Install Oracle Enterprise Manager 11gR1 on Oracle VM

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Date   : 06 February 2011
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This paper is the third in a series describing how-to install Oracle VM Server and several Oracle VM guests. In this paper I will describe how-to install Oracle Enterprise Manager Grid Control 11g (OEM11g) on an Oracle Virtual Machine.

The steps described in this paper will be:

- Create a virtual machine using virt-install and a kickstart file
- Install Oracle 11g RDBMS Software
- Create Oracle 11g database
- Install java jdk
- Install Weblogic Server
- Install Oracle Enterprise Manager 11gR1
- Patch database, Enterprise Manager and Agent

The installation will take place on a virtual machine with 4GB of memory. For production systems a minimum of 8GB is recommended.

Contents

1. Create Virtual Machine

To install OEM11g we first must create a virtual machine. On this virtual machine I will install OEL5.5 64-bit. The DVD ISO can be downloaded from here: http://edelivery.oracle.com/linux.

I like to use a kickstart file for installing Linux. Using a kickstart file will really make your installation easier and much quicker. Also, with just a few modifications, a kickstart file is reusable for other installations.

What will be present after installing using the kickstart file?

- OEL 5.5 64-bit with the selected packages
- a /u01 and /u02 filesystem
- an Oracle user
- a generic oracle profile

Create the kickstart file:

```
[root@oraovs01::/software/kickstart]# vi /software/kickstart/OEL5u5_x86_64_OEM.cfg
##START of kickstart file
install
reboot
text
lang en_US.UTF-8
keyboard us
network --device eth0 --bootproto static --ip 192.168.0.202 --netmask 255.255.255.0
--gateway 192.168.0.1 --nameserver 192.168.0.1 --hostname oraoem01.example --noipv6
rootpw --iscrypted $1$wGAh8J7a$s3VZ07TWA8EcAUQG7esZt0
firewall --disabled
authconfig --enableshadow --enablemd5
selinux --disable
timezone Europe/Amsterdam
bootloader --location=mbr --driveorder=xvda
zerombr yes
clearpart --initlabel

part /boot --fstype ext3 --size=100 --ondisk=xvda
part pv.100000 --size=38912 --grow --ondisk=xvda
part pv.100001 --size=100000 --grow --ondisk=xvdb
part pv.100002 --size=100000 --grow --ondisk=xvdc
volgroup systemvg --pesize=32768 pv.100000
volgroup u01vg --pesize=32768 pv.100001
volgroup u02vg --pesize=32768 pv.100002
logvol / --fstype ext3 --name=rootlv --vgname=systemvg --size=4096
logvol swap --fstype swap --name=swaplv --vgname=systemvg --size=8192
logvol /usr --fstype ext3 --name=usrlv --vgname=systemvg --size=8192
logvol /var --fstype ext3 --name=varlv --vgname=systemvg --size=8192
logvol /tmp --fstype ext3 --name=tmplv --vgname=systemvg --size=8192
logvol /home --fstype ext3 --name=homelv --vgname=systemvg --size=2048
logvol /u01 --fstype ext3 --name=u01lv --vgname=u01vg --size=102399
logvol /u02 --fstype ext3 --name=u02lv --vgname=u02vg --size=102399

services --disabled sendmail,xfs,bluetooth,cups,ip6tables,iptables

%packages
@base
@core
fipscheck
squashfs-tools
device-mapper-multipath
sgpio
e4fsprogs
oracle-validated
```

```
createrepo
audit
sysstat

# For 11g release 2
libaio-devel
unixODBC
unixODBC-devel
compat-libstdc++-296-2.96-138

%post --log=/root/ks-post.log

{
# Delete obsolete groups and users
/usr/sbin/userdel -r oracle
/usr/sbin/groupdel dba
/usr/sbin/groupdel oinstall
#rm -rf /home/oracle

# create group
/usr/sbin/groupadd -g 501 dba

#oracle password is oracle
/usr/sbin/useradd -c "npa" -u 500 -p '$1$wGAh8J7a$s3VZ07TWA8EcAUQG7esZt0' -g dba
oracle

# Setup oracle profile
cat > /etc/profile.d/oracle_profile.sh << EOF
# .bash_profile
#

if [ \$USER = "oracle" ]; then
  if [ \$SHELL = "/bin/ksh" ]; then
    ulimit -u 16384
    ulimit -n 65536
  else
    ulimit -u 16384 -n 65536
  fi
fi

######extend search path
export PATH=\$PATH:\$HOME/bin
export PATH=/usr/java/default/bin:\$PATH
export LD_LIBRARY_PATH=/usr/lib:/lib

####### Set some linux variables
umask 022
trap 2 3

if tty -s
  then
  set -o vi
  export EDITOR=vi
  export TERM=vt100
  stty erase ^?

  [ -s "\$MAIL" ] && echo "\$MAILMSG"
fi


####### Environment variables for Oracle
export ORACLE_BASE=/u01/app/oracle
export ORACLE_TERM=vt100
export NLS_LANG=AMERICAN_AMERICA.UTF8
export NLS_DATE_FORMAT='DD-MM-YYYY:HH24:MI:SS'
export NLS_SORT=Binary
export ORAADMIN=\$ORACLE_BASE/admin
export TNS_ADMIN=\$ORAADMIN/network/admin
```

```
###### if interactive session
if tty -s
then
   alias l="ls -al"
   alias ob="cd \${ORACLE_BASE}"
   alias oh="cd "\\\${ORACLE_HOME}""
   alias oa="cd \${ORAADMIN}"
   alias sid="cat /etc/oratab |grep -v \"#\" |sort"
   alias up="ps -ef|grep pm[o]n|awk '{print substr(\\\$NF,10)}'|sort"
   alias oracle="sudo su - oracle"
   alias root="sudo su -"
   alias sqlplus="rlwrap sqlplus"
   alias dgmgrl="rlwrap dgmgrl"
   alias rman="rlwrap rman"
   alias lsnrctl="rlwrap lsnrctl"
   alias asmcmd="rlwrap asmcmd"
   alias adrci="rlwrap adrci"
   alias impdp="rlwrap impdp"
   alias expdp="rlwrap expdp"
fi

####### Set unix prompt
USER=\${USER:-\$LOGNAME}

if tty -s
then
  export PS1="\${USER}@\`hostname -s\`:\\\${ORACLE_SID}:\\\${PWD}
$ "
fi

if tty -s
then
   #create aliases for all ORACLE_SIDs
   echo -n aliases:
   for LINE in \`cat /etc/oratab| sort | grep -v "^*" | grep -v "^#" | grep -vE "^[
]*$" | cut -f 1 -d :\`
   do
     sid=\`echo \$LINE|cut -f 1 -d :\`
     alias \${sid}="ORAENV_ASK=NO; ORACLE_SID=\${sid}; . oraenv;unset ORAENV_ASK"
     echo -n \${sid}" "
   done
   echo
fi

####### End .profile

EOF

# Setup sudo for oracle
cat > /etc/sudoers << EOF
%rootmembers     ALL=NOPASSWD: /bin/su -
%oraclemembers,%rootmembers     ALL=NOPASSWD: /bin/su - oracle
oracle          ALL=(ALL)      NOPASSWD: ALL
root            ALL=(ALL)      ALL
EOF

# Setup hosts file
cat > /etc/hosts << EOF
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1 localhost.localdomain localhost
192.168.0.202 oraoem01.example.com oraoem01
EOF

mkdir -p /u01/app/oracle/admin/network/admin
chown -R oracle:dba /u01
chown -R oracle:dba /u02
```

```
chmod -R 775 /u01
chmod -R 775 /u02

} 1>/root/ks-post.log 2>&1
##END of kickstart file
```

We are ready to create the virtual machine. We will use *virt-install* to create this virtual machine .

To prevent you get an error that the kickstart file could not be found during installation, you must first stop the firewall. This can be done by stopping the *iptables* service:

```
[root@oraovs01 /]# service iptables stop
Flushing firewall rules:
```

Now create a directory to store the files for the virtual machine:

```
[root@oraovs01 /]# mkdir /OVS/running_pool/oraoem01
```

I use NFS to share my software and kickstart files with my other servers. I described this while installing Oracle VM Manager. This paper can be found here: Install Oracle VM Manager 2.2.

Now you can create the virtual machine with virt-install:

```
virt-install \
-f /OVS/running_pool/oraoem01/system.img \
-s 40 \
-f /OVS/running_pool/oraoem01/u01disk01.img \
-s 100 \
-f /OVS/running_pool/oraoem01/u02disk01.img \
-s 100 \
-n oraoem01 \
-r 4096 \
--nographics \
-p \
-l nfs:192.168.0.200:/mount/OEL5u5_x86_64 \
-x "ks=nfs:192.168.0.200:/software/kickstart/OEL5u5_x86_64_OEM.cfg"
```

The used options of virt-install are the following:

-f	Sets the file to use as the disk image.
-s	Sets the size of the disk image in Gigabytes
-n	Sets the name of the guest instance.
-r	Sets the memory to allocate for a guest instance in Megabytes
--nographics	Do not use a graphical console for the guest.
-p	Sets the guest as being a paravirtualized guest.
-l	Sets the installation source for a paravirtualized guest
-x	Any additional arguments to pass to the installer with a paravirtualized guest.

An unattended installation will start immediately. A console will be opened automatically so you can see the progress of the installation. Unfortunately the installation ends with an error. **This error can be ignored**. (see Metalink note **466563.1**).

```
Guest installation complete... restarting guest.
libvir: Xen Daemon error : internal error domain information incomplete, missing kernel
Entity: line 25: parser error : Opening and ending tag mismatch: os line 5 and domain
</domain>
```

```
^
Entity: line 26: parser error : Premature end of data in tag domain line 1
^
libvir: Xen Daemon error : internal error domain information incomplete, missing kernel
Entity: line 25: parser error : Opening and ending tag mismatch: os line 5 and domain
</domain>
^
Entity: line 26: parser error : Premature end of data in tag domain line 1
```

After this error the virtual machine is restarted. To check this you can use the *xm* command:

```
[root@oraovs01::/root]# xm list
Name                             ID   Mem VCPUs      State   Time(s)
Domain-0                          0   564     8    r-----   4232.7
oraoem01                         15  4096     1    -b----     13.2
oraovm01                          1  2048     1    -b----    862.1
```

To open a console for the new virtual machine:

```
[root@oraovs01 /]# xm console oraoem01
```

Now you can login as root (and password oracle, as set in the kickstart file).

```
[root@oraovs01::/root]# xm console oraoem01

Enterprise Linux Enterprise Linux Server release 5.5 (Carthage)
Kernel 2.6.18-194.el5xen on an x86_64

oraoem01 login: root
Password:
Last login: Wed Jan 26 19:51:02 on xvc0
aliases:cat: /etc/oratab: No such file or directory

[root@oraoem01::/root]#
```

I really like the command line wrapper *rlwrap*. With this tool it is possible to track back previous commands in command line tools like sqlplus, rman and so on. Download rlwrap from here: rlwrap.

First mount the software for installation. I use my Oracle VM Machine as a software repository.

```
[root@oraoem01::/root]# mkdir /software
[root@oraoem01::/root]# mount -t nfs 192.168.0.200:/software /software
[root@oraoem01::/root]# cd /software/Linux/rpm/
[root@oraoem01::/root]# l
total 108
drwxr-xr-x 2 root root  4096 Jan 28 10:56 .
drwxr-xr-x 3 root root  4096 Jan 28 10:55 ..
-rw-r--r-- 1 root root 94353 Nov 14 17:28 rlwrap-0.37-1.el5.x86_64.rpm
[root@oraoem01::/root]# rpm -ivh rlwrap-0.37-1.el5.x86_64.rpm
warning: rlwrap-0.37-1.el5.x86_64.rpm: Header V3 DSA signature: NOKEY, key ID
217521f6
Preparing...                ########################################### [100%]
   1:rlwrap                 ########################################### [100%]
```

2. OS Requirements:

There are some requirements to meet when preparing OEL 5.5 to run the database and OEM software correctly.
These requirements are already in place, because we installed the oracle-validated rpm package and specified other needed packaged in the kickstart file, which makes all the preparations for us. But I will quickly discuss the requirements for the case you don't want to install using the kickstart file or the oracle-validated rpm.

Check the existence of the following lines in file */etc/sysctl.conf*:

```
/etc/sysctl.conf:
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
fs.file-max = 6815744
fs.aio-max-nr = 3145728
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
```

Check the existence of the following lines in file */etc/security/limits.conf*:

```
/etc/security/limits.conf:
oracle    soft    nofile    131072
oracle    hard    nofile    131072
oracle    soft    nproc     131072
oracle    hard    nproc     131072
oracle    soft    core      unlimited
oracle    hard    core      unlimited
oracle    soft    memlock   50000000
oracle    hard    memlock   50000000
```

Check the existence of the following lines in file */etc/profile.d/oracle_profile.sh*:

```
/etc/profile.d/oracle_profile.sh:
if [ $USER = "oracle" ]; then
  if [ $SHELL = "/bin/ksh" ]; then
    ulimit -u 16384
    ulimit -n 65536
  else
    ulimit -u 16384 -n 65536
  fi
fi
```

Check if the following OS packages are installed:

```
root@oraovm01::/root
$ rpm -aq binutils compat-db compat-libstdc++-296 gcc glibc glibc-common libaio
libstdc++ libstdc++-devel make rng-utils setarch sysstat
glibc-2.5-49
glibc-2.5-49
libstdc++-4.1.2-48.el5
gcc-4.1.2-48.el5
sysstat-7.0.2-3.el5
glibc-common-2.5-49
binutils-2.17.50.0.6-14.el5
libaio-0.3.106-5
setarch-2.0-1.1
compat-libstdc++-296-2.96-138
libstdc++-4.1.2-48.el5
```

```
make-3.81-3.el5
compat-db-4.2.52-5.1
libaio-0.3.106-5
libstdc++-devel-4.1.2-48.el5
rng-utils-2.0-1.14.1.fc6
```

3. Install Oracle 11gR2 RDBMS software

We are now ready to continue with the installation of the Oracle 11g RDBMS software so we can create a repository database. We will use Oracle RDBMS version 11.2.0.2. The software can be downloaded from support.oracle.com. The patchset number for 11.2.0.2 is 10098816.

After downloading the RDBMS software, copy the software to the server, I use WinSCP for this. When the software id copied to your server unzip it:

```
oracle@oraoem01::/software/Database/11.2.0.2
$ unzip p10098816_112020_Linux-x86-64_1of7.zip
$ unzip p10098816_112020_Linux-x86-64_2of7.zip
```

To install the RDBMS software you have to start a X-server like Reflexion or, what I use, Xming.

Start a telnet session and login as user oracle. Oracle will be the software owner.

```
[oracle@oraoem01::/home/oracle]# cd /software/Database/11.2.0.2/database
```

