# Linux 系统下 oracle 的安装备份与还原

## 一【实验目标】

● 学习并掌握 Linux 系统下 oracle 的安装与备份

## 二【实验环境】

● 实验机环境：mac linux
● 实验拓扑：如图 1 所示。

图 1 实验拓扑

## 三【实验原理】

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为了防止

## 四【实

**1、**

```
yangbin@ubuntu:~$ grep MemTotal /proc/meminfo
MemTotal:        1707548 kB
yangbin@ubuntu:~$ grep SwapTotal /proc/meminfo
SwapTotal:       1046524 kB
yangbin@ubuntu:~$ free -m
             total       used       free     shared    buffers     cached
Mem:          1667       1326        340          6         51        729
-/+ buffers/cache:        546       1121
Swap:         1021          0       1021
```

**swap 空间不够需要扩展**

```
Password:
root@ubuntu:/home/yangbin# cd /
root@ubuntu:/# mkdir /swap
root@ubuntu:/# cd /swap
root@ubuntu:/swap# dd if=dev/zero of=swap bs=1M count=1k
dd: failed to open 'dev/zero': No such file or directory
root@ubuntu:/swap# dd if=dev/zero of=swap bs=1M count=1k
dd: failed to open 'dev/zero': No such file or directory
root@ubuntu:/swap# sudo dd if=dev/zero of=swap bs=1024 count=2000000
dd: failed to open 'dev/zero': No such file or directory
root@ubuntu:/swap# sudo dd if=/dev/zero of=swap bs=1024 count=2000000
2000000+0 records in
2000000+0 records out
2048000000 bytes (2.0 GB) copied, 11.8529 s, 173 MB/s
root@ubuntu:/swap# sudo mkswap -f swap
Setting up swapspace version 1, size = 1999996 KiB
no label, UUID=0d7960ba-9b77-4fbf-ab7b-121818a6f44c
root@ubuntu:/swap# sudo swapon swap
root@ubuntu:/swap# free -m
             total       used       free     shared    buffers     cached
Mem:          1667       1543        124          5          1       1029
-/+ buffers/cache:        511       1155
Swap:         2975         64       2910
root@ubuntu:/swap#
```

## 2、修改操作系统核心参数

### (1) 修改用户的 shell 限制

命令：vi /etc/security/limits.conf,按 i 进入编辑模式

```
root@ubuntu:/# vi /etc/security/limits.conf
```

加入以下内容

```
oracle soft nproc 2047

oracle hard nproc 16384

oracle soft nofile 1024

oracle hard nofile 65536
```

### (2) 修改 login 文件

命令：vi /etc/pam.d/login,按 i 进入编辑模式

```
root@ubuntu:/# vi /etc/pam.d/login
```

加入以下内容

```
session required /lib/security/pam_limits.so

session required pam_limits.so
```

### (3) 修改 Linux 内核

命令：vi /etc/sysctl.conf 按 i 进入编辑模式

```
root@ubuntu:/# vi /etc/sysctl.conf
```

命令：sysctl –p 激活加入的内容

### (4) 编辑 profile

命令：vi /etc/profile 按 i 进入编辑模式

```
root@ubuntu:/# vi /etc/profile
```

加入以下内容

```
if [ $USER = "oracle" ]; then

if [ $SHELL = "/bin/ksh" ]; then

ulimit -p 16384

ulimit -n 65536

else

ulimit -u 16384 -n 65536

fi

fi
```

### 3、 创建 oracle 组和 oracle 用户

**(1)** 创建用于安装和维护 Oracle 10g 软件的 Linux 组和用户帐户。用户帐户将称为 oracle，而组将称为 oinstall（用于软件安装） 和 dba（用于数据库管理）。

命令 1：groupadd oinstall

```
root@ubuntu:/# groupadd oinstall
```

命令 2：groupadd dba

```
root@ubuntu:/# groupadd dba
```

命令 3：useradd -m -g oinstall -G dba oracle –poracle (p 表示添加帐号密码)（截图在下

张图的第一行）

(2) 创建 oracle 目录并改变目录权限

以 root 用户身份执行以下命令：

```
mkdir –p   /u01/app/oracle              # oracle根目录，-p 表示递归建立目录
mkdir –p   /u02/oradata                 # oracle数据文件存放目录
chown –R   oracle:oinstall   /u01
chown –R   oracle:oinstall   /u02
chmod –R 775   /u01
chmod –R 775   /u02
```

