

Agile

Version e6.1

ORACLE®

Oracle® Agile

Engineering Data Management

Installing Oracle 11g R2 on UNIX for Agile e6.1.2.2

Part No. E27818-02

April 2012

Copyright and Trademarks

Copyright © 1995, 2012, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third party content, products and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third party content, products or services.

CONTENTS

Copyright and Trademarks	iii
Preface	vi
Introduction.....	1
Where to Go for More Information	1
Requirements	3
IBM AIX	3
Hardware Requirements.....	3
Software Requirements.....	4
HP-UX	7
Hardware Requirements.....	7
Software Requirements.....	7
Kernel Parameters.....	8
Linux x86-64	10
Hardware Requirements.....	10
Software Requirements.....	11
Kernel Parameters.....	12
Setting the Shell Limits for the Oracle User.....	14
Using MEMORY_TARGET by 11g Installation on Linux	15
Solaris.....	16
Hardware Requirements.....	16
Software Requirements.....	16
Kernel Parameters.....	18
Preparing the System	21
Setting Up an Oracle OS User.....	21
Setting Up the Shell Environment Variables for Oracle 11g	22
Free Disk Space in the /tmp Directory	23
Copying the Database Start and Stop Scripts for the Oracle Server	23
Downloading the Oracle Installation Media.....	24

Installing the Oracle 11g Server	25
Installing the Oracle 11g Client	39
Creating the Database	49
Configuring the DB Services	65
Configuring tnsnames.ora and sqlnet.ora	65
Modifying the Oracle Database.....	71
Creating Directories for Oracle Data Pump Utility	71
Creating a Database User and Role	71
Using SQL to Create a Role	71
Using SQL to Create a User	72
Using the Enterprise Manager Database Control to Create a User	72
Importing the Database Dump	74
Compiling All Invalid Objects in the Schema PLM	75
Gathering the Statistics.....	75
Uninstalling the Oracle 11gR2	76

Preface

The Oracle documentation set includes Adobe® Acrobat™ PDF files. The [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technology/documentation/agile.html) (<http://www.oracle.com/technology/documentation/agile.html>) contains the latest versions of the Oracle Agile EDM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Oracle Documentation folder available on your network from which you can access the documentation (PDF) files.

Note To read the PDF files, you must use the free Adobe Acrobat Reader™ version 7.0 or later. This program can be downloaded from the [Adobe Web site](http://www.adobe.com) (<http://www.adobe.com>).

Note Before calling Agile Support about a problem with an Oracle Agile EDM manual, please have the full part number ready, which is located on the title page.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, 7 days a week. For TTY support, call 800.446.2398. Outside the United States, call +1.407.458.2479.

Readme

Any last-minute information about Oracle Agile EDM can be found in the Release Notes file on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technology/documentation/agile_eseries.html) (http://www.oracle.com/technology/documentation/agile_eseries.html)

Agile Training Aids

Go to the [Oracle University Web page](http://www.oracle.com/education/chooser/selectcountry_new.html) (http://www.oracle.com/education/chooser/selectcountry_new.html) for more information on Agile Training offerings.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Introduction

This guide describes how to install Oracle 11g and adapt the Oracle database for use with Agile e6.1.2.2 running on any of the following operating systems:

- IBM AIX
- HP-UX
- SUSE SLES Linux
- Sun Solaris

Where to Go for More Information

For additional information, refer to the Oracle online installation and administration documentation.

http://www.oracle.com/pls/db112/portal.portal_db?selected=11

Chapter 2

Requirements

The following sections describe the requirements to install Oracle 11gR2 for Agile e6.1.2.2 on Unix operating system.

- IBM AIX
- HP-UX
- SUSE SLES Linux
- Sun Solaris

Note In the examples given in this chapter, it is assumed that the Oracle user OS group is dba.

IBM AIX

Hardware Requirements

Requirements	Minimum Value
Physical memory (RAM)	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required memory for the Oracle Server installation. To determine the amount of available memory, enter the following command: <code>/usr/sbin/lssattr -E -l sys0 -a realmem</code>
Swap space	<ul style="list-style-type: none">▫ 1-2 GB RAM: 1.5 times the size of RAM▫ 2-16 GB RAM: Equal to the size of RAM▫ > 16 GB RAM: 16 GB To determine the amount of available swap spaces, enter the following command: <code>/usr/sbin/lssps -a</code>
Disk space in /tmp	At least one 1 GB To determine the amount of free disk space in the /tmp directory, use the df command: <code>df -k /tmp</code>
Disk space for software files	8 GB (8388608 KB). It could be smaller depending on the components chosen to be installed.

Disk space for database files	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required space for the database creation.
System architecture	64-bit If the processor is a 64-bit processor, the following command returns the value 64: <code>/usr/bin/getconf HARDWARE BITMODE</code>

Software Requirements

The system has to meet the following minimum software requirements:

- AIX 6.1 TL 02 SP1 ("6100-02-01), 64-bit kernel or later version

Note AIX 6.1 TL 06 SP3 ("6100-06-032") is required if the Agile e6 server is installed on the same machine as the Oracle Database Server.

To determine the distribution and version of AIX installed, enter the following command:

```
oslevel -s
```

The following file sets must be installed and committed:

- bos.adt.base
- bos.adt.lib
- bos.adt.libm
- bos.perf.libperfstat 6.1.2.1 or higher
- bos.perf.perfstat
- bos.perf.proctools
- xlc.aix61.rte:10.1.0.0 or higher
- gpfs.base 3.2.1.8 or higher

Note GPFS is required only if you want to use a cluster file system for Oracle clusterware or database files.

To determine whether the required file sets are installed and committed, enter a command as follows:

```
lsllpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.perfstat \  
bos.perf.libperfstat bos.perf.proctools xlc.aix61.rte gpfs.base
```

If you are using the minimum operating system TL level for AIX 6L listed above, then install all AIX 6L 6.1 Authorized Problem Analysis Reports (APARs) for AIX 6.1 TL 02 SP1, and the following AIX fixes:

- IZ41855
- IZ51456
- IZ52319

These 6.1 fixes are already present at the following TL levels:

- AIX 6.1 TL-02 SP-04 and later for IZ41855
- AIX 6.1 TL-03 SP-02 and later for IZ51456
- AIX 6.1 TL-04 for IZ52319

Note If the error message *"Error in Invoking target 'agent nmb nmo nmhs' of makefile ..."* occurs during the installation, refer to the support note 126407.1 on *My Oracle Support*.

To determine whether an APAR is installed, enter the command:

```
/usr/sbin/instfix -i -k "IZ41855 IZ51456 IZ52319"
```

The following compiler is required

- IBM XL C/C++ Enterprise Edition for AIX, V9.0 April 2008 PTF

To determine the supported kernel mode, enter a command similar to the following:

```
/usr/bin/getconf KERNEL_BITMODE
```

The output of this command is 64. If you do not see the expected output, then you cannot install the software on this system.

Asynchronous Input Output Processes

On AIX 6, the AIO device drivers are enabled by default. The number of AIO server processes has to be increased from the default value. The recommended value for aio_maxreqs is 64k (65536). To confirm the aio_maxreqs value use the command

```
ioo -o aio_maxreqs  
Output should be aio_maxreqs = 65536
```

Configuring the Shell Limits

On AIX systems you do not need to configure kernel parameters. However, Oracle

recommends that you set shell limits and system configuration parameters.

Shell Limit	Recommended Value
Soft FILE size	-1 (Unlimited)
Soft CPU time	-1 (Unlimited) (This is the default value)
Soft DATA segment	-1 (Unlimited)
Soft STACK size	-1 (Unlimited)
Soft Real Memory site	-1 (Unlimited)
Processes (per user)	-1 (Unlimited) This limit is available only in AIX 6.1 or later

To display the current value specified for these shell limits, and to change them if necessary, perform the following steps:

1. Enter the following command:

```
smit chuser
```
2. In the User NAME field, enter the user name of the Oracle software owner, for example oracle.
3. Scroll down the list and verify that the value shown for the soft limits listed in the previous table is -1.

If necessary, edit the existing value. To edit the values, you can use the smit utility. However, to set the value of Soft Real Memory size, you must edit the file /etc/security/limits. If you have permissions to run the smit utility, then you automatically have the permissions to edit the limits file.

4. When you have finished making changes, press F10 to exit.

Configuring the System Configuration Parameters

Verify that the kernel parameters shown below are set to values greater than or equal to the minimum value shown.

- maxuproc 16384
- ncargs 128

To verify the values of both parameters, enter the following command

```
smit chgsys
```

Verify the values shown for **Maximum number of PROCESSES** and **ARG/ENV list size in 4K byte blocks** and if necessary, edit the values.

HP-UX

Hardware Requirements

Requirements	Minimum Value
Physical memory (RAM)	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required memory for the Oracle Server installation. To determine the RAM size, enter the following command: Itanium <code>/usr/contrib/bin/machinfo grep -i Memory</code>
Swap space	<ul style="list-style-type: none">▫ 4-8 GB RAM: 2 times the size of RAM▫ 8-32 GB RAM: 1.5 times the size of RAM▫ > 32 GB RAM: 32 GB To determine the size of the configured swap space, enter the following command: <code>/usr/sbin/swapinfo -a</code>
Disk space in /tmp	At least one 1 GB To determine the amount of free disk space in the /tmp directory enter the following command: <code>bdf /tmp</code>
Disk space for software files	7 GB (7340032 KB). It could be smaller depending on the components chosen to be installed.
Disk space for database files	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required space for the database creation.

