

Oracle 11G 在 RHEL 5.3 上的安装文档

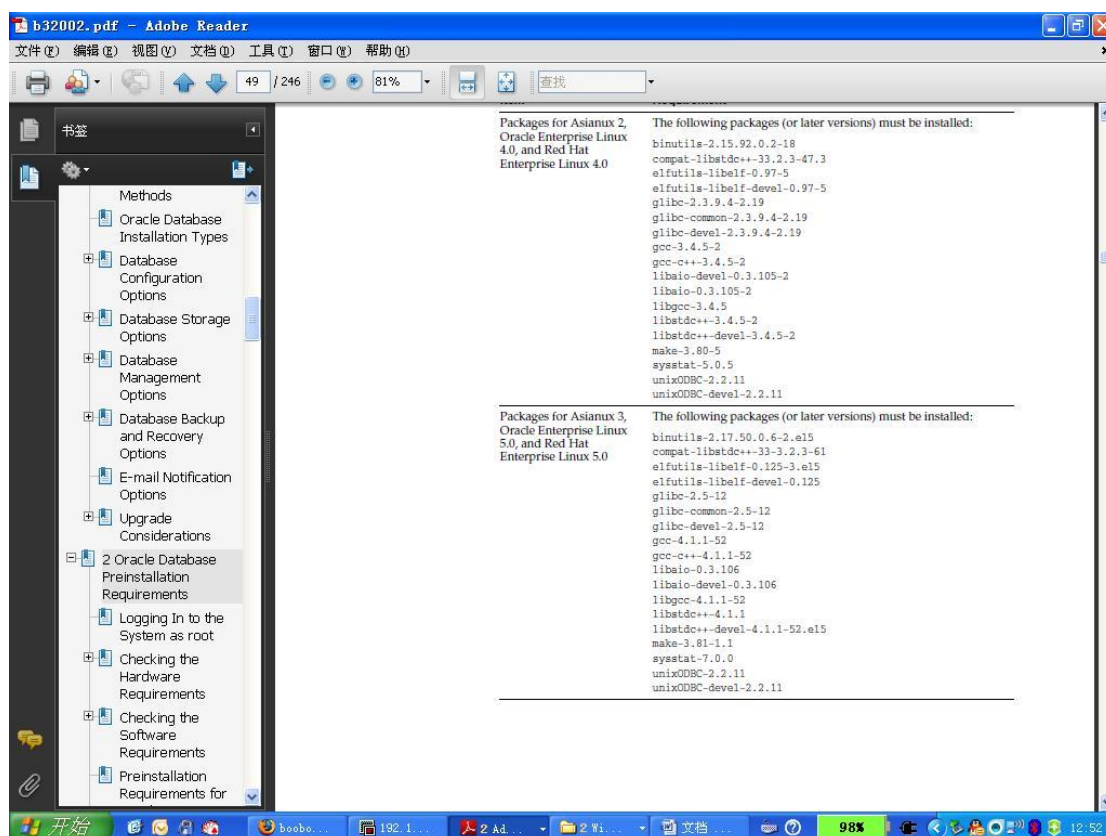
Oracle11G 出来有很长时间了，为了帮助大家学习 Oracle11G，我做了个小文档，讲述一下 Oracle 11G 在 RHEL5.3 上的安装方法(主要参考“Oracle 11G for linux Installation guide”。)

第一步：安装 RHEL 5.3 操作系统：

安装步骤不予详述了，只要把 development 组件完全安装即可。其余组件根据个人需要选装。**注意：一定要禁用 Linux 自带防火墙及 SE Linux。**

第二步：添加 Oracle 11G 安装必须的 rpm 包：

参照 Oracle 11G Installation guide 中的 Checking the Software Requirements 部分。



因为我们使用的是 RHEL 5.3，以下图中所列出的 rpm 包为依据，检查系统中是否安装了下述 rpm 包。

Packages for Asianux 3, Oracle Enterprise Linux 5.0, and Red Hat Enterprise Linux 5.0	unixODBC-devel-2.2.11
	The following packages (or later versions) must be installed: binutils-2.17.50.0.6-2.el5 compat-libstdc++-33-3.2.3-61 elfutils-libelf-0.125-3.el5 elfutils-libelf-devel-0.125 glibc-2.5-12 glibc-common-2.5-12 glibc-devel-2.5-12 gcc-4.1.1-52 gcc-c++-4.1.1-52 libaio-0.3.106 libaio-devel-0.3.106 libgcc-4.1.1-52 libstdc++-4.1.1 libstdc++-devel-4.1.1-52.el5 make-3.81-1.1 sysstat-7.0.0 unixODBC-2.2.11 unixODBC-devel-2.2.11

如果系统采用的是 SUSE Linux 操作系统，则使用下图中列出的包：

Item	Requirement
SUSE Linux Enterprise Server 10	The following packages (or later versions) must be installed:
	binutils-2.16.91.0.5
	compat-libstdc++-5.0.7
	glibc-2.4-31.2
	glibc-devel-2.4-31.2
	gcc-4.1.0
	ksh-93r-12.9
	libaio-0.3.104
	libaio-devel-0.3.104
	libelf-0.8.5
	libgcc-4.1.0
	libstdc++-4.1.0
	libstdc++-devel-4.1.0
	make-3.80
	sysstat-6.0.2
	unixODBC-2.2.11
	unixODBC-devel-2.2.11

下面我们开始检查所装系统里是否安装了上述安装 oracle 11G 所需的包：

```
192.168.0.248 - SecureCRT
File Edit View Options Transfer Script Tools Help
192.168.0.248
compat-glibc-2.3.4-2.26
compat-glibc-headers-2.3.4-2.26
glibc-common-2.5-34
glibc-devel-2.5-34
[root@localhost ~]# rpm -qa |grep gcc
gcc-java-4.1.2-44.el5
compat-gcc-34-g77-3.4.6-4
libgcc-4.1.2-44.el5
compat-libgcc-296-2.96-138
gcc-c++-4.1.2-44.el5
gcc-gnat-4.1.2-44.el5
compat-gcc-34-3.4.6-4
gcc43-4.3.2-7.el5
gcc43-gfortran-4.3.2-7.el5
compat-gcc-34-c++-3.4.6-4
gcc43-c++-4.3.2-7.el5
gcc-4.1.2-44.el5
gcc-gfortran-4.1.2-44.el5
gcc-objc-4.1.2-44.el5
[root@localhost ~]# rpm -qa |grep libaio
libaio-0.3.106-3.2
[root@localhost ~]# rpm -qa |grep libgcc
libgcc-4.1.2-44.el5
compat-libgcc-296-2.96-138
[root@localhost ~]# rpm -qa |grep libstdc
compat-libstdc++-296-2.96-138
libstdc++43-devel-4.3.2-7.el5
libstdc++-devel-4.1.2-44.el5
compat-libstdc++-33-3.2.3-61
libstdc++-4.1.2-44.el5
[root@localhost ~]# rpm -qa |grep make-3
make-3.81-3.el5
[root@localhost ~]# rpm -qa |grep sysstat
sysstat-7.0.2-3.el5
[root@localhost ~]# rpm -qa |grep unixODBC
[root@localhost ~]#
```

命令行及输出如下所示：

*[root@localhost ~]# rpm -qa compat**

compat-dapl-2.0.13-4.el5

compat-openldap-2.3.43_2.2.29-3.el5

compat-gcc-34-g77-3.4.6-4

compat-libstdc++-296-2.96-138

compat-glibc-2.3.4-2.26

compat-libcom_err-1.0-7

compat-glibc-headers-2.3.4-2.26

compat-libgcc-296-2.96-138

compat-libf2c-34-3.4.6-4

compat-slang-1.4.9-27.2.2

compat-dapl-utils-2.0.13-4.el5

compat-gcc-34-3.4.6-4

compat-readline43-4.3-3

compat-dapl-devel-2.0.13-4.el5

compat-dapl-static-2.0.13-4.el5

compat-gcc-34-c++-3.4.6-4

compat-libstdc++-33-3.2.3-61

compat-db-4.2.52-5.1

*[root@localhost ~]# rpm -qa |grep elfutils**

elfutils-0.137-3.el5

elfutils-libelf-0.137-3.el5

elfutils-libs-0.137-3.el5

elfutils-libelf-devel-0.137-3.el5

elfutils-libelf-devel-static-0.137-3.el5

*[root@localhost ~]# rpm -qa |grep glibc**

glibc-headers-2.5-34

glibc-2.5-34

glib2-devel-2.12.3-2.fc6

compat-glibc-2.3.4-2.26

glib2-2.12.3-2.fc6

compat-glibc-headers-2.3.4-2.26

glibc-common-2.5-34

NetworkManager-glib-0.7.0-3.el5

glibc-devel-2.5-34

dbus-glib-devel-0.73-8.el5

glib-java-0.2.6-3.fc6

avahi-glib-0.6.16-1.el5

dbus-glib-0.73-8.el5

[root@localhost ~]# rpm -qa |grep glibc

glibc-headers-2.5-34

glibc-2.5-34

compat-glibc-2.3.4-2.26

compat-glibc-headers-2.3.4-2.26

glibc-common-2.5-34

glibc-devel-2.5-34

[root@localhost ~]# rpm -qa |grep gcc

gcc-java-4.1.2-44.el5

compat-gcc-34-g77-3.4.6-4

libgcc-4.1.2-44.el5

compat-libgcc-296-2.96-138

gcc-c++-4.1.2-44.el5

gcc-gnat-4.1.2-44.el5

compat-gcc-34-3.4.6-4

gcc43-4.3.2-7.el5

gcc43-gfortran-4.3.2-7.el5

compat-gcc-34-c++-3.4.6-4

gcc43-c++-4.3.2-7.el5

gcc-4.1.2-44.el5

gcc-gfortran-4.1.2-44.el5

gcc-objc-4.1.2-44.el5

[root@localhost ~]# rpm -qa |grep libaio

libaio-0.3.106-3.2

[root@localhost ~]# rpm -qa |grep libgcc

libgcc-4.1.2-44.el5

compat-libgcc-296-2.96-138

[root@localhost ~]# rpm -qa |grep libstdc

compat-libstdc++-296-2.96-138

libstdc++43-devel-4.3.2-7.el5

libstdc++-devel-4.1.2-44.el5

compat-libstdc++-33-3.2.3-61

libstdc++-4.1.2-44.el5

[root@localhost ~]# rpm -qa |grep make-3

make-3.81-3.el5

[root@localhost ~]# rpm -qa |grep sysstat

sysstat-7.0.2-3.el5

[root@localhost ~]# rpm -qa |grep unixODBC

```
[root@localhost ~]#
```

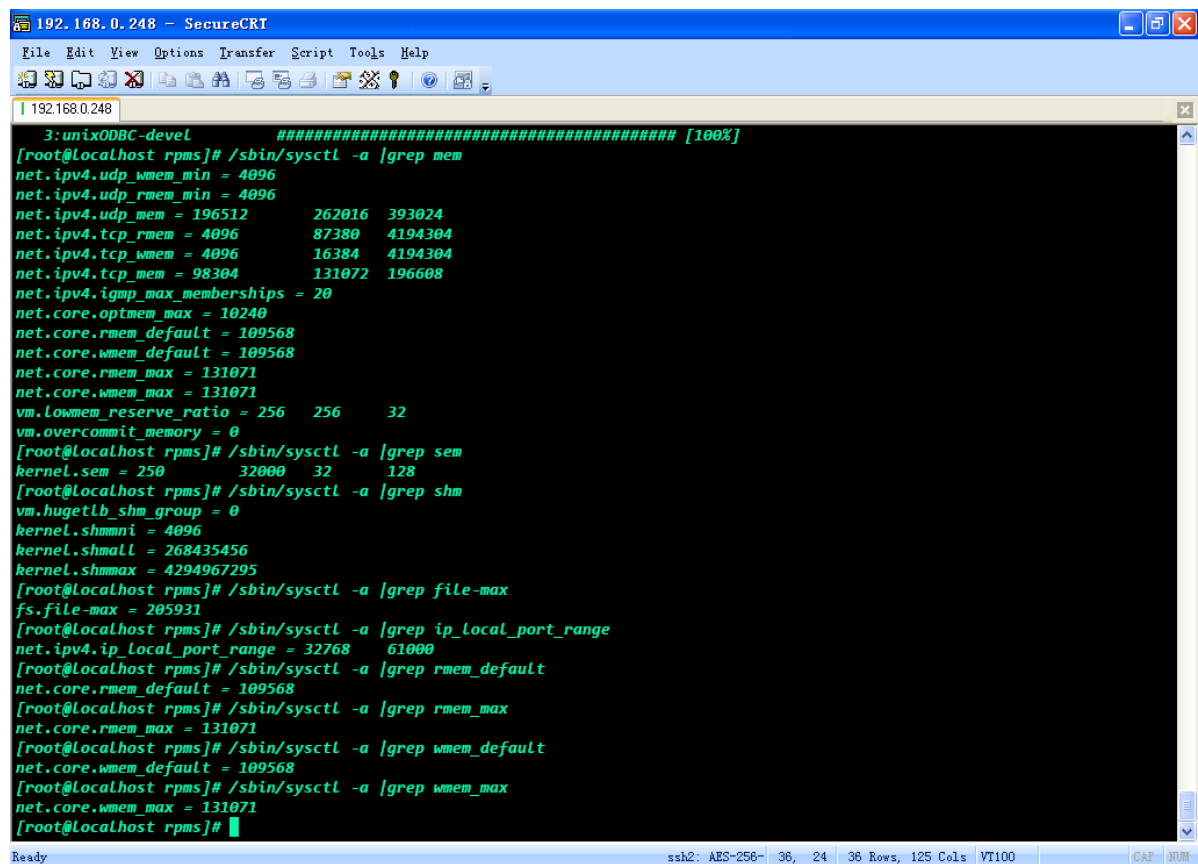
从上面的输出显示我们可以看出，系统缺少了 libaio-devel-0.3.106、unixODBC-2.2.11 及 unixODBC-devel-2.2.11 三个包。