截图截糊了，当时没有发现。。。。

## 4 导出 X 图形界面 oracle 用户

命令：#xhost +



## 5 设置环境变量

命令：su – oracle

    $vi .bash_profile

添加：TMP=/tmp

    TMPDIR=$TMP

    ORACLE_BASE=/u01/app/oracle                          #oracle 根目录

    ORACLE_HOME=$ORACLE_BASE/product/10.2.0/db_1        #oracle 家目录

    ORACLE_SID=yangbin    #根据实际需要命名

    LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib

    PATH=$ORACLE_HOME/bin:$PATH

    exportTMP TMPDIR ORACLE_BASE ORACLE_HOME ORACLE_SID LD_LIBRARY_PATH PATH



命令：$source .bash_profile              #使环境变量生效

## 6 安装 oracle

（1） 去官网下载

   ⬇ Linux x86-64                              File 1, File 2 (2.5 GB) See All

（2） 解压

命令：`mv /home/yb524555/Downloads/*.zip /home/oracle`

```
root@ubuntu:/# mv /home/yb524555/Downloads/*.zip /home/oracle
```

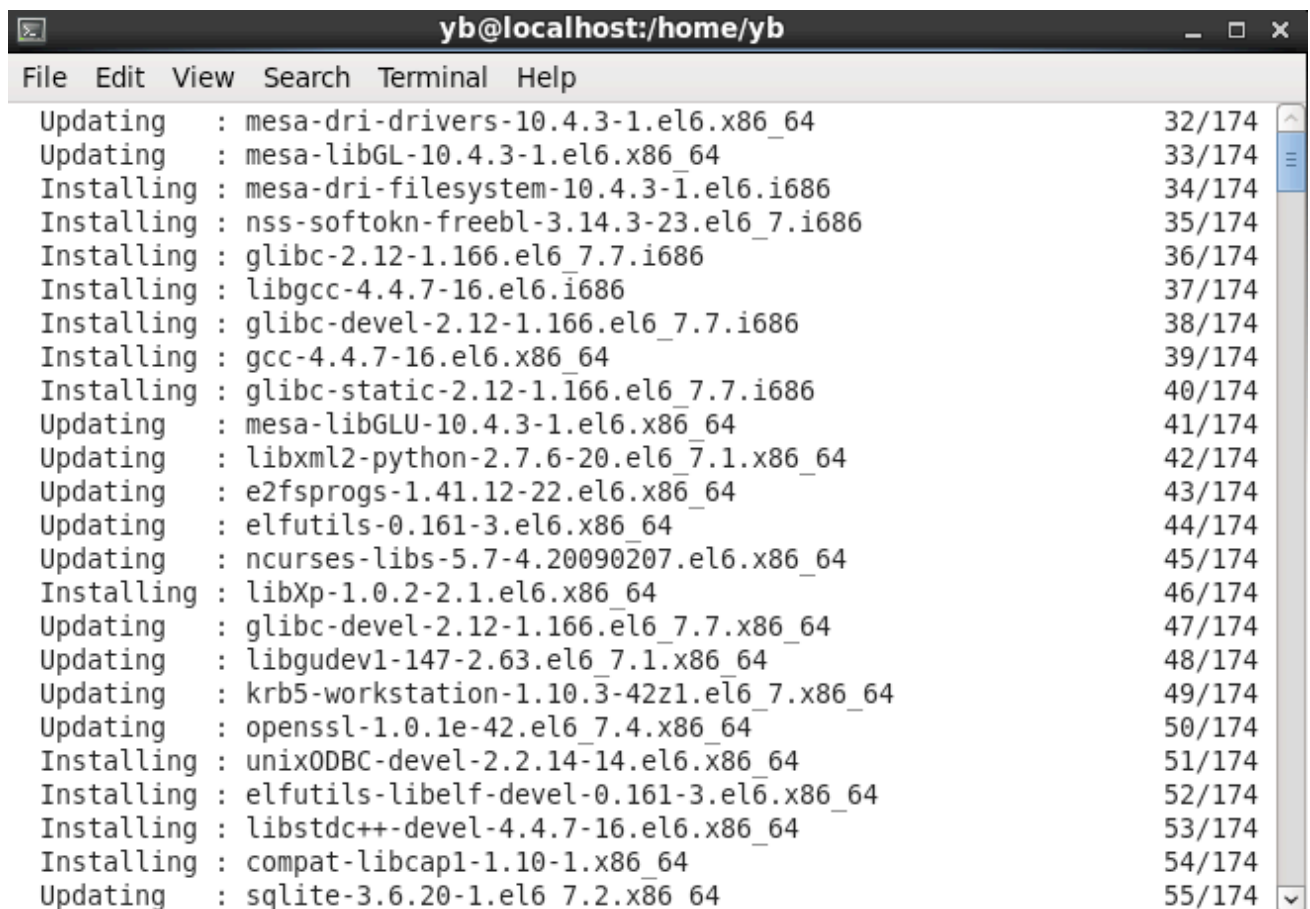命令：切换到 oracle 下 unzip linuxamd64_12102_database_2of2.zip(另一个解压时忘截图了)

```
oracle@ubuntu:~$ unzip linuxamd64_12102_database_2of2.zip
Archive:  linuxamd64_12102_database_2of2.zip
```
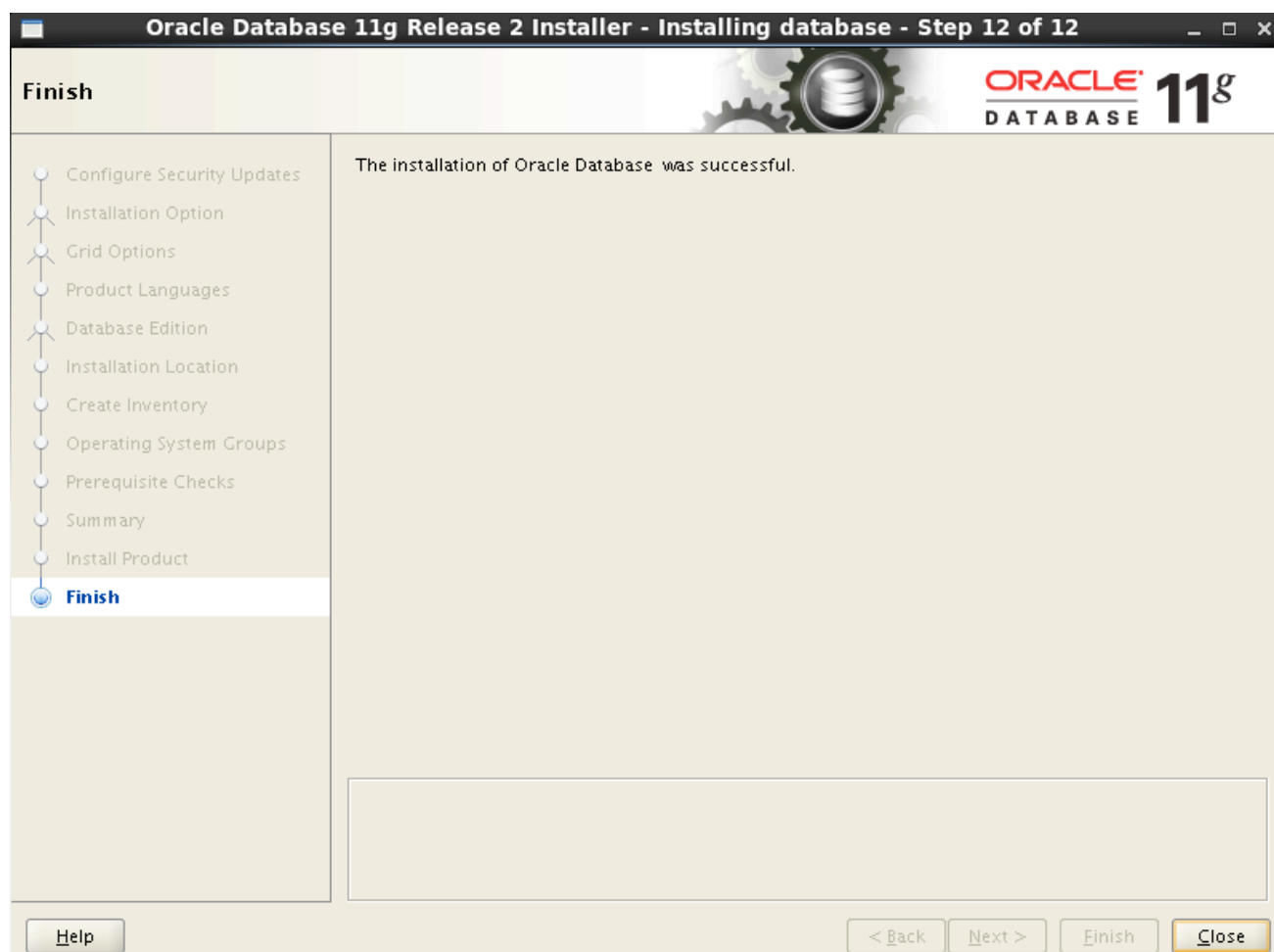
命令：切换到 database 下 `./runInstaller`

```
oracle@ubuntu:~/database$ ls
install  response  rpm  runInstaller  sshsetup  stage  welcome.html
oracle@ubuntu:~/database$ ./runInstaller
```