Software Requirements

The system must meet the following minimum software requirements:

- HP-UX must be HP-UX 11i v3 (Itanium 2)

To determine the distribution and version of HP-UX installed, enter the following command:

```
uname -a
```

Verify that the system meets the minimum patch bundle requirements using the following command:

```
# /usr/sbin/swlist -l bundle | grep QPK
```

The QPK (Quality Pack) bundles have version numbers of the form B.11.31.0809.326a (for the September 2008 release), B.11.31.0903.334a (for the March 2009 release), and so on.

Install required bundle, product, or file set if it is not installed.

Note There may be more recent versions of the patches listed installed on the system.

The following patches must be installed:

- PHCO_40381 11.31 Disk Owner Patch
- PHKL_38038 VM patch - hot patching/Core file creation directory
- PHKL_38938 11.31 SCSI cumulative I/O patch
- PHKL_39351 Scheduler patch : post wait hang
- PHSS_36354 11.31 assembler patch
- PHSS_37042 11.31 hppac (packed decimal)
- PHSS_37959 Libcl patch for alternate stack issue fix (QXCR1000818011)
- PHSS_39094 11.31 linker + fdp cumulative patch
- PHSS_39100 11.31 Math Library Cumulative Patch
- PHSS_39102 11.31 Integrity Unwind Library
- PHSS_38141 11.31 aC++ Runtime
- PHSS_39824 - 11.31 HP C/aC++ Compiler (A.06.23) patch

To determine whether a patch is installed, enter a command similar to the following:

```
/usr/sbin/swlist -l patch | grep PHCO_40381
```

Alternatively, to list all installed patches, enter the following command:

```
/usr/sbin/swlist -l patch | more
```

Kernel Parameters

Verify that the following kernel parameters are set either to the formula or to values greater than, or equal to the recommended value shown:

Parameter	Minimum Value
ksi_alloc_max	32768
executable_stack	0

Parameter	Minimum Value
maxfiles	1024
Maxfiles_lim	63488
max_thread_proc	1024
maxdsiz	1073741824 (1 GB)
maxdsiz_64bit	2147483648 (2 GB)
maxssiz	134217728 (128 MB)
maxssiz_64bit	1073741824 (1 GB)
maxuprc	3686
msgmap	4096
msgmni	4096
msgseg	32767
msgtql	4096
ncsize	35840
nfile	63488
nflocks	4096
ninode	34816
nkthread	7184
nproc	4096
semgni	4096
semmns	8192
semmnu	4092
semvmx	32767
shmmax	The size of physical memory or 1073741824 (0X40000000), whichever is greater. Note To avoid performance degradation, the value should be greater than or equal to the size of the available memory.
shmmni	4096
shmseg	512
vps_ceiling	64

To display the current value or formula specified for these kernel parameters, and to change them if necessary:

- Enter the following command to start the kcweb application:

```
/usr/sbin/kcweb -F
```

- Check the value or formula specified for each of these parameters and, if necessary, modify that value or formula.
- If necessary, refer to the kweb online help for more information about completing this step.

Note If the current value for any parameter is higher than the value listed in this table, then do not change the value of that parameter.

If you modify the value of a parameter that is not dynamic, then you must restart the system.

MSGMAP and NCALLOUT are obsolete in HP_UX 11.31. You need not specify values for these parameters.

Linux x86-64

Hardware Requirements

The system has to meet the following minimum hardware requirements:

Requirements	Minimum Value
Physical memory (RAM)	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required memory for the Oracle Server installation. To determine the RAM size, enter the following command: <code>grep MemTotal /proc/meminfo</code>
CPU	x86-64 Architecture To determine whether the system architecture can run the software, enter the following command: <code>uname -m</code>
Swap space	1-2 GB RAM: 1.5 times the size of RAM 2-16 GB RAM: Equal to the size of RAM > 16 GB RAM: 16 GB RAM To determine the size of the configured swap space, enter the following command: <code>grep SwapTotal /proc/meminfo</code>
Disk space in /tmp	At least 1 GB To determine the amount of disk space available in the /tmp directory, enter the following command: <code>df -k /tmp</code>
Disk space for software files	Between 4 GB and 5 GB of disk space for the Oracle software, depending on

	the installation type
Disk space for database files	For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required space for the database creation.

Software Requirements

The system has to meet the following minimum software requirements:

- SUSE Linux Enterprise Server 11 (Intel Pentium 4 or higher/compatible)
- Kernel version 2.6.27.19 or higher has to be installed

To determine whether the required kernel is installed, enter the following command:

```
uname -r
```

- The following packages (or later versions) have to be installed:

- binutils-2.19
- gcc-4.3
- gcc-32bit-4.3
- gcc-c++-4.3
- glibc-2.9
- glibc-32bit-2.9
- glibc-devel-2.9
- glibc-devel-32bit-2.9
- ksh-93t
- libaio-0.3.104
- libaio-32bit-0.3.104
- libaio-devel-0.3.104
- libaio-devel-32bit-0.3.104
- libstdc++33-3.3.3
- libstdc++33-32bit-3.3.3

- libstdc++43-4.3.3_20081022
- libstdc++43-32bit-4.3.3_20081022
- libstdc++43-devel-4.3.3_20081022
- libstdc++43-devel-32bit-4.3.3_20081022
- libgcc43-4.3.3_20081022
- libstdc++-devel-4.3
- make-3.81
- sysstat-8.1.5

To determine whether the required packages are installed, enter a command similar to the following:

```
rpm -q <package_name>
```

If a package is not installed, then install it from the Linux distribution media or download the required package version from the Linux vendor's Web site.

Kernel Parameters

Verify that the kernel parameters shown in the following table are set to values greater than or equal to the recommended value. The procedure following the table describes how to verify and set the values.

Parameter	Minimum Value	File
semmsl	250	/proc/sys/kernel/sem
semmns	32000	
semopm	100	
semmni	128	
shmall	2097152	/proc/sys/kernel/shmall
shmmax	Minimum of the following values: Half the size of physical memory (in bytes) 4GB - 1 byte	/proc/sys/kernel/shmmax
shmmni	4096	/proc/sys/kernel/shmmni
file-max	6815744	/proc/sys/fs/file-max

Parameter	Minimun Value	File
aio-max-nr	Maximum: 1048576 This value limits concurrent outstanding requests and should be set to avoid I/O subsystem failures.	/proc/sys/fs/aio-max-nr
ip_local_port_range	Minimum: 9000 Maximum: 65500	/proc/sys/net/ipv4/ip_local_port_range
rmem_default	262144	/proc/sys/net/core/rmem_default
rmem_max	4194304	/proc/sys/net/core/rmem_max
wmem_default	262144	/proc/sys/net/core/wmem_default
wmem_max	1048576	/proc/sys/net/core/wmem_max

Note If the current value for any parameter is higher than the value listed in this table, do not change the value of that parameter!

To view the current value specified for these kernel parameters, and to change them if necessary, follow these steps:

1. To view the current values of the kernel parameters, enter the commands similar to the following:

Note Make a note of the current values and identify any values that you must change.

Parameter	Command	Description
semmsl, semmns, semopm and semmni	# /sbin/sysctl -a grep sem	This command displays the value of the semaphore parameters in the order listed.
shmall, shmmax and shmmni	# /sbin/sysctl -a grep shm	This command displays details of the shared memory segment sizes.
file-max	# /sbin/sysctl -a grep file-max	This command displays the maximum number of file-handles.
ip_local_port_range	# /sbin/sysctl -a grep ip_local_port_range	This command displays a range of port numbers.
rmem_default	# /sbin/sysctl -a grep rmem_default	-
rmem_max	# /sbin/sysctl -a grep rmem_max	-
wmem_default	# /sbin/sysctl -a grep wmem_default	-
wmem_max	# /sbin/sysctl -a grep wmem_max	-
aio-max-nr	# /sbin/sysctl -a grep aio-max-nr	-

2. If the value of any kernel parameter is different from the minimum value, complete the following steps:

Use any text editor, create or edit the `/etc/sysctl.conf` file and add or edit lines similar to the following:

Note Include lines only for the kernel parameter values that you want to change. For the semaphore parameters (`kernel.sem`), you must specify all the four values. However, if any of the current values are larger than the minimum value, specify the larger value.

```
fs.aio-max-nr = 1048576
fs.file-max = 6815744
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048586
net.ipv4.tcp_wmem = 262144 262144 262144
net.ipv4.tcp_rmem = 4194304 4194304 4194304
```

Note The minimum value required for `shmmax` is 0.5 GB. However, Oracle recommends that you set the value of `shmmax` to 2.0 GB for optimum performance of the system.

Note By specifying the values in the `/etc/sysctl.conf` file, they persist when you reboot the system.

