

RH6.3 64bit 安装 Oracle 11.2 手册

OS: Redhat Linux Enterprise 6.3

DB: Oracle 11g Release 2

硬件检查

内存要求:

| Available RAM | Swap Space Required |
|------------------------|-------------------------------|
| Between 1 GB and 2 GB | 1.5 times the size of the RAM |
| Between 2 GB and 16 GB | Equal to the size of the RAM |
| More than 16 GB | 16 GB |

```
grep MemTotal /proc/meminfo
grep SwapTotal /proc/meminfo
free
```

系统架构:

```
Uname -a
```

磁盘空间要求:

/tmp 至少需要 1G 的空闲空间。

```
df -h /tmp
```

如果/tmp 空间不足, 可在 Oracle 的用户环境中设置 TMP 和 TMPDIR 两个环境变量。

确定安装的目录是否有足够的空间

```
df -h
```

| Installation Type | Requirement for Software Files (GB) |
|--------------------|-------------------------------------|
| Enterprise Edition | 4.7 |
| Standard Edition | 4.6 |

| Installation Type | Requirement for Data Files (GB) |
|--------------------|---------------------------------|
| Enterprise Edition | 1.7 |
| Standard Edition | 1.5 |

检查软件包要求

在 RH6 64bit 的操作系统上安装 Oracle 11.2.0.1，需要在操作系统上同时安装以下的 32 位及 64 位的包。

```
binutils-2.20.51.0.2-5.11.el6 (x86_64)
compat-libcap1-1.10-1 (x86_64)
compat-libstdc++-33-3.2.3-69.el6 (x86_64)
compat-libstdc++-33-3.2.3-69.el6.i686
gcc-4.4.4-13.el6 (x86_64)
gcc-c++-4.4.4-13.el6 (x86_64)
glibc-2.12-1.7.el6 (i686)
glibc-2.12-1.7.el6 (x86_64)
glibc-devel-2.12-1.7.el6 (x86_64)
glibc-devel-2.12-1.7.el6.i686
ksh
libgcc-4.4.4-13.el6 (i686)
libgcc-4.4.4-13.el6 (x86_64)
libstdc++-4.4.4-13.el6 (x86_64)
libstdc++-4.4.4-13.el6.i686
libstdc++-devel-4.4.4-13.el6 (x86_64)
libstdc++-devel-4.4.4-13.el6.i686
libaio-0.3.107-10.el6 (x86_64)
libaio-0.3.107-10.el6.i686
libaio-devel-0.3.107-10.el6 (x86_64)
libaio-devel-0.3.107-10.el6.i686
make-3.81-19.el6
sysstat-9.0.4-11.el6 (x86_64)
unixODBC-2.2.14-11.el6 (x86_64) or later
unixODBC-2.2.14-11.el6.i686 or later
```

```
unixODBC-devel-2.2.14-11.el6 (x86_64) or later  
unixODBC-devel-2.2.14-11.el6.i686 or later
```

安装软件包脚本。

```
#!/bin/bash  
  
# run it with root  
# cat yum.install.sh | sed -e 's/-[0-9].\+//g' | sort -u  
  
echo 'multilib_policy=all' >> /etc/yum.conf  
  
softs='binutils  
compat-libcap1  
compat-libstdc++  
gcc  
gcc-c++  
glibc  
glibc-devel  
ksh  
libaio  
libaio-devel  
libgcc  
libstdc++  
libstdc++-devel  
make  
sysstat  
unixODBC  
unixODBC-devel'  
  
for soft in $softs  
do  
    yum install -y $soft*  
done
```

11.2.0.2 以后，除 gcc-32bit-4.3 外，不再需要安装其他 32 位的包。

摘自官方文档：

Note:

Starting with Oracle Database 11g Release 2 (11.2.0.2), all the 32-bit packages, except for **gcc-32bit-4.3**, listed in the following table are no longer required for installing a

database on Linux x86-64. Only the 64-bit packages are required.

However, for any Oracle Database 11g release before 11.2.0.2, both the 32-bit and 64-bit packages listed in the following table are required.

检查软件包是否安装的方法:

```
rpm -q package_name
```

创建用户组和用户

- The Oracle Inventory group (typically, **oinstall**)
- The OSDBA group (typically, **dba**)
- The Oracle software owner (typically, **oracle**)
- The OSOPER group (optional. Typically, **oper**)

```
# with root
/usr/sbin/groupadd oinstall
/usr/sbin/groupadd dba
/usr/sbin/groupadd oper
```

```
# with root
id oracle
# 如果 oracle 用户已经存在, 用以下命令修改组信息
/usr/sbin/usermod -g oinstall -G dba oracle
# 如果 oracle 用户不存在, 创建
/usr/sbin/useradd -g oinstall -G dba oracle
# 修改密码
passwd oracle
```

修改内核参数和资源限制

root: gedit /etc/sysctl.conf

```
fs.aio-max-nr = 1048576
fs.file-max = 6815744
kernel.shmall = 2097152
kernel.shmmax = 536870912
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 = 1048576
```

使修改生效

```
root: /sbin/sysctl -p
```

```
root: gedit /etc/security/limits.conf
```

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

创建必要的目录

```
# with root
mkdir -p /mount_point/app/
chown -R oracle:oinstall /mount_point/app/
chmod -R 775 /mount_point/app/
```

比如:

```
# with root
mkdir -pv /u01/app/
chown -R oracle:oinstall /u01/
chmod -R 775 /u01/
df -h /u01
```

关闭防火墙和 SELinux

关闭防火墙

```
# with root
chkconfig iptables off
service iptables stop
```

关闭 selinux

```
root: gedit /etc/sysconfig/selinux
```

```
# 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 - SELinux is fully disabled.
```

```
SELINUX=disabled          # 增加这一行
```

使当前 selinux 失效

root: setenforce 0

设置 hostname

检查当前的 ip 地址和 hostname:

root: ip a

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue state UNKNOWN
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP qlen 1000
    link/ether 00:0c:29:25:9d:0f brd ff:ff:ff:ff:ff:ff
    inet 192.168.79.179/24 brd 192.168.79.255 scope global eth0
    inet6 fe80::20c:29ff:fe25:9d0f/64 scope link
        valid_lft forever preferred_lft forever
```

root: route

```
Kernel IP routing table
Destination      Gateway          Genmask         Flags Metric Ref    Use
Iface
192.168.79.0     *               255.255.255.0   U        1      0      0 eth0
default          192.168.79.1    0.0.0.0         UG       0      0      0 eth0
```

root: gedit /etc/sysconfig/network-scripts/ifcfg-eth0

```
DEVICE="eth0"
ONBOOT="yes"
HWADDR="00:0c:29:25:9d:0f"    # 需要根据当前网卡的信息修改
TYPE="Ethernet"
BOOTPROTO="none"
IPADDR=192.168.79.179        # 不可重复
NETMASK=255.255.255.0
GATEWAY=192.168.79.1
DEFROUTE=yes
IPV6INIT=no
```

root: gedit /etc/hosts

```
127.0.0.1    localhost localhost.localdomain huayd
::1         localhost localhost.localdomain
192.168.79.179 huayd.oracle.com huayd      # 每个人的都设置不同的hostname
```

root: gedit /etc/sysconfig/network

```
NETWORKING=yes
NETWORKING_IPV6=no
HOSTNAME=huayd.oracle.com      # 与/etc/hosts 中的设置一致
```

重启网络

root: service network restart

配置 oracle 用户环境