Set the DISPLAY variable and then start the installer:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# ./runInstaller
```
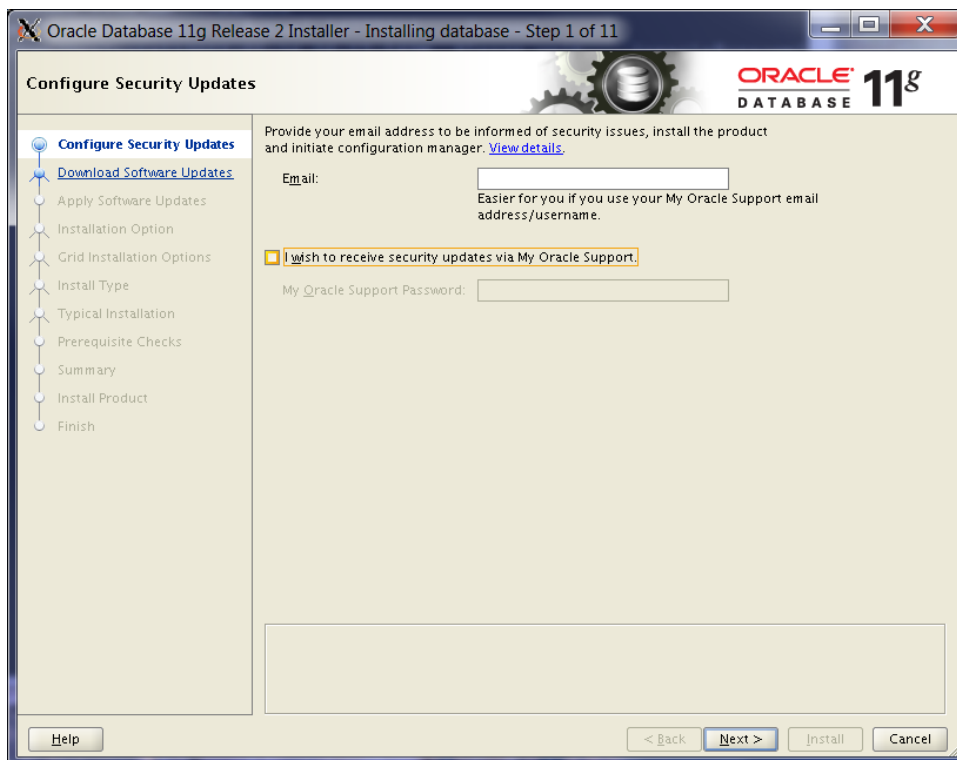

Action:
Deselect **I wish to receive security updates via My Oracle Support** and click **Next**.
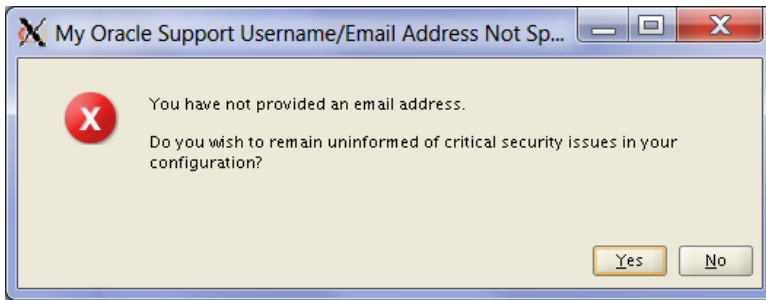
Action:
Confirm by clicking **Yes**.
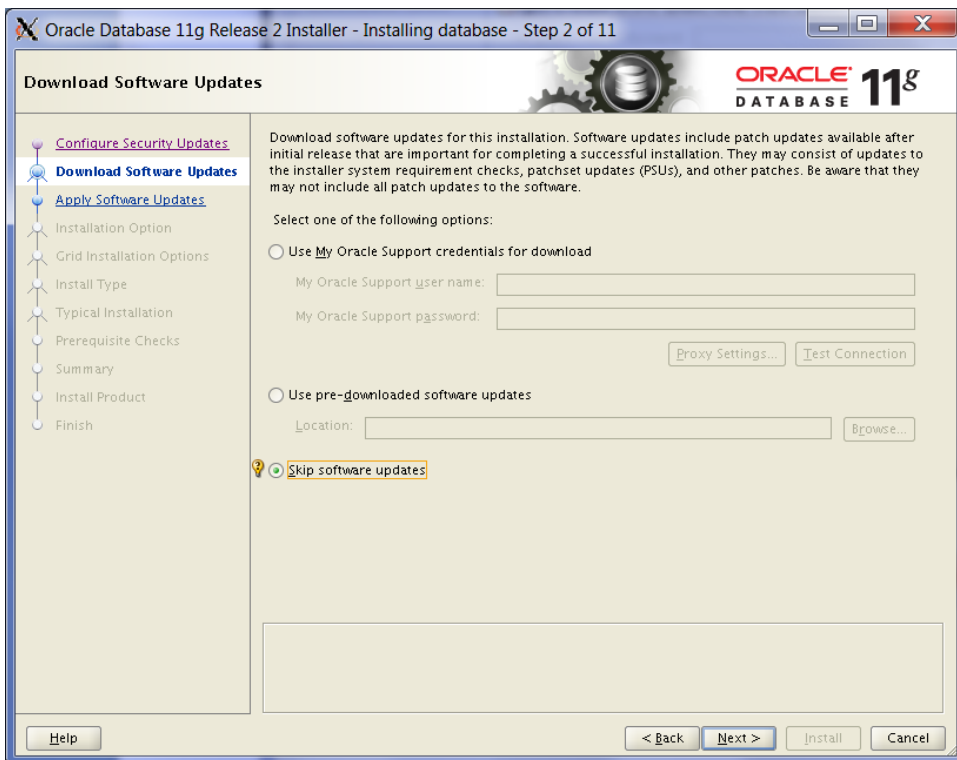
Action:
Select **Skip software updates** and click **Next**.
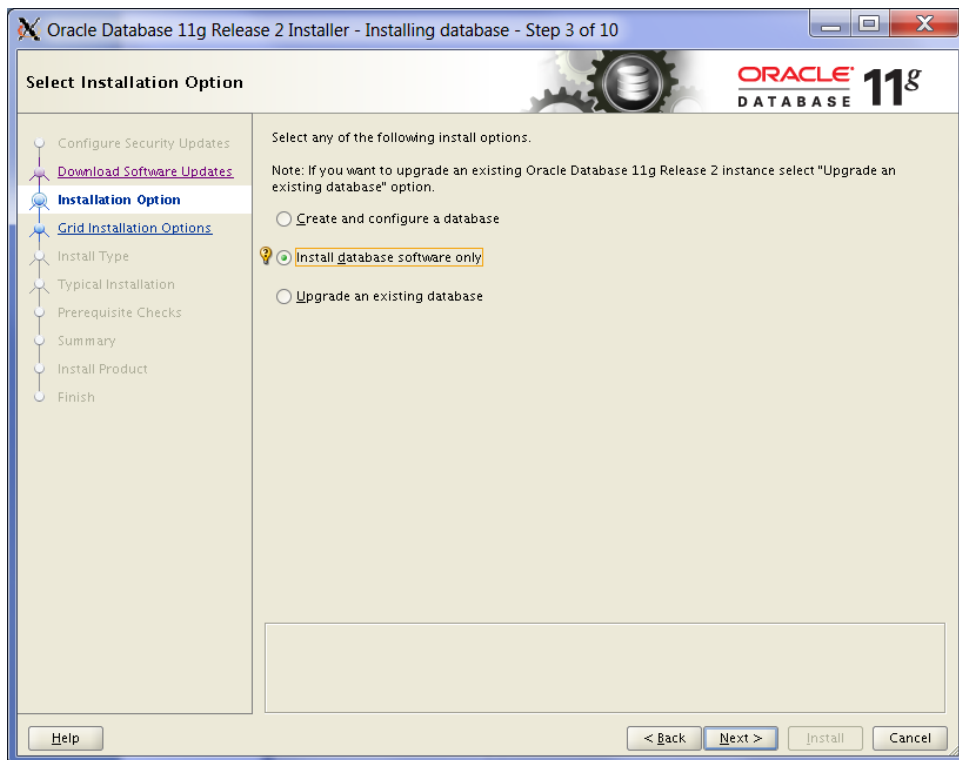
Action:
Select **Install database software only** and click **Next**.
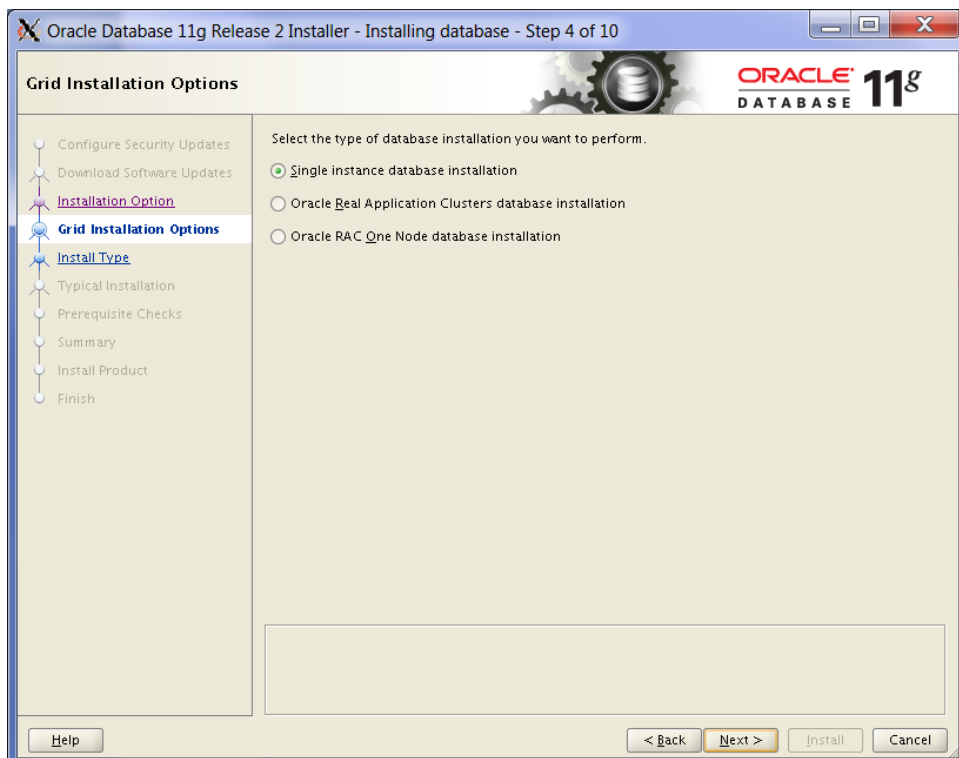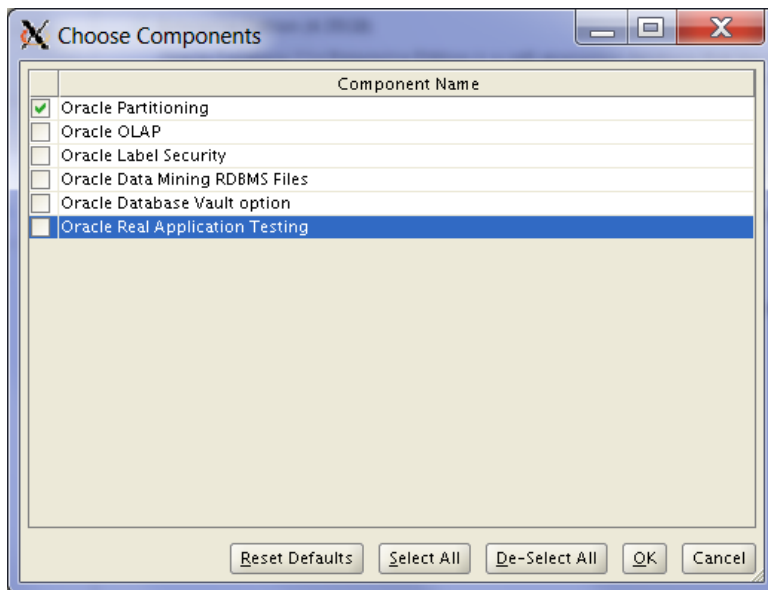

Action:
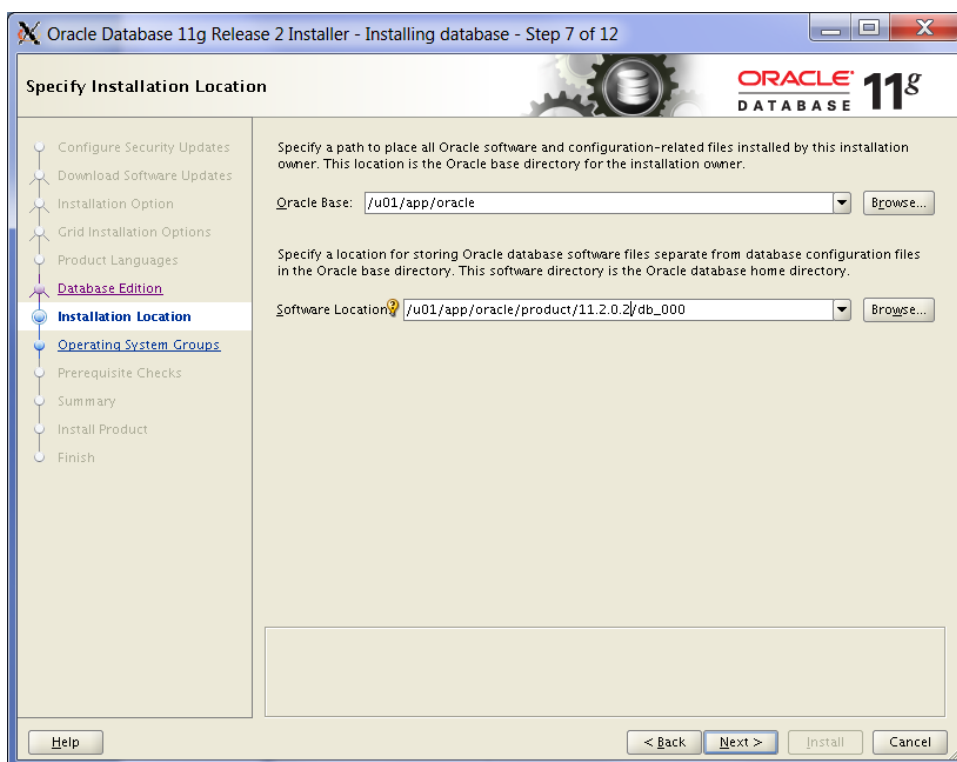Select **Single instance database installation** and click **Next**.
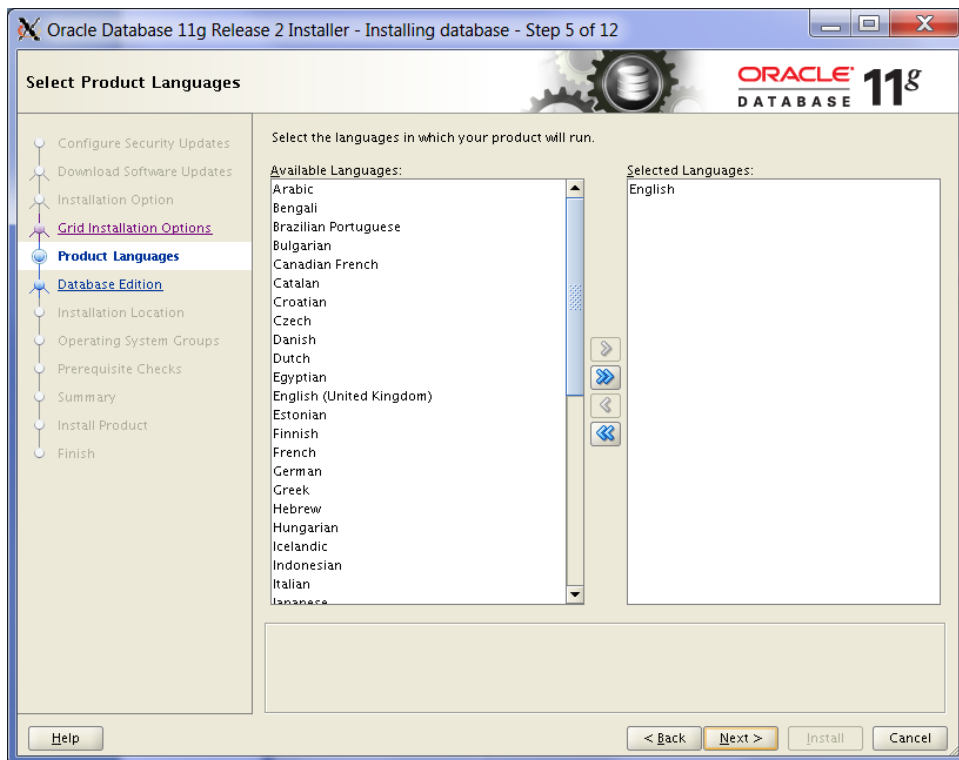
Action:
Select the language of your choice and click **Next**.
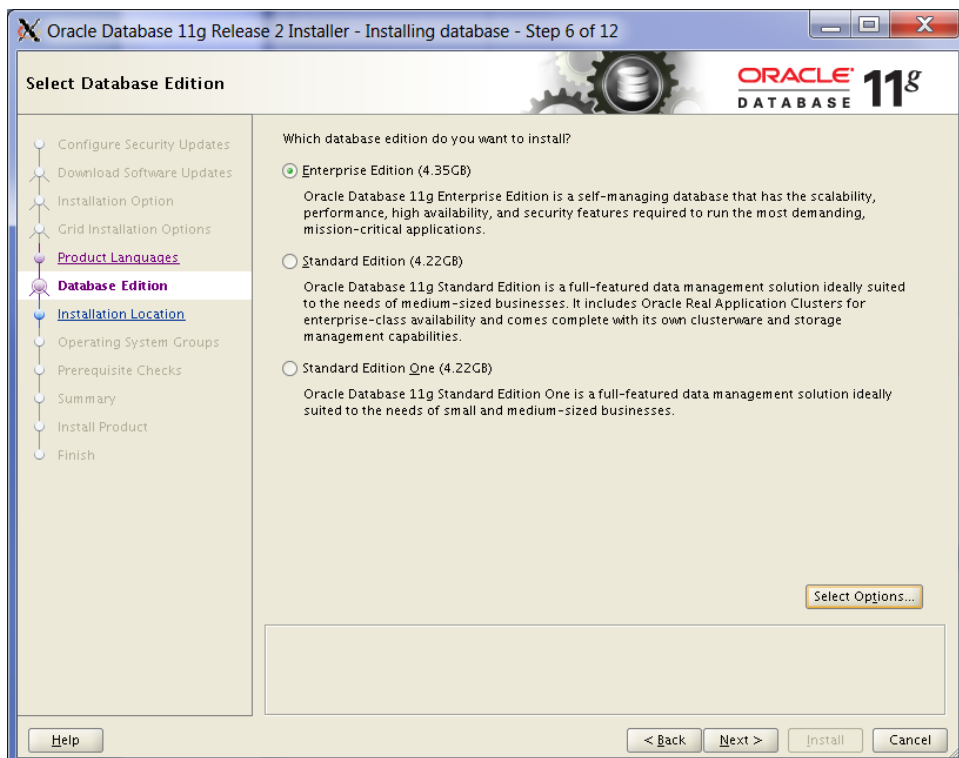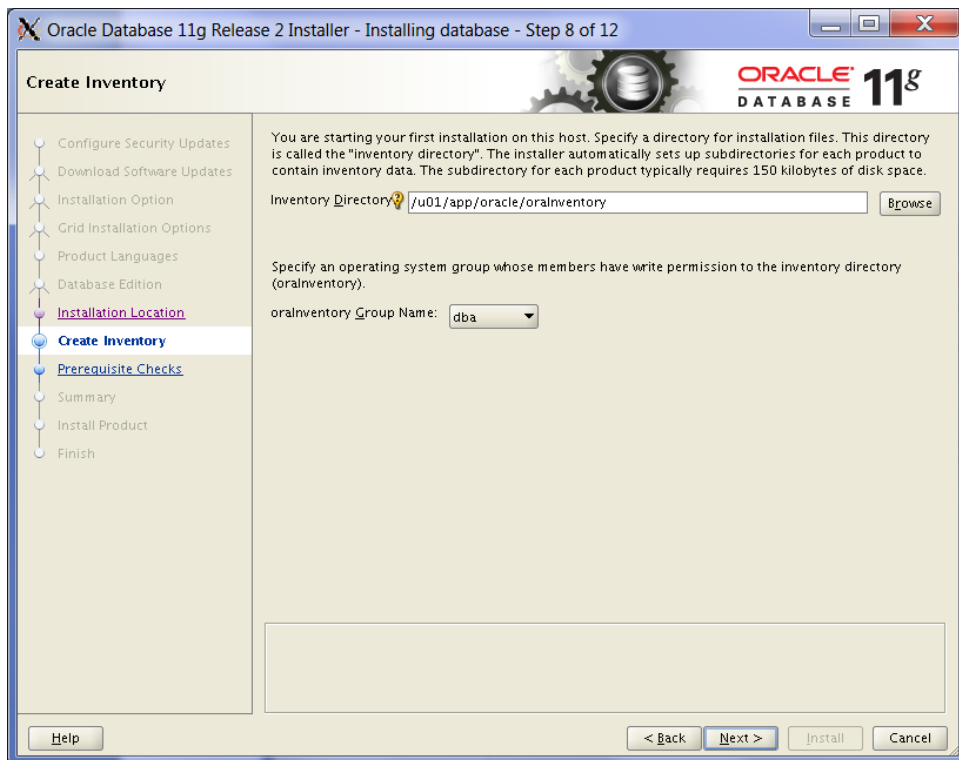

Action:
Click button **Select Options …**

Action:
Only select component **Oracle Partitioning** and click **OK**.

Action:
Specify the **Oracle Base** and **Software Location**. I use the following locations:
Oracle Base   **/u01/app/oracle**
Software Location   **/u01/app/oracle/product/11.2.0.2/db_000**

Click **Next**.

Action:
Specify the **Inventory Directory** and **oraInventory Group Name**.
Inventory Directory   **/u01/app/oracle/oraInventory**
oraInventory Group Name   **dba**

Click **Next**.
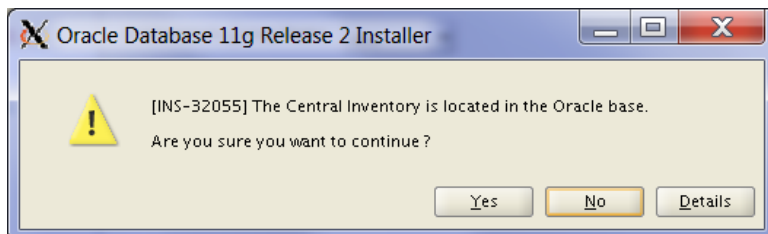
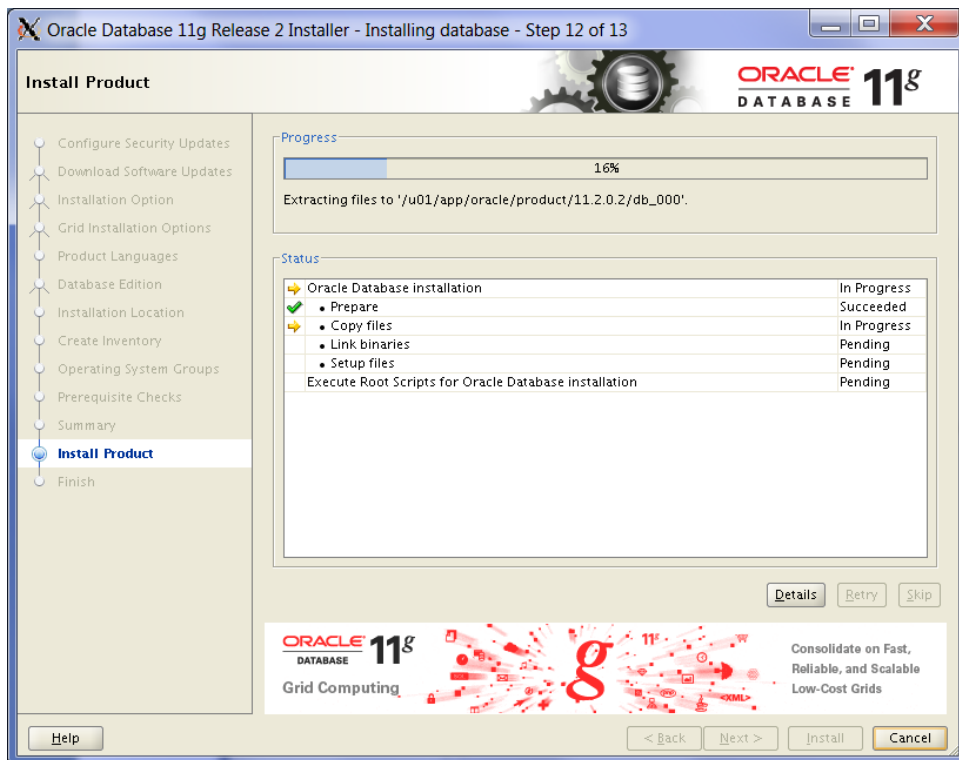**Action:**
Confirm by clicking **Yes**.
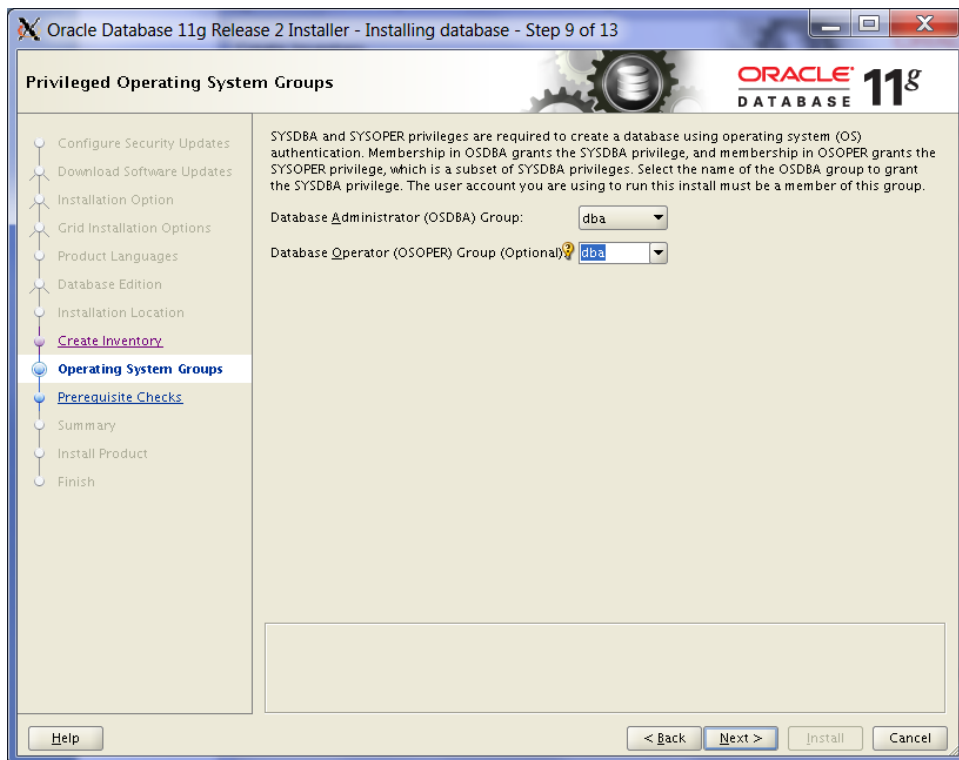
Action:
Specify the **Priviliged Operating System Groups** for OSDBA and OSOPER.
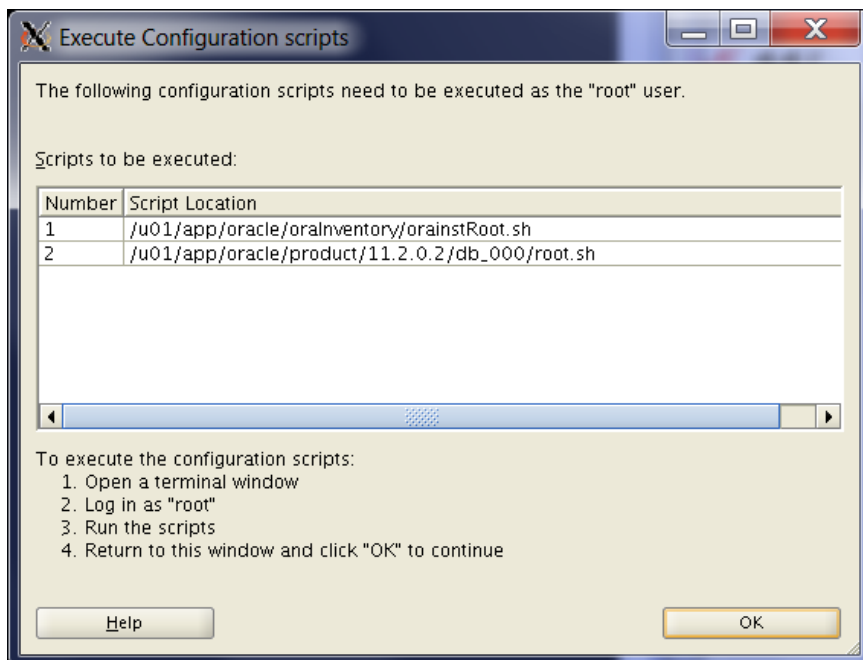I use group **dba** as OS group for both.
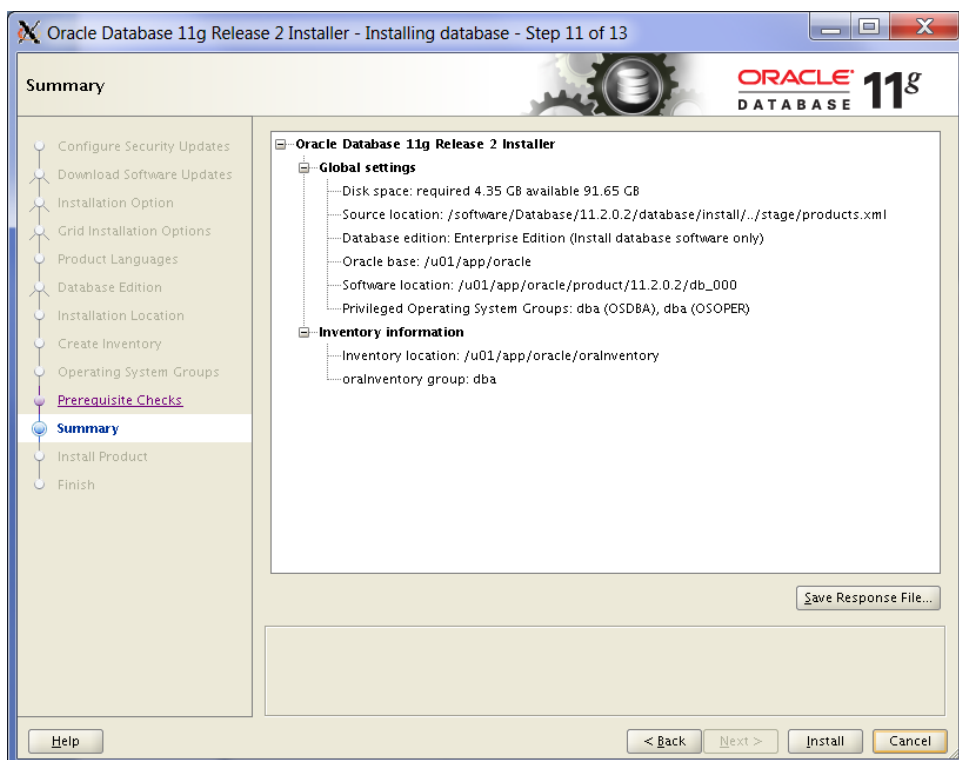
Action:
Check if all settings are correct. I you are satisfied click **Install** to start installing the RDBMS software.

Action:
Wait a while until the installation is completed.

Action:
Follow the instructions on the screen by executing the 2 scripts as user root.

```
[root@oraoem01::/root]# /u01/app/oracle/oraInventory/orainstRoot.sh
Changing permissions of /u01/app/oracle/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oracle/oraInventory to dba.
The execution of the script is complete.
```

```
[root@oraoem01::/root]# /u01/app/oracle/product/11.2.0.2/db_000/root.sh
Running Oracle 11g root script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /u01/app/oracle/product/11.2.0.2/db_000

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.
Finished product-specific root actions.
```

After executing the scripts click **OK**.
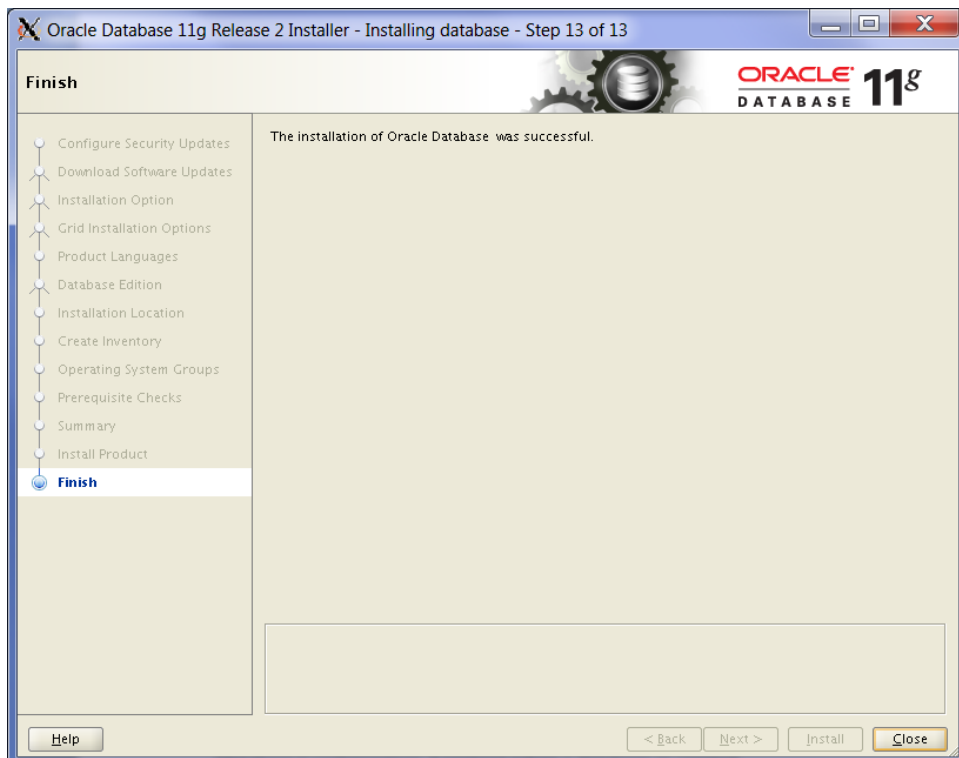
Action:
Click **Close**.

4. Install Oracle 11gR2 RDBMS patches

I recommend downloading and installing at least the following patches:

Opatch   p6880880_112000_Linux-x86-64.zip
PSU 11.2.0.2.1   p10248523_112020_Linux-x86-64.zip

First refresh OPatch

```
[oracle@oraoem01::/home/oracle]# cd /software/OPatch/
[oracle@oraoem01::/home/oracle]# unzip p6880880_112000_Linux-x86-64.zip -d
/u01/app/oracle/product/11.2.0.2/db 000
Archive:  p6880880 112000 Linux-x86-64.zip
 extracting: /u01/app/oracle/product/11.2.0.2/db 000/OPatch/ocm/ocm.zip
……
replace /u01/app/oracle/product/11.2.0.2/db_000/OPatch/ocm/ocm_platforms.txt? [y]es, [n]o,
[A]ll, [N]one, [r]ename: A
  inflating: /u01/app/oracle/product/11.2.0.2/db 000/OPatch/ocm/ocm platforms.txt
 extracting: /u01/app/oracle/product/11.2.0.2/db 000/OPatch/crs/log/dummy
……
  inflating: /u01/app/oracle/product/11.2.0.2/db_000/OPatch/README.txt
```

Now install latest database PSU

```
[oracle@oraoem01::/home/oracle]# cd
/software/Database/11.2.0.2/Patches/Database/11.2.0.2/10248523
[oracle@oraoem01::/home/oracle]# /u01/app/oracle/product/11.2.0.2/db_000/OPatch/opatch apply
Invoking OPatch 11.2.0.1.4

Oracle Interim Patch Installer version 11.2.0.1.4
Copyright (c) 2010, Oracle Corporation.  All rights reserved.


Oracle Home       : /u01/app/oracle/product/11.2.0.2/db_000
Central Inventory : /u01/app/oracle/oraInventory
   from           : /etc/oraInst.loc
OPatch version    : 11.2.0.1.4
OUI version       : 11.2.0.2.0
OUI location      : /u01/app/oracle/product/11.2.0.2/db_000/oui
Log file location : /u01/app/oracle/product/11.2.0.2/db 000/cfgtoollogs/opatch/opatch2011-01-
28 09-59-31AM.log

Patch history file:
/u01/app/oracle/product/11.2.0.2/db_000/cfgtoollogs/opatch/opatch_history.txt

ApplySession applying interim patch '10248523' to OH '/u01/app/oracle/product/11.2.0.2/db 000'

Running prerequisite checks...
Provide your email address to be informed of security issues, install and
initiate Oracle Configuration Manager. Easier for you if you use your My
Oracle Support Email address/User Name.
Visit http://www.oracle.com/support/policies.html for details.
Email address/User Name:

You have not provided an email address for notification of security issues.
Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: Y

OPatch detected non-cluster Oracle Home from the inventory and will patch the local system
only.


Please shutdown Oracle instances running out of this ORACLE HOME on the local system.
(Oracle Home = '/u01/app/oracle/product/11.2.0.2/db 000')


Is the local system ready for patching? [y|n]
Y
User Responded with: Y
```

```
Backing up files and inventory (not for auto-rollback) for the Oracle Home
Backing up files affected by the patch '10248523' for restore. This might take a while...
Backing up files affected by the patch '10248523' for rollback. This might take a while...

Patching component oracle.rdbms.rsf, 11.2.0.2.0...
Updating archive file "/u01/app/oracle/product/11.2.0.2/db_000/lib/libgeneric11.a"  with
"lib/libgeneric11.a/kgl2.o"
Copying file to "/u01/app/oracle/product/11.2.0.2/db 000/rdbms/mesg/oraus.msb"
Copying file to "/u01/app/oracle/product/11.2.0.2/db 000/rdbms/mesg/oraus.msg"

Patching component oracle.rdbms, 11.2.0.2.0...
Updating archive file "/u01/app/oracle/product/11.2.0.2/db_000/lib/libserver11.a"  with
"lib/libserver11.a/kfc.o"
……
Updating archive file "/u01/app/oracle/product/11.2.0.2/db 000/lib/libasmclntsh11.a"  with
"lib/libasmclntsh11.a/kgfdputl.o"
Copying file to "/u01/app/oracle/product/11.2.0.2/db_000/rdbms/admin/bundledata_PSU.xml"
Copying file to "/u01/app/oracle/product/11.2.0.2/db_000/psu/11.2.0.2.1/catpsu.sql"
Copying file to "/u01/app/oracle/product/11.2.0.2/db_000/psu/11.2.0.2.1/catpsu_rollback.sql"
Running make for target client sharedlib
Running make for target client sharedlib
Running make for target ioracle
ApplySession adding interim patch '10248523' to inventory

Verifying the update...
Inventory check OK: Patch ID 10248523 is registered in Oracle Home inventory with proper meta-
data.
Files check OK: Files from Patch ID 10248523 are present in Oracle Home.

The local system has been patched and can be restarted.


