

## 1 软件环境

- VirtualBox 5.2
- Oracle Linux 6.7
- Oracle 12.1.0.2

## 2 安装Oracle软件

### 2.1 内存要求

安装Oracle 12c, 内存至少是1GB, 建议在2GB以上。

### 2.2 SWAP和内存关系

- 1G~2G: 1.5倍内存
- 2G~16G: 等于内存
- >16G: 16G

### 2.3 磁盘空间要求

企业版: 至少7.5GB

标准版2: 至少7.5GB

### 2.4 设置主机名称

```
[root@strong ~]# vim /etc/hosts --添加下面一行记录  
192.168.56.102 strong.oracle.com
```

### 2.5 网络与防火墙配置 (已配置则不须配置)

#### 2.5.1 网络配置

```
[root@strong ~]# cat /etc/sysconfig/network-scripts/ifcfg-eth0  
HWADDR=08:00:27:57:D5:37
```

```
TYPE=Ethernet
BOOTPROTO=none
IPADDR=192.168.56.102
PREFIX=24
GATEWAY=192.168.56.1
DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME=eth0
UUID=8cba21ce-4059-4d18-a766-022194011e41
ONBOOT=yes
LAST_CONNECT=1531314941
```

## 2.5.2 防火墙配置

```
[root@strong ~]# service iptables stop
iptables: Setting chains to policy ACCEPT: filter      [ OK ]
iptables: Flushing firewall rules:                    [ OK ]
iptables: Unloading modules:                          [ OK ]
[root@strong ~]# chkconfig iptables off
[root@strong ~]# vim /etc/selinux/config
SELINUX=disabled
```

## 2.6 配置本地YUM源 (安装Linux时已配置, 这里不必配置)

配置本地YUM源, 为安装Oracle 12c所需的rpm做准备

```
[root@strong ~]# mount /dev/cdrom /mnt/
mount: block device /dev/sr0 is write-protected, mounting read-only
```

确保光驱有Linux系统盘, 否则出错。

```
[root@strong ~]# cd /etc/yum.repos.d/
[root@strong yum.repos.d]# ll
```

```
total 8
```

```
-rw-r--r--. 1 root root 109 Jul 11 21:22 packagekit-media.repo
```

```
-rw-r--r--. 1 root root 2545 May  4 08:24 public-yum-ol6.repo
```

```
[root@strong yum.repos.d]# mv packagekit-media.repo packagekit-  
media.repo.bak  
[root@strong yum.repos.d]# mv public-yum-ol6.repo public-yum-ol6.repo.bak  
[root@strong yum.repos.d]# vim server.repo
```

```
[server]  
name=Oracle Linux  
baseurl=file:///mnt/  
gpgcheck=0  
enabled=1  
[root@strong yum.repos.d]# yum clean all  
Loaded plugins: refresh-packagekit, security  
Cleaning repos: server  
Cleaning up Everything  
[root@strong yum.repos.d]# yum list
```

## 2.7 安装Oracle 12c所需的Package

下面的Packages是安装Oracle 12c所需的，利用yum install 进行安装。

```
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)  
libXext-1.1 (x86\_64)  
libXext-1.1 (i686)  
libXtst-1.0.99.2 (x86\_64)  
libXtst-1.0.99.2 (i686)  
libX11-1.3 (x86\_64)  
libX11-1.3 (i686)  
libXau-1.0.5 (x86\_64)  
libXau-1.0.5 (i686)  
libxcb-1.5 (x86\_64)  
libxcb-1.5 (i686)  
libXi-1.3 (x86\_64)  
libXi-1.3 (i686)  
make-3.81-19.el6  
sysstat-9.0.4-11.el6 (x86\_64)

或者利用下面的方式进行安装:

```
yum -y install binutils compat-libcap1 compat-libstdc* gcc gcc-c++* glibc glibc-  
devel ksh libgcc libstdc libaio libaio-devel make elfutils-libelf-devel sysstat
```

## 2.8 创建Oracle用户和组

### 2.8.1 安装组

```
[root@strong ~]# groupadd oinstall
```

### 2.8.2 标准组

```
[root@strong ~]# groupadd dba
```

```
[root@strong ~]# groupadd oper
```

### 2.8.3 扩展组

backupdba、dgdba、kmdba、racdba

### 2.8.4 用户

```
[root@strong ~]# useradd -g oinstall -G dba,oper oracle
```

```
[root@strong ~]# passwd oracle
```

Changing password for user oracle.

New password:

Retype new password:

passwd: all authentication tokens updated successfully.

## 2.9 配置内核参数

```
[root@strong ~]# vim /etc/sysctl.conf --增加以下内容
```

```
fs.aio-max-nr = 1048576
```

```
fs.file-max = 6815744
```

```
kernel.shmni = 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
```

```
[root@strong ~]# sysctl -p --使参数生效
```

```
[root@strong ~]# vim /etc/security/limits.conf
```

```
oracle      soft  nproc  2047
```

```
oracle      hard  nproc  16384
```

```
oracle      soft  nofile 1024
```

```
oracle      hard  nofile 65536
```

## 2.10 创建目录

```
[root@strong ~]# mkdir /u01/app
```

```
[root@strong ~]# chown -R oracle:oinstall /u01/
```

```
[root@strong ~]# chmod -R 775 /u01/
```

## 2.11 配置Oracle用户环境变量

```
[root@strong ~]# su - oracle --切换至Oracle用户
```

```
[oracle@strong ~]$ vim .bash_profile --增加以下内容
```

```
ORACLE_BASE=/u01/app/oracle
ORACLE_SID=orcl
export ORACLE_BASE ORACLE_SID
export ORACLE_TERM=xterm
[oracle@strong ~]$ . .bash_profile
[oracle@strong ~]$ echo $ORACLE_SID
orcl
```

## 2.12 准备Oracle数据库软件

### 2.12.1 创建目录存放Oracle软件

```
[oracle@strong ~]$ mkdir /u01/soft
```

### 2.12.2 上传Oracle安装软件

(略)

### 2.12.3 查看/u01/soft目录

```
[oracle@strong ~]$ cd /u01/soft/
[oracle@strong soft]$ ll -h
total 2.6G
-rw-r--r--. 1 oracle oinstall 1.6G Aug 10 13:27 linuxamd64_12102_database_1of2.zip
-rw-r--r--. 1 oracle oinstall 968M Aug 10 13:29
linuxamd64_12102_database_2of2.zip
```

### 2.12.4 解压缩Oracle数据库软件

```
[oracle@strong soft]$ unzip linuxamd64_12102_database_1of2.zip
[oracle@strong soft]$ unzip linuxamd64_12102_database_2of2.zip
```

### 2.12.5 查看解压后的文件