## 7  安装软件包

（部分截图）

```
yb@localhost:/home/yb                                    _ □ X
File  Edit  View  Search  Terminal  Help
  Updating    : mesa-dri-drivers-10.4.3-1.el6.x86_64              32/174
  Updating    : mesa-libGL-10.4.3-1.el6.x86_64                    33/174
  Installing  : mesa-dri-filesystem-10.4.3-1.el6.i686            34/174
  Installing  : nss-softokn-freebl-3.14.3-23.el6_7.i686          35/174
  Installing  : glibc-2.12-1.166.el6_7.7.i686                    36/174
  Installing  : libgcc-4.4.7-16.el6.i686                         37/174
  Installing  : glibc-devel-2.12-1.166.el6_7.7.i686              38/174
  Installing  : gcc-4.4.7-16.el6.x86_64                          39/174
  Installing  : glibc-static-2.12-1.166.el6_7.7.i686             40/174
  Updating    : mesa-libGLU-10.4.3-1.el6.x86_64                  41/174
  Updating    : libxml2-python-2.7.6-20.el6_7.1.x86_64          42/174
  Updating    : e2fsprogs-1.41.12-22.el6.x86_64                 43/174
  Updating    : elfutils-0.161-3.el6.x86_64                     44/174
  Updating    : ncurses-libs-5.7-4.20090207.el6.x86_64          45/174
  Installing  : libXp-1.0.2-2.1.el6.x86_64                      46/174
  Updating    : glibc-devel-2.12-1.166.el6_7.7.x86_64           47/174
  Updating    : libgudev1-147-2.63.el6_7.1.x86_64               48/174
  Updating    : krb5-workstation-1.10.3-42z1.el6_7.x86_64       49/174
  Updating    : openssl-1.0.1e-42.el6_7.4.x86_64                50/174
  Installing  : unixODBC-devel-2.2.14-14.el6.x86_64             51/174
  Installing  : elfutils-libelf-devel-0.161-3.el6.x86_64        52/174
  Installing  : libstdc++-devel-4.4.7-16.el6.x86_64             53/174
  Installing  : compat-libcap1-1.10-1.x86_64                    54/174
  Updating    : sqlite-3.6.20-1.el6_7.2.x86_64                  55/174
```

