

# Secrets of Successful Database 11gR2 Upgrades in an E-Business Suite Environment

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# Who Am I?

Over 18 years experience with Oracle Database

Over 15 years experience with E-Business Suite

Chair, OAUG Database SIG

Co-Founder AppsPerf

Oracle ACE

# Agenda

Introduction

Why

Assumptions

Application Base Level

Daylight Savings

Preupgrade

Upgrade

Post Upgrade



# Why do the Upgrade

New Features

Stay on Premier Support

Postpone further upgrades



# Desupport Dates

Database Version	Premier Support	Extended Support	Sustaining Support
9.2	<b>Jul 2007</b>	<b>Jul 2010</b>	Indefinite (9.2.0.8)
10.1	<b>Jan 2009</b>	Jan 2012	Indefinite (10.1.0.5)
10.2	<b>Jul 2010</b>	Jul 2013 <i>10.2.0.4 April 2011</i>	Indefinite (10.2.0.5)
11.1 (11.1.0.7)	Aug 2012	Aug 2015	Indefinite
11.2	Jan 2015 (11.2.0.1 Aug 2011)	Jan 2018	Indefinite



# Why do the Upgrade

New Features

Stay on Premier Support

Postpone further upgrades

Desupport Dates

Get on the Latest Technology

Wrong Reason!



# Assumptions

Linux

Nothing Fancy



# Applications Base Level

11.5.10.2

ATG RUP 6

Developer 6i PL 18

Sun JRE

12.0

12.0.6 (12.0.4 works, but ends support Feb 2012)

12.1

12.1.3 (12.1.1 works, but ends support July 2012  
and 12.1.2 ends Feb 2012)



**11.5.10.2**  
Main Upgrade MOS 881505.1

Minimum Baseline MOS 883202.1

If you do not meet this level, support may not allow you to

- log SEV 1 SRs
- get new password protected patches
- receive new bug fixes
- get help on new patches that have issues



# 11.5.10.2

Upgrade to JRE 1.6.0\_17 from JInitiator  
MOS 290807.1



# Developer 6i PL 19

MOS 125767.1

Apply the PL 19 patch, 6194129

Apply the 6.0.8.28 versions of

9863561 - script

6125732

6857221

5232832 - script

8888184



# Developer 6i PL 19

Apply the 6.0.8.28 versions of

7329300

6747939

7552880 – `adrelink.sh force=y "fnd f60webmx"`

3830807

9935935 – Interop



# Java

11.5.10.2 should be on 1.6

Install JDK 1.6.0\_24 to JDK\_LOC

Copy \$FND\_TOP/resource/ALBANY\*.ttf  
JDK\_LOC/jdk/jre/lib/fonts

## Patches

5622511

5977502

# Java

```
txkrun.pl -script=SetJDKCfg  
-contextfile=$CONTEXT_FILE  
-runautoconfig=YES  
-appspass=APPS_PASSWORD -jdktop=JDK_LOC
```

```
adjavamig java=JDK_LOC
```

```
adadmin
```

```
regenerate all JAR files
```

MOS Note 401561.1

# R12

Master Document 1058763.1

Many R12 patches have the same number

- patches for 12.0 have **A** in the name
- patches for 12.1 have **B** in the name



# R12 Interoperability

## R12.0

8623536

9868229

## R12.1

9062910

8919489

9868229

10024524

10163753



# R12 Interoperability

Demand Signal Repository

Warehouse Builder

Special considerations, read the note



# Autoconfig

11.5.10.2

9535311

9835302

19182813

R12.0

9386653



# Autoconfig

R12.1

9738085

9852070

Apply to Database

\$AD\_TOP/admkappsutil.pl

unzip appsutil.zip in ORACLE\_HOME



# Daylight Savings

Version 14

MOS 458452.1 for 11.5.10.2

MOS 563019.1 for R12

MOS 840118.1 for the Database (only if  
upgrading source)





# Daylight Saving

11.5.10.2

Developer 6i

- 9005427
  - `adrelink.sh`
- 9814469

# Daylight Saving

R12

10.1.0.5 versions of patches to 10.1.2 Home

- 7695070
  - cd \$ORACLE\_HOME/forms/lib
  - make -f ins\_forms.mk install
- 9742718
  - Issues downloading
- 6400501
  - ins\_reports.mk
  - OEL 5, libXtst.so MOS 1087151.1

# Preupgrade

## Performance Baselines

Clone just prior to upgrade with all stats jobs off

## Dictionary Stats

## Invalid Objects



# 11.2.0.2

Must have support to download

Patch 10098816

Install Database

Install Examples

# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 1 of 11

## Configure Security Updates

Provide your email address to be informed of security issues, install the product and initiate configuration manager. [View details.](#)

**Configure Security Updates**

[Download Software Updates](#)

Apply Software Updates

Installation Option

Grid Installation Options

Install Type

Typical Installation

Prerequisite Checks

Summary

Install Product

Finish

Email:

Easier for you if you use your My Oracle Support email address/username.

☐ I wish to receive security updates via My Oracle Support.

My Oracle Support Password:

Help < Back Next > Install Cancel

# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 2 of 11

## Download Software Updates

Download software updates for this installation. Software updates include patch updates available after initial release that are important for completing a successful installation. They may consist of updates to the installer system requirement checks, patchset updates (PSUs), and other patches. Be aware that they may not include all patch updates to the software.