我们从 RHEL 5.3 的安装光盘里的 Server 目录里找到对应的 rpm 包，复制到 /home/rpms 文件夹下。

执行 rpm -Uvh * 进行安装。如下图所示：

```
[root@localhost Server]# cd /home/rpms
[root@localhost rpms]# rpm -Uvh *
warning: libaio-devel-0.3.106-3.2.i386.rpm: Header V3 DSA signature: NOKEY, key ID 37017186
Preparing...
 1:libaio-devel                ##### [100%]
 2:unixODBC                    ##### [ 33%]
 3:unixODBC-devel              ##### [100%]
[root@localhost rpms]#
```

下面我们开始检查现有 Linux 系统的内核参数。



```
192.168.0.248 - SecureCRT
File Edit View Options Transfer Script Tools Help
192.168.0.248
3:unixODBC-devel                ##### [100%]
[root@localhost rpms]# /sbin/sysctl -a |grep mem
net.ipv4.udp_wmem_min = 4096
net.ipv4.udp_rmem_min = 4096
net.ipv4.udp_mem = 196512 262016 393024
net.ipv4.tcp_rmem = 4096 87380 4194304
net.ipv4.tcp_wmem = 4096 16384 4194304
net.ipv4.tcp_mem = 98304 131072 196608
net.ipv4.igmp_max_memberships = 20
net.core.optmem_max = 10240
net.core.rmem_default = 109568
net.core.wmem_default = 109568
net.core.rmem_max = 131071
net.core.wmem_max = 131071
vm.lowmem_reserve_ratio = 256 256 32
vm.overcommit_memory = 0
[root@localhost rpms]# /sbin/sysctl -a |grep sem
kernel.sem = 250 32000 32 128
[root@localhost rpms]# /sbin/sysctl -a |grep shm
vm.hugetlb_shm_group = 0
kernel.shmmax = 4096
kernel.shmall = 268435456
kernel.shmmax = 4294967295
[root@localhost rpms]# /sbin/sysctl -a |grep file-max
fs.file-max = 205931
[root@localhost rpms]# /sbin/sysctl -a |grep ip_local_port_range
net.ipv4.ip_local_port_range = 32768 61000
[root@localhost rpms]# /sbin/sysctl -a |grep rmem_default
net.core.rmem_default = 109568
[root@localhost rpms]# /sbin/sysctl -a |grep rmem_max
net.core.rmem_max = 131071
[root@localhost rpms]# /sbin/sysctl -a |grep wmem_default
net.core.wmem_default = 109568
[root@localhost rpms]# /sbin/sysctl -a |grep wmem_max
net.core.wmem_max = 131071
[root@localhost rpms]#
```

安装 oracle11G 要求的内核参数如下：

```
Fs.file-max = 512 * PROCESSES
kernel.shmall = 2097152
kernel.shmmax = 2147483648
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default = 4194304
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 262144
```

根据上述的检查我们需要在/etc/sysctl.conf 中加入以下内容:

```
# Controls the maximum shared segment size, in bytes
kernel.shmmax = 4294967295

# Controls the maximum number of shared memory segments, in pages
kernel.shmall = 268435456

kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default = 4194304
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 262144

"/etc/sysctl.conf" 45L, 1189C written
[root@localhost rpms]#
```

然后我们运行: sysctl -p 使内核参数立即生效:

```
net.core.wmem_max = 262144

"/etc/sysctl.conf" 45L, 1189C written
[root@localhost rpms]# sysctl -p
net.ipv4.ip_forward = 0
net.ipv4.conf.default.rp_filter = 1
net.ipv4.conf.default.accept_source_route = 0
kernel.sysrq = 0
kernel.core_uses_pid = 1
net.ipv4.tcp_syncookies = 1
kernel.msgmnb = 65536
kernel.msgmax = 65536
kernel.shmmax = 4294967295
kernel.shmall = 268435456
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default = 4194304
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 262144
[root@localhost rpms]#
```

我们开始创建 ORACLE 的用户群组并为用户 oracle 设置密码:


```

net.core.wmem_default = 262144
net.core.wmem_max = 262144
[root@localhost rpms]# groupadd oinstall
[root@localhost rpms]# groupadd dba
[root@localhost rpms]# useradd -g oinstall -G dba oracle
[root@localhost rpms]# passwd oracle
Changing password for user oracle.
New UNIX password:
BAD PASSWORD: it is based on a dictionary word
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
[root@localhost rpms]# █

```

验证 nobody 用户及 oracle 用户：

```

BAD PASSWORD: it is based on a dictionary word
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
[root@localhost rpms]# id nobody
uid=99(nobody) gid=99(nobody) groups=99(nobody)
[root@localhost rpms]# id oracle
uid=500(oracle) gid=500(oinstall) groups=500(oinstall),501(dba)
[root@localhost rpms]# █

```

下面在/home 下的 oracle 目录下创建/DB 目录作为 Oracle 数据库的安装目录，并在/DB 下创建 database 目录来存放 Oracle 数据库的安装文件。

```

[root@localhost rpms]# cd /home
[root@localhost home]# ls
lost+found oracle rpms
[root@localhost home]# ls -l
总计 24
drwx----- 2 root root 16384 2009-03-15 lost+found
drwx----- 4 oracle oinstall 4096 03-15 13:48 oracle
drwxr-xr-x 2 root root 4096 03-15 13:31 rpms
[root@localhost home]# cd oracle
[root@localhost oracle]# ls
[root@localhost oracle]# ls -l
总计 0
[root@localhost oracle]# mkdir DB
[root@localhost oracle]# ls
DB
[root@localhost oracle]# ls -l
总计 4
drwxr-xr-x 2 root root 4096 03-15 13:56 DB
[root@localhost oracle]# chown oracle:oinstall /home/oracle/DB
[root@localhost oracle]# ls -l
总计 4
drwxr-xr-x 2 oracle oinstall 4096 03-15 13:56 DB
[root@localhost oracle]#

```

为 Oracle 用户设置 Shell 限制：在/etc/security/limits.conf 文件的最后一行添加：


```

        . $i
    fi
done

unset i
unset pathmunge
if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 65536
    else
        ulimit -u 16384 -n 65536
    fi
fi
[oracle@localhost ~]#

```

配置 oracle 的 *.bash_profile* 文件:

```

export PATH

ORACLE_BASE=/home/oracle/DB
ORACLE_HOME=$ORACLE_BASE/oracle
ORACLE_SID=fxcx
PATH=$ORACLE_HOME/bin:$PATH
export ORACLE_BASE ORACLE_HOME ORACLE_SID

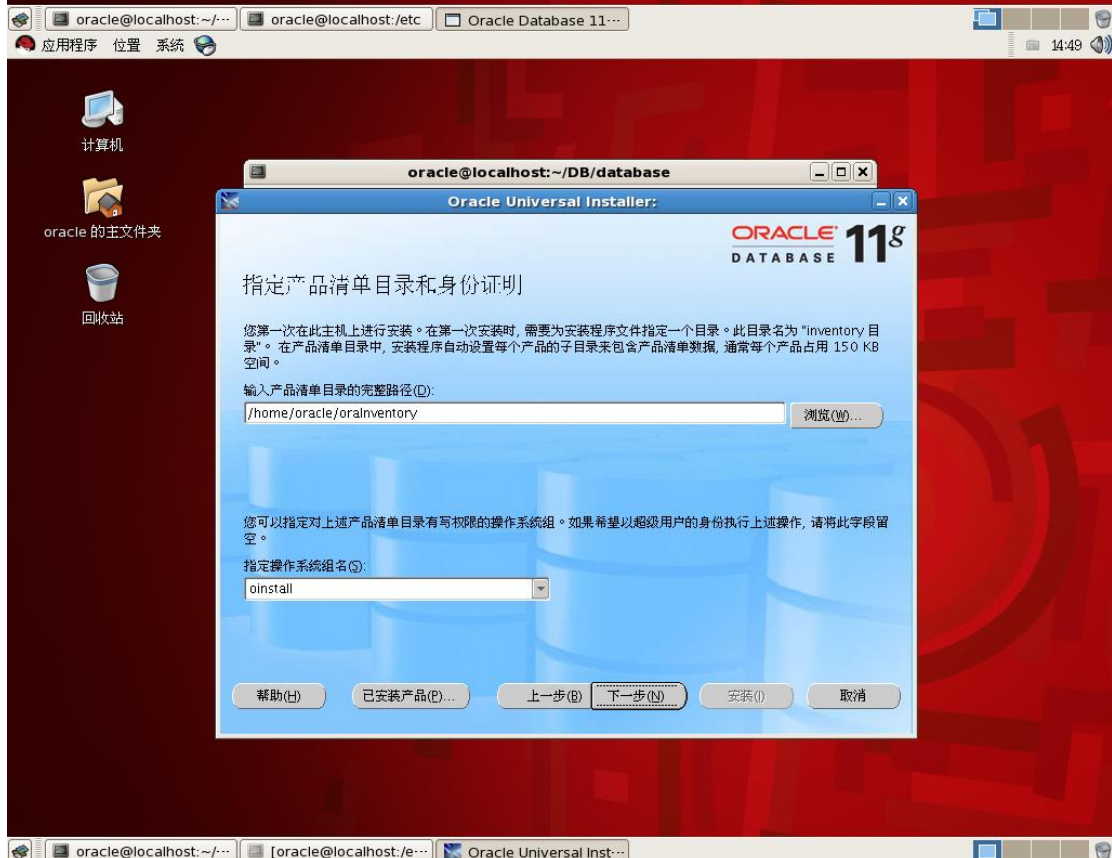
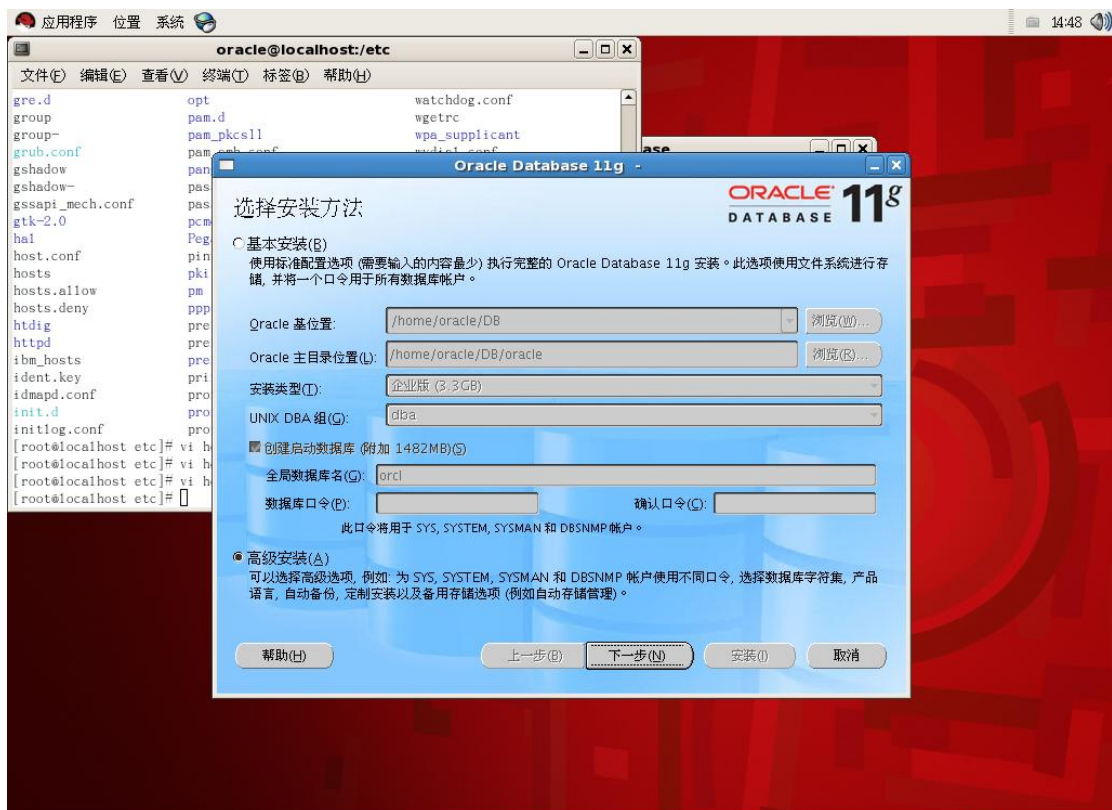
".bash_profile" 19L, 324C 已写入
[oracle@localhost ~]$ exit
Logout

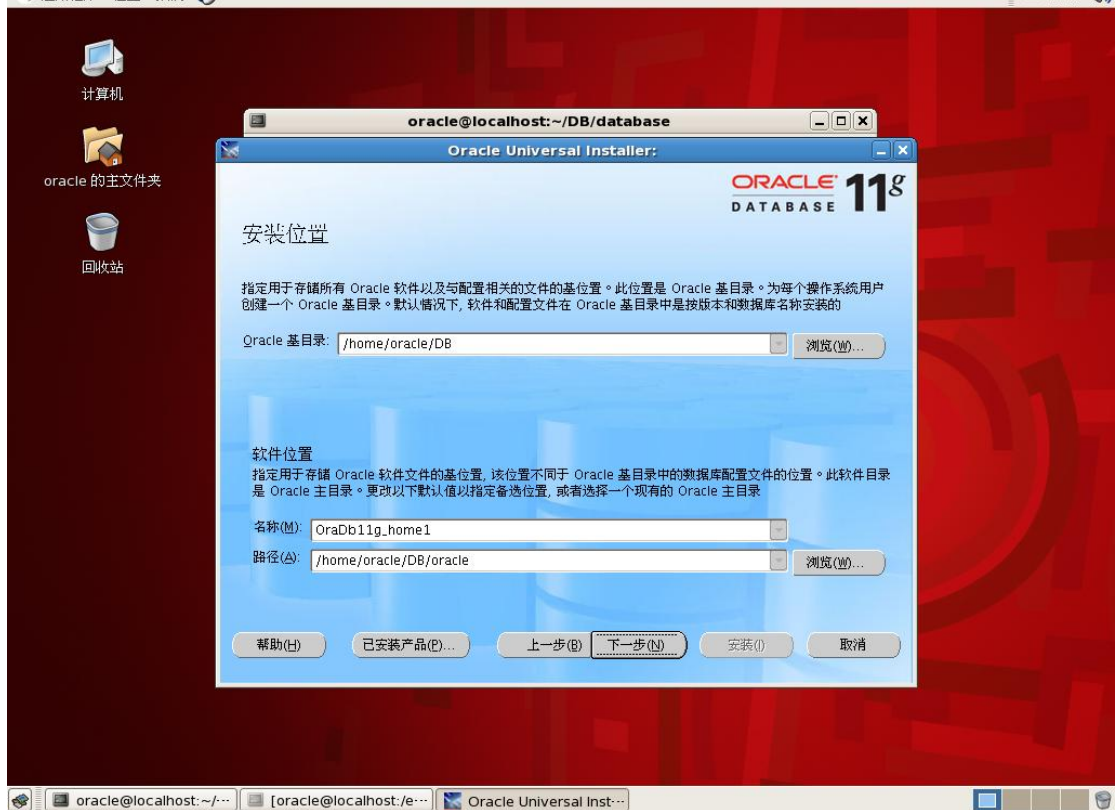
[root@localhost oracle]# su - oracle
[oracle@localhost ~]$ env |grep ORA
ORACLE_SID=fxcx
ORACLE_BASE=/home/oracle/DB
ORACLE_HOME=/home/oracle/DB/oracle
[oracle@localhost ~]$

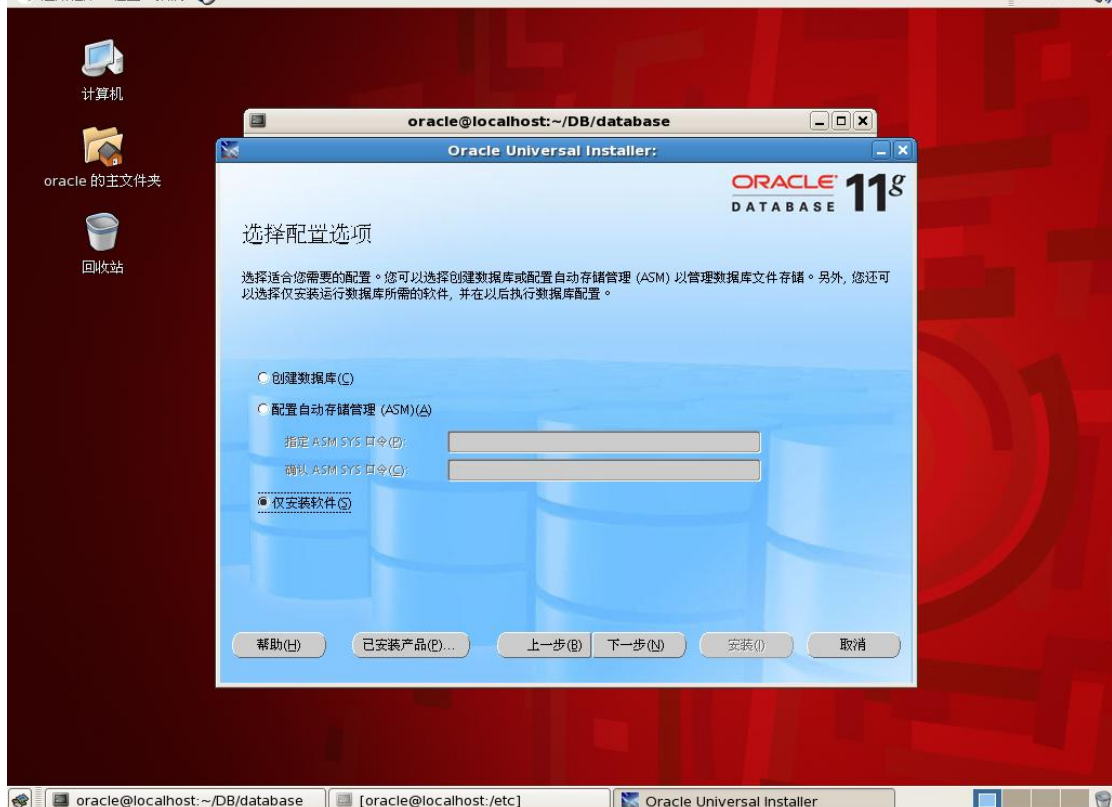
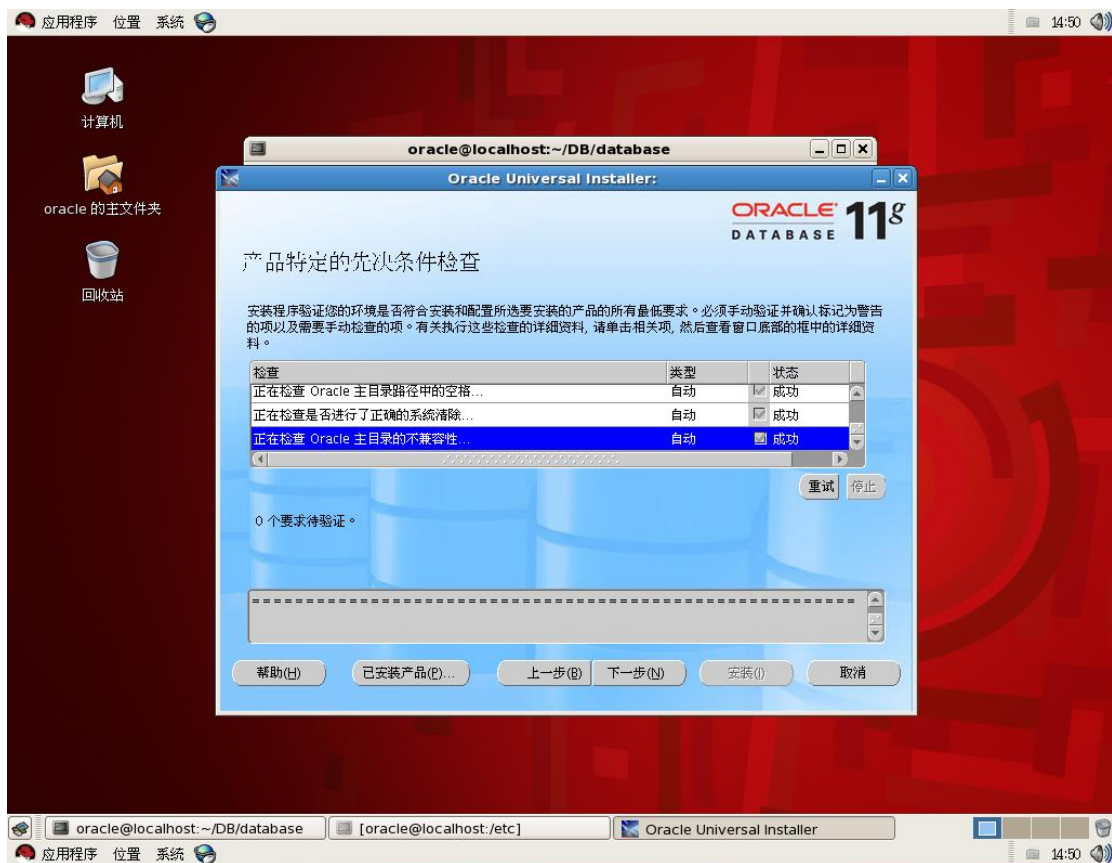
```

