AIX 安装单实例 11gR2 GRID+DB

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 11gR2 的 grid 和 db 软件（重点）

② 静默安装

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

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

Oracle ASM+11gR2 安装 **http://blog.itpub.net/26736162/viewspace-1205206/**

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

ASM 数据文件和 FILESYSTEM 文件转移方法集锦

http://blog.itpub.net/26736162/viewspace-1400516/

1.2.3 本文简介

本文亮点是全篇基于命令行来安装。

第 2 章　AIX 安装单实例 11gR2 GRID+DB

2.1 安装环境收集

项目	primary db
db 类型	单实例
db version	11.2.0.3.0
db 存储	ASM
主机 IP 地址/hosts 配置	22.188.187.158　ZFFR4CB1101
OS 版本及 kernel 版本	AIX 64 位 7.1.0.0

2.2 系统硬件检测

内存的基本要求
至少 1GB 的物理内存
Oracle 官方推荐内存 2GB 或者更多
这里我们如果是实验环境满足基本条件即可。实际生产环境要充分的评估业务使用情况和系统的架构来制定内存的分配和预留。
在 AIX 系统命令行中输入
getconf REAL_MEMORY
11927552
我们内存是 12G，非常充裕，这个和实际生产系统使用的内存也差不多
1　下表列出内存与交换空间大小的对应关系

可用内存 RAM	交换空间需求
1GB 到 2GB 之间	内存大小的 1.5 倍
2GB 到 16GB 之间	等于内存的大小
超过 16GB	以 16GB 为准

查看要安装的 AIX6.1 系统的交换空间的尺寸，通过以下命令
lsps -a
Page Space　Physical Volume　Volume Group　Size %Used Active　Auto　Type Chksum
hd6　hdisk0　　rootvg　　11264MB　1　yes　yes　lv　0
输出的结果是我们物理内存 12 个 G，这里系统还占用一小部分，如果不是的话，
chps　–s　number　hd6 增加交换空间，例如 chps　–s 28 hd6　28*pp size 算出 number 数即可。

1.2 磁盘空间要求

l 至少 1GB 的/TMP 目录空间

我们继续满足条件，这个空间其实可以给大了，我们还要利用它存放 oracle 11g 安装包，这里我们给 20 个 G.继续下一个环节

1.3 运行级别要求

l 确保系统运行在 2 级别模式

cat /etc/.init.state

2.检查软件需求

2.1 操作系统要求

l AIX 5L V5.3 TL 09 SP1 ("5300-09-01"), 64 bit kernel

l AIX 6.1 TL 02 SP 1 ("6100-02-01), 64-bit kernel

l AIX 7.1 TL 0 SP 1 ("7100-00-01"), 64-bit kernel

我们满足上面罗列出的基本条件即可，或者更高的修订版本，但是不能比上面所列出的低。我们安装的是 AIX 6.1 的系统，确认操作系统版本，命令如下

oslevel -s

6100-07-00-0000

满足安装条件，我们继续下一步

2.2 安装 oracle 11G 所需要的操作系统环境包

我们要确保以下的操作系统环境包已安装

bos.adt.base

bos.adt.lib

bos.adt.libm

bos.perf.libperfstat 6.1.2.1 or later

bos.perf.perfstat

bos.perf.proctools

xlC.aix61.rte.10.1.0.0 or later

xlC.rte.10.1.0.0 or later

gpfs.base 3.2.1.8 or later

命令行查询是否安装

lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.perfstat bos.perf.libperfstat bos.perf.proctools

一般情况只要将 AIX 升级到最新的 TL，这一步应该没有问题

查看物理内存大小

```
#/usr/sbin/lsattr -E -l sys0 -a realmem
realmem 2031616 Amount of usable physical memory in Kbytes False
```

查看 swap space,交换空间通常情况下是物理内存的 2 倍,通常采用如下公式计算交换空间的大小 512M + (物理内存大小(单位 M) - 256M) * 1.25

```
#lsps -a
Page Space           Physical Volume     Volume Group        Size %Used
Active    Auto    Type
```

```
hd6                 hdisk0              rootvg
512MB       1       yes     yes         lv
```

查看系统结构,AIX 下安装 ORACLE 需要是 64 位的系统

```
# getconf HARDWARE_BITMODE
64
```

或者

```
# bootinfo -K
64
```

检查 OS 版本,11GR2 需要 5300-09 以上的版本

```
# oslevel -s
5300-10-00-0000
```

检查如下包是否已经安装,没有的话需要 smit install 进行安装

```
lslpp -l bos.adt.base
lslpp -l bos.adt.lib
lslpp -l bos.adt.libm
lslpp -l bos.perf.perfstat
lslpp -l bos.perf.libperfstat
lslpp -l bos.perf.proctools
lslpp -l  rsct.basic.rte (这个包官方文档没有提及,不安装的情况下检查通不过)
```

```
[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.
```