Select one of the following options:

☐ Use My Oracle Support credentials for download

My Oracle Support user name:

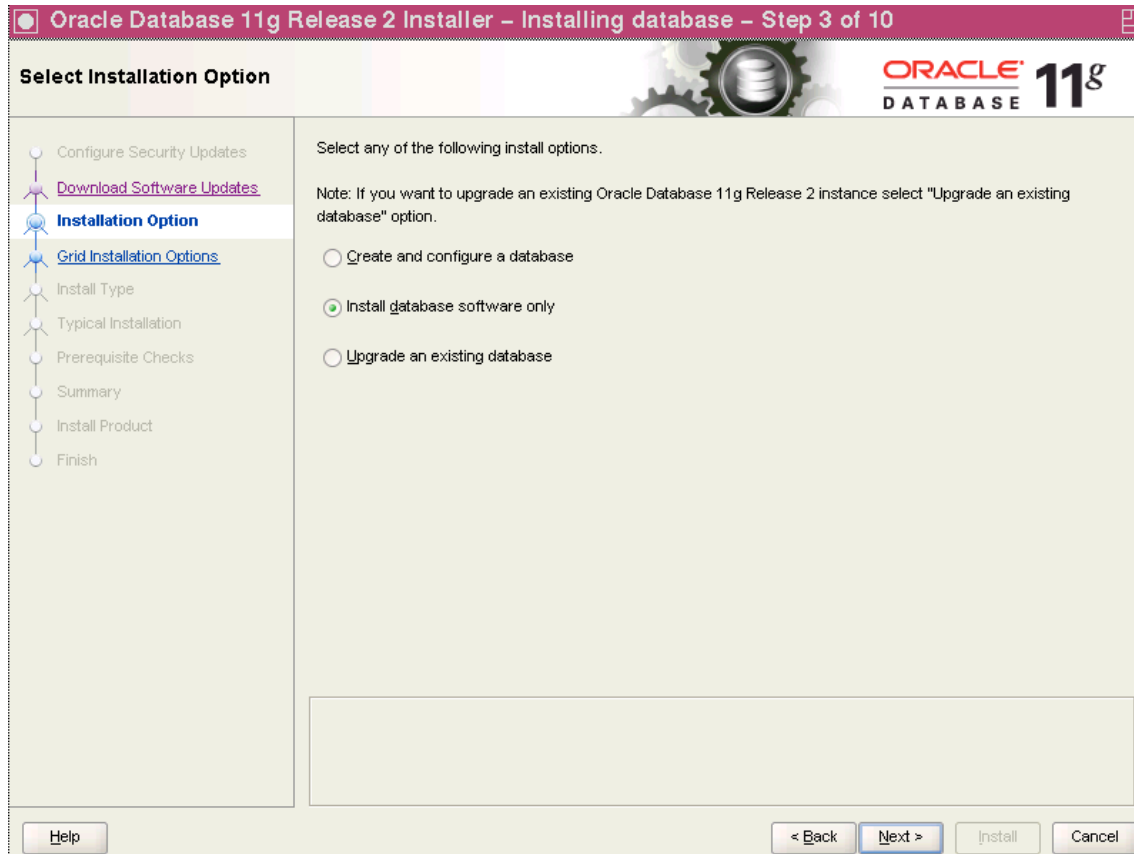
My Oracle Support password:

☐ Use pre-downloaded software updates

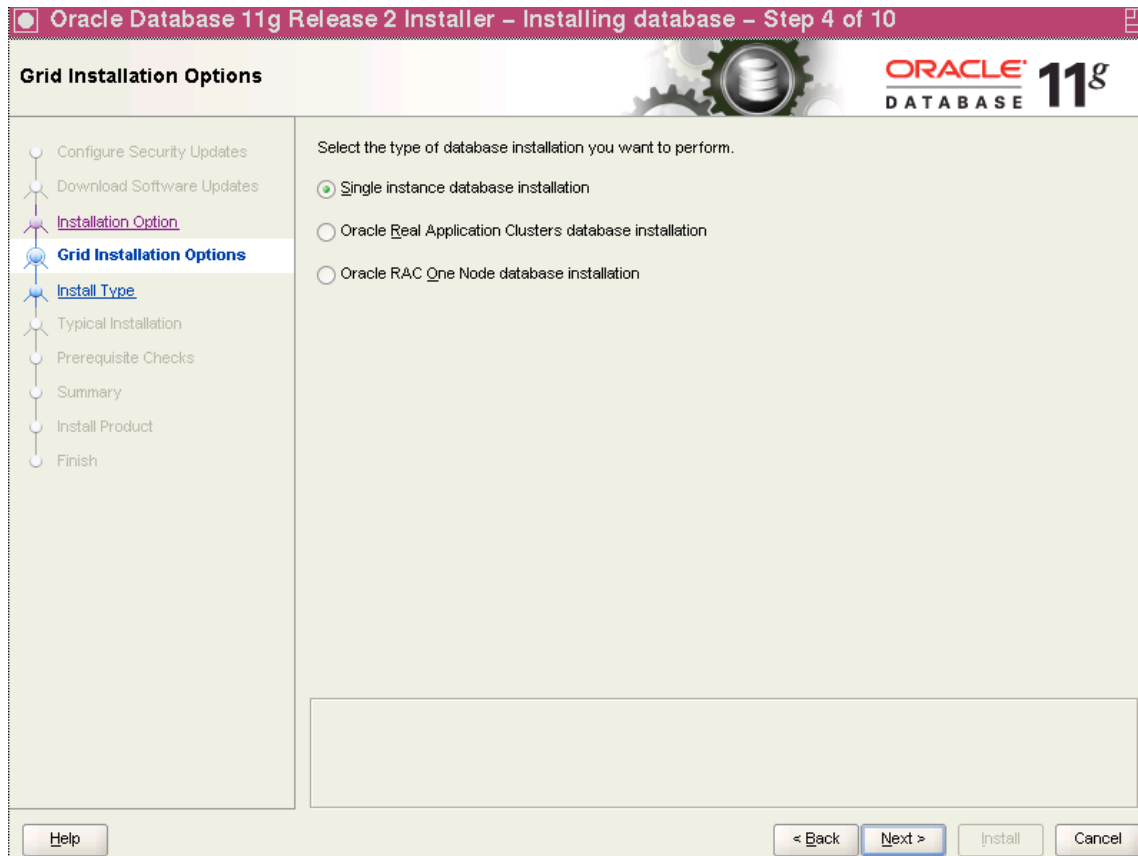
Location:

☒ Skip software updates

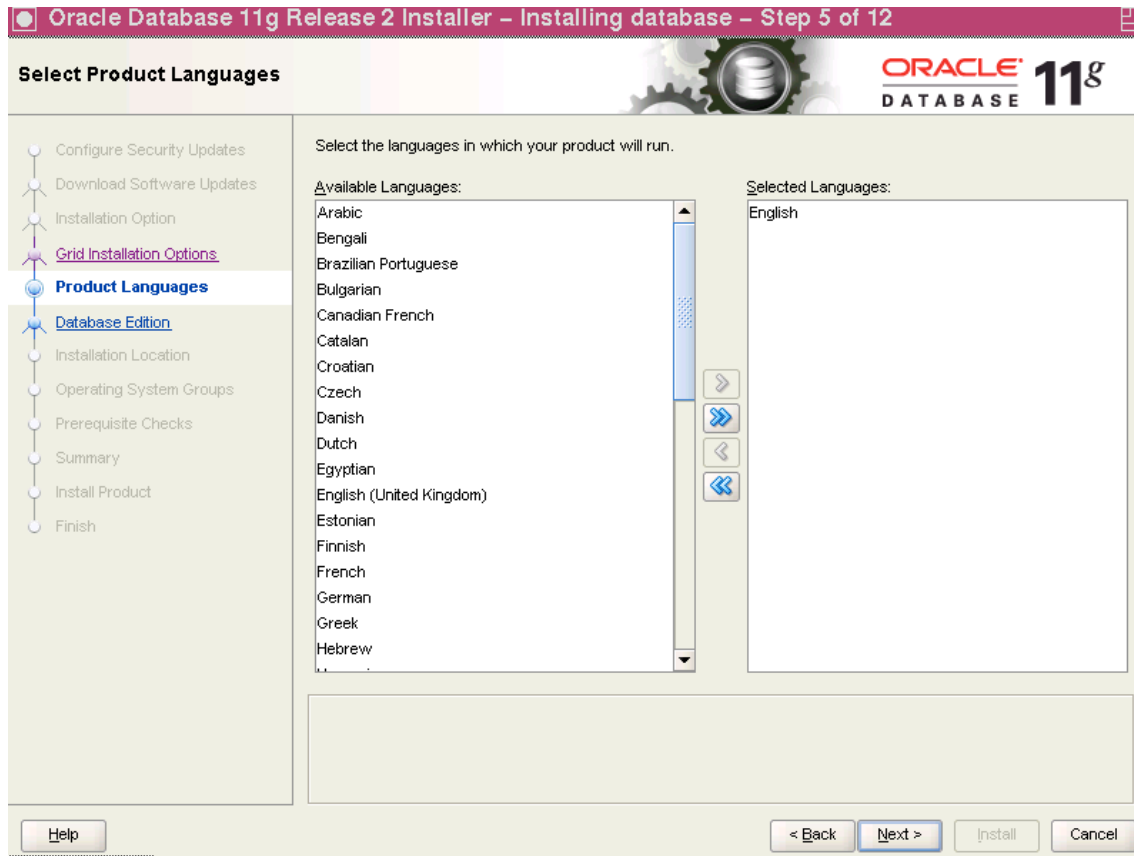
# 11.2.0.2



# 11.2.0.2



# 11.2.0.2



# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 6 of 12

### Select Database Edition

Which database edition do you want to install?

☒ Enterprise Edition (4.7GB)  
Oracle Database 11g Enterprise Edition is a self-managing database that has the scalability, performance, high availability, and security features required to run the most demanding, mission-critical applications.

☐ Standard Edition (4.6GB)  
Oracle Database 11g Standard Edition is a full-featured data management solution ideally suited to the needs of medium-sized businesses. It includes Oracle Real Application Clusters for enterprise-class availability and comes complete with its own clusterware and storage management capabilities.

☐ Standard Edition One (4.6GB)  
Oracle Database 11g Standard Edition One is a full-featured data management solution ideally suited to the needs of small and medium-sized businesses.

Select Options...

Help < Back Next > Install Cancel

# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 7 of 12

### Specify Installation Location

Configure Security Updates  
Download Software Updates  
Installation Option  
Grid Installation Options  
Product Languages  
Database Edition  
**Installation Location**  
Operating System Groups  
Prerequisite Checks  
Summary  
Install Product  
Finish

Specify a path to place all Oracle software and configuration-related files installed by this installation owner. This location is the Oracle base directory for the installation owner.

Oracle Base:  Browse...

Specify a location for storing Oracle database software files separate from database configuration files in the Oracle base directory. This software directory is the Oracle database home directory.

Software Location:  Browse...

Messages:

- [INS-32012] Unable to create directory: /u01/app/oracle.
- [INS-32012] Unable to create directory: /u01/app/oracle/db/tech\_st/11.2.0.2.