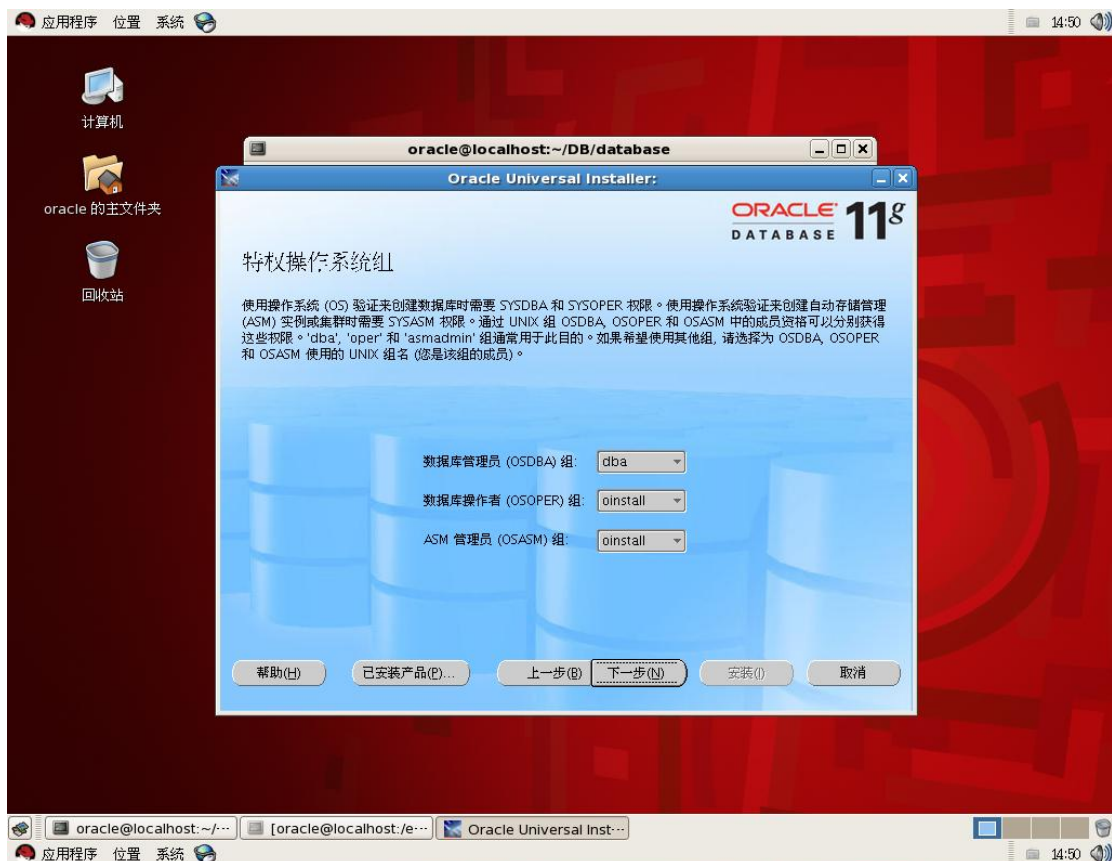
我们重新登陆到 oracle 用户中，用 env 命令看到 oracle 的 .bash_profile 已经生效.

现在 oracle 11G 的准备工作已经做完，下面开始安装 oracle 11G 数据库。











安装完毕后执行提示的脚本, 选择默认即可。如下图所示:


```
[root@localhost oracle]# /home/oracle/iraInventory/orainstRoot.sh
-bash: /home/oracle/iraInventory/orainstRoot.sh: 没有那个文件或目录
[root@localhost oracle]# /home/oracle/oraInventory/orainstRoot.sh
更改权限/home/oracle/oraInventory 到 770.
更改组名/home/oracle/oraInventory 到 oinstall.
脚本的执行已完成
[root@localhost oracle]# /home/oracle/DB/oracle/root.sh
Running Oracle 11g root.sh script...
```

The following environment variables are set as:

ORACLE_OWNER= oracle

ORACLE_HOME= /home/oracle/DB/oracle

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.

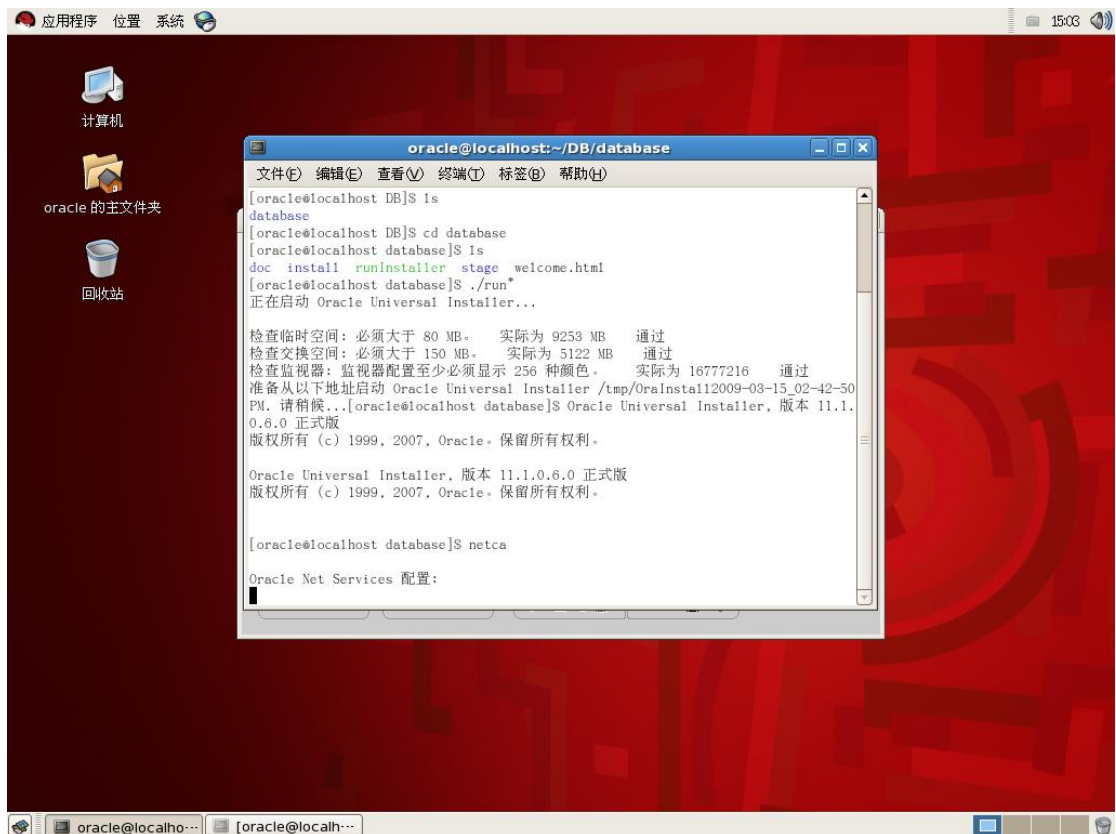
Finished product-specific root actions.