```
su - oracle
. ~/.bash_profile
```

oracle: gedit ~/.bash_profile

```
export ORACLE_BASE=/u01/app/oracle
export ORACLE_SID=ocp
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0/dbhome_1
export PATH=$PATH:$ORACLE_HOME/bin
```

准备安装介质

解压到/tmp

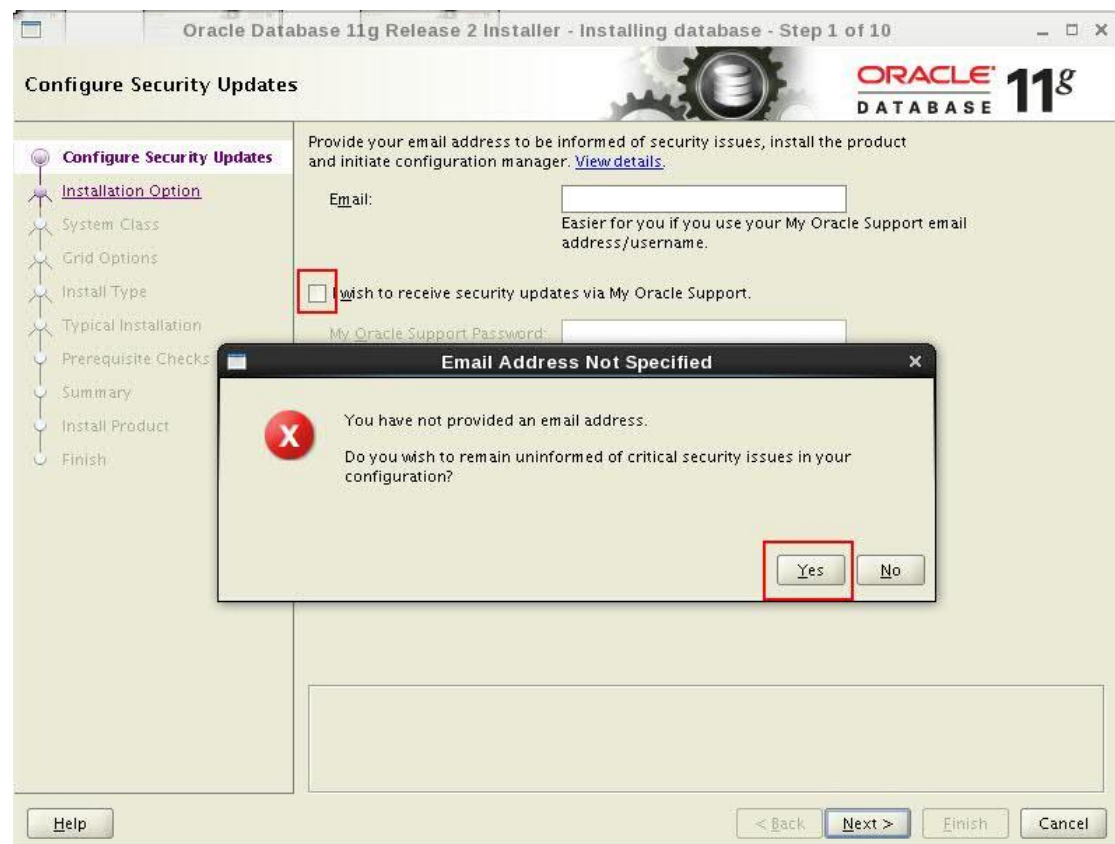
```
# With root
unzip linux.x64_11gR2_database_1of2.zip -d /tmp
unzip linux.x64_11gR2_database_2of2.zip -d /tmp/
chmod 775 -R /tmp/database
```

安装 Oracle 数据库软件

