



Oracle 数据库教程

—— DBA 强化实战系列第四期：在企业私有云 vmware 上部署 oracle11.2.0.4 rac

随着企业私有云的普及和发展,现在越来越多的人开始在云平台上建立大型应用。有的企业也开始把 oracle rac 搭建在企业私有云上面,我们也接到了这样的一个活,到现场为客户实施。现在我们就在私有云上面搭建 rac 的详细步骤进行说明。

本案例是基于 vmware5.1 虚拟平台,操作系统采用的 centos6.4 搭建一个 oracle11.2.0.4 rac

1、在虚拟机上安装操作系统, centos6.4, 这个问题都不是很大

安装的时候, 特别要注意, 配置 dns。虽然 dns 不是必须的, 但我们还是建议, 在安装的过程中, 把这个配置进去, 这样可以配置多个 scan-ip, 便于单 ip 故障!

在后面配置也没有问题,

主要设置如下:

```
[root@mytest1 etc]# cat resolv.conf
# Generated by NetworkManager
search hdjt.hdad.local
nameserver 10.10.100.8
nameserver 10.10.100.9

[root@mytest2 network-scripts]# cat ifcfg-eth0
DEVICE=eth0
TYPE=Ethernet
UUID=46b7400b-8087-4298-8f10-4a5532ce42b4
ONBOOT=yes
NM_CONTROLLED=yes
BOOTPROTO=none
HWADDR=00:50:56:95:45:B8
IPADDR=10.10.92.182
PREFIX=24
GATEWAY=10.10.92.254
DNS1=10.10.100.8
```



```
DNS2=10.10.100.9
DOMAIN=hdjt.hdad.local
DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="System eth0"
```

注意：基本上配置这两个地方就没问题了，本小节中两台机器均要配置！

2、配置操作系统环境

—编辑语言环境

```
[root@mytest1 etc]# cd /etc/sysconfig
[root@mytest1 sysconfig]# vi i18n

#LANG="zh_CN.UTF-8"
LANG="en_US.UTF-8"
```

通常情况下，配置成英文环境较好。

—编辑 hosts 文件

```
[root@mytest1 bin]# vi /etc/hosts

#public ip
10.10.92.181 mytest1
10.10.92.182 mytest2

#priv ip
10.10.100.181 mytest1-private
10.10.100.182 mytest2-private

#vip ip
10.10.92.151 mytest1-vip
10.10.92.152 mytest2-vip

#scan ip
10.10.92.100 mytest-scan
```

—编辑系统参数文件

编辑系统参数

```
[root@mytest1 ~]# vi /etc/sysctl.conf

# Controls the maximum shared segment size, in bytes
#kernel.shmmax = 68719476736
```



```
# Controls the maximum number of shared memory segments, in pages
#kernel.shmall = 4294967296
```

```
fs.aio-max-nr = 1048576
fs.file-max = 6815744
kernel.shmall = 8388608
kernel.shmmax = 19327352832
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048586
vm.min_free_kbytes = 102400
```

```
[root@mytest1 ~]# vi /etc/security/limits.conf
```

```
oracle soft nproc 2047
oracle hard nproc 16384
oracle soft nofile 1024
oracle hard nofile 65536
oracle hard stack 10240
grid soft nproc 2047
grid hard nproc 16384
grid soft nofile 1024
grid hard nofile 65536
grid hard stack 10240
```

这里的两个用户均需要编辑，否则在切换用户时会报错

```
[root@mytest1 ~]# vi /etc/selinux/config
```

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
```



```
SELINUX=disabled
# SELINUXTYPE= can take one of these two values:
#     targeted - Targeted processes are protected,
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted

[root@mytest1 ~]# vi /etc/pam.d/login

##PAM-1.0

auth [user_unknown=ignore success=ok ignore=ignore default=bad] pam_securetty.so

auth            include            system-auth

account         required           pam_nologin.so

account         include            system-auth

password        include            system-auth

# pam_selinux.so close should be the first session rule
session         required           pam_selinux.so close

session         required           pam_loginuid.so

session         optional          pam_console.so

# pam_selinux.so open should only be followed by sessions to be executed in the user context
session         required           pam_selinux.so open

session         required           pam_namespace.so

session         optional          pam_keyinit.so force revoke

session         include            system-auth

-session        optional          pam_ck_connector.so

session         required           pam_limits.so
```

注意：在本小节中，两台机上都进行相同的配置即可

3、安装必须的补丁包

--配置 yum 源

