc461fc77fe                    None
hdisk7          00c49fc461fc783f                    None
hdisk8          00c49fc461fc7880                    None
hdisk9          00c49fc461fc78c5                    None
hdisk10         00c49fc461fc7908                    None
hdisk11         00c49fc461fc7958                    None
hdisk12         00c49fc461fc79a0                    None
hdisk13         00c49fc461fc79ea                    None
hdisk14         00c49fc461fc7a2f                    None
hdisk15         00c49fc461fc7a71                    None
hdisk16         00c49fc461fc7ab1                    None
hdisk17         00c49fb4e3a8fc12                    None
hdisk18         00c49fc461fc7b3b                    T_NET_APP_vg    active
hdisk19         00c49fc461fc7b7d                    None
hdisk20         00c49fc461fc7bbe                    None
hdisk21         00c49fc461fc7bff                    None
hdisk22         00c49fc461fc7c40                    None
hdisk23         00c49fc461fc7c88                    T_TEST_LHR_VG   active
hdisk24         00c49fc461fc7cca                    T_TEST_LHR_VG   active
```

```
[ZFFR4CB2101:root]/]> df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
/dev/hd4           4.25      4.00    6%    12643     2% /
/dev/hd2          10.00      4.58   55%   118785    10% /usr
/dev/hd9var        4.50      4.08   10%     1175     1% /var
/dev/hd3           4.25      3.75   12%     1717     1% /tmp
/dev/hd1           1.00      1.00    1%       17     1% /home
/dev/hd11admin      0.25      0.25    1%        7     1% /admin
/proc                 -         -    -         -     -  /proc
/dev/hd10opt       4.50      4.37    3%     2559     1% /opt
/dev/livedump      1.00      1.00    1%        6     1% /var/adm/ras/livedump
/dev/Plv_install      1.00      1.00    1%        4     1% /install
/dev/Plv_mtool      1.00      1.00    1%        4     1% /mtool
/dev/Plv_audit      2.00      1.99    1%        5     1% /audit
/dev/Plv_ftplog      1.00      1.00    1%        5     1% /ftplog
/dev/Tlv_bocnet     50.00     49.99    1%        4     1% /bocnet
/dev/Tlv_WebSphere     10.00      5.71   43%    45590     4% /WebSphere
/dev/TLV_TEST_DATA    100.00     99.98    1%        7     1% /lhr
ZTDNETAP3:/nfs    1240.00     14.39   99%   512924    14% /nfs
ZTINIMSERVER:/sharebkup    5500.00   1258.99   78%  2495764     1% /sharebkup
```

```
[ZFFR4CB2101:root]/]> mklv -t jfs2 -y tlv_u01 -x 1024 t_u01_vg 400
tlv_u01
[ZFFR4CB2101:root]/]> crfs -v jfs2 -d tlv_u01 -m /u01 -A yes
```

```
File system created successfully.
52426996 kilobytes total disk space.
New File System size is 104857600
[ZFFR4CB2101:root]/]> mount /u01
[ZFFR4CB2101:root]/]> df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
/dev/hd4           4.25      4.00    6%    12648     2% /
/dev/hd2          10.00      4.58   55%   118785    10% /usr
/dev/hd9var        4.50      4.08   10%     1176     1% /var
/dev/hd3           4.25      3.75   12%     1717     1% /tmp
/dev/hd1           1.00      1.00    1%       17     1% /home
/dev/hd11admin      0.25      0.25    1%        7     1% /admin
/proc                 -         -    -         -     -  /proc
/dev/hd10opt       4.50      4.37    3%     2559     1% /opt
/dev/livedump      1.00      1.00    1%        6     1% /var/adm/ras/livedump
/dev/Plv_install      1.00      1.00    1%        4     1% /install
/dev/Plv_mtool      1.00      1.00    1%        4     1% /mtool
/dev/Plv_audit      2.00      1.99    1%        5     1% /audit
/dev/Plv_ftplog      1.00      1.00    1%        5     1% /ftplog
/dev/Tlv_bocnet     50.00     49.99    1%        4     1% /bocnet
/dev/Tlv_WebSphere     10.00      5.71   43%    45590     4% /WebSphere
/dev/TLV_TEST_DATA    100.00     99.98    1%        7     1% /lhr
ZTDNETAP3:/nfs    1240.00     14.39   99%   512924    14% /nfs
ZTINIMSERVER:/sharebkup    5500.00   1258.99   78%  2495764     1% /sharebkup
/dev/tlv_u01       50.00     49.99    1%        4     1% /u01
[ZFFR4CB2101:root]/]>
```

```
[ZFFR4CB2101:root]/]> mklv -t jfs2 -y tlv_softtmp -x 1024 t_u01_vg 240
tlv_softtmp
[ZFFR4CB2101:root]/]> crfs -v jfs2 -d tlv_softtmp -m /softtmp -A yes
File system created successfully.
31456116 kilobytes total disk space.
New File System size is 62914560
[ZFFR4CB2101:root]/]> mount /softtmp
[ZFFR4CB2101:root]/]> df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
/dev/hd4           4.25      4.00    6%    12650     2% /
/dev/hd2          10.00      4.58   55%   118785    10% /usr
/dev/hd9var        4.50      4.08   10%     1177     1% /var
/dev/hd3           4.25      3.75   12%     1717     1% /tmp
/dev/hd1           1.00      1.00    1%       17     1% /home
/dev/hd11admin      0.25      0.25    1%        7     1% /admin
/proc                 -         -    -         -     -  /proc
/dev/hd10opt       4.50      4.37    3%     2559     1% /opt
/dev/livedump      1.00      1.00    1%        6     1% /var/adm/ras/livedump
/dev/Plv_install      1.00      1.00    1%        4     1% /install
/dev/Plv_mtool      1.00      1.00    1%        4     1% /mtool
/dev/Plv_audit      2.00      1.99    1%        5     1% /audit
/dev/Plv_ftplog      1.00      1.00    1%        5     1% /ftplog
/dev/Tlv_bocnet     50.00     49.99    1%        4     1% /bocnet
/dev/Tlv_WebSphere     10.00      5.71   43%    45590     4% /WebSphere
/dev/TLV_TEST_DATA    100.00     99.98    1%        7     1% /lhr
ZTDNETAP3:/nfs    1240.00     14.39   99%   512924    14% /nfs
ZTINIMSERVER:/sharebkup    5500.00   1258.99   78%  2495764     1% /sharebkup
/dev/tlv_u01       50.00     49.99    1%        4     1% /u01
/dev/tlv_softtmp      30.00     30.00    1%        4     1% /softtmp
[ZFFR4CB2101:root]/]>
```

创建卷组的时候注意踩盘，懂 AIX 的人懂的，不多说。

2.6 建立安装目录

直接复制粘贴执行：

```
mkdir -p  /u01/app/11.2.0/grid
chmod -R 755 /u01/app/11.2.0/grid
mkdir -p /u01/app/grid
chmod -R 755 /u01/app/grid
mkdir -p  /u01/app/oracle
chmod -R 755 /u01/app/oracle
```

```
[ZFFR4CB2101:root]/]>  mkdir -p  /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]>  chmod -R 755 /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]>  mkdir -p /u01/app/grid
[ZFFR4CB2101:root]/]>  chmod -R 755 /u01/app/grid
[ZFFR4CB2101:root]/]>  mkdir -p  /u01/app/oracle
[ZFFR4CB2101:root]/]>  chmod -R 755 /u01/app/oracle
[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]> cd /u01/app
[ZFFR4CB2101:root]/u01/app]> l
total 0
drwxr-xr-x    3 root     system          256 Mar 08 16:11 11.2.0
drwxr-xr-x    2 root     system          256 Mar 08 16:11 grid
drwxr-xr-x    2 root     system          256 Mar 08 16:11 oracle
[ZFFR4CB2101:root]/u01/app]>
```

2.7 建立用户和用户组

直接复制粘贴执行：

```
mkgroup -A id=1024 dba
mkgroup -A id=1025 asmadmin
mkgroup -A id=1026 asmdba
mkgroup -A id=1027 asmoper
mkgroup -A id=1028 oinstall


mkuser -a id=1025 pgrp=oinstall groups=dba,asmadmin,asmdba,asmoper,oinstall home=/home/grid
fsize=-1 cpu=-1 data=-1 core=-1 rss=-1 stack=-1 stack_hard=-1
capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE  grid
echo "grid:grid" |chpasswd
pwdadm -c grid

mkuser -a id=1024 pgrp=dba groups=dba,asmadmin,asmdba,asmoper,oinstall  home=/home/oracle
fsize=-1 cpu=-1 data=-1 core=-1 rss=-1 stack=-1 stack_hard=-1
capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE  oracle
echo "oracle:oracle" |chpasswd
pwdadm -c oracle


chown -R grid:dba  /u01/app/11.2.0
chown grid:dba  /u01/app
chown grid:dba  /u01/app/grid
chown -R oracle:dba  /u01/app/oracle
chown oracle:dba  /u01

/usr/sbin/lsuser  -a  capabilities grid
```

```
/usr/sbin/lsuser  -a  capabilities oracle
```

```
[ZFFR4CB2101:root]/u01/app]> mkgroup -A id=1024 dba
[ZFFR4CB2101:root]/u01/app]> mkuser -a id=1025 pgrp=dba groups=dba home=/home/grid fsize=-1 cpu=-1 data=-1
core=-1 rss=-1 stack=-1 stack_hard=-1  capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE  grid
[ZFFR4CB2101:root]/u01/app]> passwd  grid
Changing password for "grid"
grid's New password:
Enter the new password again:
[ZFFR4CB2101:root]/u01/app]>
[ZFFR4CB2101:root]/u01/app]> mkuser -a id=1024 pgrp=dba groups=dba home=/home/oracle fsize=-1 cpu=-1 data=-1
core=-1 rss=-1 stack=-1 stack_hard=-1  capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE  oracle
[ZFFR4CB2101:root]/u01/app]> passwd  oracle
Changing password for "oracle"
oracle's New password:
Enter the new password again:
[ZFFR4CB2101:root]/u01/app]>    chown -R grid:dba  /u01/app/11.2.0
[ZFFR4CB2101:root]/u01/app]>    chown grid:dba  /u01/app
[ZFFR4CB2101:root]/u01/app]>    chown grid:dba  /u01/app/grid
[ZFFR4CB2101:root]/u01/app]>    chown -R oracle:dba  /u01/app/oracle
[ZFFR4CB2101:root]/u01/app]>    chown oracle:dba  /u01
[ZFFR4CB2101:root]/u01/app]> /usr/sbin/lsuser  -a  capabilities grid
grid capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE
[ZFFR4CB2101:root]/u01/app]> /usr/sbin/lsuser  -a  capabilities oracle
oracle capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE
[ZFFR4CB2101:root]/u01/app]>
```

2 个节点都校验：

```
[ZFFR4CB1101:root]/]> id grid
uid=1025(grid) gid=1028(oinstall) groups=1024(dba),1025(asmadmin),1026(asmdba),1027(asmoper)
[ZFFR4CB1101:root]/]> id oracle
uid=1024(oracle) gid=1024(dba) groups=1025(asmadmin),1026(asmdba),1027(asmoper),1028(oinstall)
[ZFFR4CB1101:root]/]>
```

2.8 配置 grid 和 oracle 的 .profile

---------2 个节点分别配置，注意修改 ORACLE_SID 的值为+ASM1,+ASM2

su - grid

vi .profile

```
umask 022
export ORACLE_BASE=/u01/app/grid
export ORACLE_HOME=/u01/app/11.2.0/grid
export ORACLE_SID=+ASM
export ORACLE_TERM=vt100
export ORACLE_OWNER=grid
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:/u01/app/oracle/product/11.2.0/dbhome_1/lib32
export LIBPATH=$LIBPATH:/u01/app/oracle/product/11.2.0/dbhome_1/lib
export NLS_LANG=AMERICAN_AMERICA.ZHS16GBK
export PATH=$PATH:/bin:/usr/ccs/bin:/usr/bin/X11:$ORACLE_HOME/bin
export NLS_DATE_FORMAT='YYYY-MM-DD HH24:MI:SS'
```

```
set -o vi
export EDITOR=vi
alias l='ls -l'
export PS1='[$LOGNAME@'`hostname`':'$PWD']$ '
export AIXTHREAD_SCOPE=S
export ORACLE_TERM=vt100
export TMP=/tmp
export TMPDIR=/tmp
export LANG=en_US
export PS1='[$LOGNAME@'`hostname`':'$PWD']$ '
export DISPLAY=22.188.216.97:0.0
```

su - oracle

vi .profile

```
umask 022
export ORACLE_SID=ora11g
export ORACLE_BASE=/u01/app/oracle
export GRID_HOME=/u01/app/11.2.0/grid
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0/dbhome_1
export PATH=$ORACLE_HOME/bin:$GRID_HOME/bin:$PATH:$ORACLE_HOME/OPatch
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:$ORACLE_HOME/rdbms/lib:/lib:/usr/lib
export
CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib:$ORACLE_HOME/networ
k/jlib
export NLS_LANG=AMERICAN_AMERICA.ZHS16GBK
export NLS_DATE_FORMAT='YYYY-MM-DD HH24:MI:SS'
export ORACLE_OWNER=oracle


set -o vi
export EDITOR=vi
alias l='ls -l'
export AIXTHREAD_SCOPE=S
export ORACLE_TERM=vt100
export TMP=/tmp
export TMPDIR=/tmp
export LANG=en_US
export PS1='[$LOGNAME@'`hostname`':'$PWD']$ '
export DISPLAY=22.188.216.97:0.0
```

. ~/.profile 生效当前的环境变量

```
[ZFFR4CB1101:root]/]> . ~/.profile
```

2.9 准备 ASM 磁盘

2 个节点都执行， ASM 磁盘权限和属性的修改，否则执行 root.sh 的时候报错：

Disk Group OCR creation failed with the following message:

ORA-15018: diskgroup cannot be created

ORA-15031: disk specification '/dev/rhdisk10' matches no disks

ORA-15025: could not open disk "/dev/rhdisk10"

ORA-15056: additional error message