```
# with root
xhost +
ssh -X oracle@localhost
```

```
cd /tmp/database/  
# 安装前再次确认环境设置  
echo $ORACLE_HOME  
echo $ORACLE_BASE  
echo $ORACLE_SID  
./runInstaller
```

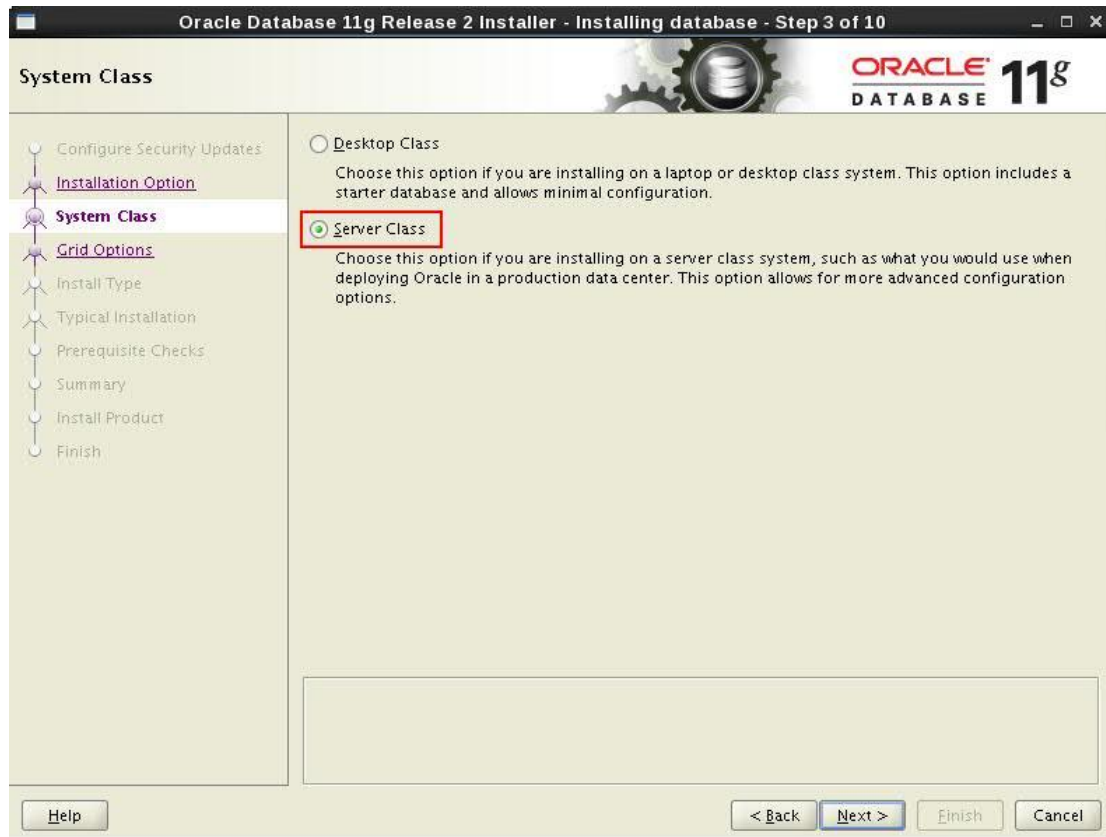
第一步：跳过 Oracle Support 的设置



第二步：选择创建并配置一个数据库，如果不创建数据库选择第 2 项



第三步：选择服务类



第四步：选择单实例数据库安装



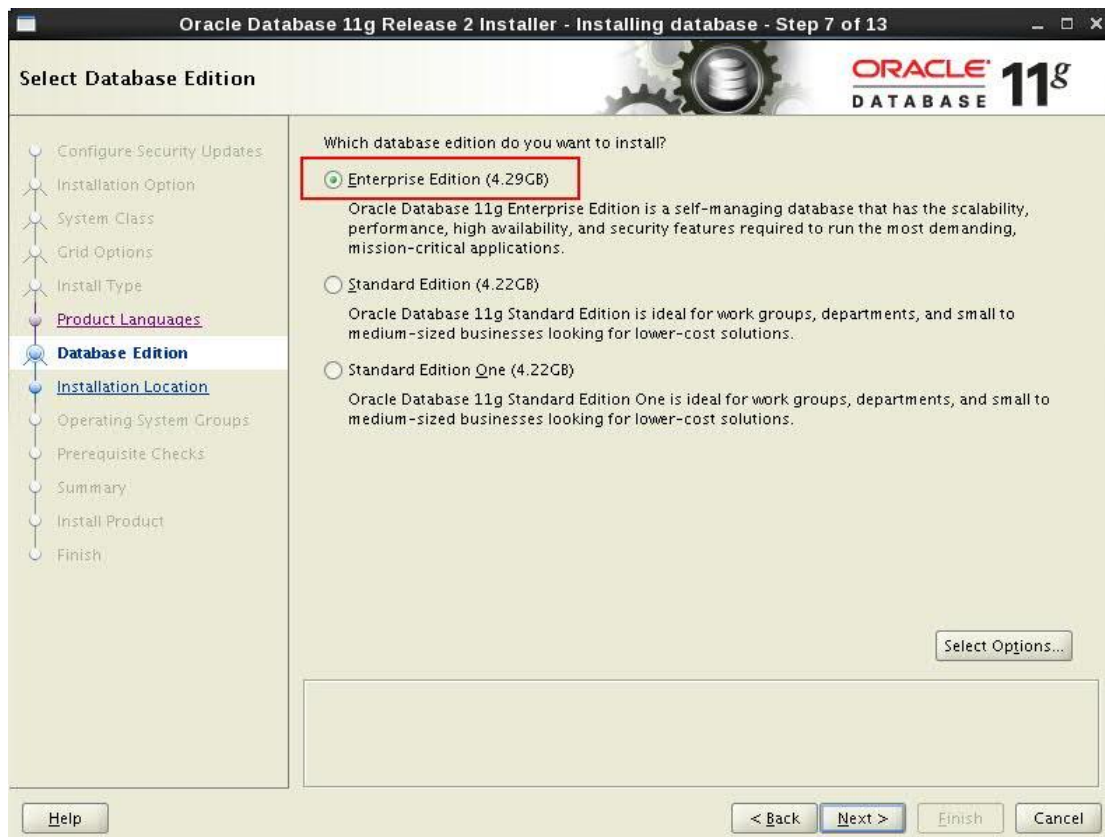
第五步：选择高级自定义安装



第六步：选择产品的语言，默认即可



第七步：选择要安装的 oracle 版本，选择企业版



第八步：安装路径 Oracle Base

如果 oracle 环境是配置好的，会自动从 ORACLE_BASE 和 ORACLE_HOME 取值自动填充。

Oracle Database 11g Release 2 Installer - Installing database - Step 8 of 13

Specify Installation Location

Configure Security Updates

Installation Option

System Class

Grid Options

Install Type

Product Languages

Database Edition

Installation Location

Operating System Groups

Prerequisite Checks

Summary

Install Product

Finish

Specify an Oracle base path to place all Oracle software and configuration-related files. This location is the Oracle base directory.

Oracle Base: /u01/app/oracle