## 8 安装 oracle11g



## 9 完成两个 shell 认证

命令：sh root.h

```
[yb@localhost ~]$ su root
Password:
[root@localhost yb]# cd  /home/oracle/app/oracle/product/11.2.0/dbhome_1
bash: cd: /home/oracle/app/oracle/product/11.2.0/dbhome_1: No such file or direc
tory
[root@localhost yb]# cd /home/app/oracle/product/11.2.0/dbhome_1
bash: cd: /home/app/oracle/product/11.2.0/dbhome_1: No such file or directory
[root@localhost yb]# cd /u01/app/oracle/product/11.2.0/dbhome_1
bash: cd: /u01/app/oracle/product/11.2.0/dbhome_1: No such file or directory
[root@localhost yb]# cd /u01/app/oracle/product/11.2.0/db_1
[root@localhost db_1]# sh root.sh
Running Oracle 11g root.sh script...
```
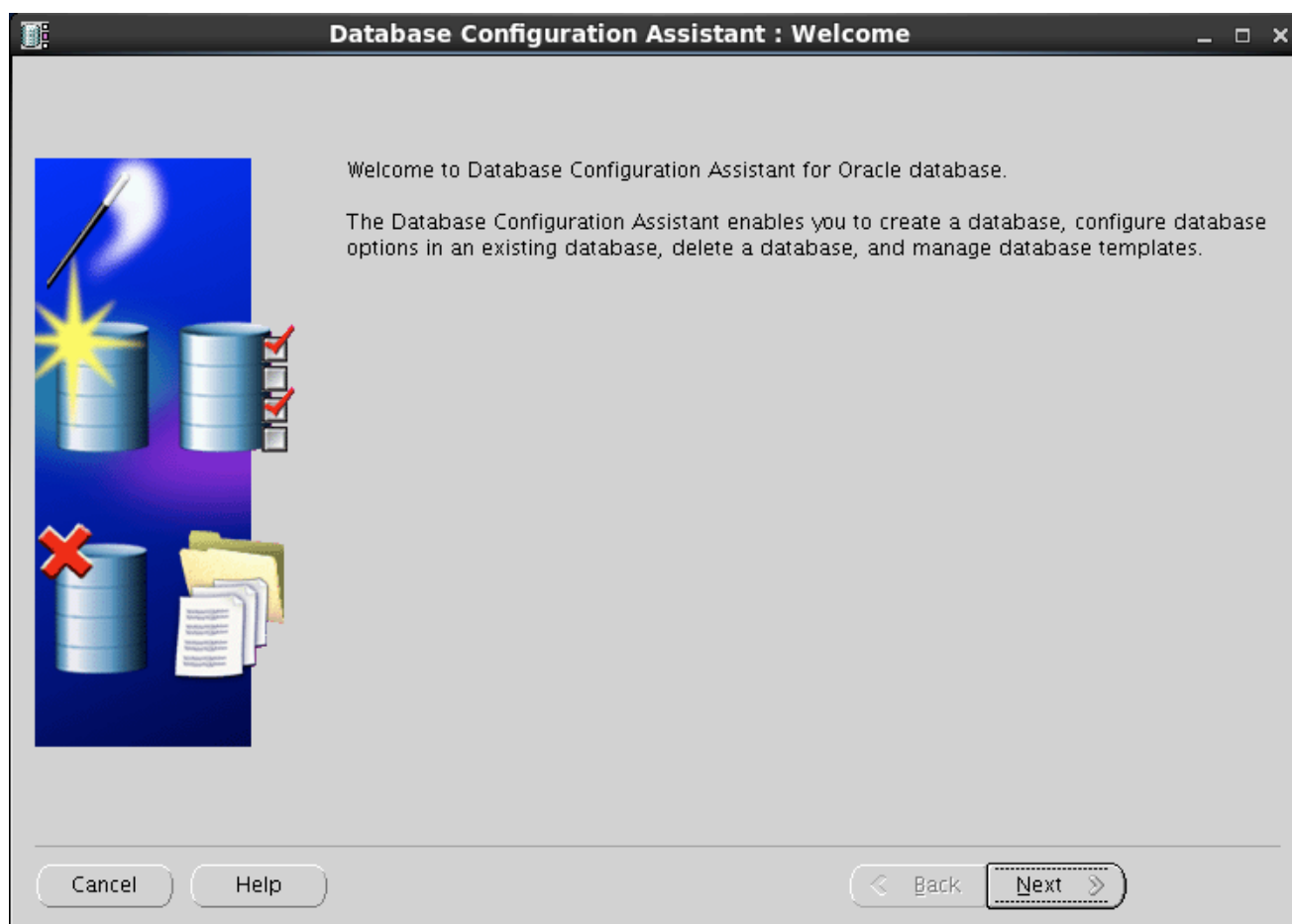
图 9

