在 Linux 32 系统安装 Oracle 10g

1. 操作系统

1.1 CentOS 5.2 及以上版本

1.2 Redhat Advance Sever 4 及以上版本

安装操作系统可以参考相关课件《CentOS5 安装过程.pdf》

2. Oracle 10g 安装准备工作

2.1 用 root 登录 linux 系统

su -

2.2 step1:检查 host 文件

vi /etc/hosts

```
[root@speedec ~]# cat /etc/hosts
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1       speedec localhost.localdomain   localhost
```

- 文件中必须包含 a fully qualified name for the server
- 一般格式：
  <IP-address><fully-qualified-machine-name><machine-name>
- 建议必须含有 localhost，这对启动 Oracle 监听等服务很重要

2.3 step2:设置内核参数

vi /etc/sysctl.conf

```
kernel.shmall = 2097152
kernel.shmmax = 2147483648
kernel.shmmni = 4096
# semaphores: semmsl, semmns, semopm, semmni
kernel.sem = 250 32000 100 128
fs.file-max = 65536
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default=262144
net.core.rmem_max=262144
net.core.wmem_default=262144
net.core.wmem_max=262144
```

退出 vi，让设置立即生效

```
/sbin/sysctl  -p
```

说明：

- shmmax 定义单个进程共享内存段的最大值，它取值范围是[0,4294967295]，单位为 byte。
- 建议：kernel.shmmax = 2147483648，SGA 的不要超过这个数字
- 对于 32bit 的 linux 来说，不管实际的内存有多大，shmmax 的最大值不应该超过 4294967295。
- 当然这个参数与 linux 内核和版本有关系
- 有兴趣的可以查询相关网络资料

2.4 step3，检查几个文件

系统资源限制配置文件/etc/security/limits.conf 文件中加入：

```
vi /etc/security/limits.conf

* soft nproc 2047
* hard nproc 16384
* soft nofile 1024
* hard nofile 65536
```

要使 limits.conf 文件配置生效，必须要确保 pam_limits.so 文件被加入到启动文件中。即文件中加入下列行，如果里面没有的话

```
vi /etc/pam.d/login

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

2.5 step4:禁用 selinux

```
vi /etc/selinux/config

SELINUX=disabled
```

备注：

出于解决安全问题，NSA（ National Security Agency 的缩写.它是五角大楼下属的 15 个国防局之一）在 Linux 社区的帮助下开发了一种访问控制体系，在这种访问控制体系的限制下，进程只能访问那些在他的任务中所需要文件。这种体系叫做 Security-Enhanced Linux 或简化为 SELinux。SELinux 提供了比传统的 UNIX 权限更好的访问控制

2.6 Step5:检查必要的 rpm 包

```
rpm -q setarch
rpm -q compat-libstdc++
rpm -q make
rpm -q glibc
rpm -q openmotif
rpm -q compat-db
rpm -q libaio
rpm -q gcc
rpm -q compat-gcc-32
rpm -q compat-gcc-32-c++
```

说明：

- 留意 rpm –q 的查询结果
- 没有目前系统没有安装相关 rpm，就用 rpm －ivh ***.rpm 安装
- 相关 rpm 包一般在 linux 安装光碟中都有

2.7 Step6:创建用户和组

用以下命令创建下列 Oracle 运行和安装需要的组和用户

```
groupadd oinstall
groupadd dba
groupadd oper
useradd -g oinstall -G dba oracle
passwd oracle
```

说明：

- 建议为 Orcle 用户设置一个复杂的密码

2.8 Step7:创建安装 oracle 的目录

创建 oracle 安装目录

```
mkdir -p /oracle/product/10.2.0/db_1
```

修改对应目录的权属关系

```
chown -R oracle.oinstall /oracle
```

2.9 Step8:为用户打开访问 X 权限

用 root 登录，执行下列指令：

```
su-
xhost +
```

说明：

- xhost + 是使所有用户都能访问 Xserver.

2.10 Step9:修改 Oracle 用户的参数

把下列行加在/home/oracle/.bash_profile 文件末尾,注意把其中 ORACLE_SID 换成自己的实例名（如 orcl）：

vi /home/oracle/.bash_profile