```
[oracle@strong soft]$ ll -h
```

```
total 2.6G
drwxr-xr-x. 7 oracle oinstall 4.0K Jul  7 2014 database
-rw-r--r--. 1 oracle oinstall 1.6G Aug 10 13:27 linuxamd64_12102_database_1of2.zip
-rw-r--r--. 1 oracle oinstall 968M Aug 10 13:29
linuxamd64_12102_database_2of2.zip
```

## 3 Oracle软件安装

### 3.1 root下执行xhost

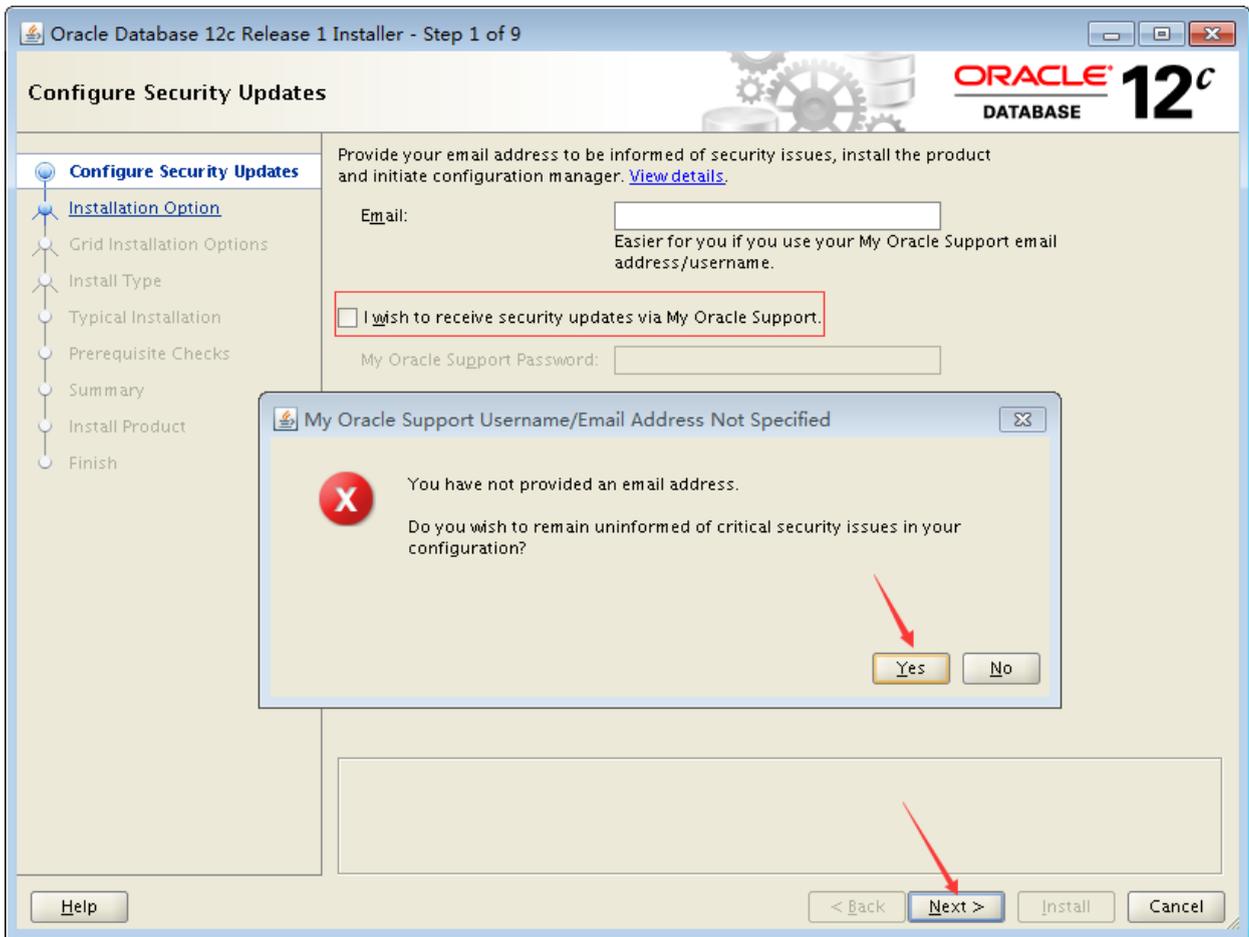
```
[root@strong ~]# xhost +
```

### 3.2 执行安装命令

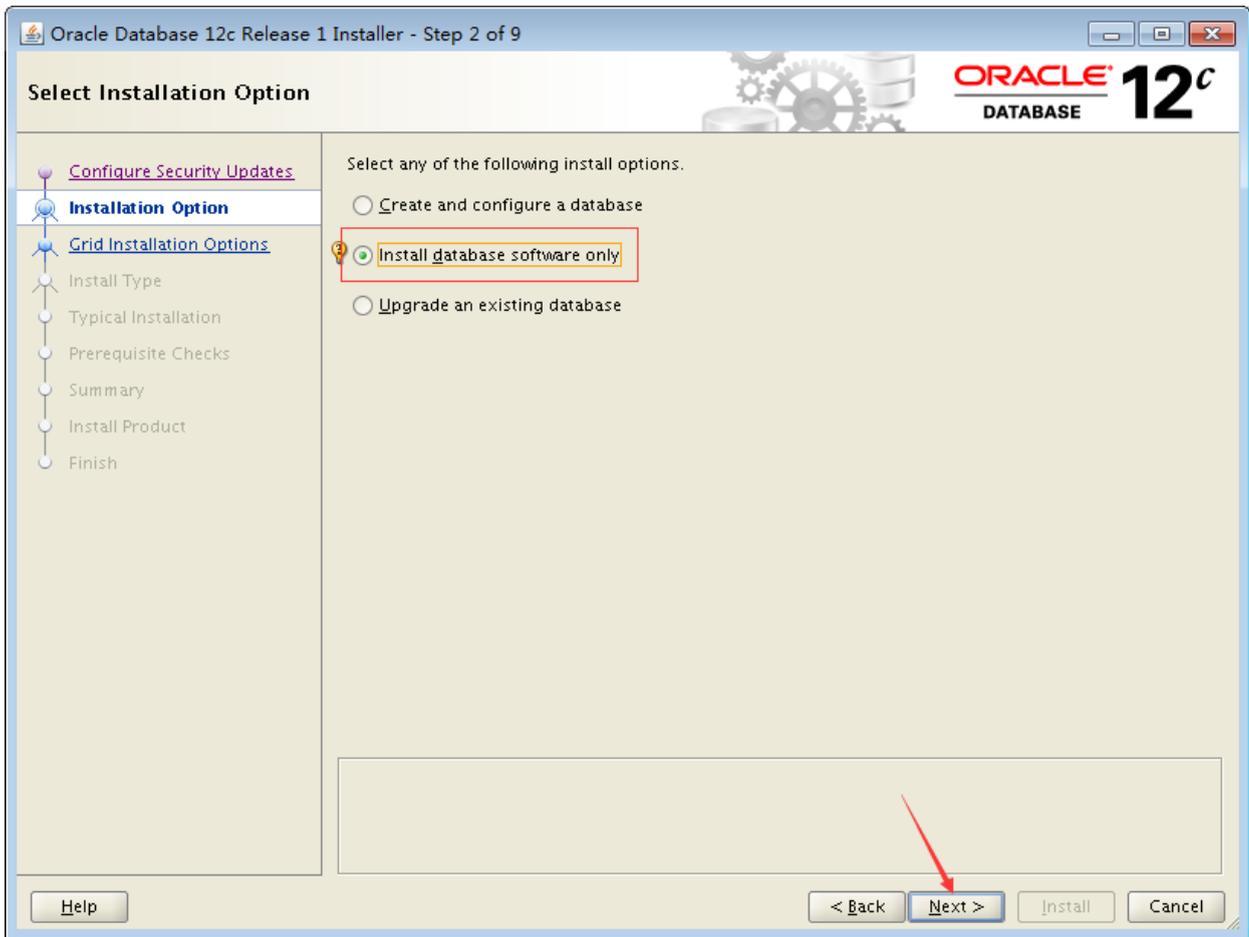
```
[oracle@strong ~]$ cd /u01/soft/database/
[oracle@strong database]$ ll
total 36
drwxr-xr-x. 4 oracle oinstall 4096 Aug 10 13:38 install