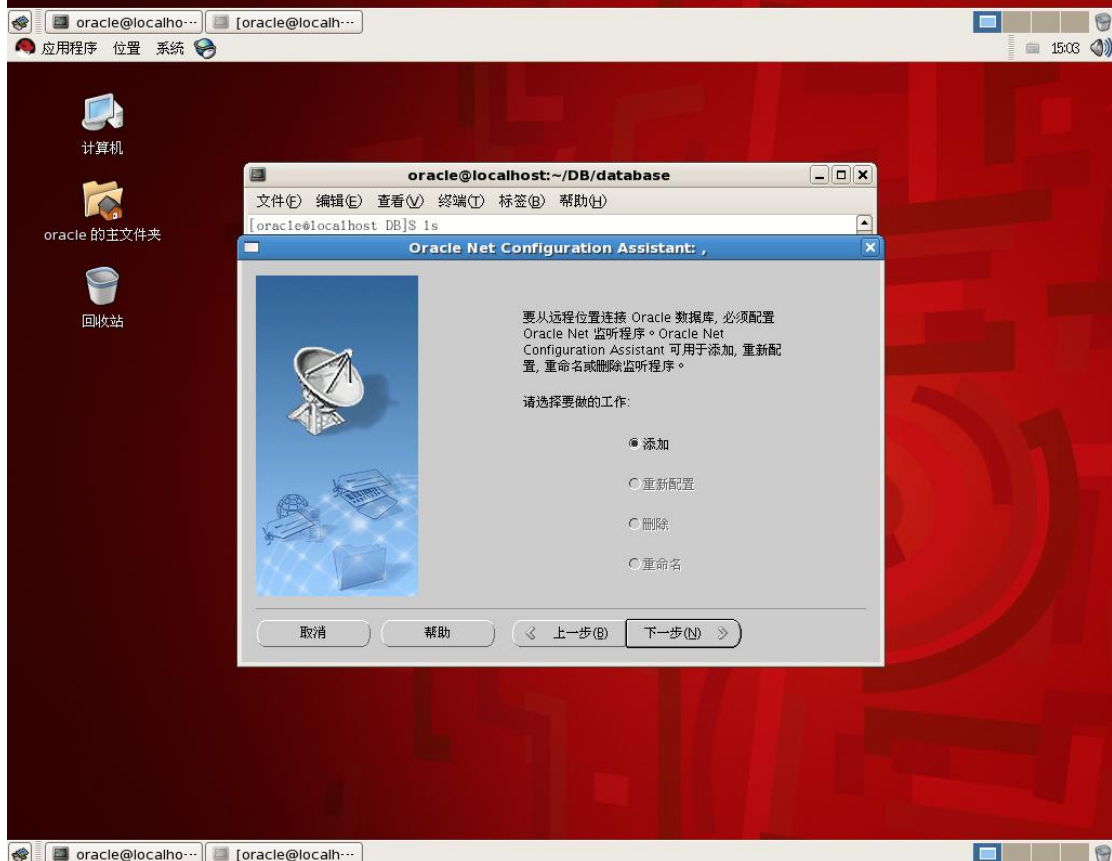
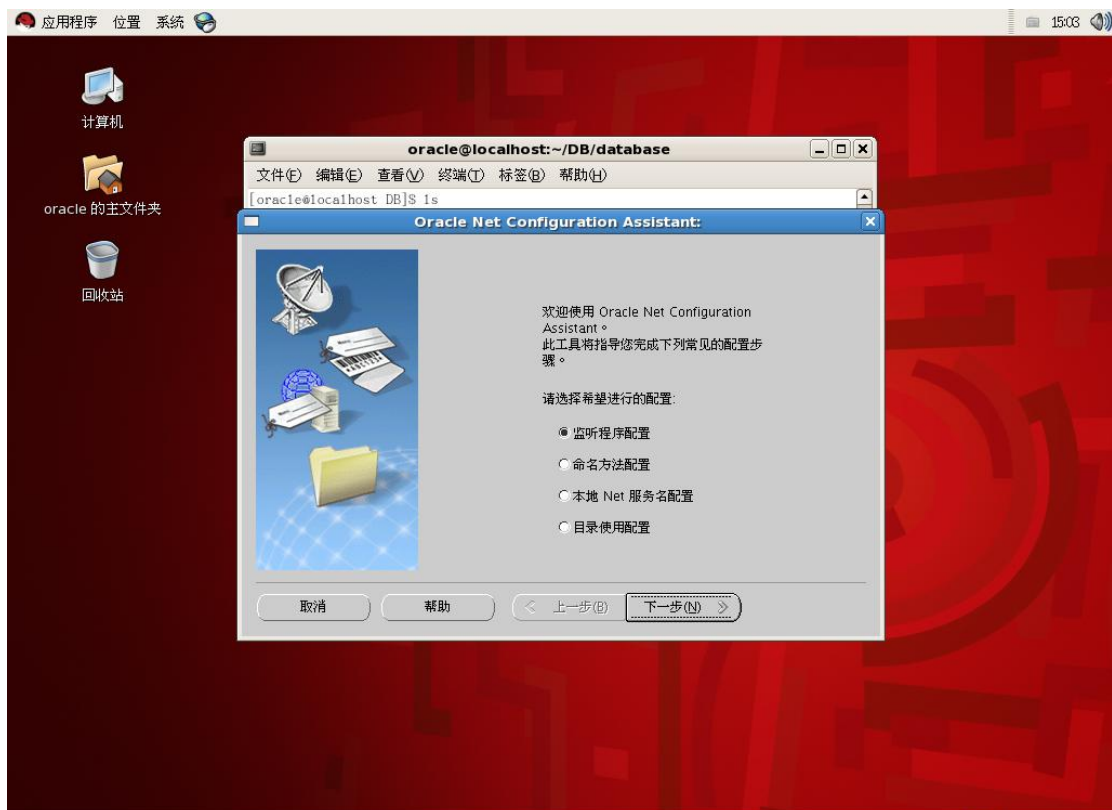
[root@localhost oracle]#

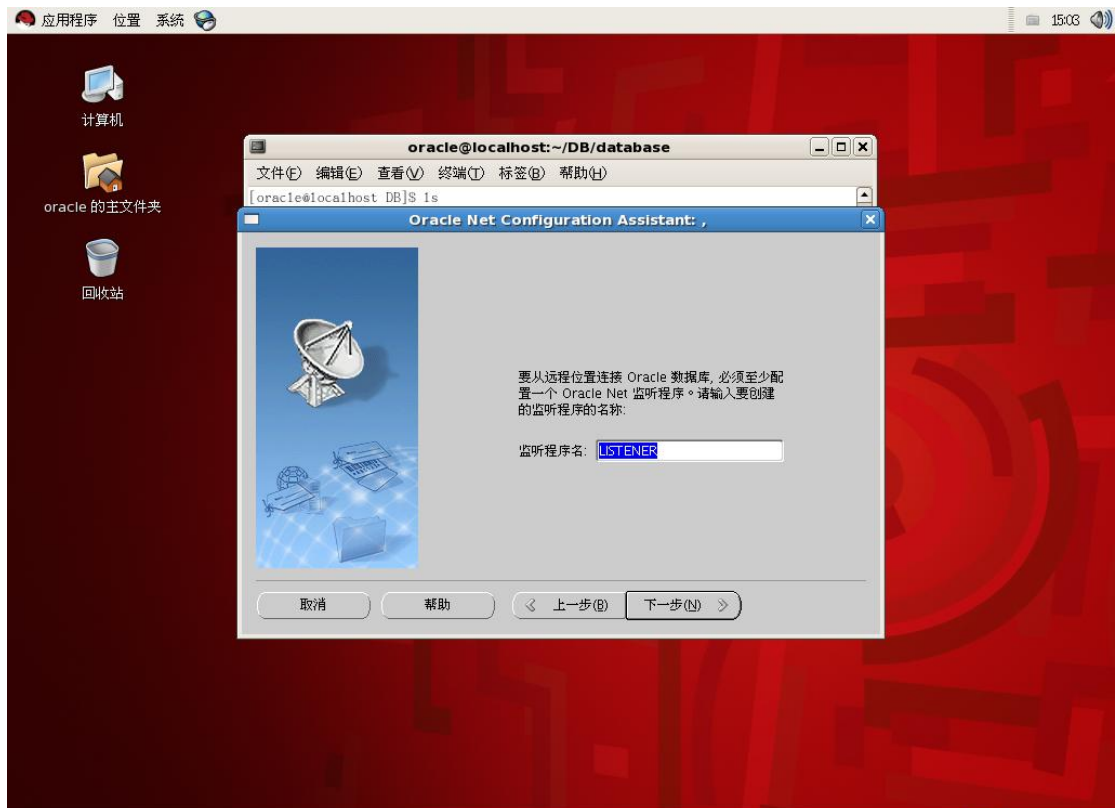


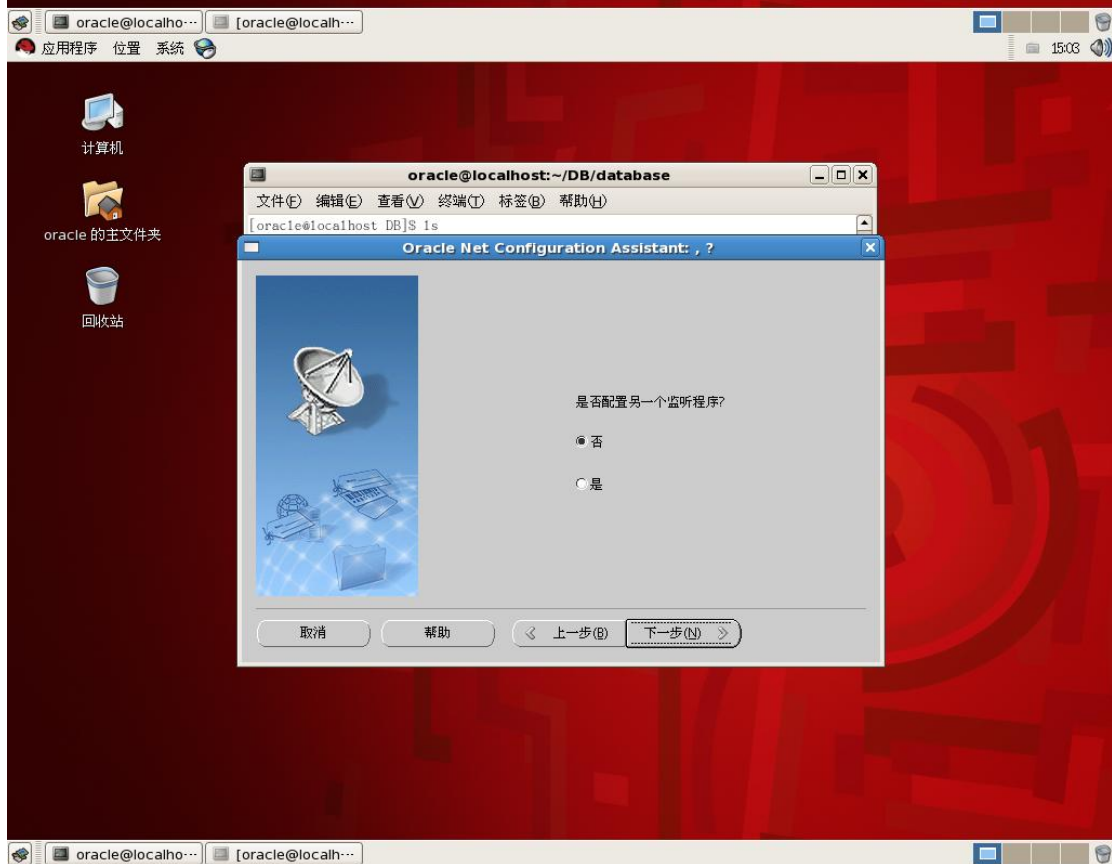
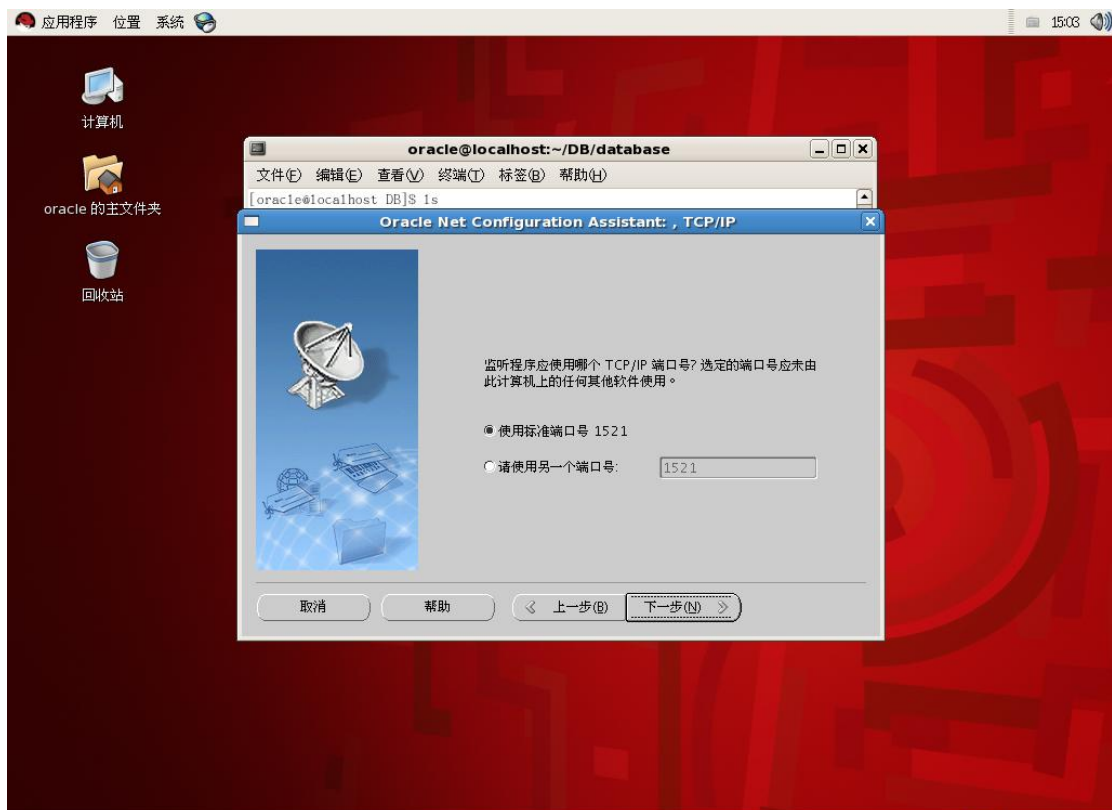