3. Enter the following command to change the current values of the kernel parameters:

```
/sbin/sysctl -p
```

4. Review the output from this command to verify that the values are correct. If the values are incorrect, edit the `/etc/sysctl.conf` file, then enter this command again.
5. Enter the following command to cause the system to read the `/etc/sysctl.conf` file when it reboots:

```
/sbin/chkconfig boot.sysctl on
```

Setting the Shell Limits for the Oracle User

To improve the performance of the software on Linux systems, you must increase the following shell limits for the **Oracle** user:

Shell Limit	Item in limits.conf	Hard Limit
Maximum number of open file descriptors	nofile	65536
Maximum number of processes available to a single user	nproc	16384
Maximum size of the stack segment of the process	stack	10240

To increase the shell limits:

1. Add the following lines to /etc/security/limits.conf file:

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

2. Add or edit the following line to the /etc/pam.d/login file:

```
session    required    pam_limits.so
```

Using MEMORY_TARGET by 11g Installation on Linux

Increase the size of /dev/shm mountpoint - to be bigger than the value of the initialization parameters MEMORY_TARGET and MEMORY_MAX_TARGET. Refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document for the value of the initialization parameters MEMORY_TARGET and MEMORY_MAX_TARGET

For instance, if the value of MEMORY_MAX_TARGET is 8GB, increase the size of /dev/shm mountpoint by the following command:

```
mount -t tmpfs shmfs -o size=8g /dev/shm
```

Also, to make this change persistent across system restarts, add an entry in /etc/fstab similar to the following:

```
shmfs /dev/shm tmpfs size=8g 0
```

When AMM (Automatic Memory Management) is enabled, by setting the initialization parameters MEMORY_TARGET and MEMORY_MAX_TARGET, it uses /dev/shm on Linux. If memory_max_target is set over /dev/shm size, you may get the following error message:

ORA-00845: MEMORY_TARGET not supported on this system!

A solution is to increase the */dev/shm mountpoint* size.

Solaris

Hardware Requirements

The system has to meet the following minimum hardware requirements:

Requirements	Minimum Value
Physical memory (RAM)	<p>For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required memory for the Oracle Server installation.</p> <p>To determine the physical RAM size, enter the following command:</p> <pre>/usr/sbin/prtconf grep "Memory size"</pre>
Swap space	<ul style="list-style-type: none">▫ 1-2 GB RAM: 1.5 times the size of RAM▫ 2-16 GB RAM: Equal to the size of RAM▫ > 16 GB RAM: 16 GB RAM <p>To determine the size of the configured swap space, enter the following command:</p> <pre>/usr/sbin/swap -l</pre>
Disk space in /tmp	<p>At least 1 GB</p> <p>To determine the amount of disk space available in the /tmp directory, enter the following command:</p> <pre>df -h /tmp</pre>
Disk space for software files	5 GB (5242880KB)
Disk space for database files	<p>For additional information refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document to determine the required space for the database creation.</p>
System architecture	<p>64-bit</p> <p>Processor UltraSPARC III or higher</p> <p>To determine whether the system architecture can run the software, enter the following command:</p> <pre>/bin/isainfo -kv</pre>

Software Requirements

The system has to meet the following minimum software requirements:

- Solaris 10 U6 (5.10-2008.10) or later version

The following packages have to be installed:

- SUNWarc

- SUNWbtool
- SUNWhea
- SUNWlibC
- SUNWlibm
- SUNWlibms
- SUNWsprot
- SUNWtoo
- SUNWi1of
- SUNWi1cs (ISO8859-1)
- SUNWi15cs (ISO8859-15)
- SUNWxwfmt
- SUNWcsl

To determine whether the required packages are installed, enter a command similar to the following:

```
pkginfo -i SUNWarc SUNWbtool SUNWhea SUNWlibC SUNWlibms SUNWsprot \
SUNWtoo SUNWi1of SUNWi1cs SUNWi15cs SUNWxwfmt
```

If a package is not installed, then install it. Refer to your operating system or software documentation for information about installing packages.

The following patches have to be installed:

- 120753-06: SunOS 5.10: Microtasking libraries (libmtsk) patch
- 139574-03: SunOS 5.10
- 119963-14: SunOS 5.10: Shared library patch for C++
- 124861-15: SunOS 5.10 Compiler Common patch for Sun C C++ (optional)

If Database Smart Flash Cache (An Enterprise Edition only feature) is enabled, then the following patches are required too:

- 125555-03

- 140796-01
- 140899-01
- 141016-01
- 139555-08
- 141414-10
- 141736-05

To determine whether an operating system patch is installed, enter a command similar to the following:

```
# /usr/sbin/patchadd -p | grep patch_number(without version number)
```

For example, to determine if any version of the 111713 patch is installed, use the following command:

```
# /usr/sbin/patchadd -p | grep 119963
```

Kernel Parameters

The kernel parameter and shell limit values shown in the following section are minimum values only. For production database systems, Oracle recommends that you tune these values to optimize the performance of the system. Refer to your operating system documentation for more information about tuning kernel parameters.

Verify that the kernel parameters shown in the following table are set to values greater than, or equal to the recommended value shown. The table also contains the resource controls that replace the `/etc/system` file for a specific kernel parameter.

Note In Solaris 10 you are not required to make changes to the `/etc/system` file to implement the System V TPC. Solaris 10 uses the resource control facility for its implementation. However, Oracle recommends that you set both resource control and the `/etc/system/` parameters

Parameter	Replaced by Resource Control	Minimum Value
noexec_user_stack	NA	1
semsys:seminfo_semmni	project.max-sem-ids	100
semsys:seminfo_semmsl	process.max-sem-nsems	256
shmsys:shminfo_shmmax	project.max-shm-memory	4294967295
shmsys:shminfo_shmmni	project.max-shm-ids	100

Use the following procedure to view the current value specified for resource controls, and to change them if necessary:

- To view the current values of the resource control, enter the following commands:

```
$ id -p // to verify the project id
uid=100(oracle) gid=100(dba) projid=1 (group.dba)
$ prctl -n project.max-shm-memory -i project group.dba
$ prctl -n project.max-sem-ids -i project group.dba
```

- If you must change any of the current values, perform the following steps:

- To modify the value of max-shm-memory to 6 GB:

```
prctl -n project.max-shm-memory -v 6gb -r -i project group.dba
```

- To modify the value of max-sem-ids to 256:

```
prctl -n project.max-sem-ids -v 100 -r -i project group.dba
```


Chapter 3

Preparing the System

Setting Up an Oracle OS User

Depending on if this is the first time Oracle software is being installed on this system and on the products that you are installing, you may have to create several operating system groups and users. For complete information on how to set up an Oracle OS User, refer to the Oracle Database Software documentation.

To create an Oracle account:

1. Create the dba group for the machine on which Oracle is being installed:

```
groupadd - g 502 dba
```
2. Create an Oracle user "oracle" with the home directory "/opt/oracle" (the value for ORACLE_BASE too - the directory must be created first) login shell "/bin/csh" and member of the group "dba":

```
useradd - u 502 -g dba -d /opt/oracle -s /bin/csh oracle
```

3. Log into Oracle and create the subdirectories /opt/oracle/bin, /opt/oracle/product, and /opt/oracle/product/11.2

If ORACLE_BASE is not set to /opt/oracle, the above mentioned subdirectories have to be created in the designated directory.

4. Create the directory, links, and mount points for distribution of the data files depending on the number of disks prepared for the Oracle installation.

For instance, if you have prepared 3 disks:

- .../data1
- .../data2
- .../data3

The names data1, data2 and data3 are just examples. The directory names are up to you. Subdirectories will be created later in these directories by the database creation (see Chapter 4).

Setting Up the Shell Environment Variables for Oracle 11g

To set up the shell environment variables, do the following:

1. Download and uncompress the Oracle Agile Engineering Data Management Application (Release e6.1.2.2) from the Oracle Software Delivery Cloud web site (under Oracle Agile Applications > Oracle Agile Engineering Data Management (Release e6.1.2.2) Media Pack).
2. Copy the script `csH_ORA11.2` from the folder `addon/db/unix/scripts` to `/opt/oracle/bin`

If `ORACLE_BASE` is not set to `/opt/oracle`, open the script with an editor and change the value for `ORACLE_BASE`. Then source the script to set the environmental variables.

```
chmod 754 csH_ORA11.2
source $HOME/csH_ORA11.2
```

3. Set the file creation permissions with the “umask” command:

```
login:
umask 022
```

4. Verify the environment.
5. Log off and log in as the Oracle user to ensure all environment settings are active.
6. Type `env | sort` at the Unix prompt to view all environment variables.

Software Item	Requirements
DISPLAY	Set it to the machine name and monitor the station from which you are connecting to the server machine (setenv DISPLAY hostname: 0.0).
LD_LIBRARY_PATH SHLIB_PATH (HP-UX) LIBPATH (AIX)	Required for Oracle products using shared libraries. Must include: <code>\$ORACLE_HOME/lib</code> .
ORACLE_BASE	Not required, but recommended as part of an OFA-compliant installation.
ORACLE_HOME	Must be set to the directory where the Oracle software will be installed.
ORACLE_SID	Specifies the instance name, or SID of the Oracle Server. Must be unique for Oracle instances running on the same machine. Oracle Corporation recommends using four characters or less.
ORACLE_TERM	Required by all character mode and Motif mode Oracle products. 386 386x 386u 386s dgd2 dgd4 hftc hft hpterm 3151 ncd220 sun sun5 vt100 vt220 wy50 wy150 xsun xsun5.