Help < Back Next > Install Cancel

# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 8 of 12

## Privileged Operating System Groups

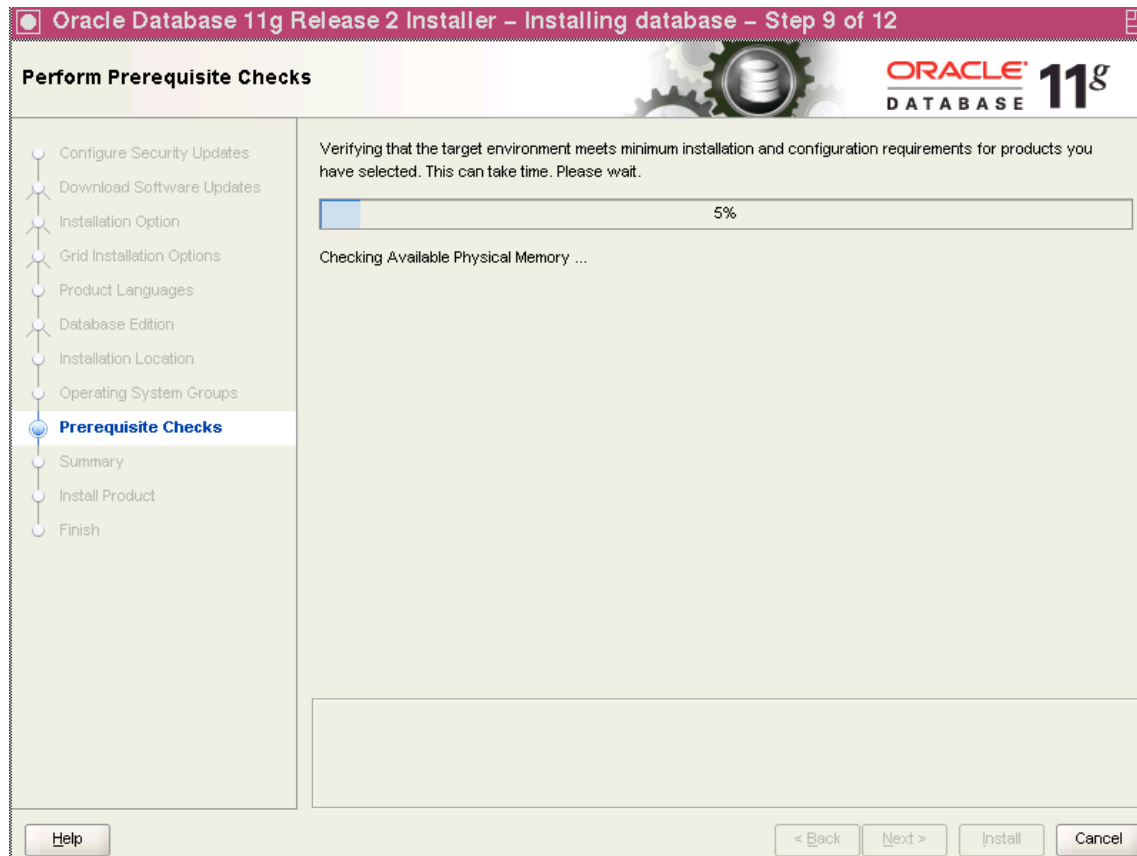
SYSDBA and SYSOPER privileges are required to create a database using operating system (OS) authentication. Membership in OSDBA grants the SYSDBA privilege, and membership in OSOPER grants the SYSOPER privilege, which is a subset of SYSDBA privileges. Select the name of the OSDBA group to grant the SYSDBA privilege. The user account you are using to run this install must be a member of this group.

Database Administrator (OSDBA) Group:

Database Operator (OSOPER) Group (Optional):

Help < Back Next > Install Cancel

# 11.2.0.2



# 11.2.0.2

Oracle Database 11g Release 2 Installer – Installing database – Step 9 of 12

## Perform Prerequisite Checks

Some of the minimum requirements for installation are not completed. Review and fix the issues listed in the following table, and recheck the system.