Browse...

Specify a location for storing Oracle software files. This location is the Oracle home directory.

Software Location: /u01/app/oracle/product/11.2.0/dbhome_1

Browse...

Help

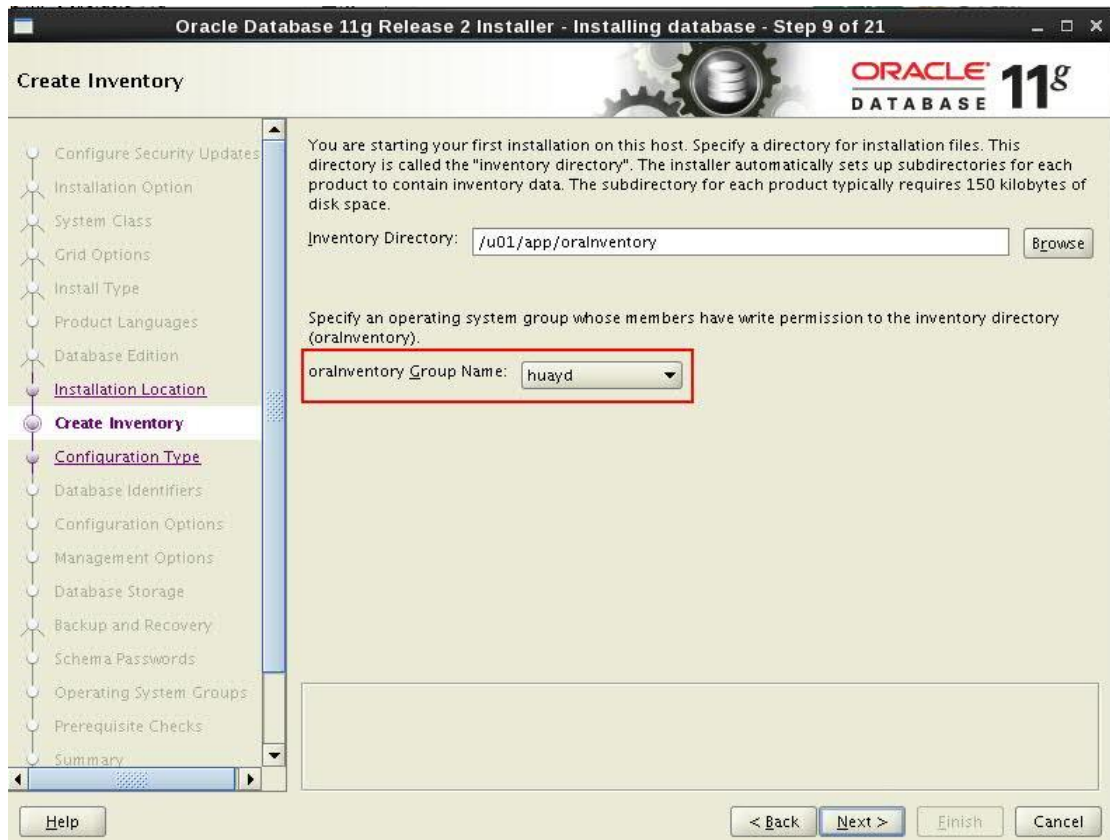
< Back

Next >

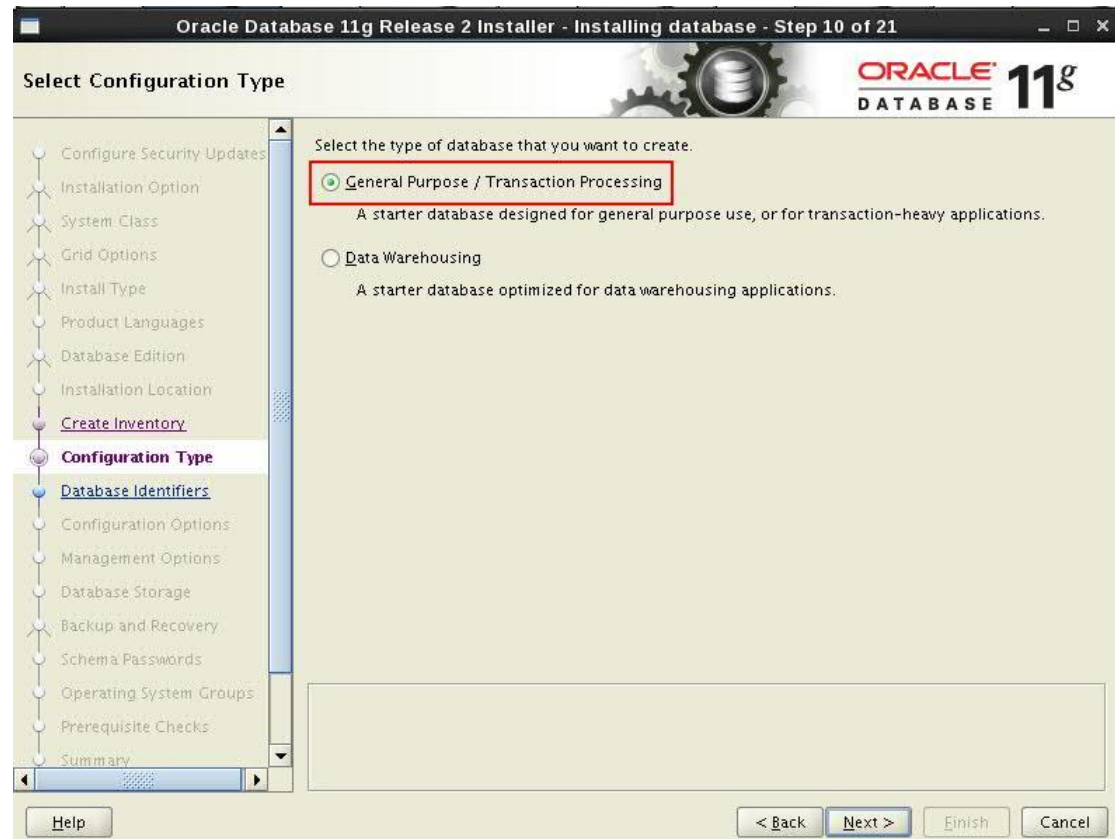
Finish

Cancel

第九步：设置 oraInventory 的用户组，通常是选择 oinstall



第十步： 选择数据库类型，一般用途的



第十一步：选择数据库及数据库实例名字（SID），根据应用命名

Oracle Database 11g Release 2 Installer - Installing database - Step 11 of 21

Specify Database Identifiers

An Oracle database is uniquely identified by a Global Database Name, typically of the form "name.domain".

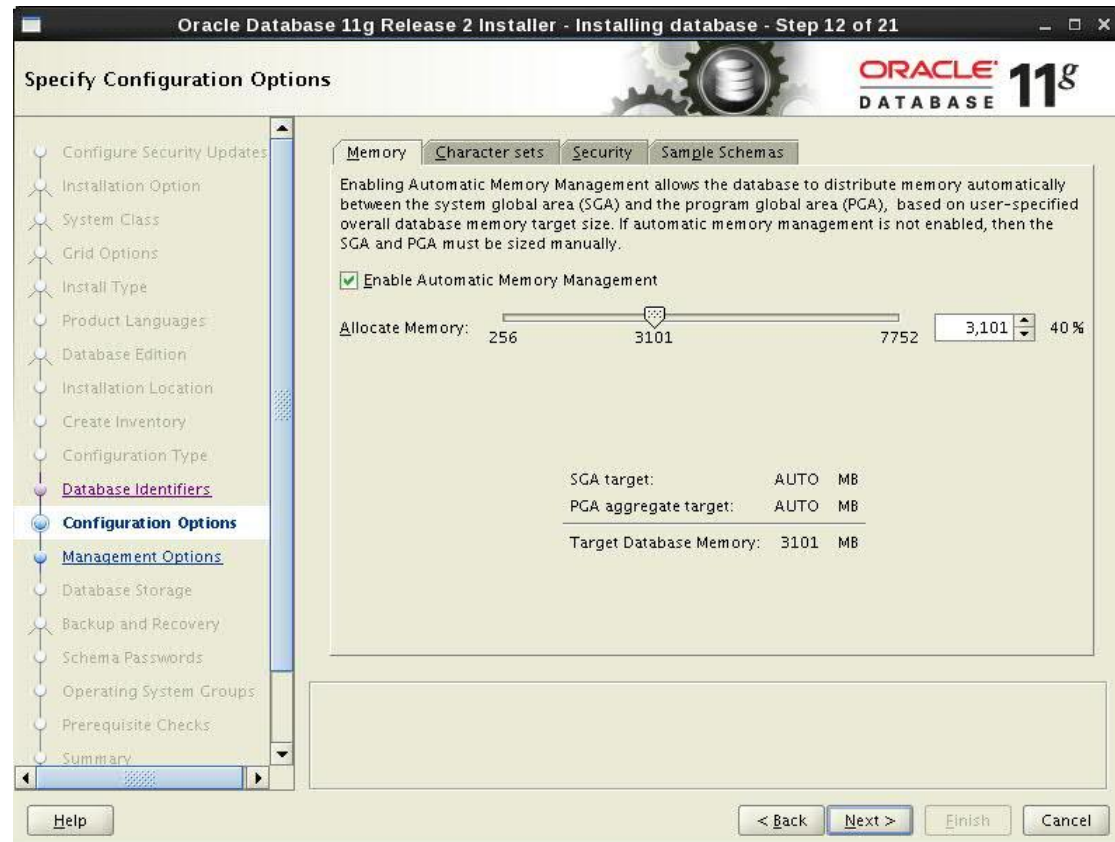
Global database name:

A database is referenced by at least one Oracle instance that is uniquely identified from any other instance on this computer by an Oracle Service Identifier (SID).

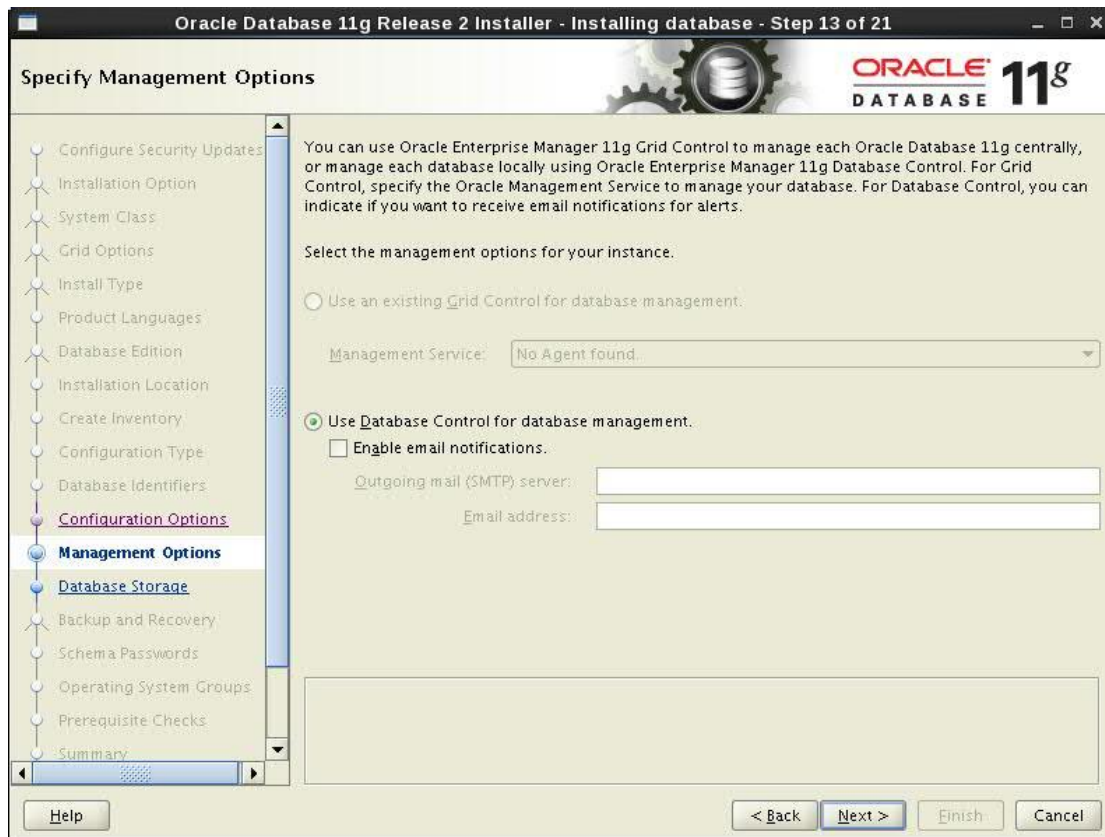
Oracle Service Identifier (SID):

Help < Back Next > Finish Cancel

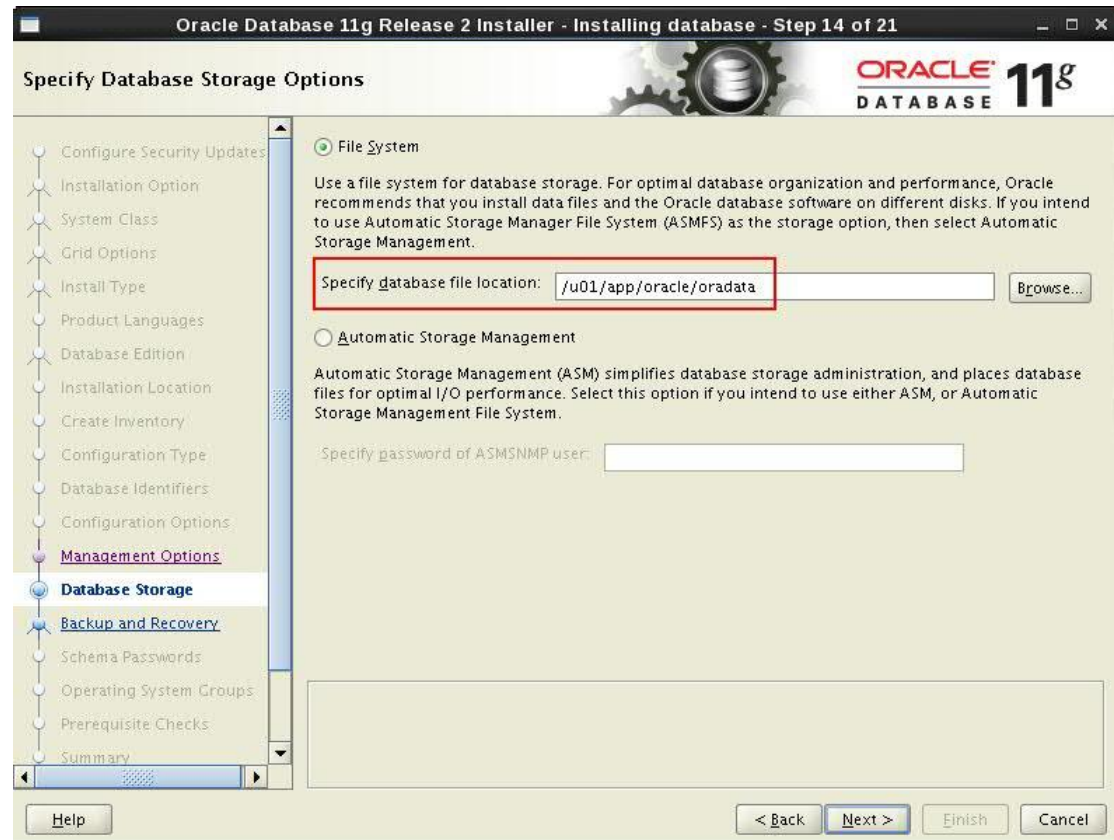