```
[root@mytest1 u02]# mv /etc/yum.repos.d/CentOS-Base.repo
```

--查看光盘挂载是否有问题

```
[root@mytest1 u02]# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sda2	48G	6.6G	39G	15%	/
tmpfs		16G	76K	16G	1% /dev/shm
/dev/sr0	4.1G	4.1G		0 100%	/media/CentOS_6.4_Final



--编辑 yum 配置文件，如下所示

```
-bash: /etc/yum.repos.d/CentOS-Media.repo: Permission denied
```

```
[root@mytest1 u02]# vi /etc/yum.repos.d/CentOS-Media.repo
```

```
file:///media/cdrom/
```

```
file:///media/cdrecorder/
```

```
# CentOS-Media.repo
```

```
#
```

```
# This repo can be used with mounted DVD media, verify the mount point for
```

```
# CentOS-6. You can use this repo and yum to install items directly off the
```

```
# DVD ISO that we release.
```

```
#
```

```
# To use this repo, put in your DVD and use it with the other repos too:
```

```
# yum --enablerepo=c6-media [command]
```

```
#
```

```
# or for ONLY the media repo, do this:
```

```
#
```

```
# yum --disablerepo=\* --enablerepo=c6-media [command]
```

```
[c6-media]
```

```
name=CentOS-$releasever - Media
```

```
baseurl=file:///media/CentOS_6.4_Final
```

```
gpgcheck=1
```

```
enabled=1
```

```
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-6
```

以下补丁包是必须安装的

```
compat-libstdc++-33-3.2.3-69.el6.i686.rpm
```

```
compat-libstdc++-33-3.2.3-69.el6.x86_64.rpm
```

```
gcc-4.4.4-13.el6
```

```
gcc-4.4.7-3.el6.x86_64.rpm
```

```
gcc-c++-4.4.7-3.el6.x86_64.rpm
```

```
glibc-2.12-1.107.el6.i686.rpm
```

```
glibc-devel-2.12-1.107.el6.x86_64.rpm
```

```
glibc-devel-2.12-1.107.el6.i686.rpm
```

```
ksh-20100621-19.el6.x86_64.rpm
```

```
libgcc-4.4.7-3.el6.i686.rpm
```

```
libgcc-4.4.7-3.el6.x86_64.rpm
```



```
libstdc++-docs-4.4.7-3.el6.x86_64.rpm
libstdc++-devel-4.4.7-3.el6.x86_64.rpm
libstdc++-4.4.7-3.el6.x86_64.rpm
libstdc++-devel-4.4.7-3.el6.i686.rpm
libaio-0.3.107-10.el6.i686.rpm
libaio-0.3.107-10.el6.x86_64.rpm
libaio-devel-0.3.107-10.el6.i686.rpm
libaio-devel-0.3.107-10.el6.x86_64.rpm
elfutils-libelf-0.152-1.el6.i686.rpm
```

另外，pdksh-5.2.14-36.el5.i386.rpm，也要安装，如果找不到，也可以不安装，与ksh是冲突的！
我是两个都安装的，在预检查的时候，会提示到这个包！

注意：安装补丁包，两台机均要进行操作

4、创建 rac 用户组及用户

两台机器上创建相同的用户，命令及 id 如下：

```
[root@mytest1 ~] groupadd -g 501 oinstall
[root@mytest1 ~] groupadd -g 502 dba
[root@mytest1 ~] groupadd -g 503 oper
[root@mytest1 ~] groupadd -g 504 asmadmin
[root@mytest1 ~] groupadd -g 505 asmoper
[root@mytest1 ~] groupadd -g 506 asmdba
[root@mytest1 ~] useradd -g oinstall -G dba,asmdba,oper oracle
[root@mytest1 ~] useradd -g oinstall -G asmadmin,asmdba,asmoper,oper,dba grid

[root@mytest1 ~]# passwd oracle
Changing password for user oracle.
New password:
BAD PASSWORD: it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.

[root@mytest1 ~]# passwd grid
Changing password for user grid.
New password:
BAD PASSWORD: it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
```