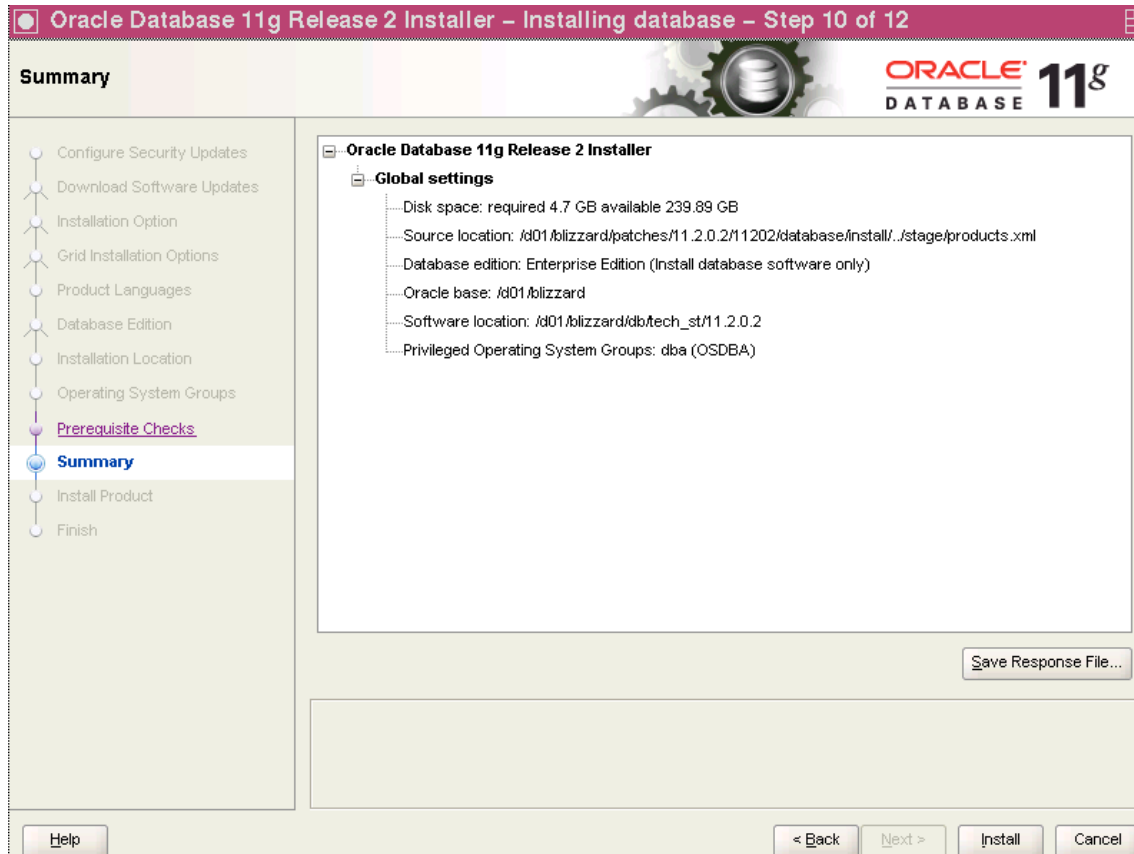
☐ Ignore All

Checks	Status	Fixable
Checks		
Hard Limit: maximum open file descriptors	Failed	No
OS Kernel Parameters		
OS Kernel Parameter: tcp_smallest_anon_port	Failed	Yes
OS Kernel Parameter: tcp_largest_anon_port	Failed	Yes
OS Kernel Parameter: udp_smallest_anon_port	Failed	Yes
OS Kernel Parameter: udp_largest_anon_port	Failed	Yes

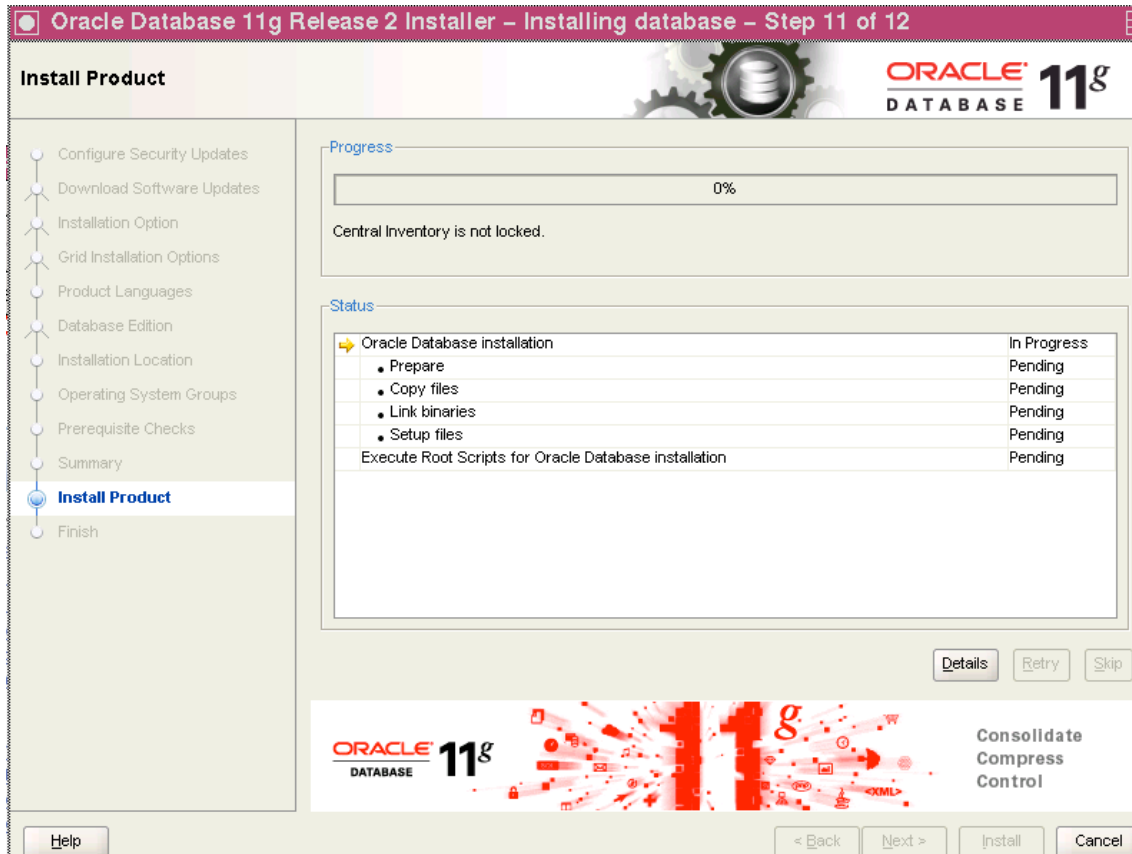
This is a prerequisite condition to test whether the OS kernel parameter "udp\_largest\_anon\_port" is properly set. [\(more details\)](#)

Expected Value : 65500  
Actual Value : 65535

# 11.2.0.2



# 11.2.0.2



# 11.2.0.2



# 11.2.0.2

Must have support to download

Patch 10098816

Install Database

Install Examples

# 11.2.0.2

Create nls/data/9idata

nls/data/old/cr9idata.pl

When you switch to the 11g home, ORA\_NLS10  
must point to the nls/data/9idata directory

Latest OPatch (6880880)