命令： sh orainstRoot.sh

```
[root@localhost oraInventory]# sh orainstRoot.sh
Changing permissions of /u01/app/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oraInventory to oinstall.
The execution of the script is complete.
[root@localhost oraInventory]#
```
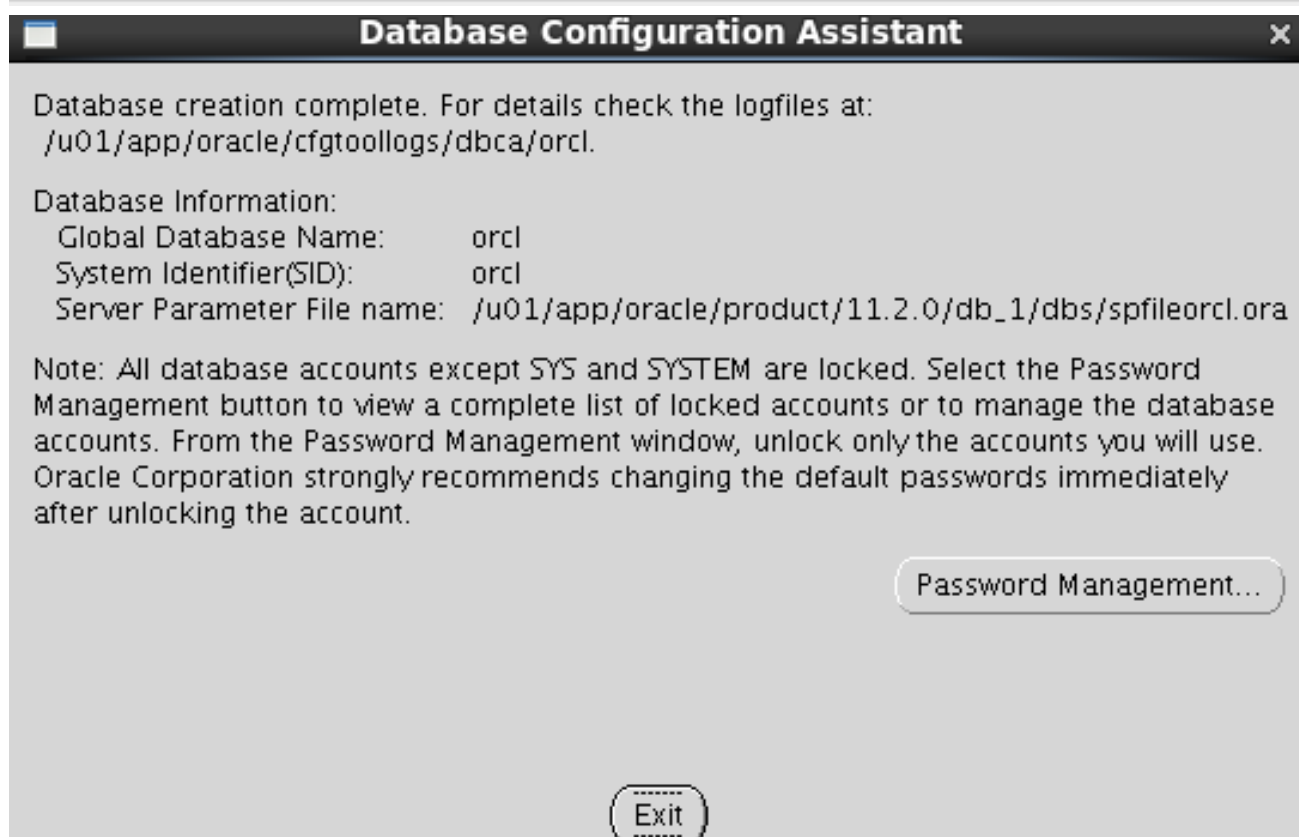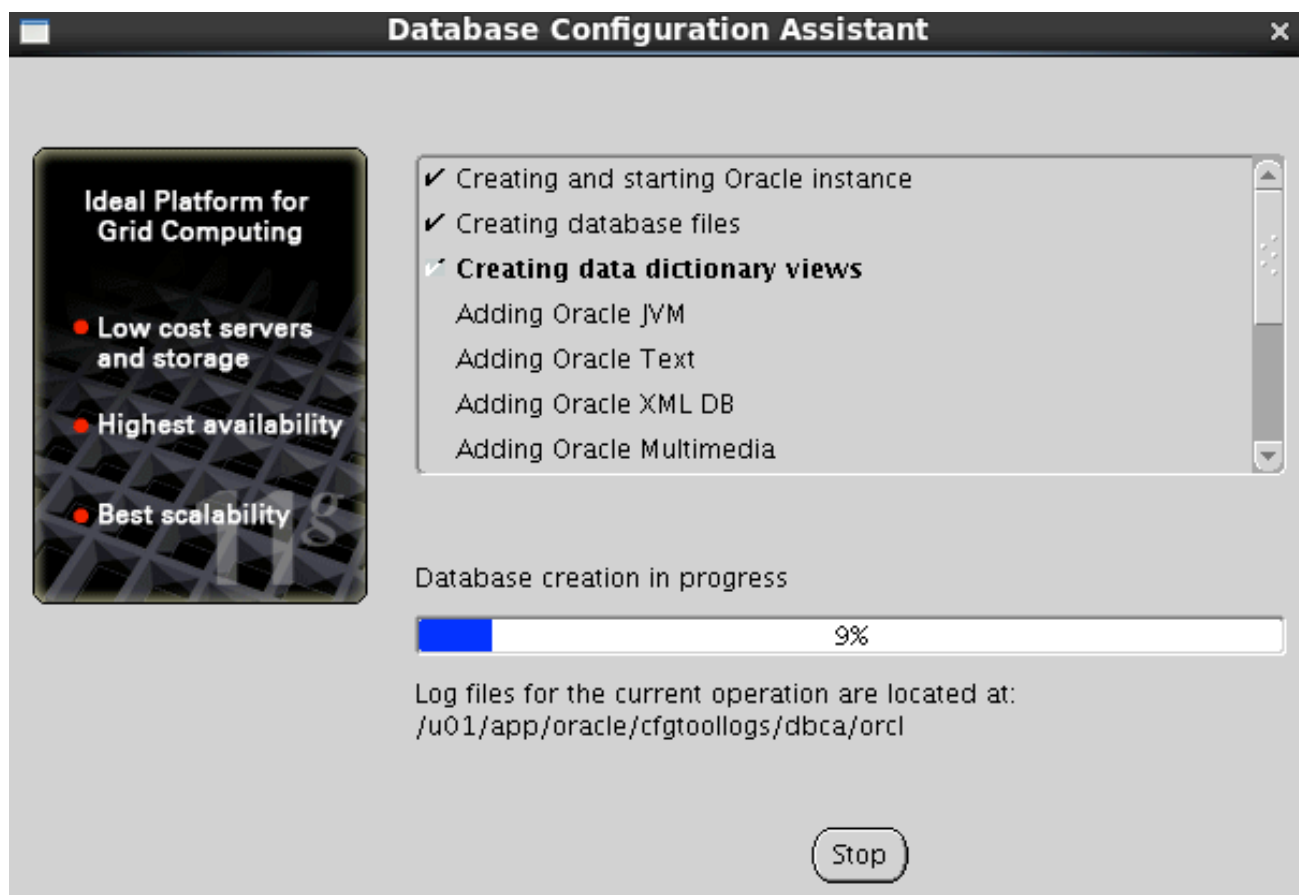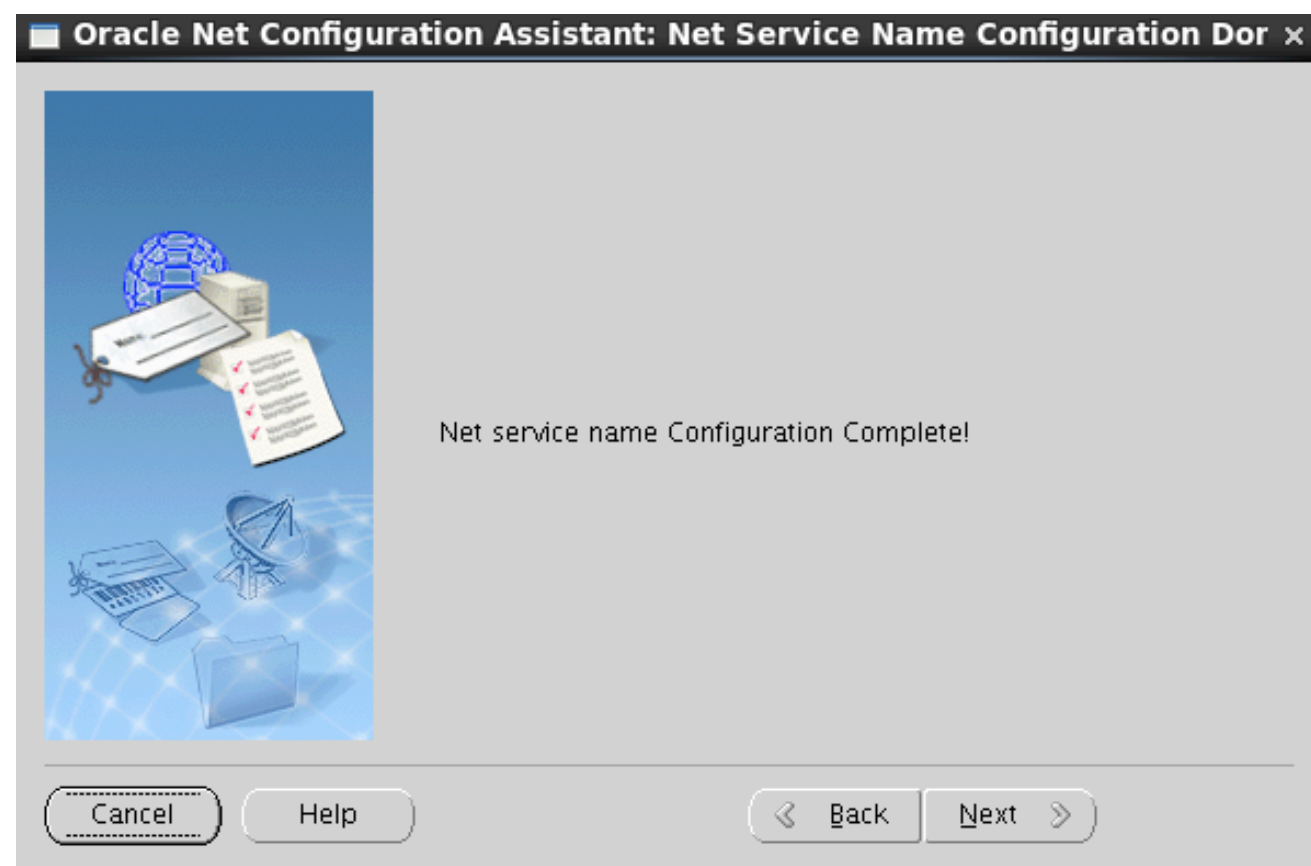
## 10 创建数据库