```
chown grid.asmadmin /dev/rhdisk10
chown grid.asmadmin /dev/rhdisk11
chmod 660  /dev/rhdisk10
chmod 660  /dev/rhdisk11

lquerypv -h /dev/hdisk10

chdev -l hdisk10 -a reserve_policy=no_reserve -a algorithm=round_robin -a queue_depth=32 -a
pv=yes
chdev -l hdisk11 -a reserve_policy=no_reserve -a algorithm=round_robin -a queue_depth=32 -a
pv=yes

lsattr -El hdisk10
```

```
[ZFFR4CB2101:root]/]> lsattr -El hdisk10
PCM             PCM/friend/MSYMM_VRAID           Path Control Module              True
PR_key_value    none                             Persistant Reserve Key Value     True
algorithm       fail_over                        Algorithm                        True
clr_q           yes                              Device CLEARS its Queue on error True
dist_err_pcnt   0                                Distributed Error Percentage     True
dist_tw_width   50                               Distributed Error Sample Time    True
hcheck_cmd      inquiry                          Health Check Command             True
hcheck_interval 60                               Health Check Interval            True
hcheck_mode     nonactive                        Health Check Mode                True
location                                         Location Label                   True
lun_id          0x9000000000000                  Logical Unit Number ID           False
lun_reset_spt   yes                              FC Forced Open LUN               True
max_coalesce    0x100000                         Maximum Coalesce Size            True
max_retries     5                                Maximum Number of Retries        True
max_transfer    0x100000                         Maximum TRANSFER Size            True
node_name       0x50000978080a6000               FC Node Name                     False
pvid            00c49fc461fc79080000000000000000 Physical volume identifier      False
q_err           no                               Use QERR bit                     True
q_type          simple                           Queue TYPE                       True
queue_depth     32                               Queue DEPTH                      True
reserve_policy  single_path                      Reserve Policy                   True
rw_timeout      40                               READ/WRITE time out value        True
scsi_id         0xce0040                         SCSI ID                          False
start_timeout   180                              START UNIT time out value        True
timeout_policy  retry_path                       Timeout Policy                   True
ww_name         0x50000978080a61d1               FC World Wide Name               False
[ZFFR4CB2101:root]/]> chdev -l hdisk10 -a reserve_policy=no_reserve -a algorithm=round_robin -a
queue_depth=32 -a pv=yes
hdisk10 changed
[ZFFR4CB2101:root]/]> chdev -l hdisk11 -a reserve_policy=no_reserve -a algorithm=round_robin -a
queue_depth=32 -a pv=yes
hdisk11 changed
[ZFFR4CB2101:root]/]> lsattr -El hdisk11
PCM             PCM/friend/MSYMM_VRAID           Path Control Module              True
PR_key_value    none                             Persistant Reserve Key Value     True
algorithm       round_robin                      Algorithm                        True
clr_q           yes                              Device CLEARS its Queue on error True
dist_err_pcnt   0                                Distributed Error Percentage     True
dist_tw_width   50                               Distributed Error Sample Time    True
hcheck_cmd      inquiry                          Health Check Command             True
hcheck_interval 60                               Health Check Interval            True
hcheck_mode     nonactive                        Health Check Mode                True
location                                         Location Label                   True
lun_id          0xa000000000000                  Logical Unit Number ID           False
```

```
lun_reset_spt   yes                                 FC Forced Open LUN              True
max_coalesce    0x100000                            Maximum Coalesce Size           True
max_retries     5                                   Maximum Number of Retries       True
max_transfer    0x100000                            Maximum TRANSFER Size           True
node_name       0x50000978080a6000                  FC Node Name                    False
pvid            00c49fc461fc79580000000000000000    Physical volume identifier      False
q_err           no                                  Use QERR bit                    True
q_type          simple                              Queue TYPE                      True
queue_depth     32                                  Queue DEPTH                     True
reserve_policy  no_reserve                          Reserve Policy                  True
rw_timeout      40                                  READ/WRITE time out value       True
scsi_id         0xce0040                            SCSI ID                         False
start_timeout   180                                 START UNIT time out value       True
timeout_policy  retry_path                          Timeout Policy                  True
ww_name         0x50000978080a61d1                  FC World Wide Name              False
[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]> lquerypv -h  /dev/rhdisk10
00000000   00000000 00000000 00000000 00000000  |................|
00000010   00000000 00000000 00000000 00000000  |................|
00000020   00000000 00000000 00000000 00000000  |................|
00000030   00000000 00000000 00000000 00000000  |................|
00000040   00000000 00000000 00000000 00000000  |................|
00000050   00000000 00000000 00000000 00000000  |................|
00000060   00000000 00000000 00000000 00000000  |................|
00000070   00000000 00000000 00000000 00000000  |................|
00000080   00000000 00000000 00000000 00000000  |................|
00000090   00000000 00000000 00000000 00000000  |................|
000000A0   00000000 00000000 00000000 00000000  |................|
000000B0   00000000 00000000 00000000 00000000  |................|
000000C0   00000000 00000000 00000000 00000000  |................|
000000D0   00000000 00000000 00000000 00000000  |................|
000000E0   00000000 00000000 00000000 00000000  |................|
000000F0   00000000 00000000 00000000 00000000  |................|
```

2.10 配置 SSH 连通性

可以采用 shell 脚本或者手动配置，推荐 shell 脚本的方式。

2.10.1 shell 脚本(2 个节点都执行)

注意修改黄色背景的部分，oth 代表另外一个节点的主机名，执行 cfgssh.sh 即可，执行 testssh.sh 测试 ssh 的连通性，该脚本 AIX 和 linux 通用，若只给一个节点配置，可以将 oth 的值设置为 hn 的值 ：

vi cfgssh.sh

```
echo "config ssh..."
grep "^LoginGraceTime 0" /etc/ssh/sshd_config
[ $? -ne 0 ] && { cp -p /etc/ssh/sshd_config /etc/ssh/sshd_config.org; echo "LoginGraceTime
0" >>/etc/ssh/sshd_config; }

export hn=`hostname`
export oth=ZFFR4CB2101
```

```
export p_pwd=`pwd`
su - grid -c "$p_pwd/sshUserSetup.sh -user grid -hosts $oth -noPromptPassphrase"
su - grid -c "ssh $hn hostname"
su - grid -c "ssh $oth hostname"

su - oracle -c "$p_pwd/sshUserSetup.sh -user oracle -hosts $oth -noPromptPassphrase"
su - oracle -c "ssh $hn hostname"
su - oracle -c "ssh $oth hostname"
```

vi sshUserSetup.sh

sshUserSetup.sh

vi testssh.sh

```
export hn=`hostname`
export oth=ZFFR4CB2101
su - grid -c "ssh $hn pwd"
su - grid -c "ssh $oth pwd"
su - oracle -c "ssh $hn pwd"
su - oracle -c "ssh $oth pwd"
```

chmod 777 *.sh

sh cfgssh.sh

2.10.2 手动配置

分别配置 grid 和 oracle 用户的 ssh

[root@node1 : /]# su - oracle

[oracle@node1 ~]$ mkdir ~/.ssh

[oracle@node1 ~]$ chmod 700 ~/.ssh

[oracle@node1 ~]$ ssh-keygen -t rsa ->回车->回车->回车

[oracle@node1 ~]$ ssh-keygen -t dsa ->回车->回车->回车

[root@node2 : /]# su - oracle

[oracle@node2 ~]$ mkdir ~/.ssh

[oracle@node2 ~]$ chmod 700 ~/.ssh

[oracle@node2 ~]$ ssh-keygen -t rsa ->回车->回车->回车

[oracle@node2 ~]$ ssh-keygen -t dsa ->回车->回车->回车

[oracle@node1 ~]$ cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys

[oracle@node1 ~]$ cat ~/.ssh/id_dsa.pub >> ~/.ssh/authorized_keys

[oracle@node1 ~]$ ssh ZFFR4CB2101 cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys ->输入 node2 密码
[oracle@node1 ~]$ ssh ZFFR4CB2101 cat ~/.ssh/id_dsa.pub >> ~/.ssh/authorized_keys ->输入 node2 密码
[oracle@node1 ~]$ scp ~/.ssh/authorized_keys ZFFR4CB2101:~/.ssh/authorized_keys ->输入 node2 密码

测试两节点连通性：

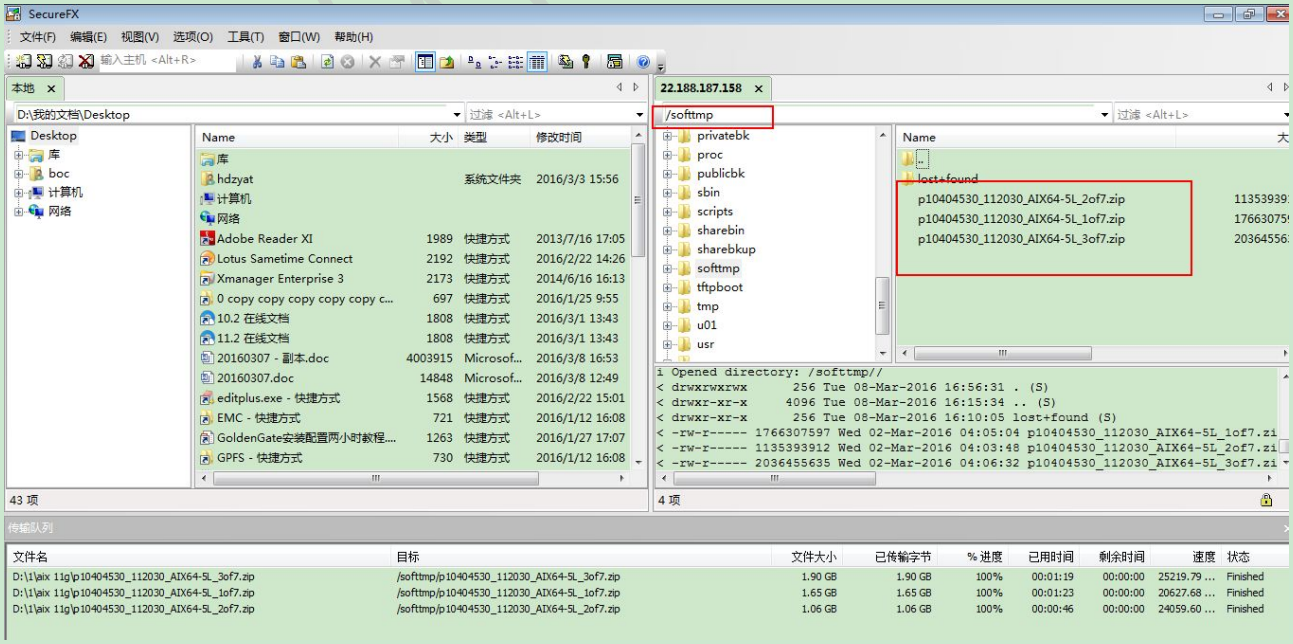
[oracle@node1 ~]$ ssh ZFFR4CB1101 date
[oracle@node1 ~]$ ssh ZFFR4CB2101 date
[oracle@node1 ~]$ ssh ZFFR4CB1101-priv date
[oracle@node1 ~]$ ssh ZFFR4CB2101-priv date

[oracle@node2 ~]$ ssh ZFFR4CB1101 date
[oracle@node2 ~]$ ssh ZFFR4CB2101 date
[oracle@node2 ~]$ ssh ZFFR4CB1101-priv date
[oracle@node2 ~]$ ssh ZFFR4CB2101-priv date

第 3 章　grid 安装

3.1 准备安装源

上传文件到 softtmp 目录：



```
[ZFFR4CB2101:root]/softtmp]> l
total 9644872
drwxr-xr-x    2 root     system          256 Mar 08 16:10 lost+found
-rw-r-----    1 root     system   1766307597 Mar 02 04:05 p10404530_112030_AIX64-5L_1of7.zip
-rw-r-----    1 root     system   1135393912 Mar 02 04:03 p10404530_112030_AIX64-5L_2of7.zip
-rw-r-----    1 root     system   2036455635 Mar 02 04:06 p10404530_112030_AIX64-5L_3of7.zip
[ZFFR4CB2101:root]/softtmp]> unzip p10404530_112030_AIX64-5L_3of7.zip
Archive:  p10404530_112030_AIX64-5L_3of7.zip
   creating: grid/
   creating: grid/stage/
  inflating: grid/stage/shiphomeproperties.xml
   creating: grid/stage/Components/
   creating: grid/stage/Components/oracle.crs/
   creating: grid/stage/Components/oracle.crs/11.2.0.3.0/
   creating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/
   creating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/
  inflating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/filegroup5.jar
  inflating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/filegroup4.jar
  inflating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/filegroup3.jar
  inflating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/filegroup2.jar
  inflating: grid/stage/Components/oracle.crs/11.2.0.3.0/1/DataFiles/filegroup1.jar
   creating: grid/stage/Components/oracle.has.crs/
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
  inflating: grid/doc/server.11203/E18951-02.mobi
  inflating: grid/welcome.html
   creating: grid/sshsetup/
  inflating: grid/sshsetup/sshUserSetup.sh
  inflating: grid/readme.html
[ZFFR4CB2101:root]/softtmp]>
[ZFFR4CB2101:root]/softtmp]> l
total 9644880
drwxr-xr-x    9 root     system         4096 Oct 28 2011  grid
drwxr-xr-x    2 root     system          256 Mar 08 16:10 lost+found
-rw-r-----    1 root     system   1766307597 Mar 02 04:05 p10404530_112030_AIX64-5L_1of7.zip
-rw-r-----    1 root     system   1135393912 Mar 02 04:03 p10404530_112030_AIX64-5L_2of7.zip
-rw-r-----    1 root     system   2036455635 Mar 02 04:06 p10404530_112030_AIX64-5L_3of7.zip
[ZFFR4CB2101:root]/softtmp]> cd grid
[ZFFR4CB2101:root]/softtmp/grid]> l
total 168
drwxr-xr-x    9 root     system         4096 Oct 10 2011  doc
drwxr-xr-x    4 root     system         4096 Oct 21 2011  install
-rwxr-xr-x    1 root     system        28122 Oct 28 2011  readme.html
drwxrwxr-x    2 root     system          256 Oct 21 2011  response
drwxrwxr-x    3 root     system          256 Oct 21 2011  rootpre
-rwxr-xr-x    1 root     system        13369 Sep 22 2010  rootpre.sh
drwxrwxr-x    2 root     system          256 Oct 21 2011  rpm
-rwxr-xr-x    1 root     system        10006 Oct 21 2011  runInstaller
-rwxrwxr-x    1 root     system         4878 May 14 2011  runcluvfy.sh
drwxrwxr-x    2 root     system          256 Oct 21 2011  sshsetup
drwxr-xr-x   14 root     system         4096 Oct 21 2011  stage
-rw-r--r--    1 root     system         4561 Oct 10 2011  welcome.html
```

3.2 执行 runcluvfy.sh 脚本预检测

```
[grid@ZFFR4CB2101:/softtmp/grid]$ /softtmp/grid/runcluvfy.sh stage -pre crsinst -n
ZFFR4CB2101,ZFFR4CB1101 -verbose -fixup

Performing pre-checks for cluster services setup

Checking node reachability...