```
# Oracle Settings
TMP=/tmp;
export TMP
TMPDIR=$TMP;
export TMPDIR
ORACLE_BASE=/oracle;
export ORACLE_BASE
ORACLE_HOME=$ORACLE_BASE/product/10.2.0/db_1;
export ORACLE_HOME
ORACLE_SID=expbook;
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
#LD_ASSUME_KERNEL=2.4.1;
export LD_ASSUME_KERNEL
NLS_LANG=AMERICAN_AMERICA.ZHS16GBK;
export NLS_LANG
if [ $USER = "oracle" ]; then
if [ $SHELL = "/bin/ksh" ]; then
ulimit -p 16384
ulimit -n 65536
else
ulimit -u 16384 -n 65536
fi
fi
```

说明：

- 留意文本中红色部分关键信息
- 结合自己的应用设置 SID

2.11 Step10：启动安装

- 用 oracle 用户登录。

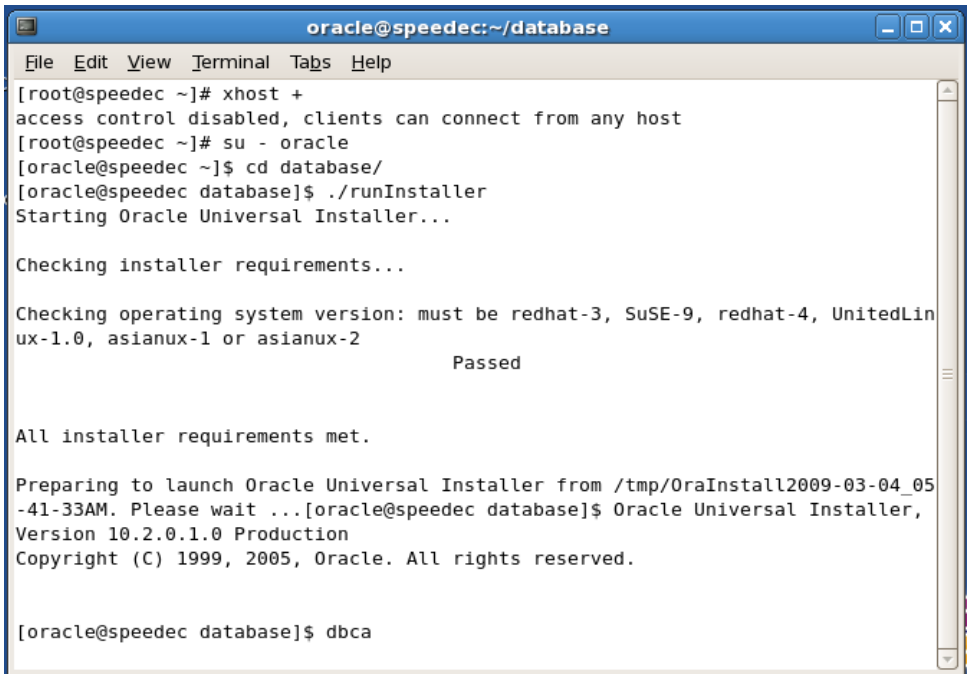
  su - oracle

- 如果用的是 X 模式，要把 DISPLAY 设置：

  DISPLAY=<machine-name>:0.0; export DISPLAY

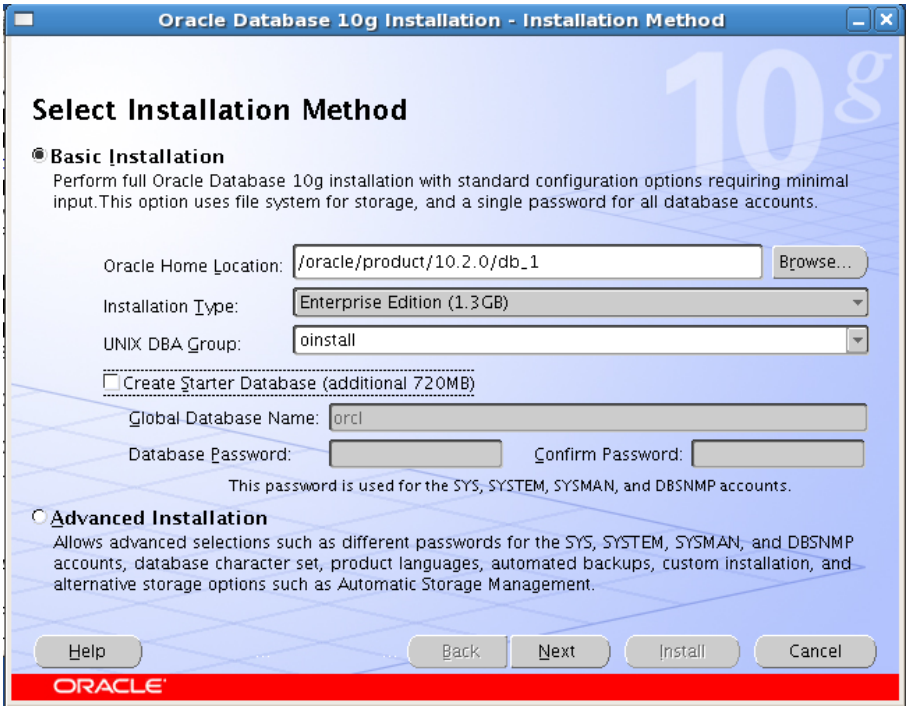
- 在 Oracle 安装文件 Disk1 目录下用如下命令开始安装：

./runInstaller



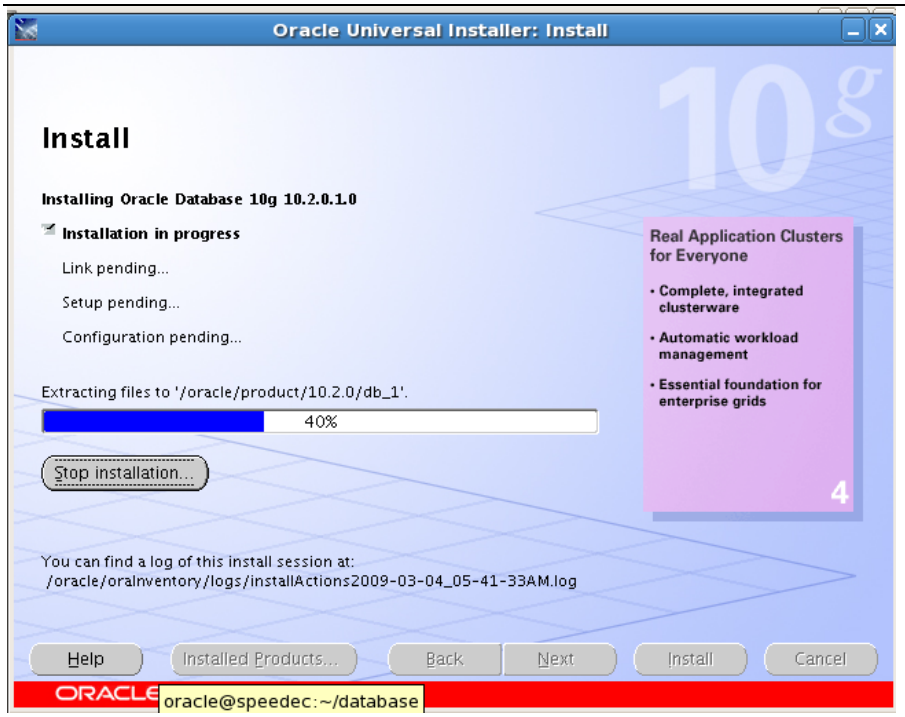
3. Oracle 10g 安装过程

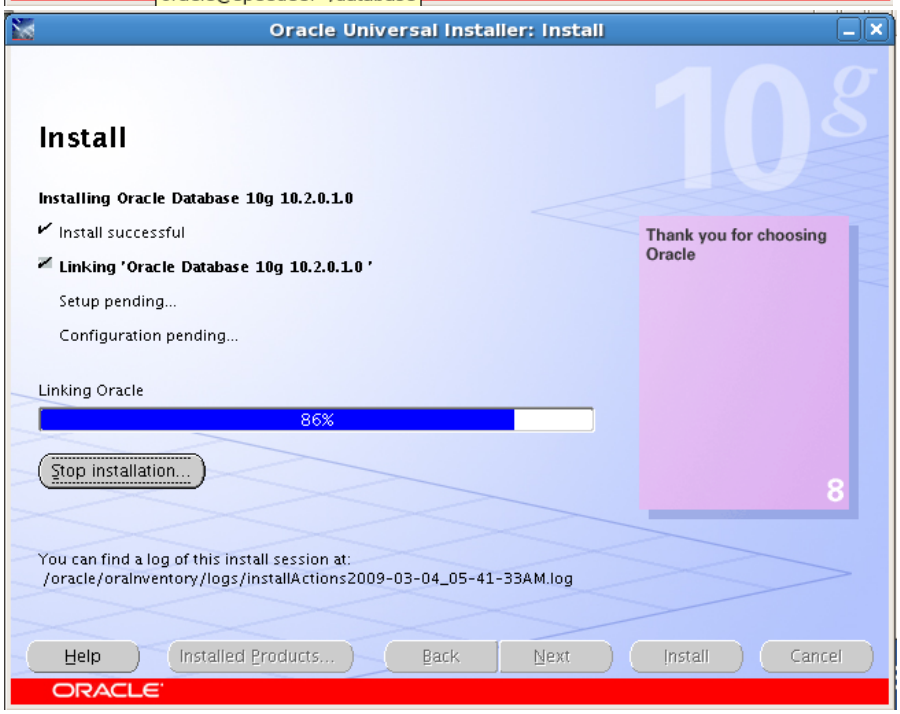
3.1 选择高级安装 advanced installation



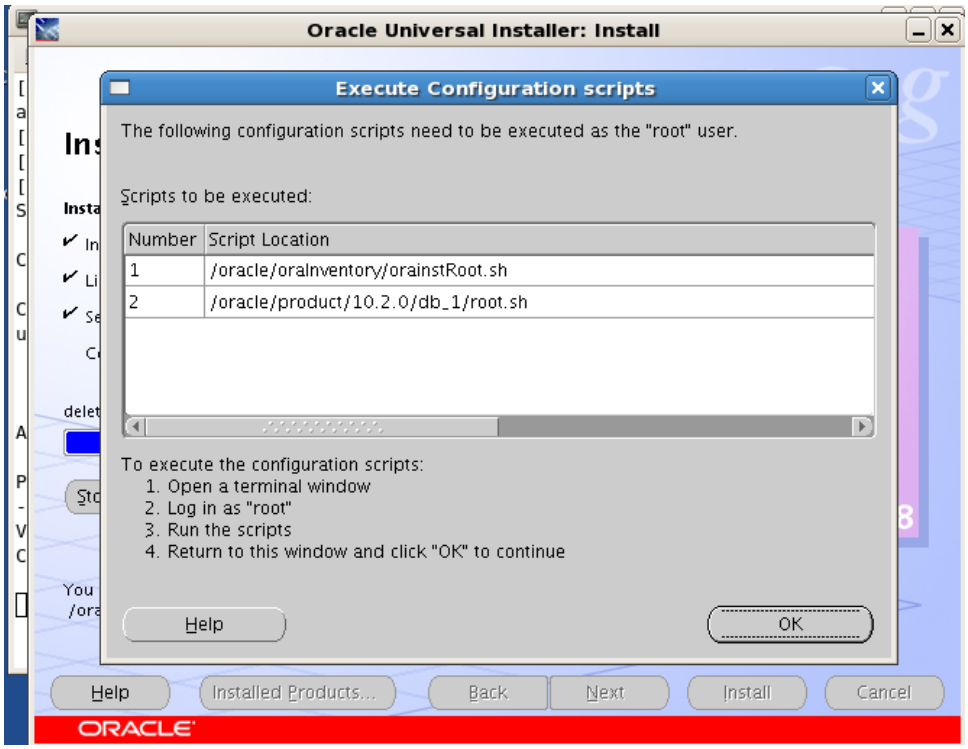
3.2 默认情况可以找到安装路径，选择下一步

3.3 开始安装数据库软件，这个过程很快


Oracle Universal Installer: Install
Install
Installing Oracle Database 10g 10.2.0.1.0
Installation in progress
Link pending...
Setup pending...
Configuration pending...
Extracting files to '/oracle/product/10.2.0/db_1'.
40%
Stop installation...
Real Application Clusters for Everyone
• Complete, integrated clusterware
• Automatic workload management
• Essential foundation for enterprise grids
4
You can find a log of this install session at:
/oracle/oraInventory/logs/installActions2009-03-04_05-41-33AM.log
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE
oracle@speedec:~/database


Oracle Universal Installer: Install
Install
Installing Oracle Database 10g 10.2.0.1.0
Install successful
Linking 'Oracle Database 10g 10.2.0.1.0 '
Setup pending...
Configuration pending...
Linking Oracle
86%
Stop installation...
Thank you for choosing Oracle
8
You can find a log of this install session at:
/oracle/oraInventory/logs/installActions2009-03-04_05-41-33AM.log
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE

3.4 安装过程需要执行两个 sh 文件，执行完就继续



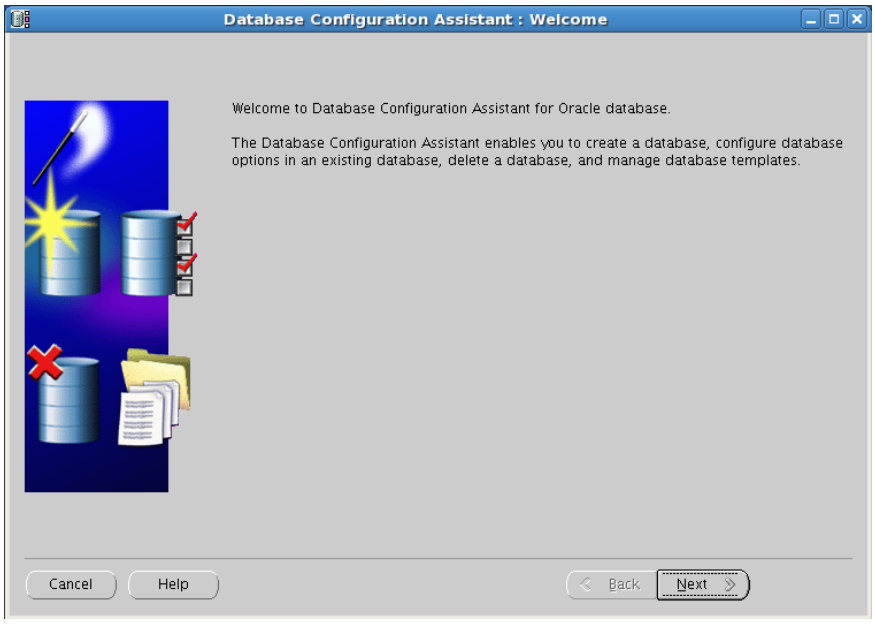
- 执行第一个 shell