命令:dbca

```
[oracle@localhost ~]$ dbca
```

**Database Configuration Assistant**

✔ Creating and starting Oracle instance
✔ Creating database files
✔ **Creating data dictionary views**
  Adding Oracle JVM
  Adding Oracle Text
  Adding Oracle XML DB
  Adding Oracle Multimedia

Database creation in progress

9%

Log files for the current operation are located at:
/u01/app/oracle/cfgtoollogs/dbca/orcl

Stop



**Database Configuration Assistant**

Database creation complete. For details check the logfiles at:
/u01/app/oracle/cfgtoollogs/dbca/orcl.

Database Information:
  Global Database Name:        orcl
  System Identifier(SID):        orcl
  Server Parameter File name:  /u01/app/oracle/product/11.2.0/db_1/dbs/spfileorcl.ora

Note: All database accounts except SYS and SYSTEM are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts. From the Password Management window, unlock only the accounts you will use. Oracle Corporation strongly recommends changing the default passwords immediately after unlocking the account.

Password Management...

Exit

**11 监听**

Each Oracle database or service has a service name. An Oracle database's service name is normally its global database name. Enter the service name of the database or other service you want to access.

Service Name: orcl

Cancel    Help                        Back    Next

Net service name Configuration Complete!

Cancel    Help                        Back    Next

**12 备份与还原**

命令：

        mkdir bak_dir

        chmod 777 bak_dir

        create or replace directory bak_dir as '/opt/oracle/bak_dir'    commit

```
SQL> create or replace directory bak_dir as'/opt/oracle/bak_dir'
  2  commit
```

        grant all on directory bak_dir to  orcl

```
SQL> grant all on directory bak_dir to orcl
  2  commit
  3
SQL> quit
```

命令：用户名 orcl 密码 oracle 将数据备份到 bak_dir 中

      expdp orcl/oracle@orcl directory=bak_dir dumpfile=expdb_orcl.dmp
logfile=expdb_orcllog tables=yb   备份

```
[oracle@localhost ~]$ expdp orcl/oracle@orcl directory=bak_dir dumpfile=expdb_or
cl.dmp logfile=expdb_orcllog tables=yb
```

      impdp  orcl/oracle@orcl  directory=bak_dir  expdp  table_exists  action=truncate
dumpfile=expdb orcl.dmp logfile=impdb.orcllog   还原

```
[oracle@localhost ~]$ impdp orcl/oracle@orcl directory=bak_dir expdp table_exist
s action=truncate dumpfile=expdb orcl.dmp logfile=impdb orcllog
```

# 五【实验思考】

    这次实验做的很差，究其原因还是自己接触较为繁琐实验很少，在第一次做这样老是出问题的实验时非常容易急躁。还有就是对 oracle 太陌生了，专业知识太少导致问题过多，实验进展困难。

    我相信积累失败的经验之后，以后的实验会顺利一些。