2.3 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
```

```
[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]/]>
```

2.4 建立安装目录

```
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]>
```

2.5 建立用户和用户组

```
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]>
```

2.6 配置 grid 和 oracle 的 .profile

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

2.7 准备 ASM 磁盘

ASM 磁盘权限

chown grid.dba /dev/rhdiskN -> (ocr,votedisk)

chown oracle.dba /dev/rhdiskM -> (datafile)

chmod 660 /dev/rhdiskN、M

```
chown grid.dba   /dev/rhdisk20
chown oracle.dba /dev/rhdisk21
chmod 660  /dev/rhdisk20
chmod 660  /dev/rhdisk21
```

```
[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                    t_u01_vg        active
hdisk23         00c49fc461fc7c88                    T_TEST_LHR_VG   active
hdisk24         00c49fc461fc7cca                    T_TEST_LHR_VG   active
[ZFFR4CB2101:root]/]>    chown grid.dba   /dev/rhdisk20
[ZFFR4CB2101:root]/]>    chown oracle.dba /dev/rhdisk21
[ZFFR4CB2101:root]/]>    chmod 660  /dev/rhdisk20
[ZFFR4CB2101:root]/]>    chmod 660  /dev/rhdisk21
[ZFFR4CB2101:root]/]>
```

2.8 调整相应的系统参数

2.8.1 /etc/security/limits

vi /etc/security/limits

```
root:
```

```
    fsize = -1
    stack = -1
    fsize_hard = -1
    nofiles = 65536
    core = -1
    data = -1
    cpu_hard = -1
    data_hard = -1
    stack_hard = -1
    rss = -1
    rss_hard = -1
    nofiles_hard = 65536
    cpu = -1

oracle:
    fsize = -1
    stack = -1
    fsize_hard = -1
    nofiles = 65536
    core = -1
    data = -1
    cpu_hard = -1
    data_hard = -1
    stack_hard = -1
    rss = -1
    rss_hard = -1
    nofiles_hard = 65536
    cpu = -1

grid:
    fsize = -1
    stack = -1
    fsize_hard = -1
    nofiles = 65536
    core = -1
    data = -1
    cpu_hard = -1
    data_hard = -1
    stack_hard = -1
    rss = -1
    rss_hard = -1
    nofiles_hard = 65536
    cpu = -1
```

2.8.2 调整用户最大进程数调整 maxuproc(系统最大进程数)

调整 maxuproc(系统最大进程数)

smitty chgsys

或是

#chdev -l sys0 -a maxuproc=16384

sys0 changed

```
[ZFFR4CB2101:root]/]> lsattr -E -l sys0 -a maxuproc
maxuproc 16384 Maximum number of PROCESSES allowed per user True
[ZFFR4CB2101:root]/]> chdev -l sys0 -a maxuproc=16384
sys0 changed
```

```
[ZFFR4CB2101:root]/]> lsattr -E -l sys0 -a maxuproc
maxuproc 16384 Maximum number of PROCESSES allowed per user True
[ZFFR4CB2101:root]/]>
```

2.8.3 其它参数

```
[ZFFR4CB2101:root]/]> ioo -a | grep aio_maxreqs
                aio_maxreqs = 131072
          posix_aio_maxreqs = 131072