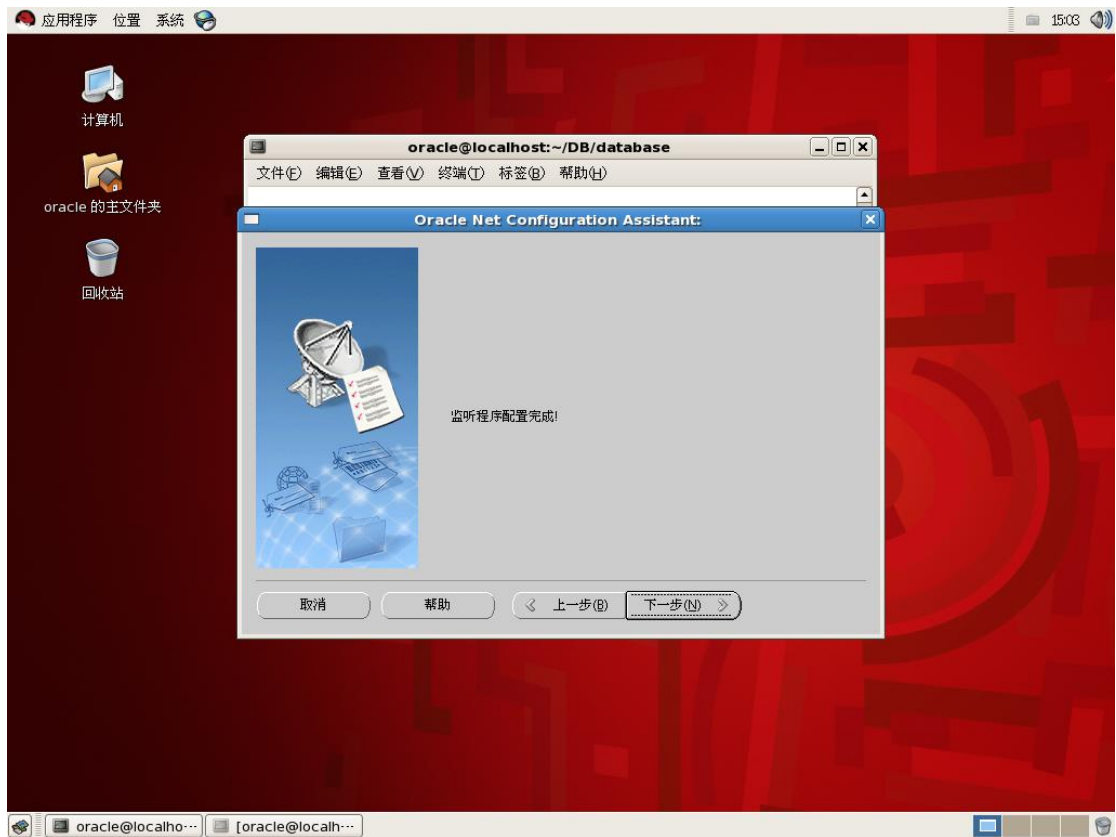
当 Oracle 11G 安装完成之后，我们使用 netca 配置监听程序。



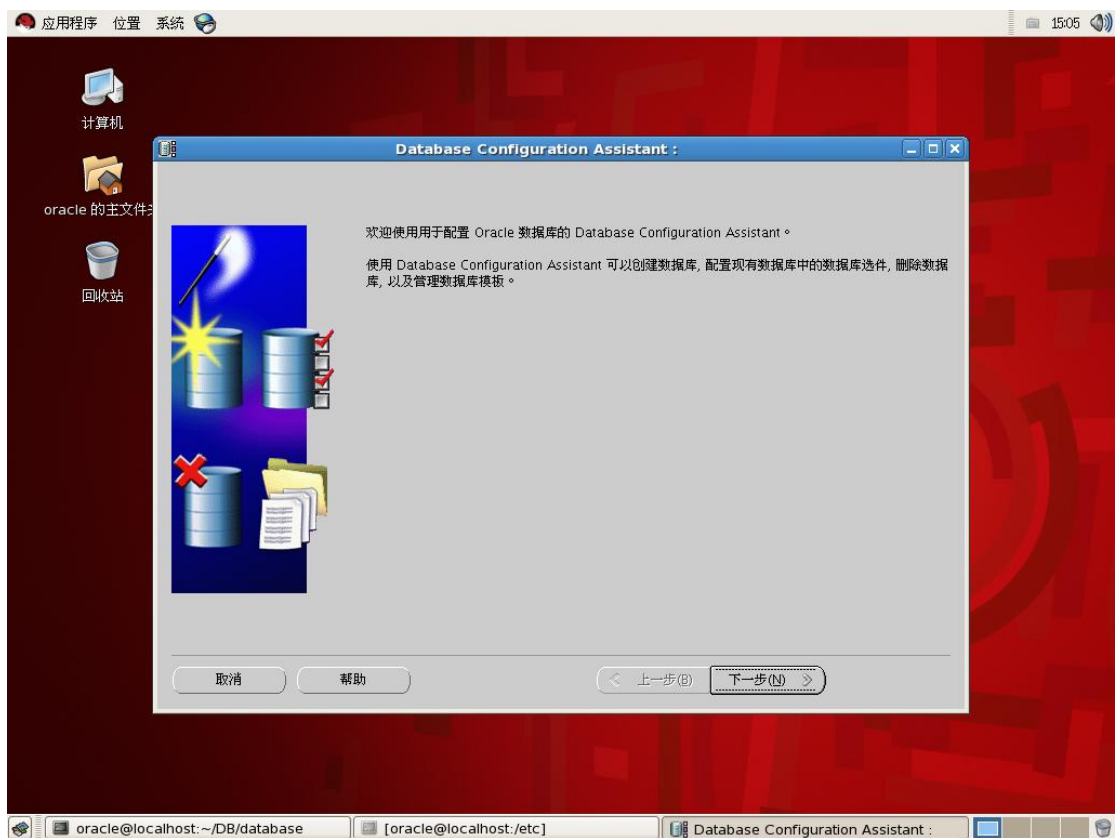


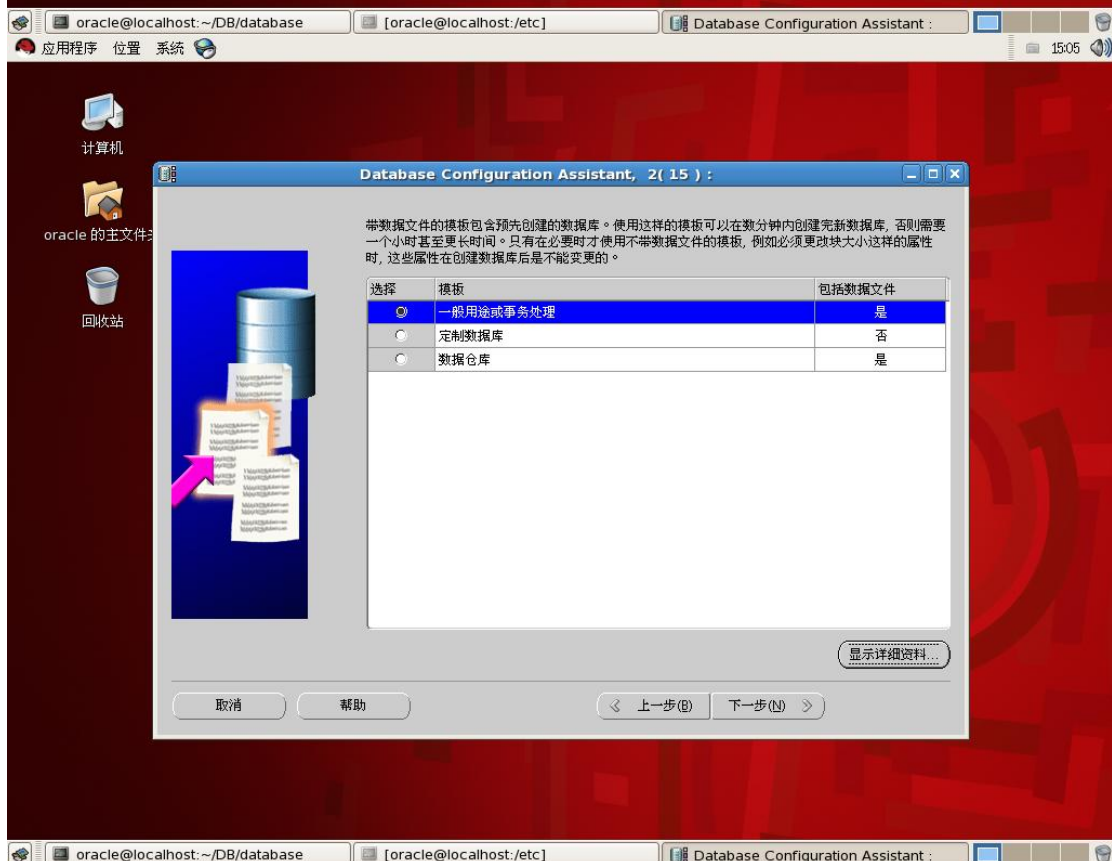
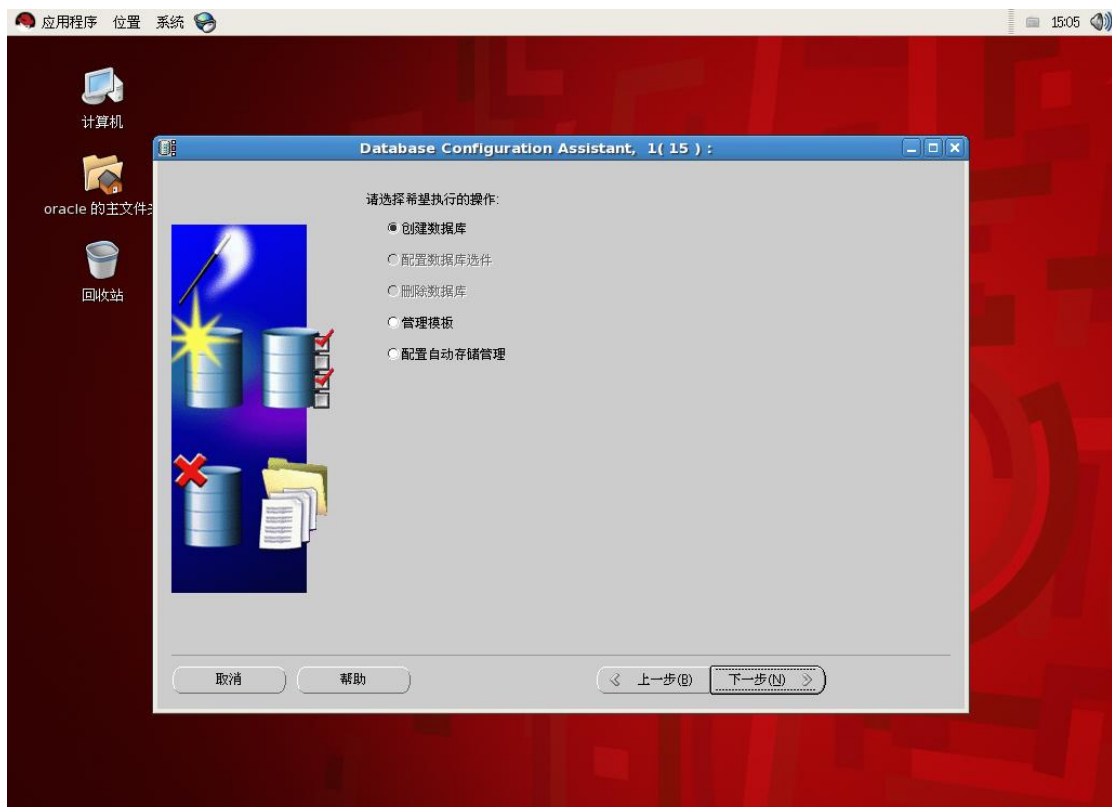