drwxrwxr-x. 2 oracle oinstall 4096 Jul  7 2014 response
drwxr-xr-x. 2 oracle oinstall 4096 Jul  7 2014 rpm
-rwxr-xr-x. 1 oracle oinstall 8533 Jul  7 2014 runInstaller
drwxrwxr-x. 2 oracle oinstall 4096 Jul  7 2014 sshsetup
drwxr-xr-x. 14 oracle oinstall 4096 Jul  7 2014 stage
-rwxr-xr-x. 1 oracle oinstall  500 Feb  7 2013 welcome.html
[oracle@strong database]$ ./runInstaller
```

### 3.3 安装详细步骤

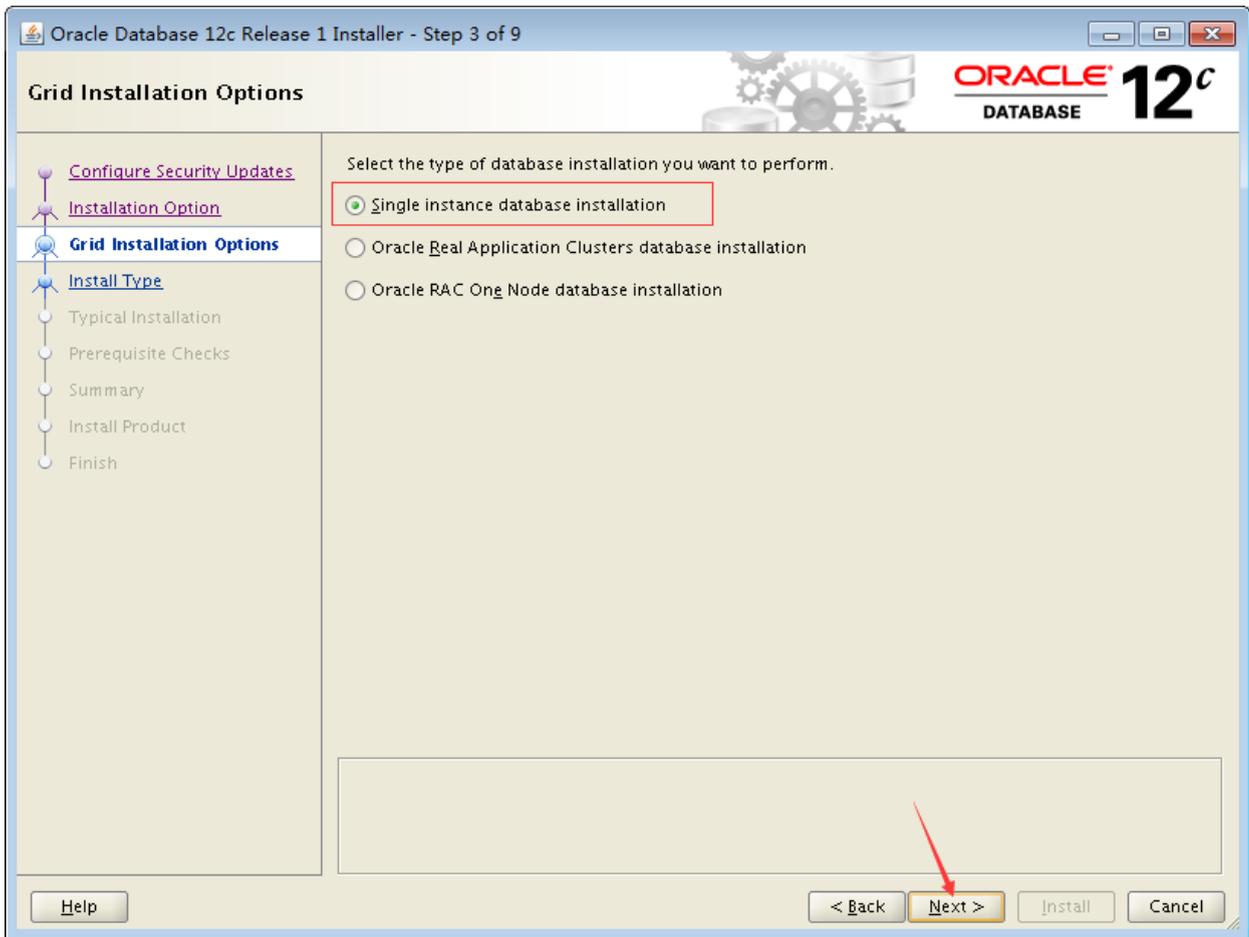
1) 配置安全更新页，输入Email和My Oracle Support Password，在此去掉勾选，点击Next;



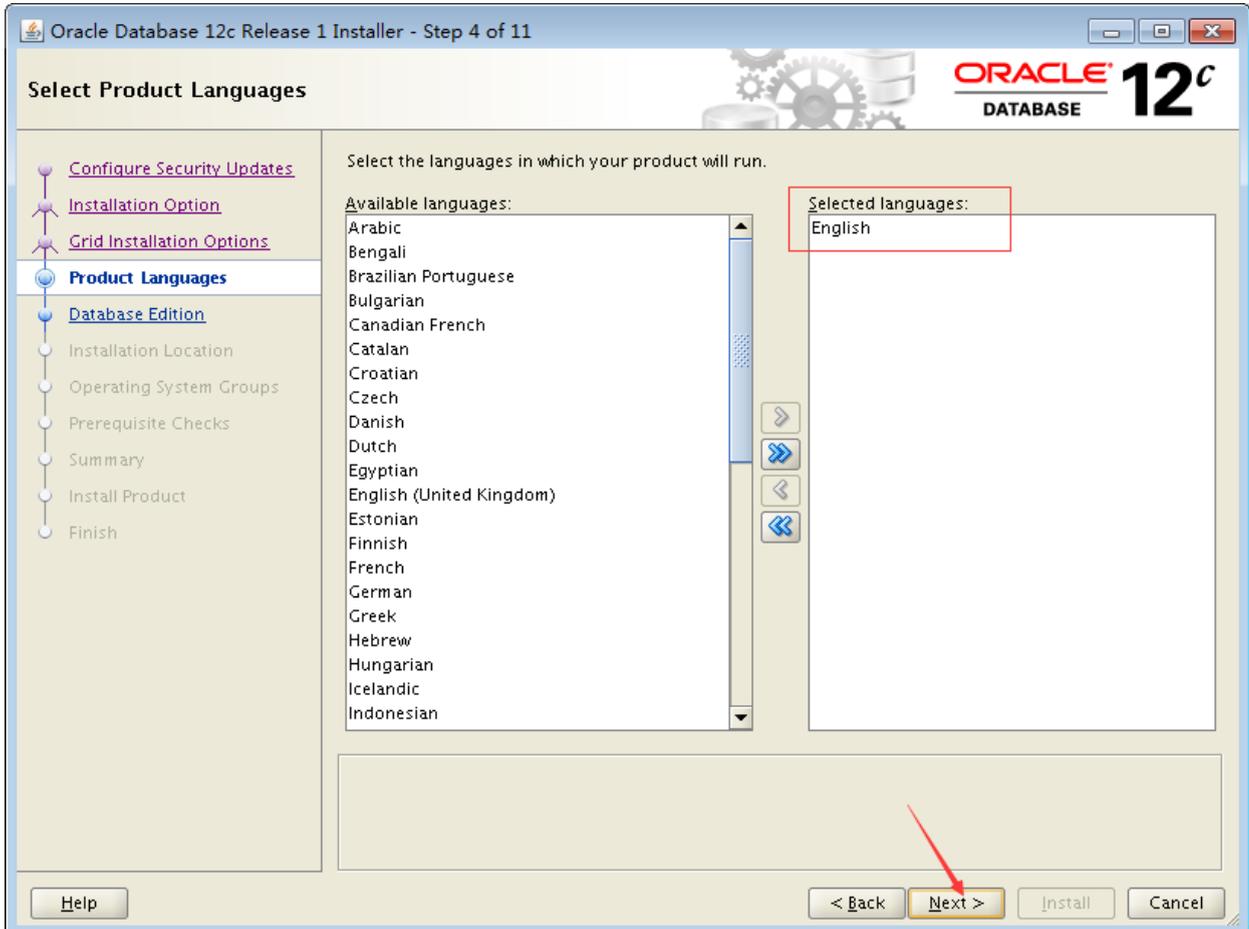
