

[For Part-1 of this document, click here.](#)

## How to upgrade 32-Bit 10g R2 (10.2.0.4) to 32-Bit 11g R2 (11.2.0.2) on RHEL4 Part-2

**12) Copy utlu112i.sql from 11g ORACLE\_HOME/rdbms/admin to /tmp directory**

cp \$ORACLE\_BASE/product/11.2.0/db\_1/rdbms/admin/**utlu112i.sql** /tmp/.

**13) Login to 10g database**

export ORACLE\_SID=MoidDB

sqlplus / as sysdba

SQL> select status from v\$instance; (Make sure database is up)

SQL > spool /tmp/upgrade.sql

SQL > @/tmp/utlu112i.sql

SQL > spool off

SQL> exit.

#### 14) Check the script generated from above step

vi /tmp/upgrade.spl

```
1 SQL> @/tmp/utlul12i.sql
2 Oracle Database 11.2 Pre-Upgrade Information Tool 05-20-2011 01:49:02
3 Script Version: 11.2.0.2.0 Build: 001
4 .
5 *****
6 Database:
7 *****
8 --> name:          MOIDDB
9 --> version:       10.2.0.4.0
10 --> compatible:   10.2.0.3.0
11 --> blocksize:    8192
12 --> platform:     Linux IA (32-bit)
13 --> timezone file: V4
14 .
15 *****
16 Tablespace: [make adjustments in the current environment]
17 *****
18 --> SYSTEM tablespace is adequate for the upgrade.
19 .... minimum required size: 735 MB
20 --> UNDOTBS1 tablespace is adequate for the upgrade.
21 .... minimum required size: 394 MB
22 --> SYSAUX tablespace is adequate for the upgrade.
23 .... minimum required size: 523 MB
24 --> TEMP tablespace is adequate for the upgrade.
25 .... minimum required size: 61 MB
26 .
27 *****
28 Flashback: OFF
29 *****
30 *****
31 Update Parameters: [Update Oracle Database 11.2 init.ora or spfile]
32 Note: Pre-upgrade tool was run on a lower version 32-bit database.
33 *****
34 --> If Target Oracle is 32-Bit, refer here for Update Parameters:
35 WARNING: --> "sga_target" needs to be increased to at least 412 MB
36 .
37
38 --> If Target Oracle is 64-Bit, refer here for Update Parameters:
39 WARNING: --> "sga_target" needs to be increased to at least 596 MB
40 .
41 *****
42 Renamed Parameters: [Update Oracle Database 11.2 init.ora or spfile]
43 *****
44 -- No renamed parameters found. No changes are required.
45 .
```

```

46 *****
47 Obsolete/Deprecated Parameters: [Update Oracle Database 11.2 init.ora or spfile]
48 *****
49 --> background_dump_dest          11.1      DEPRECATED    replaced by "diagnostic_dest"
50 --> user_dump_dest                11.1      DEPRECATED    replaced by "diagnostic_dest"
51 .
52
53 *****
54 Components: [The following database components will be upgraded or installed]
55 *****
56 --> Oracle Catalog Views           [upgrade]  VALID
57 --> Oracle Packages and Types      [upgrade]  VALID
58 --> JServer JAVA Virtual Machine  [upgrade]  VALID
59 --> Oracle XDK for Java            [upgrade]  VALID
60 --> Oracle Workspace Manager       [upgrade]  VALID
61 --> OLAP Analytic Workspace        [upgrade]  VALID
62 --> OLAP Catalog                   [upgrade]  VALID
63 --> EM Repository                  [upgrade]  VALID
64 --> Oracle Text                    [upgrade]  VALID
65 --> Oracle XML Database            [upgrade]  VALID
66 --> Oracle Java Packages           [upgrade]  VALID
67 --> Oracle interMedia              [upgrade]  VALID
68 --> Spatial                        [upgrade]  VALID
69 --> Data Mining                    [upgrade]  VALID
70 --> Expression Filter               [upgrade]  VALID
71 --> Rule Manager                   [upgrade]  VALID
72 --> Oracle OLAP API                [upgrade]  VALID
73 .
74 *****
75 Miscellaneous Warnings
76 *****
77 WARNING: --> Database is using a timezone file older than version 14.
78 .... After the release migration, it is recommended that DBMS_DST package
79 .... be used to upgrade the 10.2.0.4.0 database timezone version
80 .... to the latest version which comes with the new release.
81 WARNING: --> EM Database Control Repository exists in the database.
82 .... Direct downgrade of EM Database Control is not supported. Refer to the
83 .... Upgrade Guide for instructions to save the EM data prior to upgrade.
84 WARNING: --> Your recycle bin is turned on and currently contains no objects.
85 .... Because it is REQUIRED that the recycle bin be empty prior to upgrading
86 .... and your recycle bin is turned on, you may need to execute the command:
87         PURGE DBA_RECYCLEBIN
88 .... prior to executing your upgrade to confirm the recycle bin is empty.
89 .
90 *****
91 Recommendations
92 *****