One Off Patches

Do not do the post install steps, but record them to  
apply after the d



upgrade

# 11.2.0.2

## 11.5.10.2

- 10149223
- 10229719

## R12

- 4247037
  - Run catmgdidcode post upgrade
- 10149223
- 10229719



# 11.2.0.2.1

## PSU

- MOS Notes 854428.1 and 1147107.1
- 10248523
  - MOS 1263370.1 for known issues



# Upgrade

utlu11i.sql

DROP SYS.ENABLED\$INDEXES

32 bit/64 bit conversion in the past

579523.1

DROP SYS.PLAN\_TABLE

565600.1

ORA-1408 on

system.repcat\$\_.column\_f2\_idx

737400.1



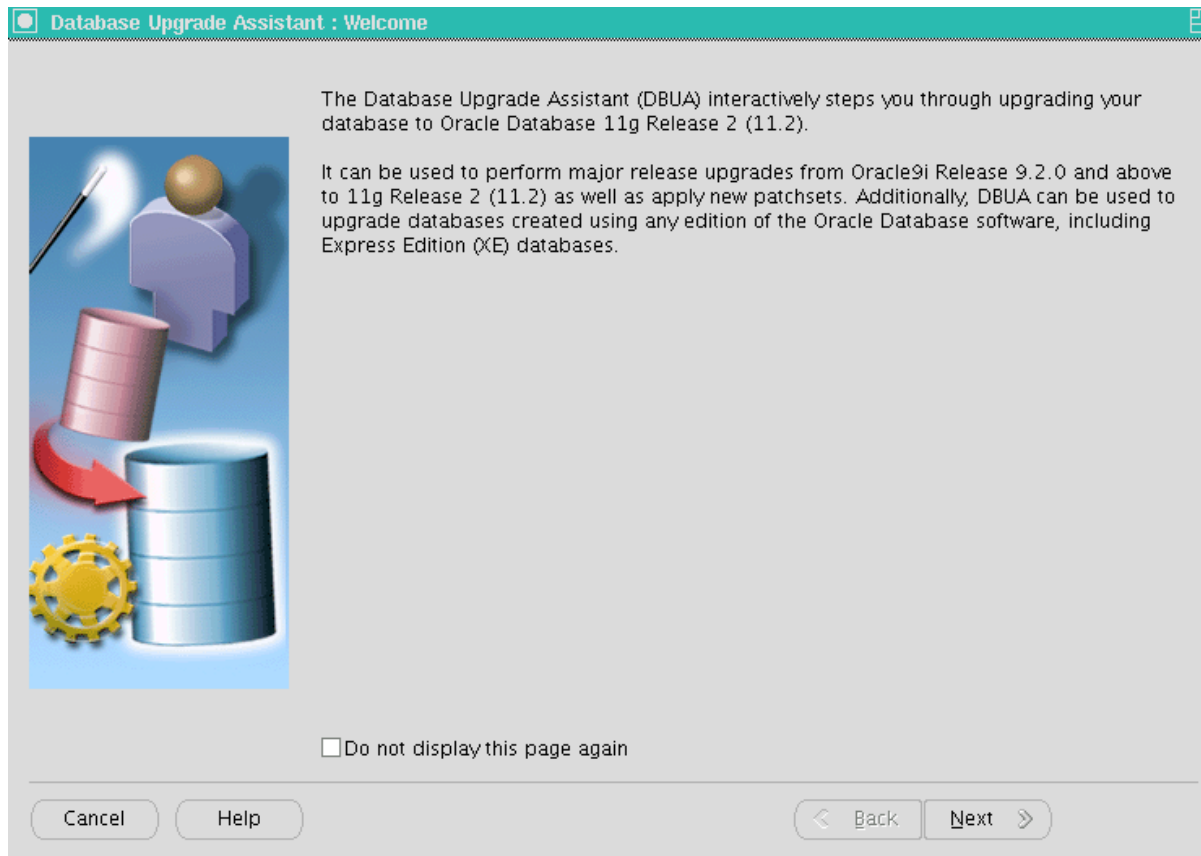
# Upgrade

Make sure native compilation is off  
dbua

Make sure to turn on timezone update




# dbua



# dbua

Database Upgrade Assistant, Step 1 of 7 : 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:

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.

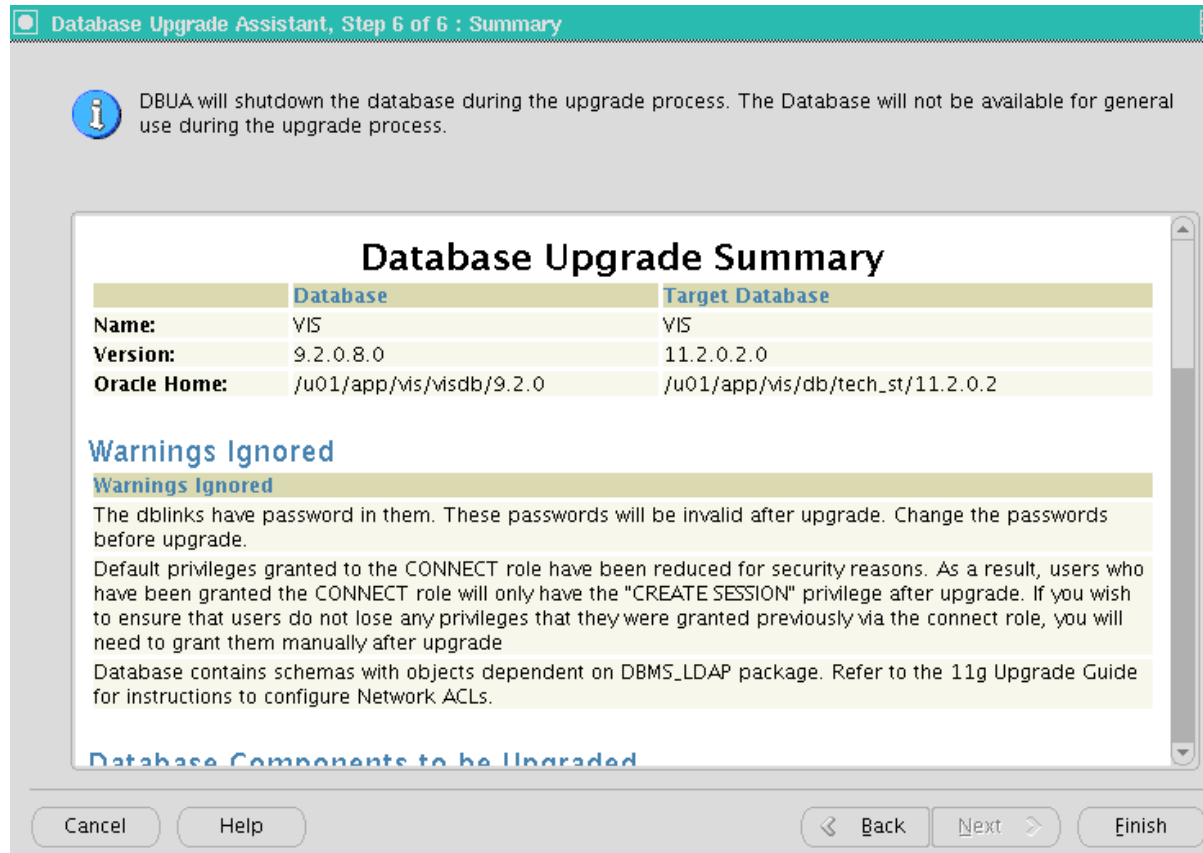
☒ Upgrade Timezone Version and TIMESTAMP WITH TIME ZONE Data

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.