OPatch succeeded.
```
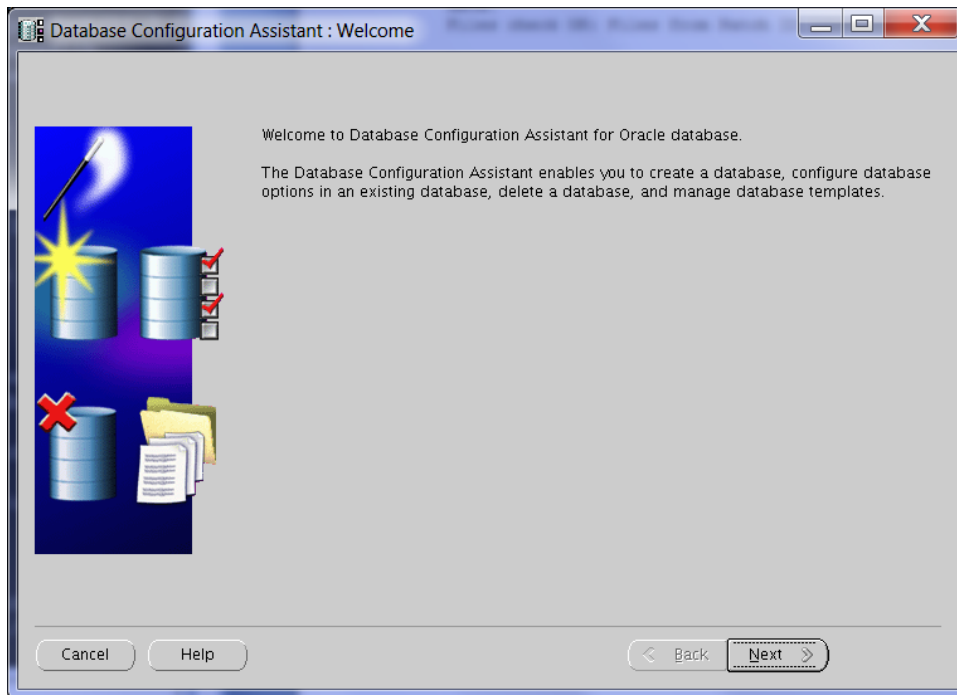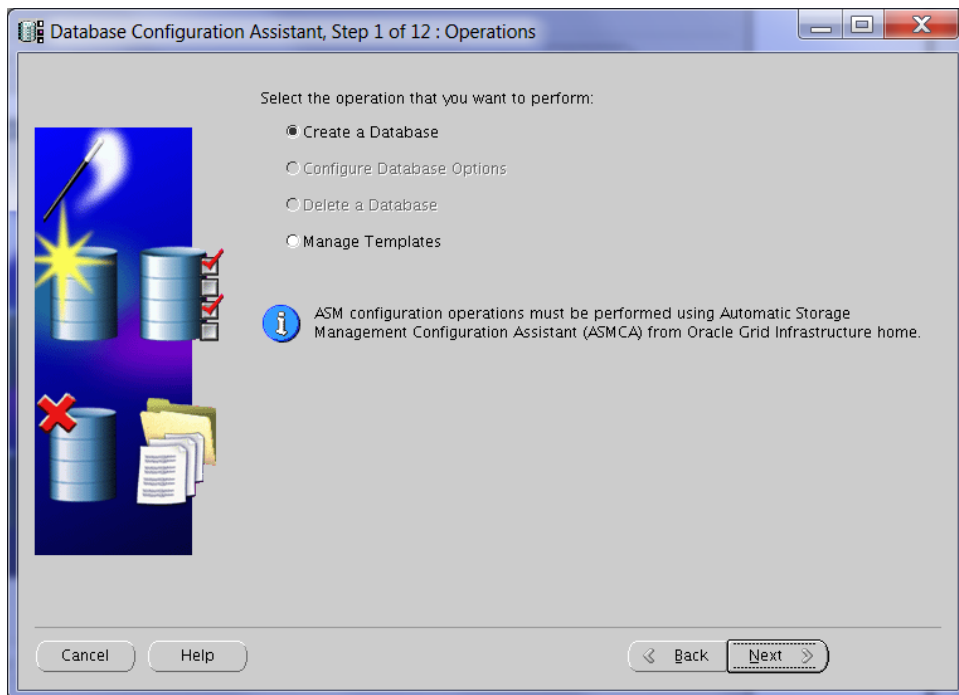
5. Create OEM Repository database

Now we can create a database for the OEM repository. To create the OEM repository database we will use DBCA utility.

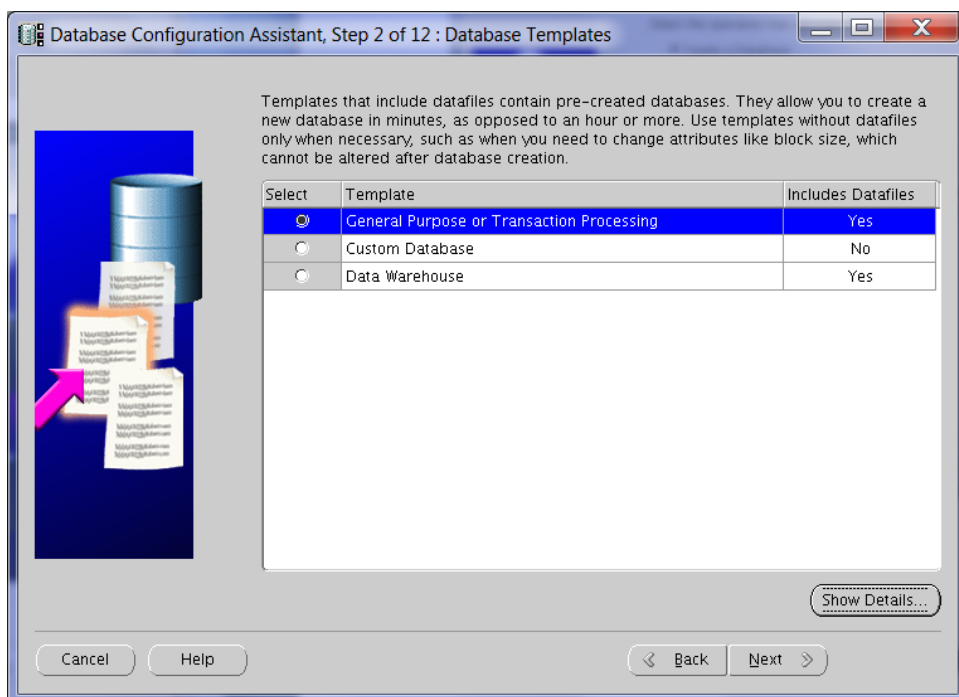Set the DISPLAY variable and then start DBCA:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# cd /u01/app/oracle/product/11.2.0.2/db_000/bin
[oracle@oraoem01::/home/oracle]# ./dbca
```
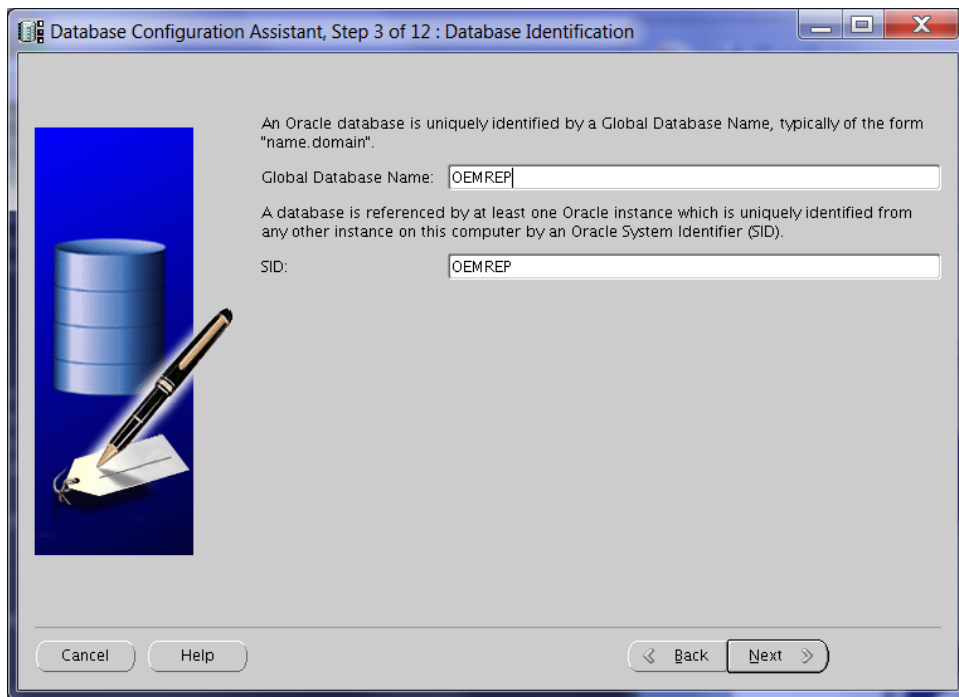

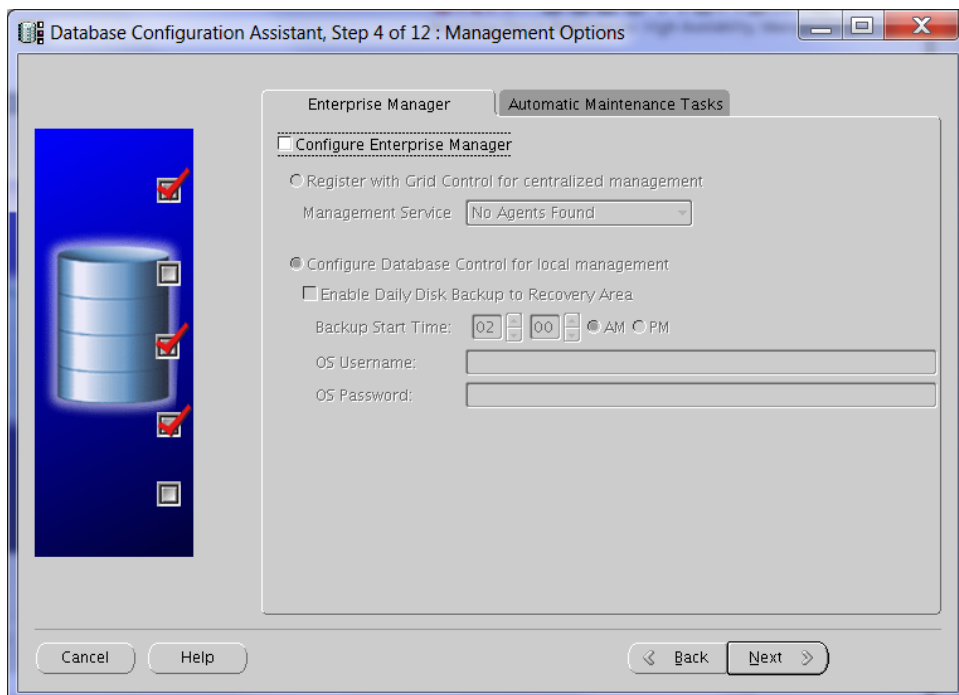**Action:**
Click **Next**.

Action:
Select **Create a Database** and click **Next**.

Action:
Select the template **General Purpose or Transaction Processing** and click **Next**.
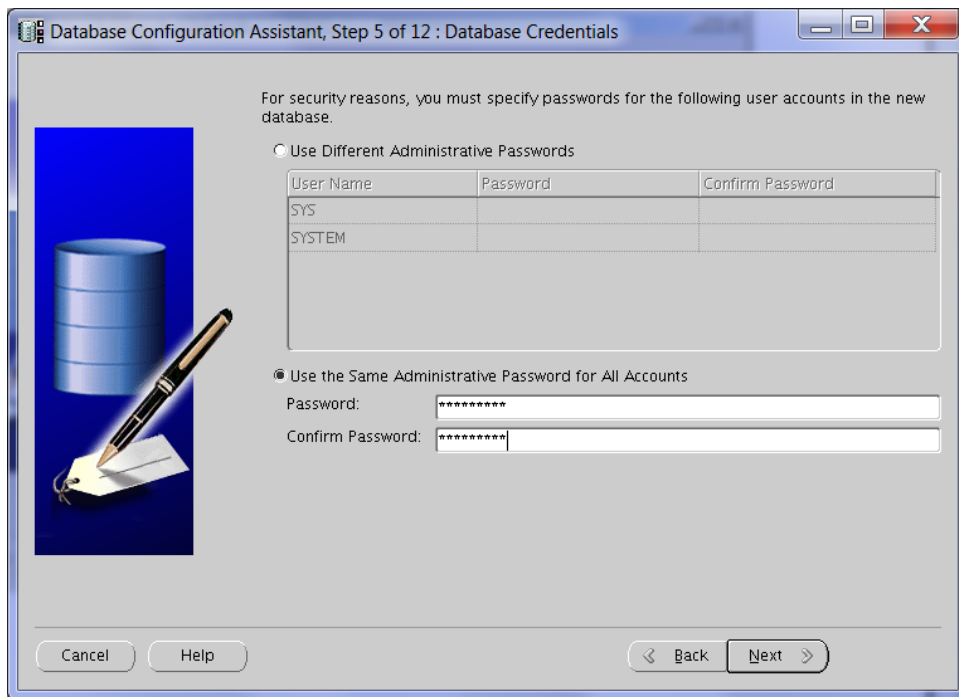
Action:
Specify the **Global Database Name** and **SID** for the OEM repository database.
Click **Next**.

Action:
Because this will be our OEM repository database we don't need dbconsole. Unfortunately this doesn't prevent the installation of even just a small part of some sysman object. I a later step we will remove these object.
Deselect **Configure Enterprise Manager** and click **Next**.
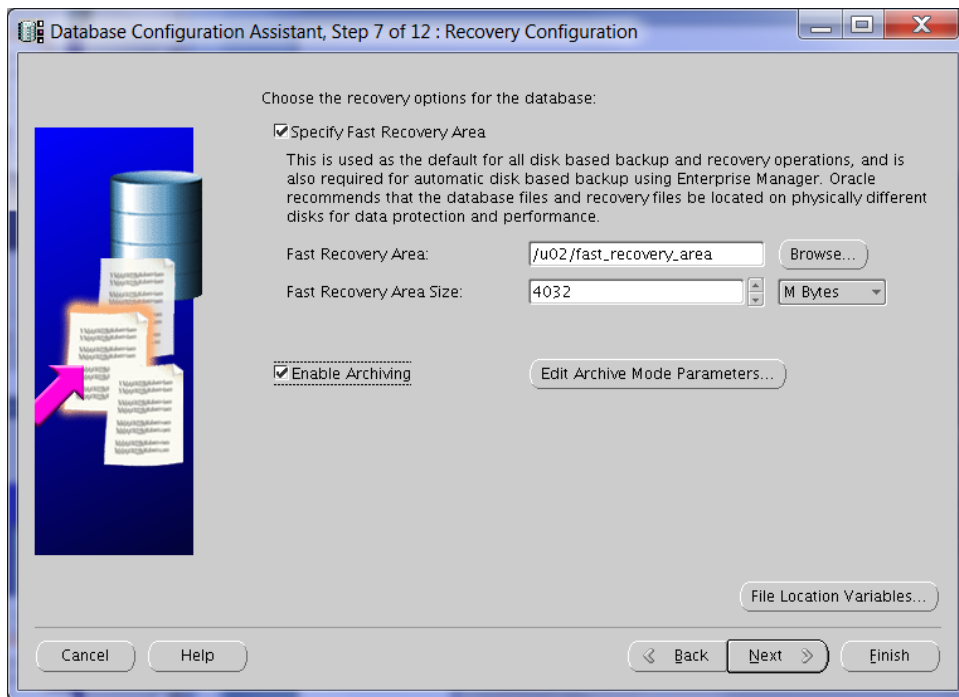
Action:
Set the **Database Credentials**. I use the same password for the SYS and SYSTEM accounts.
Click **Next**.
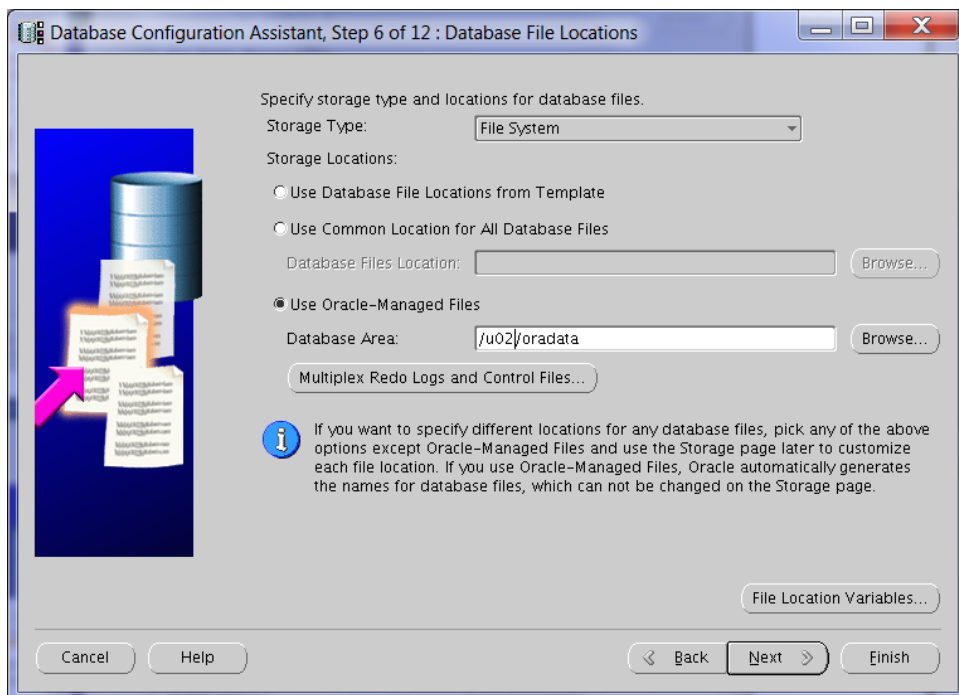
Action:
If you recall I have specified multiple disks in the kickstart file and the virt-install command. One of these files is used to create a /u02 filesystem. On this filesystem I want to store my database files.
To store the files on this filesystem select **Use Oracle-Managed Files**.
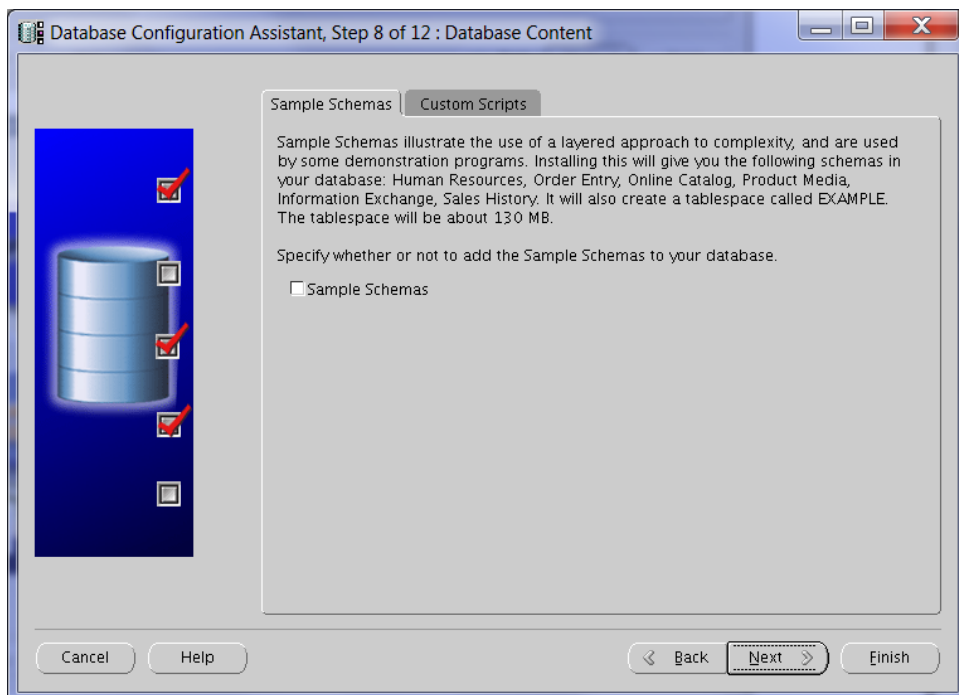Specify the **Database Area** as **/u02/oradata**.
Click **Next**.

Action:
Specify the **Fast Recovery Area** as **/u02/fast_recovery_area**.
Select **Enable Archiving** if you want to enable archiving (useful if you want to create online backups).
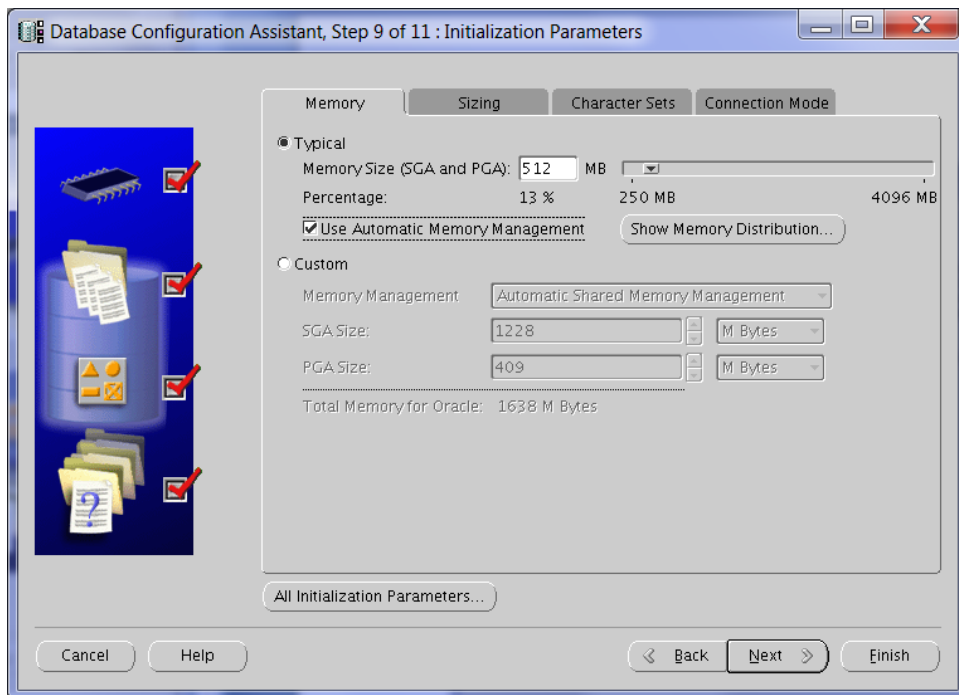Click **Next**.

Action:
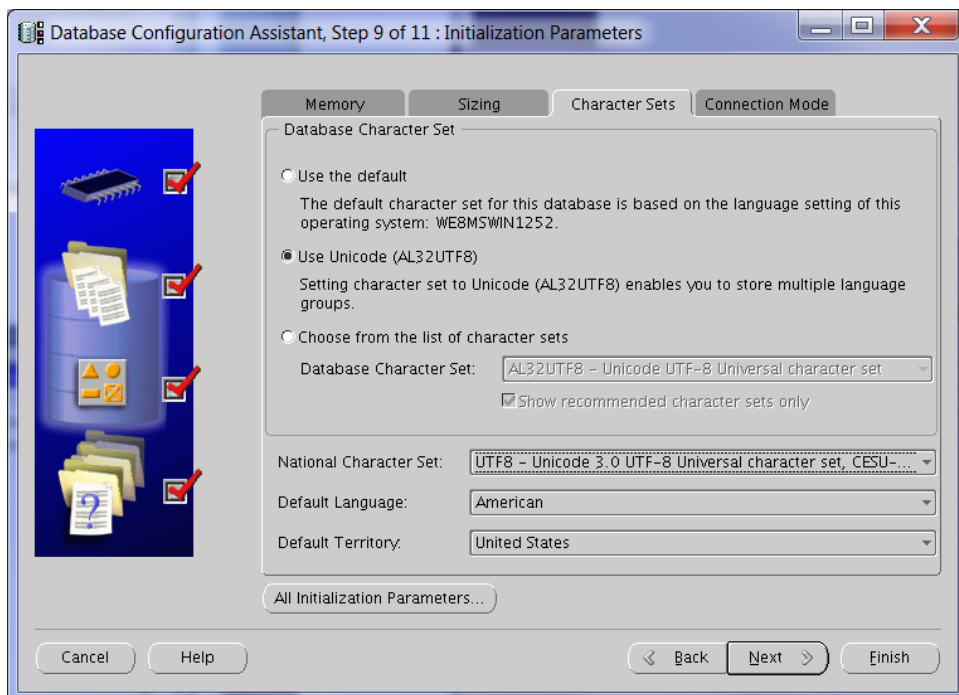No sample schemas or custom scripts are needed.
Click **Next**.

Action:
Specify the following memory settings:
Memory Size (SGA and PGA) 512MB
Select **Automatic Memory Management**
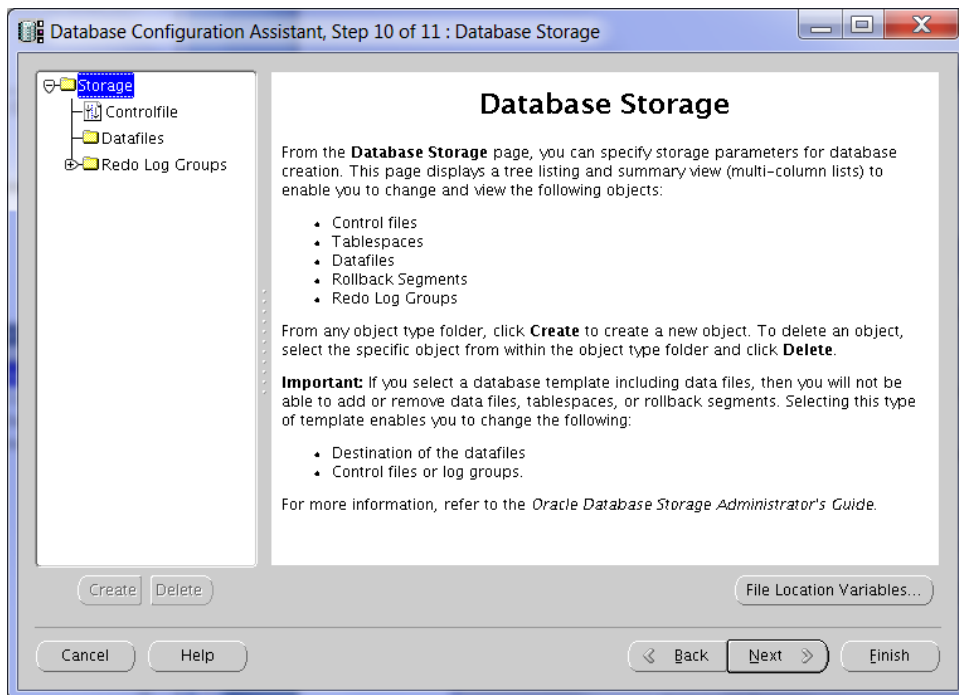Click tab **Character Sets**.

Action:
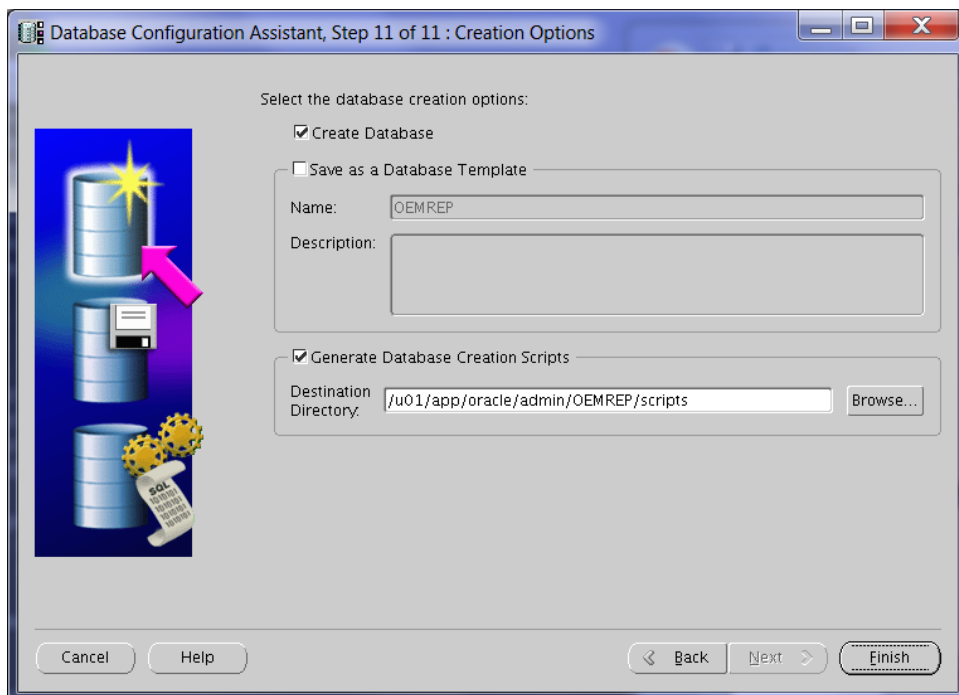As **Database Character Set** select **Use Unicode (AL32UTF8)**.
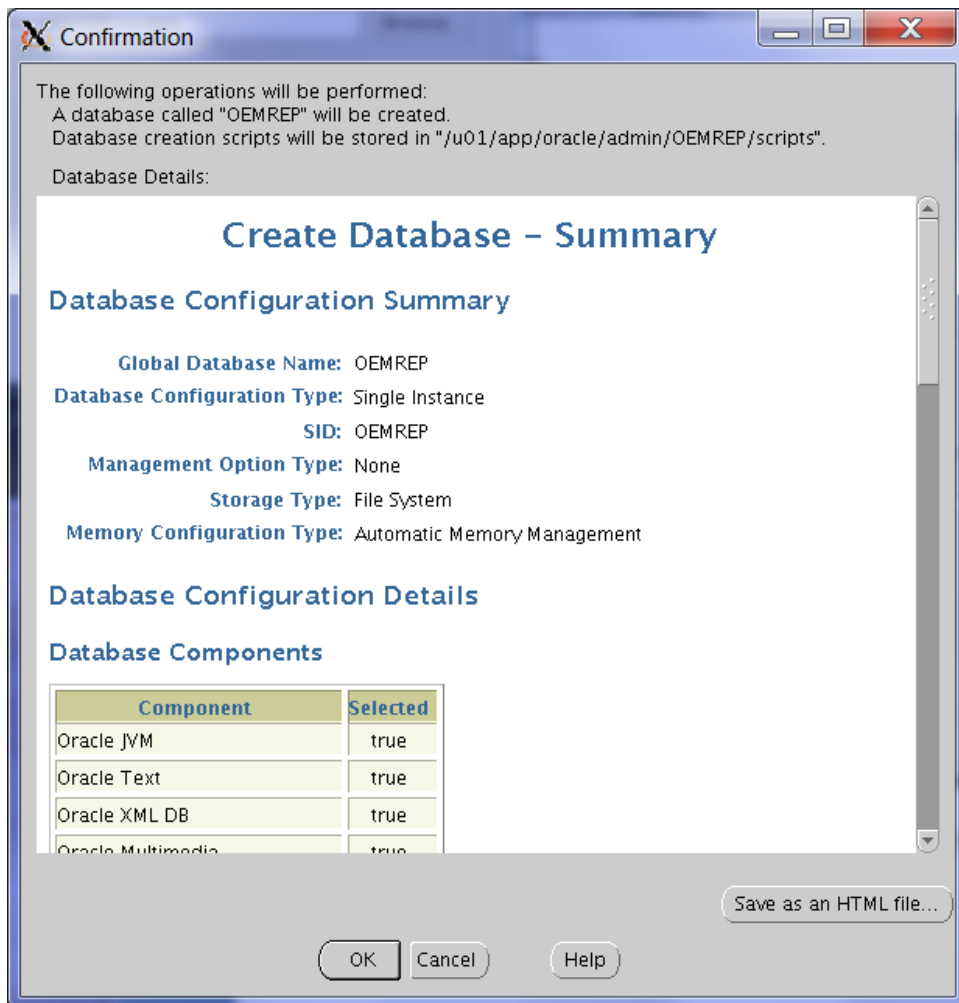As **National Character Set** select **UTF8**.
Click **Next**.