```

```

93 Oracle recommends gathering dictionary statistics prior to
94 upgrading the database.
95 To gather dictionary statistics execute the following command
96 while connected as SYSDBA:
97
98     EXECUTE dbms_stats.gather_dictionary_stats;
99
100 *****
101 Oracle recommends reviewing any defined events prior to upgrading.
102
103 To view existing non-default events execute the following commands
104 while connected AS SYSDBA:
105     Events:
106         SELECT (translate(value,chr(13)||chr(10),' ')) FROM sys.v$parameter2
107             WHERE UPPER(name) ='EVENT' AND isdefault='FALSE'
108
109     Trace Events:
110         SELECT (translate(value,chr(13)||chr(10),' ')) from sys.v$parameter2
111             WHERE UPPER(name) = '_TRACE_EVENTS' AND isdefault='FALSE'
112
113 Changes will need to be made in the init.ora or spfile.
114
115 *****
116 SQL> spool off

```

## 15) Apply recommendation.

At this point, adjust any warnings shown by Pre-Upgrade Information tool above. I have marked my recommendation in RED and I will adjust them with the following parameters.

Line # 35 "sga\_target" needs to be increased to at least 412 MB

Solution:

```

alter system set SGA_MAX_SIZE=450M scope=spfile;
alter system set SGA_TARGET=412M scope=spfile

```

Line # 87 PURGE DBA\_RECYCLEBIN

```
SQL> PURGE DBA_RECYCLEBIN;
```

Line # 98 Gather dictionary statistics

```
SQL> EXECUTE dbms_stats.gather_dictionary_stats;
```

#### 16) Restart your database.

SQL > shutdown force;

SQL> startup;

#### 17) Update .bash\_profile

At this point, the .bash\_profile will need to change to reflect ORACLE\_HOME as /u01/app/oracle/product/11.2.0/db\_1 instead of /u01/app/oracle/product/10.2.0/db\_1.

You can do that manually or simply copy a .bash\_profile for 11g database from 223 server.

```
cp ~/.bash_profile ~/.bash_profile/.
```

```
scp 192.168.0.223:/u99/software/BASH_PROFILES/11g/.bash_profile_11gR2 ~/.bash_profile
```

#### 18) Re-execute .bash\_profile

```
./~/.bash_profile
```

*Note: Change ORACLE\_SID to your own ORACLE\_SID in bash\_profile.*

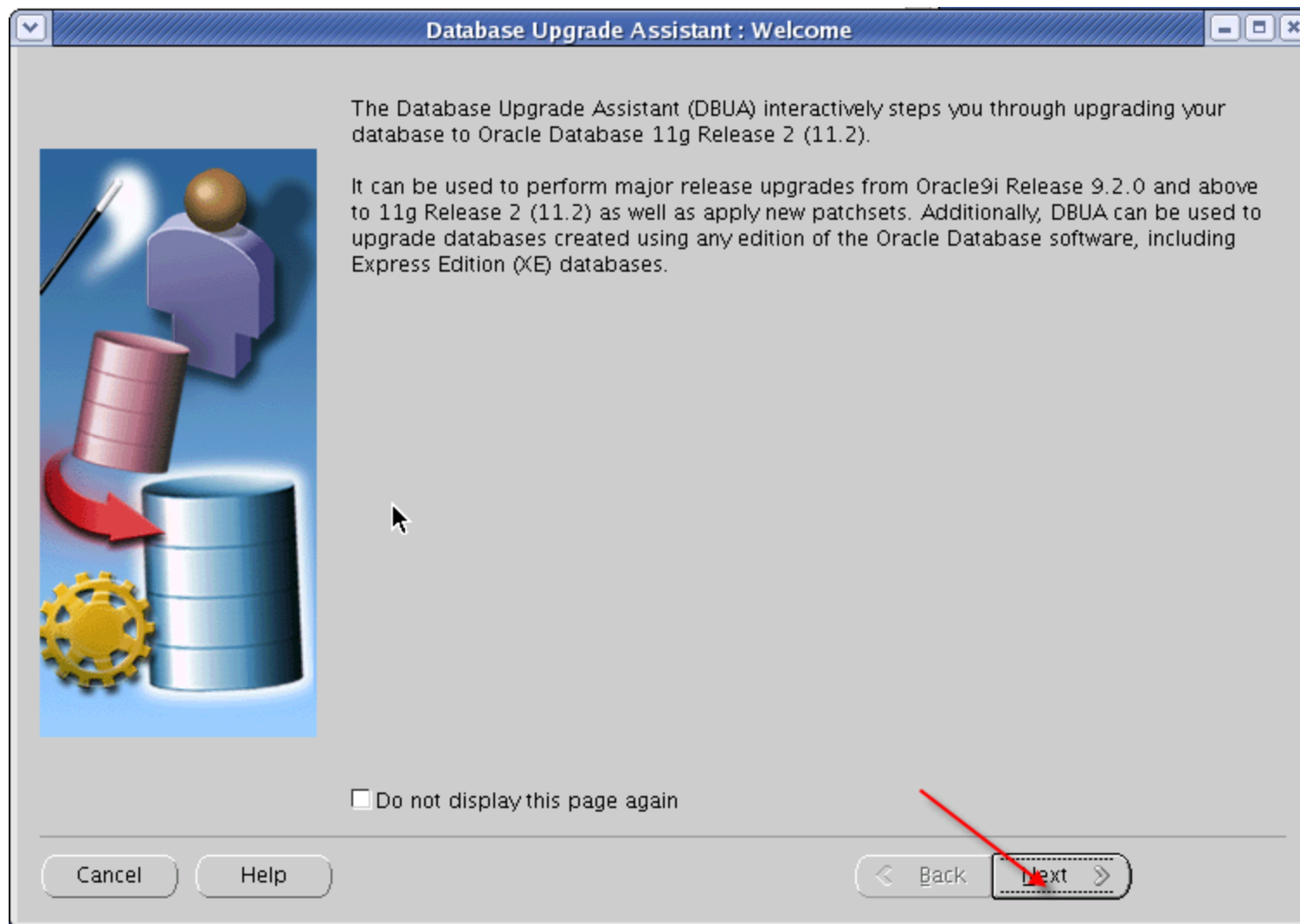
#### 19) Execute dbua from 11g home (*from RealVNC*).

```
./~/.bash_profile
```

```
cd $ORACLE_HOME/bin
```