```
[root@speedec oraInventory]# ./orainstRoot.sh
Changing permissions of /oracle/oraInventory to 770.
Changing groupname of /oracle/oraInventory to oinstall.
The execution of the script is complete
[root@speedec oraInventory]#
```

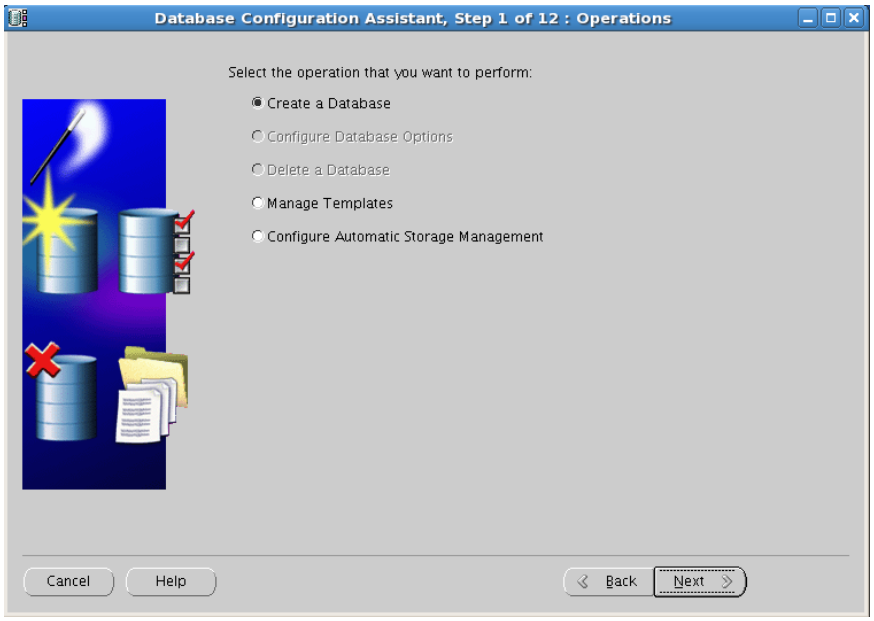
- 执行第二个 shell

```
[root@speedec db_1]# ./root.sh
Running Oracle10 root.sh script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /oracle/product/10.2.0/db_1

Enter the full pathname of the local bin directory: [/usr/local/bin]:
   Copying dbhome to /usr/local/bin ...
   Copying oraenv to /usr/local/bin ...
   Copying coraenv to /usr/local/bin ...