第十二步：设置数据库内存参数及字符集等



第十三步：直接跳过



第十四步：指定数据库数据存放的存放目录，会自动使用 **\$ORACLE_BASE/oradata** 填充



第十五步：关闭自动备份

Oracle Database 11g Release 2 Installer - Installing database - Step 15 of 21

Specify Recovery Options

Select to enable or disable automated backups for your database. If enabled, then the Backup Job uses the specified recovery area storage.

☒ **Do not enable automated backups**

☐ Enable automated backups

Recovery area storage:

☒ File System

Recovery Area location:

☐ Automatic Storage Management

Backup Job Operating System credentials

Username: Password:

第十六步：设置数据库管理员用户密码

Oracle Database 11g Release 2 Installer - Installing database - Step 16 of 21

Specify Schema Passwords

The starter database contains pre-loaded schemas, most of which have passwords that are expired and locked at the end of installation. After installation is complete, you must unlock and set new passwords for those accounts you want to use. Schemas used for database management and postinstallation functions are left unlocked, and passwords for these accounts will not expire. Specify the passwords for these accounts.

☐ Use different passwords for these accounts

| | Password | Confirm password |
|--------|----------|------------------|
| SYS | | |
| SYSTEM | | |
| SYSMAN | | |
| DBSNMP | | |

☒ Use the same password for all accounts

Password: *** Confirm password: ***

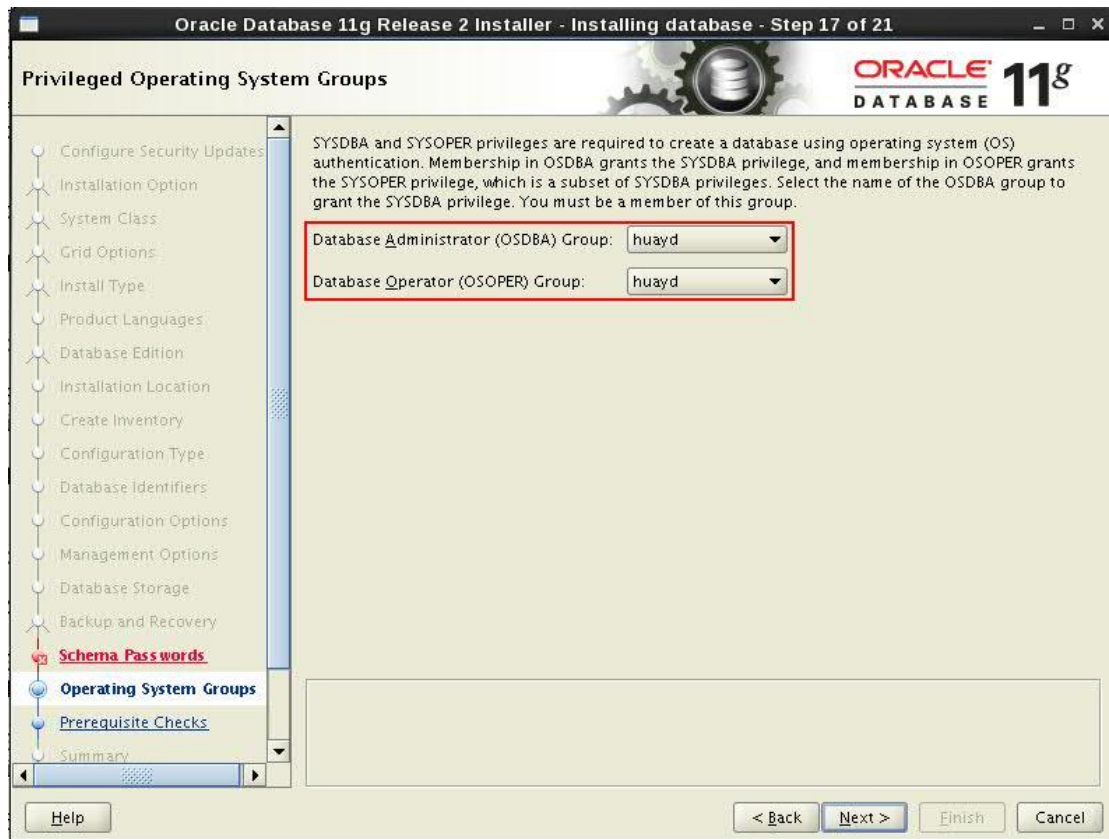
Messages:

⚠ Password:[INS-30011] The password entered does not conform to the Oracle recommended standards.

Help < Back Next > Finish Cancel

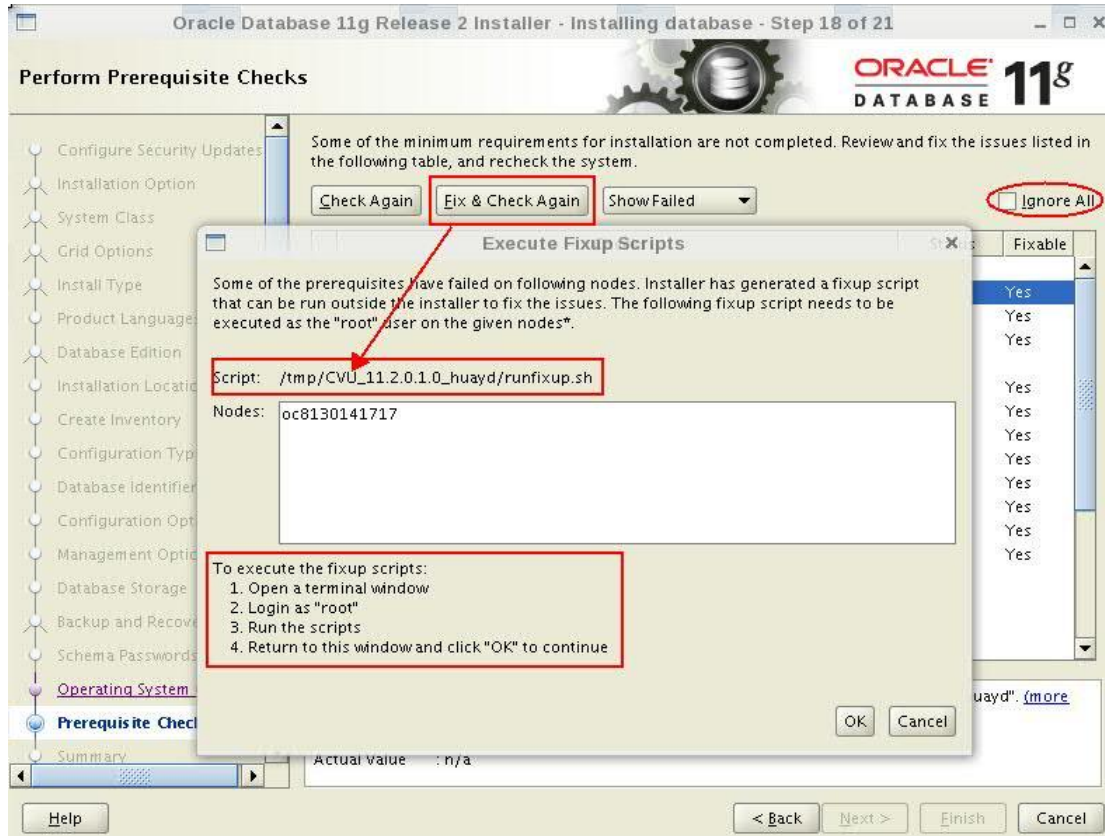
第十六步：设置 OSDBA 和 OSOPER 组

通常 OSDBA 组设定为 dba，OSOPER 组设定为 oper，全部设置为一个组也可。

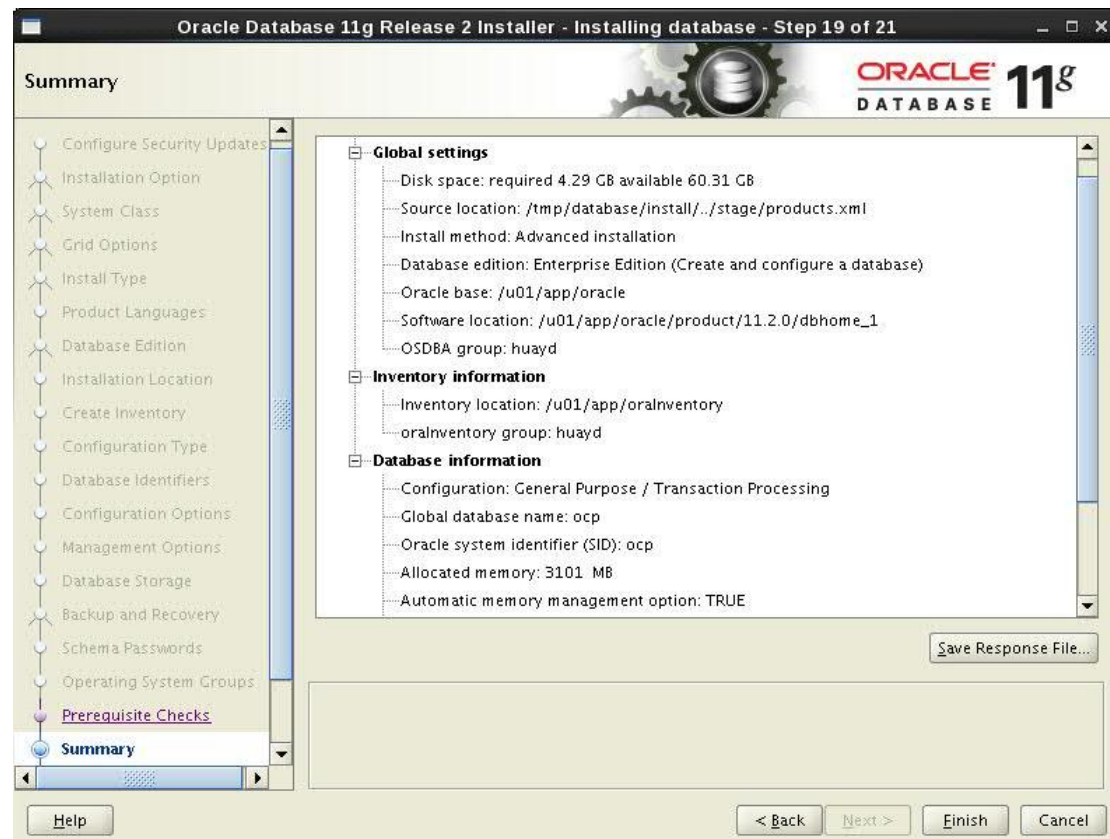


第十七步：环境及软件包检测

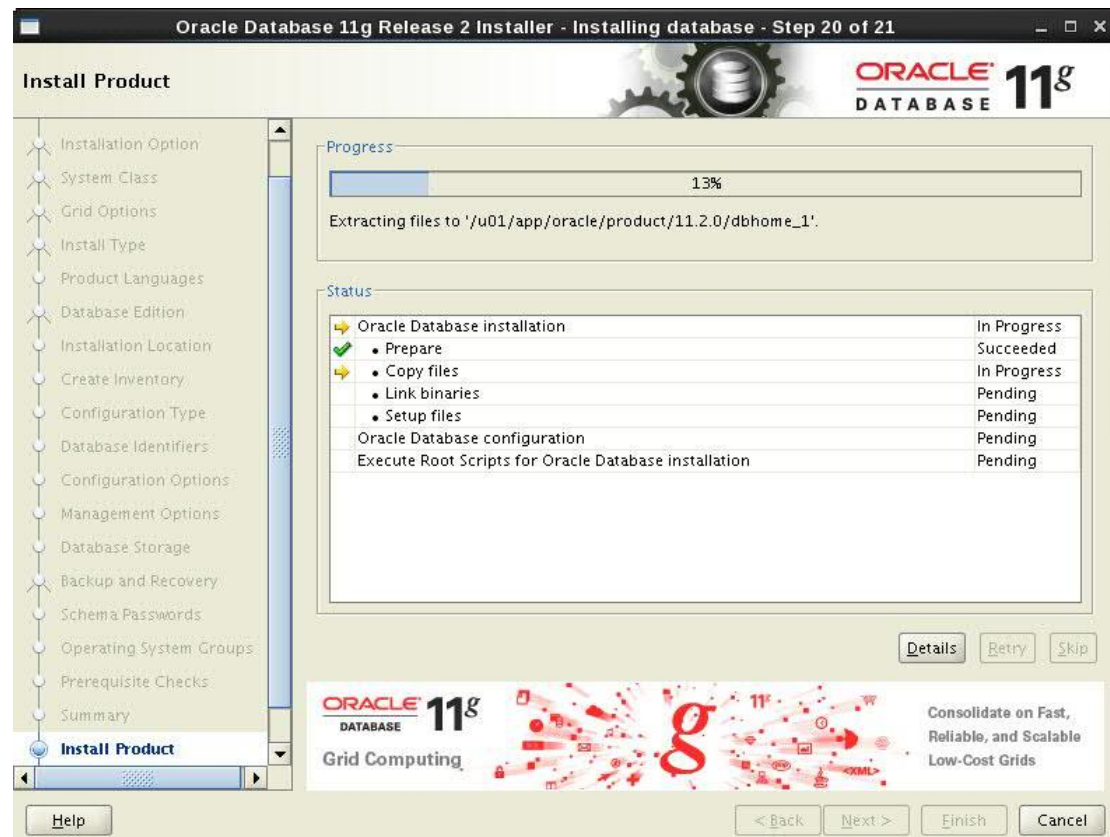
如果所有的软件包都已经安装，可以选择 ignore all。



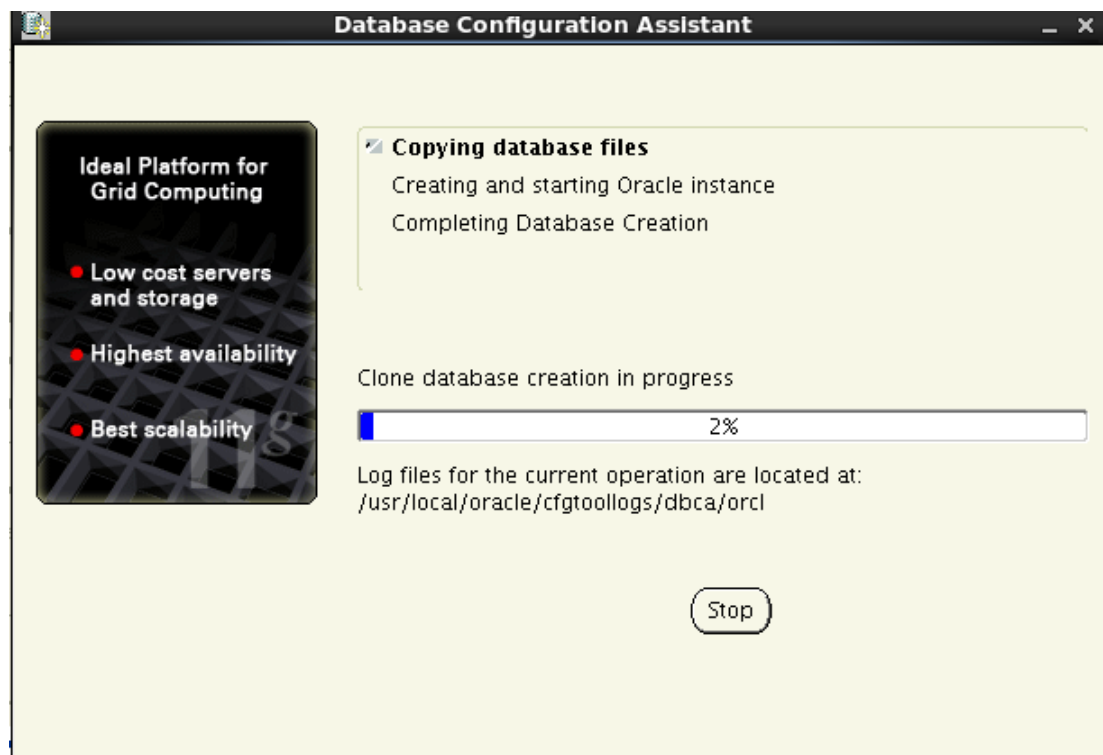
第十八步：oracle 的安装配置信息

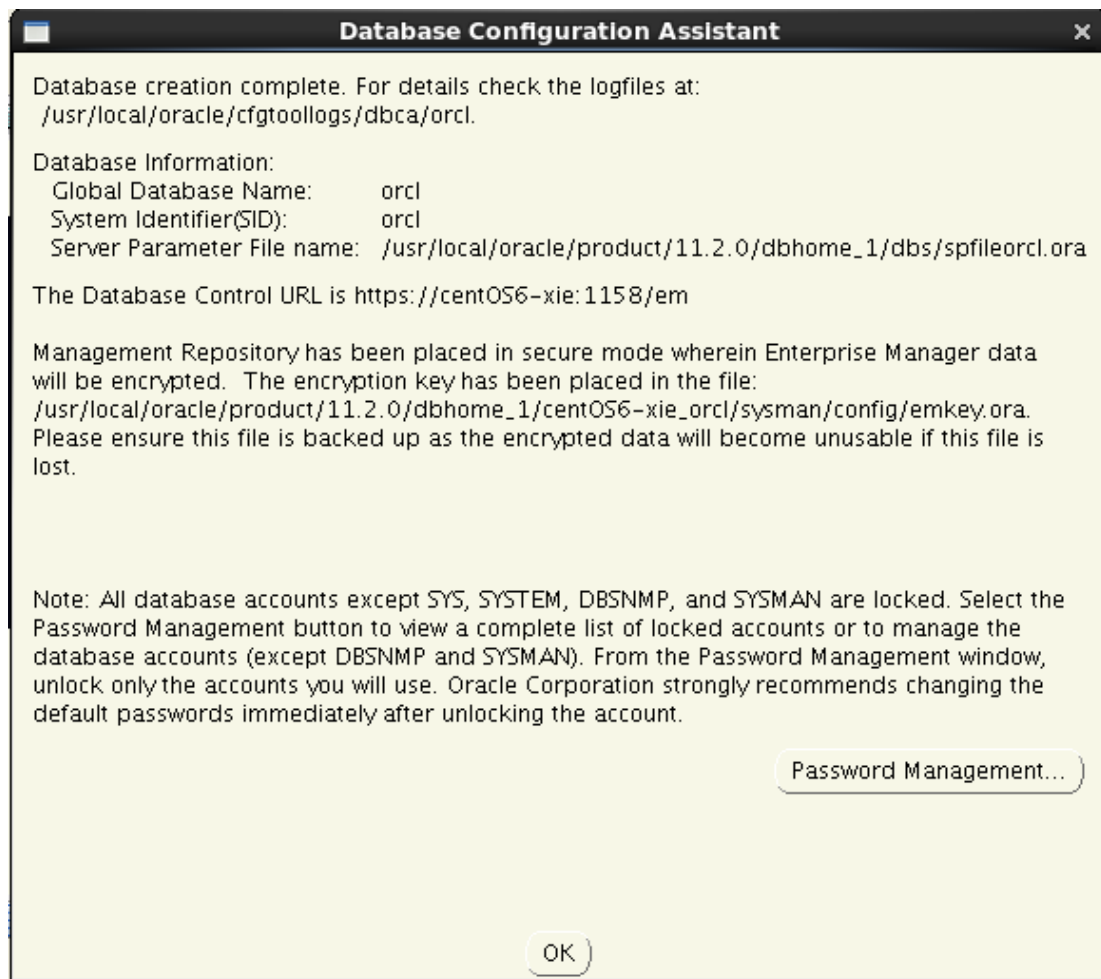


第十九步：开始安装软件

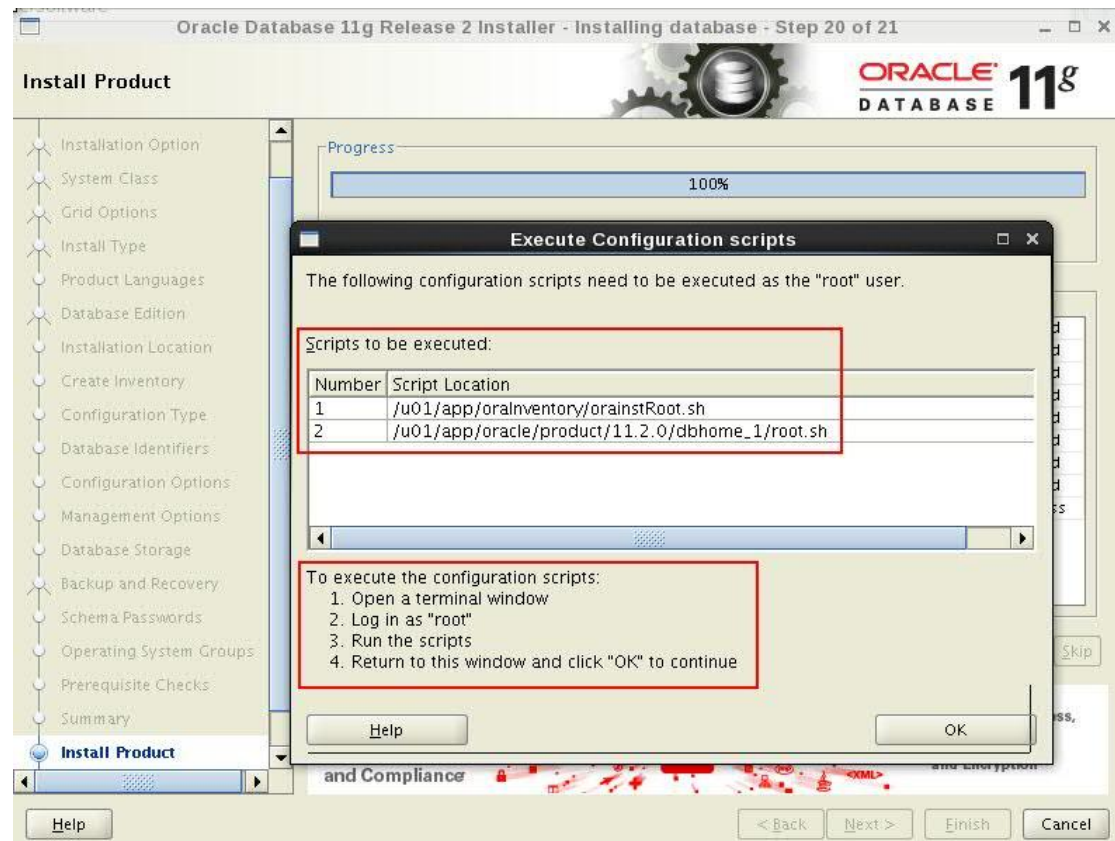


第二十步：创建数据库





第二十一歩：以 root 用户，执行脚本