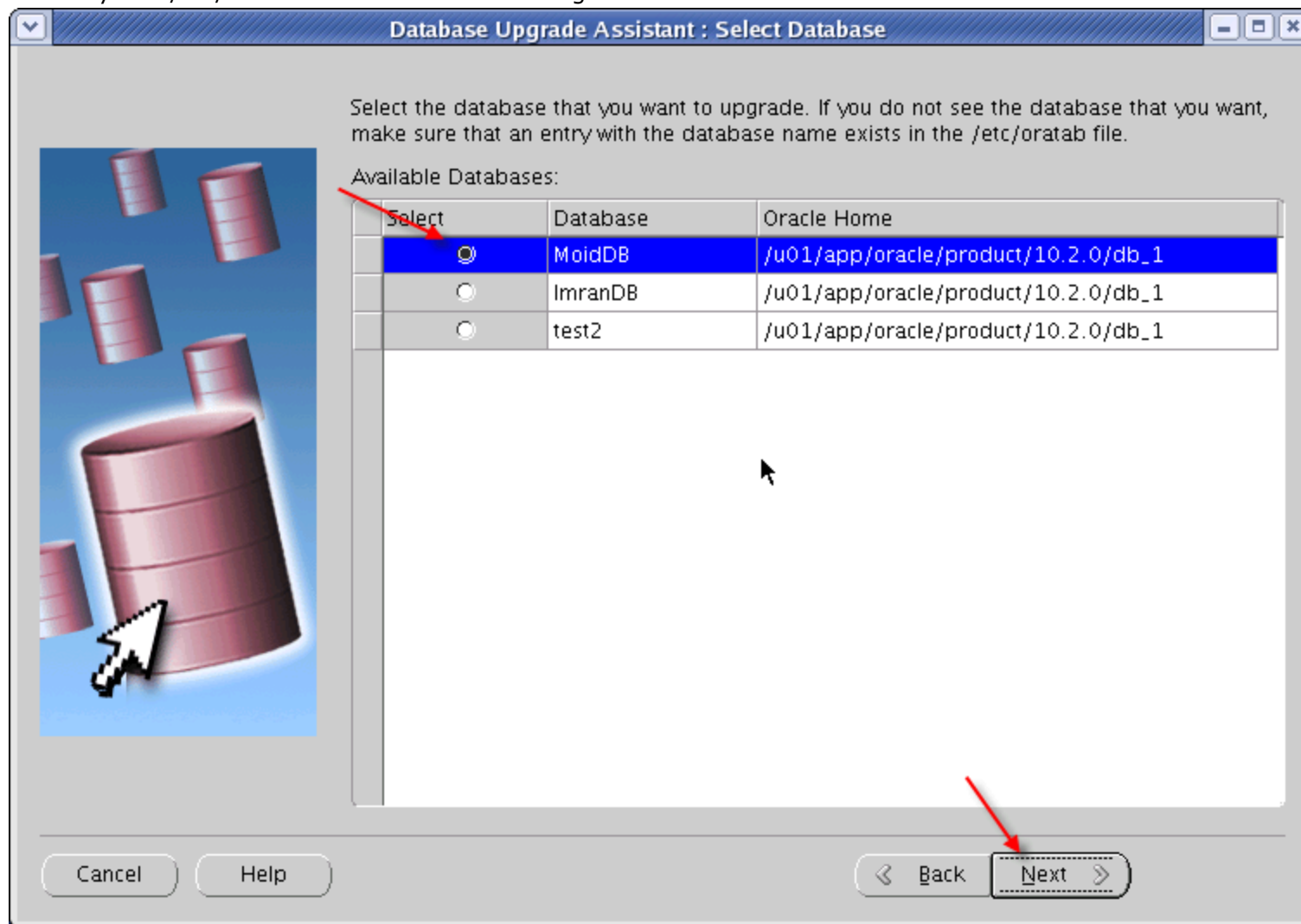
```
./dbua
```

Click "Next"