[ZFFR4CB2101:root]/]>
# ioo -o aio_maxreqs
aio_maxreqs = 65536
```

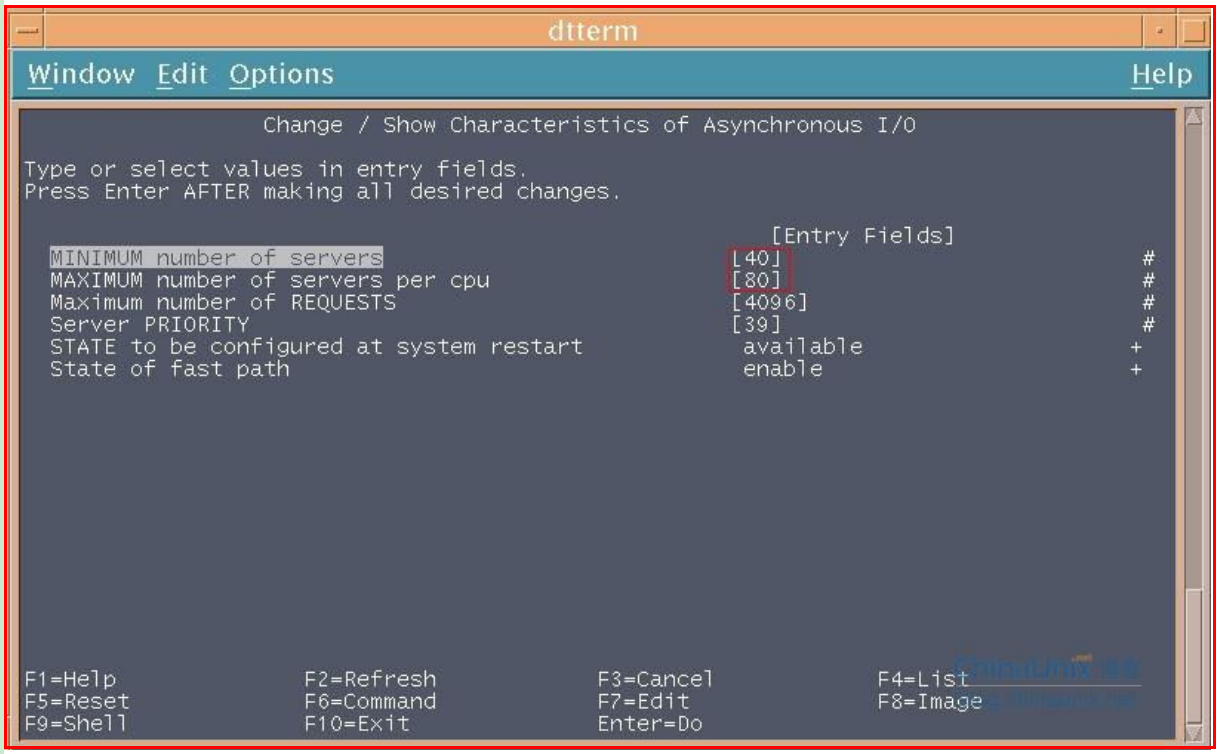
这里有需要声明的是在 AIX 5L 需要运行 rootpre.sh 脚本才能开启 aio 功能，在 AIX 6L 中默认已开启。在 AIX 5 和 6 中都是 65536（6k）的值去做最大的异步 io。

调整 ncargs(系统块大小)

```
#chdev -l sys0 -a ncargs=128
sys0 changed
```

调整异步 io

```
#smitty aio
```



修改完后需要重启动,可以使用如下命令查看 aio server 的进程数

```
$pstat -a|grep aios
```

修改完毕后，需重起系统生效.

优化虚拟内存管理

```
vmo -p -o minperm%=3
vmo -p -o maxperm%=90
vmo -p -o maxclient%=90
vmo -p -o lru_file_repage=0
vmo -p -o strict_maxclient=1
vmo -p -o strict_maxperm=0
```

调整网络参数