Software Item	Requirements
ORA_NLS10	Required when creating a database with characters set other than US7ASCII. Set to \$ORACLE_HOME/nls/data
PATH	The search path must include: \$ORACLE_HOME/bin, /bin, /usr/bin, and /usr/local/bin.
TMPDIR	A directory with free space where the Oracle account has write permission. The default location on Linux is /usr/tmp.

Free Disk Space in the /tmp Directory

The Oracle Installer needs some temporary disk space during the installation in /tmp. Check the required space in tmp directory under Hardware Requirements for the relevant OS.

To determine the amount of free disk space available in the /tmp directory, enter the following command:

```
df /tmp
```

If the space available in the /tmp directory is less than required, complete one of the following steps:

1. Delete unnecessary files from the /tmp directory to achieve the required disk space.
2. Set the TEMP and TMPDIR environment variables when setting the Oracle user's environment (described later).
3. Extend the file system that contains the /tmp directory. If necessary, contact your system administrator for information about extending file systems.

If you have determined that the /tmp directory had insufficient free disk space when checking the hardware requirements, enter the following commands to set the TEMP and TMPDIR environment variables. Specify a directory on a file system with sufficient free disk space.

- Bourne, Bash, or Korn shell:

```
TEMP=/directory  
TMPDIR=/directory  
export TEMP TMPDIR
```

- C shell:

```
setenv TEMP /directory  
setenv TMPDIR /directory
```

Copying the Database Start and Stop Scripts for the Oracle

Server

Copy the start and stop scripts from folder `addon/db/unix/scripts` to the directory `/opt/oracle/bin`.

- `start_plm61`
- `stop_plm61`
- `stop_plm61_immediate`
- `stop_plm61_transactional`

Downloading the Oracle Installation Media

Download and uncompress the Oracle Database 11g Release 2 (11.2.0.3) for the relevant platform from Oracle Support (<http://support.oracle.com>) under the section Patches & Updates. Search the patch number 10404530.

Note Although it is downloadable from the Patches & Updates section, the software is for full installation.

A 32-bit Oracle client must be installed on the machine where Agile e6.1.2.2 is installed. If Agile e6.1.2.2 and the database are installed on the same machine, the 32-bit Oracle client must be installed on the same machine too.

Download and uncompress the Oracle Client 11g Release 2 (11.2.0.3) (32-bit) for the relevant platform from Oracle Support (<http://support.oracle.com>) under the section Patches & Updates. Search the patch number 10404530.

Chapter 4

Installing the Oracle 11g Server

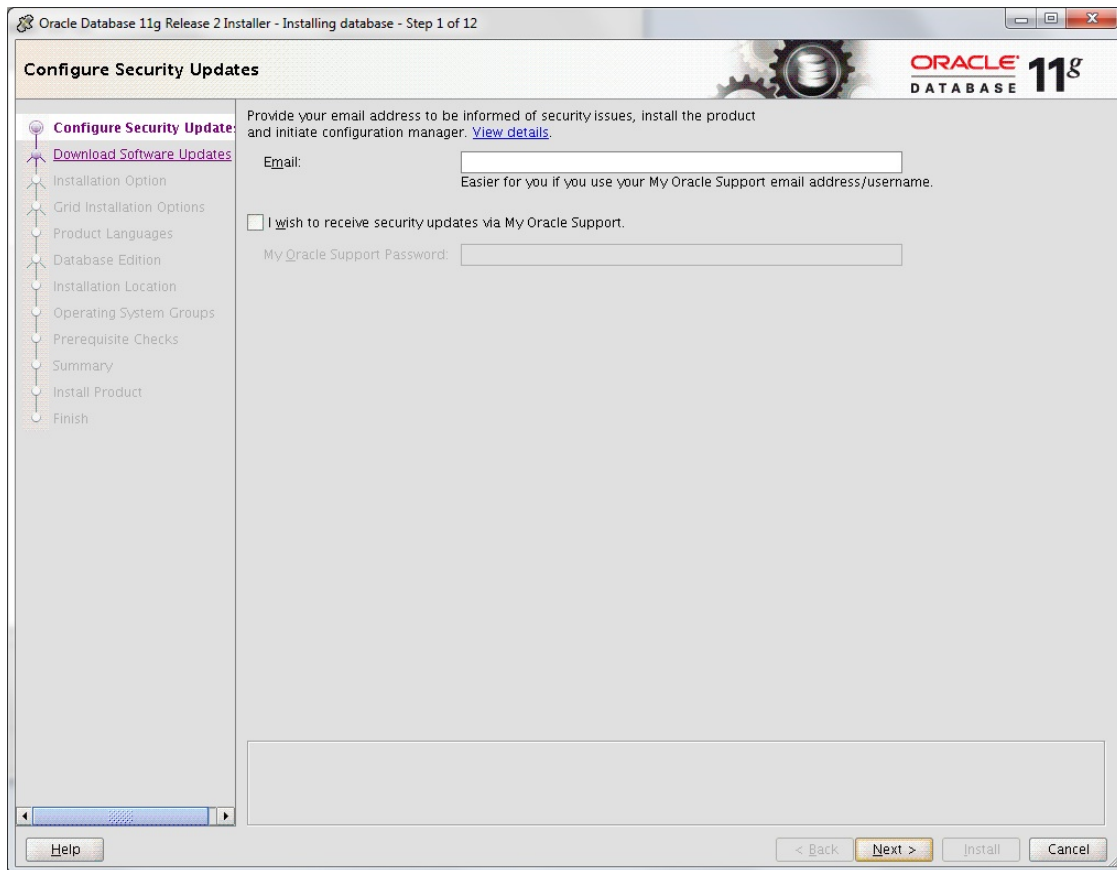
This chapter describes the steps required to install the Oracle Server 11g Release 2 (11.2.0.3).

To install the Oracle 11g Server:

1. Log in as oracle user.
2. Start the Oracle Universal Installer with the following command:

```
./runInstaller
```

The *Configure Security Updates* window opens.



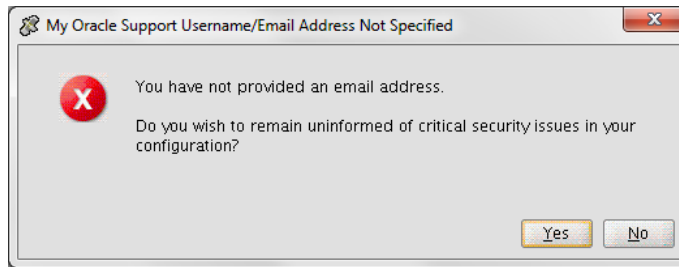
You can opt for notifications about the security issues and security updates from My Oracle Support.

1. To receive notifications about the security issues via e-mail, enter your e-mail address in the Email text field.
2. To receive the security updates, enter the e-mail address registered with My Oracle Support, then select the I wish to receive security updates... option and enter your My Oracle Support password.

If you choose not to receive security updates, do not check the I wish to receive security updates via My Oracle Support check box.

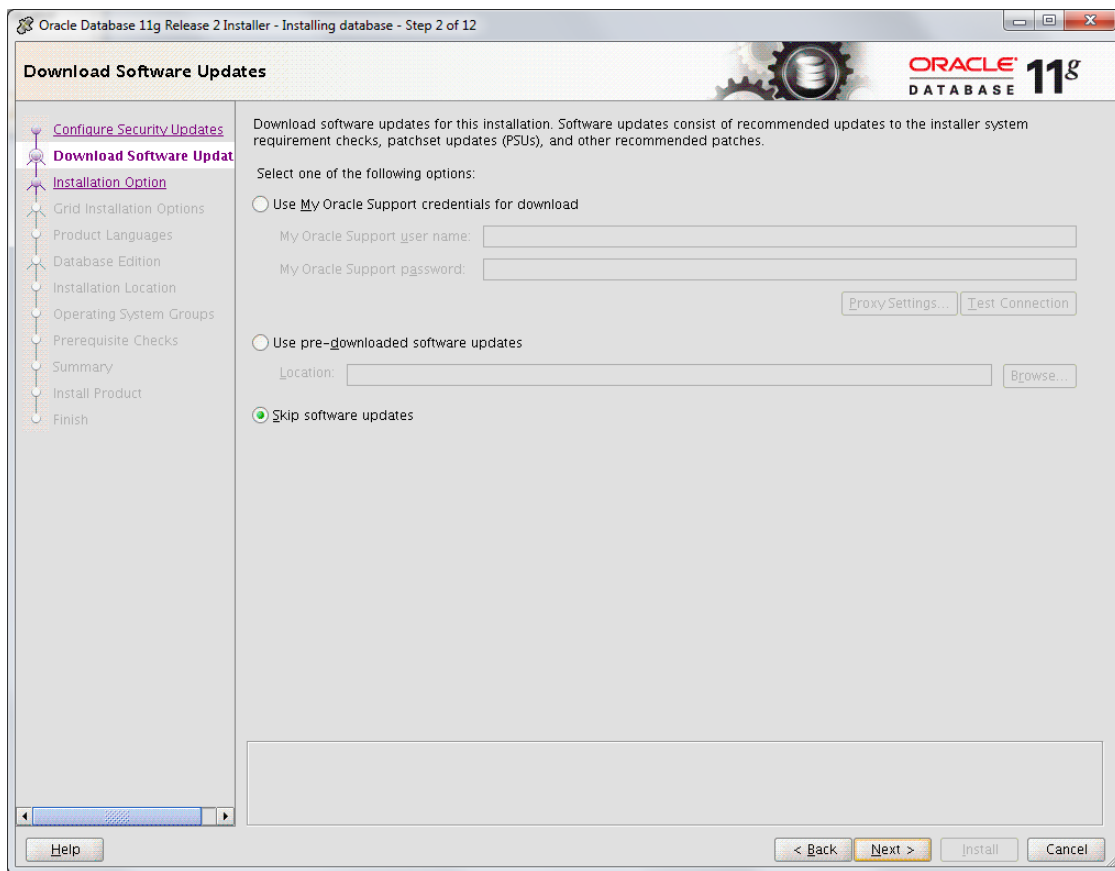
By default, the I wish to receive security updates... option is unchecked, i.e., not selected. If according to the company policy such updates are required, then this option should be selected.