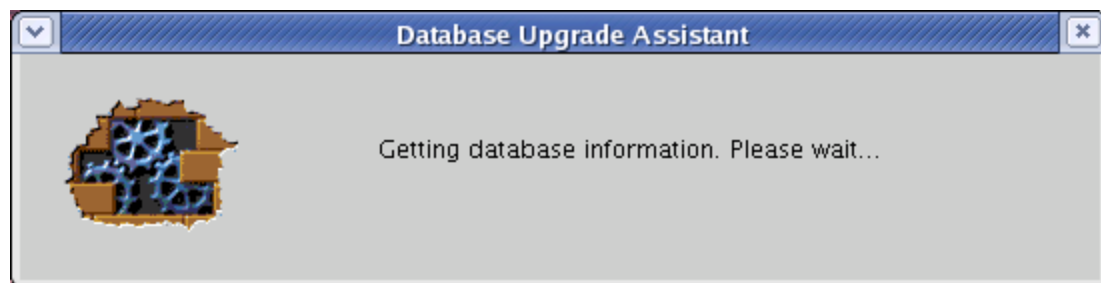


Select your database and click next.

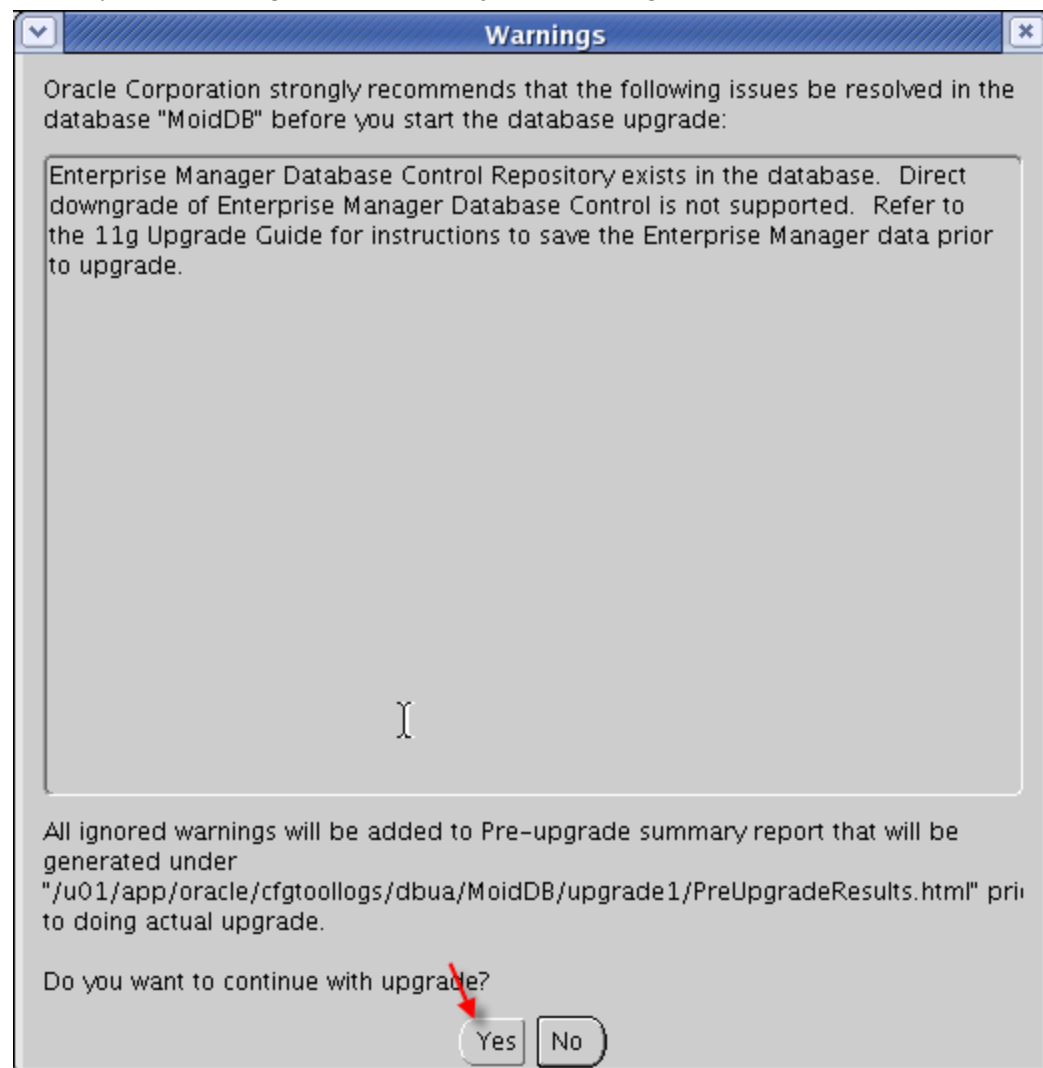
Note: If you don't see your database, it is most probably you created database manually and forgot to add the database entry in /etc/oratab. Add the entry and /etc/oratab and re-execute dbua again.