5、建目录并授权

在两台机器上建成相同的目录

```
[root@mytest1 ~]# mkdir -p /u01/app/oracle/product/11.2.0/db1
[root@mytest1 ~]# mkdir -p /u01/app/grid/product/11.2.0/crs
[root@mytest1 ~]# chown -R grid:oinstall /u01/app/grid
[root@mytest1 ~]# chown -R oracle:oinstall /u01/app/oracle
[root@mytest1 ~]# chmod -R 775 /u01/app
```

6、编辑集群用户参数

参数编辑，要求在两台机器上分别对 oracle\grid 进行编辑配置

```
[root@mytest1 ~]# su - grid
[grid@mytest1 ~]$ vi .bash_profile

PATH=$PATH:$HOME/bin
TMP=/tmp; export TMP
TMPDIR=$TMP; export TMPDIR
ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE
ORACLE_HOME=$ORACLE_BASE/product/11.2.0/db1; export ORACLE_HOME
ORACLE_SID=+ASM; export ORACLE_SID
ORACLE_TERM=xterm; export ORACLE_TERM
PATH=/usr/sbin:$PATH; export PATH
PATH=$ORACLE_HOME/bin:$PATH; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib; export CLASSPATH
NLS_DATE_FORMAT="yyyy-mm-dd HH24:MI:SS"; export NLS_DATE_FORMAT
NLS_LANG=AMERICAN_AMERICA.ZHS16GBK;export NLS_LANG
export PATH

if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 65536
    else
        ulimit -u 16384 -n 65536
    fi
fi

umask 022

fi
```



```
[root@mytest1 ~]# su - oracle
[oracle@mytest1 ~]$ vi .bash_profile
PATH=$PATH:$HOME/bin
TMP=/tmp; export TMP
TMPDIR=$TMP; export TMPDIR
ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE
ORACLE_HOME=$ORACLE_BASE/product/11.2.0/db1; export ORACLE_HOME
ORACLE_SID=+ASM; export ORACLE_SID
ORACLE_TERM=xterm; export ORACLE_TERM
PATH=/usr/sbin:$PATH; export PATH
PATH=$ORACLE_HOME/bin:$PATH; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib; export CLASSPATH
NLS_DATE_FORMAT="yyyy-mm-dd HH24:MI:SS"; export NLS_DATE_FORMAT
NLS_LANG=AMERICAN_AMERICA.ZHS16GBK;export NLS_LANG
export PATH
if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 65536
    else
        ulimit -u 16384 -n 65536
    fi
    umask 022
fi
```

7、配置 oracle\grid 信任

—停防火墙

```
[root@mytest1 ~]# service iptables stop
iptables: Flushing firewall rules: [ OK ]
iptables: Setting chains to policy ACCEPT: nat mangle filter [ OK ]
iptables: Unloading modules: [ OK ]
[root@mytest1 ~]# chkconfig iptables off
```

在两台机器上都关闭防火墙

—配置 grid 信任

```
[root@mytest1 ~]# su - grid
```




```
[grid@mytest1 ~]$ mkdir ~/.ssh
[grid@mytest1 ~]$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/grid/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/grid/.ssh/id_rsa.
Your public key has been saved in /home/grid/.ssh/id_rsa.pub.
The key fingerprint is:
55:28:6c:8b:d2:4a:ed:7b:54:70:52:7e:32:2b:71:fa grid@mytest1
```

The key's randomart image is:

```
+--[ RSA 2048 ]-----+
|           . . . . .           |
|           * . o .           |
|        o o . ** .           |
|      o + . = . =           |
|    . +   S . .           |
|    . . . o           |
|           o   E           |
|           . .           |
|           .           |
+-----+
```

```
[grid@mytest1 ~]$ ssh-keygen -t dsa
Generating public/private dsa key pair.
Enter file in which to save the key (/home/grid/.ssh/id_dsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/grid/.ssh/id_dsa.
Your public key has been saved in /home/grid/.ssh/id_dsa.pub.
The key fingerprint is:
64:1d:fa:6c:94:44:23:64:07:cc:01:51:52:0e:00:13 grid@mytest1
```

The key's randomart image is:

```
+--[ DSA 1024 ]-----+
|   Eo..=00+*           |
|   .   =0* +           |
+-----+
```



```
|          = +          |
|          o +          |
|          S +          |
|          .            |
|                      |
|                      |
|                      |
+-----+
```