The *My Oracle Support Username/Email Address Not Specified* warning appears.



3. Click Yes to continue.

The *Download Software Updates* window appears.

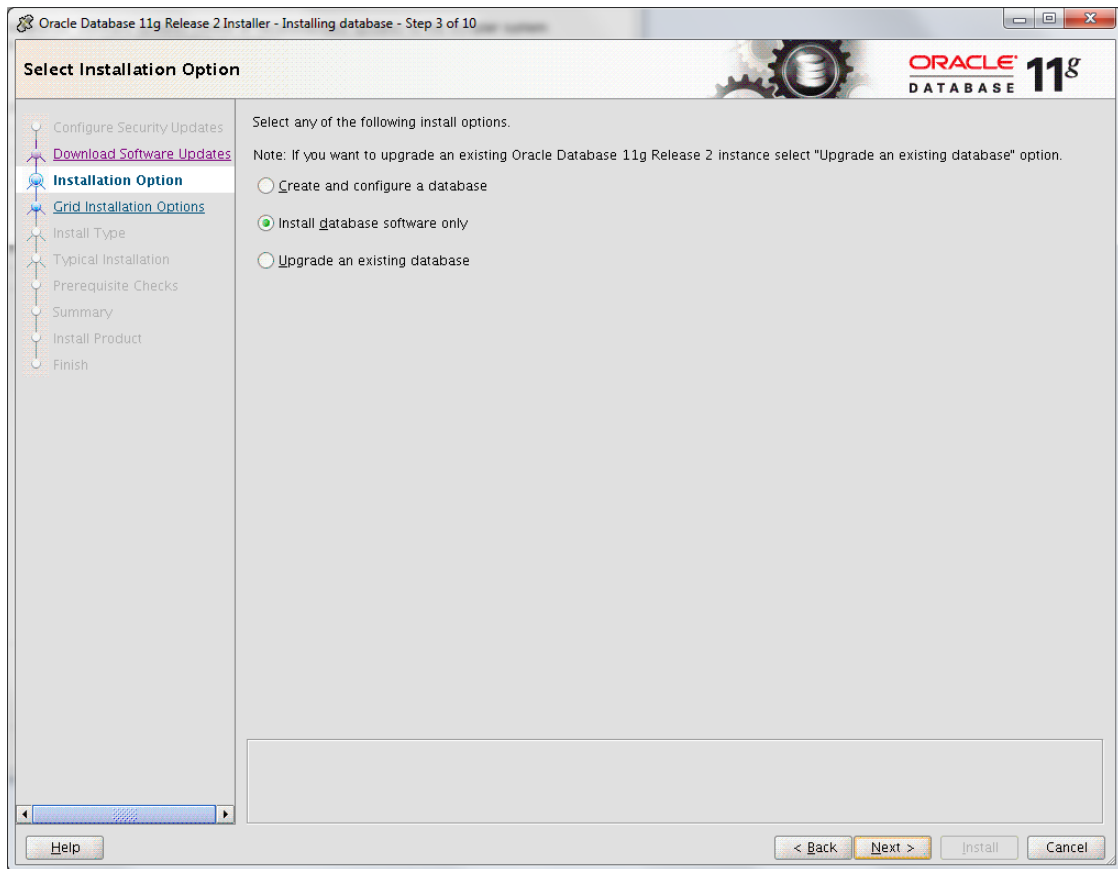


3. To download software updates for this installation, select Use My Oracle Support credentials for download and enter your My Oracle Support user name and My Oracle Support password.

If you chose not to download software updates for this installation, select Skip software updates.

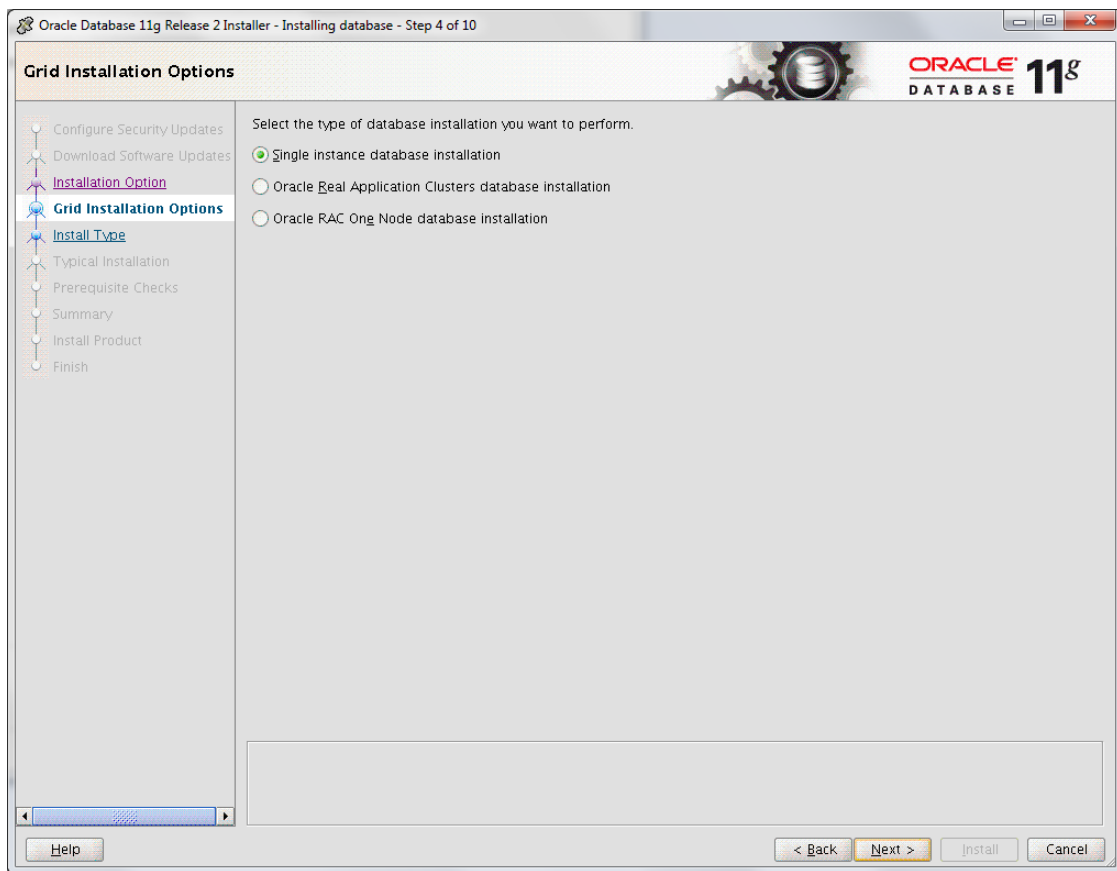
4. Click Next to continue.

The *Select Installation Option* window appears.