```
[root@oc8130141717 yum.repos.d]# /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 huayd.
The execution of the script is complete.
```

```
[root@oc8130141717 yum.repos.d]#
/u01/app/oracle/product/11.2.0/dbhome_1/root.sh
Running Oracle 11g root.sh script...
```

The following environment variables are set as:

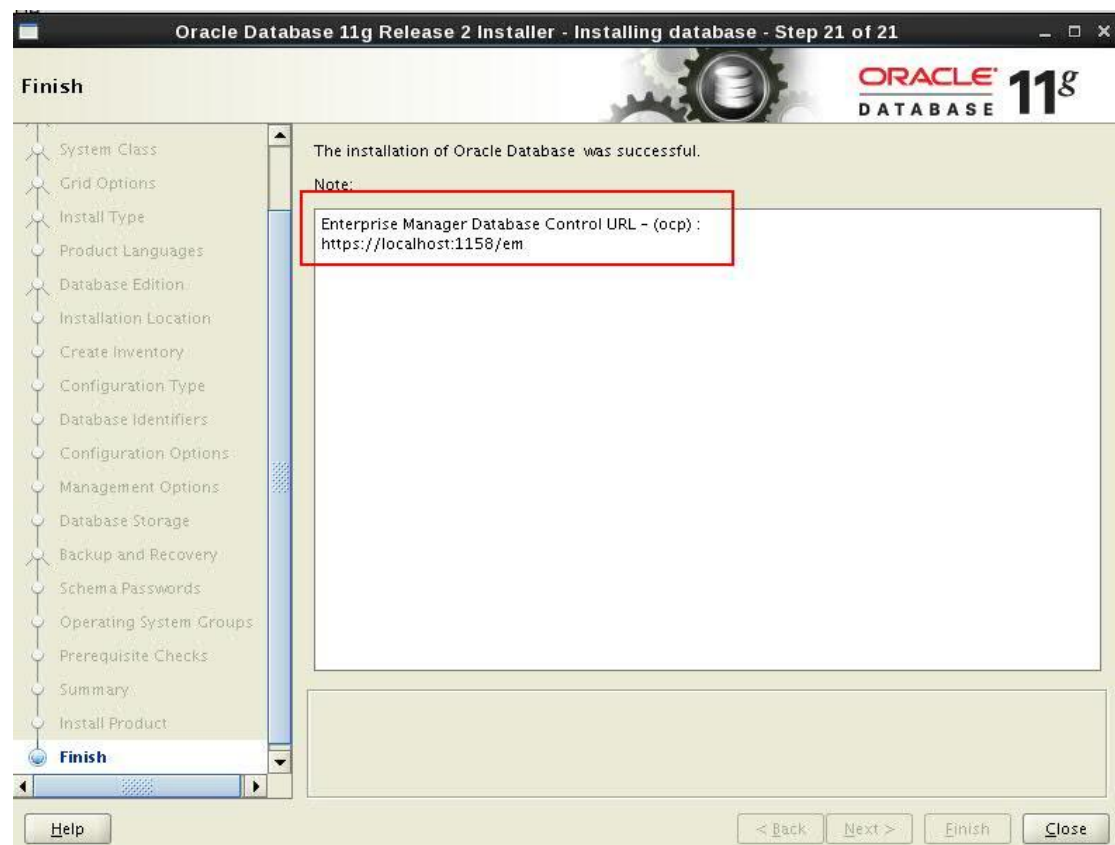
```
ORACLE_OWNER= huayd
ORACLE_HOME= /u01/app/oracle/product/11.2.0/dbhome_1
```

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.
Finished product-specific root actions.
```