Check: Node reachability from node "ZFFR4CB2101"
```

```
  Destination Node                      Reachable?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           yes
Result: Node reachability check passed from node "ZFFR4CB2101"


Checking user equivalence...

Check: User equivalence for user "grid"
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed
Result: User equivalence check passed for user "grid"

Checking node connectivity...

Checking hosts config file...
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed

Verification of the hosts config file successful


Interface information for node "ZFFR4CB2101"
 Name   IP Address      Subnet          Gateway         Def. Gateway    HW Address        MTU
 ------ --------------- --------------- --------------- --------------- ----------------- ------
 en0    22.188.187.158  22.188.187.0    22.188.187.158  22.188.187.1    C6:03:AE:03:97:83 1500
 en1    222.188.187.158 222.188.187.0   222.188.187.158 22.188.187.1    C6:03:A7:3E:FE:01 1500


Interface information for node "ZFFR4CB1101"
 Name   IP Address      Subnet          Gateway         Def. Gateway    HW Address        MTU
 ------ --------------- --------------- --------------- --------------- ----------------- ------
 en0    22.188.187.148  22.188.187.0    22.188.187.148  UNKNOWN         FE:B6:72:EF:12:83 1500
 en1    222.188.187.148 222.188.187.0   222.188.187.148 UNKNOWN         FE:B6:7D:9F:6C:01 1500


Check: Node connectivity of subnet "22.188.187.0"
  Source                          Destination                     Connected?
  ------------------------------  ------------------------------  ----------------
  ZFFR4CB2101[22.188.187.158]     ZFFR4CB1101[22.188.187.148]     yes
Result: Node connectivity passed for subnet "22.188.187.0" with node(s) ZFFR4CB2101,ZFFR4CB1101


Check: TCP connectivity of subnet "22.188.187.0"
  Source                          Destination                     Connected?
  ------------------------------  ------------------------------  ----------------
  ZFFR4CB2101:22.188.187.158      ZFFR4CB1101:22.188.187.148      passed
Result: TCP connectivity check passed for subnet "22.188.187.0"


Check: Node connectivity of subnet "222.188.187.0"
  Source                          Destination                     Connected?
  ------------------------------  ------------------------------  ----------------
  ZFFR4CB2101[222.188.187.158]    ZFFR4CB1101[222.188.187.148]    yes
Result: Node connectivity passed for subnet "222.188.187.0" with node(s) ZFFR4CB2101,ZFFR4CB1101


Check: TCP connectivity of subnet "222.188.187.0"
  Source                          Destination                     Connected?
  ------------------------------  ------------------------------  ----------------
```

```
  ZFFR4CB2101:222.188.187.158     ZFFR4CB1101:222.188.187.148     passed
Result: TCP connectivity check passed for subnet "222.188.187.0"


Interfaces found on subnet "22.188.187.0" that are likely candidates for VIP are:
ZFFR4CB2101 en0:22.188.187.158
ZFFR4CB1101 en0:22.188.187.148

Interfaces found on subnet "222.188.187.0" that are likely candidates for VIP are:
ZFFR4CB2101 en1:222.188.187.158
ZFFR4CB1101 en1:222.188.187.148

WARNING:
Could not find a suitable set of interfaces for the private interconnect
Checking subnet mask consistency...
Subnet mask consistency check passed for subnet "22.188.187.0".
Subnet mask consistency check passed for subnet "222.188.187.0".
Subnet mask consistency check passed.

Result: Node connectivity check passed

Checking multicast communication...

Checking subnet "22.188.187.0" for multicast communication with multicast group "230.0.1.0"...
Check of subnet "22.188.187.0" for multicast communication with multicast group "230.0.1.0" passed.

Checking subnet "222.188.187.0" for multicast communication with multicast group "230.0.1.0"...
Check of subnet "222.188.187.0" for multicast communication with multicast group "230.0.1.0" passed.

Check of multicast communication passed.

Check: Total memory
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   4GB (4194304.0KB)         2GB (2097152.0KB)         passed
  ZFFR4CB1101   48GB (5.0331648E7KB)      2GB (2097152.0KB)         passed
Result: Total memory check passed

Check: Available memory
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   2.3528GB (2467056.0KB)    50MB (51200.0KB)          passed
  ZFFR4CB1101   43.8485GB (4.5978476E7KB)  50MB (51200.0KB)          passed
Result: Available memory check passed

Check: Swap space
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   8GB (8388608.0KB)         4GB (4194304.0KB)         passed
  ZFFR4CB1101   8GB (8388608.0KB)         16GB (1.6777216E7KB)      failed
Result: Swap space check failed

Check: Free disk space for "ZFFR4CB2101:/tmp"
  Path              Node Name     Mount point   Available     Required      Status
  ----------------  ------------  ------------  ------------  ------------  ------------
  /tmp              ZFFR4CB2101   /tmp          3.5657GB      1GB           passed
Result: Free disk space check passed for "ZFFR4CB2101:/tmp"

Check: Free disk space for "ZFFR4CB1101:/tmp"
  Path              Node Name     Mount point   Available     Required      Status
  ----------------  ------------  ------------  ------------  ------------  ------------
  /tmp              ZFFR4CB1101   /tmp          18.4434GB     1GB           passed
Result: Free disk space check passed for "ZFFR4CB1101:/tmp"

Check: User existence for "grid"
```

```
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists(1025)
  ZFFR4CB1101   passed                    exists(1025)

Checking for multiple users with UID value 1025
Result: Check for multiple users with UID value 1025 passed
Result: User existence check passed for "grid"

Check: Group existence for "oinstall"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists
  ZFFR4CB1101   passed                    exists
Result: Group existence check passed for "oinstall"

Check: Group existence for "dba"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists
  ZFFR4CB1101   passed                    exists
Result: Group existence check passed for "dba"

Check: Membership of user "grid" in group "oinstall" [as Primary]
  Node Name         User Exists   Group Exists  User in Group  Primary       Status
  ----------------  ------------  ------------  ------------  ------------  ------------
  ZFFR4CB2101       yes           yes           yes           yes           passed
  ZFFR4CB1101       yes           yes           yes           yes           passed
Result: Membership check for user "grid" in group "oinstall" [as Primary] passed

Check: Membership of user "grid" in group "dba"
  Node Name         User Exists   Group Exists  User in Group  Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       yes           yes           yes           passed
  ZFFR4CB1101       yes           yes           yes           passed
Result: Membership check for user "grid" in group "dba" passed

Check: Run level
  Node Name     run level                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   2                         2                         passed
  ZFFR4CB1101   2                         2                         passed
Result: Run level check passed

Check: Hard limits for "maximum open file descriptors"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       hard          9223372036854776000  65536         passed
  ZFFR4CB1101       hard          9223372036854776000  65536         passed
Result: Hard limits check passed for "maximum open file descriptors"

Check: Soft limits for "maximum open file descriptors"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       soft          9223372036854776000  1024          passed
  ZFFR4CB1101       soft          9223372036854776000  1024          passed
Result: Soft limits check passed for "maximum open file descriptors"

Check: Hard limits for "maximum user processes"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       hard          16384         16384         passed
  ZFFR4CB1101       hard          16384         16384         passed
Result: Hard limits check passed for "maximum user processes"
```

```
Check: Soft limits for "maximum user processes"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       soft          16384         2047          passed
  ZFFR4CB1101       soft          16384         2047          passed
Result: Soft limits check passed for "maximum user processes"

Check: System architecture
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   powerpc                   powerpc                   passed
  ZFFR4CB1101   powerpc                   powerpc                   passed
Result: System architecture check passed

Check: Kernel version
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   7.1-7100.03.03.1415       7.1-7100.00.01.1037       passed
  ZFFR4CB1101   7.1-7100.02.05.1415       7.1-7100.00.01.1037       passed

WARNING:
PRVF-7524 : Kernel version is not consistent across all the nodes.
Kernel version = "7.1-7100.02.05.1415" found on nodes: ZFFR4CB1101.
Kernel version = "7.1-7100.03.03.1415" found on nodes: ZFFR4CB2101.
Result: Kernel version check passed

Check: Kernel parameter for "ncargs"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   256                       128                       passed
  ZFFR4CB1101   256                       128                       passed
Result: Kernel parameter check passed for "ncargs"

Check: Kernel parameter for "maxuproc"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   16384                     2048                      passed
  ZFFR4CB1101   16384                     2048                      passed
Result: Kernel parameter check passed for "maxuproc"

Check: Kernel parameter for "tcp_ephemeral_low"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   32768                     9000                      failed (ignorable)
  ZFFR4CB1101   32768                     9000                      failed (ignorable)
Result: Kernel parameter check passed for "tcp_ephemeral_low"

Check: Kernel parameter for "tcp_ephemeral_high"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   65535                     65500                     failed (ignorable)
  ZFFR4CB1101   65535                     65500                     failed (ignorable)
Result: Kernel parameter check passed for "tcp_ephemeral_high"

Check: Kernel parameter for "udp_ephemeral_low"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   32768                     9000                      failed (ignorable)
  ZFFR4CB1101   32768                     9000                      failed (ignorable)
Result: Kernel parameter check passed for "udp_ephemeral_low"

Check: Kernel parameter for "udp_ephemeral_high"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   65535                     65500                     failed (ignorable)
```

```
  ZFFR4CB1101   65535                    65500                    failed (ignorable)
Result: Kernel parameter check passed for "udp_ephemeral_high"

Check: Package existence for "bos.adt.base"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.adt.base-7.1.3.15-0  bos.adt.base-...         passed
  ZFFR4CB1101   bos.adt.base-7.1.3.15-0  bos.adt.base-...         passed
Result: Package existence check passed for "bos.adt.base"

Check: Package existence for "bos.adt.lib"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.adt.lib-7.1.2.15-0   bos.adt.lib-...          passed
  ZFFR4CB1101   bos.adt.lib-7.1.2.15-0   bos.adt.lib-...          passed
Result: Package existence check passed for "bos.adt.lib"

Check: Package existence for "bos.adt.libm"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.adt.libm-7.1.3.0-0   bos.adt.libm-...         passed
  ZFFR4CB1101   bos.adt.libm-7.1.3.0-0   bos.adt.libm-...         passed
Result: Package existence check passed for "bos.adt.libm"

Check: Package existence for "bos.perf.libperfstat"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.perf.libperfstat-7.1.3.15-0  bos.perf.libperfstat-...  passed
  ZFFR4CB1101   bos.perf.libperfstat-7.1.3.15-0  bos.perf.libperfstat-...  passed
Result: Package existence check passed for "bos.perf.libperfstat"

Check: Package existence for "bos.perf.perfstat"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.perf.perfstat-7.1.3.15-0  bos.perf.perfstat-...    passed
  ZFFR4CB1101   bos.perf.perfstat-7.1.3.15-0  bos.perf.perfstat-...    passed
Result: Package existence check passed for "bos.perf.perfstat"

Check: Package existence for "bos.perf.proctools"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   bos.perf.proctools-7.1.3.15-0  bos.perf.proctools-...   passed
  ZFFR4CB1101   bos.perf.proctools-7.1.3.15-0  bos.perf.proctools-...   passed
Result: Package existence check passed for "bos.perf.proctools"

Check: Package existence for "xlC.aix61.rte"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   xlC.aix61.rte-12.1.0.1-0  xlC.aix61.rte-10.1.0.0   passed
  ZFFR4CB1101   xlC.aix61.rte-12.1.0.1-0  xlC.aix61.rte-10.1.0.0   passed
Result: Package existence check passed for "xlC.aix61.rte"

Check: Package existence for "xlC.rte"
  Node Name     Available                Required                 Status
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   xlC.rte-12.1.0.1-0       xlC.rte-10.1.0.0         passed
  ZFFR4CB1101   xlC.rte-12.1.0.1-0       xlC.rte-10.1.0.0         passed
Result: Package existence check passed for "xlC.rte"

Check: Operating system patch for "Patch IZ87216"
  Node Name     Applied                  Required                 Comment
  ------------  -----------------------  -----------------------  ----------
  ZFFR4CB2101   Patch IZ87216:devices.common.IBM.mpio.rte  Patch IZ87216           passed
  ZFFR4CB1101   Patch IZ87216:devices.common.IBM.mpio.rte  Patch IZ87216           passed
Result: Operating system patch check passed for "Patch IZ87216"
```

```
Check: Operating system patch for "Patch IZ87564"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ87564:bos.adt.libmIZ87564:bos.adt.prof  Patch IZ87564             passed
  ZFFR4CB1101   Patch IZ87564:bos.adt.libmIZ87564:bos.adt.prof  Patch IZ87564             passed
Result: Operating system patch check passed for "Patch IZ87564"

Check: Operating system patch for "Patch IZ89165"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ89165:bos.rte.bind_cmds  Patch IZ89165             passed
  ZFFR4CB1101   Patch IZ89165:bos.rte.bind_cmds  Patch IZ89165             passed
Result: Operating system patch check passed for "Patch IZ89165"

Check: Operating system patch for "Patch IZ97035"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ97035:devices.vdevice.IBM.l-lan.rte  Patch IZ97035             passed
  ZFFR4CB1101   Patch IZ97035:devices.vdevice.IBM.l-lan.rte  Patch IZ97035             passed
Result: Operating system patch check passed for "Patch IZ97035"

Checking for multiple users with UID value 0
Result: Check for multiple users with UID value 0 passed

Check: Current group ID
Result: Current group ID check passed

Starting check for consistency of primary group of root user
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed

Check for consistency of root user's primary group passed

Starting Clock synchronization checks using Network Time Protocol(NTP)...

NTP Configuration file check started...
The NTP configuration file "/etc/ntp.conf" is available on all nodes
NTP Configuration file check passed

Checking daemon liveness...