5. Select Install database software only and click Next.

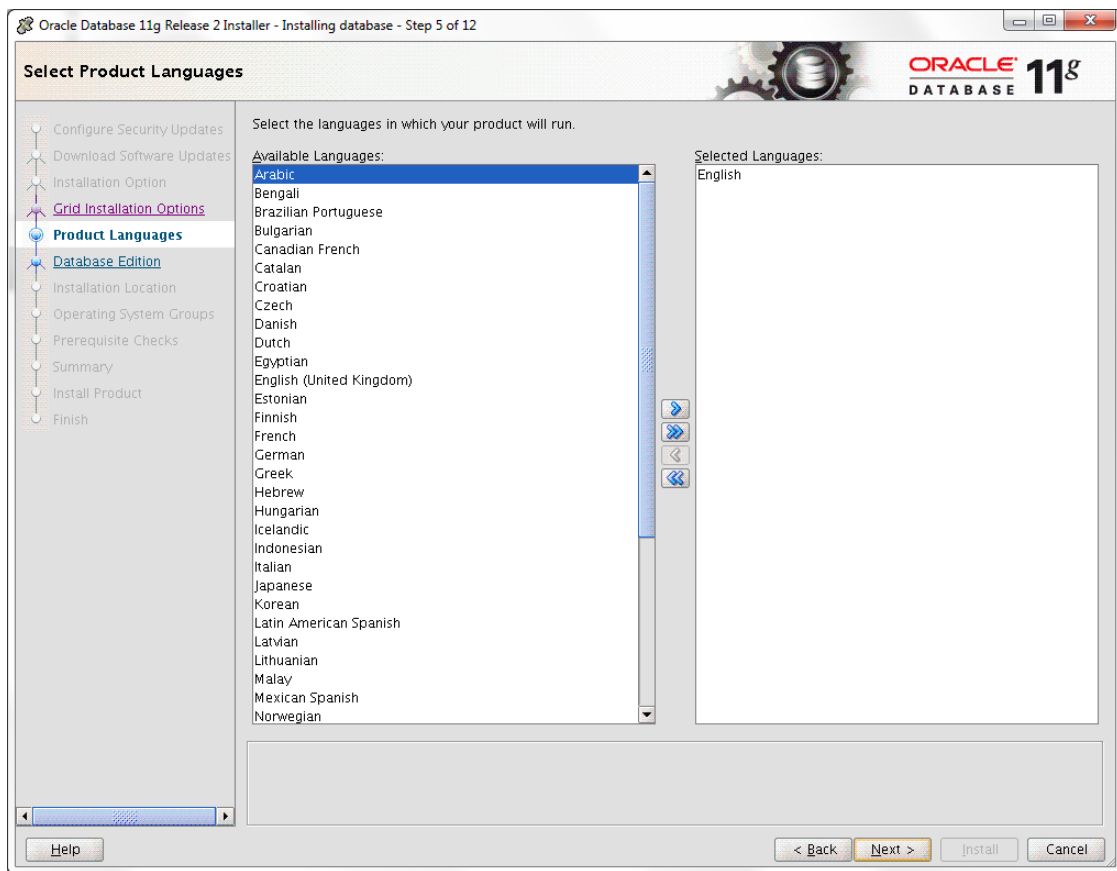
The *Grid Installation Options* window appears.



6. Select Single instance database installation and click Next.

Note The Real Application Cluster database installation is not a subject of this document.

The *Select Product Languages* window appears.



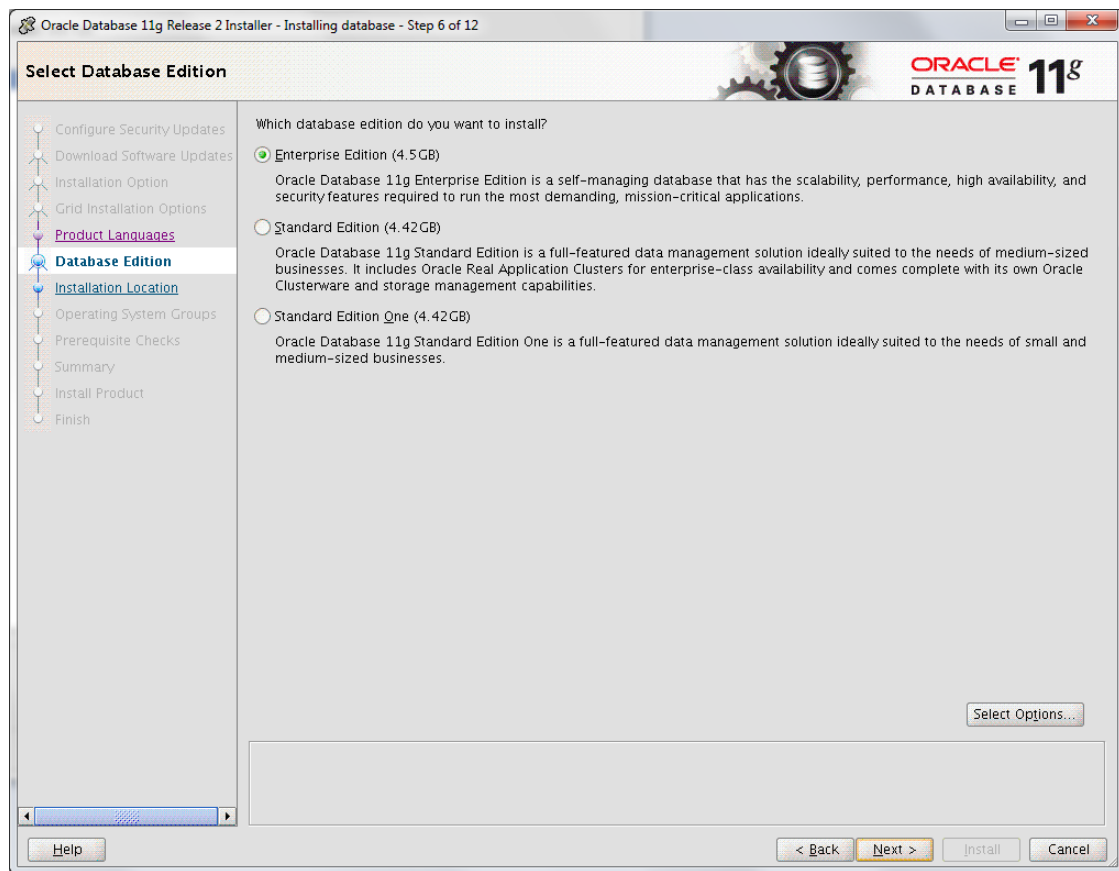
7. Select English as the product language.

If you want the Oracle database to operate in any language other than English, you may select the required language from the list of the product languages.

Note The scope of translation for a given component may differ from language to language. For example, some translations may include all the user interface texts, while some may include only the error messages without any help file.

8. Click Next.

The *Select Database Edition* window appears.



The Enterprise Edition is set as the default database edition.

Note Do not select the Enterprise Edition if you have the Standard Edition license.

With an Agile e6 installation, no further action on the components is necessary. However, the components that are not enabled automatically can be enabled manually.

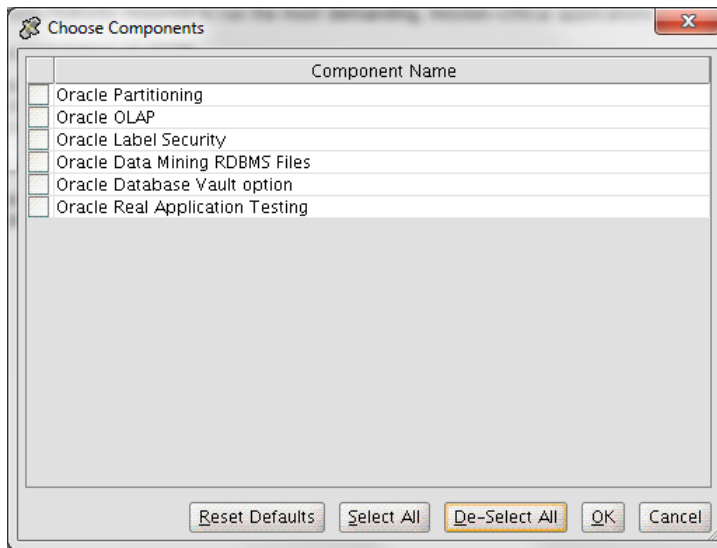
The Enterprise Edition is preset as the default database edition. Do not select the Enterprise Edition if you have a Standard Edition license.

If you select have Enterprise Edition, you are required to click Select Options... to select further options. You must select only those options for which you have a license.

If you select the Standard Edition, no further action is required and you can proceed with the installation.

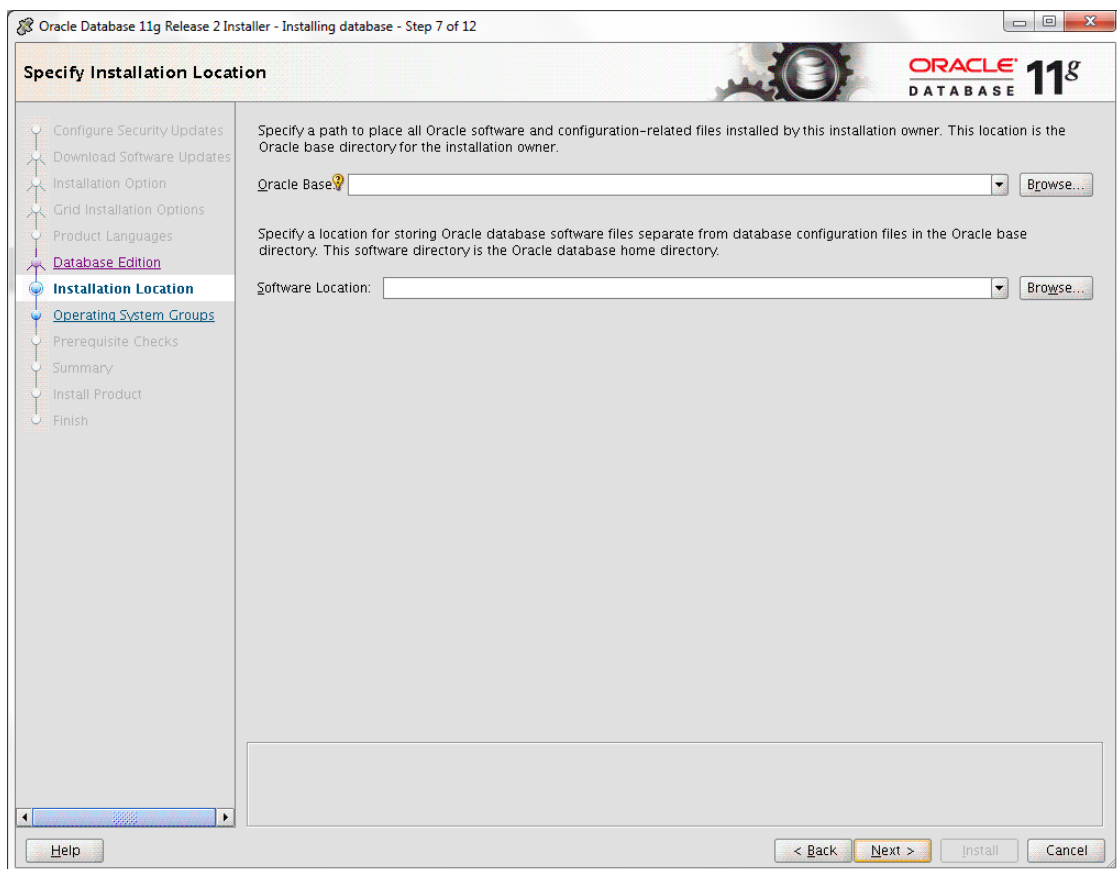
9. Click the Next button to proceed with the installation.