以上两步，分别在两台机器上进行配置

```
[grid@mytest1 ~]$ touch ~/.ssh/authorized_keys
[grid@mytest1 ~]$ cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
[grid@mytest1 ~]$ cat ~/.ssh/id_dsa.pub >> ~/.ssh/authorized_keys
[grid@mytest1 ~]$ ssh mytest2 cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
The authenticity of host 'mytest2 (10.10..92.182)' can't be established.
RSA key fingerprint is 6f:ef:66:b3:32:dd:c1:19:62:b1:4c:dc:d6:cd:ed:3d.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mytest2,10.10..92.182' (RSA) to the list of known hosts.
grid@mytest2's password:
[grid@mytest1 ~]$ ssh mytest2 cat ~/.ssh/id_dsa.pub >> ~/.ssh/authorized_keys
grid@mytest2's password:
[grid@mytest1 ~]$ scp ~/.ssh/authorized_keys mytest2:~/.ssh/authorized_keys
grid@mytest2's password:
authorized_keys                                     100%
1988          1.9KB/s   00:00
```

这几步，只需要在一台机器上操作就行了

```
[grid@mytest1 ~]$ ssh mytest1 date
The authenticity of host 'mytest1 (10.10..92.181)' can't be established.
RSA key fingerprint is be:43:7f:84:3f:5a:8c:b9:20:43:be:8d:b4:4e:eb:b6.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mytest1,10.10..92.181' (RSA) to the list of known hosts.
Fri Apr 11 16:55:02 CST 2014
[grid@mytest1 ~]$ ssh mytest2 date
Fri Apr 11 16:55:06 CST 2014
[grid@mytest1 ~]$ ssh mytest2-private date
The authenticity of host 'mytest2-private (10.10..100.182)' can't be established.
```



```
RSA key fingerprint is 6f:ef:66:b3:32:dd:c1:19:62:b1:4c:dc:d6:cd:ed:3d.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mytest2-private,10.10..100.182' (RSA) to the list of known hosts.
Fri Apr 11 16:55:16 CST 2014
[grid@mytest1 ~]$ ssh mytest1-private date
The authenticity of host 'mytest1-private (10.10..100.181)' can't be established.
RSA key fingerprint is be:43:7f:84:3f:5a:8c:b9:20:43:be:8d:b4:4e:eb:b6.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mytest1-private,10.10..100.181' (RSA) to the list of known hosts.
Fri Apr 11 16:55:22 CST 2014
```

--配置 oracle 信任

与上面的方法完全相同，就不再列举出来了

8、配置共享盘

首先要规划一下。需要三个盘来建 crsdg，每个盘分配 4g，然后归档、重做日志、数据、索引、系统这一很重要，需要关闭虚拟机，因为涉及到对虚拟机的参数的配置问题，是由图形界面配置的，我把步骤说一下：

--选中你要编辑的虚拟机，点击编辑虚拟机

--在新的界面中，点击添加

--在新的界面中，选择磁盘，点击下一步

--在新的界面中，选择创建新的虚拟磁盘，点击下一步

--在新的界面中，输入磁盘大小，选择厚置备置零，选择你的磁盘所要放置的底层存储

--在新的界面中，选择虚拟设备节点。如果系统盘选择的是 scsi (0:n) ，那么这里建议选择 1:n 的模式，这样会生成一个新的 scsi 控制器。

--到最后完成，就建成了一个虚拟磁盘，这个需要点时间

回到上述步骤第一个界面，点击新生成的 scsi 控制器，可以看到 scsi 共享总线编辑，选择物理，虚拟磁盘可以在任何服务器上的虚拟机共享

在另一台虚拟机上共享磁盘

--选中你要编辑的虚拟机，点击编辑虚拟机

--在新的界面中，点击添加

--在新的界面中，选择磁盘，点击下一步

--在新的界面中，选择使用现有的虚拟磁盘

--在弹出来的选项框中，根据上面所选的存储及虚拟机名称，找到相应的目录，然后把磁盘添加进去

--在新的界面中，选择虚拟设备节点。这里要与上面的对应起来，保持一致。



完成了磁盘添加后，需要在配置参数中加入参数

--选中你要编辑的虚拟机，点击编辑虚拟机

--在弹出的界面中，左上角，点击选项

--在选项的范围内，点击常规

--然后你会看到配置参数

--点击配置参数，加入以下内容，分别填到每行的两个格中，有多少个盘，填多少！两台虚拟机均要添加

```
scsil:0.sharing "multi-writer"
```

```
scsil:1.sharing "multi-writer"
```

```
scsil:2.sharing "multi-writer"
```

```
scsil:3.sharing "multi-writer"
```

```
scsil:4.sharing "multi-writer"
```

```
scsil:5.sharing "multi-writer"
```