最后提示完成安装 ,可采用 <https://IP:1158/em> 方式访问 oracle 的 web 界面 ,用户名是 sys ,密码为安装过程中设置的密码。



测试 Oracle 是否正常安装

```
[oracle ~]$ echo $ORACLE_SID
ocp
[oracle ~]$ sqlplus / as sysdba
```

SQL*Plus: Release 11.2.0.1.0 Production on Fri Mar 6 16:05:00 2015

Copyright (c) 1982, 2009, Oracle. All rights reserved.

Connected to:

Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit
Production

With the Partitioning, OLAP, Data Mining and Real Application Testing
options

SQL> select * from v\$version;

BANNER

Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit
Production

PL/SQL Release 11.2.0.1.0 - Production

CORE 11.2.0.1.0 Production

TNS for Linux: Version 11.2.0.1.0 - Production

NLSRTL Version 11.2.0.1.0 - Production

SQL> alter user hr account unlock identified by hr;

User altered.

SQL> conn hr/hr

Connected.

SQL> select * from tab;

| TNAME | TABTYPE | CLUSTERID |
|------------------|---------|-----------|
| ----- | ----- | ----- |
| COUNTRIES | TABLE | |
| DEPARTMENTS | TABLE | |
| EMPLOYEES | TABLE | |
| EMP_DETAILS_VIEW | VIEW | |
| JOBS | TABLE | |
| JOB_HISTORY | TABLE | |
| LOCATIONS | TABLE | |
| REGIONS | TABLE | |

8 rows selected.

常见安装错误

1. 网络类

错误的 netmask

粗心写错 hostname

hostname, /etc/hosts, /etc/sysconfig/network, 没有全部配置

2. Oracle 环境配置类

ORACLE_HOME 写成 ORACLE_home

ORACLE_BASE=/u01/app/oracle, = (等号的两边没有空格的)

没有定义 ORACLE_SID, 或者和安装时指定的不一致

3.操作系统环境类

没有关闭 SELINUX,导致安装好后不能正常使用

没有关闭 iptables, 导致远程连接不可用

忘记修改/u01 属主权限, 安装过程中提示不能创建目录

4. 卸载不干净, 再次安装失败