Check: Liveness for "xntpd"
  Node Name                             Running?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           yes
Result: Liveness check passed for "xntpd"
Check for NTP daemon or service alive passed on all nodes

Checking NTP daemon command line for slewing option "-x"
Check: NTP daemon command line
  Node Name                             Slewing Option Set?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           no
Result:
NTP daemon slewing option check failed on some nodes
PRVF-5436 : The NTP daemon running on one or more nodes lacks the slewing option "-x"
Result: Clock synchronization check using Network Time Protocol(NTP) failed

Checking Core file name pattern consistency...
Core file name pattern consistency check passed.
```

```
Checking to make sure user "grid" is not in "system" group
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    does not exist
  ZFFR4CB1101   passed                    does not exist
Result: User "grid" is not part of "system" group. Check passed

Check default user file creation mask
  Node Name     Available                 Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   022                       0022                      passed
  ZFFR4CB1101   022                       0022                      passed
Result: Default user file creation mask check passed
Checking consistency of file "/etc/resolv.conf" across nodes

File "/etc/resolv.conf" does not exist on any node of the cluster. Skipping further checks

File "/etc/resolv.conf" is consistent across nodes

Check: Time zone consistency
Result: Time zone consistency check passed
Result: User ID < 65535 check passed

Result: Kernel 64-bit mode check passed

[grid@ZFFR4CB2101:/softtmp/grid]$
```

3.2.1 静默安装 grid 软件

先 root 执行：

/softtmp/grid/rootpre.sh

```
[ZFFR4CB2101:root]/]> /softtmp/grid/rootpre.sh
/softtmp/grid/rootpre.sh output will be logged in /tmp/rootpre.out_16-03-09.09:47:33

Checking if group services should be configured....
Nothing to configure.
[ZFFR4CB2101:root]/]>
```

```
./runInstaller -silent  -force -noconfig -IgnoreSysPreReqs -ignorePrereq  -showProgress \
INVENTORY_LOCATION=/u01/app/oraInventory \
SELECTED_LANGUAGES=en \
ORACLE_BASE=/u01/app/grid \
ORACLE_HOME=/u01/app/11.2.0/grid \
oracle.install.asm.OSDBA=asmdba \
oracle.install.asm.OSOPER=asmoper \
oracle.install.asm.OSASM=asmadmin \
oracle.install.crs.config.storageOption=ASM_STORAGE \
oracle.install.crs.config.sharedFileSystemStorage.votingDiskRedundancy=EXTERNAL \
oracle.install.crs.config.sharedFileSystemStorage.ocrRedundancy=EXTERNAL \
oracle.install.crs.config.useIPMI=false \
oracle.install.asm.diskGroup.name=OCR \
oracle.install.asm.diskGroup.redundancy=EXTERNAL \
oracle.installer.autoupdates.option=SKIP_UPDATES \
oracle.install.crs.config.gpnp.scanPort=1521 \
oracle.install.crs.config.gpnp.configureGNS=false \
oracle.install.option=CRS_CONFIG \
oracle.install.asm.SYSASMPassword=lhr \
oracle.install.asm.monitorPassword=lhr \
```

```
oracle.install.asm.diskGroup.diskDiscoveryString=/dev/rhdisk* \
oracle.install.asm.diskGroup.disks=/dev/rhdisk10 \
oracle.install.crs.config.gpnp.scanName=ZFFR4CB2101-scan \
oracle.install.crs.config.clusterName=ZFFR4CB-cluster \
oracle.install.crs.config.autoConfigureClusterNodeVIP=false \
oracle.install.crs.config.clusterNodes=ZFFR4CB2101:ZFFR4CB2101-vip,ZFFR4CB1101:ZFFR4CB11
01-vip \
oracle.install.crs.config.networkInterfaceList=en0:22.188.187.0:1,en1:222.188.187.0:2 \
ORACLE_HOSTNAME=ZFFR4CB2101
```

命令行模式执行静默安装，注意复制脚本的时候最后不能多加回车符号，当前窗口不要执行其他内容，开始执行有点慢，需要修改的地方我已经用黄色背景表示了：

```
[grid@ZFFR4CB2101:/softtmp/grid]$ ./runInstaller -silent  -force -noconfig -IgnoreSysPreReqs
-ignorePrereq  -showProgress \
> INVENTORY_LOCATION=/u01/app/oraInventory \
> SELECTED_LANGUAGES=en \
> ORACLE_BASE=/u01/app/grid \
> ORACLE_HOME=/u01/app/11.2.0/grid \
> oracle.install.asm.OSDBA=asmdba \
> oracle.install.asm.OSOPER=asmoper \
> oracle.install.asm.OSASM=asmadmin \
> oracle.install.crs.config.storageOption=ASM_STORAGE \
> oracle.install.crs.config.sharedFileSystemStorage.votingDiskRedundancy=EXTERNAL \
> oracle.install.crs.config.sharedFileSystemStorage.ocrRedundancy=EXTERNAL \
> oracle.install.crs.config.useIPMI=false \
> oracle.install.asm.diskGroup.name=OCR \
> oracle.install.asm.diskGroup.redundancy=EXTERNAL \
> oracle.installer.autoupdates.option=SKIP_UPDATES \
> oracle.install.crs.config.gpnp.scanPort=1521 \
> oracle.install.crs.config.gpnp.configureGNS=false \
> oracle.install.option=CRS_CONFIG \
> oracle.install.asm.SYSASMPassword=lhr \
> oracle.install.asm.monitorPassword=lhr \
> oracle.install.asm.diskGroup.diskDiscoveryString=/dev/rhdisk* \
> oracle.install.asm.diskGroup.disks=/dev/rhdisk10 \
> oracle.install.crs.config.gpnp.scanName=ZFFR4CB2101-scan \
> oracle.install.crs.config.clusterName=ZFFR4CB-cluster \
> oracle.install.crs.config.autoConfigureClusterNodeVIP=false \
>
oracle.install.crs.config.clusterNodes=ZFFR4CB2101:ZFFR4CB2101-vip,ZFFR4CB1101:ZFFR4CB11
01-vip \
> oracle.install.crs.config.networkInterfaceList=en0:22.188.187.0:1,en1:222.188.187.0:2 \
> ORACLE_HOSTNAME=ZFFR4CB2101
************************************************************************************

Your platform requires the root user to perform certain pre-installation
OS preparation.  The root user should run the shell script 'rootpre.sh' before
you proceed with Oracle installation.  rootpre.sh can be found at the top level
of the CD or the stage area.

Answer 'y' if root has run 'rootpre.sh' so you can proceed with Oracle
installation.
Answer 'n' to abort installation and then ask root to run 'rootpre.sh'.

************************************************************************************

Has 'rootpre.sh' been run by root on all nodes? [y/n] (n)
y

Starting Oracle Universal Installer...

Checking Temp space: must be greater than 190 MB.   Actual 4330 MB    Passed
Checking swap space: must be greater than 150 MB.   Actual 8192 MB    Passed
```

```
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2016-03-10_04-54-07PM. Please
wait ...[grid@ZFFR4CB2101:/softtmp/grid]$
[grid@ZFFR4CB2101:/softtmp/grid]$
[grid@ZFFR4CB2101:/softtmp/grid]$
[grid@ZFFR4CB2101:/softtmp/grid]$
[grid@ZFFR4CB2101:/softtmp/grid]$ [WARNING] [INS-30011] The SYS password entered does not conform to the Oracle
recommended standards.
   CAUSE: Oracle recommends that the password entered should be at least 8 characters in length, contain at least
1 uppercase character, 1 lower case character and 1 digit [0-9].
   ACTION: Provide a password that conforms to the Oracle recommended standards.
[WARNING] [INS-30011] The ASMSNMP password entered does not conform to the Oracle recommended standards.
   CAUSE: Oracle recommends that the password entered should be at least 8 characters in length, contain at least
1 uppercase character, 1 lower case character and 1 digit [0-9].
   ACTION: Provide a password that conforms to the Oracle recommended standards.
You can find the log of this install session at:
 /u01/app/oraInventory/logs/installActions2016-03-10_04-54-07PM.log

Prepare in progress.
.................................................   5% Done.

Prepare successful.

Copy files in progress.
.................................................   10% Done.
.................................................   15% Done.
.....................................
Copy files successful.
.................................................   27% Done.

Link binaries in progress.

Link binaries successful.
.................................................   34% Done.

Setup files in progress.

Setup files successful.
.................................................   41% Done.

Perform remote operations in progress.
.................................................   48% Done.

Perform remote operations successful.
The installation of Oracle Grid Infrastructure was successful.
Please check '/u01/app/oraInventory/logs/silentInstall2016-03-10_04-54-07PM.log' for more details.
.................................................   97% Done.

Execute Root Scripts in progress.

As a root user, execute the following script(s):
        1. /u01/app/oraInventory/orainstRoot.sh
        2. /u01/app/11.2.0/grid/root.sh

Execute /u01/app/oraInventory/orainstRoot.sh on the following nodes:
[ZFFR4CB2101, ZFFR4CB1101]
Execute /u01/app/11.2.0/grid/root.sh on the following nodes:
[ZFFR4CB2101, ZFFR4CB1101]

.................................................   100% Done.

Execute Root Scripts successful.
As install user, execute the following script to complete the configuration.
        1. /u01/app/11.2.0/grid/cfgtoollogs/configToolAllCommands

        Note:
```

```
        1. This script must be run on the same system from where installer was run.
        2. This script needs a small password properties file for configuration assistants that require passwords
(refer to install guide documentation).


Successfully Setup Software.

[grid@ZFFR4CB2101:/softtmp/grid]$
```

执行命令的节点：

```
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
6.80    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
7.41    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
8.03    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
8.61    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
9.80    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/u01/app]> du -sg /u01/app/11.2.0/grid
9.80    /u01/app/11.2.0/grid
```

执行到 Perform remote operations in progress. 的时候，可以查看另外一个节点的 grid 目录的大小来判断是否卡掉：

```
[ZFFR4CB1101:root]/u01/app/11.2.0/grid/bin]> du -sg .
1.78    .
[ZFFR4CB1101:root]/u01/app/11.2.0/grid/bin]> cd
[ZFFR4CB1101:root]/]> du -sg /u01/app/11.2.0/grid
2.90    /u01/app/11.2.0/grid
[ZFFR4CB1101:root]/]> du -sg /u01/app/11.2.0/grid
3.41    /u01/app/11.2.0/grid
[ZFFR4CB1101:root]/]> du -sg /u01/app/11.2.0/grid
7.25    /u01/app/11.2.0/grid
[ZFFR4CB1101:root]/]> du -sg /u01/app/11.2.0/grid
8.76    /u01/app/11.2.0/grid
[ZFFR4CB1101:root]/]> du -sg /u01/app/11.2.0/grid
9.81    /u01/app/11.2.0/grid
[ZFFR4CB1101:root]/]>
```

3.2.1.1 执行 root.sh

As a root user, execute the following script(s):

1. /u01/app/oraInventory/orainstRoot.sh
2. /u01/app/11.2.0/grid/root.sh

```
[ZFFR4CB2101:root]/]> /u01/app/oraInventory/orainstRoot.sh
Changing permissions of /u01/app/oraInventory.
Adding read,write permissions for group.
```

```
Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oraInventory to oinstall.
The execution of the script is complete.
[ZFFR4CB2101:root]/]> /u01/app/11.2.0/grid/root.sh
Check /u01/app/11.2.0/grid/install/root_ZFFR4CB2101_2016-03-10_17-08-45.log for the output of root script
```

回车后一直在等待。。。。。直到自动跳出才是完成，单独开窗口查看日志：

```
[ZFFR4CB2101:root]/softtmp]>  tail -2000f
/u01/app/11.2.0/grid/install/root_ZFFR4CB2101_2016-03-10_17-08-45.log

Performing root user operation for Oracle 11g

The following environment variables are set as:
    ORACLE_OWNER= grid
    ORACLE_HOME=  /u01/app/11.2.0/grid

Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
Using configuration parameter file: /u01/app/11.2.0/grid/crs/install/crsconfig_params
Creating trace directory
User ignored Prerequisites during installation
User grid has the required capabilities to run CSSD in realtime mode
OLR initialization - successful
  root wallet
  root wallet cert
  root cert export
  peer wallet
  profile reader wallet
  pa wallet
  peer wallet keys
  pa wallet keys
  peer cert request
  pa cert request
  peer cert
  pa cert
  peer root cert TP
  profile reader root cert TP
  pa root cert TP
  peer pa cert TP
  pa peer cert TP
  profile reader pa cert TP
  profile reader peer cert TP
  peer user cert
  pa user cert
Adding Clusterware entries to inittab
CRS-2672: Attempting to start 'ora.mdnsd' on 'zffr4cb2101'
CRS-2676: Start of 'ora.mdnsd' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.gpnpd' on 'zffr4cb2101'
CRS-2676: Start of 'ora.gpnpd' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.cssdmonitor' on 'zffr4cb2101'
CRS-2672: Attempting to start 'ora.gipcd' on 'zffr4cb2101'
CRS-2676: Start of 'ora.gipcd' on 'zffr4cb2101' succeeded
CRS-2676: Start of 'ora.cssdmonitor' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.cssd' on 'zffr4cb2101'
CRS-2672: Attempting to start 'ora.diskmon' on 'zffr4cb2101'
CRS-2676: Start of 'ora.diskmon' on 'zffr4cb2101' succeeded
CRS-2676: Start of 'ora.cssd' on 'zffr4cb2101' succeeded

ASM created and started successfully.

Disk Group OCR created successfully.
```

```
clscfg: -install mode specified
Successfully accumulated necessary OCR keys.
Creating OCR keys for user 'root', privgrp 'system'..
Operation successful.
CRS-4256: Updating the profile
Successful addition of voting disk 04bd1fe1816f4f55bfc976416720128d.
Successfully replaced voting disk group with +OCR.
CRS-4256: Updating the profile
CRS-4266: Voting file(s) successfully replaced
##  STATE    File Universal Id               File Name Disk group
--  -----    -----------------               --------- ---------
 1. ONLINE   04bd1fe1816f4f55bfc976416720128d (/dev/rhdisk10) [OCR]
Located 1 voting disk(s).

CRS-2672: Attempting to start 'ora.asm' on 'zffr4cb2101'
CRS-2676: Start of 'ora.asm' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.OCR.dg' on 'zffr4cb2101'
CRS-2676: Start of 'ora.OCR.dg' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.registry.acfs' on 'zffr4cb2101'
CRS-2676: Start of 'ora.registry.acfs' on 'zffr4cb2101' succeeded
Configure Oracle Grid Infrastructure for a Cluster ... succeeded
```

```
CRS-2676: Start of 'ora.mdnsd' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.gpnpd' on 'zffr4cb2101'
CRS-2676: Start of 'ora.gpnpd' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.cssdmonitor' on 'zffr4cb2101'
CRS-2672: Attempting to start 'ora.gipcd' on 'zffr4cb2101'
CRS-2676: Start of 'ora.gipcd' on 'zffr4cb2101' succeeded
CRS-2676: Start of 'ora.cssdmonitor' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.cssd' on 'zffr4cb2101'
CRS-2672: Attempting to start 'ora.diskmon' on 'zffr4cb2101'
CRS-2676: Start of 'ora.diskmon' on 'zffr4cb2101' succeeded
CRS-2676: Start of 'ora.cssd' on 'zffr4cb2101' succeeded

ASM created and started successfully.