You will see the following screen until the database information is gathered by DBUA.




You may see a warning similar to this. I just chose to ignore it.





Since we already backed up our database, I clicked the first three recommendations and clicked "Next".

**Database Upgrade Assistant, Step 1 of 5 : Upgrade Options**



Upgrade process will invalidate objects in the database. Oracle recommends recompiling of invalid objects as a part of upgrade. Based on the number of CPUs Oracle has set the following default degree of parallelism. Parallel recompilation reduces the recompilation time.

☒ Recompile invalid objects at the end of upgrade

Degree of Parallelism:

The database is running in archive log mode. Disabling archiving during upgrade reduces the time and disk space required for the upgrade. If you choose to disable archiving, Oracle recommends that you perform an off-line backup immediately after the upgrade.

☒ Turn off Archiving for the duration of upgrade

Oracle recommends upgrading time zone version and `TIMESTAMP WITH TIME ZONE` data of the database. Oracle will handle semantic errors automatically. If errors occur during the timezone upgrade, you may need to restore the database from the backup.

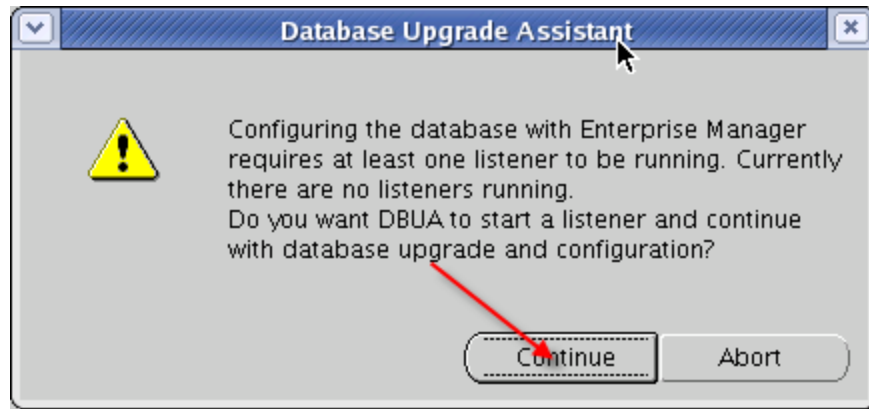
☒ Upgrade Timezone Version and `TIMESTAMP WITH TIME ZONE` Data

Oracle strongly recommends that you back up your database before starting the upgrade. If errors occur during the upgrade, you may need to restore the database from the backup.

☐ Backup database

Backup Directory:

If listener is not up, you may see a warning like this. Click "Continue" so that DBUA can start the listener on your behalf.



Since I do not want to move any datafiles as part of upgrade, I just clicked "Next" to proceed.

Database Upgrade Assistant, Step 2 of 5 : Move Database Files

Specify if you want to move the database files during the upgrade process.

☒ Do Not Move Database Files as Part of Upgrade

☐ Move Database Files during Upgrade

Select the storage mechanism you would like to use for the database.

☒ File System  
Use the File System for Database storage.

☐ Automatic Storage Management (ASM)  
Automatic Storage Management simplifies database storage administration and optimizes database layout for I/O performance. To use this option, ASM should exist with configured disk groups. If ASM does not exist, use Automatic Storage Management Configuration Assistant (ASMCA) from Oracle Grid Infrastructure home to create ASM and necessary disk groups then re-start the DBUA. If Oracle Grid Infrastructure home does not exist, it needs to be installed.

Cancel Help Back Next

Click "Next"

Database Upgrade Assistant, Step 3 of 4 : Recovery and Diagnostic Locations

Fast Recovery Area is an Oracle managed disk location used for storing backup and recovery related files. Oracle strongly recommends configuring a fast recovery area as it significantly enhances speed, reliability and manageability of the database recovery process.

☒ Specify Fast Recovery Area

Oracle recommends that the database files and recovery files be located on physically different disks for data protection and performance.