Action:
No changes are made to the default Database Storage.
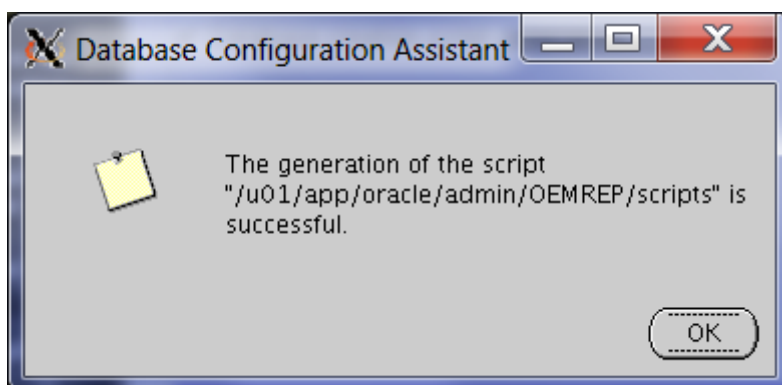Click **Next**.

Action:
I'm always curious about the scripts generated by the dbca utility. So I select **Generate Database Creation Scripts**.
To start creating the database click **Finish**.

Action:
View the Database Configuration Summary.
If the configuration is correct click **OK.**

Action:
The scripts are generated first. Click **OK** to continue creating the database.
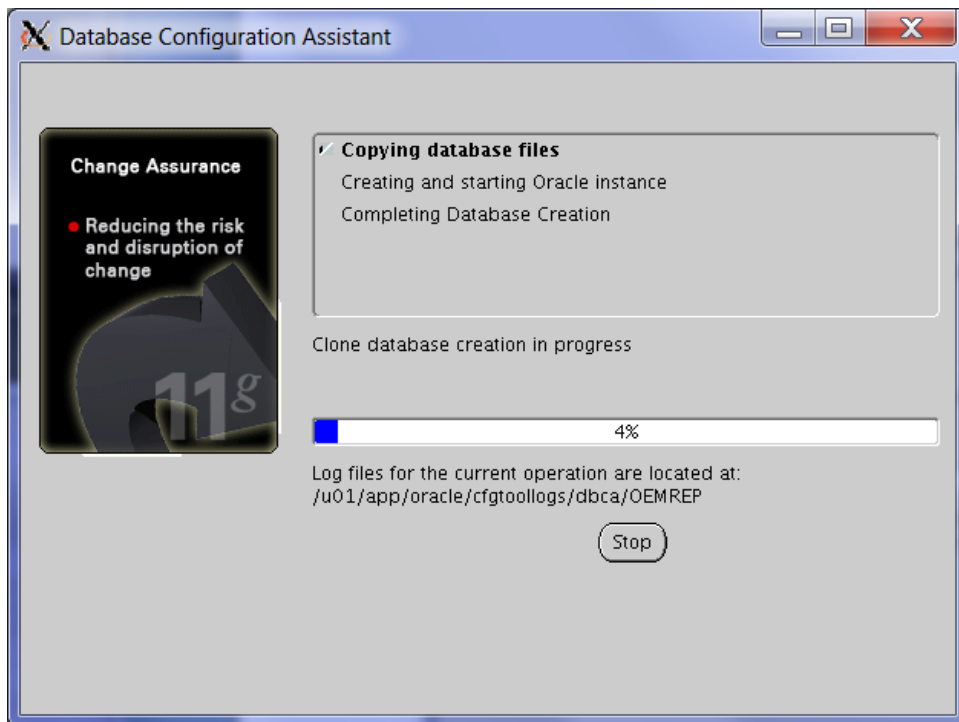
Action:
Wait while the database is being created.

Action:
The repository database is now created.
Click **Exit**

5.1. Loading Modified SQL Files into the Database

In chapter 4 Install Oracle 11gR2 RDBMS patches we installed the latest PSU. To load the modified SQL files in the database follow the next steps:

```
oracle@oraoem01::/home/oracle
$ . oraenv
ORACLE_SID = [oracle] ? OEMREP
ORACLE_HOME = [/home/oracle] ? /u01/app/oracle/product/11.2.0.2/db_000
The Oracle base for ORACLE_HOME=/u01/app/oracle/product/11.2.0.2/db_000 is
/u01/app/oracle
[oracle@oraoem01::/home/oracle]# cd $ORACLE_HOME/rdbms/admin/
[oracle@oraoem01::/home/oracle]# sqlplus / as sysdba

SQL*Plus: Release 11.2.0.2.0 Production on Sat Jan 29 20:29:21 2011

Copyright (c) 1982, 2010, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit Production
With the Partitioning option

SQL> @catbundle psu apply
SQL> exit
```

6. Listener and Local Net Service Name configuration

To be able to connect to the repository database using SQL*Net a listener and the local name resolving must be configured. The easiest way to do this is by using net NETCA utility.

Set the DISPLAY variable and then start DBCA:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# cd /u01/app/oracle/product/11.2.0.2/db_000/bin
[oracle@oraoem01::/home/oracle]# ./netca
```


Action:
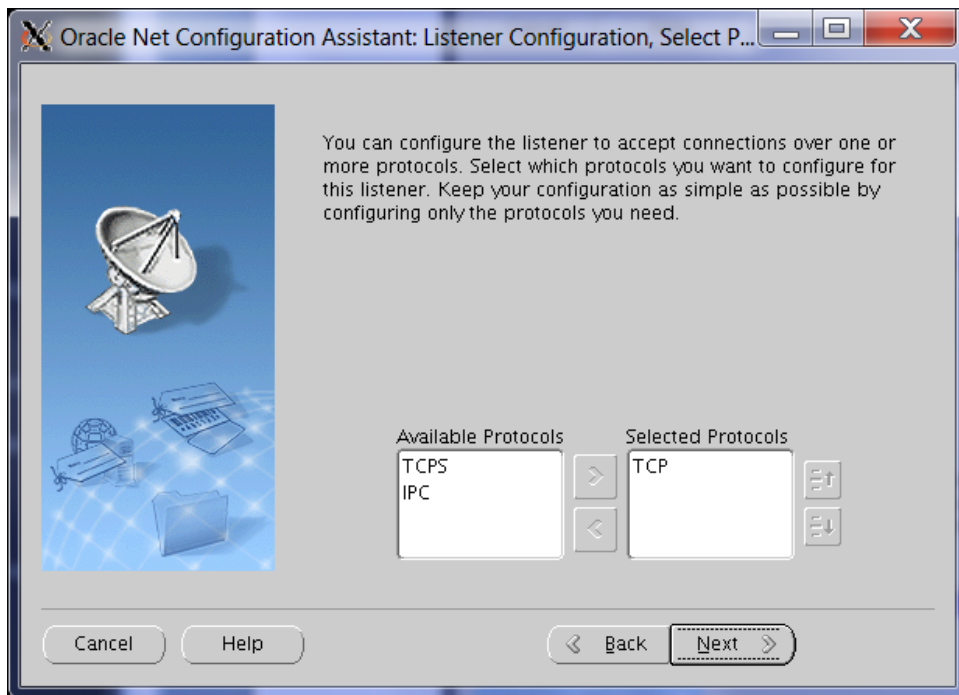Select **Listener configuration** and click **Next**.
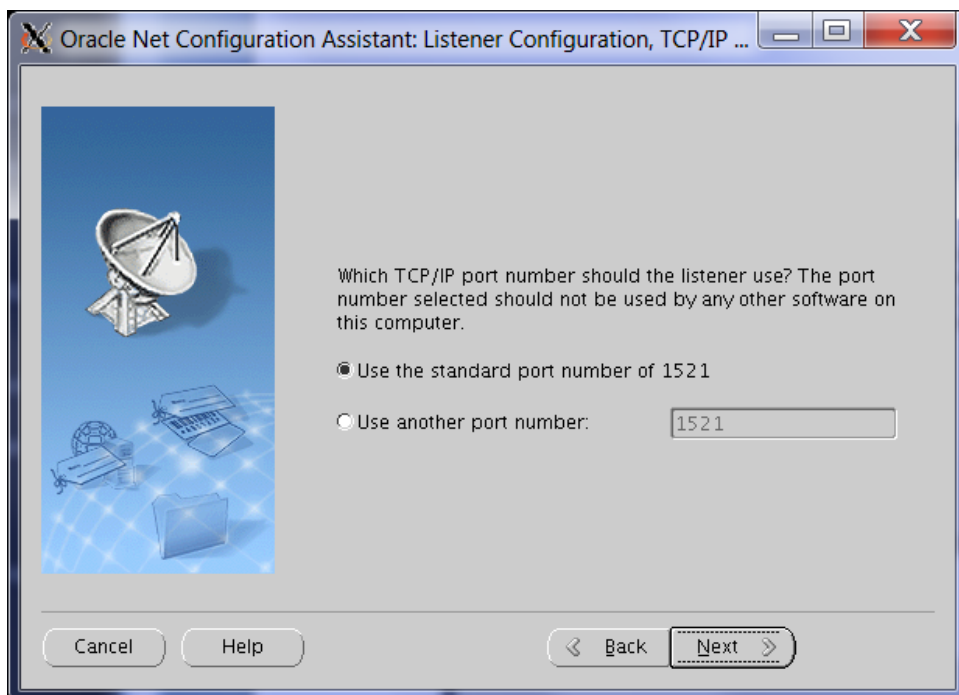
Action:
Click **Next**.

Action:
Specify the **Listener name**. I use the default name **LISTENER**. Click **Next**.

Action:
Select **TCP** as protocol for the listener and click **Next**.

Action:
I use the **standard port number** of **1521** for the listener.
Click **Next**.

Oracle Net Configuration Assistant: Listener Configuration, More Li...

Would you like to configure another listener?

⦿ No

○ Yes

Cancel   Help   Back   Next

Action:
Select **No** and click **Next**.

Oracle Net Configuration Assistant: Listener Configuration Done

Listener configuration complete!

Cancel   Help   Back   Next
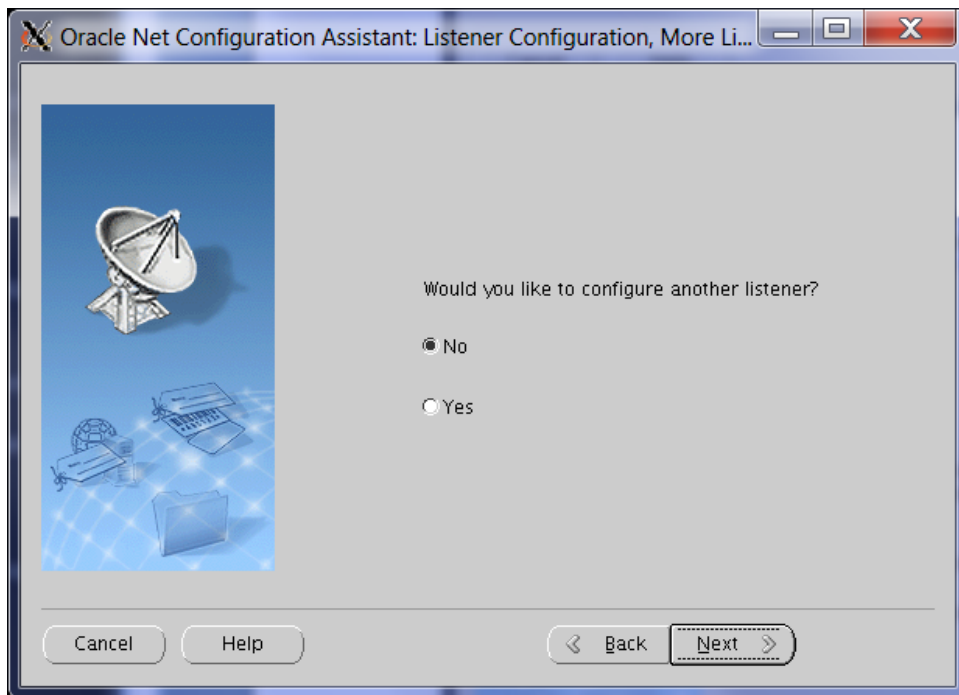
Action:
Click **Next**.

Action:
Select **Local Net Service Name configuration** and click **Next**.

Action:
Click **Next**.

Action:
Specify the **Service Name** as **OEMREP**.
Click **Next**.
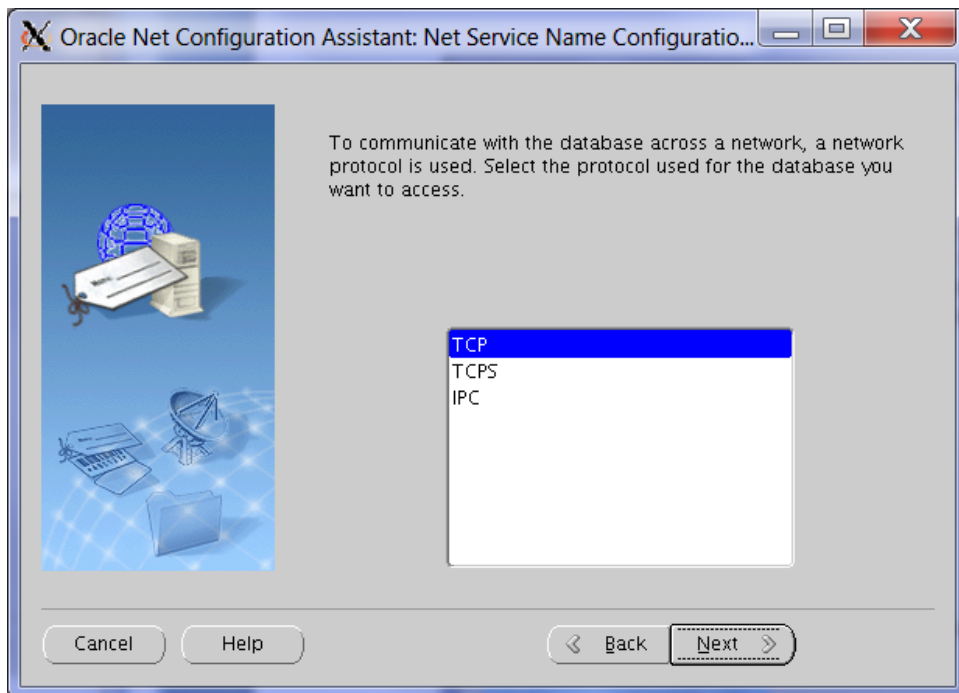
Action:
Specify **TCP** as network protocol.
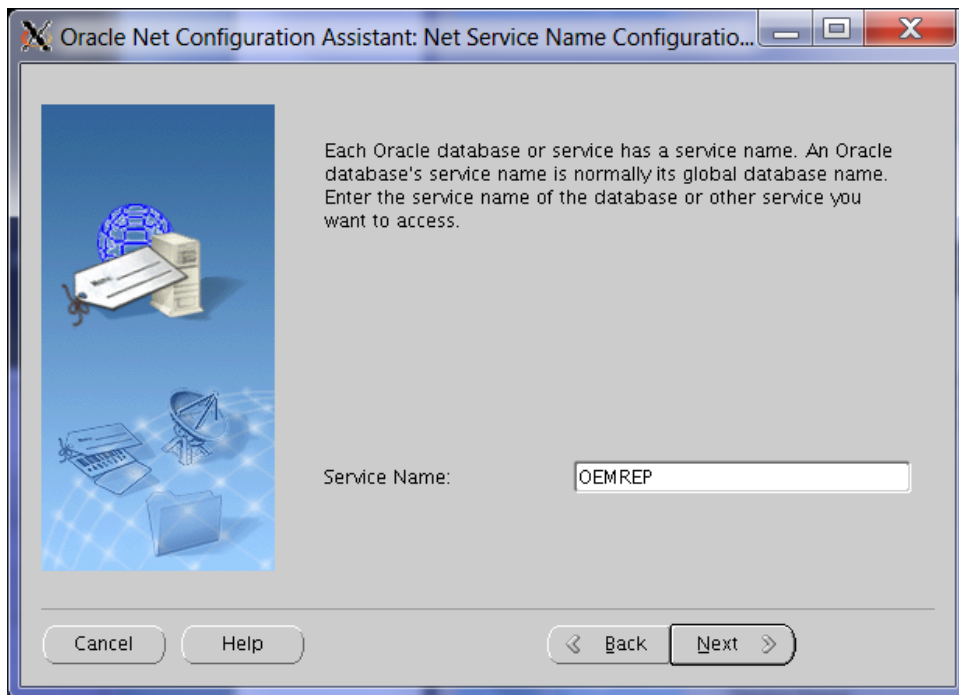Click **Next**.
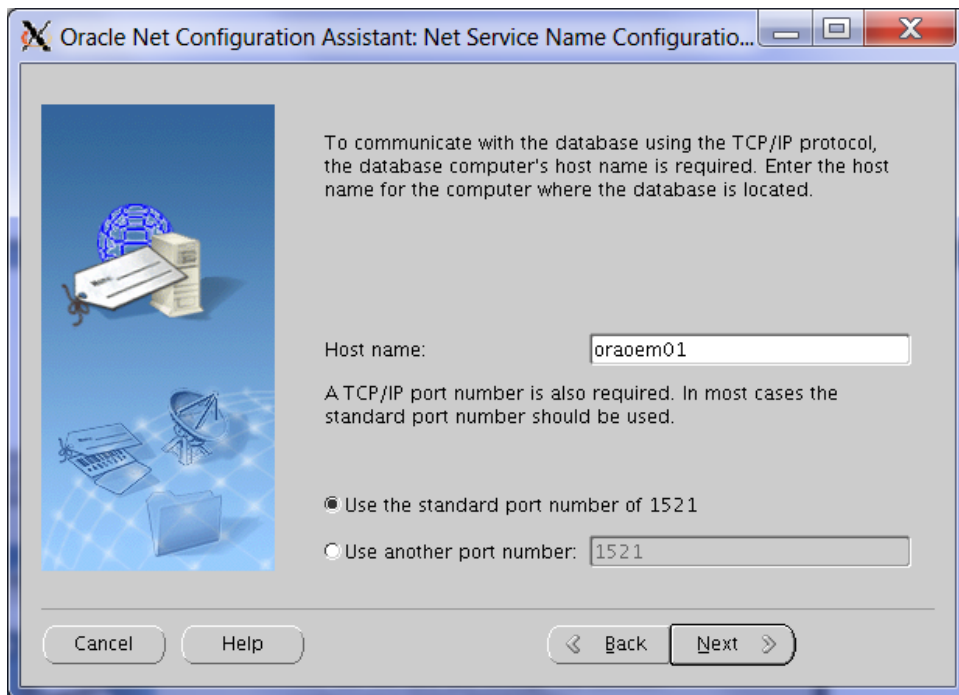
Action:
Specify the **Host name** where the database is running. I this case it is a local database running on the host **oraoem01**. Use the **standard port number** of **1521** for the TCP/IP communication.
Click **Next**.
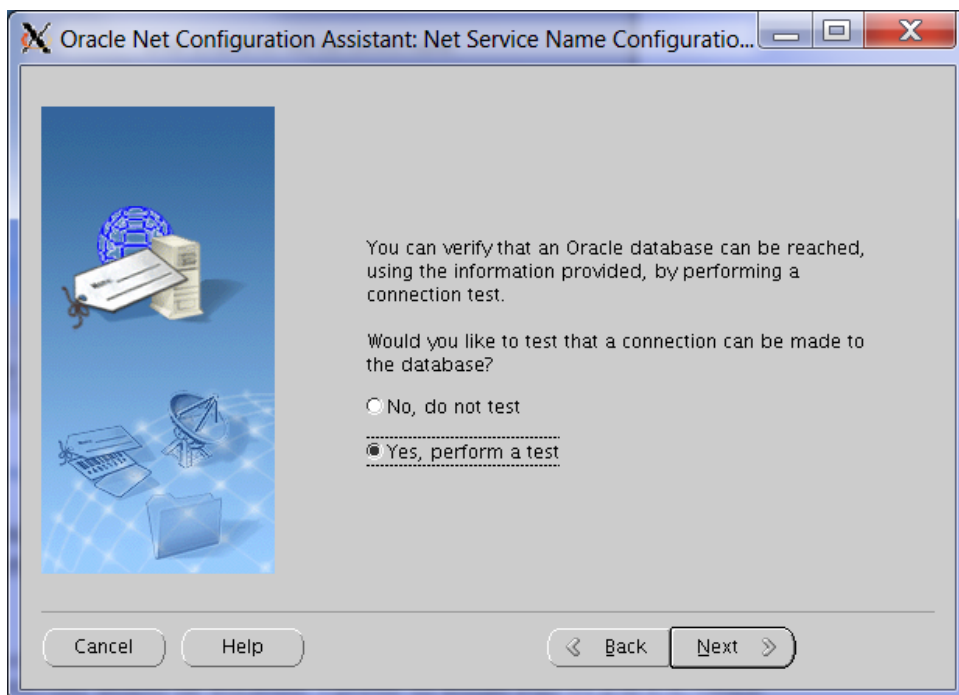
Action:
To perform a quick test to check if the net service if configured correctly select **Yes, perform a test**.
Click **Next**.
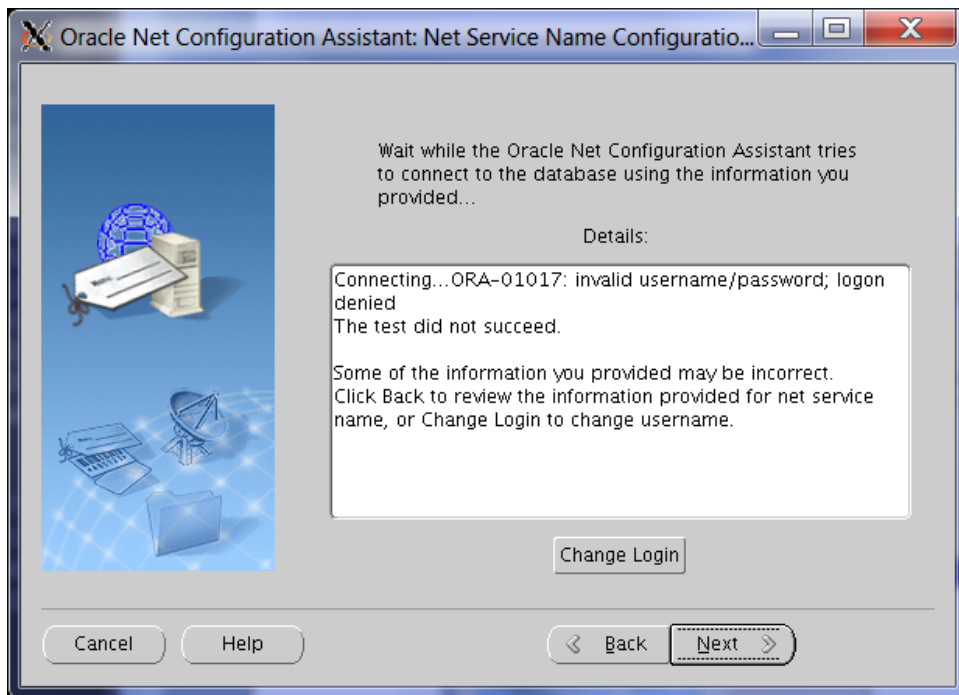
Action:
The netca utility uses the default password of user system the perform a check. If you specified another password the check will fail.
Click **Change Login** to change the login credentials.
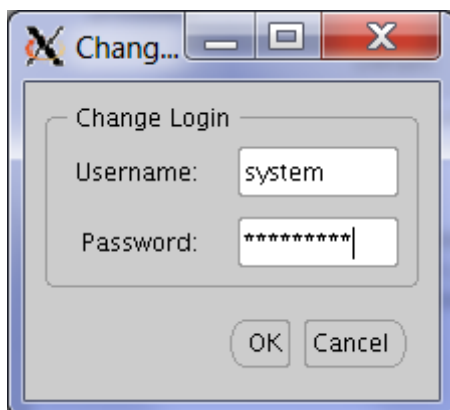
Action:
Specify the correct credentials you specified when creating the database.
Click **OK**.

Action:
Now the test succeeded.
Click **Next**.

Action:
Specify **OEMREP** ad the **Net Service Name** and click **Next**.
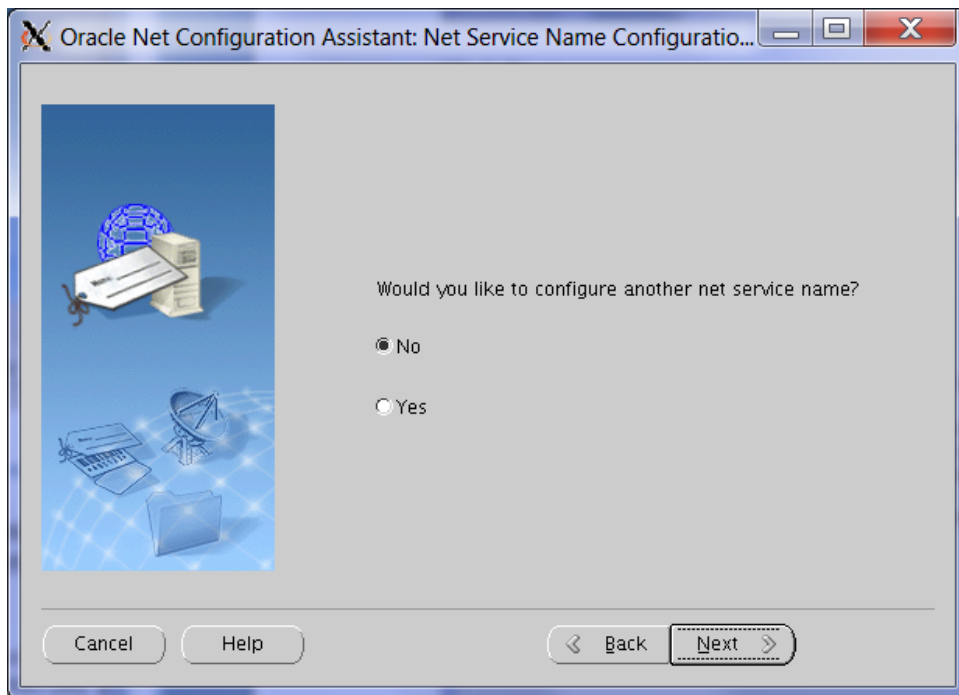
Action:
Select **No** and click **Next**.
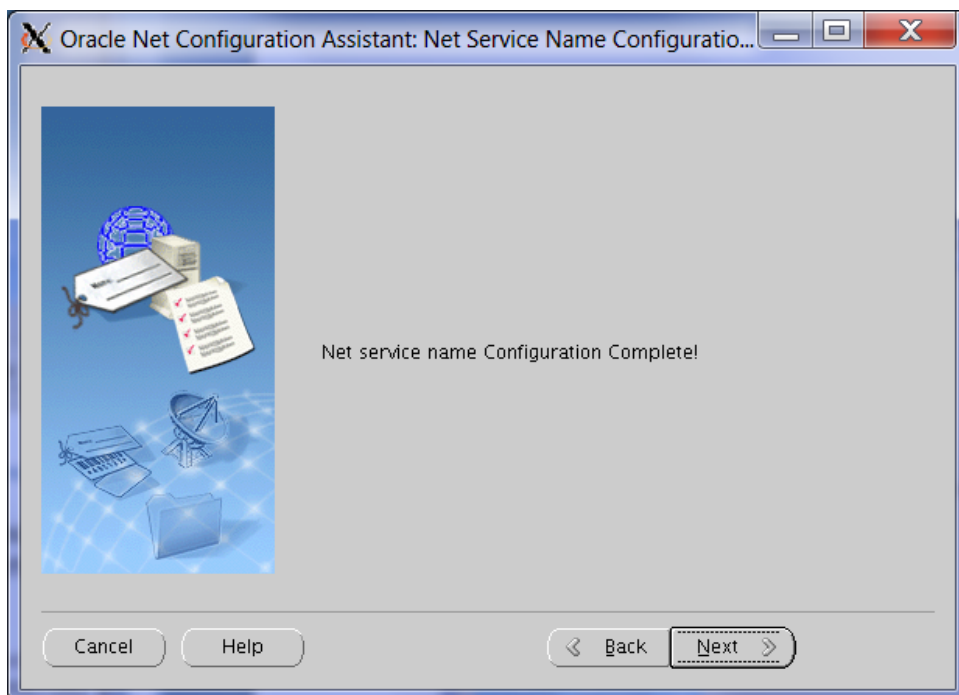
Action:
The net service name configuration is now finished.
Click **Next**.

Action:
Click **Finish**.

The previous actions resulted in the creation of 2 files in the $TNS_ADMIN directory, the listener.ora
and tnsnames.ora:

```
[oracle@oraoem01::/home/oracle]# cat $TNS_ADMIN/listener.ora
# listener.ora Network Configuration File:
/u01/app/oracle/admin/network/admin/listener.ora
# Generated by Oracle configuration tools.