Disk Group OCR created successfully.

clscfg: -install mode specified
Successfully accumulated necessary OCR keys.
Creating OCR keys for user 'root', privgrp 'system'..
Operation successful.
CRS-4256: Updating the profile
Successful addition of voting disk 04bd1fe1816f4f55bfc976416720128d.
Successfully replaced voting disk group with +OCR.
CRS-4256: Updating the profile
CRS-4266: Voting file(s) successfully replaced
##  STATE    File Universal Id               File Name Disk group
--  -----    -----------------               --------- ---------
 1. ONLINE   04bd1fe1816f4f55bfc976416720128d (/dev/rhdisk10) [OCR]
Located 1 voting disk(s).

CRS-2672: Attempting to start 'ora.asm' on 'zffr4cb2101'
CRS-2676: Start of 'ora.asm' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.OCR.dg' on 'zffr4cb2101'
CRS-2676: Start of 'ora.OCR.dg' on 'zffr4cb2101' succeeded
CRS-2672: Attempting to start 'ora.registry.acfs' on 'zffr4cb2101'
CRS-2676: Start of 'ora.registry.acfs' on 'zffr4cb2101' succeeded
Configure Oracle Grid Infrastructure for a Cluster ... succeeded


[ZFFR4CB2101:root]/softtmp]>
```

```
[ZFFR4CB2101:root]/]> ps -ef|grep d.bin
    root  6815752        1   0 17:16:23      -  0:01 /u01/app/11.2.0/grid/bin/orarootagent.bin
    root  6881442        1   2 17:15:26      -  0:04 /u01/app/11.2.0/grid/bin/crsd.bin reboot
    root  7209048        1   2 17:15:04      -  0:06 /u01/app/11.2.0/grid/bin/osysmond.bin
```

```
    root  8061058  6488154   0 17:19:26  pts/1  0:00 grep d.bin
    grid  8126564        1   0 17:16:29      -  0:00 /u01/app/11.2.0/grid/bin/tnslsnr LISTENER_SCAN1 -inherit
    grid  8192252 13631536   0 17:15:29      -  0:00 /u01/app/11.2.0/grid/bin/evmlogger.bin -o
/u01/app/11.2.0/grid/evm/log/evmlogger.info -l /u01/app/11.2.0/grid/evm/log/evmlogger.log
    root 10420390        1   0 17:14:13      -  0:00 /u01/app/11.2.0/grid/bin/cssdmonitor
    root 10551502        1   0 17:14:14      -  0:00 /u01/app/11.2.0/grid/bin/cssdagent
    grid 11731188        1   0 17:16:31      -  0:00 /u01/app/11.2.0/grid/bin/scriptagent.bin
    grid 12845094        1   0 17:14:09      -  0:01 /u01/app/11.2.0/grid/bin/oraagent.bin
    root 12976196        1   0 17:14:14      -  0:00 /bin/sh /u01/app/11.2.0/grid/bin/ocssd
    grid 13631536        1   0 17:15:27      -  0:02 /u01/app/11.2.0/grid/bin/evmd.bin
    grid 14221350        1   0 17:14:09      -  0:00 /u01/app/11.2.0/grid/bin/mdnsd.bin
    grid 15007882        1   1 17:14:13      -  0:02 /u01/app/11.2.0/grid/bin/gipcd.bin
    grid 15859816        1   0 17:16:11      -  0:00 /u01/app/11.2.0/grid/bin/oraagent.bin
    root 16056384        1   0 17:15:02      -  0:02 /u01/app/11.2.0/grid/bin/octssd.bin
    grid 16122020 12976196   1 17:14:14      -  0:04 /u01/app/11.2.0/grid/bin/ocssd.bin
    root 16515114        1   3 17:11:26      -  0:07 /u01/app/11.2.0/grid/bin/ohasd.bin reboot
    root 16711732        1   1 17:12:38      -  0:01 /u01/app/11.2.0/grid/bin/orarootagent.bin
    grid 16777306        1   0 17:14:11      -  0:00 /u01/app/11.2.0/grid/bin/gpnpd.bin
[ZFFR4CB2101:root]/]> crs_stat -t
Name           Type           Target    State     Host
------------------------------------------------------------
ora....N1.lsnr ora....er.type ONLINE    ONLINE    zffr4cb2101
ora.OCR.dg     ora....up.type ONLINE    ONLINE    zffr4cb2101
ora.asm        ora.asm.type   ONLINE    ONLINE    zffr4cb2101
ora.cvu        ora.cvu.type   ONLINE    ONLINE    zffr4cb2101
ora.gsd        ora.gsd.type   OFFLINE   OFFLINE
ora....network ora....rk.type ONLINE    ONLINE    zffr4cb2101
ora.oc4j       ora.oc4j.type  ONLINE    ONLINE    zffr4cb2101
ora.ons        ora.ons.type   ONLINE    ONLINE    zffr4cb2101
ora....ry.acfs ora....fs.type ONLINE    ONLINE    zffr4cb2101
ora.scan1.vip  ora....ip.type ONLINE    ONLINE    zffr4cb2101
ora....SM1.asm application    ONLINE    ONLINE    zffr4cb2101
ora....101.gsd application    OFFLINE   OFFLINE
ora....101.ons application    ONLINE    ONLINE    zffr4cb2101
ora....101.vip ora....t1.type ONLINE    ONLINE    zffr4cb2101
[ZFFR4CB2101:root]/]> crsctl stat res -t
--------------------------------------------------------------------------------
NAME           TARGET  STATE        SERVER                   STATE_DETAILS
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.OCR.dg
               ONLINE  ONLINE       zffr4cb2101
ora.asm
               ONLINE  ONLINE       zffr4cb2101              Started
ora.gsd
               OFFLINE OFFLINE      zffr4cb2101
ora.net1.network
               ONLINE  ONLINE       zffr4cb2101
ora.ons
               ONLINE  ONLINE       zffr4cb2101
ora.registry.acfs
               ONLINE  ONLINE       zffr4cb2101
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       zffr4cb2101
ora.cvu
      1        ONLINE  ONLINE       zffr4cb2101
ora.oc4j
      1        ONLINE  ONLINE       zffr4cb2101
ora.scan1.vip
      1        ONLINE  ONLINE       zffr4cb2101
ora.zffr4cb2101.vip
```

```
      1        ONLINE  ONLINE       zffr4cb2101
[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]> ps -ef|grep asm
    grid  4391000        1   0 17:15:17      -  0:00 asm_dbw0_+ASM1
    grid  8519868        1   0 17:15:17      -  0:00 asm_lmhb_+ASM1
    grid  8650940        1   0 17:15:17      -  0:00 asm_mmon_+ASM1
    grid  8847532        1   0 17:15:17      -  0:00 asm_mman_+ASM1
    grid 10289152        1   0 17:15:17      -  0:00 asm_diag_+ASM1
    grid 10354890        1   0 17:15:17      -  0:00 asm_lms0_+ASM1
    grid 10682428        1   0 17:15:17      -  0:00 asm_lmd0_+ASM1
    grid 11010164        1   0 17:15:17      -  0:00 asm_mmnl_+ASM1
    root 11796632  6488154   0 17:22:17  pts/1  0:00 grep asm
    grid 12714016        1   0 17:15:17      -  0:00 asm_dia0_+ASM1
    grid 12910704        1   0 17:15:17      -  0:00 asm_rbal_+ASM1
    grid 13303898        1   0 17:15:27      -  0:00 asm_asmb_+ASM1
    grid 13435084        1   0 17:15:17      -  0:00 asm_lmon_+ASM1
    grid 13697226        1   0 17:15:18      -  0:00 asm_lck0_+ASM1
    grid 13828112        1   0 17:15:17      -  0:00 asm_ckpt_+ASM1
    grid 14155956        1   0 17:15:17      -  0:00 asm_gen0_+ASM1
    grid 14418088        1   0 17:15:17      -  0:00 asm_vktm_+ASM1
    grid 14680284        1   0 17:15:17      -  0:00 asm_ping_+ASM1
    grid 15073388        1   0 17:15:27      -  0:00 oracle+ASM1_asmb_+asm1
(DESCRIPTION=(LOCAL=YES)(ADDRESS=(PROTOCOL=beq)))
    grid 15400976        1   0 17:15:17      -  0:00 asm_smon_+ASM1
    grid 15990812        1   0 17:15:17      -  0:00 asm_gmon_+ASM1
    grid 16187420        1   0 17:15:17      -  0:00 asm_lgwr_+ASM1
    grid 16449694        1   0 17:15:16      -  0:00 asm_pmon_+ASM1
    grid 16580744        1   0 17:15:16      -  0:00 asm_psp0_+ASM1
[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]> lquerypv -h /dev/rhdisk10
00000000    00820101 00000000 80000000 B6FE0F29  |.............)|
00000010    00000000 00000000 00000000 00000000  |................|
00000020    4F52434C 4449534B 00000000 00000000  |ORCLDISK........|
00000030    00000000 00000000 00000000 00000000  |................|
00000040    0B200000 00000103 4F43525F 30303030  |. ......OCR_0000|
00000050    00000000 00000000 00000000 00000000  |................|
00000060    00000000 00000000 4F435200 00000000  |........OCR.....|
00000070    00000000 00000000 00000000 00000000  |................|
00000080    00000000 00000000 4F43525F 30303030  |........OCR_0000|
00000090    00000000 00000000 00000000 00000000  |................|
000000A0    00000000 00000000 00000000 00000000  |................|
000000B0    00000000 00000000 00000000 00000000  |................|
000000C0    00000000 00000000 01F80D69 66A0E000  |...........if...|
000000D0    01F80D69 70C48800 02001000 00100000  |...ip...........|
000000E0    0001BC80 0002001C 00000003 00000001  |................|
000000F0    00000002 00000002 00000000 00000000  |................|
[ZFFR4CB2101:root]/]>
```

一、 另外一个节点执行

As a root user, execute the following script(s):

1. /u01/app/oraInventory/orainstRoot.sh
2. /u01/app/11.2.0/grid/root.sh

```
[ZFFR4CB1101:root]/]> /u01/app/oraInventory/orainstRoot.sh
Changing permissions of /u01/app/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.
```

```
Changing groupname of /u01/app/oraInventory to oinstall.
The execution of the script is complete.
[ZFFR4CB1101:root]/]> $ORACLE_HOME/root.sh
Check /u01/app/11.2.0/grid/install/root_ZFFR4CB1101_2016-03-11_09-54-09.log for the output of root script
[ZFFR4CB1101:root]/]>
```

回车后一直在等待。。。。。直到自动跳出才是完成，单独开窗口查看日志：

```
[ZFFR4CB1101:root]/]> tail -200f /u01/app/11.2.0/grid/install/root_ZFFR4CB1101_2016-03-11_09-54-09.log

Performing root user operation for Oracle 11g

The following environment variables are set as:
    ORACLE_OWNER= grid
    ORACLE_HOME=  /u01/app/11.2.0/grid
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
Using configuration parameter file: /u01/app/11.2.0/grid/crs/install/crsconfig_params
User ignored Prerequisites during installation
User grid has the required capabilities to run CSSD in realtime mode
OLR initialization - successful
Adding Clusterware entries to inittab
CRS-4402: The CSS daemon was started in exclusive mode but found an active CSS daemon on node zffr4cb2101, number
1, and is terminating
An active cluster was found during exclusive startup, restarting to join the cluster
Configure Oracle Grid Infrastructure for a Cluster ... succeeded

[ZFFR4CB1101:root]/]> ps -ef|grep asm
    grid  9961498        1   0 09:57:39      -  0:00 asm_gmon_+ASM2
    grid 10813654        1   0 09:57:39      -  0:00 asm_mmon_+ASM2
    root 11599892  4587988   0 10:00:26  pts/0  0:00 grep asm
    grid 11862082        1   0 09:57:39      -  0:00 asm_diag_+ASM2
    grid 12124202        1   0 09:57:41      -  0:00 asm_lck0_+ASM2
    grid 12320918        1   0 09:57:39      -  0:00 asm_lmhb_+ASM2
    grid 12386418        1   1 09:57:39      -  0:00 asm_vktm_+ASM2
    grid 12517574        1   0 09:57:39      -  0:00 asm_lms0_+ASM2
    grid 12648524        1   0 09:57:46      -  0:00 asm_o000_+ASM2
    grid 12845130        1   1 09:57:39      -  0:00 asm_dia0_+ASM2
    grid 14221316        1   0 09:57:46      -  0:00 oracle+ASM2_asmb_+asm2
(DESCRIPTION=(LOCAL=YES)(ADDRESS=(PROTOCOL=beq)))
    grid 14942382        1   0 09:57:39      -  0:00 asm_mmnl_+ASM2
    grid 15270102        1   0 09:57:39      -  0:00 asm_ping_+ASM2
    grid 15597756        1   0 09:57:39      -  0:00 asm_lgwr_+ASM2
    grid  2359724        1   0 09:57:38      -  0:00 asm_psp0_+ASM2
    grid  3014926        1   0 09:57:39      -  0:00 asm_ckpt_+ASM2
    grid  3080676        1   0 09:57:39      -  0:00 asm_dbw0_+ASM2
    grid  3211710        1   0 09:57:39      -  0:00 asm_mman_+ASM2
    grid  3539244        1   0 09:57:37      -  0:00 asm_pmon_+ASM2
    grid  3670514        1   1 09:57:39      -  0:00 asm_lmon_+ASM2
    grid  4129072        1   0 09:57:46      -  0:00 oracle+ASM2_o000_+asm2
(DESCRIPTION=(LOCAL=YES)(ADDRESS=(PROTOCOL=beq)))
    grid  4522356        1   0 09:57:45      -  0:00 asm_asmb_+ASM2
    grid  4784516        1   0 09:57:39      -  0:00 asm_smon_+ASM2
    grid  5112192        1   0 09:57:39      -  0:00 asm_rbal_+ASM2
    grid  5243238        1   1 09:57:39      -  0:00 asm_lmd0_+ASM2
    grid  5702040        1   0 09:57:39      -  0:00 asm_gen0_+ASM2
[ZFFR4CB1101:root]/]> crsctl stat res -t
--------------------------------------------------------------------------------
NAME           TARGET  STATE        SERVER                   STATE_DETAILS
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
```