2) 在选择安装选项页，有三种选项，在此选择Install database software only，并点击Next进入下一页；



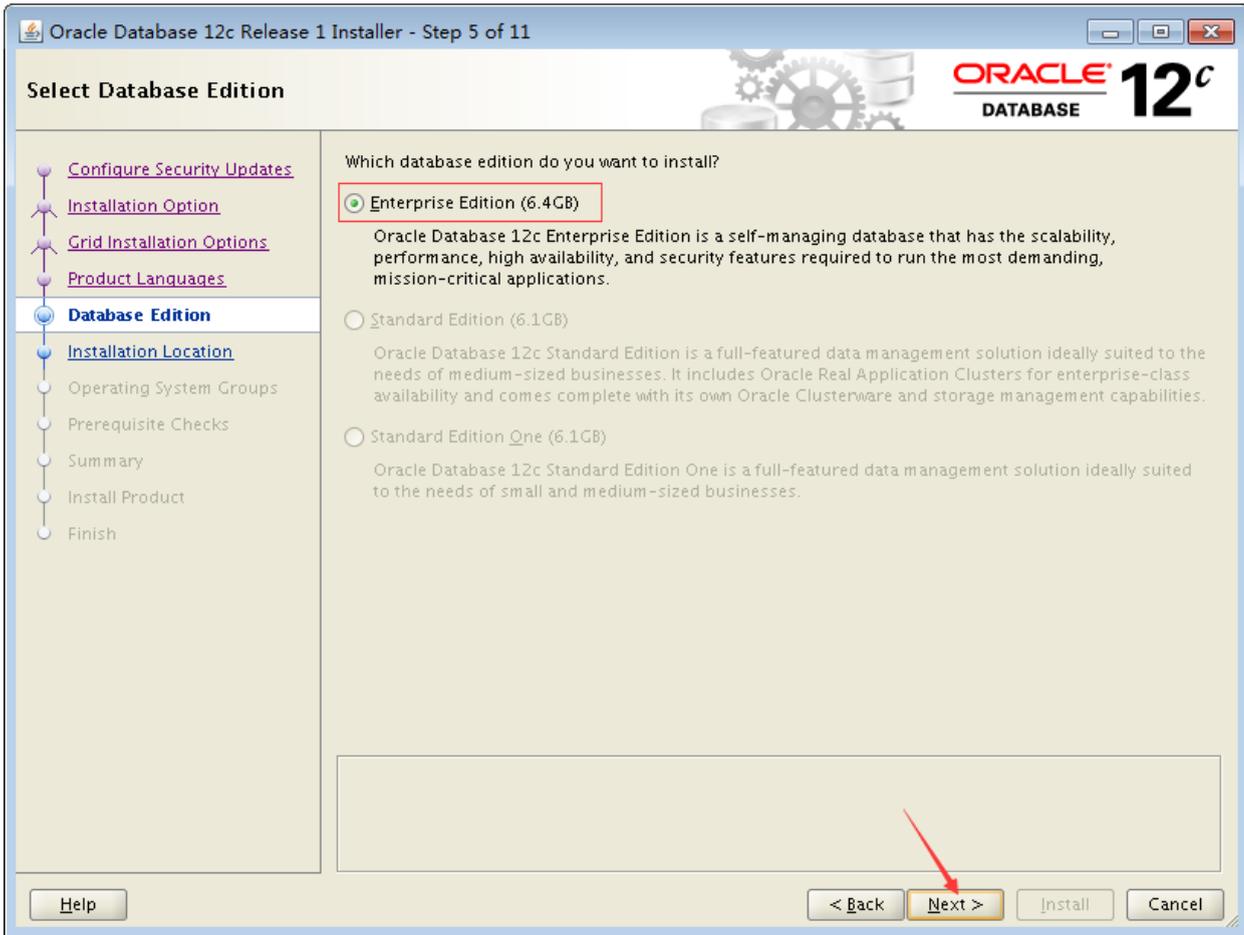
3) 在数据库安装选项页，选择Single instance database installation，并点击Next进入下一页；



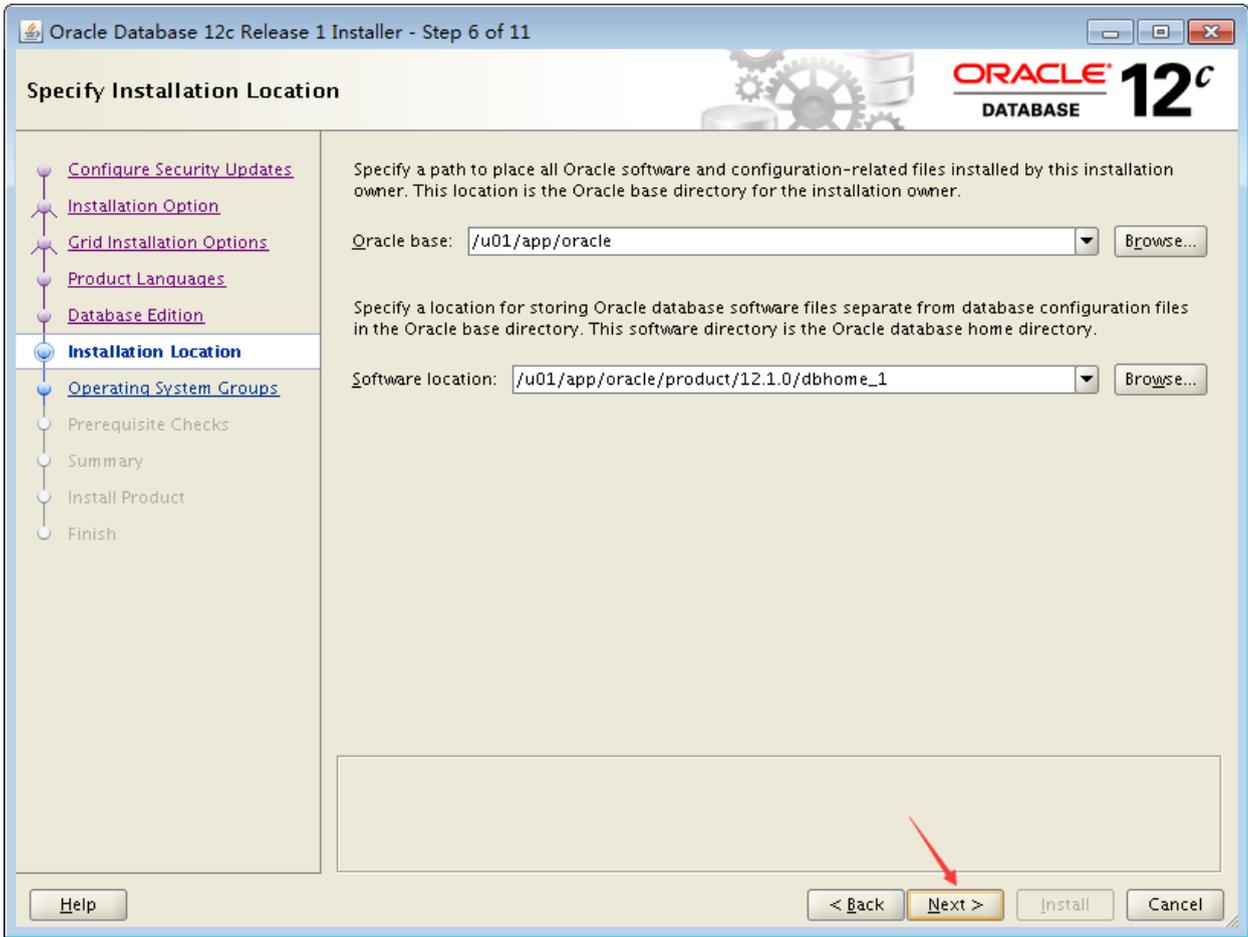
#### 4) 选择产品语言，点击Next



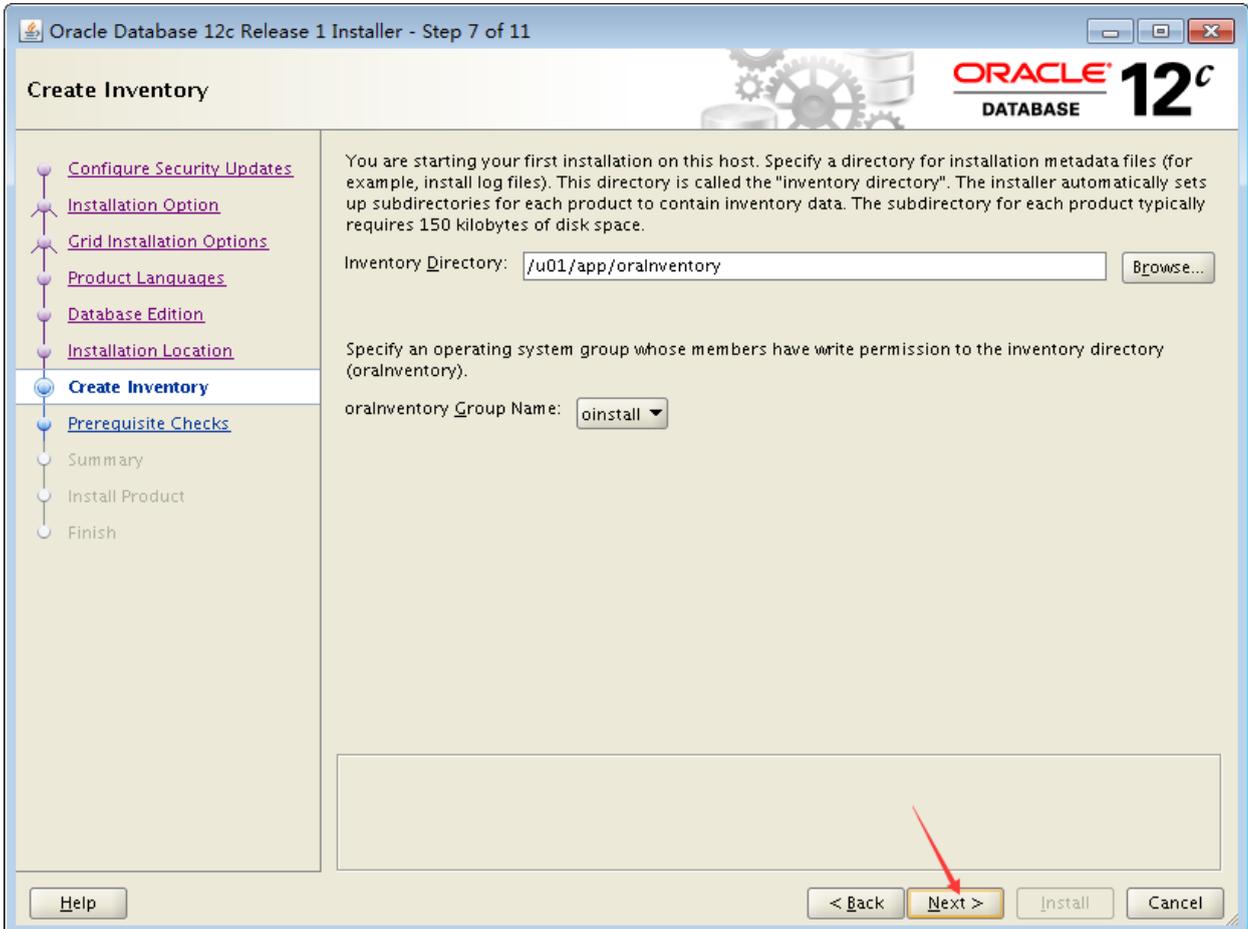