注意，要跳过 scsil:7.sharing

9、绑定裸设备

我们使用的是 udev，具体操作如下：

--磁盘分区

```
[root@mytest1 ~]# fdisk /dev/sdb
```

```
Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel
```

```
Building a new DOS disklabel with disk identifier 0x646bfece.
```

```
Changes will remain in memory only, until you decide to write them.
```

```
After that, of course, the previous content won't be recoverable.
```

```
Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)
```

```
WARNING: DOS-compatible mode is deprecated. It's strongly recommended to
```

```
switch off the mode (command 'c') and change display units to
sectors (command 'u').
```

```
Command (m for help): n
```

```
Command action
```

```
 e   extended
```

```
 p   primary partition (1-4)
```

```
p
```

```
Partition number (1-4): 1
```

```
First cylinder (1-1017, default 1):
```

```
Using default value 1
```



Last cylinder, +cylinders or +size{K,M,G} (1-1017, default 1017):

Using default value 1017

Command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

Syncing disks.

其它盘也进行如此操作即可

--绑定裸设备

```
[root@mytest1 ~]# cd /etc/udev
```

```
[root@mytest1 udev]# cd rules.d/
```

```
[root@mytest1 rules.d]# vi 60-raw.rules
```

```
# Enter raw device bindings here.
```

```
#
```

```
# An example would be:
```

```
# ACTION=="add", KERNEL=="sda", RUN+="/bin/raw /dev/raw/raw1 %N"
```

```
# to bind /dev/raw/raw1 to /dev/sda, or
```

```
# ACTION=="add", ENV{MAJOR}=="8", ENV{MINOR}=="1", RUN+="/bin/raw /dev/raw/raw2 %M %m"
```

```
# to bind /dev/raw/raw2 to the device with major 8, minor 1.
```

```
ACTION=="add", KERNEL=="sdb1", RUN+="/bin/raw /dev/raw/raw1 %N"
```

```
ACTION=="add", KERNEL=="sdc1", RUN+="/bin/raw /dev/raw/raw2 %N"
```

```
ACTION=="add", KERNEL=="sdd1", RUN+="/bin/raw /dev/raw/raw3 %N"
```

```
.....
```

```
KERNEL=="raw[1-8]", OWNER="grid", GROUP="dba", MODE="660"
```

```
[root@mytest1 yum.repos.d]# start_udev
```

```
[root@mytest1 yum.repos.d]# raw -qa
```

```
/dev/raw/raw1: bound to major 8, minor 17
```

```
/dev/raw/raw2: bound to major 8, minor 33
```

```
/dev/raw/raw3: bound to major 8, minor 49
```

```
/dev/raw/raw4: bound to major 8, minor 65
```

```
/dev/raw/raw5: bound to major 8, minor 81
```

```
/dev/raw/raw6: bound to major 8, minor 97
```

```
/dev/raw/raw7: bound to major 8, minor 113
```

```
/dev/raw/raw8: bound to major 8, minor 129
```

--在另一个节点执行，对磁盘进行确认



```
[root@mytest2 ~]# partprobe
```

执行此命令后，可以看到在另一个节点磁盘也认到了

然后像第一个节点，编辑 60-raw.rules 文件

```
[root@mytest2 ~]# start_udev
```

至此，准备工作基本结束

10、安装集群软件

--上传安装文件

```
p13390677_112040_Linux-x86-64_3of7.zip
```

```
p13390677_112040_Linux-x86-64_2of7.zip
```

```
p13390677_112040_Linux-x86-64_1of7.zip
```

3 是集群安装包，1 和 2 都是 rdbms 安装包

解压软件，rdbms 安装包，先解压第一个，再解压第二个

--验证集群安装环境

```
[grid@mytest1 grid]$ ./runcluvfy.sh stage -pre crsinst -n mytest1,mytest2 -fixup -verbose
```

```
Performing pre-checks for cluster services setup
```

```
Checking node reachability...
```

```
Check: Node reachability from node "mytest1"
```