```
ora.OCR.dg
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.asm
               ONLINE  ONLINE       zffr4cb1101              Started
               ONLINE  ONLINE       zffr4cb2101              Started
ora.gsd
               OFFLINE OFFLINE      zffr4cb1101
               OFFLINE OFFLINE      zffr4cb2101
ora.net1.network
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.ons
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.registry.acfs
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       zffr4cb2101
ora.cvu
      1        ONLINE  ONLINE       zffr4cb2101
ora.oc4j
      1        ONLINE  ONLINE       zffr4cb2101
ora.scan1.vip
      1        ONLINE  ONLINE       zffr4cb2101
ora.zffr4cb1101.vip
      1        ONLINE  ONLINE       zffr4cb1101
ora.zffr4cb2101.vip
      1        ONLINE  ONLINE       zffr4cb2101
```

第 4 章　db 安装

4.1 准备安装文件

unzip　p10404530_112030_AIX64-5L_1of7.zip && unzip p10404530_112030_AIX64-5L_2of7.zip

```
[ZFFR4CB2101:root]/]> cd /soft*
[ZFFR4CB2101:root]/softtmp]> l
total 9644880
drwxr-xr-x    9 root     system         4096 Oct 28 2011  grid
drwxr-xr-x    2 root     system          256 Mar 08 16:10 lost+found
-rw-r-----    1 root     system   1766307597 Mar 02 04:05 p10404530_112030_AIX64-5L_1of7.zip
-rw-r-----    1 root     system   1135393912 Mar 02 04:03 p10404530_112030_AIX64-5L_2of7.zip
-rw-r-----    1 root     system   2036455635 Mar 02 04:06 p10404530_112030_AIX64-5L_3of7.zip
```

```
[ZFFR4CB2101:root]/softtmp]> unzip  p10404530_112030_AIX64-5L_1of7.zip && unzip
p10404530_112030_AIX64-5L_2of7.zip
Archive:  p10404530_112030_AIX64-5L_1of7.zip
   creating: database/
   creating: database/stage/
  inflating: database/stage/shiphomeproperties.xml
   creating: database/stage/Components/
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
  inflating: database/doc/server.11203/E22487-03.mobi
  inflating: database/doc/server.11203/e22487.pdf
  inflating: database/welcome.html
   creating: database/sshsetup/
  inflating: database/sshsetup/sshUserSetup.sh
  inflating: database/readme.html
Archive:  p10404530_112030_AIX64-5L_2of7.zip
   creating: database/stage/Components/oracle.ctx/
   creating: database/stage/Components/oracle.ctx/11.2.0.3.0/
   creating: database/stage/Components/oracle.ctx/11.2.0.3.0/1/
   creating: database/stage/Components/oracle.ctx/11.2.0.3.0/1/DataFiles/
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
   creating: database/stage/Components/oracle.javavm.containers/
   creating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/
   creating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/
   creating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/DataFiles/
  inflating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/DataFiles/filegroup4.jar
  inflating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/DataFiles/filegroup3.jar
  inflating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/DataFiles/filegroup2.jar
  inflating: database/stage/Components/oracle.javavm.containers/11.2.0.3.0/1/DataFiles/filegroup1.jar
[ZFFR4CB2101:root]/softtmp]>
[ZFFR4CB2101:root]/softtmp]> l
total 9644888
drwxr-xr-x    9 root     system         4096 Oct 28 2011  database
drwxr-xr-x    9 root     system         4096 Oct 28 2011  grid
drwxr-xr-x    2 root     system          256 Mar 08 16:10 lost+found
-rw-r-----    1 root     system   1766307597 Mar 02 04:05 p10404530_112030_AIX64-5L_1of7.zip
-rw-r-----    1 root     system   1135393912 Mar 02 04:03 p10404530_112030_AIX64-5L_2of7.zip
-rw-r-----    1 root     system   2036455635 Mar 02 04:06 p10404530_112030_AIX64-5L_3of7.zip
[ZFFR4CB2101:root]/softtmp]>
```

4.2 执行 runcluvfy.sh 脚本预检测

```
[grid@ZFFR4CB2101:/home/grid]$ /softtmp/grid/runcluvfy.sh stage -pre dbinst -n
ZFFR4CB2101,ZFFR4CB1101 -verbose -fixup

Performing pre-checks for database installation

Checking node reachability...

Check: Node reachability from node "ZFFR4CB2101"
  Destination Node                      Reachable?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           yes
Result: Node reachability check passed from node "ZFFR4CB2101"


Checking user equivalence...

Check: User equivalence for user "grid"
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
```

```
  ZFFR4CB1101                           passed
Result: User equivalence check passed for user "grid"

Checking node connectivity...

Checking hosts config file...
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed

Verification of the hosts config file successful


Interface information for node "ZFFR4CB2101"
 Name   IP Address      Subnet          Gateway         Def. Gateway    HW Address        MTU
 ------ --------------- --------------- --------------- --------------- ----------------- ------
 en0    22.188.187.158  22.188.187.0    22.188.187.158  22.188.187.1    C6:03:AE:03:97:83 1500
 en0    22.188.187.158  22.188.187.0    22.188.187.158  22.188.187.1    C6:03:AE:03:97:83 1500
 en0    22.188.187.158  22.188.187.0    22.188.187.158  22.188.187.1    C6:03:AE:03:97:83 1500
 en1    222.188.187.158 222.188.187.0   222.188.187.158 22.188.187.1    C6:03:A7:3E:FE:01 1500
 en1    222.188.187.158 222.188.187.0   222.188.187.158 22.188.187.1    C6:03:A7:3E:FE:01 1500


Interface information for node "ZFFR4CB1101"
 Name   IP Address      Subnet          Gateway         Def. Gateway    HW Address        MTU
 ------ --------------- --------------- --------------- --------------- ----------------- ------
 en0    22.188.187.148  22.188.187.0    22.188.187.148  UNKNOWN         FE:B6:72:EF:12:83 1500
 en0    22.188.187.148  22.188.187.0    22.188.187.148  UNKNOWN         FE:B6:72:EF:12:83 1500
 en1    222.188.187.148 222.188.187.0   222.188.187.148 UNKNOWN         FE:B6:7D:9F:6C:01 1500
 en1    222.188.187.148 222.188.187.0   222.188.187.148 UNKNOWN         FE:B6:7D:9F:6C:01 1500


Check: Node connectivity for interface "en0"
  Source                            Destination                       Connected?
  --------------------------------  --------------------------------  ----------------
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB2101[22.188.187.158]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB2101[22.188.187.158]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB2101[22.188.187.158]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB2101[22.188.187.158]       ZFFR4CB1101[22.188.187.148]       yes
  ZFFR4CB1101[22.188.187.148]       ZFFR4CB1101[22.188.187.148]       yes
Result: Node connectivity passed for interface "en0"


Check: TCP connectivity of subnet "22.188.187.0"
  Source                            Destination                       Connected?
  --------------------------------  --------------------------------  ----------------
  ZFFR4CB2101:22.188.187.158        ZFFR4CB1101:22.188.187.148        passed
Result: TCP connectivity check passed for subnet "22.188.187.0"


Check: Node connectivity for interface "en1"
  Source                            Destination                       Connected?
  --------------------------------  --------------------------------  ----------------
  ZFFR4CB2101[222.188.187.158]      ZFFR4CB2101[222.188.187.158]      yes
  ZFFR4CB2101[222.188.187.158]      ZFFR4CB1101[222.188.187.148]      yes
  ZFFR4CB2101[222.188.187.158]      ZFFR4CB1101[222.188.187.148]      yes
  ZFFR4CB2101[222.188.187.158]      ZFFR4CB1101[222.188.187.148]      yes
  ZFFR4CB2101[222.188.187.158]      ZFFR4CB1101[222.188.187.148]      yes
  ZFFR4CB1101[222.188.187.148]      ZFFR4CB1101[222.188.187.148]      yes
```

```
Result: Node connectivity passed for interface "en1"


Check: TCP connectivity of subnet "222.188.187.0"
  Source                          Destination                     Connected?
  ------------------------------  ------------------------------  ----------------
  ZFFR4CB2101:222.188.187.158     ZFFR4CB1101:222.188.187.148     passed
Result: TCP connectivity check passed for subnet "222.188.187.0"

Checking subnet mask consistency...
Subnet mask consistency check passed for subnet "22.188.187.0".
Subnet mask consistency check passed for subnet "222.188.187.0".
Subnet mask consistency check passed.

Result: Node connectivity check passed

Checking multicast communication...

Checking subnet "22.188.187.0" for multicast communication with multicast group "230.0.1.0"...
Check of subnet "22.188.187.0" for multicast communication with multicast group "230.0.1.0" passed.

Checking subnet "222.188.187.0" for multicast communication with multicast group "230.0.1.0"...
Check of subnet "222.188.187.0" for multicast communication with multicast group "230.0.1.0" passed.

Check of multicast communication passed.

Check: Total memory
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   4GB (4194304.0KB)         1GB (1048576.0KB)         passed
  ZFFR4CB1101   48GB (5.0331648E7KB)      1GB (1048576.0KB)         passed
Result: Total memory check passed

Check: Available memory
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   224.293MB (229676.0KB)    50MB (51200.0KB)          passed
  ZFFR4CB1101   41.4106GB (4.3422168E7KB)  50MB (51200.0KB)          passed
Result: Available memory check passed

Check: Swap space
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   8GB (8388608.0KB)         4GB (4194304.0KB)         passed
  ZFFR4CB1101   8GB (8388608.0KB)         16GB (1.6777216E7KB)      failed
Result: Swap space check failed

Check: Free disk space for "ZFFR4CB2101:/tmp"
  Path            Node Name     Mount point   Available     Required      Status
  --------------  ------------  ------------  ------------  ------------  ------------
  /tmp            ZFFR4CB2101   /tmp          3.899GB       1GB           passed
Result: Free disk space check passed for "ZFFR4CB2101:/tmp"

Check: Free disk space for "ZFFR4CB1101:/tmp"
  Path            Node Name     Mount point   Available     Required      Status
  --------------  ------------  ------------  ------------  ------------  ------------
  /tmp            ZFFR4CB1101   /tmp          18.1031GB     1GB           passed
Result: Free disk space check passed for "ZFFR4CB1101:/tmp"

Check: User existence for "grid"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists(1025)
  ZFFR4CB1101   passed                    exists(1025)
```

```
Checking for multiple users with UID value 1025
Result: Check for multiple users with UID value 1025 passed
Result: User existence check passed for "grid"

Check: Group existence for "oinstall"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists
  ZFFR4CB1101   passed                    exists
Result: Group existence check passed for "oinstall"

Check: Group existence for "dba"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   passed                    exists
  ZFFR4CB1101   passed                    exists
Result: Group existence check passed for "dba"

Check: Membership of user "grid" in group "oinstall" [as Primary]
  Node Name         User Exists   Group Exists  User in Group  Primary       Status
  ----------------  ------------  ------------  ------------  ------------  ------------
  ZFFR4CB2101       yes           yes           yes           yes           passed
  ZFFR4CB1101       yes           yes           yes           yes           passed
Result: Membership check for user "grid" in group "oinstall" [as Primary] passed

Check: Membership of user "grid" in group "dba"
  Node Name         User Exists   Group Exists  User in Group  Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       yes           yes           yes           passed
  ZFFR4CB1101       yes           yes           yes           passed
Result: Membership check for user "grid" in group "dba" passed

Check: Run level
  Node Name     run level                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   2                         2                         passed
  ZFFR4CB1101   2                         2                         passed
Result: Run level check passed

Check: Hard limits for "maximum open file descriptors"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       hard          9223372036854776000  65536         passed
  ZFFR4CB1101       hard          9223372036854776000  65536         passed
Result: Hard limits check passed for "maximum open file descriptors"

Check: Soft limits for "maximum open file descriptors"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       soft          9223372036854776000  1024          passed
  ZFFR4CB1101       soft          9223372036854776000  1024          passed
Result: Soft limits check passed for "maximum open file descriptors"

Check: Hard limits for "maximum user processes"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       hard          16384         16384         passed
  ZFFR4CB1101       hard          16384         16384         passed
Result: Hard limits check passed for "maximum user processes"

Check: Soft limits for "maximum user processes"
  Node Name         Type          Available     Required      Status
  ----------------  ------------  ------------  ------------  ----------------
  ZFFR4CB2101       soft          16384         2047          passed
  ZFFR4CB1101       soft          16384         2047          passed
```

```
Result: Soft limits check passed for "maximum user processes"

Check: System architecture
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   powerpc                   powerpc                   passed
  ZFFR4CB1101   powerpc                   powerpc                   passed
Result: System architecture check passed

Check: Kernel version
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   7.1-7100.03.03.1415       7.1-7100.00.01.1037       passed
  ZFFR4CB1101   7.1-7100.02.05.1415       7.1-7100.00.01.1037       passed

WARNING:
PRVF-7524 : Kernel version is not consistent across all the nodes.
Kernel version = "7.1-7100.02.05.1415" found on nodes: ZFFR4CB1101.
Kernel version = "7.1-7100.03.03.1415" found on nodes: ZFFR4CB2101.
Result: Kernel version check passed

Check: Kernel parameter for "ncargs"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   256                       128                       passed
  ZFFR4CB1101   256                       128                       passed
Result: Kernel parameter check passed for "ncargs"

Check: Kernel parameter for "maxuproc"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   16384                     2048                      passed
  ZFFR4CB1101   16384                     2048                      passed
Result: Kernel parameter check passed for "maxuproc"

Check: Kernel parameter for "tcp_ephemeral_low"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   32768                     9000                      failed (ignorable)
  ZFFR4CB1101   32768                     9000                      failed (ignorable)
Result: Kernel parameter check passed for "tcp_ephemeral_low"

Check: Kernel parameter for "tcp_ephemeral_high"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   65535                     65500                     failed (ignorable)
  ZFFR4CB1101   65535                     65500                     failed (ignorable)
Result: Kernel parameter check passed for "tcp_ephemeral_high"

Check: Kernel parameter for "udp_ephemeral_low"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   32768                     9000                      failed (ignorable)
  ZFFR4CB1101   32768                     9000                      failed (ignorable)
Result: Kernel parameter check passed for "udp_ephemeral_low"

Check: Kernel parameter for "udp_ephemeral_high"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   65535                     65500                     failed (ignorable)
  ZFFR4CB1101   65535                     65500                     failed (ignorable)
Result: Kernel parameter check passed for "udp_ephemeral_high"

Check: Package existence for "bos.adt.base"
  Node Name     Available                 Required                  Status
```

```
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.adt.base-7.1.3.15-0   bos.adt.base-...          passed
  ZFFR4CB1101   bos.adt.base-7.1.3.15-0   bos.adt.base-...          passed
Result: Package existence check passed for "bos.adt.base"

Check: Package existence for "bos.adt.lib"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.adt.lib-7.1.2.15-0    bos.adt.lib-...           passed
  ZFFR4CB1101   bos.adt.lib-7.1.2.15-0    bos.adt.lib-...           passed
Result: Package existence check passed for "bos.adt.lib"