Fast Recovery Area:


Fast Recovery Area Size:

Diagnostic destination is the default location to store Oracle trace and diagnostic files. It replaces the initialization parameter settings for background dump destination, user dump destination and core dump destination from earlier releases.

Diagnostic Destination:

Click "Finish" to proceed.

Database Upgrade Assistant, Step 4 of 4 : Summary



DBUA will shutdown the database during the upgrade process. The Database will not be available for general use during the upgrade process.

### Database Upgrade Summary

	Database	Target Database
<b>Name:</b>	MoidDB	MoidDB
<b>Version:</b>	10.2.0.4.0	11.2.0.2.0
<b>Oracle Home:</b>	/u01/app/oracle/product/10.2.0/db_1	/u01/app/oracle/product/11.2.0/db_1

#### Warnings Ignored

Enterprise Manager Database Control Repository exists in the database. Direct downgrade of Enterprise Manager Database Control is not supported. Refer to the 11g Upgrade Guide for instructions to save the Enterprise Manager data prior to upgrade.

#### Database Components to be Upgraded

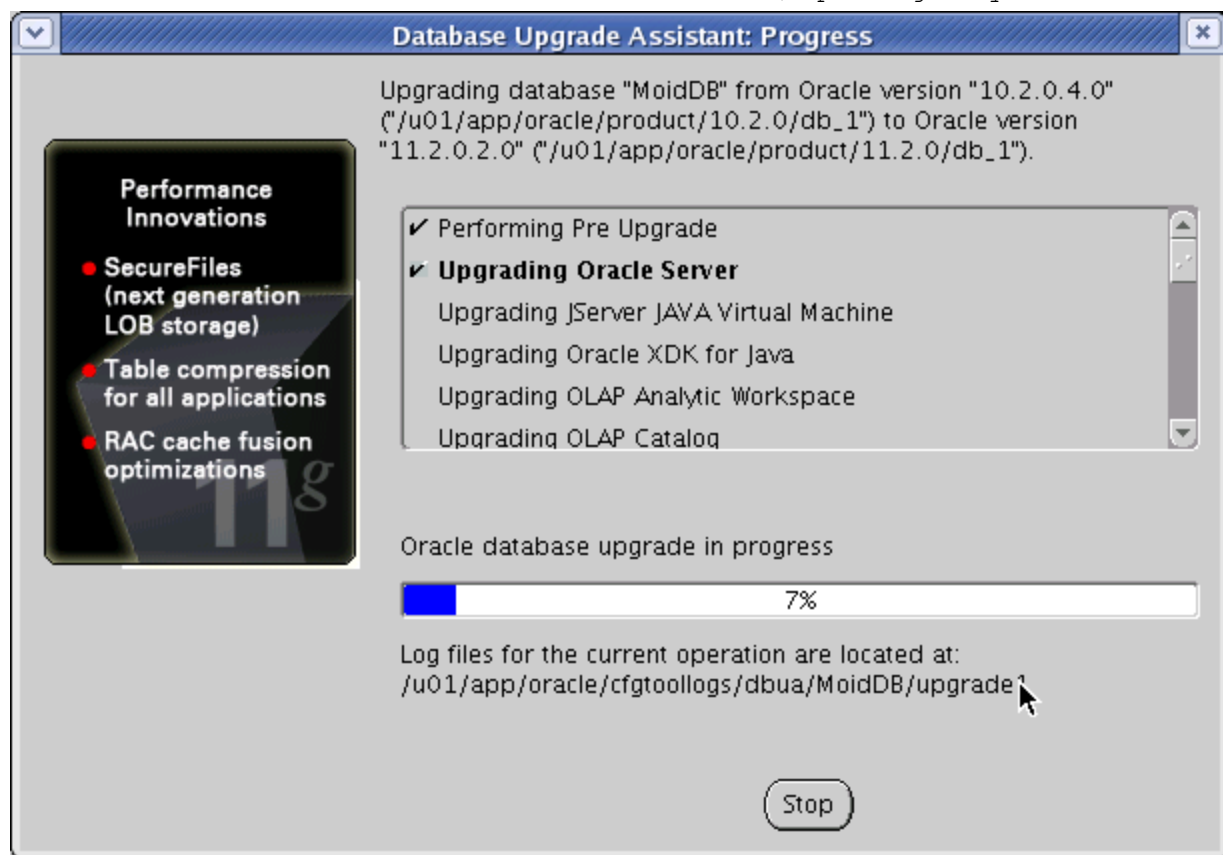
Database Components	Version	Status
Oracle Server	10.2.0.4	VALID
JServer JAVA Virtual Machine	10.2.0.4.0	VALID
Oracle XDK for Java	10.2.0.4.0	VALID