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.sh script.
Now product-specific root actions will be performed.
```

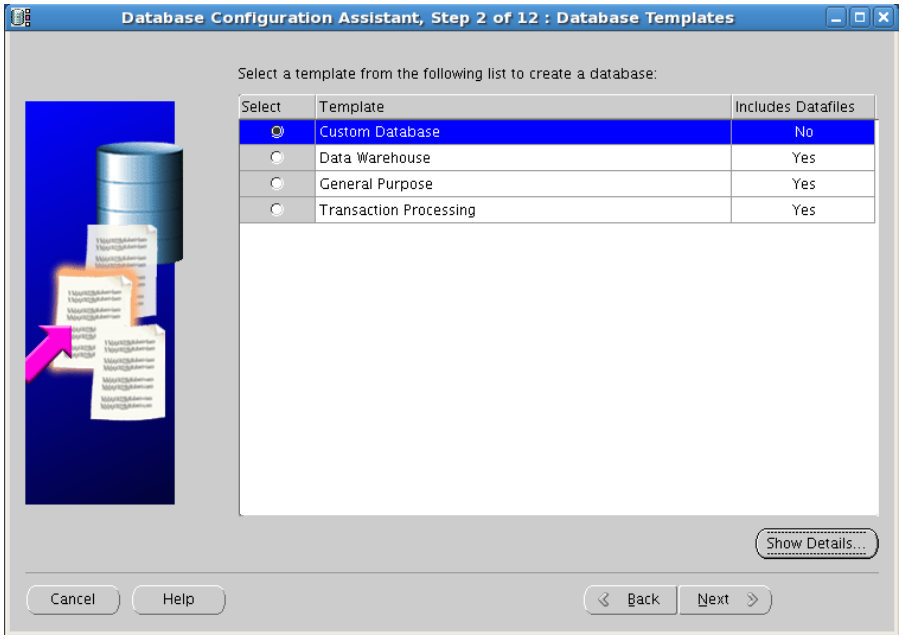
3.5 然后进入进入 DBCA(数据库配置工具)



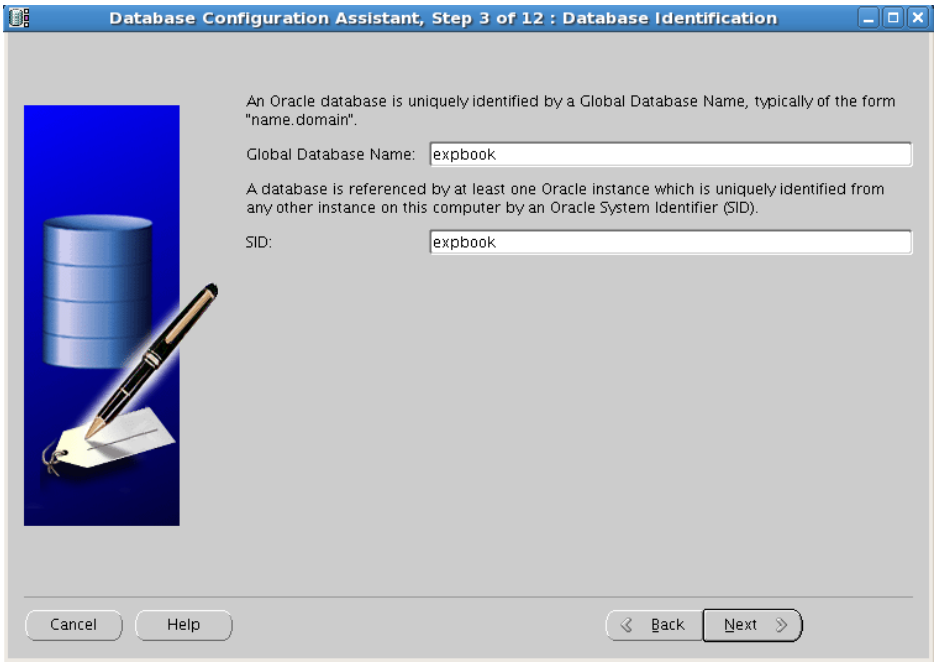
3.6 选择建库安装选项：create database



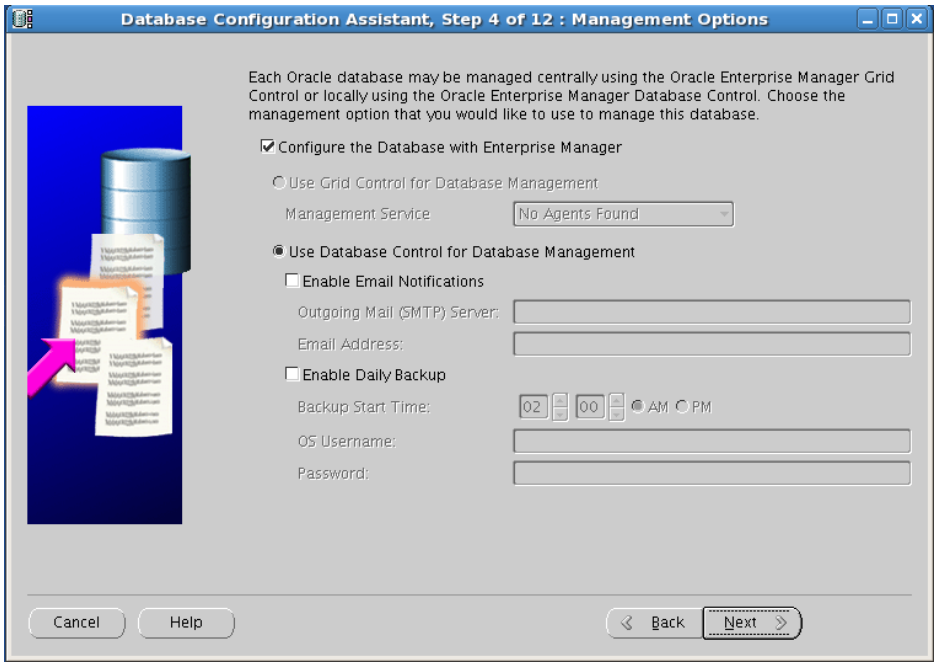
3.7 选择 costom database



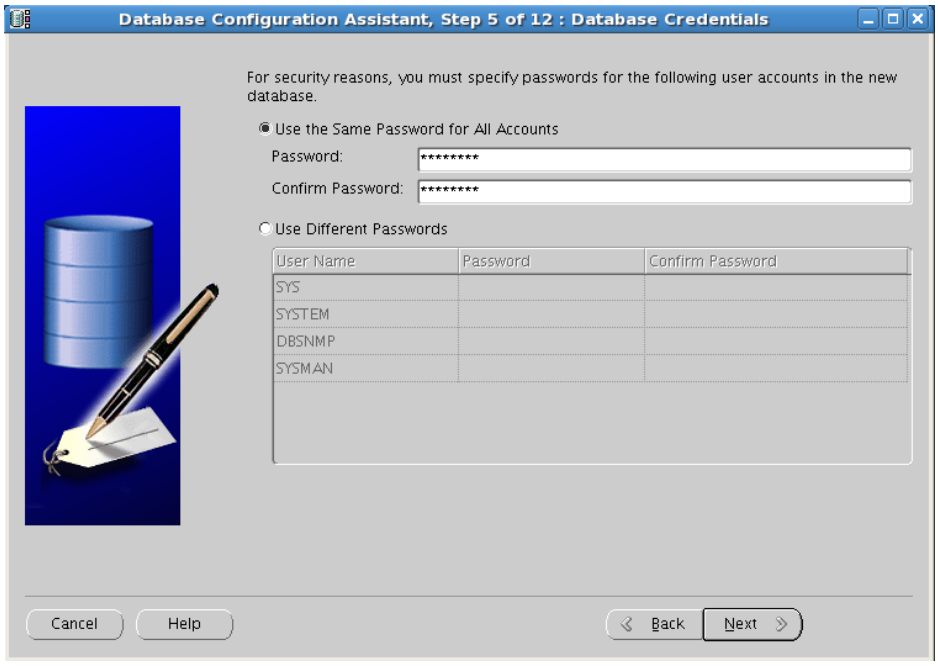
3.8 填写 S_ID 和数据库名



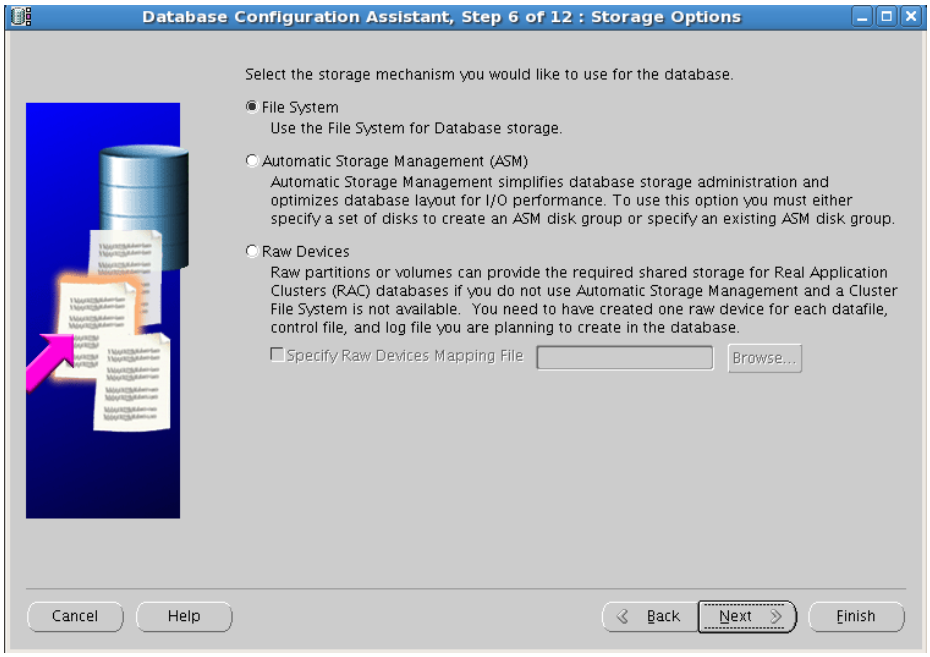
3.9 选择和配置 OEM



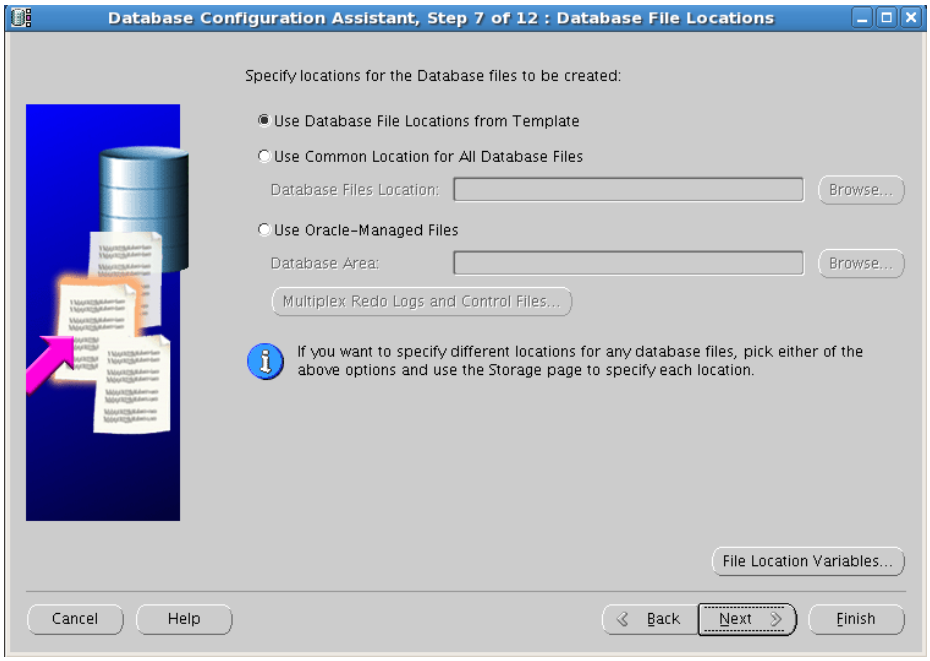
3.10 为了方便所有账户使用相同的密码，请设置后牢记



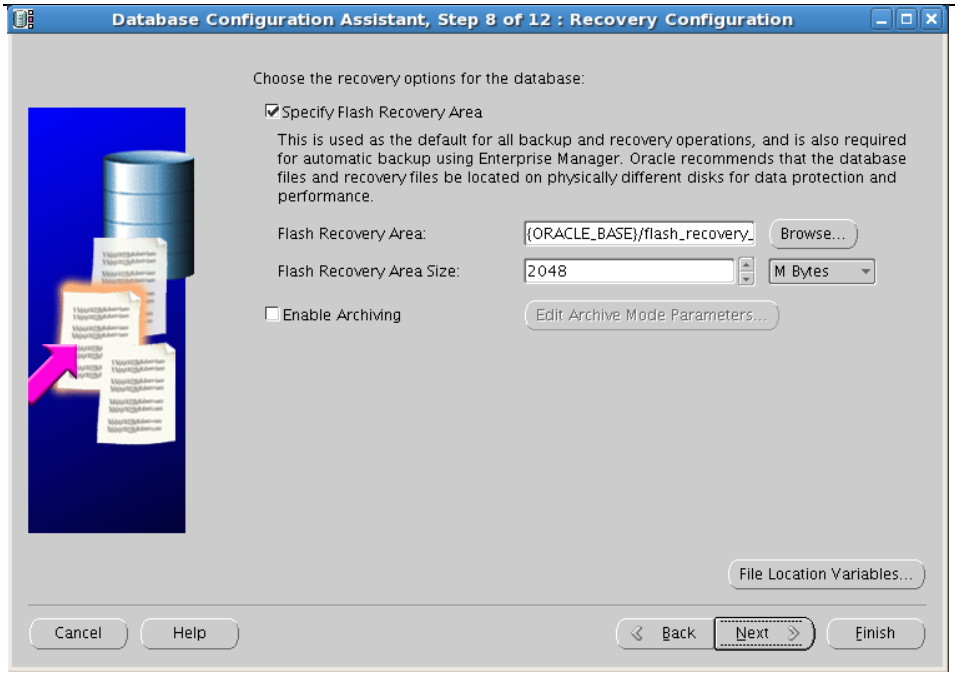
3.11 一般的服务器或者 PC 机都是用文件系统存储数据库，选择 file system

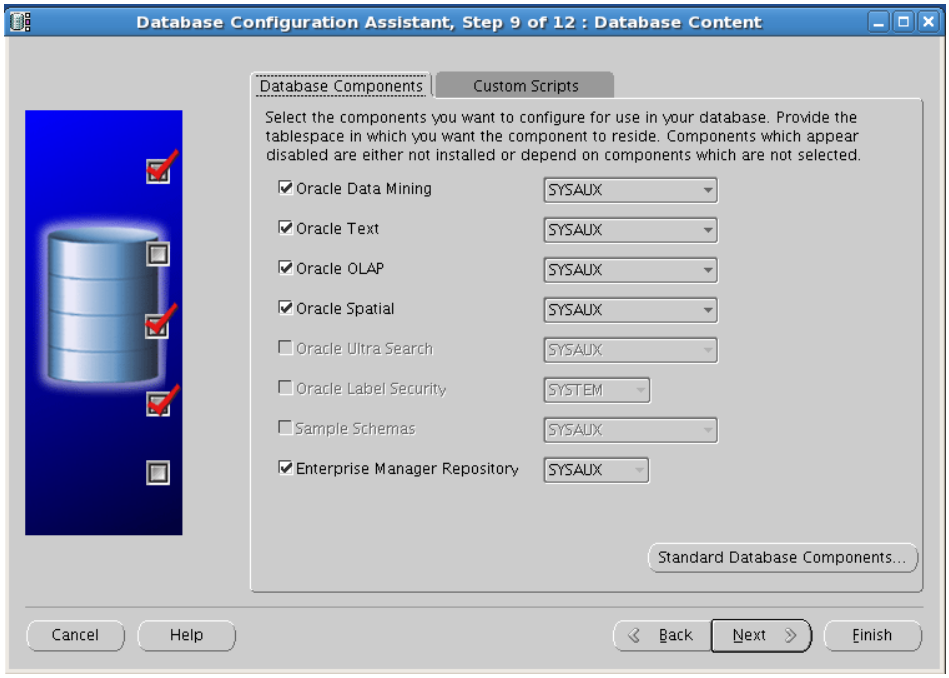


3.12 选“use database file location from template

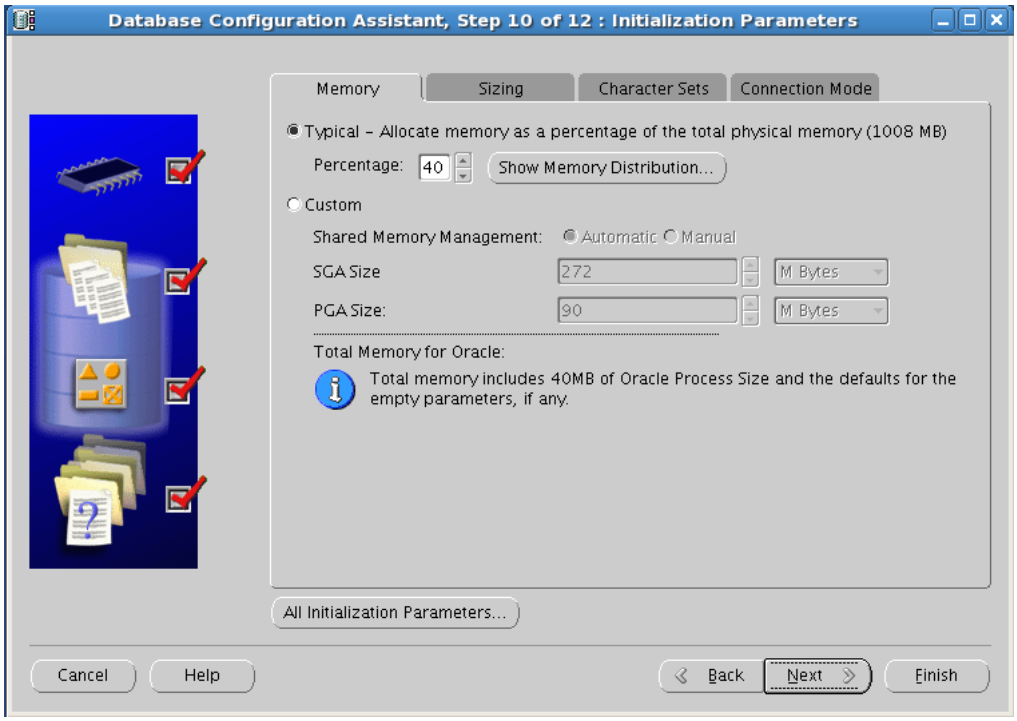


3.13 选择默认的备份和恢复选项

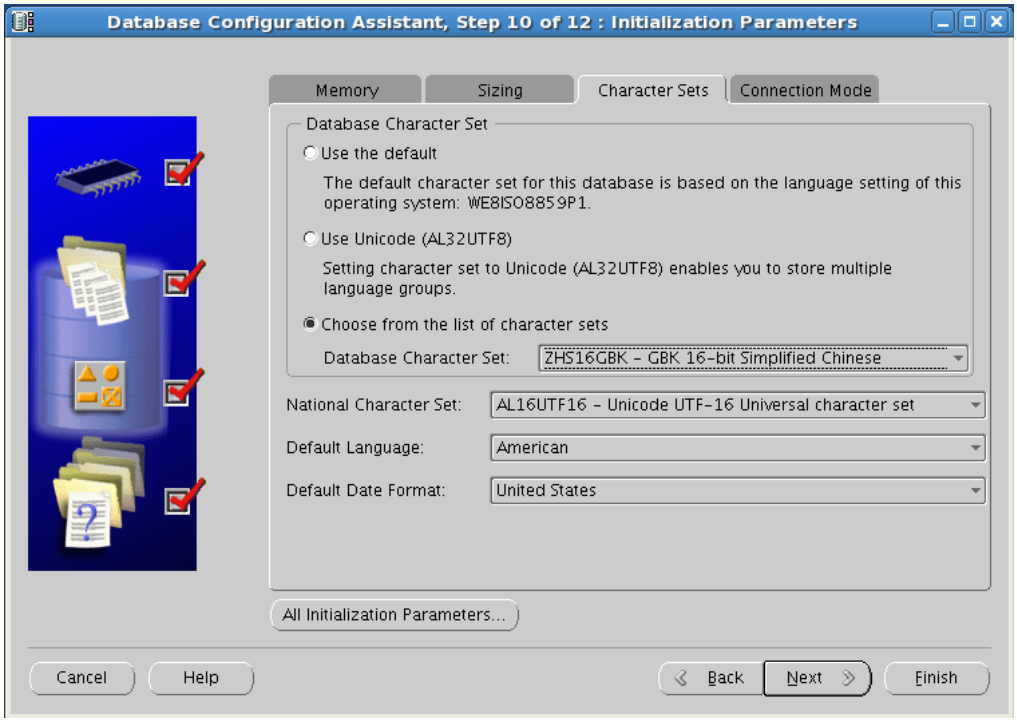

Database Configuration Assistant, Step 8 of 12 : Recovery Configuration
Choose the recovery options for the database:
Specify Flash Recovery Area