```
no -r -o ipqmaxlen=512
no -p -o rfc1323=1
no -p -o sb_max=131072  //2*65536
no -p -o tcp_recvspace=65536
no -p -o tcp_sendspace=65536
no -p -o udp_recvspace=655360
no -p -o udp_sendspace=65536
```

2.8.4 shell 脚本

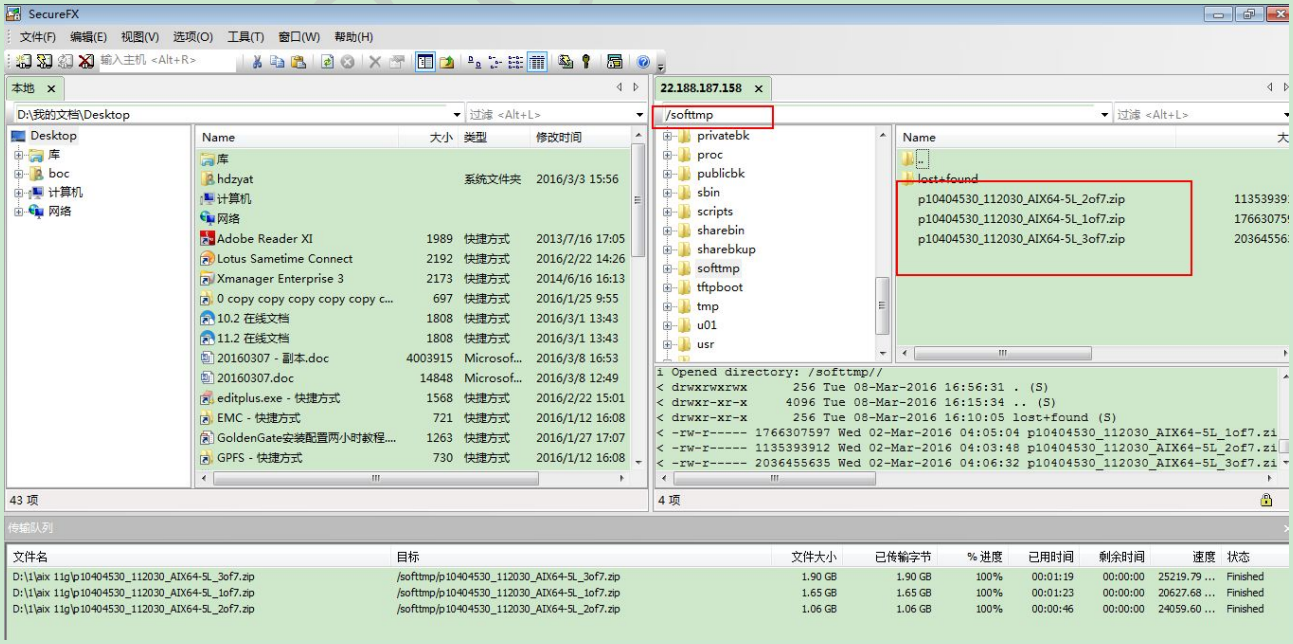
```
_chlimit(){
  [ -f /etc/security/limits.org ] || { cp -p /etc/security/limits /etc/security/limits.org; }
  cat /etc/security/limits.org |egrep -vp "root|oracle|grid" > /etc/security/limits
  echo "root:
        core = -1
        cpu = -1
        data = -1
        fsize = -1
        nofiles = -1
        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
```

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 配置连通性+执行 runcluvfy.sh 脚本预检测

该步骤主要是为了可以执行/softtmp/grid/runcluvfy.sh stage -pre crsinst -n　ZFFR4CB2101 -verbose -fixup，若不检测或者采用图形安装的话可以不用执行。

su - grid

```
mkdir -p ~/.ssh
```

```
chmod 700 ~/.ssh

ssh-keygen -t rsa  ->回车->回车->回车
ssh-keygen -t dsa  ->回车->回车->回车

cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
cat ~/.ssh/id_dsa.pub >> ~/.ssh/authorized_keys

 ssh `hostname` date
```

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



Performing pre-checks for cluster services setup

Checking node reachability...

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


Checking user equivalence...

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

Checking node connectivity...

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


Check: Node connectivity of subnet "22.188.187.0"
Result: Node connectivity passed for subnet "22.188.187.0" with node(s) ZFFR4CB2101


Check: TCP connectivity of subnet "22.188.187.0"
Result: TCP connectivity check passed for subnet "22.188.187.0"


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

WARNING:
Could not find a suitable set of interfaces for the private interconnect
```

```
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.

Check of multicast communication passed.

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

Check: Available memory
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   2.7969GB (2932716.0KB)    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
Result: Swap space check passed

Check: Free disk space for "ZFFR4CB2101:/tmp"
  Path              Node Name     Mount point   Available     Required      Status
  ----------------  ------------  ------------  ------------  ------------  ------------
  /tmp              ZFFR4CB2101   /tmp          1.7661GB      1GB           passed
Result: Free disk space check passed for "ZFFR4CB2101:/tmp"

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

Check: Group existence for "dba"
  Node Name     Status                    Comment
  ------------  ------------------------  ------------------------
  ZFFR4CB2101   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           no            failed
Result: Membership check for user "grid" in group "oinstall" [as Primary] failed

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

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

Check: System architecture
  Node Name     Available                 Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   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
Result: Kernel version check passed

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

Check: Kernel parameter for "maxuproc"
  Node Name     Current                   Required                  Status
  ------------  ------------------------  ------------------------  ----------
  ZFFR4CB2101   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)
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)
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)
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)
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
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
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
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
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
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
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
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
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
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
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
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
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

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
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
Result:
NTP daemon slewing option check passed

Checking NTP daemon's boot time configuration, in file "/etc/rc.tcpip", for slewing option "-x"

Check: NTP daemon's boot time configuration
  Node Name                         Slewing Option Set?
  --------------------------------  ------------------------
  ZFFR4CB2101                       yes
Result:
```

```
NTP daemon's boot time configuration check for slewing option passed

Checking whether NTP daemon or service is using UDP port 123 on all nodes

Check for NTP daemon or service using UDP port 123
  Node Name                             Port Open?
  ------------------------------------  ------------------------
  ZFFR4CB2101                           yes

Result: Clock synchronization check using Network Time Protocol(NTP) passed

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
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
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

Fixup information has been generated for following node(s):
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 cluster services setup was unsuccessful on all the nodes.


[ZFFR4CB2101:root]/tmp/CVU_11.2.0.3.0_grid]> /tmp/CVU_11.2.0.3.0_grid/runfixup.sh
Response file being used is :/tmp/CVU_11.2.0.3.0_grid/fixup.response
Enable file being used is :/tmp/CVU_11.2.0.3.0_grid/fixup.enable
Log file location: /tmp/CVU_11.2.0.3.0_grid/orarun.log
Setting Kernel Parameters...
[ZFFR4CB2101:root]/tmp/CVU_11.2.0.3.0_grid]>
```