CancelHelp

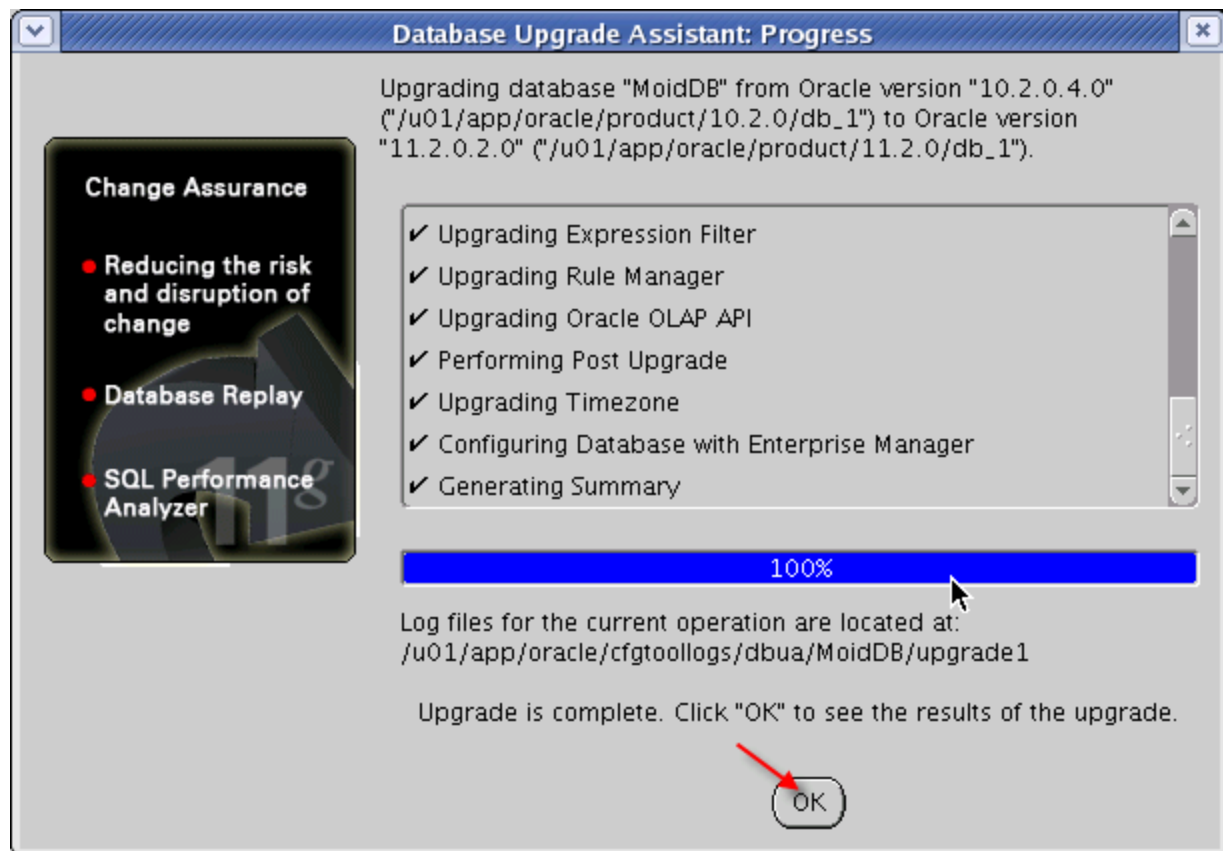
BackNext

Finish

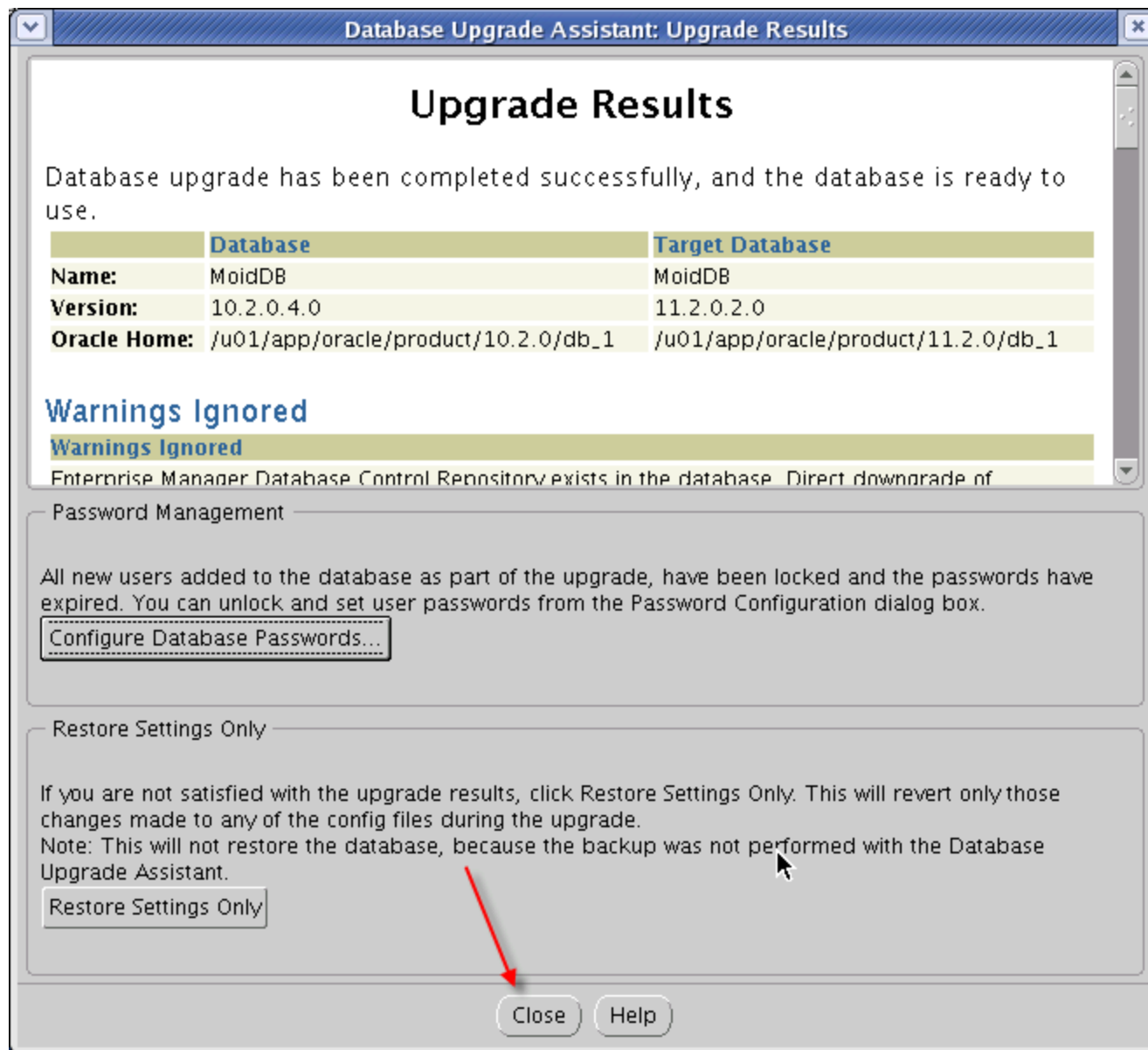
Installation will start and runs for few minutes (depending on your database size).



Once done, click "OK".



Click "Close"



## 20) Upgrade other databases which are still in 10g ORACLE\_HOME

Do the same thing for all the other databases still in 10g ORACLE\_HOME. Once all the database are upgraded to 11g, we need to move the tnsnames.ora and listener.ora file from 10g ORACLE\_HOME to 11g ORACLE\_HOME.



**21) Copy listener.ora tnsnames.ora sqlnet.ora to 11g ORACLE\_HOME**

```
cp /u01/app/oracle/product/10.2.0/db_1/network/admin/*.ora /u01/app/oracle/product/11.2.0/db_1/network/admin/.
```

**22) Verify the files are copied to 11g ORACLE\_HOME**

```
ls -ltrh /u01/app/oracle/product/11.2.0/db_1/network/admin
```

```
Linux-VM-240: (MoidDB)$ ls -ltrh /u01/app/oracle/product/11.2.0/db_1/network/admin
total 16K
drwxr-xr-x  2 oracle oinstall 4.0K May 20 01:35 samples
-rw-r--r--  1 oracle oinstall  172 May 20 09:56 shrept.lst
-rw-r--r--  1 oracle oinstall  953 May 20 09:57 tnsnames.ora
-rw-r--r--  1 oracle oinstall  508 May 20 09:57 listener.ora
```

23) Edit ORACLE\_HOME in listener.ora file to reflect 11g ORACLE\_HOME.

Edit database entries in listener.ora file to reflect 11g ORACLE\_HOME.

Before:

```
# listener.ora Network Configuration File: /u01/app/oracle/product/10.2.0/db_1/ne
# Generated by Oracle configuration tools.

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = PLSExtProc)
      (ORACLE_HOME = /u01/app/oracle/product/10.2.0/db_1)
      (PROGRAM = extproc)
    )
  )

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = Linux-VM-240) (PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROCO))
    )
  )

~
```

After:

```
# listener.ora Network Configuration File: /u01/app/oracle/product/10.2.0/db_1/ne
# Generated by Oracle configuration tools.

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = PLSExtProc)
      (ORACLE_HOME = /u01/app/oracle/product/11.2.0/db_1)
      (PROGRAM = extproc)
    )
  )

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = Linux-VM-240) (PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROCO))
    )
  )
```

**24) Start the listener.**

```
lsnrctl start listener.
```

**25) Verify listener is up.**

```
ps -ef |grep lsnr
```

```
lsnrctl status listener
```

In part-3 of this series, I will work on manual upgrade (instead of DBUA) to upgrade my 10g database to 11g.

--Moid Muhammad

11/10/2011