Destination	
Node	Reachable?
-----	-----
mytest2	yes
mytest1	yes

```
Result: Node reachability check passed from node "mytest1"
```

```
Checking user equivalence...
```

```
Check: User equivalence for user "grid"
```

Node	
Name	Status
-----	-----
mytest2	passed



mytest1 passed

```
Result: User equivalence check passed for user "grid"
domain entry in file "/etc/resolv.conf" is consistent across nodes
Checking if search entry in file "/etc/resolv.conf" is consistent across the nodes...
search entry in file "/etc/resolv.conf" is consistent across nodes
Checking file "/etc/resolv.conf" to make sure that only one search entry is defined
All nodes have one search entry defined in file "/etc/resolv.conf"
Checking all nodes to make sure that search entry is "hdjt.hdad.local" as found on node "mytest2"
All nodes of the cluster have same value for 'search'
Checking DNS response time for an unreachable node
```

Node	Status
mytest2	passed
mytest1	passed

The DNS response time for an unreachable node is within acceptable limit on all nodes

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

Check: Time zone consistency

Result: Time zone consistency check passed

Pre-check for cluster services setup was unsuccessful on all the nodes.

到最后，说我的没有成功，一个是 dns，主要是因为可能域服务器忙，另一个是 ntp 服务，但这个并不影响的

--安装集群软件

打开 xmanager 的 passive

```
[grid@mytest1 u02]$ export DISPLAY=172.17.255.25:0.0
```

```
[grid@mytest1 grid]$ ./runInstaller
```

具体步骤如下：

--选择 skip software updates

--选择 install and configure oracle grid infrastructure for a Cluster



	ONLINE	ONLINE	mytest2
ora. REDODG1. dg			
	ONLINE	ONLINE	mytest1
	ONLINE	ONLINE	mytest2
ora. REDODG2. dg			
	ONLINE	ONLINE	mytest1
	ONLINE	ONLINE	mytest2
ora. asm			
	ONLINE	ONLINE	mytest1
Started			
	ONLINE	ONLINE	mytest2
Started			
ora. gsd			
	ONLINE	OFFLINE	mytest1
	ONLINE	OFFLINE	mytest2
ora. net1. network			
	ONLINE	ONLINE	mytest1
	ONLINE	ONLINE	mytest2
ora. ons			
	ONLINE	ONLINE	mytest1
	ONLINE	ONLINE	mytest2

Cluster Resources



```
-----  
ora.LISTENER_SCAN1.lsnr  
      1                ONLINE  ONLINE                mytest2  
  
ora.mytest1.vip  
      1                ONLINE  ONLINE                mytest1  
  
ora.mytest2.vip  
      1                ONLINE  ONLINE                mytest2  
  
ora.cvu  
      1                ONLINE  ONLINE                mytest1  
  
ora.oc4j  
      1                ONLINE  ONLINE                mytest1  
  
ora.scan1.vip  
      1                ONLINE  ONLINE                mytest2
```

--安装 rdbms 软件

如果能够成功安装集群软件，安装这个应该没什么问题，直接按提示走就行了

--建立规划好的 dg

```
[grid@mytest1 bin]$ ./asmca
```

图形界面操作，问题不大

--建立数据库

在这一步，遇到了麻烦，开始始终认不到 dg，感觉挺奇怪，经检查其它的安装都没有问题。后来确认到是组不对！

```
[root@mytest1 ~]# id oracle  
uid=500(oracle) gid=501(oinstall) groups=501(oinstall), 502(dba), 503(oper), 506(asmdba)  
[root@mytest1 ~]# id grid  
uid=501(grid) gid=501(oinstall)  
groups=501(oinstall), 502(dba), 503(oper), 504(asmadmin), 505(asmoper), 506(asmdba)  
[root@mytest1 ~]# usermod -a -G asmadmin oracle  
[root@mytest1 ~]# cd /u01/app/grid/product/11.2.0/crs/bin  
[root@mytest1 bin]# chmod +s oracle
```



再次执行时，问题得到解决！

更多文章可见：公司官网：<http://www.farbest.net>