基本所有检测项都 pass，可以进行下一步。

3.3 开始安装 grid

3.3.1 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]/]>
```

```
/softtmp/grid/runInstaller -silent  -force -noconfig -IgnoreSysPreReqs -ignorePrereq
-showProgress \
ORACLE_HOSTNAME=ZFFR4CB2101 \
INVENTORY_LOCATION=/u01/app/oraInventory \
SELECTED_LANGUAGES=en \
oracle.install.option=CRS_SWONLY \
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.SYSASMPassword=lhr \
oracle.install.asm.diskGroup.name=OCR \
oracle.install.asm.diskGroup.redundancy=EXTERNAL \
oracle.install.asm.diskGroup.disks=/dev/rhdisk20 \
oracle.install.asm.monitorPassword=lhr \
oracle.installer.autoupdates.option=SKIP_UPDATES
```

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：

```
[grid@ZFFR4CB2101:/home/grid]$ /softtmp/grid/runInstaller -silent  -force -noconfig
-IgnoreSysPreReqs -ignorePrereq  -showProgress \
> ORACLE_HOSTNAME=ZFFR4CB2101 \
ORACLE_HOSTNAME=ZFFR4CB2101 \
> INVENTORY_LOCATION=/u01/app/oraInventory \
> SELECTED_LANGUAGES=en \
> oracle.install.option=CRS_SWONLY \
> 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.SYSASMPassword=lhr \
> oracle.install.asm.diskGroup.name=OCR \
> oracle.install.asm.diskGroup.redundancy=EXTERNAL \
> oracle.install.asm.diskGroup.disks=/dev/rhdisk20 \
> oracle.install.asm.monitorPassword=lhr \
```

```
> oracle.installer.autoupdates.option=SKIP_UPDATES
********************************************************************************

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 4335 MB    Passed
Checking swap space: must be greater than 150 MB.   Actual 8192 MB    Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2016-03-09_04-44-05PM. Please
wait ...[grid@ZFFR4CB2101:/home/grid]$ You can find the log of this install session at:
 /u01/app/oraInventory/logs/installActions2016-03-09_04-44-05PM.log

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

Prepare successful.

Copy files in progress.
.................................................   19% Done.
.................................................   24% Done.
.................................................   29% Done.
.................................................   34% Done.
.................................................   39% Done.
.................................................   44% Done.
.................................................   49% 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 Grid Infrastructure was successful.
Please check '/u01/app/oraInventory/logs/silentInstall2016-03-09_04-44-05PM.log' for more details.

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



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

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

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

查看安装过程中文件的大小：

```
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
0.28    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
0.55    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
4.09    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
6.48    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
9.58    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]> du -sg /u01/app/11.2.0/grid
9.58    /u01/app/11.2.0/grid
[ZFFR4CB2101:root]/]>
```

安装要求，root 执行如下 2 个脚本：

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 dba.
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_2016-03-09_16-49-06.log for the output of root script
[ZFFR4CB2101:root]/]> more /u01/app/11.2.0/grid/install/root_ZFFR4CB2101_2016-03-09_16-49-06.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.

To configure Grid Infrastructure for a Stand-Alone Server run the following command as the root user:
/u01/app/11.2.0/grid/perl/bin/perl -I/u01/app/11.2.0/grid/perl/lib -I/u01/app/11.2.0/grid/crs/install
/u01/app/11.2.0/grid/crs/install/roothas.pl


To configure Grid Infrastructure for a Cluster execute the following command:
/u01/app/11.2.0/grid/crs/config/config.sh
This command launches the Grid Infrastructure Configuration Wizard. The wizard also supports silent operation,
and the parameters can be passed through the response fi
le that is available in the installation media.
```

安装要求，单实例执行脚本/u01/app/11.2.0/grid/perl/bin/perl -I/u01/app/11.2.0/grid/perl/lib -I/u01/app/11.2.0/grid/crs/install /u01/app/11.2.0/grid/crs/install/roothas.pl ：