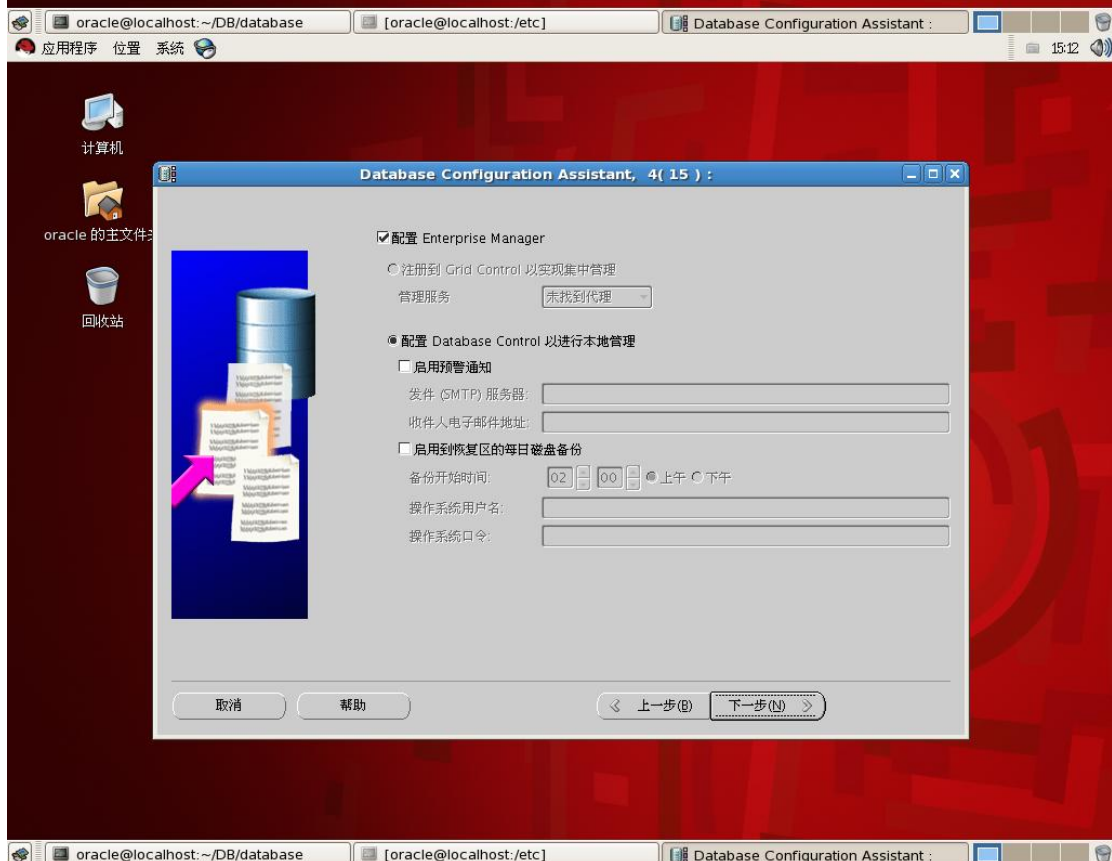
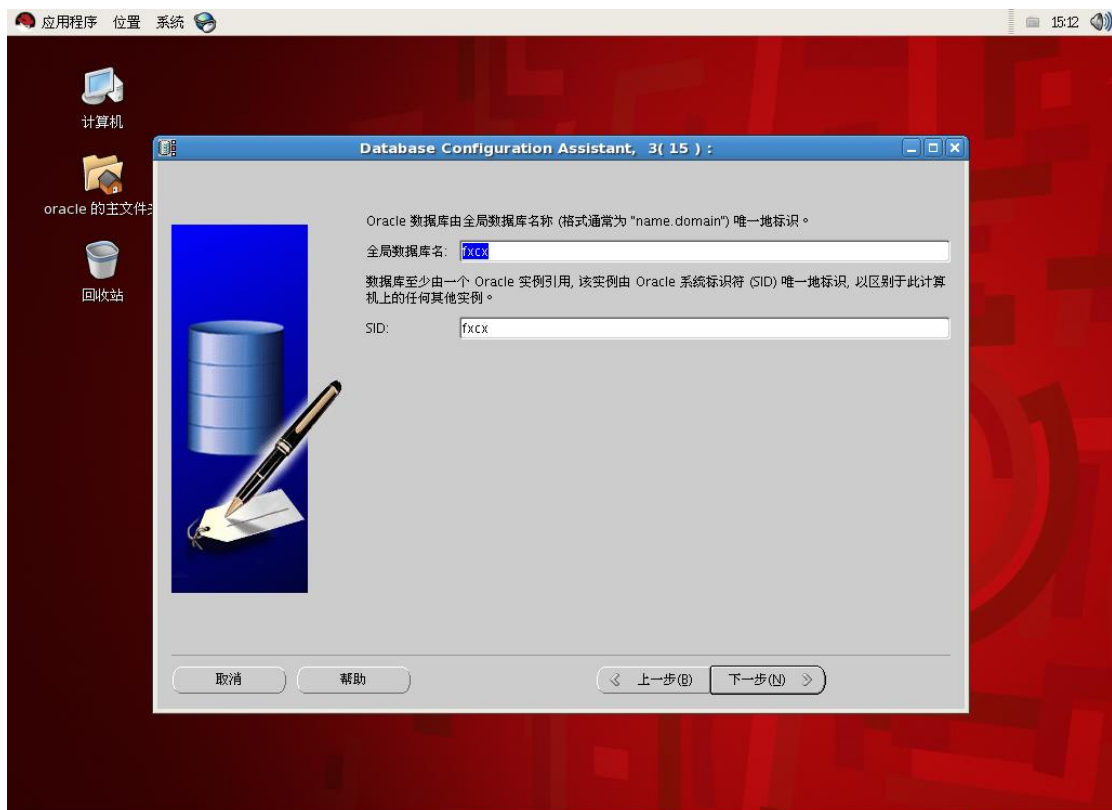


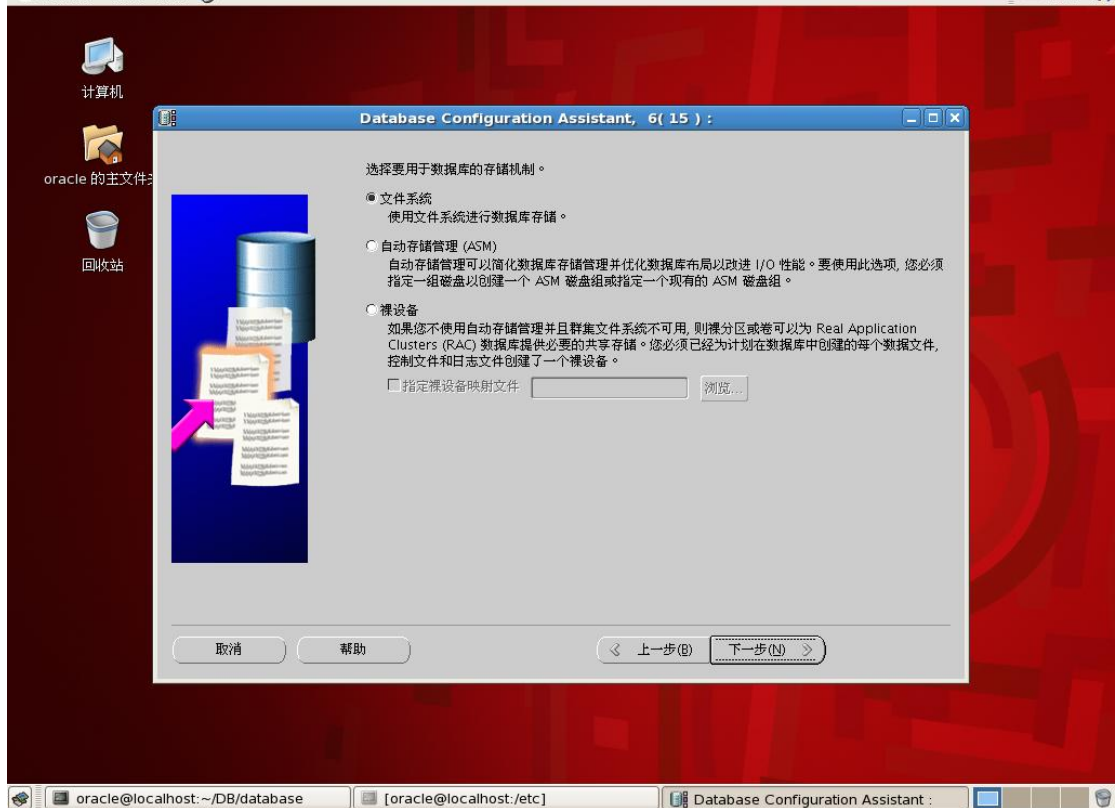
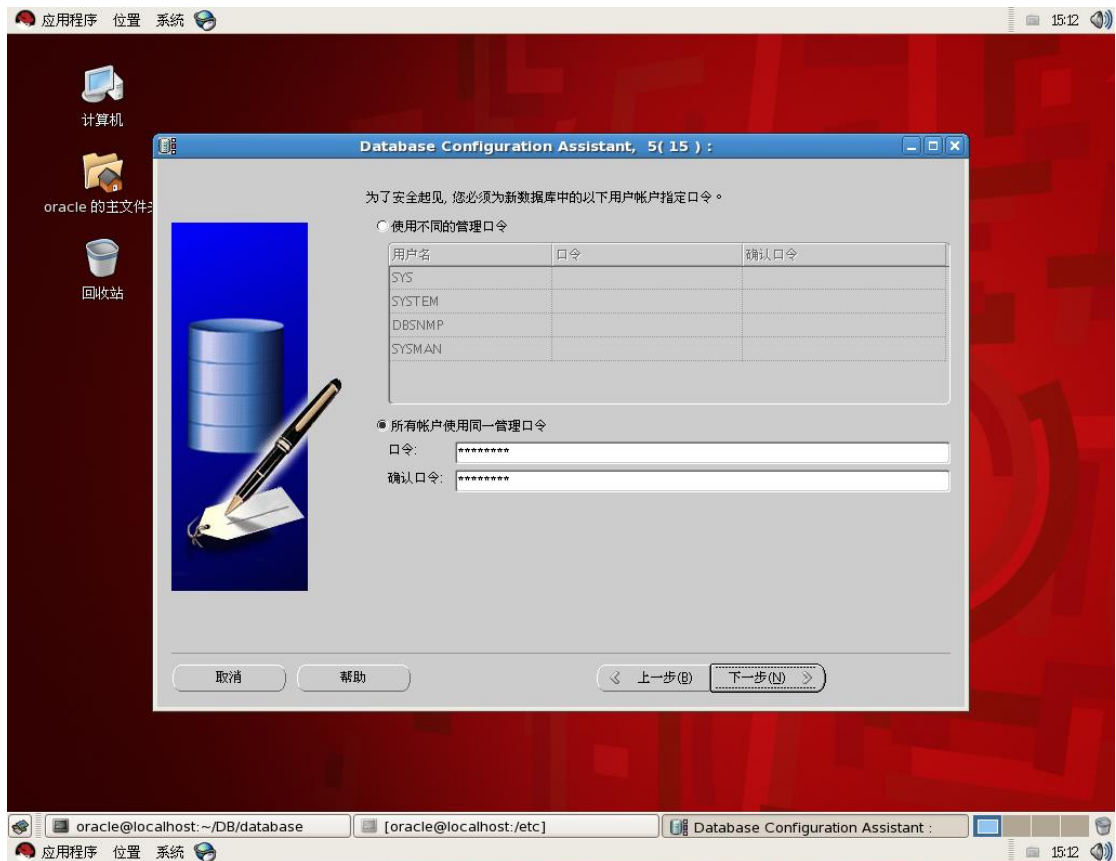


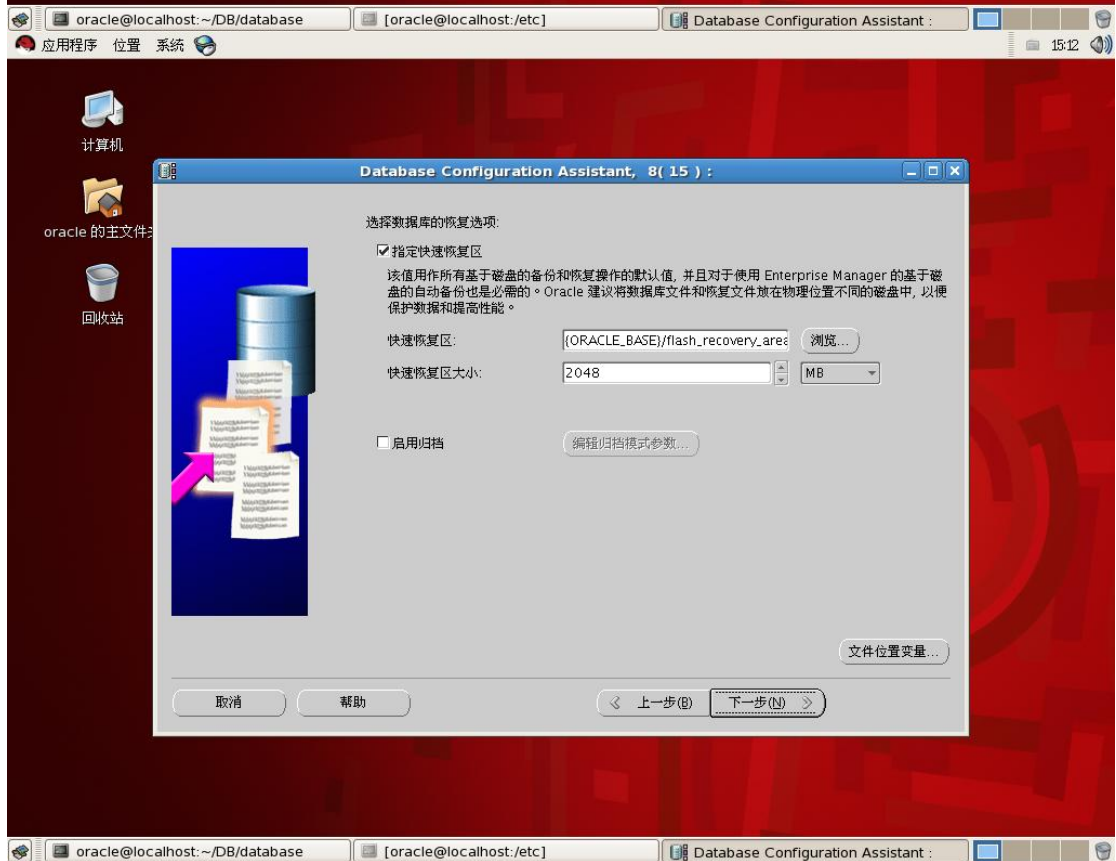
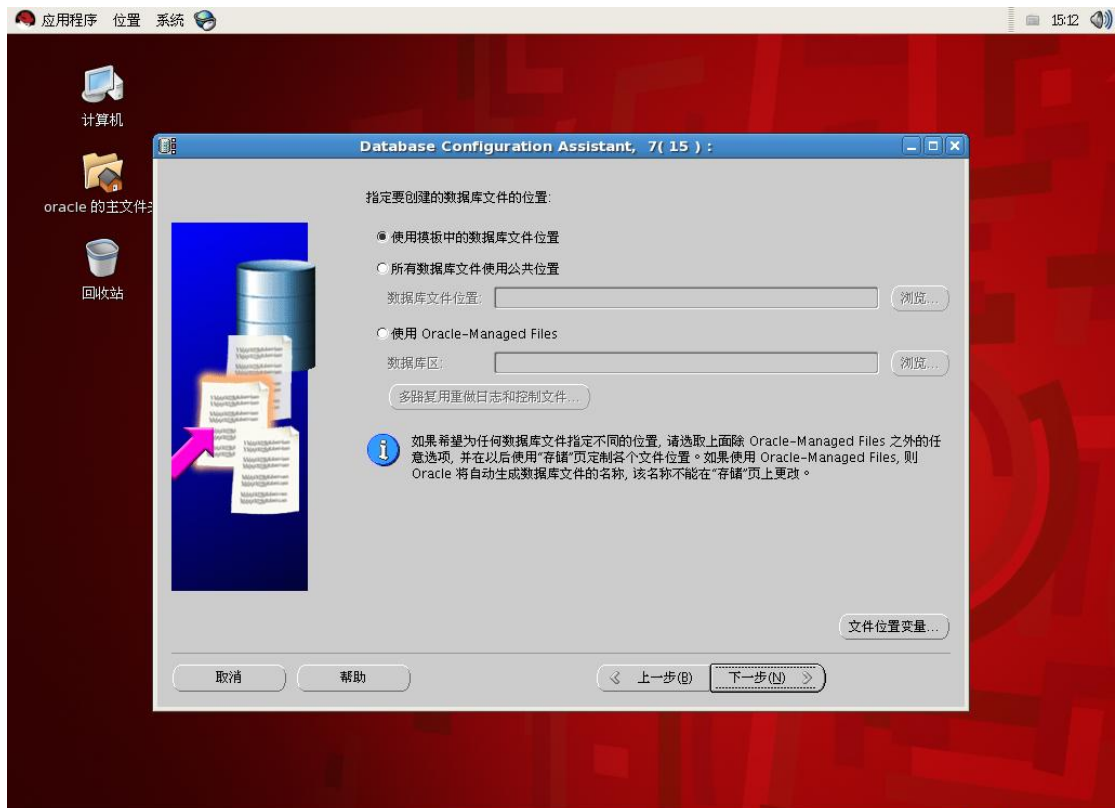
然后使用 dbca 创建数据库实例