## 5) 选择数据库版本, 点击Next



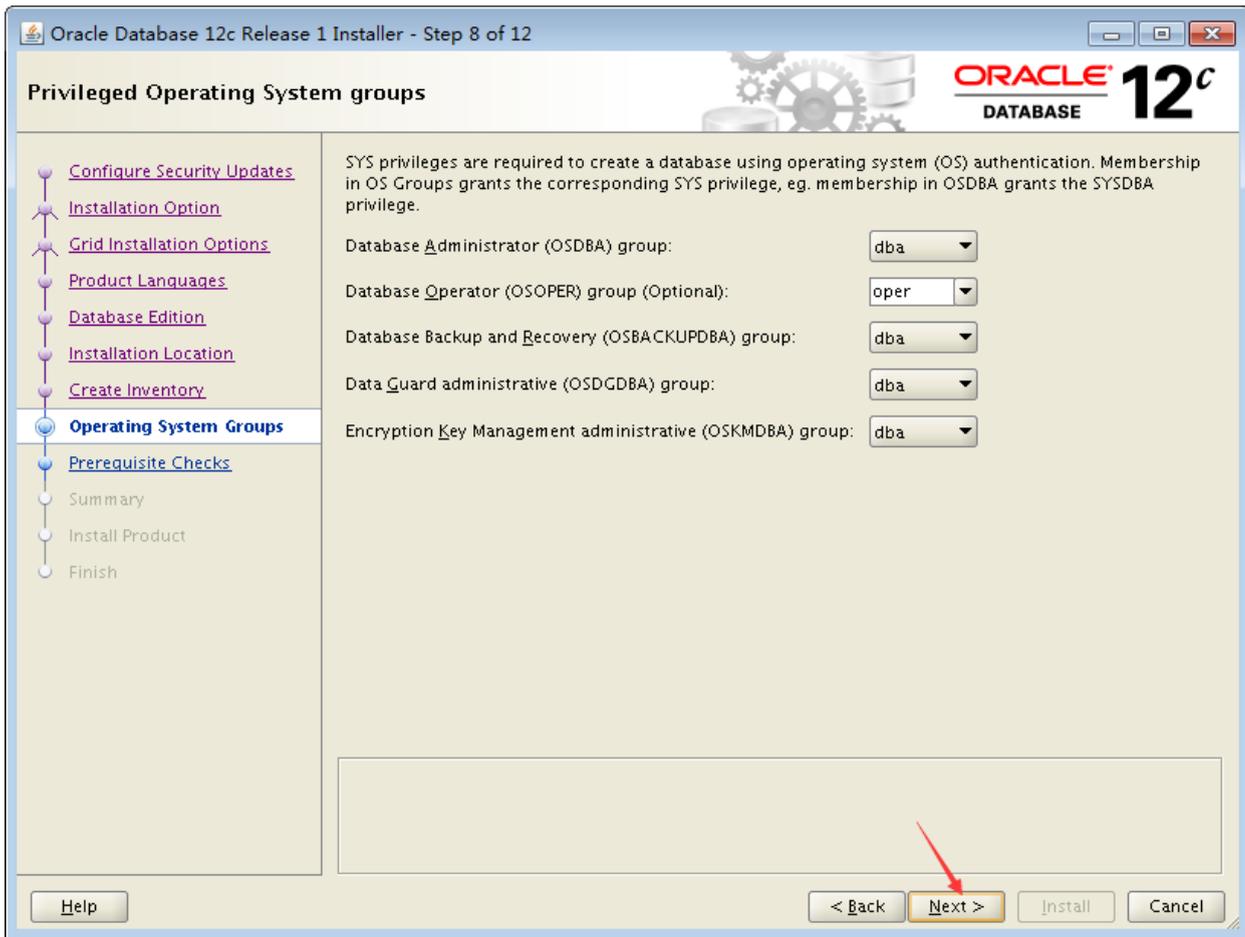
## 6) 指定安装位置



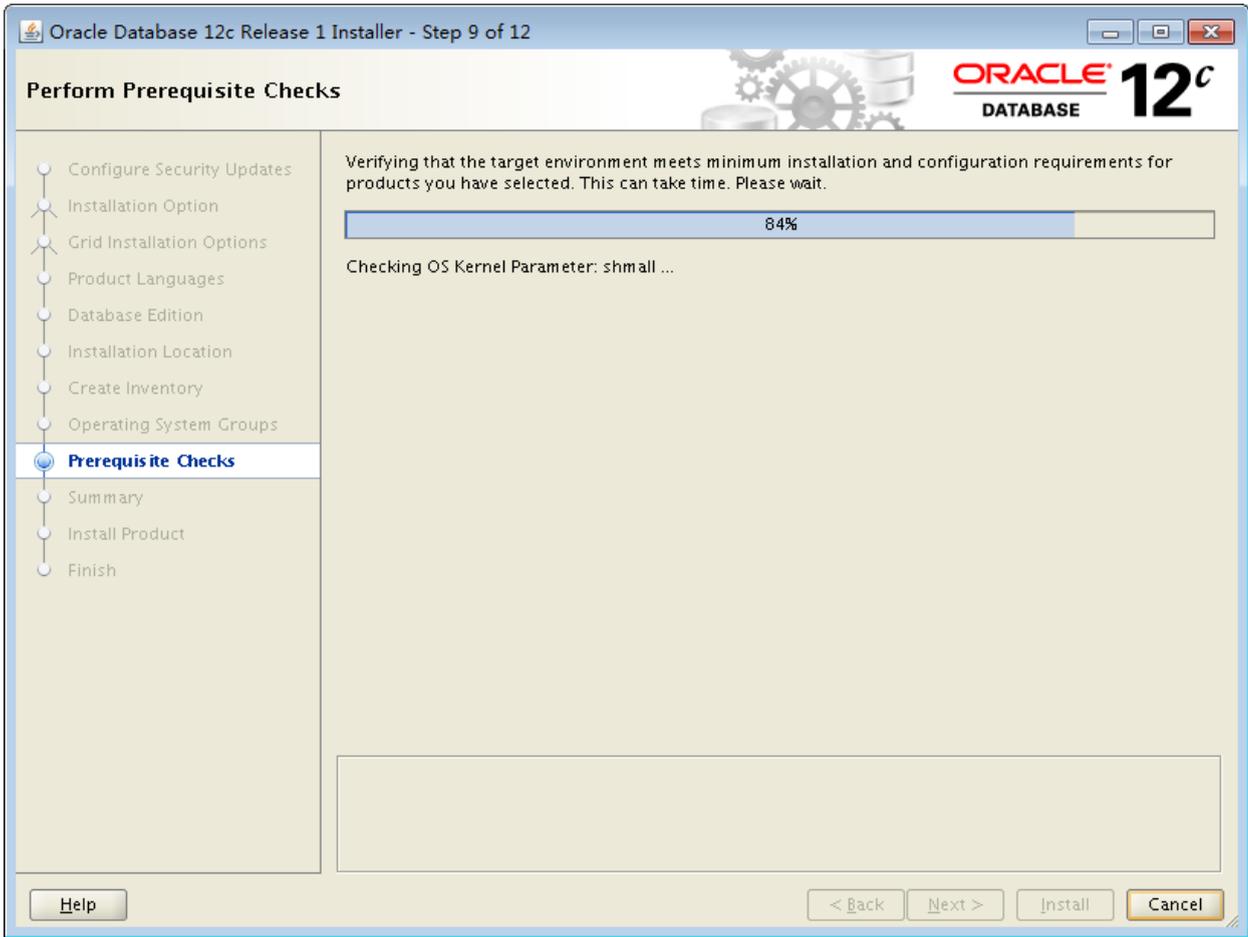
## 7) 创建安装库



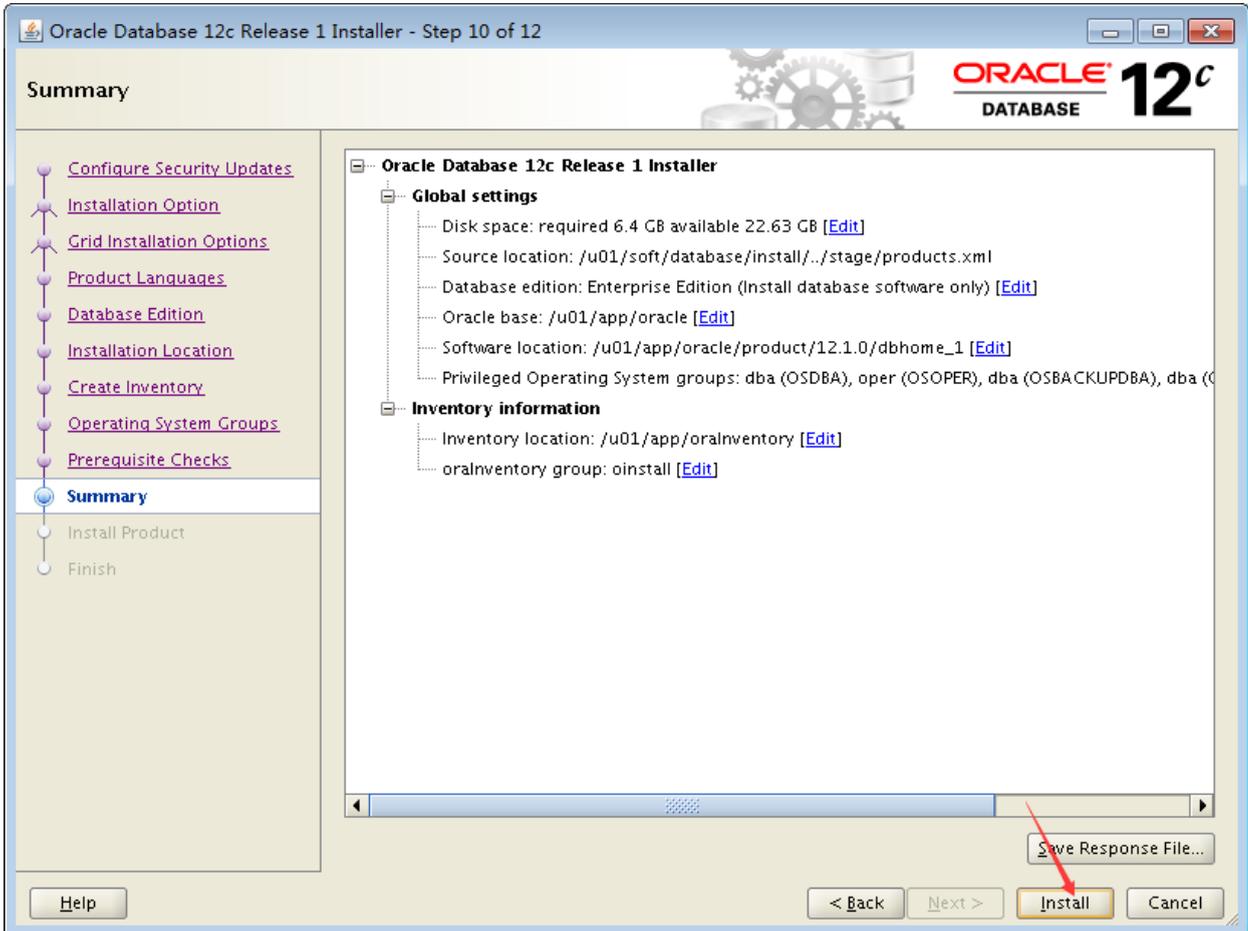
## 8) 授权的操作系统组



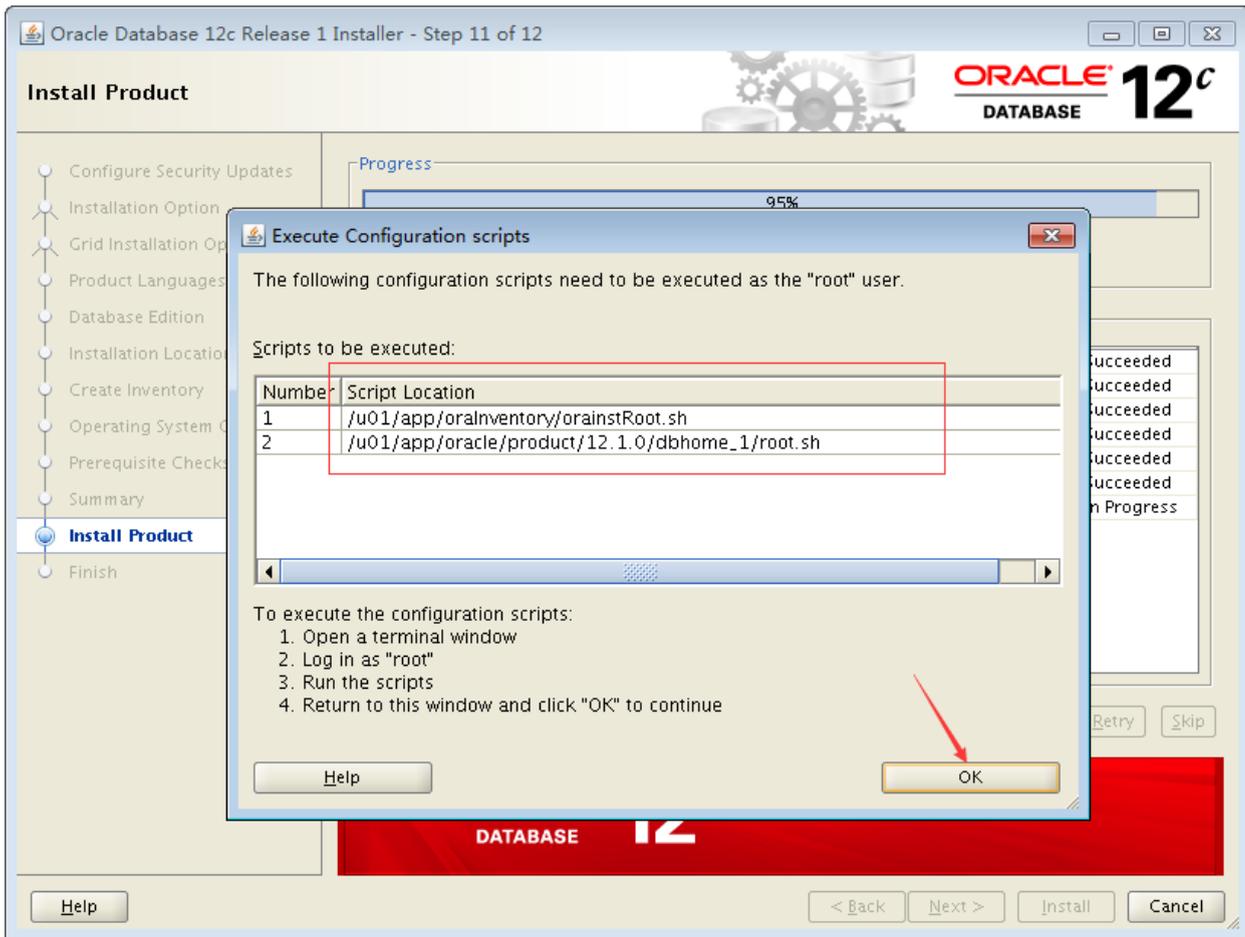
## 9) 执行先决条件检查



10) 概要页, 点击Install



## 11) 安装产品, 并执行Root脚本