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oraoem01)(PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
  )

ADR_BASE_LISTENER = /u01/app/oracle
```
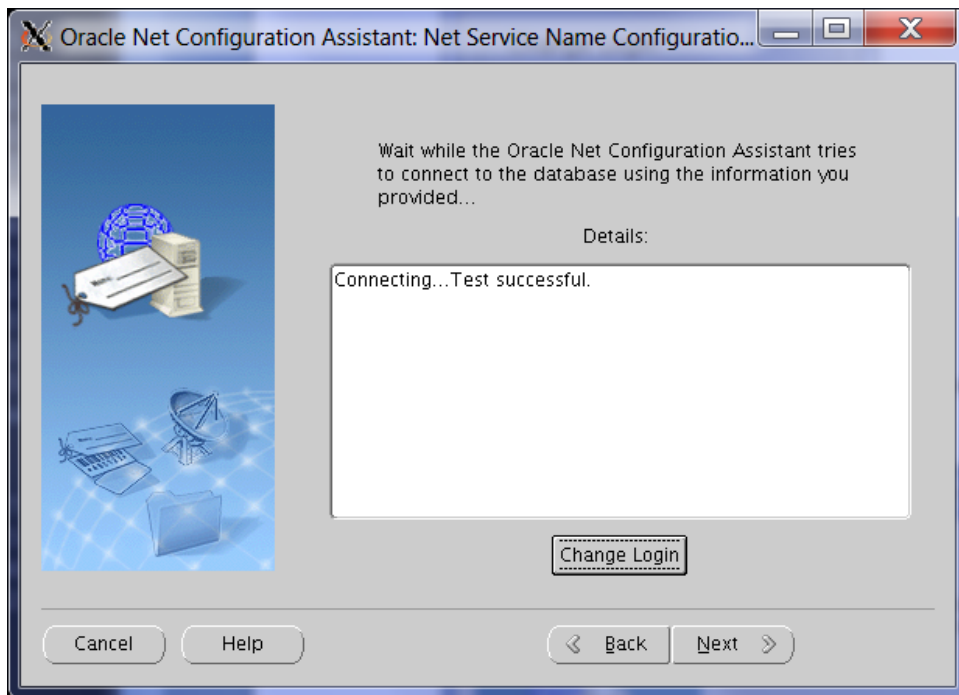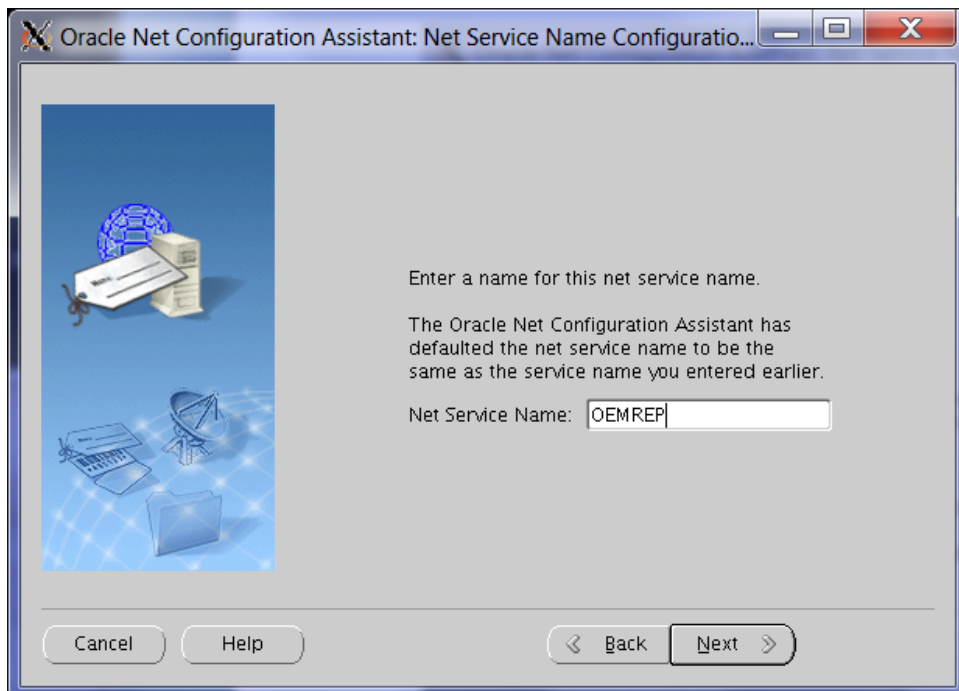
```
[oracle@oraoem01::/home/oracle]# cat $TNS_ADMIN/tnsnames.ora
# tnsnames.ora Network Configuration File:
/u01/app/oracle/admin/network/admin/tnsnames.ora
# Generated by Oracle configuration tools.

OEMREP =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oraoem01)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = OEMREP)
    )
  )
```

Check is the listener is created successfully and that the databases is registered at the listener:

```
[oracle@oraoem01::/home/oracle]# export
ORACLE_HOME=/u01/app/oracle/product/11.2.0.2/db_000
[oracle@oraoem01::/home/oracle]# ./lsnrctl status

LSNRCTL for Linux: Version 11.2.0.2.0 - Production on 29-JAN-2011 20:22:42

Copyright (c) 1991, 2010, Oracle.  All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=oraoem01)(PORT=1521)))
STATUS of the LISTENER
------------------------
Alias                     LISTENER
Version                   TNSLSNR for Linux: Version 11.2.0.2.0 - Production
Start Date                29-JAN-2011 20:18:19
Uptime                    0 days 0 hr. 4 min. 23 sec
Trace Level               off
Security                  ON: Local OS Authentication
SNMP                      OFF
Listener Parameter File   /u01/app/oracle/admin/network/admin/listener.ora
Listener Log File
/u01/app/oracle/diag/tnslsnr/oraoem01/listener/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=oraoem01)(PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=EXTPROC1521)))
Services Summary...
Service "OEMREP" has 1 instance(s).
  Instance "OEMREP", status READY, has 1 handler(s) for this service...
Service "OEMREPXDB" has 1 instance(s).
  Instance "OEMREP", status READY, has 1 handler(s) for this service...
The command completed successfully
```

This looks good!

Let's try to connect to the database using the Net Service name we have just created:

```
oracle@oraoem01::/home/oracle
$ . oraenv
ORACLE_SID = [oracle] ? OEMREP
ORACLE_HOME = [/home/oracle] ? /u01/app/oracle/product/11.2.0.2/db_000
The Oracle base for ORACLE_HOME=/u01/app/oracle/product/11.2.0.2/db_000 is
/u01/app/oracle

[oracle@oraoem01::/home/oracle]# sqlplus system@oemrep

SQL*Plus: Release 11.2.0.2.0 Production on Fri Jan 28 11:27:59 2011

Copyright (c) 1982, 2010, Oracle.  All rights reserved.

Enter password:

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit Production
With the Partitioning option

SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit
Production
With the Partitioning option
```

This looks great! We can now continue with installing Oracle Enterprise Manager Grid Control and its components.

7. Database requirements

No that the database is created there are still some requirements to meet for the database before we can use this database to create the OEM repository in it.

Check that the UNDO- and TEMP tablespaces are autoextensible in the database.
It is recommended to start with a UNDO tablespace of at least 256MB.

```
SQL> select tablespace_name, file_name, bytes/1024/1024 as SIZE_MB, autoextensible
from dba_data_files
union
select tablespace_name, file_name, bytes/1024/1024 as SIZE_MB, autoextensible from
dba_temp_files;

TABLESPACE_NAME FILE_NAME                                                    SIZE_MB   AUTOEXTEN
--------------- ------------------------------------------------------------ --------- ---------
SYSAUX          /u02/oradata/OEMREP/datafile/o1 mf sysaux 6n52xo2k .dbf          510   YES
SYSTEM          /u02/oradata/OEMREP/datafile/o1 mf system 6n52xo1v .dbf          700   YES
TEMP            /u02/oradata/OEMREP/datafile/o1_mf_temp_6n530dz0_.tmp            29    YES
UNDOTBS1        /u02/oradata/OEMREP/datafile/o1_mf_undotbs1_6n52xo4k_.dbf        128    YES
USERS           /u02/oradata/OEMREP/datafile/o1_mf_users_6n52xo62_.dbf           5     YES
```

All datafiles are autoextensible but the datafile of the undo tablespace is too small. Resize this datafile:

```
SQL> alter database datafile
'/u02/oradata/OEMREP/datafile/o1_mf_undotbs1_6n52xo4k_.dbf' resize 256M;
```

There are also some database parameters to be set:

```
SQL> alter system set job_queue_processes=30 scope=spfile sid='*';
SQL> alter system set session_cached_cursors=200 scope=spfile sid='*';
SQL> alter system set log_buffer=10485760 scope=spfile sid='*';
SQL> alter system set processes=500 scope=spfile sid='*';
SQL> alter system set nls_length_semantics=BYTE scope=spfile sid='*';
```

The databases must now be restarted to activate the modified parameters:

```
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.

SQL> startup
ORACLE instance started.

Total System Global Area  534462464 bytes
Fixed Size                  2228200 bytes
Variable Size             364904472 bytes
Database Buffers          155189248 bytes
Redo Buffers               12140544 bytes
Database mounted.
Database opened.
SQL> exit
```

Although we explicitly specified NOT to configure the database with Enterprise Manager (which results in the installation of dbconsole) this doesn't prevent the installation of even just a small part of some sysman object. Before we can use this databases as a OEM repository database we have to remove these objects.

```
[oracle@oraoem01::/home/oracle]# cd /u01/app/oracle/product/11.2.0.2/db_000/bin
[oracle@oraoem01::/home/oracle]# ./emca -deconfig dbcontrol db -repos drop
STARTED EMCA at Jan 28, 2011 11:46:04 AM
```

```
EM Configuration Assistant, Version 11.2.0.0.2 Production
Copyright (c) 2003, 2005, Oracle.  All rights reserved.


Enter the following information:
Database SID: OEMREP
Listener port number: 1521
Password for SYS user: xxxx
Password for SYSMAN user: xxxx


------------------------------------------------------------------
WARNING : While repository is dropped the database will be put in quiesce mode.
------------------------------------------------------------------
Do you wish to continue? [yes(Y)/no(N)]: y
Jan 28, 2011 11:46:30 AM oracle.sysman.emcp.EMConfig perform
INFO: This operation is being logged at
/u01/app/oracle/cfgtoollogs/emca/OEMREP/emca 2011 01 28 11 46 04.log.
Jan 28, 2011 11:46:31 AM oracle.sysman.emcp.util.GeneralUtil initSQLEngineLoacly
WARNING: ORA-28000: the account is locked

Jan 28, 2011 11:46:31 AM oracle.sysman.emcp.ParamsManager checkListenerStatusForDBControl
WARNING: Error initializing SQL connection. SQL operations cannot be performed
Jan 28, 2011 11:46:31 AM oracle.sysman.emcp.EMDBPreConfig performDeconfiguration
WARNING: EM is not configured for this database. No EM-specific actions can be performed. Some
of the possible reasons may be:
 1) EM is configured with different hostname then physical host. Set environment variable
ORACLE HOSTNAME=<hostname> and re-run EMCA script
 2) ORACLE_HOSTNAME is set. Unset it and re-run EMCA script
Jan 28, 2011 11:46:31 AM oracle.sysman.emcp.EMReposConfig invoke
INFO: Dropping the EM repository (this may take a while) ...
Jan 28, 2011 11:47:34 AM oracle.sysman.emcp.EMReposConfig invoke
INFO: Repository successfully dropped
Enterprise Manager configuration completed successfully
FINISHED EMCA at Jan 28, 2011 11:47:34 AM
```

8. Automating Database/Listener Startup and Shutdown

Automating database startup and shutdown can be done by using the *dbstart* and *dbshut* scripts.
These scripts start/stop database available in the */etc/oratab*.

Once the instance is created, edit the */etc/oratab* file setting the restart flag for each instance to 'Y':

```
OEMREP:/u01/app/oracle/product/11.2.0.2/db_000:Y
```

Now, as OS user root, create a file called */etc/init.d/dbora* with the following contents:

```
#!/bin/sh
# chkconfig: 345 80 20
# description: Oracle auto start-stop script.
#
# Change the value of ORACLE_HOME to specify the correct Oracle home
# directory for your installation.

ORACLE_HOME=/u01/app/oracle/product/11.2.0.2/db_000
#
# Change the value of ORACLE to the login name of the
# oracle owner at your site.
#
ORA_OWNER=oracle

PATH=${PATH}:$ORACLE_HOME/bin
HOST=`hostname`
PLATFORM=`uname`
export ORACLE_HOME PATH
#
#
case $1 in
'start')
        su - $ORA_OWNER -c "$ORACLE_HOME/bin/dbstart $ORACLE_HOME"
        ;;
'stop')
        su - $ORA_OWNER -c "$ORACLE_HOME/bin/dbshut $ORACLE_HOME"
        rm -f touch /var/lock/subsys/dbora
        ;;
*)
        echo "usage: $0 {start|stop}"
        exit
        ;;
esac
#
exit
```

Change the permissions of the /etc/init.d/dbora file:

```
[root@oraoem01::/root]# chgrp dba /etc/init.d/dbora
[root@oraoem01::/root]# chmod 750 /etc/init.d/dbora
```

Add a new service to start/stop the database automatically:

```
[root@oraoem01::/root]# chkconfig --add dbora
```

Check if the new service is created correctly:

```
[root@oraoem01::/root]# chkconfig --list dbora
dbora          0:off   1:off   2:off   3:on    4:on    5:on    6:off
```

9. Installation JDK

The Java SE Development Kit 6u18 or higher for Linux x64 is required in order to install WebLogic 10.3.2 on a 64-bit Linux server.
You can download the Java SE Development Kit 6u18 for Linux x64 from here:

http://www.oracle.com/technetwork/java/javase/overview/index.html.

Once downloaded, copy the software to your server, for example with WinSCP. Copy the software to the staging directory.

Make sure the permissions are correct:

```
[root@oraoem01::/root]# cd /software/EM11/JAVA
[root@oraoem01::/software/EM11/JAVA]# chmod u+x jdk-6u18-linux-x64-rpm.bin
```

Now you can install the jdk software:

```
[root@oraoem01::/root]# cd /tmp
[root@oraoem01::/root]# /software/EM11/JAVA/jdk-6u18-linux-x64-rpm.bin
…
Do you agree to the above license terms? [yes or no]
yes
Unpacking...
Checksumming...
Extracting...
UnZipSFX 5.50 of 17 February 2002, by Info-ZIP (Zip-Bugs@lists.wku.edu).
  inflating: jdk-6u18-linux-amd64.rpm
  inflating: sun-javadb-common-10.5.3-0.2.i386.rpm
  inflating: sun-javadb-core-10.5.3-0.2.i386.rpm
  inflating: sun-javadb-client-10.5.3-0.2.i386.rpm
  inflating: sun-javadb-demo-10.5.3-0.2.i386.rpm
  inflating: sun-javadb-docs-10.5.3-0.2.i386.rpm
  inflating: sun-javadb-javadoc-10.5.3-0.2.i386.rpm
Preparing...                ######################################### [100%]
   1:jdk                    ######################################### [100%]
Unpacking JAR files...
        rt.jar...
        jsse.jar...
        charsets.jar...
        tools.jar...
        localedata.jar...
        plugin.jar...
        javaws.jar...
        deploy.jar...
Installing JavaDB
Preparing...                ######################################### [100%]
   1:sun-javadb-common      ######################################### [ 17%]
   2:sun-javadb-core        ######################################### [ 33%]
   3:sun-javadb-client      ######################################### [ 50%]
   4:sun-javadb-demo        ######################################### [ 67%]
   5:sun-javadb-docs        ######################################### [ 83%]
   6:sun-javadb-javadoc     ######################################### [100%]

Java(TM) SE Development Kit 6 successfully installed.

Product Registration is FREE and includes many benefits:
* Notification of new versions, patches, and updates
* Special offers on Sun products, services and training
* Access to early releases and documentation

Product and system data will be collected. If your configuration
supports a browser, the Sun Product Registration form for
```

```
the JDK will be presented. If you do not register, none of
this information will be saved. You may also register your
JDK later by opening the register.html file (located in
the JDK installation directory) in a browser.

For more information on what data Registration collects and
how it is managed and used, see:
http://java.sun.com/javase/registration/JDKRegistrationPrivacy.html

Press Enter to continue.....


Done.
```

Check if the RPM's are installed:

```
[root@oraoem01::/root]# rpm -qa |grep java
sun-javadb-demo-10.5.3-0.2
sun-javadb-common-10.5.3-0.2
sun-javadb-client-10.5.3-0.2
sun-javadb-docs-10.5.3-0.2
sun-javadb-core-10.5.3-0.2
sun-javadb-javadoc-10.5.3-0.2
```

Delete the extracted java-rpm's:

```
[root@oraoem01::/root]# rm -f /tmp/*.rpm
```

10. Installation Oracle WebLogic Server 11gR1 (10.3.2)

After you have installed the necessary java components, you can install the Weblogic Server binaries. In this installation guide we use the latest certified version for OEM11.1. This is version 10.3.2. The software can be downloaded here:

http://www.oracle.com/technetwork/middleware/weblogic/downloads/wls-main-097127.html

Notes:
- Download the 10.3.2 version of WebLogic, not the newer version 10.3.3. At this moment version 10.3.3 is not certified and does not work!
- Download the version under the "Additional Platforms" column and not the Linux 32-bit JVM.

Once downloaded, copy the software to your server, for example with WinSCP. Copy the software to the */tmp* directory. The tmp directory must have 1GB of free space for a successful installation.

Set the DISPLAY variable and then start the installer:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# cp /software/EM11/WLS/wls1032_generic.jar /tmp
[oracle@oraoem01::/home/oracle]# cd /tmp
[oracle@oraoem01::/tmp]# ./wls1032_generic.jar
Extracting
0%.................................................................................
...................100%
```
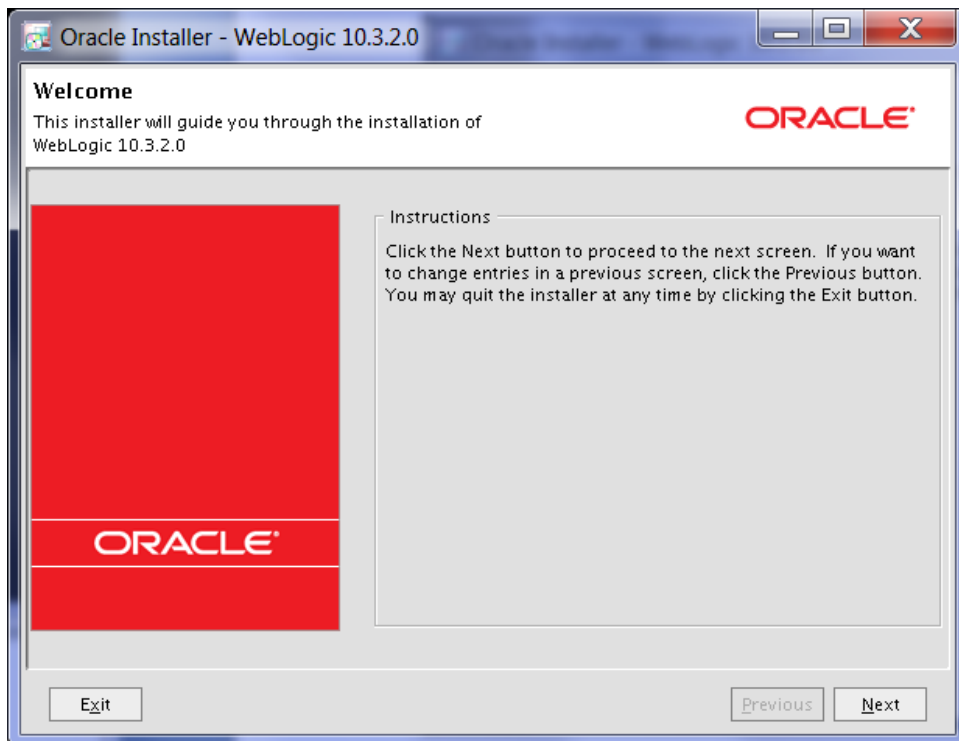

Action:
Click **Next**.
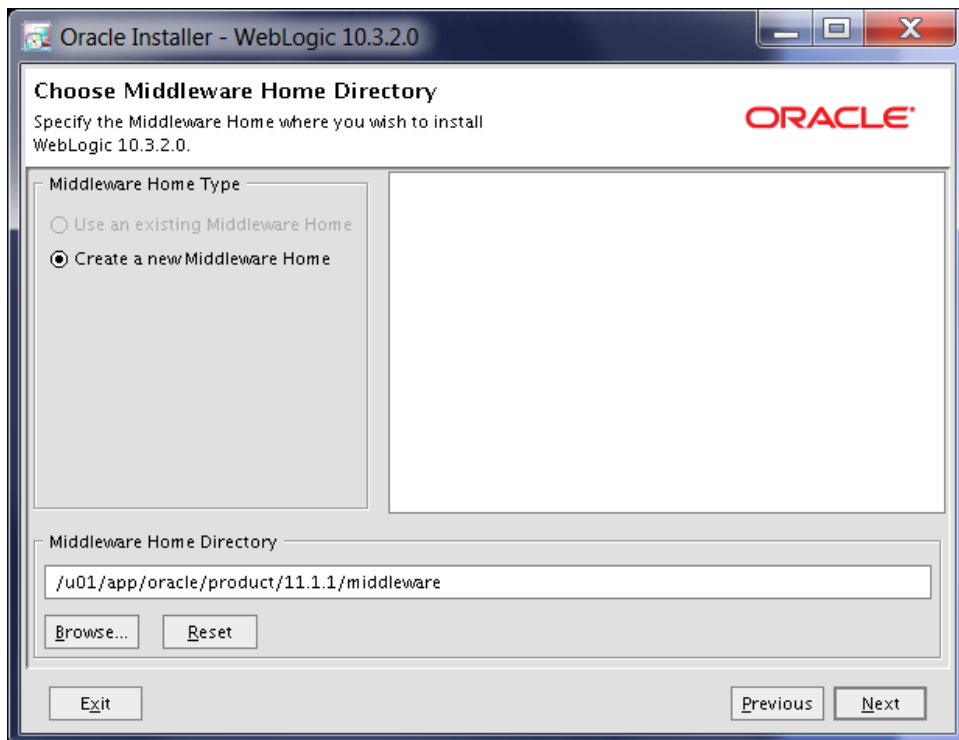
Action:
Specify the **Middleware Home Directory** as **/u01/app/oracle/product/11.1.1/middleware**.
Click **Next**.

Action:
Deselect **I wish to receive security updates via My Oracle Support**.
Click **Next**.
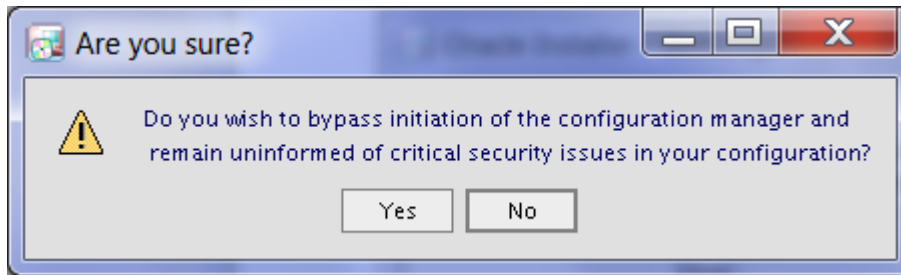
Action:
Click **Yes**.

Action:
Click **Next**.
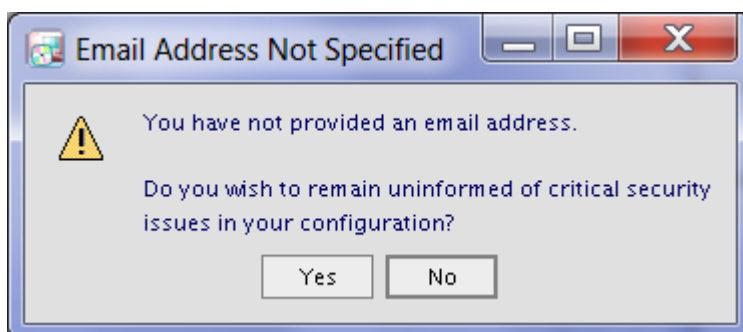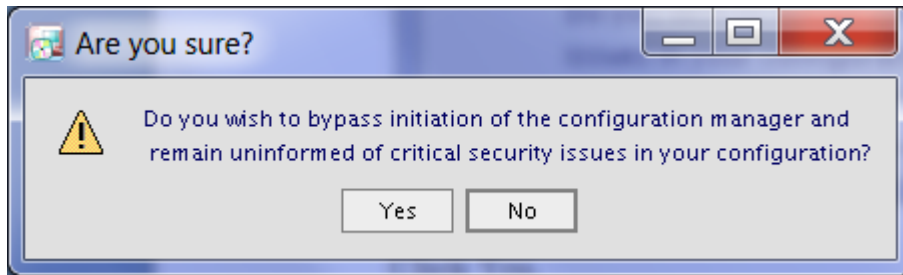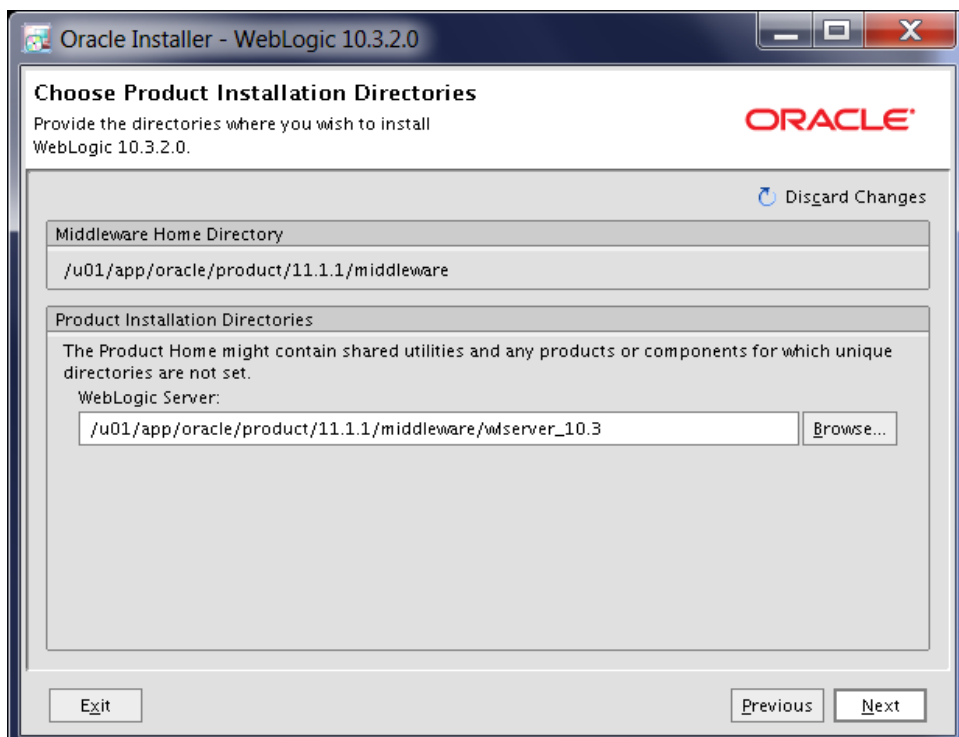

Action:
Click **Yes**.