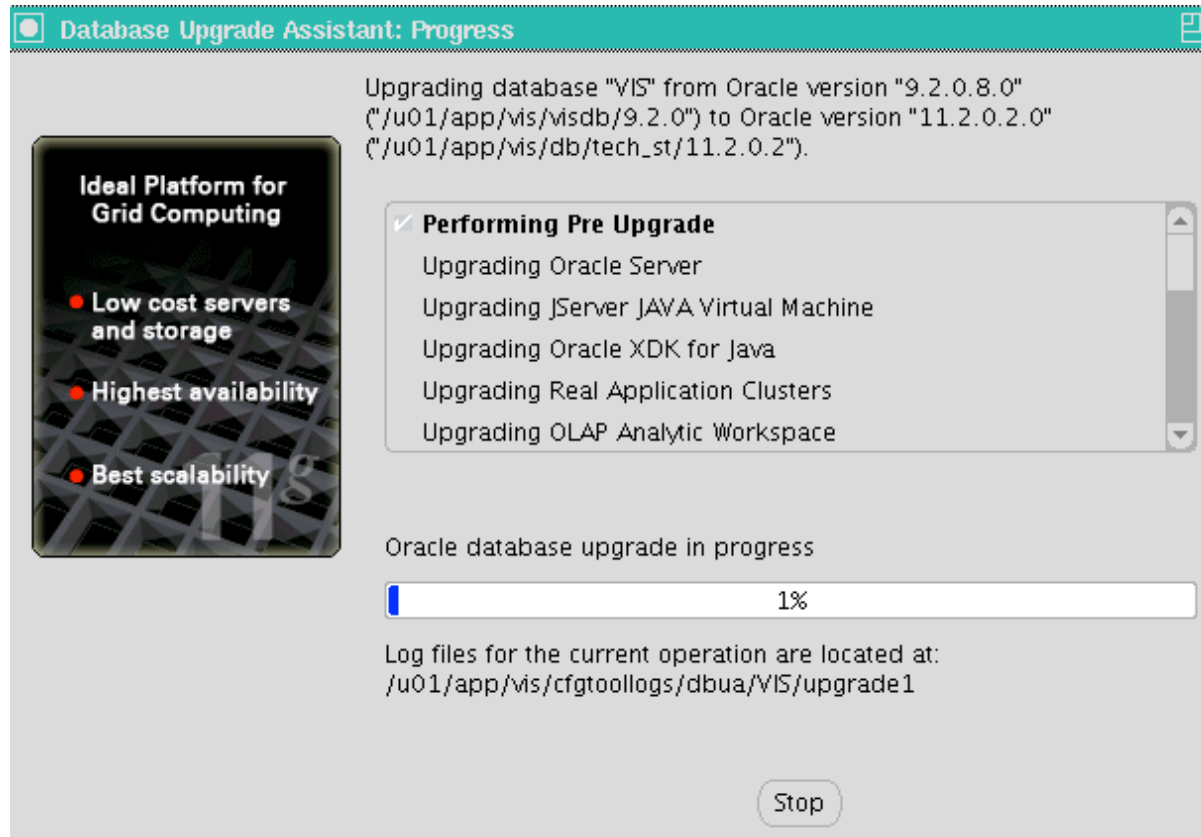
☐ Backup database

Backup Directory:

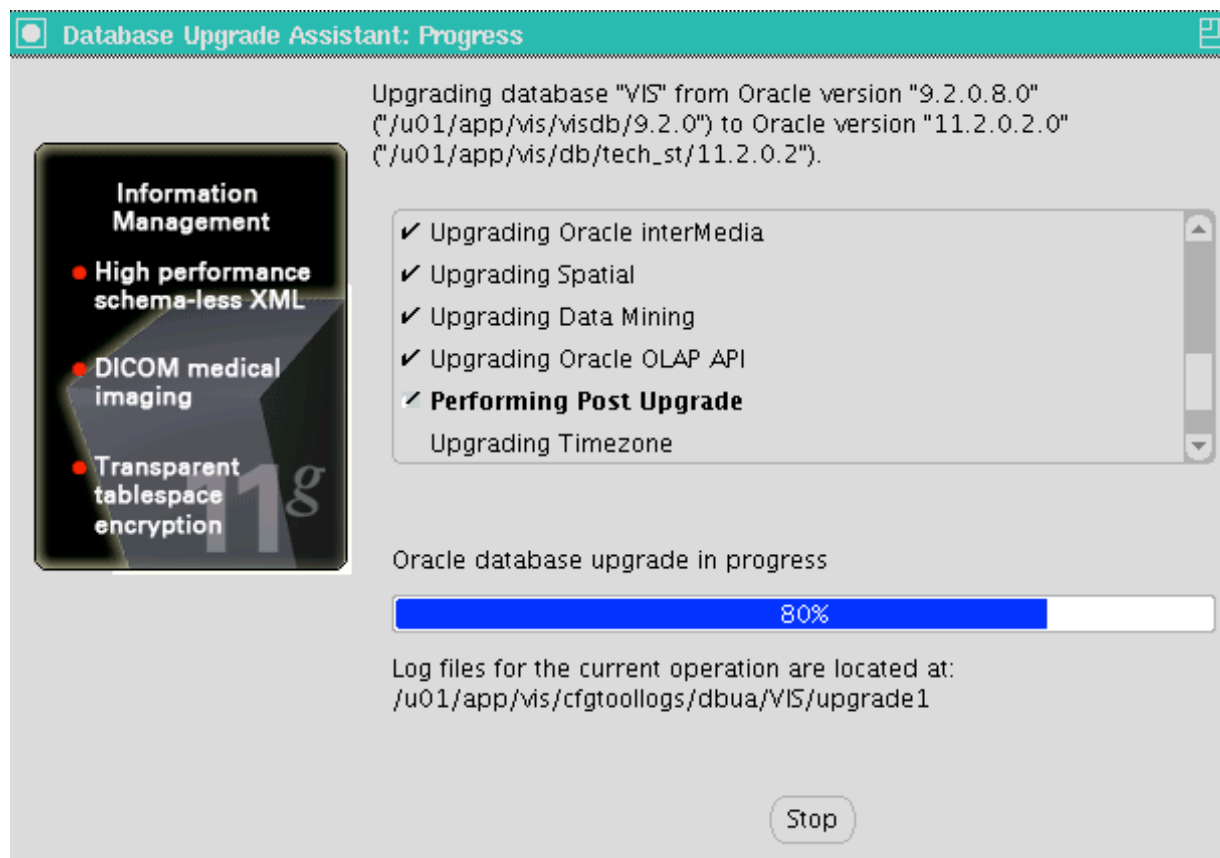
# dbua



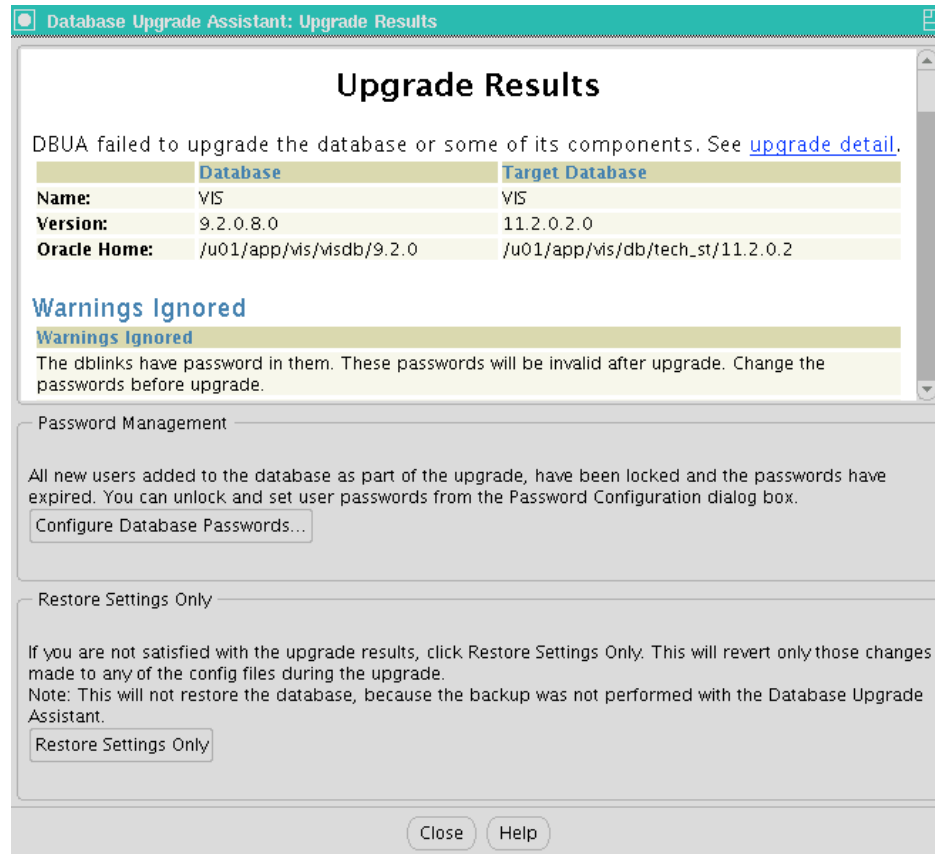
# dbua



# dbua



# dbua



# Old School

MOS 837570.1

Complete Checklist for Manual Upgrades to 11gR2

- Do Everything

# Upgrade

R12

catmgdidcode.sql

utlrp.sql

Init.ora

11.5.10.2 note 216205.1

R12 note 396009.1

# Upgrade

Upgrade the statistics table

```
DBMS_STATS.UPGRADE_STAT_TABLE('APPLSYS','FND  
_STATTAB')
```

Port the listener to the new home



adgrants.sql

```
$APPL_TOP/admin/adgrants.sql
```

```
sqlplus '/ as sysdba' @adgrants APPS
```

CTXSYS

```
$AD_TOP/patch/q15/sql/adctxprv.sql
```

```
sqlplus '/ as sysdba' @adctxprv.sql
```

```
SYSTEM_PASSWORD CTXSYS
```

```
as sysdba, exec ctxsys.ctx_adm.set_parameter  
( 'file_access_role', 'public');
```





# R12 Upgrade

## Validate Workflow Ruleset

- sqlplus apps  
@\$FND\_TOP/patch/115/sql/wfaqupfix  
APPLSYS APPS

Implement Autoconfig in 11.2.0.2 home

Run adstats

startup restrict/bounce

alter system enable/disable restricted session;



# Upgrade

Recreate any custom database links

11.5.10.2

Apply HRMS Patch 7721754

adadmin → Recreate Grants and Synonyms

Concurrent request -> Workflow Directory  
Services User/Role Validation



# Post Upgrade Support

rman

- BZIP2 can no longer be specified for compression
  - CONFIGURE COMPRESSION ALGORITHM 'BASIC'  
AS OF RELEASE 'DEFAULT' OPTIMIZE FOR LOAD  
TRUE;
- Check locations

Statistics

Comparison



o baseline

# Questions

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