```
[ZFFR4CB2101:root]/]>/u01/app/11.2.0/grid/perl/bin/perl -I/u01/app/11.2.0/grid/perl/lib
-I/u01/app/11.2.0/grid/crs/install /u01/app/11.2.0/grid/crs/install/roothas.pl
Using configuration parameter file: /u01/app/11.2.0/grid/crs/install/crsconfig_params
Creating trace directory
User ignored Prerequisites during installation
LOCAL ADD MODE
Creating OCR keys for user 'grid', privgrp 'dba'..
Operation successful.
LOCAL ONLY MODE
Successfully accumulated necessary OCR keys.
Creating OCR keys for user 'root', privgrp 'system'..
Operation successful.
CRS-4664: Node zffr4cb2101 successfully pinned.
Adding Clusterware entries to inittab

zffr4cb2101     2016/03/09 16:50:11     /u01/app/11.2.0/grid/cdata/zffr4cb2101/backup_20160309_165011.olr
Successfully configured Oracle Grid Infrastructure for a Standalone Server
[ZFFR4CB2101:root]/]>
```

```
[grid@ZFFR4CB2101:/home/grid]$ crs_stat -t
Name           Type           Target    State     Host
------------------------------------------------------------
ora.cssd       ora.cssd.type  OFFLINE   OFFLINE
ora.diskmon    ora....on.type OFFLINE   OFFLINE
ora.evmd       ora.evm.type   ONLINE    ONLINE    zffr4cb2101
ora.ons        ora.ons.type   OFFLINE   OFFLINE
[grid@ZFFR4CB2101:/home/grid]$
```

3.3.2 静默创建 asm 实例

/u01/app/11.2.0/grid/bin/asmca -silent -configureASM -sysAsmPassword lhr -asmsnmpPassword lhr -diskGroupName OCR -diskList /dev/rhdisk20 -redundancy EXTERNAL

```
[grid@ZFFR4CB2101:/home/grid]$ /u01/app/11.2.0/grid/bin/asmca -silent -configureASM
-sysAsmPassword lhr -asmsnmpPassword lhr -diskGroupName OCR -diskList /dev/rhdisk20
-redundancy EXTERNAL

ASM created and started successfully.

Disk Group OCR created successfully.
```

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.OCR.dg                     ora.diskgroup.type     ONLINE    ONLINE    zffr4cb2101
ora.asm                        ora.asm.type           ONLINE    ONLINE    zffr4cb2101
ora.cssd                       ora.cssd.type          ONLINE    ONLINE    zffr4cb2101
ora.diskmon                    ora.diskmon.type       OFFLINE   OFFLINE
ora.evmd                       ora.evm.type           ONLINE    ONLINE    zffr4cb2101
ora.ons                        ora.ons.type           OFFLINE   OFFLINE
[ZFFR4CB2101:root]/]>
```

```
[grid@ZFFR4CB2101:/home/grid]$ ps -ef|grep asm_
    grid 6553706       1   0 16:52:35      -  0:00 asm_mmnl_+ASM
    grid 6750336       1   0 16:52:34      -  0:00 asm_mmon_+ASM
    grid 6947042       1   0 16:52:34      -  0:00 asm_gmon_+ASM
    grid 7078108       1   0 16:52:34      -  0:00 asm_rbal_+ASM
    grid 7274504       1   0 16:52:34      -  0:00 asm_smon_+ASM
    grid 7405708       1   0 16:52:34      -  0:00 asm_ckpt_+ASM
    grid 7536862       1   0 16:52:34      -  0:00 asm_lgwr_+ASM
    grid 7667964       1   0 16:52:34      -  0:00 asm_mman_+ASM
    grid 7733486       1   0 16:52:34      -  0:00 asm_gen0_+ASM
    grid 7799032       1   0 16:52:34      -  0:00 asm_dbw0_+ASM
    grid 7864574 6225956   0 16:53:55  pts/2  0:00 grep asm_
    grid 7930102       1   0 16:52:34      -  0:00 asm_diag_+ASM
    grid 7995640       1   0 16:52:33      -  0:00 asm_psp0_+ASM
    grid 8061182       1   0 16:52:34      -  0:00 asm_vktm_+ASM
    grid 8126716       1   0 16:52:33      -  0:00 asm_pmon_+ASM
    grid 8192010       1   0 16:52:34      -  0:00 asm_dia0_+ASM
[grid@ZFFR4CB2101:/home/grid]$
```

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 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_16-03-09.16:57:12