This is used as the default for all backup and recovery operations, and is also required for automatic backup using Enterprise Manager. Oracle recommends that the database files and recovery files be located on physically different disks for data protection and performance.
Flash Recovery Area:
{ORACLE_BASE}/flash_recovery_
Browse...
Flash Recovery Area Size:
2048
M Bytes
Enable Archiving
Edit Archive Mode Parameters...
File Location Variables...
Cancel
Help
Back
Next
Finish


Database Configuration Assistant, Step 9 of 12 : Database Content
Database Components
Custom Scripts
Select the components you want to configure for use in your database. Provide the tablespace in which you want the component to reside. Components which appear disabled are either not installed or depend on components which are not selected.
Oracle Data Mining
SYSAUX
Oracle Text
SYSAUX
Oracle OLAP
SYSAUX
Oracle Spatial
SYSAUX
Oracle Ultra Search
SYSAUX
Oracle Label Security
SYSTEM
Sample Schemas
SYSAUX
Enterprise Manager Repository
SYSAUX
Standard Database Components...
Cancel
Help
Back
Next
Finish

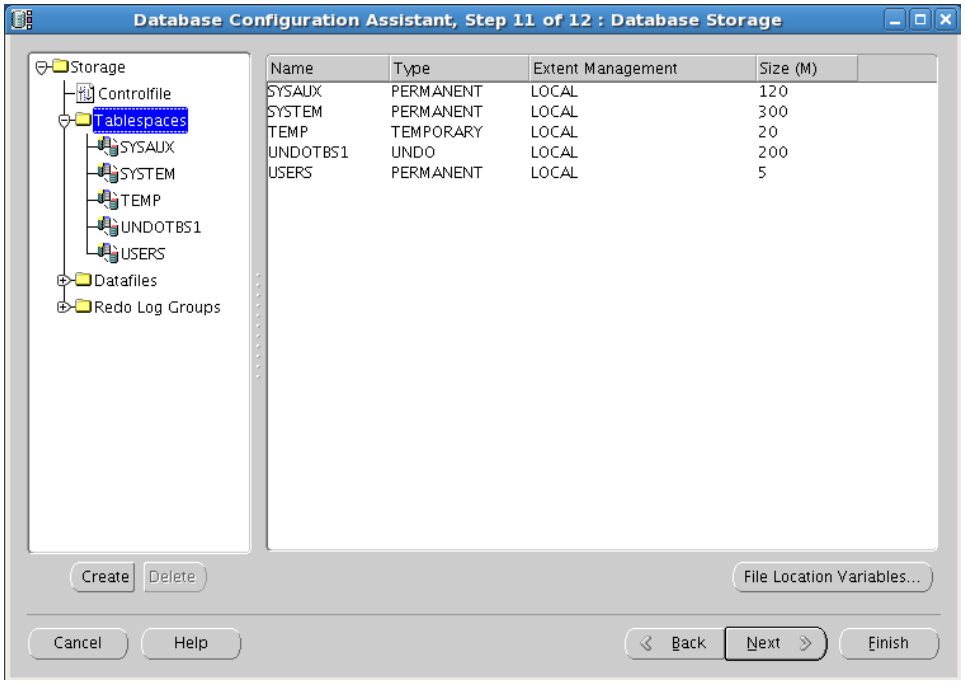
3.14 配置内存资源、数据库字符集和链接模式

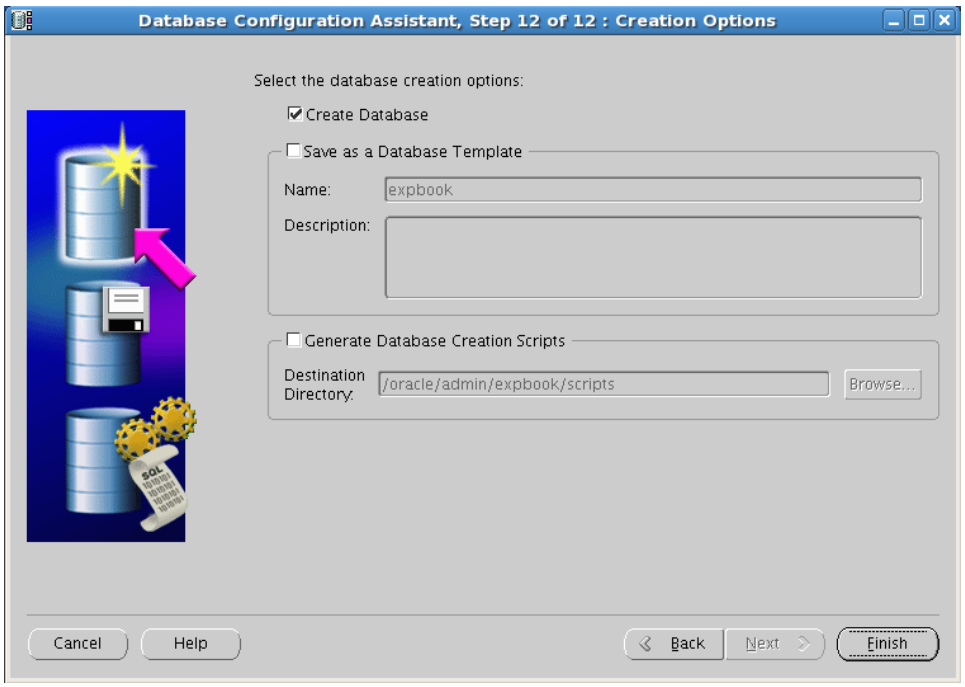


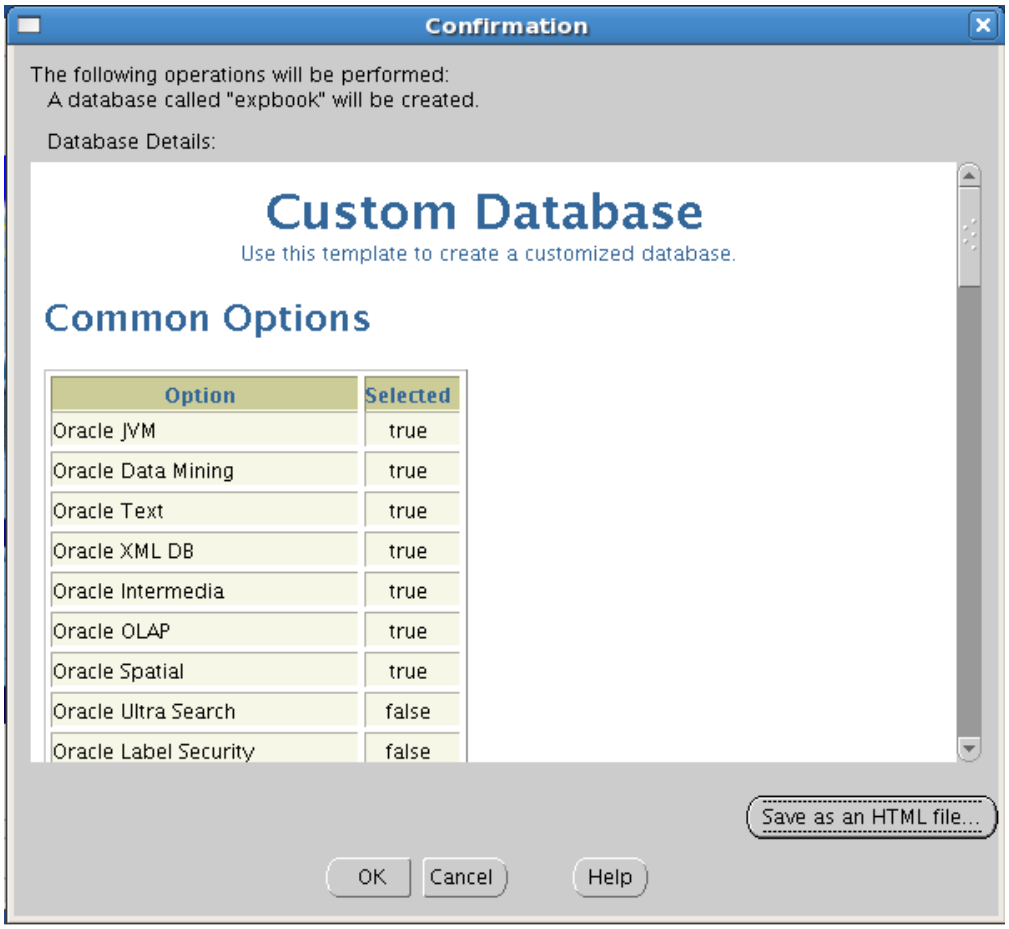
3.15 选择字符集，非常好重要



3.16 DBCA 选项总揽

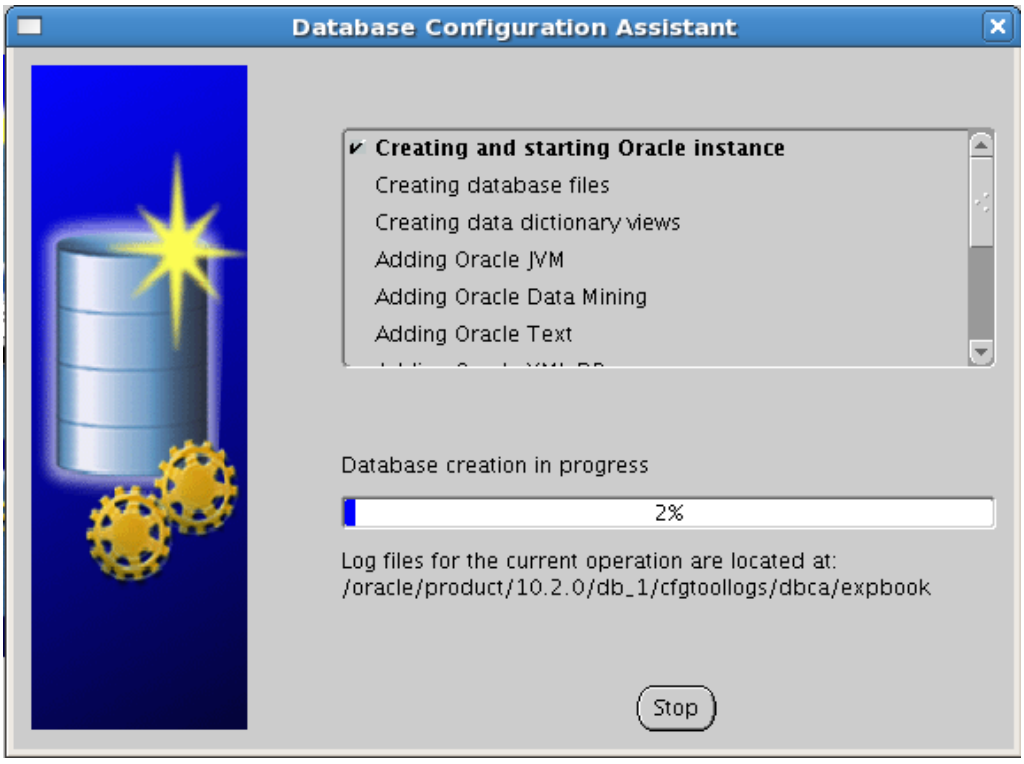




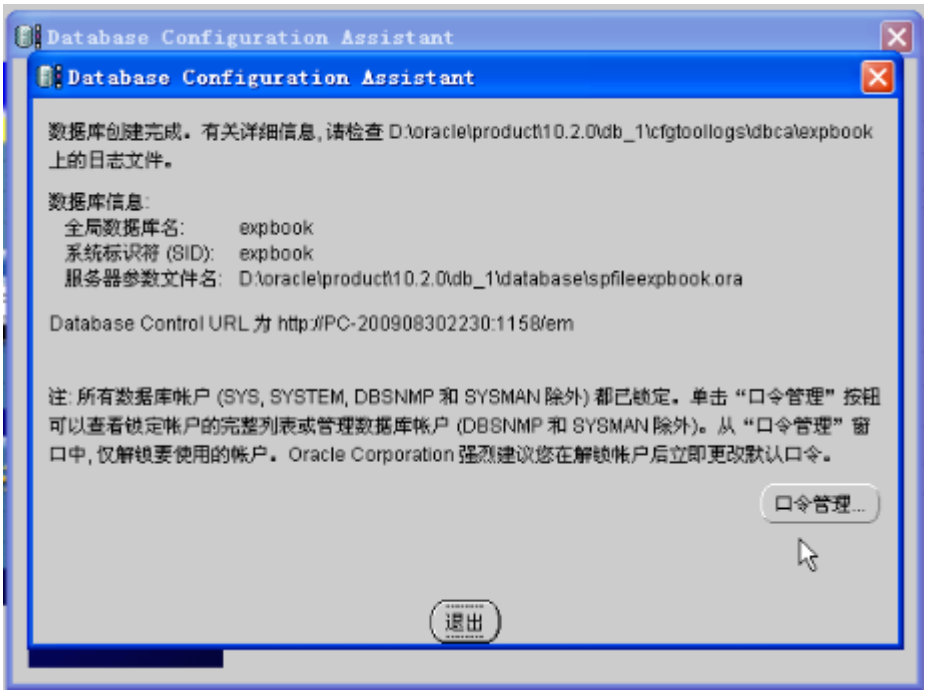


3.17 DBCA 开始配置创建数据库

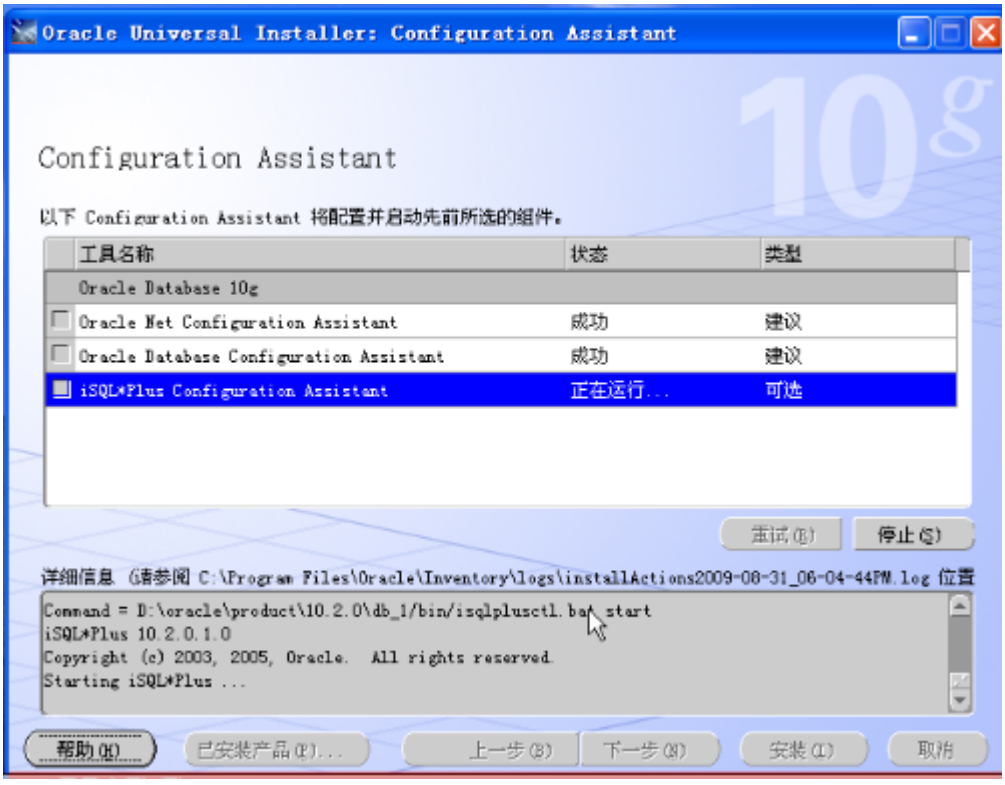
这个过程比较漫长，也很容易出问题



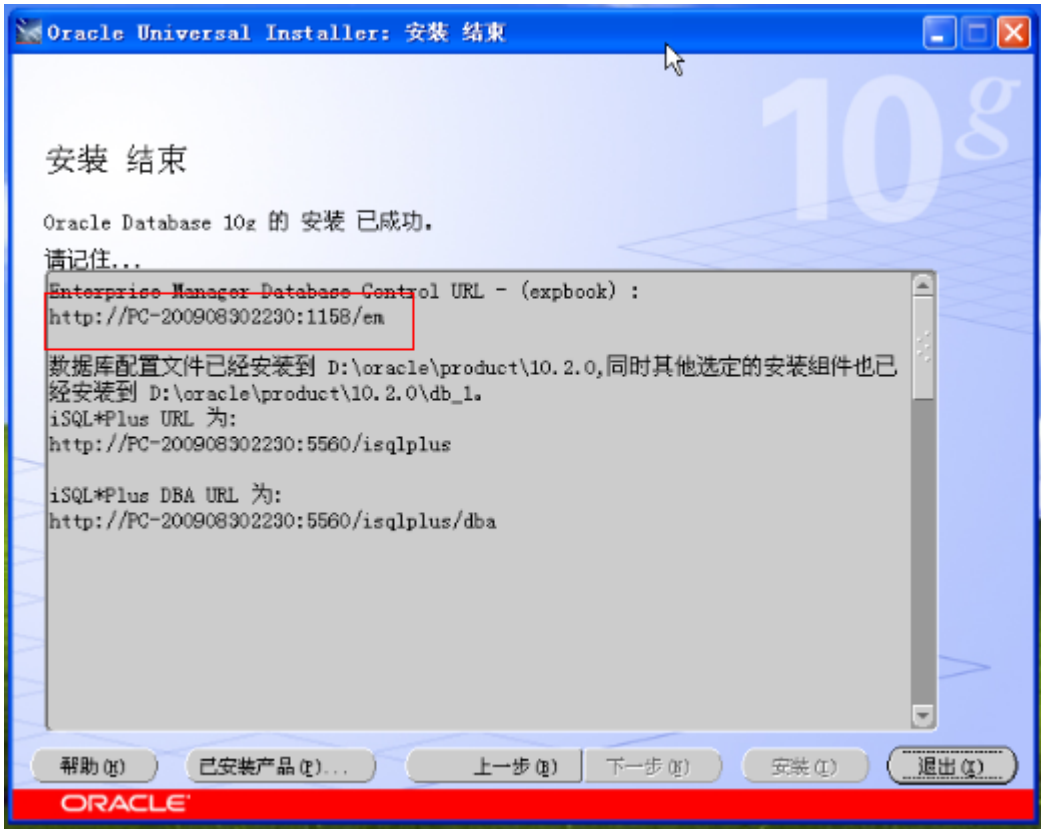
3.18 DBCA 完成后，可以管理几个主要账户密码



3.19 安装程序开始配置 iSQL*PLUS



3.20 完成后的画面中会有管理端入口地址和 sqlplus 入口地址。



3.21 至此 oracle 的安装完成

4. Oracle 开机自动启动和关闭方法

4.1 修改启动选项

vi /etc/oratab

expbook:/oracle/product/10.2.0/db_1:Y

说明：

- 格式为：SID:ORACLE_HOME:Y
- 把 AUTO 域设置为 Y(大写)，只有这样，oracle 自带的 dbstart 和 dbshut 才能够发挥作用

4.2 处理服务脚本：

Oracle

将脚本命名为 oracle，保存在/etc/rc.d/init.d 下
改变文件属性：chmod 755 oracle
chown root.root oracle

4.3 建立服务连接：

系统启动时启动数据库，我们需要以下连结：