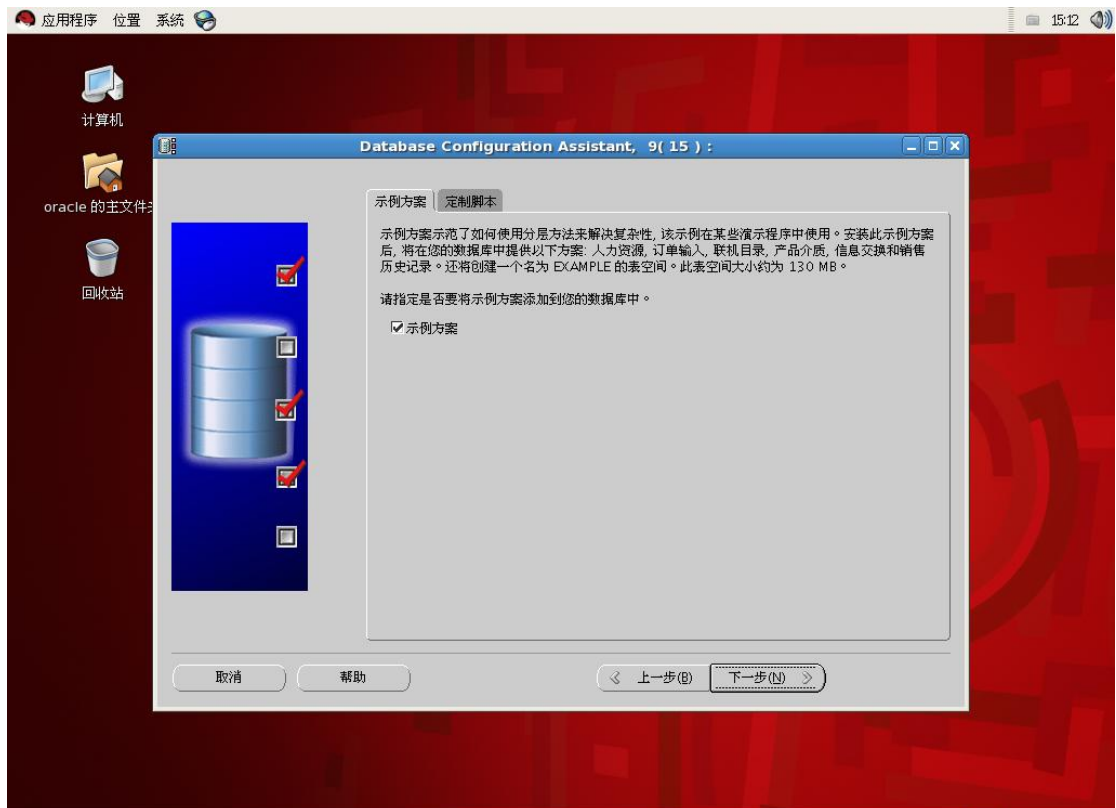


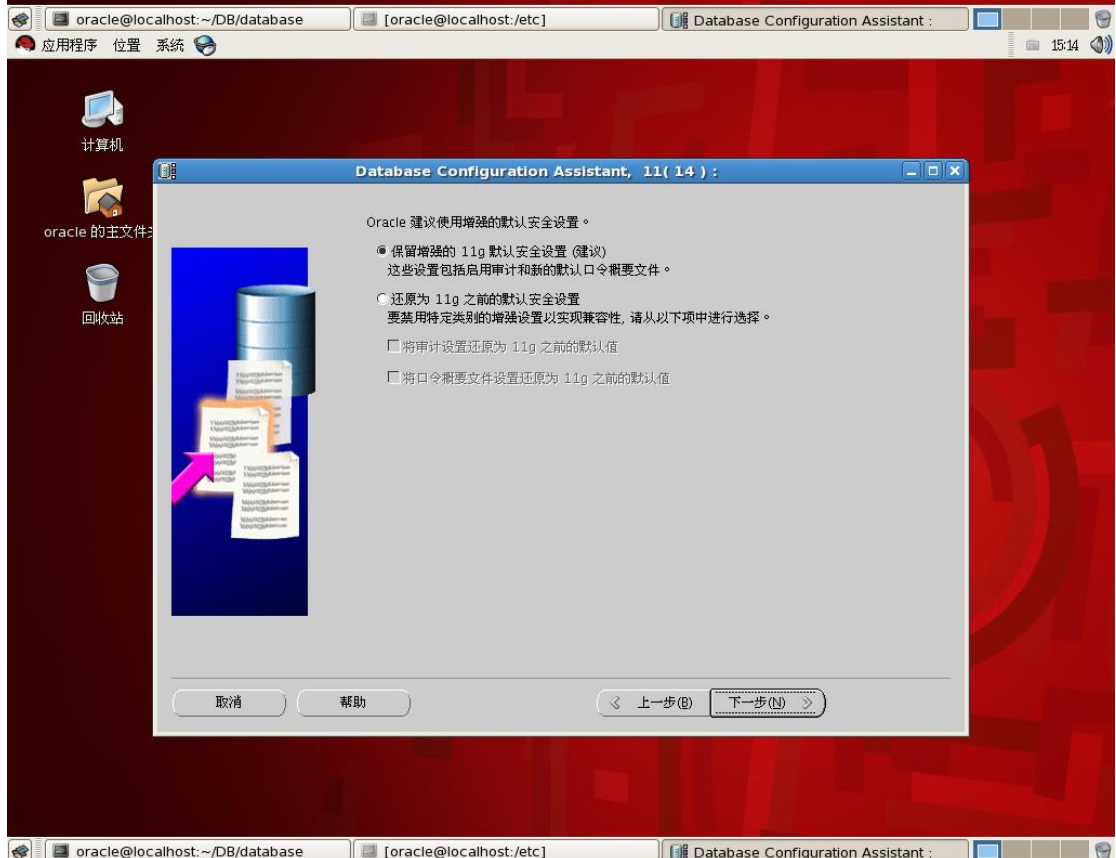
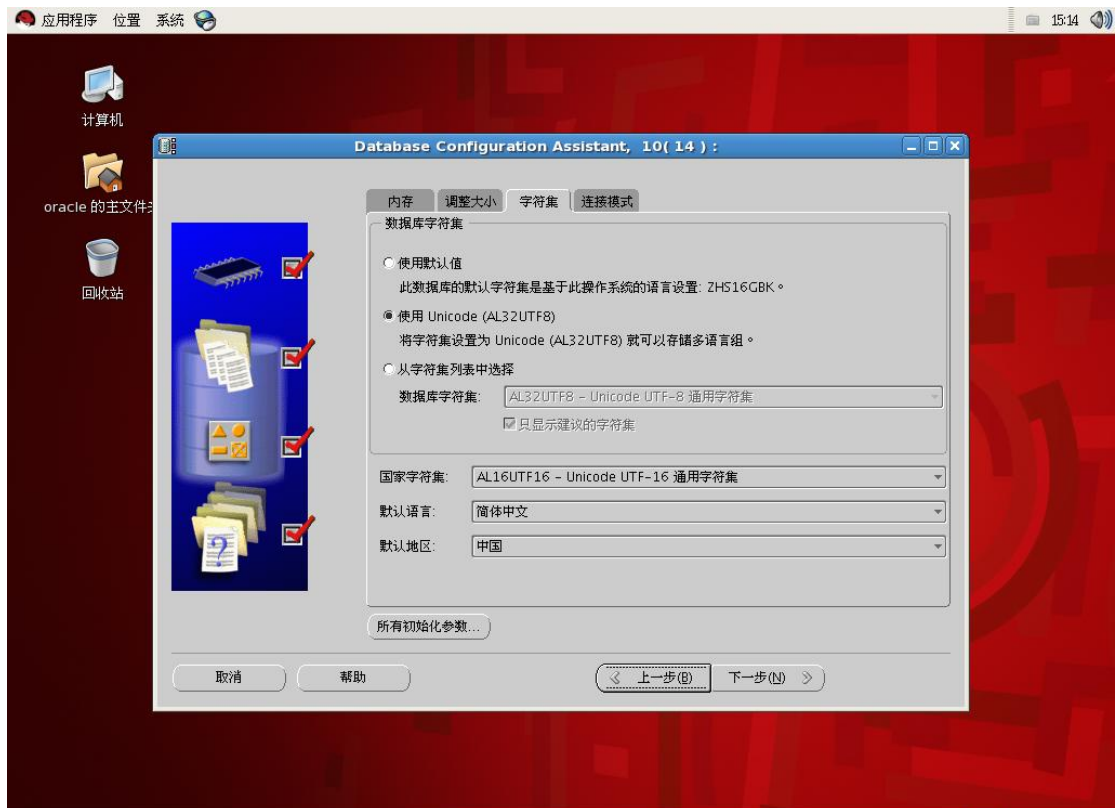


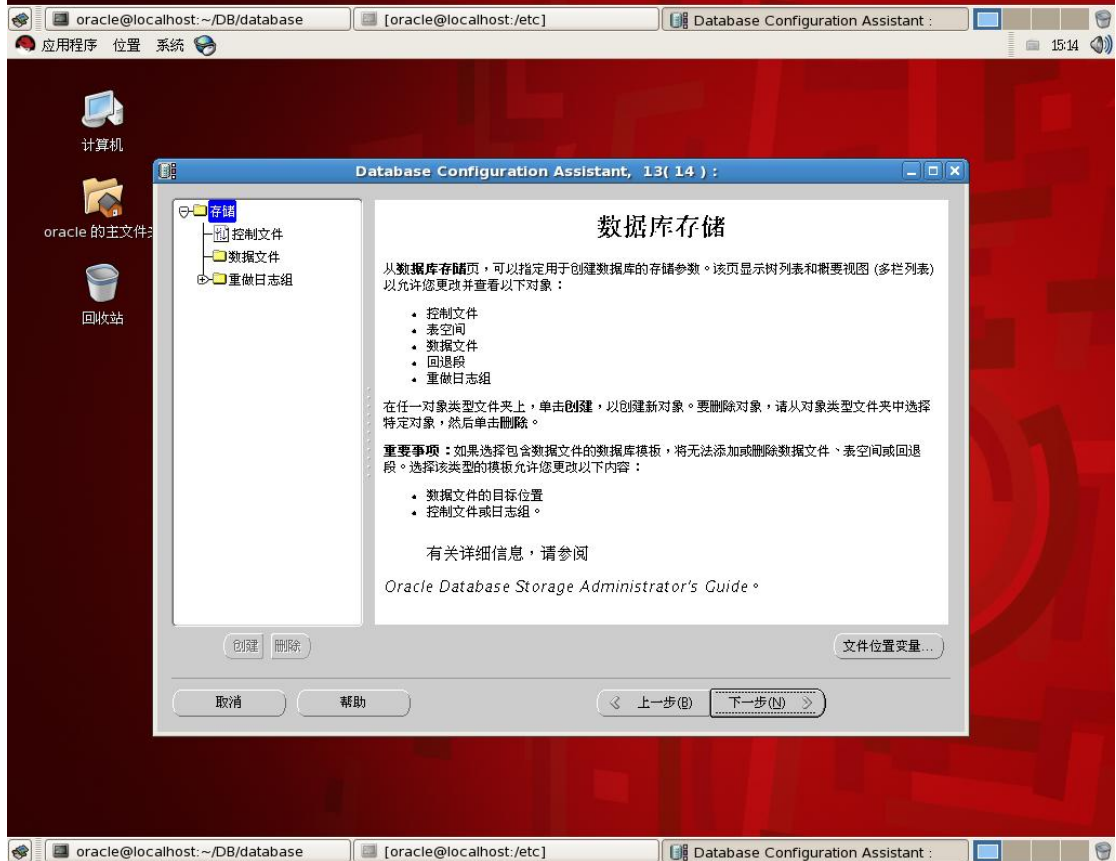
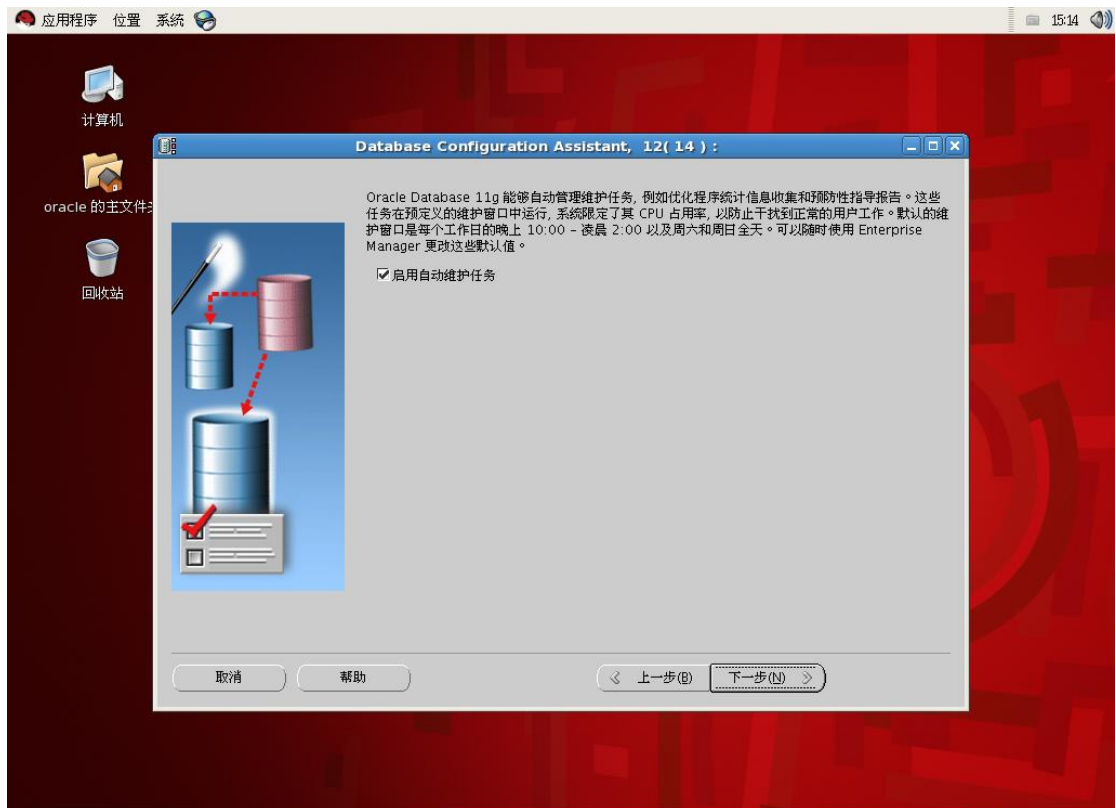