Check: Package existence for "bos.adt.libm"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.adt.libm-7.1.3.0-0    bos.adt.libm-...          passed
  ZFFR4CB1101   bos.adt.libm-7.1.3.0-0    bos.adt.libm-...          passed
Result: Package existence check passed for "bos.adt.libm"

Check: Package existence for "bos.perf.libperfstat"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.perf.libperfstat-7.1.3.15-0  bos.perf.libperfstat-...  passed
  ZFFR4CB1101   bos.perf.libperfstat-7.1.3.15-0  bos.perf.libperfstat-...  passed
Result: Package existence check passed for "bos.perf.libperfstat"

Check: Package existence for "bos.perf.perfstat"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.perf.perfstat-7.1.3.15-0  bos.perf.perfstat-...     passed
  ZFFR4CB1101   bos.perf.perfstat-7.1.3.15-0  bos.perf.perfstat-...     passed
Result: Package existence check passed for "bos.perf.perfstat"

Check: Package existence for "bos.perf.proctools"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   bos.perf.proctools-7.1.3.15-0  bos.perf.proctools-...    passed
  ZFFR4CB1101   bos.perf.proctools-7.1.3.15-0  bos.perf.proctools-...    passed
Result: Package existence check passed for "bos.perf.proctools"

Check: Package existence for "xlC.aix61.rte"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   xlC.aix61.rte-12.1.0.1-0  xlC.aix61.rte-10.1.0.0    passed
  ZFFR4CB1101   xlC.aix61.rte-12.1.0.1-0  xlC.aix61.rte-10.1.0.0    passed
Result: Package existence check passed for "xlC.aix61.rte"

Check: Package existence for "xlC.rte"
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   xlC.rte-12.1.0.1-0        xlC.rte-10.1.0.0          passed
  ZFFR4CB1101   xlC.rte-12.1.0.1-0        xlC.rte-10.1.0.0          passed
Result: Package existence check passed for "xlC.rte"

Check: Operating system patch for "Patch IZ87216"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ87216:devices.common.IBM.mpio.rte  Patch IZ87216            passed
  ZFFR4CB1101   Patch IZ87216:devices.common.IBM.mpio.rte  Patch IZ87216            passed
Result: Operating system patch check passed for "Patch IZ87216"

Check: Operating system patch for "Patch IZ87564"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ87564:bos.adt.libmIZ87564:bos.adt.prof  Patch IZ87564            passed
```

```
  ZFFR4CB1101   Patch IZ87564:bos.adt.libmIZ87564:bos.adt.prof  Patch IZ87564            passed
Result: Operating system patch check passed for "Patch IZ87564"

Check: Operating system patch for "Patch IZ89165"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ89165:bos.rte.bind_cmds  Patch IZ89165             passed
  ZFFR4CB1101   Patch IZ89165:bos.rte.bind_cmds  Patch IZ89165             passed
Result: Operating system patch check passed for "Patch IZ89165"

Check: Operating system patch for "Patch IZ97035"
  Node Name     Applied                   Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   Patch IZ97035:devices.vdevice.IBM.l-lan.rte  Patch IZ97035            passed
  ZFFR4CB1101   Patch IZ97035:devices.vdevice.IBM.l-lan.rte  Patch IZ97035            passed
Result: Operating system patch check passed for "Patch IZ97035"

Checking for multiple users with UID value 0
Result: Check for multiple users with UID value 0 passed

Check: Current group ID
Result: Current group ID check passed

Starting check for consistency of primary group of root user
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed

Check for consistency of root user's primary group passed

Check default user file creation mask
  Node Name     Available                 Required                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   022                       0022                      passed
  ZFFR4CB1101   022                       0022                      passed
Result: Default user file creation mask check passed

Checking CRS integrity...

Clusterware version consistency passed
The Oracle Clusterware is healthy on node "ZFFR4CB2101"
The Oracle Clusterware is healthy on node "ZFFR4CB1101"

CRS integrity check passed

Checking Cluster manager integrity...


Checking CSS daemon...

  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           running
  ZFFR4CB1101                           running

Oracle Cluster Synchronization Services appear to be online.

Cluster manager integrity check passed


Checking node application existence...

Checking existence of VIP node application (required)
  Node Name     Required                  Running?                  Comment
```

```
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   yes                       yes                       passed
  ZFFR4CB1101   yes                       yes                       passed
VIP node application check passed

Checking existence of NETWORK node application (required)
  Node Name     Required                  Running?                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   yes                       yes                       passed
  ZFFR4CB1101   yes                       yes                       passed
NETWORK node application check passed

Checking existence of GSD node application (optional)
  Node Name     Required                  Running?                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   no                        no                        exists
  ZFFR4CB1101   no                        no                        exists
GSD node application is offline on nodes "ZFFR4CB2101,ZFFR4CB1101"

Checking existence of ONS node application (optional)
  Node Name     Required                  Running?                  Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   no                        yes                       passed
  ZFFR4CB1101   no                        yes                       passed
ONS node application check passed


Checking if Clusterware is installed on all nodes...
Check of Clusterware install passed

Checking if CTSS Resource is running on all nodes...
Check: CTSS Resource running on all nodes
  Node Name                             Status
  ------------------------------------  ------------------------
  ZFFR4CB2101                           passed
  ZFFR4CB1101                           passed
Result: CTSS resource check passed


Querying CTSS for time offset on all nodes...
Result: Query of CTSS for time offset passed

Check CTSS state started...
Check: CTSS state
  Node Name                             State
  ------------------------------------  ------------------------
  ZFFR4CB2101                           Observer
  ZFFR4CB1101                           Observer
CTSS is in Observer state. Switching over to clock synchronization checks using NTP


Starting Clock synchronization checks using Network Time Protocol(NTP)...

NTP Configuration file check started...
The NTP configuration file "/etc/ntp.conf" is available on all nodes
NTP Configuration file check passed

Checking daemon liveness...

Check: Liveness for "xntpd"
  Node Name                             Running?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           yes
Result: Liveness check passed for "xntpd"
```

```
Check for NTP daemon or service alive passed on all nodes

Checking NTP daemon command line for slewing option "-x"
Check: NTP daemon command line
  Node Name                             Slewing Option Set?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes
  ZFFR4CB1101                           no
Result:
NTP daemon slewing option check failed on some nodes
PRVF-5436 : The NTP daemon running on one or more nodes lacks the slewing option "-x"
Result: Clock synchronization check using Network Time Protocol(NTP) failed


PRVF-9652 : Cluster Time Synchronization Services check failed
Checking consistency of file "/etc/resolv.conf" across nodes

File "/etc/resolv.conf" does not exist on any node of the cluster. Skipping further checks

File "/etc/resolv.conf" is consistent across nodes

Check: Time zone consistency
Result: Time zone consistency check passed

Checking Single Client Access Name (SCAN)...
  SCAN Name         Node          Running?      ListenerName  Port          Running?
  ----------------  ------------  ------------  ------------  ------------  ------------
  ZFFR4CB2101-scan  zffr4cb2101   true          LISTENER_SCAN1  1521          true

Checking TCP connectivity to SCAN Listeners...
  Node          ListenerName              TCP connectivity?
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   LISTENER_SCAN1            yes
TCP connectivity to SCAN Listeners exists on all cluster nodes

Checking name resolution setup for "ZFFR4CB2101-scan"...

ERROR:
PRVG-1101 : SCAN name "ZFFR4CB2101-scan" failed to resolve
  SCAN Name     IP Address                Status                    Comment
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101-scan  22.188.187.160           failed                    NIS Entry

ERROR:
PRVF-4657 : Name resolution setup check for "ZFFR4CB2101-scan" (IP address: 22.188.187.160) failed

ERROR:
PRVF-4663 : Found configuration issue with the 'hosts' entry in the /etc/nsswitch.conf file

Verification of SCAN VIP and Listener setup failed
Checking VIP configuration.
Checking VIP Subnet configuration.
Check for VIP Subnet configuration passed.
Checking VIP reachability

Checking Database and Clusterware version compatibility


Checking ASM and CRS version compatibility
ASM and CRS versions are compatible
Database version "11.2.0.3.0" is compatible with the Clusterware version "11.2.0.3.0".
Database Clusterware version compatibility passed
Result: User ID < 65535 check passed

Result: Kernel 64-bit mode check passed
```

```
Fixup information has been generated for following node(s):
ZFFR4CB1101,ZFFR4CB2101
Please run the following script on each node as "root" user to execute the fixups:
'/tmp/CVU_11.2.0.3.0_grid/runfixup.sh'

Pre-check for database installation was unsuccessful on all the nodes.
[grid@ZFFR4CB2101:/home/grid]$
```

4.3 静默安装 DB 软件

```
[ZFFR4CB2101:root]/]> /softtmp/database/rootpre.sh
/softtmp/database/rootpre.sh output will be logged in /tmp/rootpre.out_16-03-11.10:02:47

Checking if group services should be configured....
Nothing to configure.
[ZFFR4CB2101:root]/]>
```

```
./runInstaller -silent  -force -noconfig -IgnoreSysPreReqs -ignorePrereq  -showProgress \
oracle.install.option=INSTALL_DB_SWONLY \
DECLINE_SECURITY_UPDATES=true \
UNIX_GROUP_NAME=oinstall \
INVENTORY_LOCATION=/u01/app/oraInventory \
SELECTED_LANGUAGES=en \
oracle.install.db.InstallEdition=EE \
oracle.install.db.isCustomInstall=false \
oracle.install.db.EEOptionsSelection=false \
oracle.install.db.DBA_GROUP=dba \
oracle.install.db.OPER_GROUP=asmoper \
oracle.install.db.isRACOneInstall=false \
oracle.install.db.config.starterdb.type=GENERAL_PURPOSE \
SECURITY_UPDATES_VIA_MYORACLESUPPORT=false \
oracle.installer.autoupdates.option=SKIP_UPDATES \
ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1 \
ORACLE_BASE=/u01/app/oracle \
ORACLE_HOSTNAME=ZFFR4CB2101 \
oracle.install.db.CLUSTER_NODES=zffr4cb2101,zffr4cb1101 \
oracle.install.db.isRACOneInstall=false
```

同样，复制脚本的时候注意最后不能加回车符号，需要修改的地方我已经用黄色背景表示了：

```
[oracle@ZFFR4CB2101:/softtmp/database]$ ./runInstaller -silent  -force -noconfig -IgnoreSysPreReqs
-ignorePrereq  -showProgress \
> oracle.install.option=INSTALL_DB_SWONLY \
> DECLINE_SECURITY_UPDATES=true \
> UNIX_GROUP_NAME=oinstall \
> INVENTORY_LOCATION=/u01/app/oraInventory \
> SELECTED_LANGUAGES=en \
> oracle.install.db.InstallEdition=EE \
> oracle.install.db.isCustomInstall=false \
> oracle.install.db.EEOptionsSelection=false \
> oracle.install.db.DBA_GROUP=dba \
> oracle.install.db.OPER_GROUP=asmoper \
> oracle.install.db.isRACOneInstall=false \
> oracle.install.db.config.starterdb.type=GENERAL_PURPOSE \
> SECURITY_UPDATES_VIA_MYORACLESUPPORT=false \
> oracle.installer.autoupdates.option=SKIP_UPDATES \
> ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1 \
```

```
> ORACLE_BASE=/u01/app/oracle \
> ORACLE_HOSTNAME=ZFFR4CB2101 \
> oracle.install.db.CLUSTER_NODES=zffr4cb2101,zffr4cb1101 \
> oracle.install.db.isRACOneInstall=false
********************************************************************************

Your platform requires the root user to perform certain pre-installation
OS preparation.  The root user should run the shell script 'rootpre.sh' before
you proceed with Oracle installation.  rootpre.sh can be found at the top level
of the CD or the stage area.

Answer 'y' if root has run 'rootpre.sh' so you can proceed with Oracle
installation.
Answer 'n' to abort installation and then ask root to run 'rootpre.sh'.

********************************************************************************

Has 'rootpre.sh' been run by root on all nodes? [y/n] (n)
y

Starting Oracle Universal Installer...

Checking Temp space: must be greater than 190 MB.   Actual 4328 MB    Passed
Checking swap space: must be greater than 150 MB.   Actual 8192 MB    Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2016-03-11_11-21-26AM. Please
wait ...[oracle@ZFFR4CB2101:/softtmp/database]$ You can find the log of this install session at:
 /u01/app/oraInventory/logs/installActions2016-03-11_11-21-26AM.log

Prepare in progress.
.................................................   9% Done.

Prepare successful.

Copy files in progress.
.................................................   14% Done.
.................................................   19% Done.
.................................................   24% Done.
.................................................   29% Done.
.................................................   34% Done.
.................................................   39% Done.
.................................................   44% Done.
.........................................
Copy files successful.
.................................................   60% Done.

Link binaries in progress.

Link binaries successful.
.................................................   77% Done.

Setup files in progress.
.................................................   94% Done.

Setup files successful.

The installation of Oracle Database 11g was successful.
Please check '/u01/app/oraInventory/logs/silentInstall2016-03-11_11-21-26AM.log' for more details.

Execute Root Scripts in progress.

As a root user, execute the following script(s):
        1. /u01/app/oracle/product/11.2.0/dbhome_1/root.sh

Execute /u01/app/oracle/product/11.2.0/dbhome_1/root.sh on the following nodes:
[zffr4cb2101, zffr4cb1101]
```

```
.....................................................    100% Done.