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

```
/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_HOME=/u01/app/oracle/product/11.2.0/dbhome_1 \
ORACLE_BASE=/u01/app/oracle \
oracle.install.db.InstallEdition=EE \
oracle.install.db.isCustomInstall=false \
oracle.install.db.DBA_GROUP=dba \
oracle.install.db.OPER_GROUP=dba \
oracle.install.db.isRACOneInstall=false \
oracle.install.db.config.starterdb.type=GENERAL_PURPOSE \
SECURITY_UPDATES_VIA_MYORACLESUPPORT=false \
oracle.installer.autoupdates.option=SKIP_UPDATES
```

同样，复制脚本的时候注意最后不能加回车符号：

```
[oracle@ZFFR4CB2101:/home/oracle]$ /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,zh_CN \
> ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1 \
> ORACLE_BASE=/u01/app/oracle \
> oracle.install.db.InstallEdition=EE \
> oracle.install.db.isCustomInstall=false \
> oracle.install.db.DBA_GROUP=dba \
> oracle.install.db.OPER_GROUP=dba \
> oracle.install.db.isRACOneInstall=false \
> oracle.install.db.config.starterdb.type=GENERAL_PURPOSE \
> SECURITY_UPDATES_VIA_MYORACLESUPPORT=false \
> oracle.installer.autoupdates.option=SKIP_UPDATES
********************************************************************************

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? [y/n] (n)
y

Starting Oracle Universal Installer...

Checking Temp space: must be greater than 190 MB.   Actual 4331 MB    Passed
Checking swap space: must be greater than 150 MB.   Actual 8192 MB    Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2016-03-09_05-16-47PM. Please
wait ...[oracle@ZFFR4CB2101:/home/oracle]$ You can find the log of this install session at:
 /u01/app/oraInventory/logs/installActions2016-03-09_05-16-47PM.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.
.................................................   50% Done.
.................................................   55% Done.
.................................................   60% Done.
.................................................   65% Done.
.................................................   70% Done.

Copy files successful.

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/silentInstall2016-03-09_05-16-47PM.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


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

Execute Root Scripts successful.
Successfully Setup Software.

[oracle@ZFFR4CB2101:/home/oracle]$
```

```
[ZFFR4CB2101:root]/]> du -sg /u01/app/oracle
0.00    /u01/app/oracle
[ZFFR4CB2101:root]/]> du -sg /u01/app/oracle
1.49    /u01/app/oracle
[ZFFR4CB2101:root]/]> du -sg /u01/app/oracle
6.65    /u01/app/oracle
[ZFFR4CB2101:root]/]> du -sg /u01/app/oracle
7.10    /u01/app/oracle
[ZFFR4CB2101:root]/]> du -sg /u01/app/oracle
7.10    /u01/app/oracle
[ZFFR4CB2101:root]/]>
```

执行 root.sh 脚本：

```
[ZFFR4CB2101:root]/u01/app/oracle]> /u01/app/oracle/product/11.2.0/dbhome_1/root.sh
Check /u01/app/oracle/product/11.2.0/dbhome_1/install/root_ZFFR4CB2101_2016-03-09_17-23-12.log for the output
of root script

[ZFFR4CB2101:root]/u01/app/oracle]>
[ZFFR4CB2101:root]/u01/app/oracle]> more
/u01/app/oracle/product/11.2.0/dbhome_1/install/root_ZFFR4CB2101_2016-03-09_17-23-12.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.
[ZFFR4CB2101:root]/u01/app/oracle]>
```

```
--------- 若报如下错误
SEVERE:OUI-10182:The effective user ID does not match the owner of the file, or the process
is not the super-user; the system indicates that super-user privilege is required.
[FATAL] [INS-10008] Session initialization failed
   CAUSE: An unexpected error occured while initializing the session.
   ACTION: Contact Oracle Support Services or refer logs
   SUMMARY:
```

```
      -

解决办法：新建  /etc/oraInst.loc ，修改 inst_group=oinstall
--在/etc 目录下创建一个名为 oraInst.loc 的文件,文件中的内容(两行代码)如下：
inventory_loc=/u01/app/oraInventory
inst_group=oinstall
--输入下面的命令在 oraInst.loc 文件上设置合适的拥有者，组和权限：
[root@ORCLTEST ~] chown oracle:oinstall /etc/oraInst.loc
[root@ORCLTEST ~] chmod 664 /etc/oraInst.loc
```