The *Choose Components* window appears.



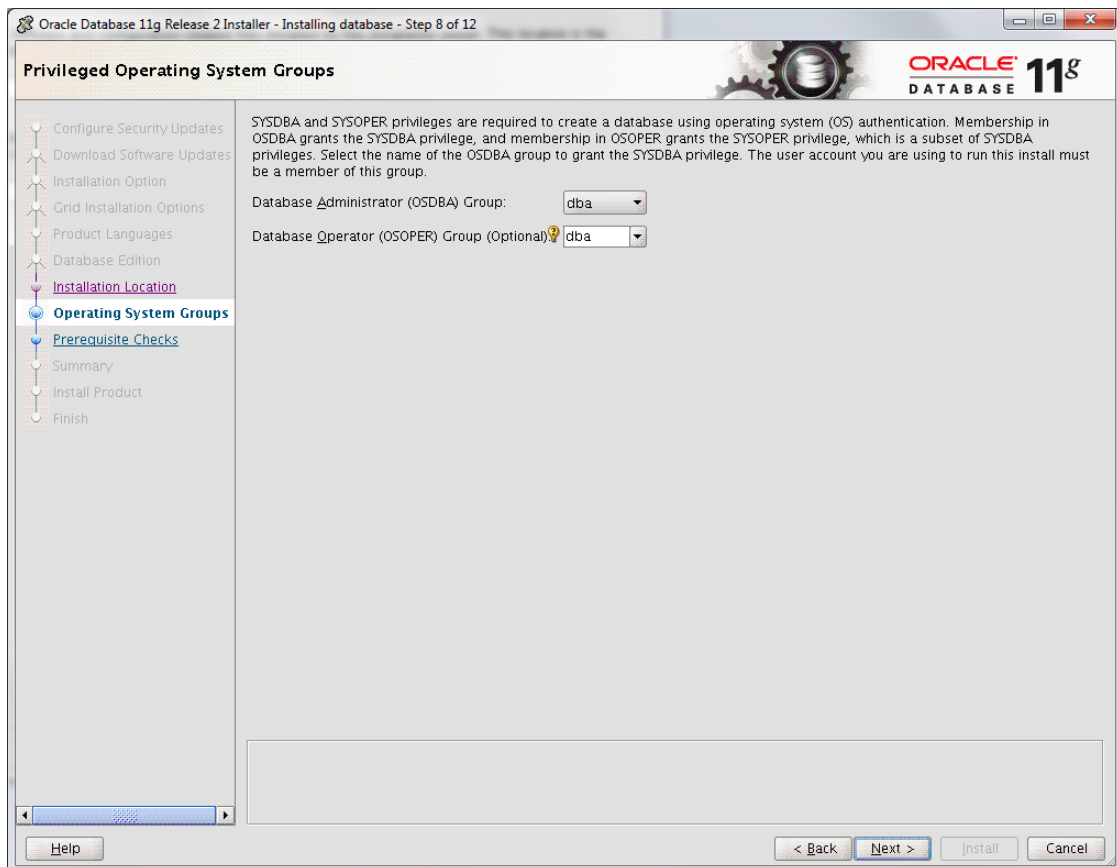
10. Select the required components and click OK.

The *Specify Installation Location* window appears.



11. Specify the installation location for the Oracle Base directory and the Software Location which is the Oracle Home directory.
12. Click Next.

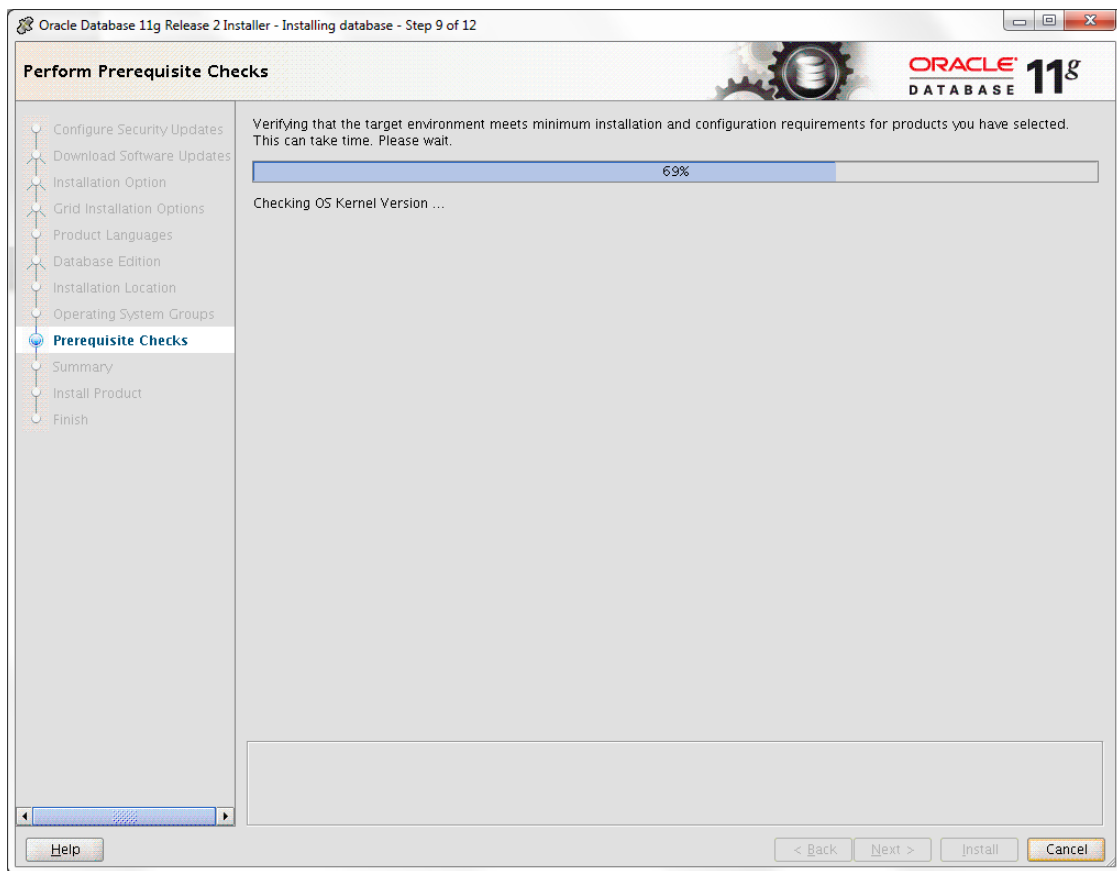
The *Privileged Operating System Groups* window appears.



Note The *Privileged Operating System Groups* window appears ONLY if this is the first Oracle installation on your machine, NOT the first Oracle 11g version 11.2.0.3 installation.