Action:
Click **Yes**.
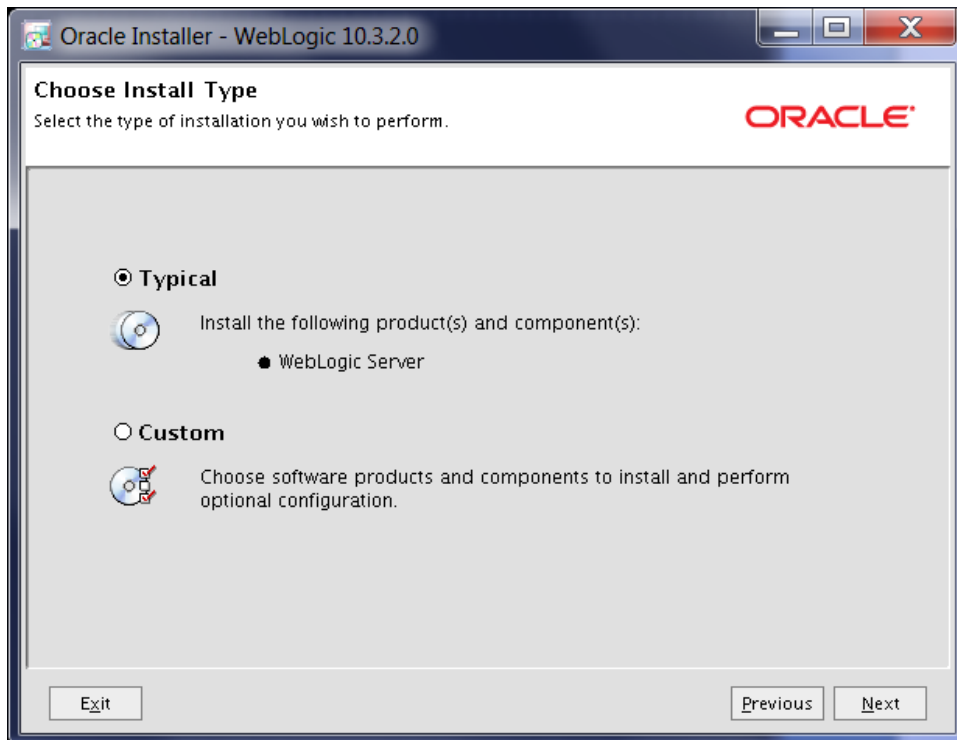
Action:
Select **Typical** and click **Next**.
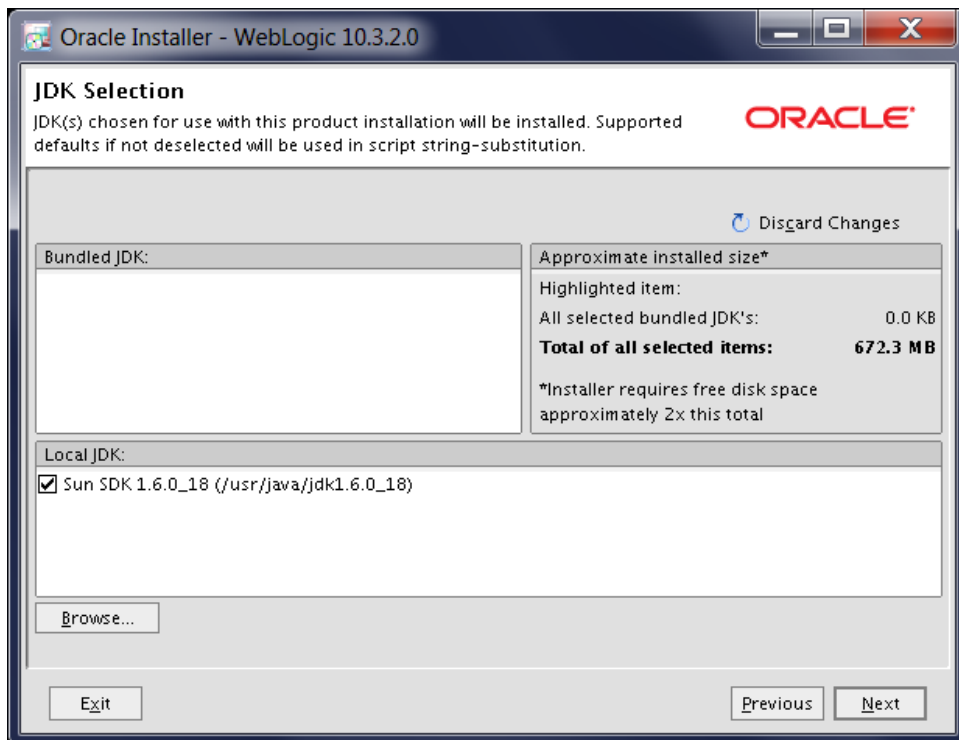
Action:
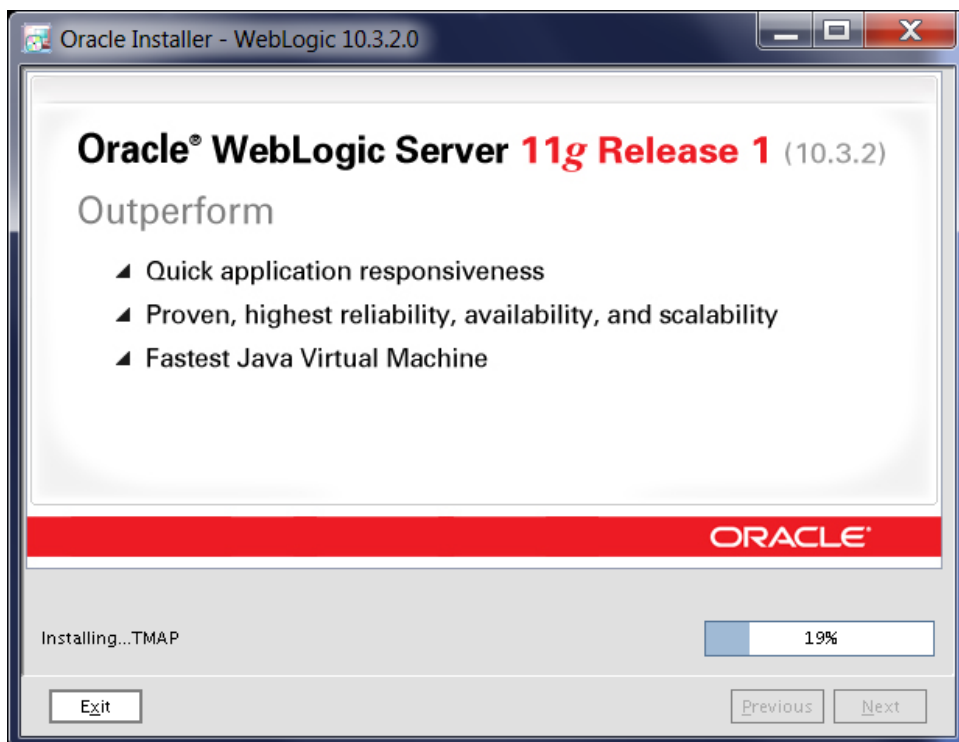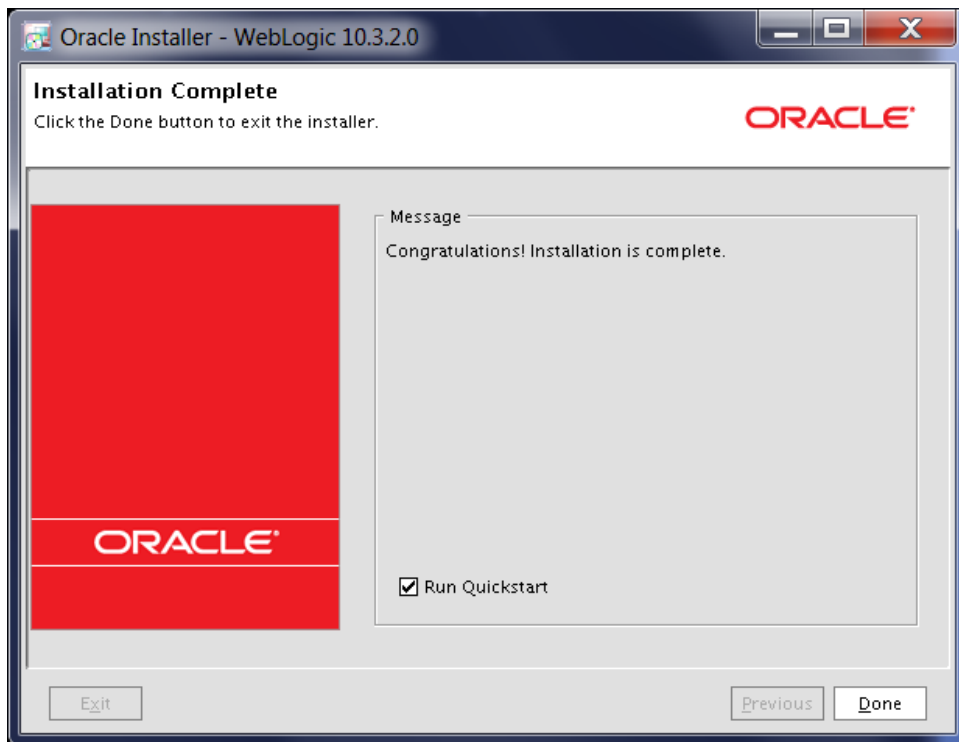Check if the Sun SDK is located in directory **/usr/java/jdk1.6.0_18**.
Click **Next**.

Action:
Accept the default directory and click **Next**.

Action:
Click **Next**.

Action:
Wait until Weblogic Server gets installed.

Action:
Deselect the **Run Quickstart** option.
Click **Done**.

The Weblogic Server is now installed. We will continue with installing some recommended patches for the Weblogic Server.

Remove the Weblogic binaries from the /tmp directrory:

```
oracle@oraoem01::/tmp
$ rm -f wls1032_generic.jar
```

11. WebLogic Server Patch Installation

Before we can install Oracle Enterprise Manager Grid Control 11g you must first install some Weblogic patches for bugs 8990616, 9100465, and 9221722. These WebLogic patches are applied using the Smart Update Tool found in the $BEA_HOME/utils/bsu directory

Set the DISPLAY variable and then start the Smart Update Tool:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# cd
/u01/app/oracle/product/11.1.1/middleware/utils/bsu
[oracle@oraoem01::/home/oracle]# ./bsu.sh
```
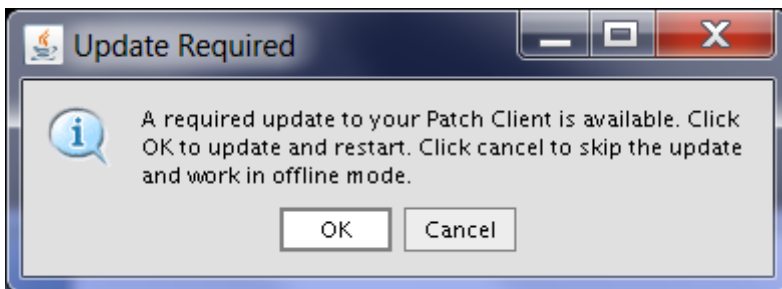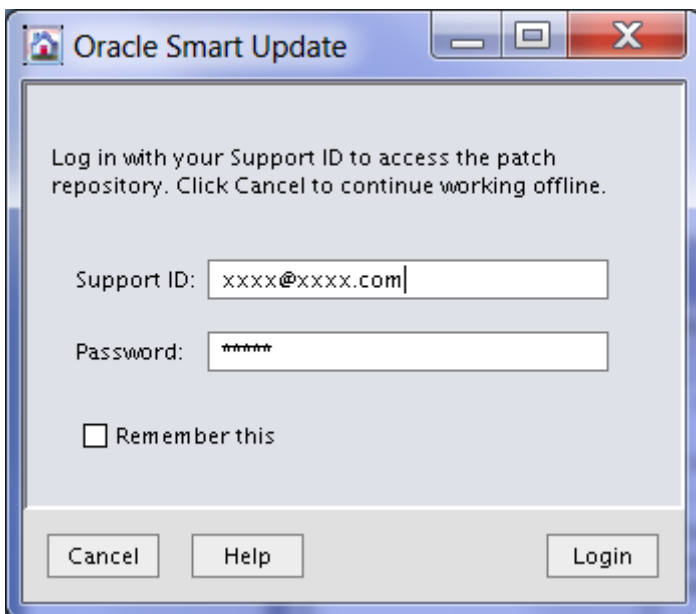
Action:
Click **OK**.
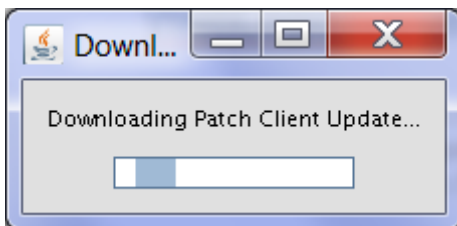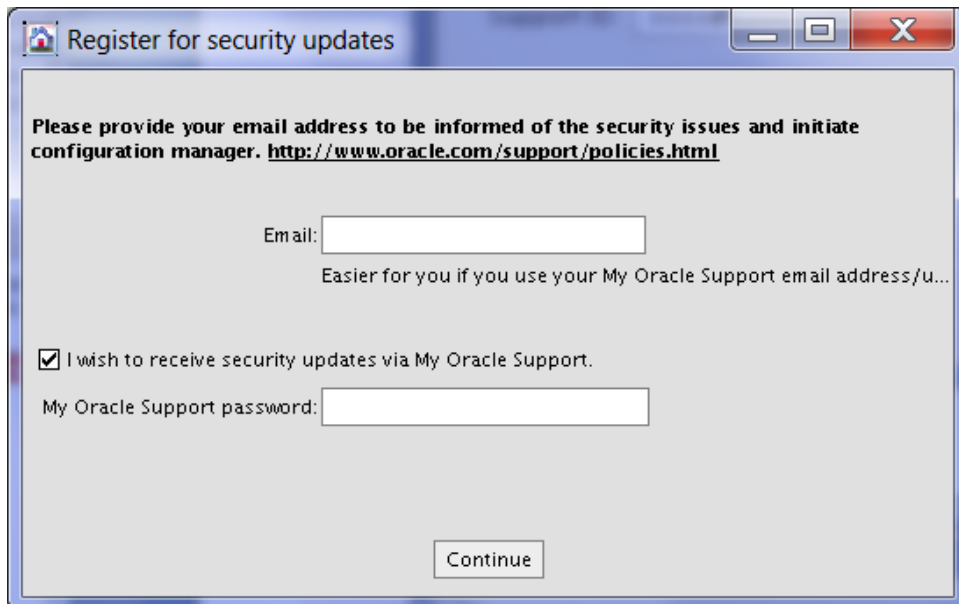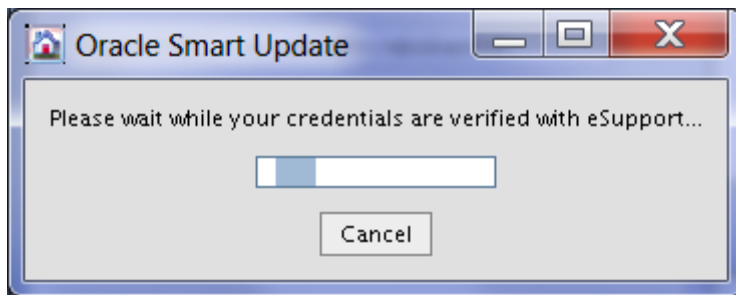
Action:
Click **Work Offline**.
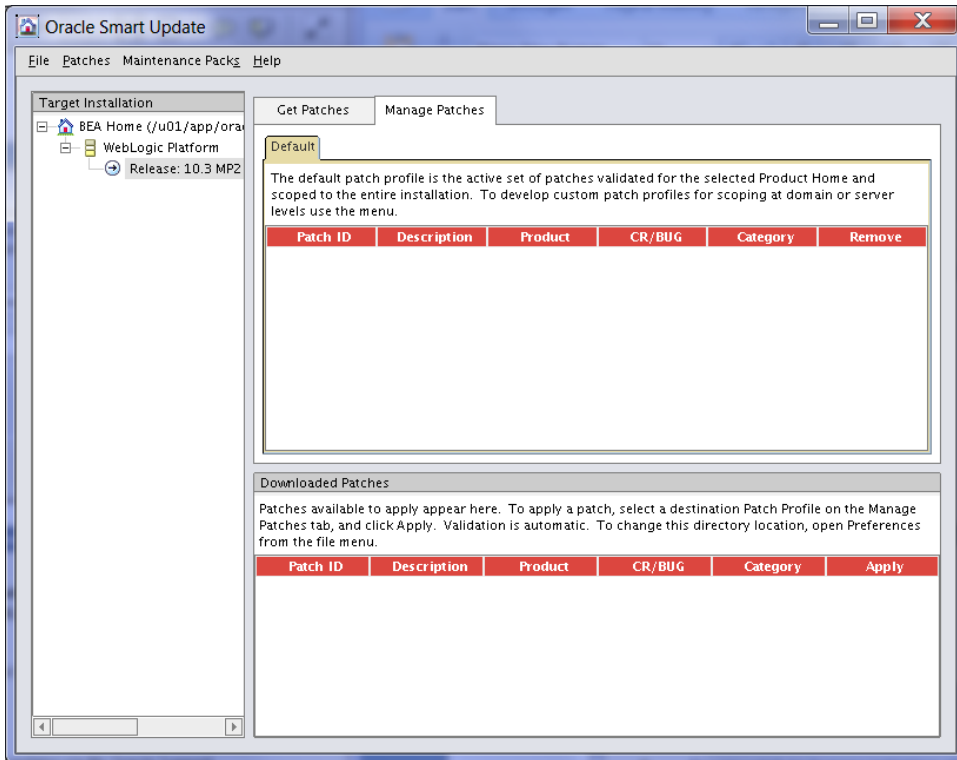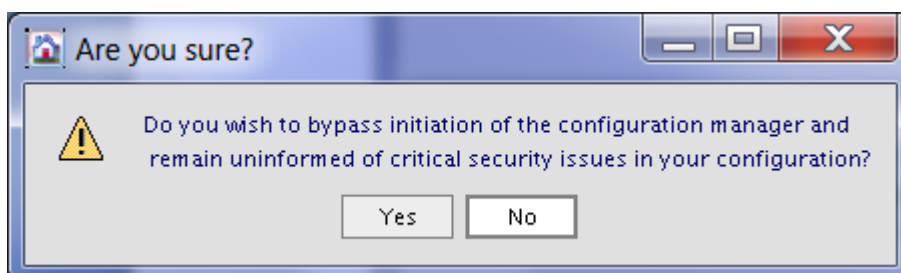
Action:
Click tab **Get Patches**.

Action:
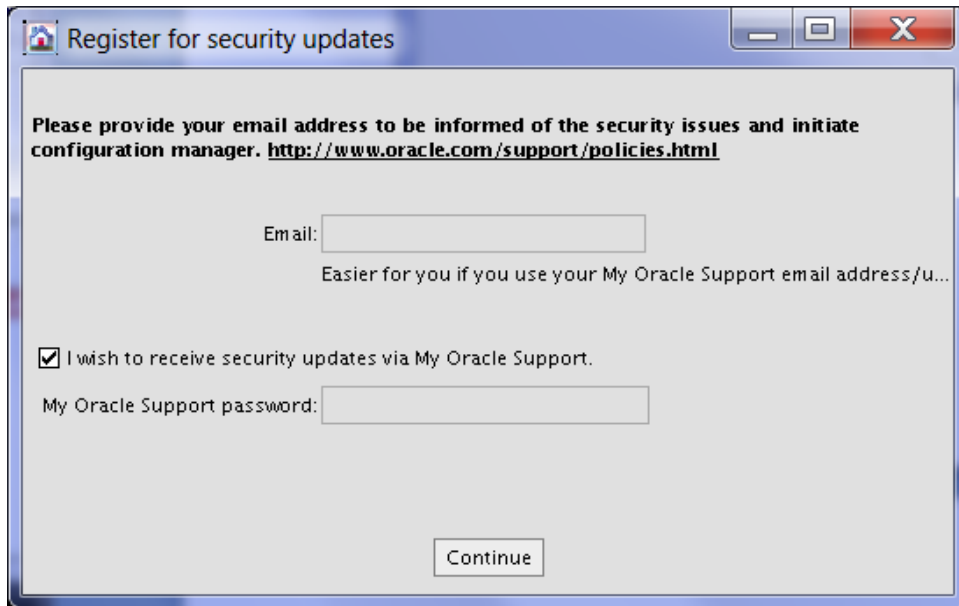Specify you're **My Oracle Support ID credentials** and click **Login**.

Action:
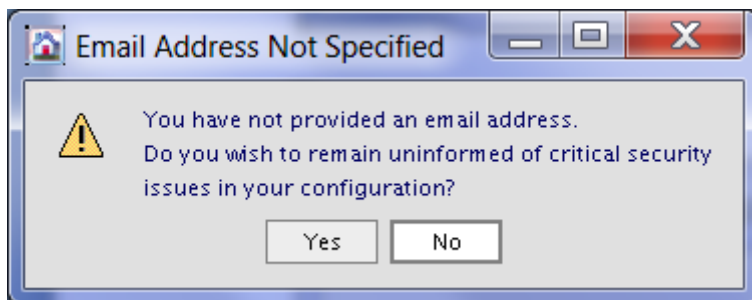Deselect **I wish to receive security updates via My Oracle Support**.
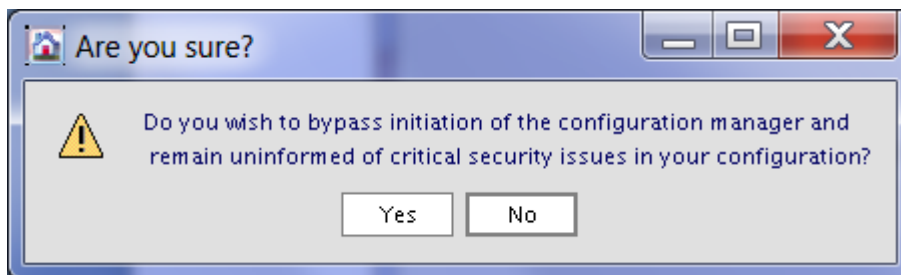

Action:
Click **Yes**.

Action:
Click **Continue**.

Action:
Click **Yes**.

Action:
Yes, I am very sure!!
Click **Yes**.
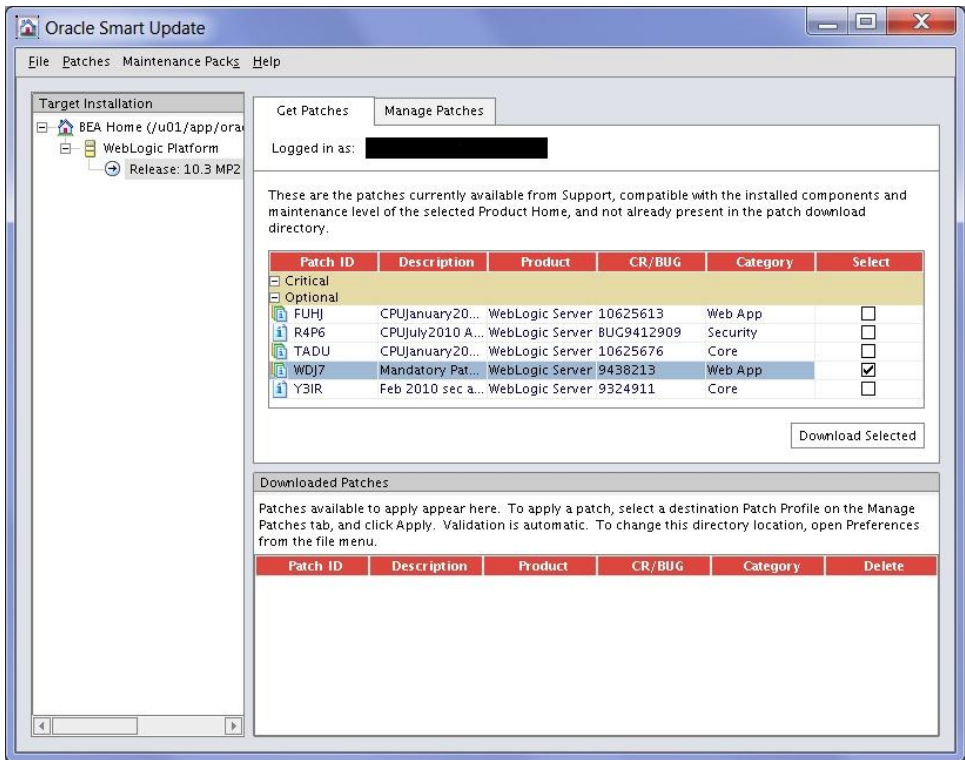
Action:

Select patch **WDJ7** and click **Download Selected**.
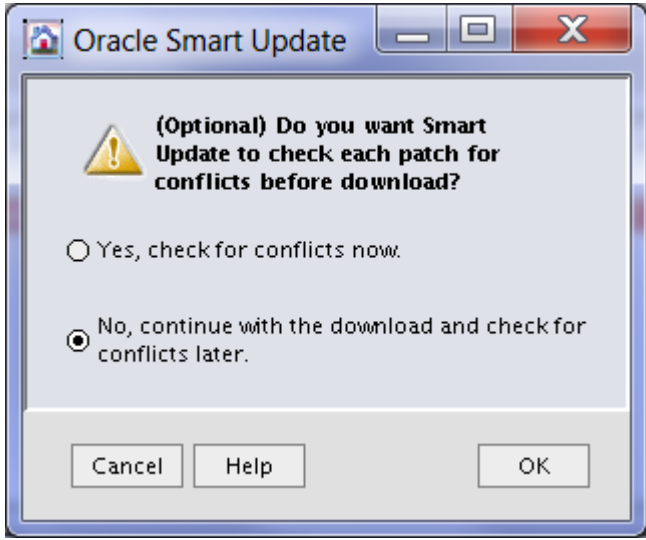
Action:

Click **OK**.
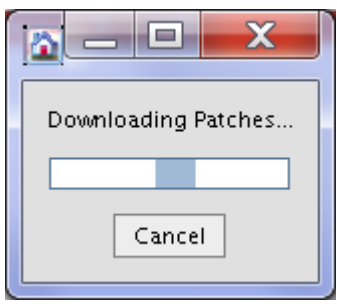
Action:
The patches have been downloaded.
Click tab **Manage Patches** to continue patching.

Action:
Click the **Apply** button next to the **WDJ7** patch.

Action:
Click **OK**.
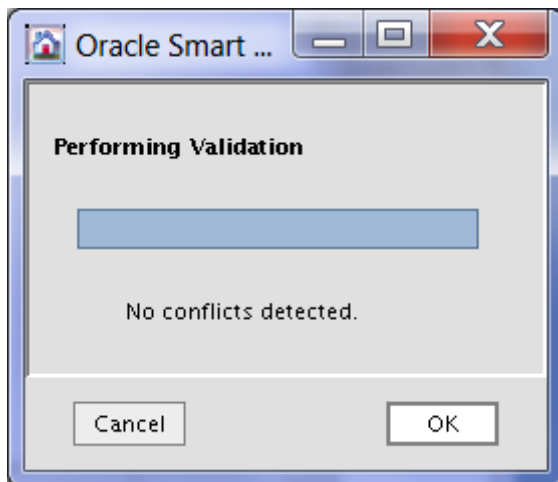
Action:
Click **OK**.
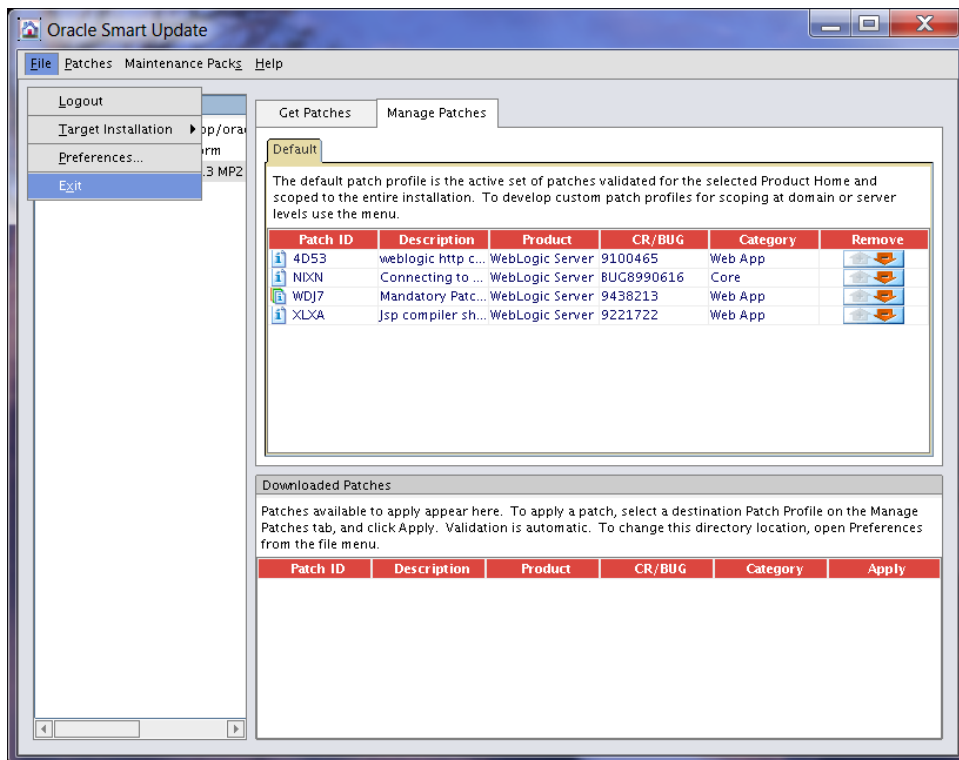
Action:

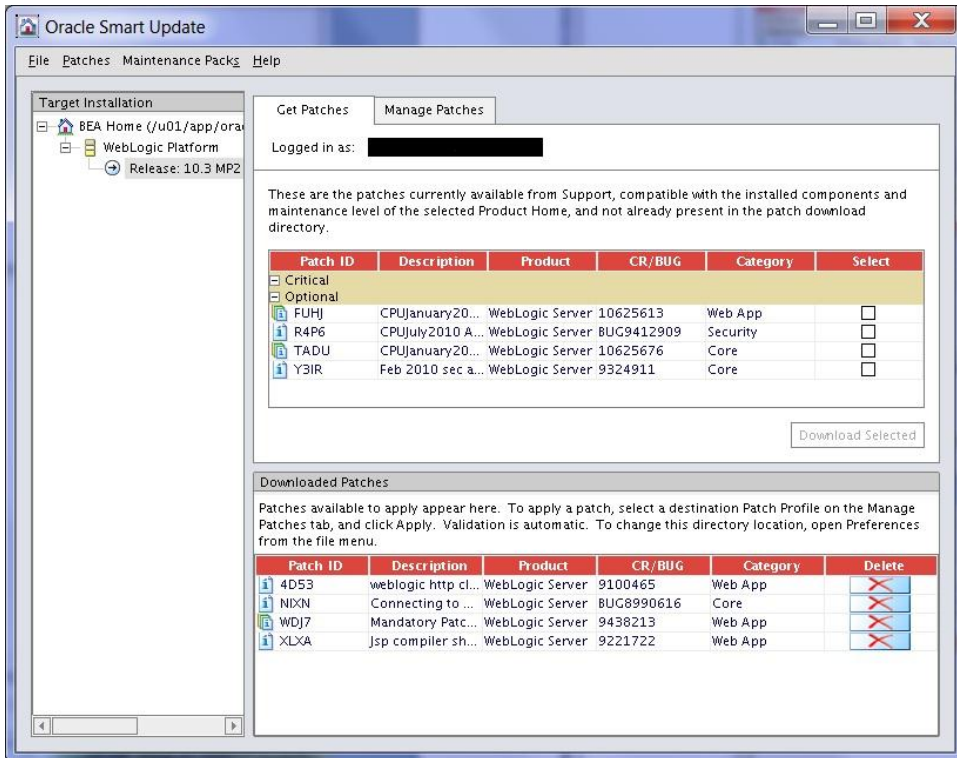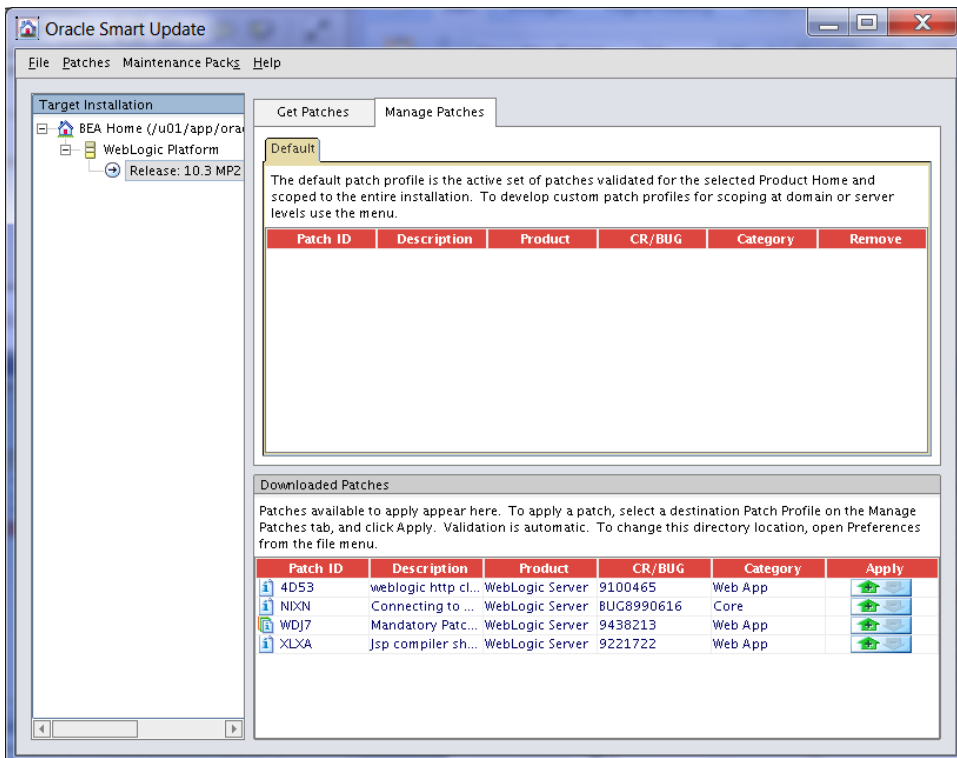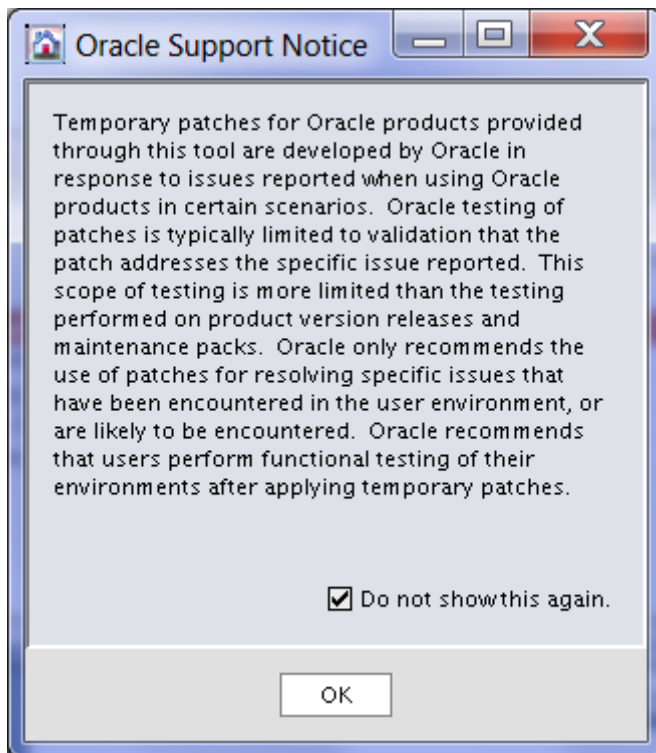Patches have been successfully applied.

You can now **exit** the patch utility.

12. Install Enterprise Manager Grid Control 11g

Now that de repository database is created and Weblogic is in place, we can continue with installing the Oracle Enterprise Manager Grid Control components. The software can be downloaded from here:

http://www.oracle.com/technetwork/oem/grid-control/downloads/linuxx8664soft-085949.html.

After downloading the software copy the zipfiles to your server. Unzip the files in the staging area:

```
[root@oraovs01::/software/EM11]# unzip V20515-01_1of3.zip
[root@oraovs01::/software/EM11]# unzip V20515-01_2of3.zip
[root@oraovs01::/software/EM11]# unzip V20515-01_3of3.zip
```

Set the DISPLAY variable and then start the installer as the OS user oracle:

```
[oracle@oraoem01::/home/oracle]# export DISPLAY=192.168.0.128:0.0
[oracle@oraoem01::/home/oracle]# cd /software/EM11
[oracle@oraoem01::/software/EM11]# ./runInstaller
```
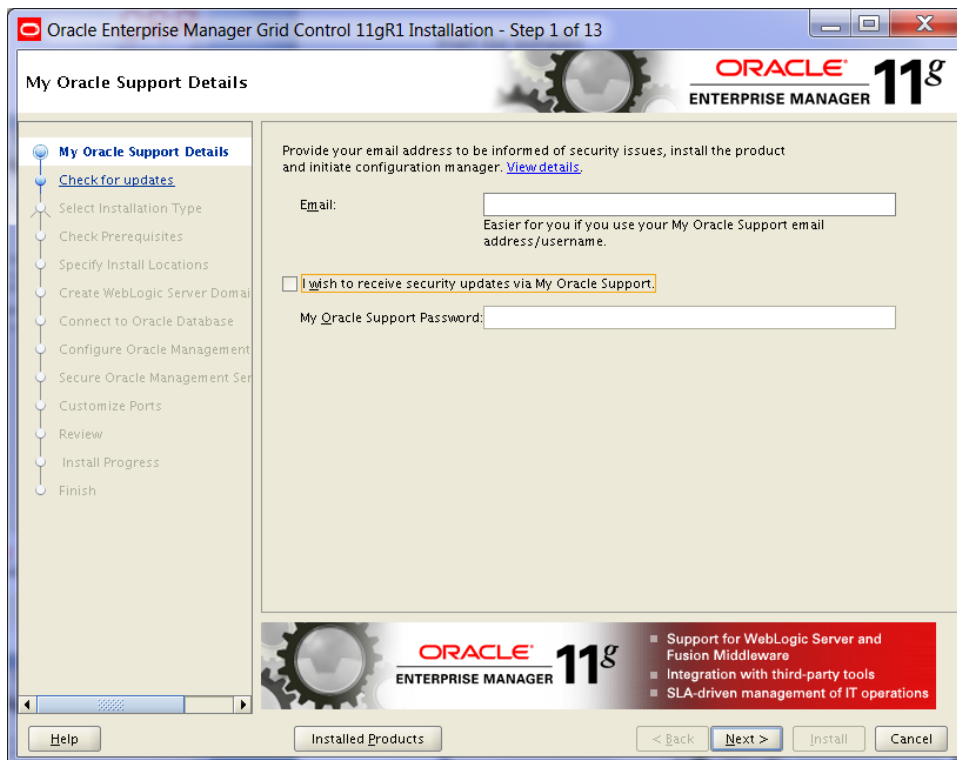

Action:
Deselect **I wish to receive security updates via My Oracle Support**.
Click **Next**.
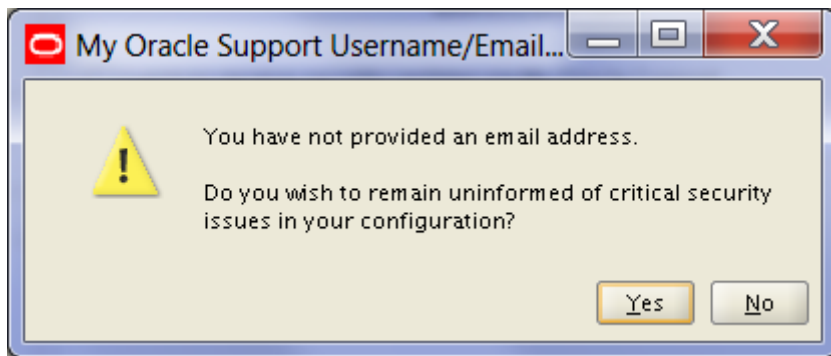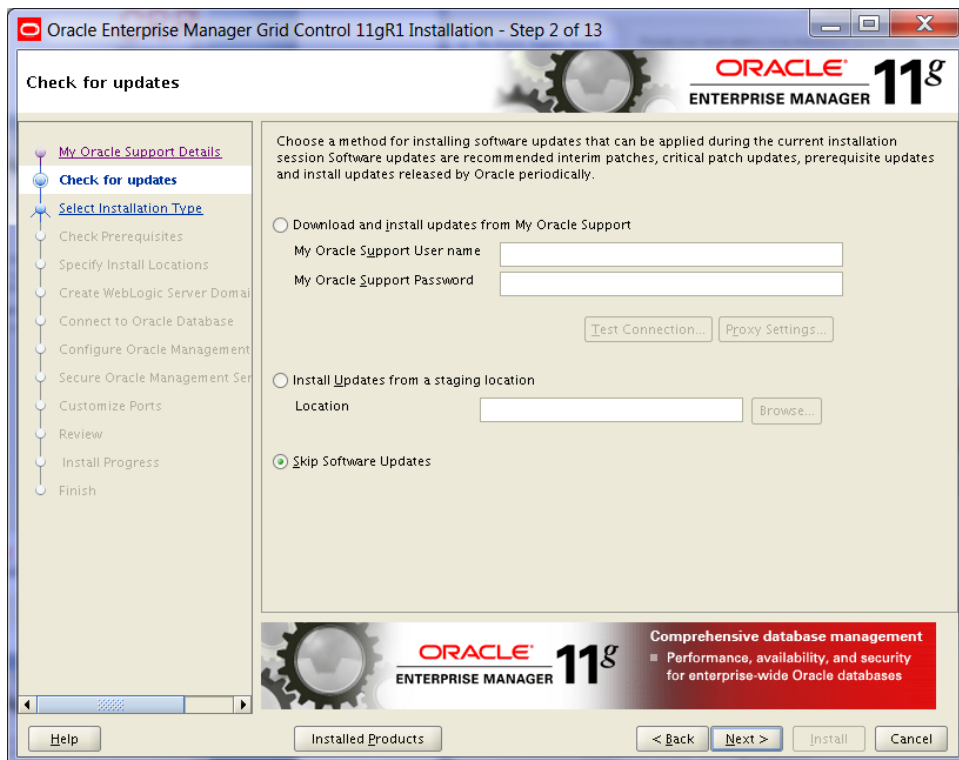
Action:
Click **Yes**.

Action:
Select **Skip Software Updates**.
Click **Next**.

Action:
Select **Install a new Enterprise Manager system**.
Click **Next**.
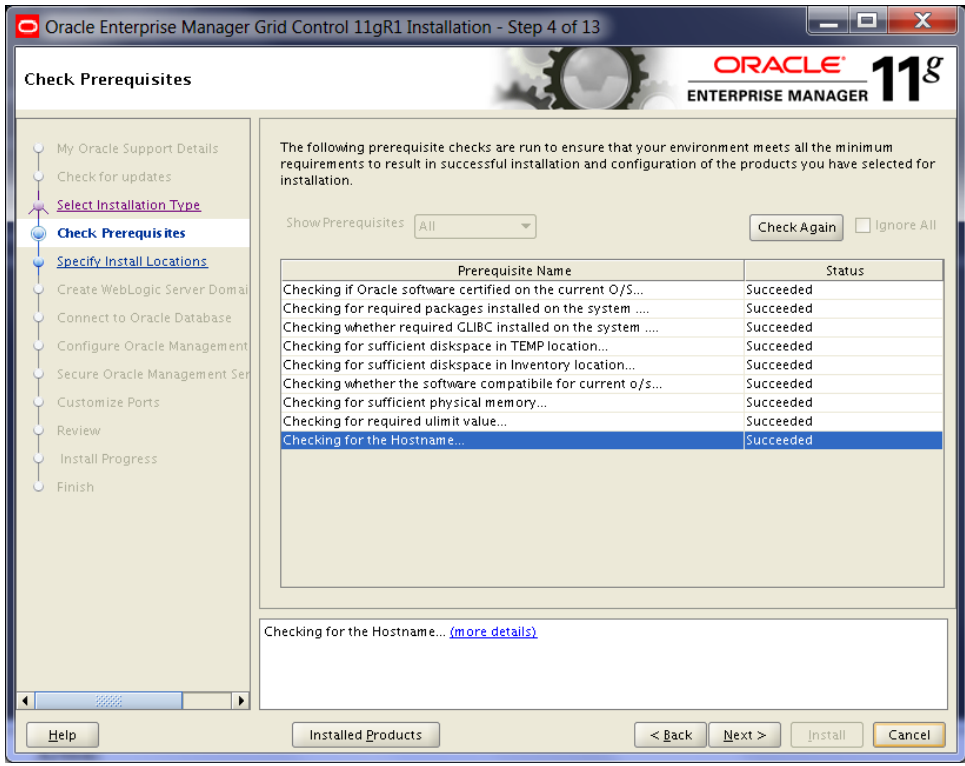
Action:
Click **Next**.

Action:
Accept the default values for the directories.
Click **Next**.
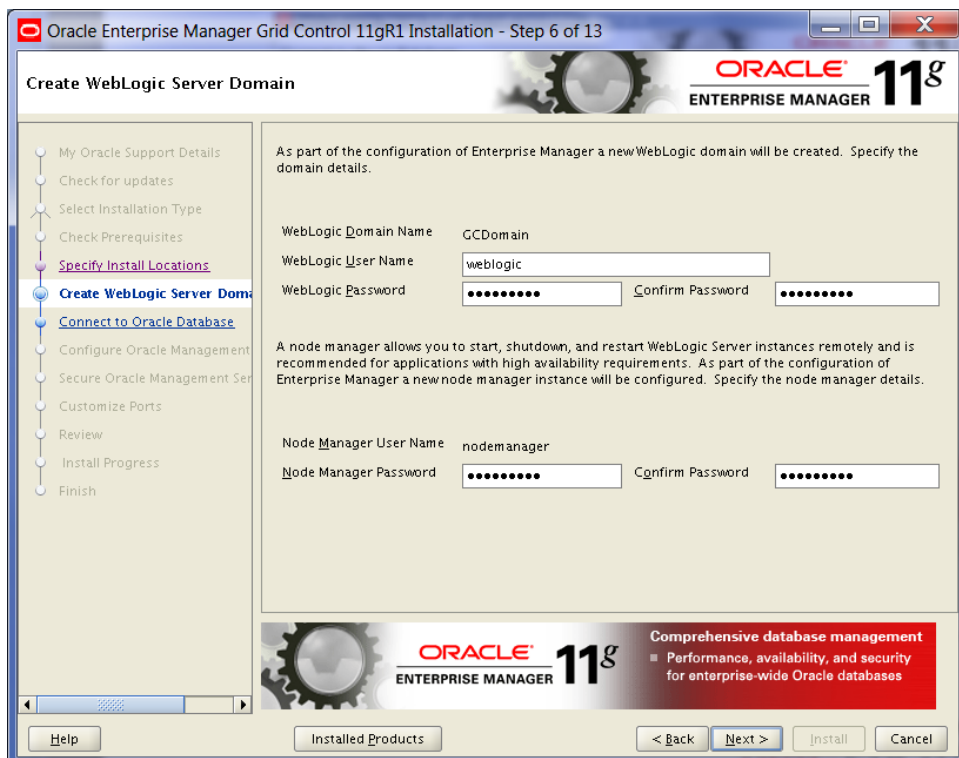
Action:
Specify the passwords for the **Weblogic Username** and the **Node Manager User Name**.
Click **Next**.
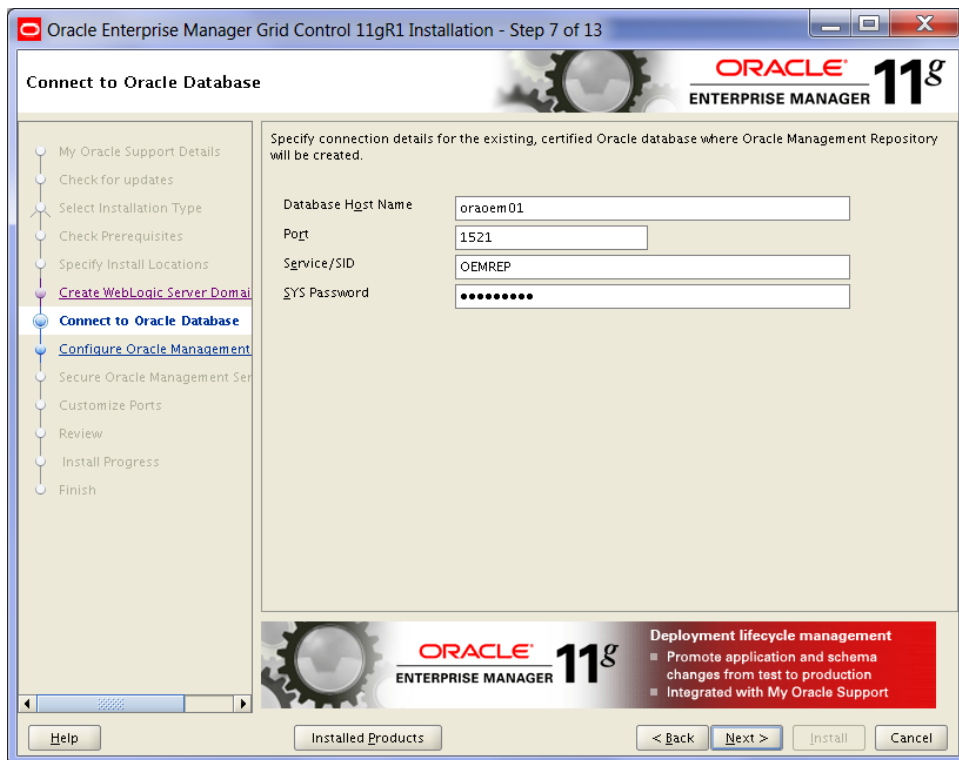
Action:
Specify the **connection details** to connect to the repository database, created in a previous step.
Database Host Name   oraoem01
Port   1521
Service/SID   OEMREP
SYS Password   The SYS password you created.
Click **Next**.
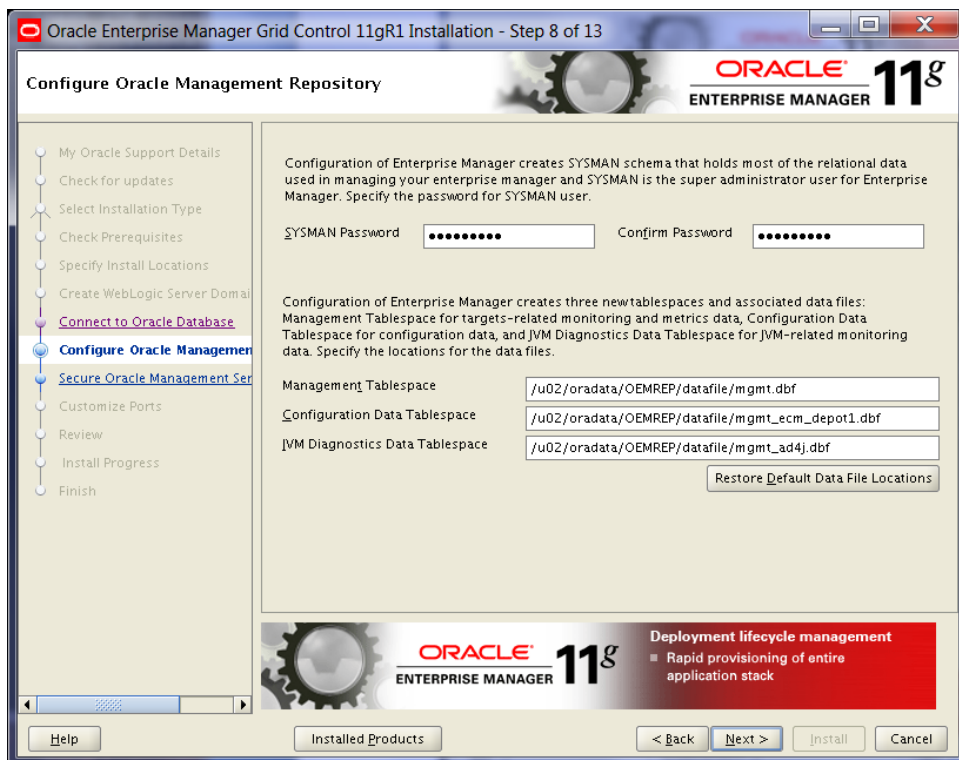
Action:
Specify a password for the SYSMAN repository user.
Accept the defaults path and names for the repository tablespaces.
Click **Next**.

Action:
Specify an **Agent Registration Password** to let the agents registrate with the OMS.
Only allow secure agents to communicate with the OMS and secure access to the console.
Click **Next**.

Action:
Accept the default ports.
Click **Next**.
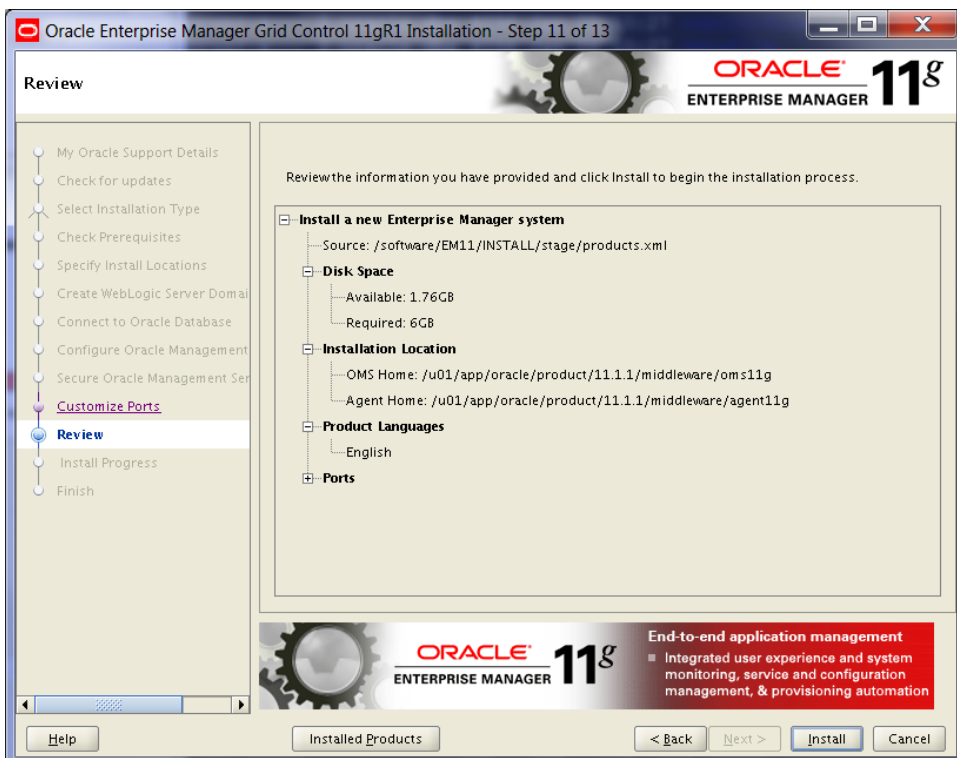
Action:
Click **Install**.
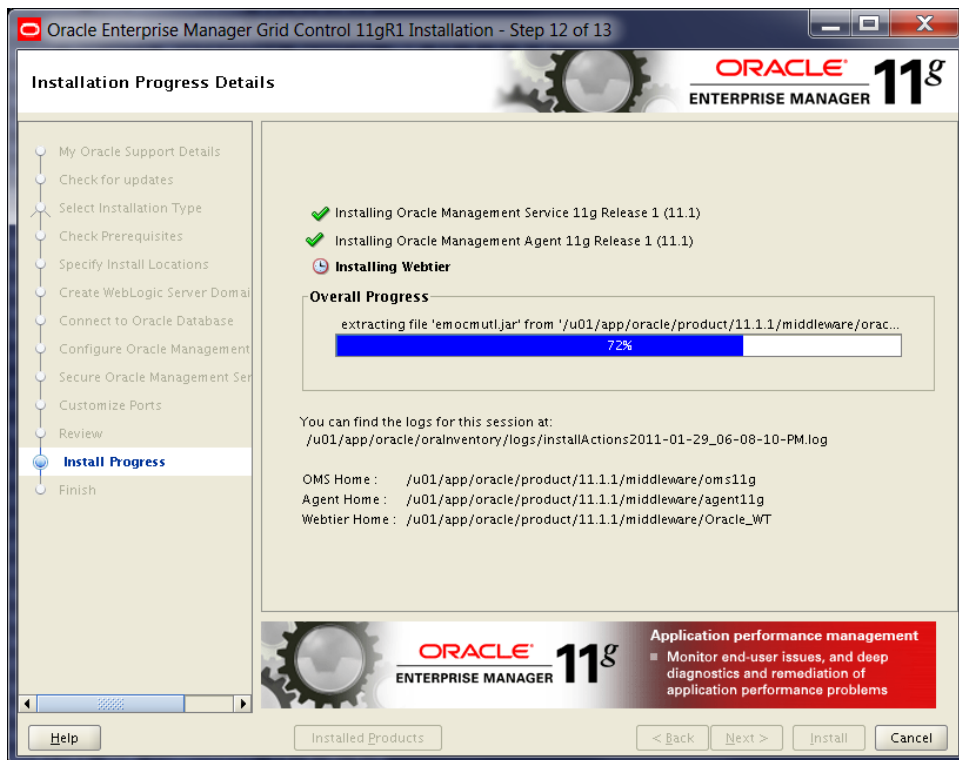
Action:
Wait while Oracle Enterprise Manager Grid Control 11gR1 gets installed.
This can take quite a while.
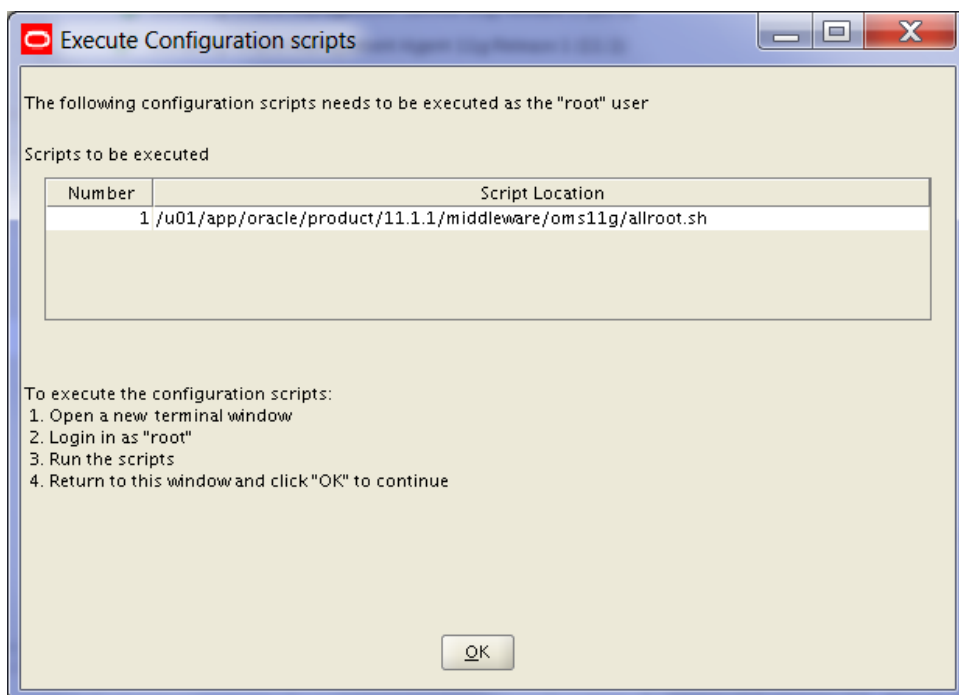
Action:
Follow the instructions on the screen by executing the script as user root.