4.3 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]$ ./crsstat_lhr.sh
Name                                     Type                          Target     State      Host
-----------------------------------------------------------------------------------------------
ora.LISTENER.lsnr                        ora.listener.type             ONLINE     ONLINE     zffr4cb2101
ora.OCR.dg                               ora.diskgroup.type            ONLINE     ONLINE     zffr4cb2101
ora.asm                                  ora.asm.type                  ONLINE     ONLINE     zffr4cb2101
ora.cssd                                 ora.cssd.type                 ONLINE     ONLINE     zffr4cb2101
ora.diskmon                              ora.diskmon.type              OFFLINE    OFFLINE
ora.evmd                                 ora.evm.type                  ONLINE     ONLINE     zffr4cb2101
ora.ons                                  ora.ons.type                  OFFLINE    OFFLINE
[grid@ZFFR4CB2101:/home/grid]$
```

第 5 章　dbca 静默方式建库

```
[grid@ZFFR4CB2101:/home/grid]$ sqlplus / as sysasm

SQL*Plus: Release 11.2.0.3.0 Production on Wed Mar 9 17:25:26 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 Automatic Storage Management option

SQL> CREATE DISKGROUP DATA external redundancy DISK '/dev/rhdisk21';

Diskgroup created.

SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Automatic Storage Management option
```

```
[grid@ZFFR4CB2101:/home/grid]$ su - oracle
oracle's Password:

[oracle@ZFFR4CB2101:/home/oracle]$ dbca -silent -createDatabase -templateName General_Purpose.dbc
-gdbname ora11g -sid ora11g -sysPassword lhr -systemPassword lhr -responseFile NO_VALUE
-datafileDestination 'DATA/' -redoLogFileSize 50 -recoveryAreaDestination 'DATA/'
-storageType ASM -asmsnmpPassword lhr  -diskGroupName 'DATA'  -characterSet ZHS16GBK
-nationalCharacterSet AL16UTF16 -sampleSchema true -memoryPercentage 30 -totalMemory 200
-databaseType OLTP -emConfiguration NONE -automaticMemoryManagement true

Copying database files
1% complete
3% complete
10% complete
17% complete
24% complete
35% complete
Creating and starting Oracle instance
37% complete
42% complete
47% complete
52% complete
53% complete
56% complete
58% complete
Registering database with Oracle Restart
64% complete
Completing Database Creation
68% complete
71% complete
75% complete
85% complete
96% complete
100% complete
Look at the log file "/u01/app/oracle/cfgtoollogs/dbca/ora11g/ora11g.log" for further details.
[oracle@ZFFR4CB2101:/home/oracle]$
[oracle@ZFFR4CB2101:/home/oracle]$

[oracle@ZFFR4CB2101:/home/oracle]$ crsctl stat res -t
--------------------------------------------------------------------------------
NAME           TARGET  STATE        SERVER                   STATE_DETAILS
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.DATA.dg
               ONLINE  ONLINE       zffr4cb2101
ora.LISTENER.lsnr
               ONLINE  ONLINE       zffr4cb2101
ora.OCR.dg
               ONLINE  ONLINE       zffr4cb2101
ora.asm
               ONLINE  ONLINE       zffr4cb2101              Started
ora.ons
               OFFLINE OFFLINE      zffr4cb2101
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.cssd
      1        ONLINE  ONLINE       zffr4cb2101
ora.diskmon
      1        OFFLINE OFFLINE
ora.evmd
      1        ONLINE  ONLINE       zffr4cb2101
ora.ora11g.db
      1        ONLINE  ONLINE       zffr4cb2101              Open
```

```
[oracle@ZFFR4CB2101:/home/oracle]$ ./crsstat_lhr.sh
Name                                     Type                      Target     State      Host
-----------------------------------------------------------------------------------------
ora.DATA.dg                              ora.diskgroup.type        ONLINE     ONLINE     zffr4cb2101
ora.LISTENER.lsnr                        ora.listener.type         ONLINE     ONLINE     zffr4cb2101
ora.OCR.dg                               ora.diskgroup.type        ONLINE     ONLINE     zffr4cb2101
ora.asm                                  ora.asm.type              ONLINE     ONLINE     zffr4cb2101
ora.cssd                                 ora.cssd.type             ONLINE     ONLINE     zffr4cb2101
ora.diskmon                              ora.diskmon.type          OFFLINE    OFFLINE
ora.evmd                                 ora.evm.type              ONLINE     ONLINE     zffr4cb2101
ora.ons                                  ora.ons.type              OFFLINE    OFFLINE
ora.ora11g.db                            ora.database.type         ONLINE     ONLINE     zffr4cb2101

[oracle@ZFFR4CB2101:/home/oracle]$ ORACLE_SID=ora11g
[oracle@ZFFR4CB2101:/home/oracle]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on Thu Mar 10 10:03:28 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, 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
---------- --------- -------------------- ------------ ---
         1 ORA11G    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 has -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
```

About Me

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