```
[root@strong ~]# /u01/app/oralInventory/orainstRoot.sh
```

Changing permissions of /u01/app/oralInventory.

Adding read,write permissions for group.

Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oralInventory to oinstall.

The execution of the script is complete.

```
[root@strong ~]# /u01/app/oracle/product/12.1.0/dbhome_1/root.sh
```

Performing root user operation.

The following environment variables are set as:

```
ORACLE_OWNER= oracle
```

```
ORACLE_HOME= /u01/app/oracle/product/12.1.0/dbhome_1
```

Enter the full pathname of the local bin directory: [/usr/local/bin]:

```
Copying dbhome to /usr/local/bin ...
```

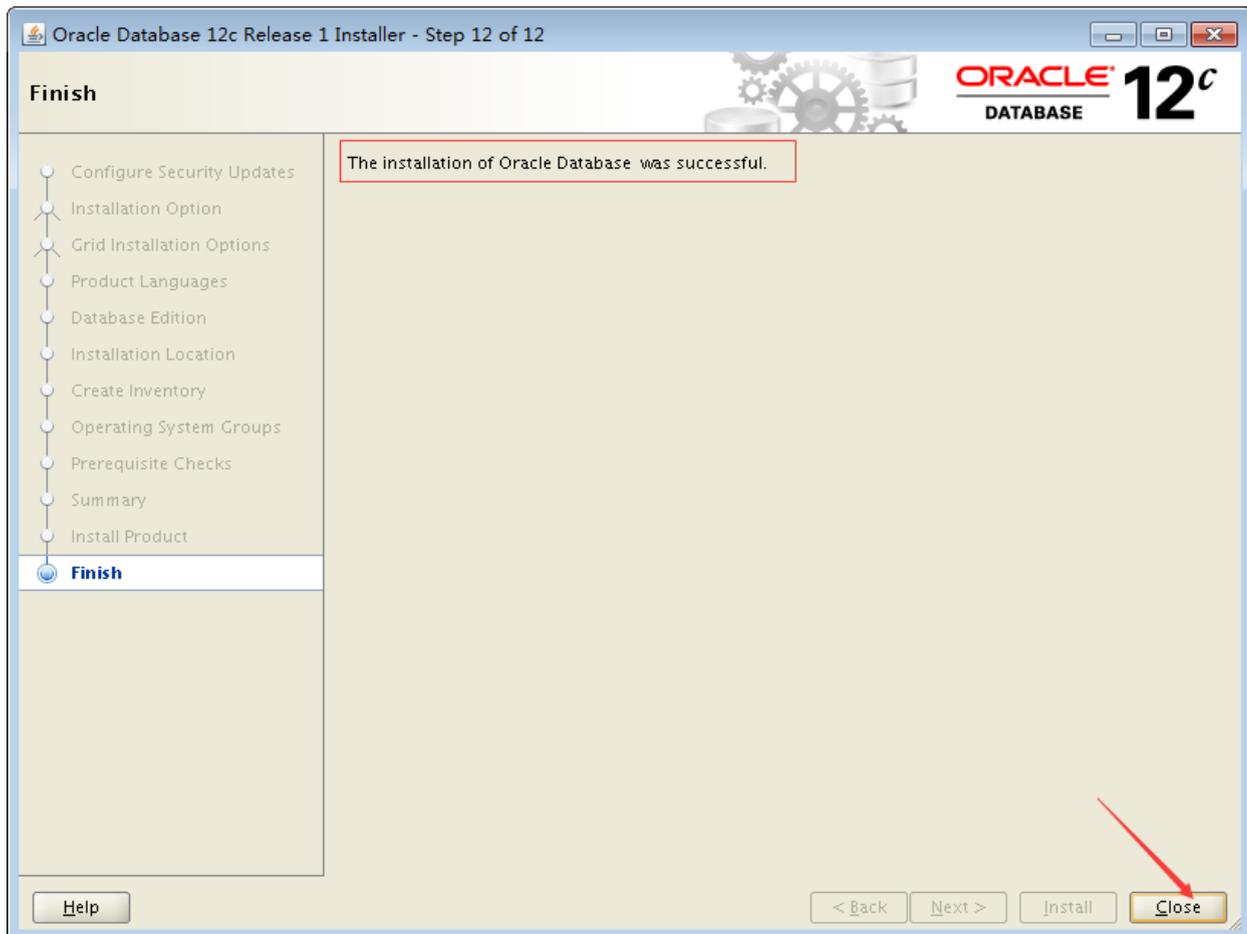
```
Copying oraenv to /usr/local/bin ...
```

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

12) 安装完成, 点击Close;



13) 完善环境变量配置, 完成Oracle 12c软件安装。

```
[oracle@strong ~]$ vim .bash_profile --增加以下两行内容
export ORACLE_HOME=/u01/app/oracle/product/12.1.0/dbhome_1
export PATH=$PATH:$ORACLE_HOME/bin
[oracle@strong ~]$ . .bash_profile
[oracle@strong ~]$ echo $ORACLE_HOME
/u01/app/oracle/product/12.1.0/dbhome_1
```

至此, Oracle数据库软件的安装完成。