Execute Root Scripts successful.
Successfully Setup Software.
```

```
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
0.00    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
0.00    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
0.00    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.08    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.33    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.44    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.50    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.54    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.64    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
3.76    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
6.17    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
7.06    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]> du -sg /u01/app/oracle/product/11.2.0/dbhome_1
7.06    /u01/app/oracle/product/11.2.0/dbhome_1
[ZFFR4CB1101:root]/]>
```

2 个节点 root 分别执行：

```
[ZFFR4CB2101:root]/]> /u01/app/oracle/product/11.2.0/dbhome_1/root.sh
Check /u01/app/oracle/product/11.2.0/dbhome_1/install/root_ZFFR4CB2101_2016-03-11_11-43-02.log for the output
of root script

[ZFFR4CB2101:root]/]>
[ZFFR4CB2101:root]/]> more
/u01/app/oracle/product/11.2.0/dbhome_1/install/root_ZFFR4CB2101_2016-03-11_11-43-02.log

Performing root user operation for Oracle 11g

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /u01/app/oracle/product/11.2.0/dbhome_1
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
Finished product-specific root actions.
```

4.4 静默配置监听

```
[grid@ZFFR4CB2101:/home/grid]$ netca -silent -responsefile
$ORACLE_HOME/assistants/netca/netca.rsp

Parsing command line arguments:
    Parameter "silent" = true
    Parameter "responsefile" = /u01/app/11.2.0/grid/assistants/netca/netca.rsp
Done parsing command line arguments.
Oracle Net Services Configuration:
Profile configuration complete.
Oracle Net Listener Startup:
    Listener started successfully.
Listener configuration complete.
Oracle Net Services configuration successful. The exit code is 0
[grid@ZFFR4CB2101:/home/grid]$
[grid@ZFFR4CB2101:/home/grid]$ crsctl stat res -t
--------------------------------------------------------------------------------
NAME           TARGET  STATE        SERVER                   STATE_DETAILS
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.OCR.dg
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.asm
               ONLINE  ONLINE       zffr4cb1101              Started
               ONLINE  ONLINE       zffr4cb2101              Started
ora.gsd
               OFFLINE OFFLINE      zffr4cb1101
               OFFLINE OFFLINE      zffr4cb2101
ora.net1.network
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.ons
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.registry.acfs
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       zffr4cb2101
ora.cvu
      1        ONLINE  ONLINE       zffr4cb2101
ora.oc4j
      1        ONLINE  ONLINE       zffr4cb2101
ora.scan1.vip
      1        ONLINE  ONLINE       zffr4cb2101
ora.zffr4cb1101.vip
      1        ONLINE  ONLINE       zffr4cb1101
ora.zffr4cb2101.vip
      1        ONLINE  ONLINE       zffr4cb2101
[grid@ZFFR4CB2101:/home/grid]$
```

vi crsstat_lhr.sh

```
awk  'BEGIN {printf "%-26s %-26s %-10s %-10s %-10s \n","Name                                    ","Type
","Target    ","State     ","Host      "; printf
"%-30s %-26s %-10s %-10s %-10s\n","-----------------------------------------","--------------------------","--
--------", "---------","----------";}'
crs_stat | awk 'BEGIN { FS="=| ";state = 0;}  $1~/NAME/ {appname = $2; state=1};  state == 0 {next;}  $1~/TYPE/
&& state == 1 {apptype = $2; state=2;} $1~/TARGET/ && state == 2 {apptarget = $2; state=3;} $1~/STATE/ && state
== 3 {appstate = $2; apphost = $4; state=4;} state == 4 {printf "%-40s %-26s %-10s %-10s %-10s\n",
appname,apptype,apptarget,appstate,apphost; state=0;}'
[ZFFR4CB2101:root]/]> chmod +x crsstat_lhr.sh
[ZFFR4CB2101:root]/]> ./crsstat_lhr.sh
Name                                     Type                       Target     State      Host
---------------------------------------- -------------------------- ---------- ---------  ----------
ora.LISTENER.lsnr                        ora.listener.type          ONLINE     ONLINE     zffr4cb1101
ora.LISTENER_SCAN1.lsnr                  ora.scan_listener.type     ONLINE     ONLINE     zffr4cb2101
ora.OCR.dg                               ora.diskgroup.type         ONLINE     ONLINE     zffr4cb1101
ora.asm                                  ora.asm.type               ONLINE     ONLINE     zffr4cb1101
ora.cvu                                  ora.cvu.type               ONLINE     ONLINE     zffr4cb2101
ora.gsd                                  ora.gsd.type               OFFLINE    OFFLINE
ora.net1.network                         ora.network.type           ONLINE     ONLINE     zffr4cb1101
ora.oc4j                                 ora.oc4j.type              ONLINE     ONLINE     zffr4cb2101
ora.ons                                  ora.ons.type               ONLINE     ONLINE     zffr4cb1101
ora.registry.acfs                        ora.registry.acfs.type     ONLINE     ONLINE     zffr4cb1101
ora.scan1.vip                            ora.scan_vip.type          ONLINE     ONLINE     zffr4cb2101
ora.zffr4cb1101.ASM2.asm                 application                ONLINE     ONLINE     zffr4cb1101
ora.zffr4cb1101.LISTENER_ZFFR4CB1101.lsnr application                ONLINE     ONLINE     zffr4cb1101
ora.zffr4cb1101.gsd                      application                OFFLINE    OFFLINE
ora.zffr4cb1101.ons                      application                ONLINE     ONLINE     zffr4cb1101
ora.zffr4cb1101.vip                      ora.cluster_vip_net1.type  ONLINE     ONLINE     zffr4cb1101
ora.zffr4cb2101.ASM1.asm                 application                ONLINE     ONLINE     zffr4cb2101
ora.zffr4cb2101.LISTENER_ZFFR4CB2101.lsnr application                ONLINE     ONLINE     zffr4cb2101
ora.zffr4cb2101.gsd                      application                OFFLINE    OFFLINE
ora.zffr4cb2101.ons                      application                ONLINE     ONLINE     zffr4cb2101
ora.zffr4cb2101.vip                      ora.cluster_vip_net1.type  ONLINE     ONLINE     zffr4cb2101
[ZFFR4CB2101:root]/]>
```

第 5 章　dbca 静默方式建库

```
[grid@ZFFR4CB2101:/home/grid]$ ORACLE_SID=+ASM1
[grid@ZFFR4CB2101:/home/grid]$ sqlplus / as sysasm

SQL*Plus: Release 11.2.0.3.0 Production on Fri Mar 11 12:33:18 2016

Copyright (c) 1982, 2011, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Real Application Clusters and Automatic Storage Management options

SQL> CREATE DISKGROUP DATA external redundancy DISK '/dev/rhdisk11';

Diskgroup created.

SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Real Application Clusters and Automatic Storage Management options
```

```
[oracle@ZFFR4CB2101:/home/oracle]$dbca -silent -createDatabase -templateName General_Purpose.dbc
-gdbname orclasm  -sid orclasm -sysPassword lhr -systemPassword lhr -datafileDestination
'DATA/' -redoLogFileSize 50 -recoveryAreaDestination 'DATA/' -storageType ASM
-asmsnmpPassword lhr  -diskGroupName 'DATA' -responseFile NO_VALUE -characterset ZHS16GBK
-nationalCharacterSet AL16UTF16 -sampleSchema true -automaticMemoryManagement true
-totalMemory 9048 -databaseType OLTP -emConfiguration NONE   -nodeinfo
ZFFR4CB2101,ZFFR4CB1101
Copying database files
Cleaning up failed steps
4% complete
Copying database files
5% complete
6% complete
7% complete
13% complete
19% complete
24% complete
33% complete
Creating and starting Oracle instance
35% complete
39% complete
43% complete
47% complete
48% complete
50% complete
52% complete
Creating cluster database views
54% complete
71% complete
Completing Database Creation
74% complete
77% complete
85% complete
94% complete
100% complete
Look at the log file "/u01/app/oracle/cfgtoollogs/dbca/orclasm/orclasm0.log" for further details.
[oracle@ZFFR4CB1101:/home/oracle]$
[oracle@ZFFR4CB1101:/home/oracle]$
[oracle@ZFFR4CB1101:/home/oracle]$ more /u01/app/oracle/cfgtoollogs/dbca/orclasm/orclasm0.log
DiskGroup "DATA" resources are not running on nodes "[ZFFR4CB2101]". Database instances may not come up on these
nodes.

Do you want to continue?
Cleaning up failed steps
DBCA_PROGRESS : 4%
Copying database files
DBCA_PROGRESS : 5%
DBCA_PROGRESS : 6%
DBCA_PROGRESS : 7%
DBCA_PROGRESS : 13%
DBCA_PROGRESS : 19%
DBCA_PROGRESS : 24%
DBCA_PROGRESS : 33%
Creating and starting Oracle instance
DBCA_PROGRESS : 35%
DBCA_PROGRESS : 39%
DBCA_PROGRESS : 43%
DBCA_PROGRESS : 47%
DBCA_PROGRESS : 48%
DBCA_PROGRESS : 50%
DBCA_PROGRESS : 52%
Creating cluster database views
DBCA_PROGRESS : 54%
DBCA_PROGRESS : 71%
Completing Database Creation
```

```
DBCA_PROGRESS : 74%
DBCA_PROGRESS : 77%
DBCA_PROGRESS : 85%
DBCA_PROGRESS : 94%
DBCA_PROGRESS : 100%
Database creation complete. For details check the logfiles at:
 /u01/app/oracle/cfgtoollogs/dbca/orclasm.
Database Information:
Global Database Name:orclasm
System Identifier(SID) Prefix:orclasm

[oracle@ZFFR4CB2101:/home/oracle]$
[oracle@ZFFR4CB1101:/home/oracle]$ crsctl stat res -t
--------------------------------------------------------------------------------
NAME           TARGET  STATE        SERVER                   STATE_DETAILS
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.DATA.dg
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.LISTENER.lsnr
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.OCR.dg
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.asm
               ONLINE  ONLINE       zffr4cb1101              Started
               ONLINE  ONLINE       zffr4cb2101              Started
ora.gsd
               OFFLINE OFFLINE      zffr4cb1101
               OFFLINE OFFLINE      zffr4cb2101
ora.net1.network
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.ons
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
ora.registry.acfs
               ONLINE  ONLINE       zffr4cb1101
               ONLINE  ONLINE       zffr4cb2101
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.LISTENER_SCAN1.lsnr
      1        ONLINE  ONLINE       zffr4cb1101
ora.cvu
      1        ONLINE  ONLINE       zffr4cb1101
ora.oc4j
      1        ONLINE  ONLINE       zffr4cb1101
ora.orclasm.db
      1        ONLINE  ONLINE       zffr4cb1101              Open
      2        ONLINE  ONLINE       zffr4cb2101              Open
ora.scan1.vip
      1        ONLINE  ONLINE       zffr4cb1101
ora.zffr4cb1101.vip
      1        ONLINE  ONLINE       zffr4cb1101
ora.zffr4cb2101.vip
      1        ONLINE  ONLINE       zffr4cb2101
[oracle@ZFFR4CB1101:/home/oracle]$

[oracle@ZFFR4CB1101:/home/oracle]$ ORACLE_SID=orclasm2
[oracle@ZFFR4CB1101:/home/oracle]$ sqlplus / as sysdba
```

```
SQL*Plus: Release 11.2.0.3.0 Production on Fri Mar 11 14:47:19 2016

Copyright (c) 1982, 2011, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> select INST_ID,name , open_mode, log_mode,force_logging from gv$database;

   INST_ID NAME      OPEN_MODE            LOG_MODE     FOR
---------- --------- -------------------- ------------ ---
         2 ORCLASM   READ WRITE           NOARCHIVELOG NO
         1 ORCLASM   READ WRITE           NOARCHIVELOG NO

SQL>
```

第 6 章　卸载

crsctl stop has -f

卸载 GRID 软件，grid 用户执行: $ORACLE_HOME/deinstall/deinstall

卸载 ORACLE 软件，oracle 用户执行: $ORACLE_HOME/deinstall/deinstall

--dd if=/dev/zero of=/dev/rhdiskN bs=1024k count=1024

--lquerypv -h　/dev/rhdisk5

```
dbca -silent -deleteDatabase -sourceDB ora11g -sysDBAUserName sys -sysDBAPassword lhr
$ORACLE_HOME/bin/crsctl stop cluster -f

rmuser -p grid
rmuser -p oracle
rmgroup dba
rmgroup asmadmin
rmgroup asmdba
rmgroup asmoper
rmgroup oinstall

rm -rf /tmp/.oracle
rm -rf /tmp/oraclone_RAC
rm -rf /tmp/oraclone
rm -rf /tmp/oraclone_RAC
rm -rf /var/tmp/.oracle
rm -rf /opt/ORCLfmap
rm -rf /etc/ora*
rm -rf /etc/ohasd
rm -rf /etc/rc.d/rc2.d/K19ohasd
rm -rf /etc/rc.d/rc2.d/S96ohasd
rm -rf /etc/init.ohasd
rm -rf /etc/inittab.crs

fuser -kuxc /u01
umount -f /u01
rmfs -r /u01
```

```
dd if=/dev/zero of=/dev/rhdiskN bs=1024k count=1024
lquerypv -h  /dev/rhdiskN
```

第 7 章　附加内容

7.1 重新执行 root.sh

安装 GRID 执行 root.sh 失败的时候，可以重新执行 root.sh

----------重新执行 root.sh----------

---$ORACLE_HOME 为 GRID_HOME 的路径
----------① 脚本方式
---执行失败，重新执行 root.sh 脚本
$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose
dd if=/dev/zero of=/dev/rhdiskN bs=1024k count=1024
lquerypv -h /dev/rhdisk5
$ORACLE_HOME/root.sh

----------② 界面方式
----------删除两节点 crsconfig_params 中的 DATA1 和磁盘　界面方式
$ORACLE_HOME/crs/install/crsconfig_params
ASM_DISK_GROUP=DATA1
ASM_DISKS=/dev/rhdisk5
--root
$ORACLE_HOME/crs/install/rootcrs.pl -deconfig -force -verbose
-- GRID
export DISPLAY=22.188.216.132:0.0
$ORACLE_HOME/crs/config/config.sh

7.2 [INS-35354] The system on which you are attempting to install Oracle RAC is not part of a valid cluster

-------- 安装数据库软件 或 添加节点时报 PRKC-1137 或 PRVF-5434
现象：

```
[INS-35354] The system on which you are attempting to install Oracle RAC is not part of a valid cluster
```

```
PRKC-1094 : Failed to retrieve the active version of crs: {0}
PRVF-5300 : Failed to retrieve active version for CRS on this node
PRKC-1093 : Failed to retrieve the version of crs software on node
```

解决办法：

```
/u01/app/oraInventory/ContentsXML/inventory.xml  修改<HOME NAME="Ora11g_gridinfrahome1"
LOC="/g01/11.2.0/grid" TYPE="O" IDX="1"> 为 <HOME NAME="Ora11g_gridinfrahome1"
LOC="/g01/11.2.0/grid" TYPE="O" IDX="1" CRS="true">，即加上 CRS="true"

[grid@vrh1 ContentsXML]$ cat /u01/app/oraInventory/ContentsXML/inventory.xml  | grep NAME
<HOME NAME="Ora11g_gridinfrahome1" LOC="/g01/11.2.0/grid" TYPE="O" IDX="1" CRS="true">
```

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

ITPUB BLOG：http://blog.itpub.net/26736162

本文地址：**http://blog.itpub.net/26736162/viewspace-2057270/**

本文pdf版：**http://yunpan.cn/cdEQedhCs2kFz**（提取码：ed9b）

QQ：642808185 若加 QQ 请注明您所正在读的文章标题

于 2016-03-07 10:00~ 2016-03-11 19:00 在中行完成

……

……