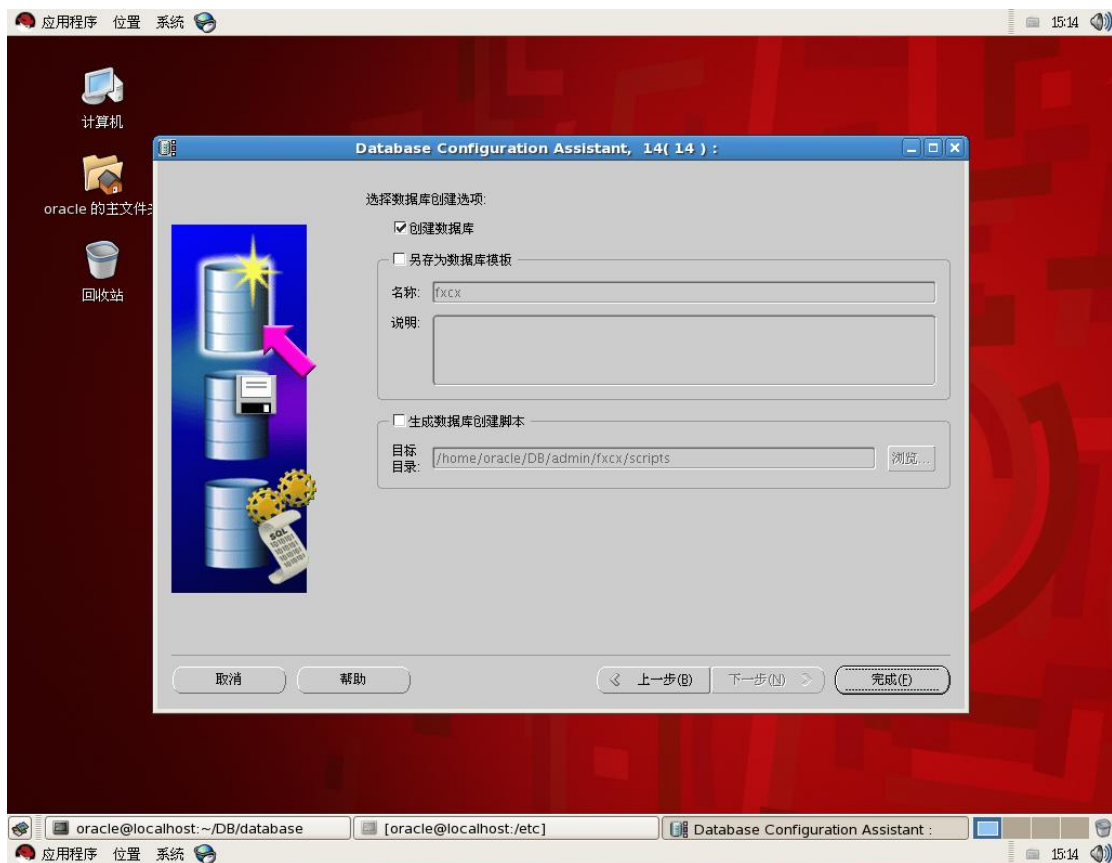


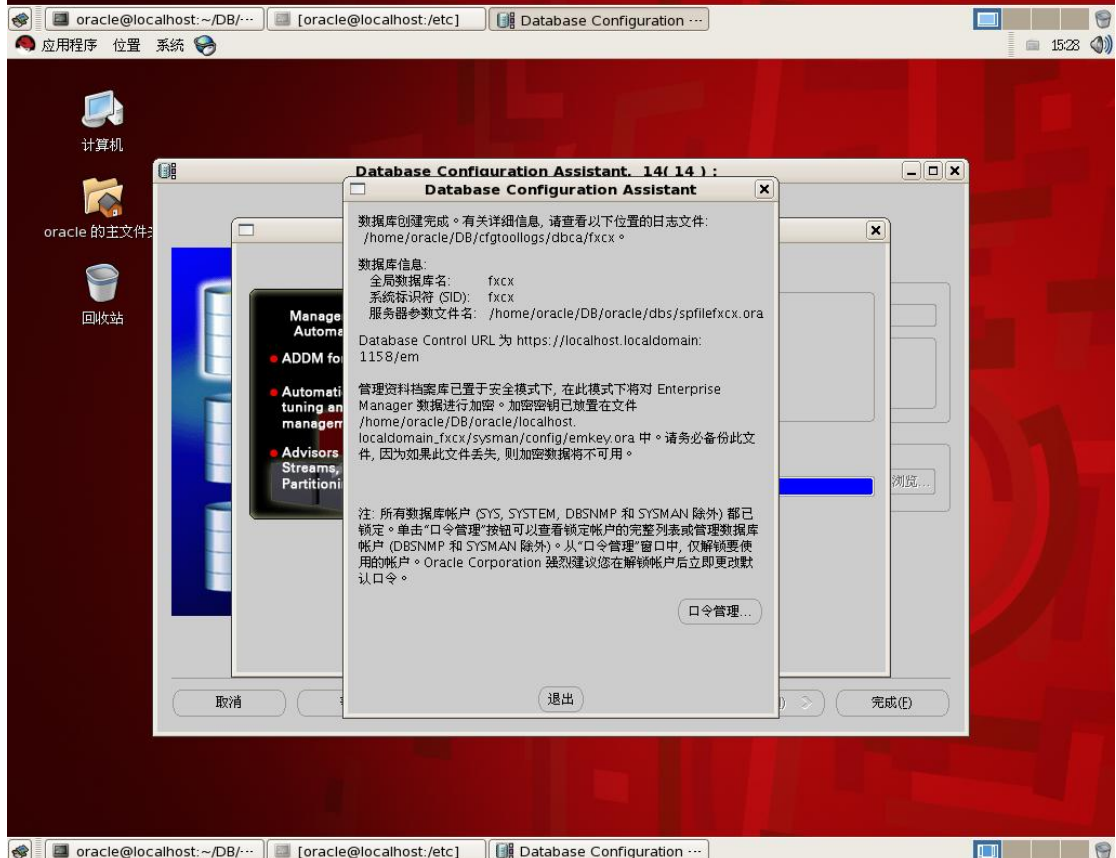
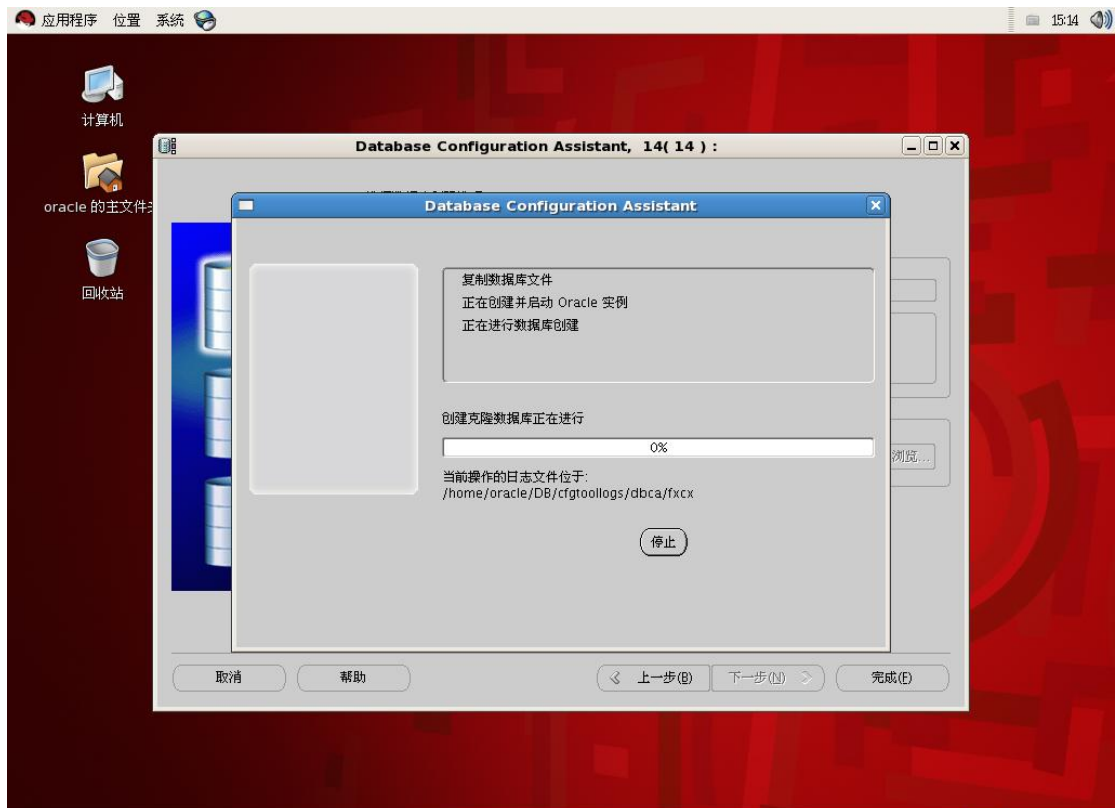


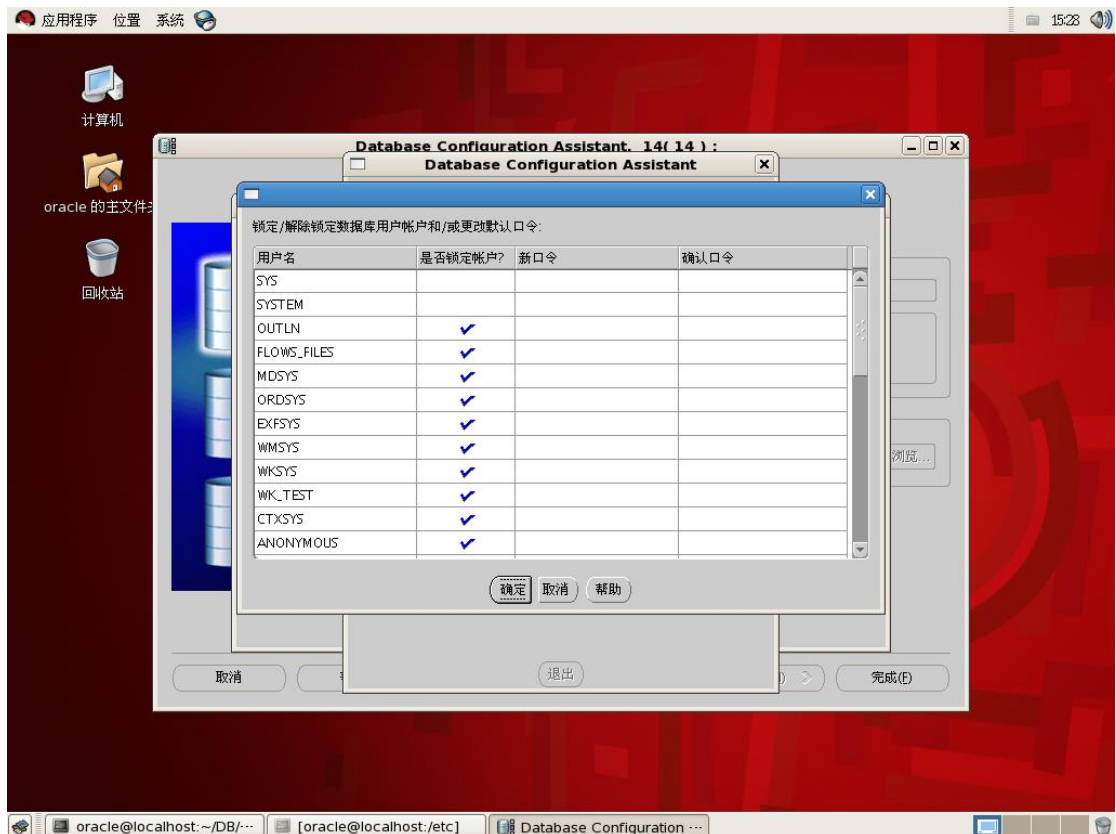












创建完数据库后，用 <https://domainname:1158/em> 登陆数据库的管理系统。



至此，oracle 11G 已经安装好了，因为家里硬件条件匮乏，所以无法演示 RAC 的安装了。

以下是相关命令

A. #dbstart // 启动数据库

#dbshut // 关闭数据库

B. #emctl start dbconsole // 开启企业管理器

#emctl stop dbconsole // 关闭企业管理器

C. #lsnrctl start // 启动监听

#lsnrctl stop // 关闭监听

D. #emctl start agent // 开启代理

#emctl stop agent // 关闭代理

E. #sqlplus /nolog

conn / as sysdba

startup // 启动实例

shutdown immediate // 关闭实例