```
ln -s ../init.d/oracle /etc/rc.d/rc2.d/S99oracle
ln -s ../init.d/oracle /etc/rc.d/rc3.d/S99oracle
ln -s ../init.d/oracle /etc/rc.d/rc5.d/S99oracle
```

要在重新启动时停止数据库，我们需要以下连结：

```
ln -s ../init.d/oracle /etc/rc.d/rc0.d/K01oracle
ln -s ../init.d/oracle /etc/rc.d/rc6.d/K01oracle
# 停止、重新启动
```

4.4 脚本内容

```
#!/bin/bash
# Oracle DataBase
#
# chkconfig: 35 80 13
# description: Oracle
    #
    ##################FUNCTION#############
    #
    # AutoStart Oracle and listener
    # AutoStop Oracle and listener
    #
    ######################################
    #
    # Created by bluefox 2003-11-26
    #
    case "$1" in
    start)
    echo "Starting Oracle Databases ... "
    echo "-----------------------------------------------" >> /var/log/oracle
    date +" %T %a %D : Starting Oracle Databasee as part of system up." >> /var/log/oracle
    echo "-----------------------------------------------" >> /var/log/oracle
    su - oracle -c "dbstart" >> /var/log/oracle
    echo "Done."
    echo "Starting Oracle Listeners ... "
    echo "-----------------------------------------------" >> /var/log/oracle
    date +" %T %a %D : Starting Oracle Listeners as part of system up." >> /var/log/oracle
    echo "-----------------------------------------------" >> /var/log/oracle
    su - oracle -c "lsnrctl start" >> /var/log/oracle
```