```
root@oraoem01::/root
$ /u01/app/oracle/product/11.1.1/middleware/oms11g/allroot.sh

Starting to execute allroot.sh .........

Starting to execute /u01/app/oracle/product/11.1.1/middleware/oms11g/root.sh ......
Running Oracle 11g root.sh script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /u01/app/oracle/product/11.1.1/middleware/oms11g

Enter the full pathname of the local bin directory: [/usr/local/bin]:
The file "dbhome" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]:
The file "oraenv" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]:
The file "coraenv" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]:

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.
Adding entry to /etc/oratab file...
Finished execution of  /u01/app/oracle/product/11.1.1/middleware/oms11g/root.sh
......


Starting to execute /u01/app/oracle/product/11.1.1/middleware/agent11g/root.sh
......
Running Oracle 11g root.sh script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /u01/app/oracle/product/11.1.1/middleware/agent11g

Enter the full pathname of the local bin directory: [/usr/local/bin]:
The file "dbhome" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]: y
   Copying dbhome to /usr/local/bin ...
The file "oraenv" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]: y
   Copying oraenv to /usr/local/bin ...
The file "coraenv" already exists in /usr/local/bin.  Overwrite it? (y/n)
[n]: y
   Copying coraenv to /usr/local/bin ...

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.
Adding entry to /etc/oratab file...
Finished execution of  /u01/app/oracle/product/11.1.1/middleware/agent11g/root.sh
......
```

Click **OK**.
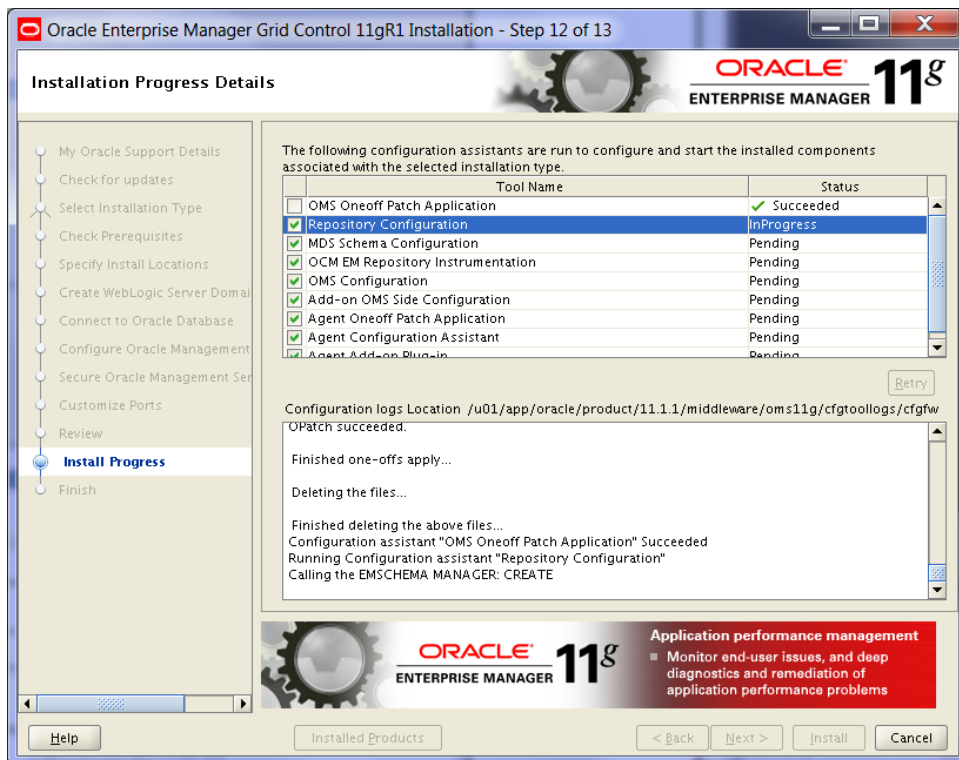
Action:
Wait until some configuration assistants have done their works.
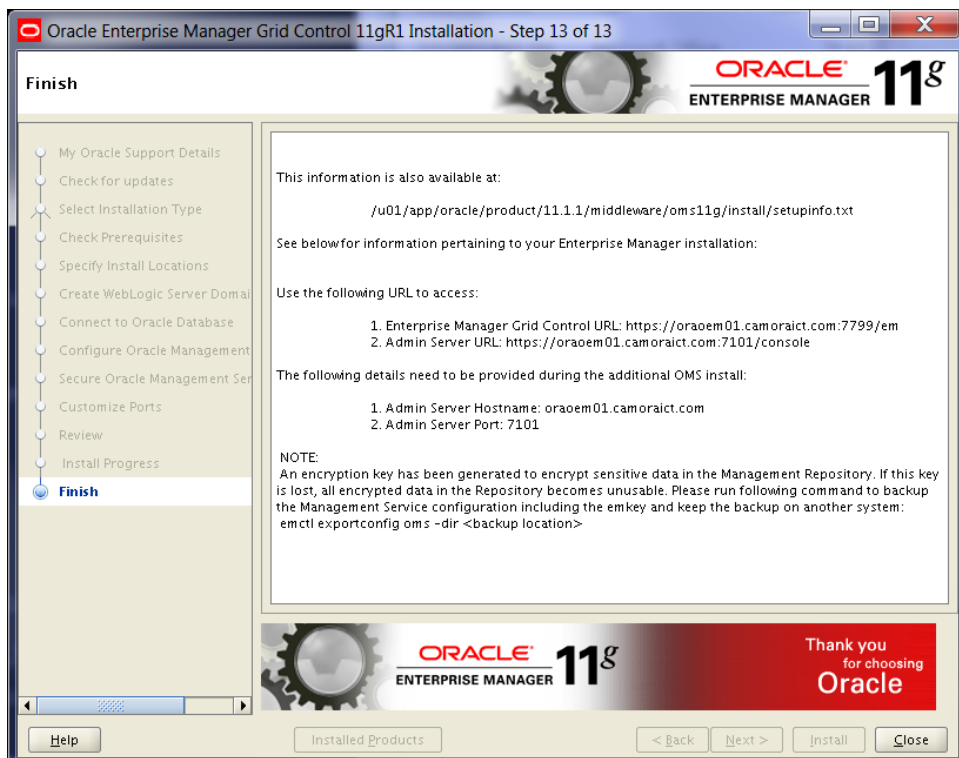
Action:
Click **Close** to finish the installation.

Installation is now complete and Enterprise Manager Grid Control can be accessed using the following URL:

https://oraoem01:7799/em/

The Weblogic console can be accessed using the following URL:

https://oraoem01:7101/console

We will now login to the Enterprise Manager Grid Control console for the first time:
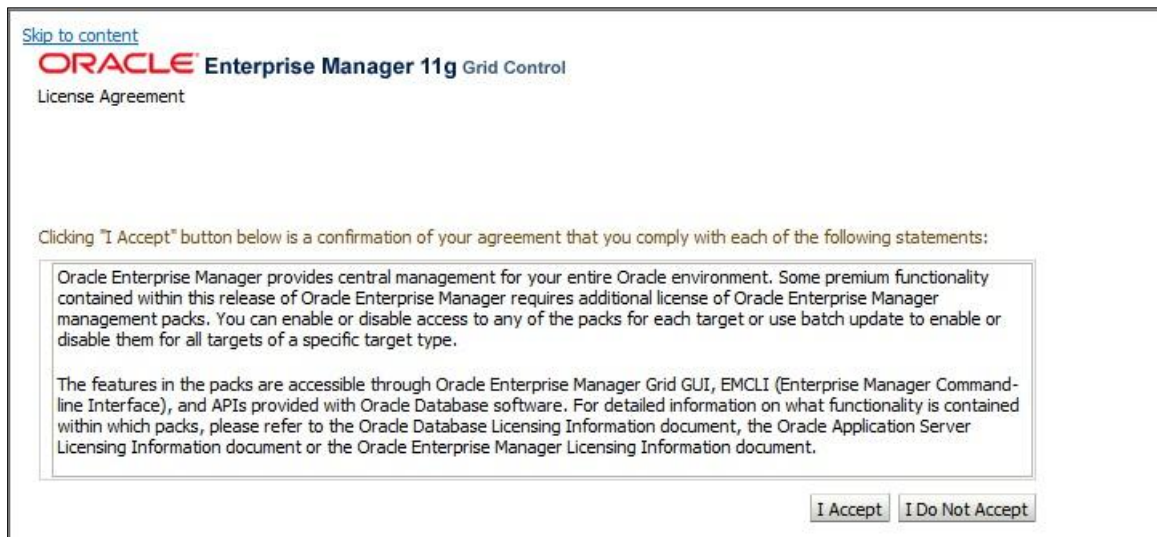
Action:
Click **I Accept**.
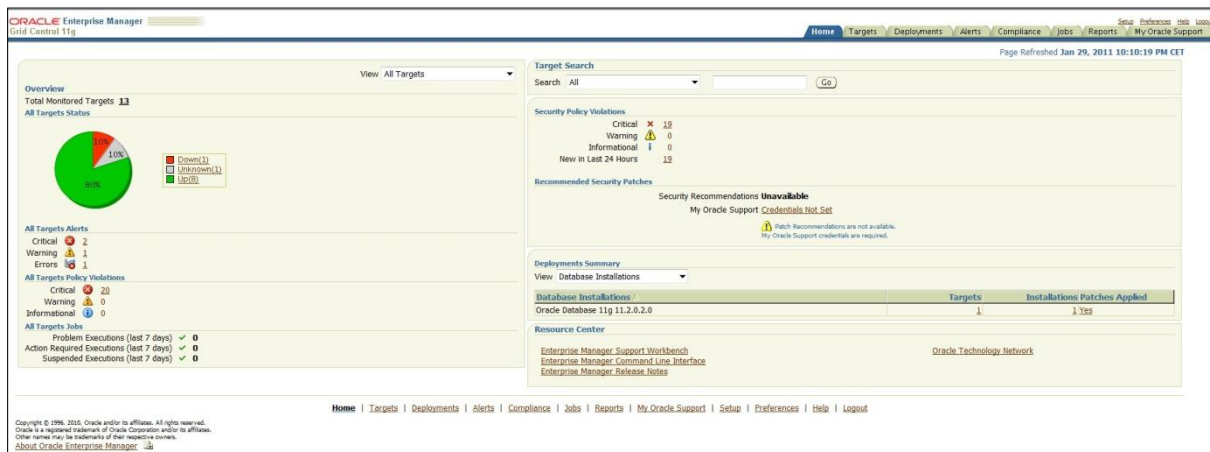
Action:
Click tab **Setup** Tab, then tab **Agents**, then on the agent link oraoem01:3872. There you will see that EMREP database is not configured yet.

Action:

To solve this the database must be configured correctly.

The database is monitored in EM using the database account dbsnmp.

Unlock the dbsnmp password in the OEMREP database to be able to configure the OEMREP database.

```
SQL> alter user dbsnmp identified by xxxx account unlock;
```

Now in the previous EM screen click button configure.

Action:

Specify the **dbsnmp** password and click button **Test Connection**.

If the connection test is successful click **Next**.
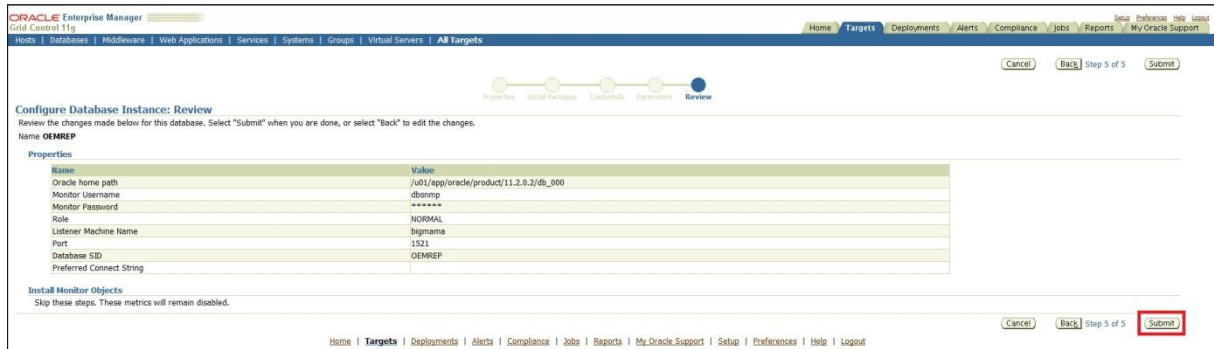
Action:
Click **Submit**.
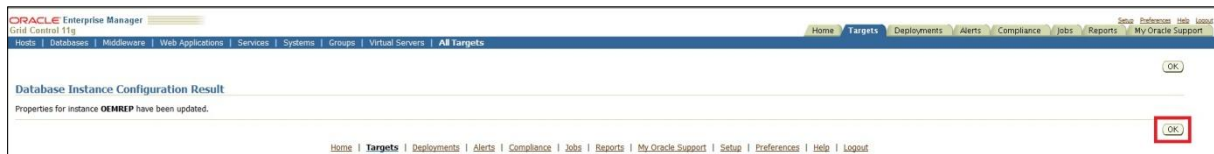
Action:
Click **OK**.

Now we will perform some check to check the availability of some installed components.

First modify some lines in the */etc/oratab* file:

```
Change

*:/u01/app/oracle/product/11.1.1/middleware/oms11g:N
*:/u01/app/oracle/product/11.1.1/middleware/agent11g:N

into

OMS:/u01/app/oracle/product/11.1.1/middleware/oms11g:N
AGENT:/u01/app/oracle/product/11.1.1/middleware/agent11g:N
```

Status check OMS:

```
oracle@oraoem01:OMS:/home/oracle
$ /u01/app/oracle/product/11.1.1/middleware/oms11g/bin/emctl status oms
Oracle Enterprise Manager 11g Release 1 Grid Control
Copyright (c) 1996, 2010 Oracle Corporation.  All rights reserved.
WebTier is Up
Oracle Management Server is Up
```

Agent check:

```
oracle@oraoem01:AGENT:/ home/oracle
$ /u01/app/oracle/product/11.1.1/middleware/agent11g/bin/emctl status agent
Oracle Enterprise Manager 11g Release 1 Grid Control 11.1.0.1.0
Copyright (c) 1996, 2010 Oracle Corporation.  All rights reserved.
---------------------------------------------------------------
Agent Version     : 11.1.0.1.0
OMS Version       : 11.1.0.1.0
Protocol Version  : 11.1.0.0.0
Agent Home        : /u01/app/oracle/product/11.1.1/middleware/agent11g
Agent binaries    : /u01/app/oracle/product/11.1.1/middleware/agent11g
```

```
Agent Process ID  : 21956
Parent Process ID : 21938
Agent URL         : https://oraoem01:3872/emd/main/
Repository URL    : https://oraoem01:4900/em/upload
Started at        : 2011-02-02 02:00:06
Started by user   : oracle
Last Reload       : 2011-02-02 02:07:37
Last successful upload                      : 2011-02-02 02:10:21
Total Megabytes of XML files uploaded so far :    26.86
Number of XML files pending upload          :        0
Size of XML files pending upload(MB)        :     0.00
Available disk space on upload filesystem   :    81.11%
Last successful heartbeat to OMS            : 2011-02-02 02:10:11
---------------------------------------------------------
Agent is Running and Ready
```

13.   Enterprise Manager Grid Control Patch Installation

I recommend downloading and installing at least the following patches after the out-of the-box installation:

Patch 6880880   OPatch 11.2
Patch 10270073   11.2.0.2.1 Patch Set Update
Patch 10273607   11.1.0.1.2 Patch Set Update for Oracle Management Agent
Patch 9431704   BROKEN 'FMW WELCOME PAGE APPLICATION' APPLICATION
                      DISCOVERED OUT-OF-BOX

First refresh OPatch:

```
[oracle@oraoem01::/home/oracle]# cd /software/OPatch/
[oracle@oraoem01::/home/oracle]# unzip p6880880_112000_Linux-x86-64.zip -d
/u01/app/oracle/product/11.1.1/middleware/oms11g
Archive:  p6880880_112000_Linux-x86-64.zip
 extracting: /u01/app/oracle/product/11.1.0/middleware/oms11g/OPatch/ocm/ocm.zip
……
replace
/u01/app/oracle/product/11.1.0/middleware/oms11g/OPatch/ocm/ocm_platforms.txt?
[y]es, [n]o, [A]ll, [N]one, [r]ename: A
  inflating:
/u01/app/oracle/product/11.1.0/middleware/oms11g/OPatch/ocm/ocm_platforms.txt
 extracting: /u01/app/oracle/product/11.1.0/middleware/oms11g/OPatch/crs/log/dummy
……
  inflating: /u01/app/oracle/product/11.1.0/middleware/oms11g/OPatch/README.txt
```

Repeat this for the next ORACLE_HOME locations:

- /u01/app/oracle/product/11.1.1/middleware/oracle_common
- /u01/app/oracle/product/11.1.1/middleware/agent11g

Install the latest OMS PSU.

First stop the OMS:

```
oracle@oraoem01:OMS:/home/oracle
$ OMS
The Oracle base for ORACLE_HOME=/u01/app/oracle/product/11.1.1/middleware/oms11g is
/u01/app/oracle
oracle@oraoem01:OMS:/home/oracle
$ emctl stop oms -all
Oracle Enterprise Manager 11g Release 1 Grid Control
Copyright (c) 1996, 2010 Oracle Corporation.  All rights reserved.
Stopping WebTier...
WebTier Successfully Stopped
Stopping Oracle Management Server...
Oracle Management Server Successfully Stopped
Oracle Management Server is Down
```

Now apply the latest PSU:

```
oracle@oraoem01:OMS:/home/oracle
$ cd /software/EM11/PATCHES/OMS/10270073
oracle@oraoem01:OMS:/software/EM11/PATCHES/OMS/10270073
$ /u01/app/oracle/product/11.1.1/middleware/oms11g/OPatch/opatch apply
Invoking OPatch 11.2.0.1.4

Oracle Interim Patch Installer version 11.2.0.1.4
```

```
Copyright (c) 2010, Oracle Corporation.  All rights reserved.


Oracle Home       : /u01/app/oracle/product/11.1.1/middleware/oms11g
Central Inventory : /u01/app/oracle/oraInventory
   from           : /etc/oraInst.loc
OPatch version    : 11.2.0.1.4
OUI version       : 11.1.0.8.0
OUI location      : /u01/app/oracle/product/11.1.1/middleware/oms11g/oui
Log file location :
/u01/app/oracle/product/11.1.1/middleware/oms11g/cfgtoollogs/opatch/opatch2011-02-
06_17-40-16PM.log


Patch history file:
/u01/app/oracle/product/11.1.1/middleware/oms11g/cfgtoollogs/opatch/opatch_history.
txt


OPatch detects the Middleware Home as "/u01/app/oracle/product/11.1.1/middleware"

ApplySession applying interim patch '10270073' to OH
'/u01/app/oracle/product/11.1.1/middleware/oms11g'
Execution of 'sh /software/EM11/PATCHES/OMS/10270073/custom/scripts/init -apply
10270073 ':


Return Code = 0

Running prerequisite checks...
Provide your email address to be informed of security issues, install and
initiate Oracle Configuration Manager. Easier for you if you use your My
Oracle Support Email address/User Name.
Visit http://www.oracle.com/support/policies.html for details.
Email address/User Name:

You have not provided an email address for notification of security issues.
Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]:  Y

OPatch detected non-cluster Oracle Home from the inventory and will patch the local
system only.

Backing up files and inventory (not for auto-rollback) for the Oracle Home
Backing up files affected by the patch '10270073' for restore. This might take a
while...
Backing up files affected by the patch '10270073' for rollback. This might take a
while...

Patching component oracle.sysman.oms.core, 11.1.0.1.0...
Updating jar file
"/u01/app/oracle/product/11.1.1/middleware/oms11g/sysman/jlib/emCORE.jar" with
"/sysman/jlib/emCORE.jar/oracle/sysman/eml/ecm/policy/PolicyViolationsController.cl
ass"
……
ApplySession adding interim patch '10270073' to inventory

Verifying the update...
Inventory check OK: Patch ID 10270073 is registered in Oracle Home inventory with
proper meta-data.
Files check OK: Files from Patch ID 10270073 are present in Oracle Home.
Execution of 'sh /software/EM11/PATCHES/OMS/10270073/custom/scripts/post -apply
10270073 ':


Return Code = 0

OPatch succeeded.
```

Connect to rcuJDBCEngine as SYS and run the post_install_script.sql script as follows:

```
oracle@oraoem01:OMS:/software/EM11/PATCHES/OMS/10270073
$ $ORACLE_HOME/bin/rcuJDBCEngine sys/<sys_password>@oraoem01:1521:OEMREP
JDBC_SCRIPT post_install_script.sql $PWD $ORACLE_HOME
```

If the previous step runs successfully, then you must run the post_install_patch.sql as SYS user:

```
oracle@oraoem01:OMS:/software/EM11/PATCHES/OMS/10270073
$ $ORACLE_HOME/bin/rcuJDBCEngine sys/<sys_password>@oraoem01:1521:OEMREP
JDBC_SCRIPT post_install_patch.sql $PWD $ORACLE_HOME
```

Now install Patch 9431704

```
oracle@oraoem01:OMS:/software/EM11/PATCHES/OMS/10270073
$ export ORACLE_HOME=/u01/app/oracle/product/11.1.1/middleware/oracle_common
$ cd /software/EM11/PATCHES/OMS/9431704
$ /u01/app/oracle/product/11.1.1/middleware/oracle_common/OPatch/opatch apply
$ Invoking OPatch 11.2.0.1.4

Oracle Interim Patch Installer version 11.2.0.1.4
Copyright (c) 2010, Oracle Corporation.  All rights reserved.


Oracle Home       : /u01/app/oracle/product/11.1.1/middleware/oracle_common
Central Inventory : /u01/app/oracle/oraInventory
   from           : /etc/oraInst.loc
OPatch version    : 11.2.0.1.4
OUI version       : 11.1.0.7.0
OUI location      : /u01/app/oracle/product/11.1.1/middleware/oracle_common/oui
Log file location :
/u01/app/oracle/product/11.1.1/middleware/oracle_common/cfgtoollogs/opatch/opatch2
011-02-12_23-04-42PM.log

Patch history file:
/u01/app/oracle/product/11.1.1/middleware/oracle_common/cfgtoollogs/opatch/opatch_
history.txt


OPatch detects the Middleware Home as "/u01/app/oracle/product/11.1.1/middleware"

ApplySession applying interim patch '9431704' to OH
'/u01/app/oracle/product/11.1.1/middleware/oracle_common'

Running prerequisite checks...
Provide your email address to be informed of security issues, install and
initiate Oracle Configuration Manager. Easier for you if you use your My
Oracle Support Email address/User Name.
Visit http://www.oracle.com/support/policies.html for details.
Email address/User Name:

You have not provided an email address for notification of security issues.
Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]:  Y

OPatch detected non-cluster Oracle Home from the inventory and will patch the
local system only.


Please shutdown Oracle instances running out of this ORACLE_HOME on the local
system.
(Oracle Home = '/u01/app/oracle/product/11.1.1/middleware/oracle_common')


Is the local system ready for patching? [y|n]
y
```

```
User Responded with: Y
Backing up files and inventory (not for auto-rollback) for the Oracle Home
Backing up files affected by the patch '9431704' for restore. This might take a
while...
Backing up files affected by the patch '9431704' for rollback. This might take a
while...

Patching component oracle.jrf.j2ee, 11.1.1.2.0...
Copying file to
"/u01/app/oracle/product/11.1.1/middleware/oracle_common/modules/oracle.wsm.common
_11.1.1/wsm-dependencies.jar"
ApplySession adding interim patch '9431704' to inventory

Verifying the update...
Inventory check OK: Patch ID 9431704 is registered in Oracle Home inventory with
proper meta-data.
Files check OK: Files from Patch ID 9431704 are present in Oracle Home.

The local system has been patched and can be restarted.


OPatch succeeded.
```

Finally start the OMS again:

```
oracle@oraoem01:OMS:/ software/EM11/PATCHES/OMS/9431704
$ OMS
The Oracle base for ORACLE_HOME=/u01/app/oracle/product/11.1.1/middleware/oms11g is
/u01/app/oracle
oracle@oraoem01:OMS:/software/EM11/PATCHES/OMS/9431704
$ emctl start oms
Oracle Enterprise Manager 11g Release 1 Grid Control
Copyright (c) 1996, 2010 Oracle Corporation.  All rights reserved.
Starting WebTier...
WebTier Successfully Started
Starting Oracle Management Server...
Oracle Management Server Successfully Started
Oracle Management Server is Up
```

Install the latest AGENT PSU.

First stop the AGENT:

```
oracle@oraoem01::/home/oracle
$ AGENT
The Oracle base for ORACLE_HOME=/u01/app/oracle/product/11.1.1/middleware/agent11g
is /u01/app/oracle
oracle@oraoem01:AGENT:/home/oracle
$ emctl stop agent
Oracle Enterprise Manager 11g Release 1 Grid Control 11.1.0.1.0
Copyright (c) 1996, 2010 Oracle Corporation.  All rights reserved.
Stopping agent ... stopped.
```

Now apply the latest PSU:

```
oracle@oraoem01:AGENT:/home/oracle
$ cd /software/EM11/PATCHES/AGENT/10273607
oracle@oraoem01:AGENT:/software/EM11/PATCHES/AGENT/10273607
$ /u01/app/oracle/product/11.1.1/middleware/agent11g/OPatch/opatch apply
Invoking OPatch 11.2.0.1.4

Oracle Interim Patch Installer version 11.2.0.1.4
Copyright (c) 2010, Oracle Corporation.  All rights reserved.
```

```
Oracle Home         : /u01/app/oracle/product/11.1.1/middleware/agent11g
Central Inventory : /u01/app/oracle/oraInventory
   from             : /etc/oraInst.loc
OPatch version      : 11.2.0.1.4
OUI version         : 11.1.0.8.0
OUI location        : /u01/app/oracle/product/11.1.1/middleware/agent11g/oui
Log file location :
/u01/app/oracle/product/11.1.1/middleware/agent11g/cfgtoollogs/opatch/opatch2011-
02-06_18-26-05PM.log

Patch history file:
/u01/app/oracle/product/11.1.1/middleware/agent11g/cfgtoollogs/opatch/opatch_histor
y.txt


OPatch detects the Middleware Home as "/u01/app/oracle/product/11.1.1/middleware"

ApplySession applying interim patch '10273607' to OH
'/u01/app/oracle/product/11.1.1/middleware/agent11g'

Running prerequisite checks...
Provide your email address to be informed of security issues, install and
initiate Oracle Configuration Manager. Easier for you if you use your My
Oracle Support Email address/User Name.
Visit http://www.oracle.com/support/policies.html for details.
Email address/User Name:

You have not provided an email address for notification of security issues.
Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: Y

OPatch detected non-cluster Oracle Home from the inventory and will patch the local
system only.


Please shutdown Oracle instances running out of this ORACLE_HOME on the local
system.
(Oracle Home = '/u01/app/oracle/product/11.1.1/middleware/agent11g')


Is the local system ready for patching? [y|n]
Y
User Responded with: Y
Backing up files and inventory (not for auto-rollback) for the Oracle Home
Backing up files affected by the patch '10273607' for restore. This might take a
while...
Backing up files affected by the patch '10273607' for rollback. This might take a
while...
……
ApplySession adding interim patch '10273607' to inventory

Verifying the update...
Inventory check OK: Patch ID 10273607 is registered in Oracle Home inventory with
proper meta-data.
Files check OK: Files from Patch ID 10273607 are present in Oracle Home.

The local system has been patched and can be restarted.


OPatch succeeded.
```

Finally restart the agent:

```
oracle@oraoem01:AGENT:/software/EM11/PATCHES/AGENT/10273607
$ emctl start agent
```

Update:

I recommend downloading and installing at least the following patches after the out-of the-box installation:

OMS:

Patch 9659466	HACONFIG1_COLLECTION COLLECTION INTERVAL INCORRECTLY SET IN 11.1GC
Patch 9738008	UPDATE AGENT DOWNLOAD KIT WITH BUG 9676134 FOR 11.1 OMS