```
echo "Done."
echo ""
echo "------------------------------------------------" >> /var/log/oracle
date +" %T %a %D : Finished." >> /var/log/oracle
echo "------------------------------------------------" >> /var/log/oracle
touch /var/lock/subsys/oracle
;;
stop)
echo "Stoping Oracle Listeners ... "
echo "------------------------------------------------" >> /var/log/oracle
date +" %T %a %D : Stoping Oracle Listener as part of system down." >> /var/log/oracle
echo "------------------------------------------------" >> /var/log/oracle
su - oracle -c "lsnrctl stop" >> /var/log/oracle
echo "Done."
rm -f /var/lock/subsys/oracle
echo "Stoping Oracle Databases ... "
echo "------------------------------------------------" >> /var/log/oracle
date +" %T %a %D : Stoping Oracle Databases as part of system down." >> /var/log/oracle
echo "------------------------------------------------" >> /var/log/oracle
su - oracle -c "dbshut" >>/var/log/oracle
echo "Done."
echo ""
echo "------------------------------------------------" >> /var/log/oracle
date +" %T %a %D : Finished." >> /var/log/oracle
echo "------------------------------------------------" >> /var/log/oracle
;;
restart)
$0 stop
$0 start
;;
*)
echo "Usage: oracle {start|stop|restart}"
exit 1
esac
```