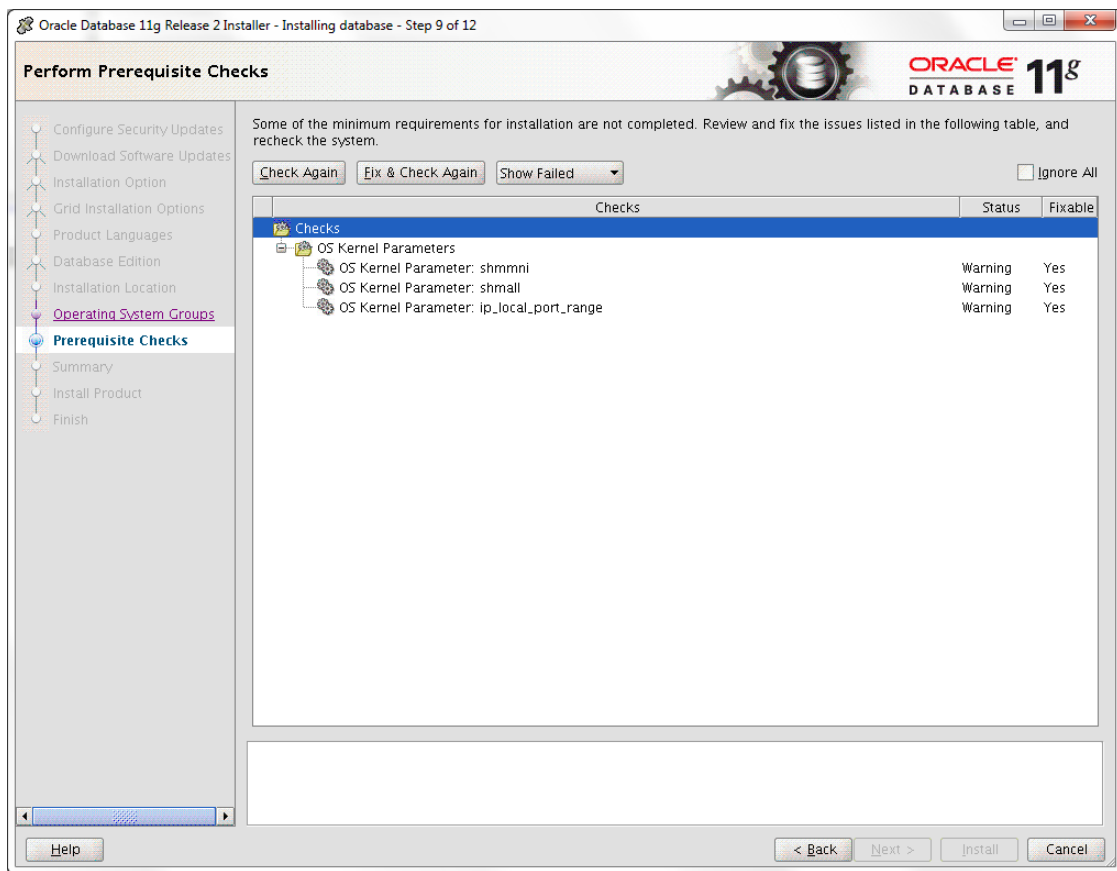
13. Select the Database Administrator Group and optionally, select or specify the Database Operator Group (members have write permission to the Inventory Directory). You can also accept the default values.
14. Click Next.

The *Perform Prerequisites Checks* window appears, displaying the verification process.



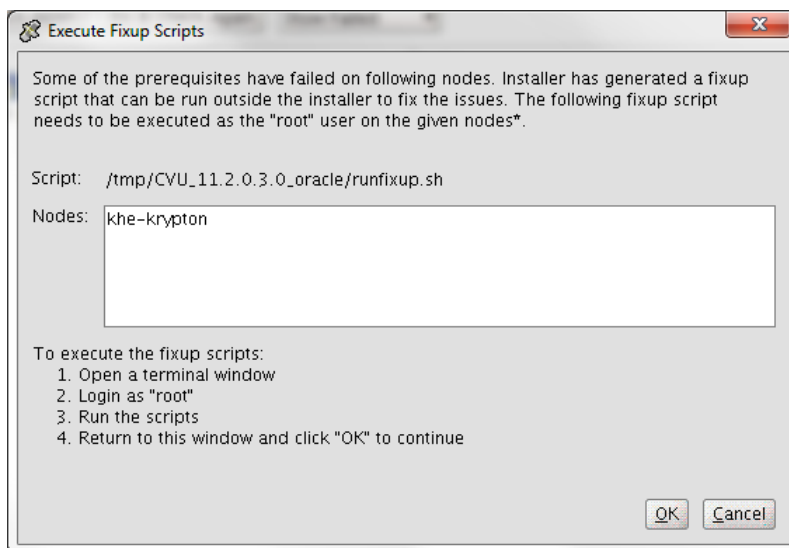
Upon completion of the checks, the installer displays the results for review.

If any of the requirements is not met, the installer displays a list of the failed checks and their actual and expected values.



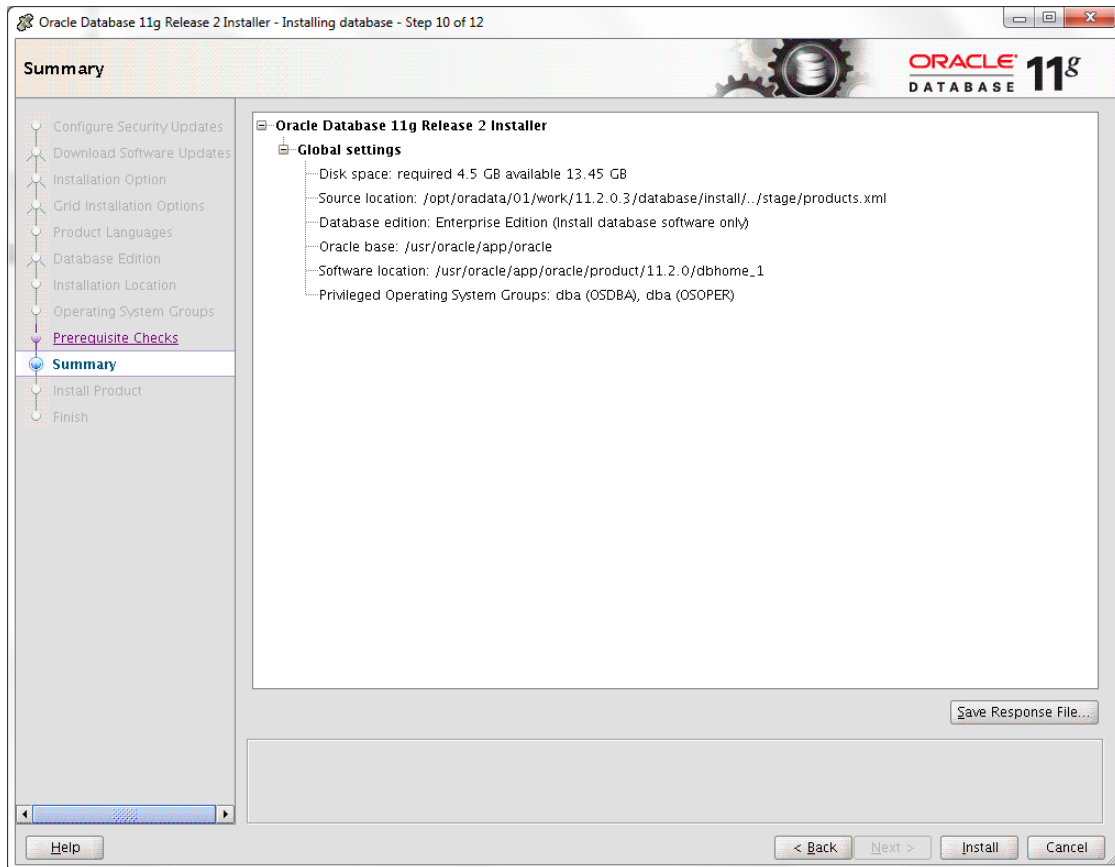
You may click the Fix & Check Again button to generate a fixup script.

The nodes on which the prerequisites failed are listed in the Execute Fixup Script window. You can run the fixup script as a root user to complete the required pre-installation steps.



Note Using the fixup scripts does not ensure that all the prerequisites for installing the Oracle database are satisfied. You must still verify that all the pre-installation requirements are met to ensure a successful installation.

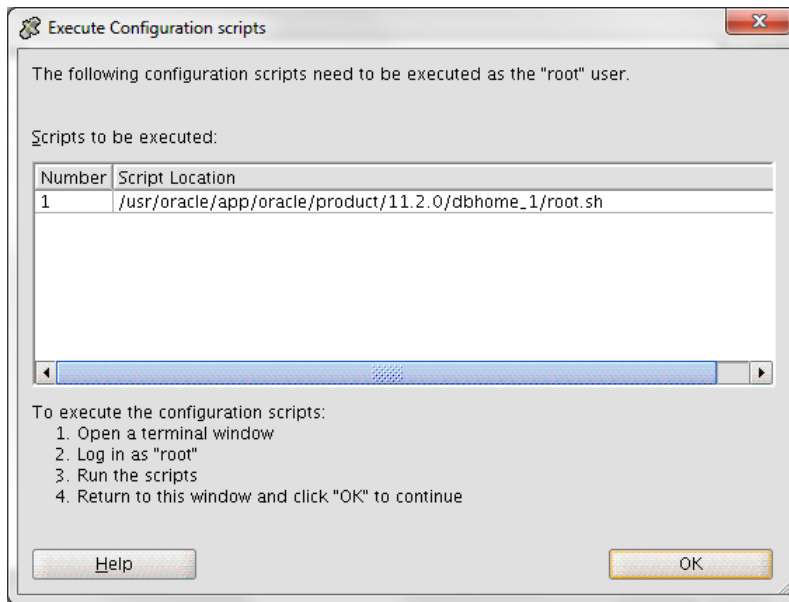
When all of the minimum requirements are met, a *Summary* window appears.



If any of the requirements are not met, the failed checks will be displayed in the *Perform Prerequisite Checks* window. You will have to fix and check them again.

15. In the Summary window, review the global settings you have chosen and click Finish to start the installation.

The *Execute Configuration Scripts* window appears at the end of the installation.



16. Execute a script as "root" user and click OK.

Ignore the warning that the Oracle Base is the Oracle home directory (if you decided to place it there).

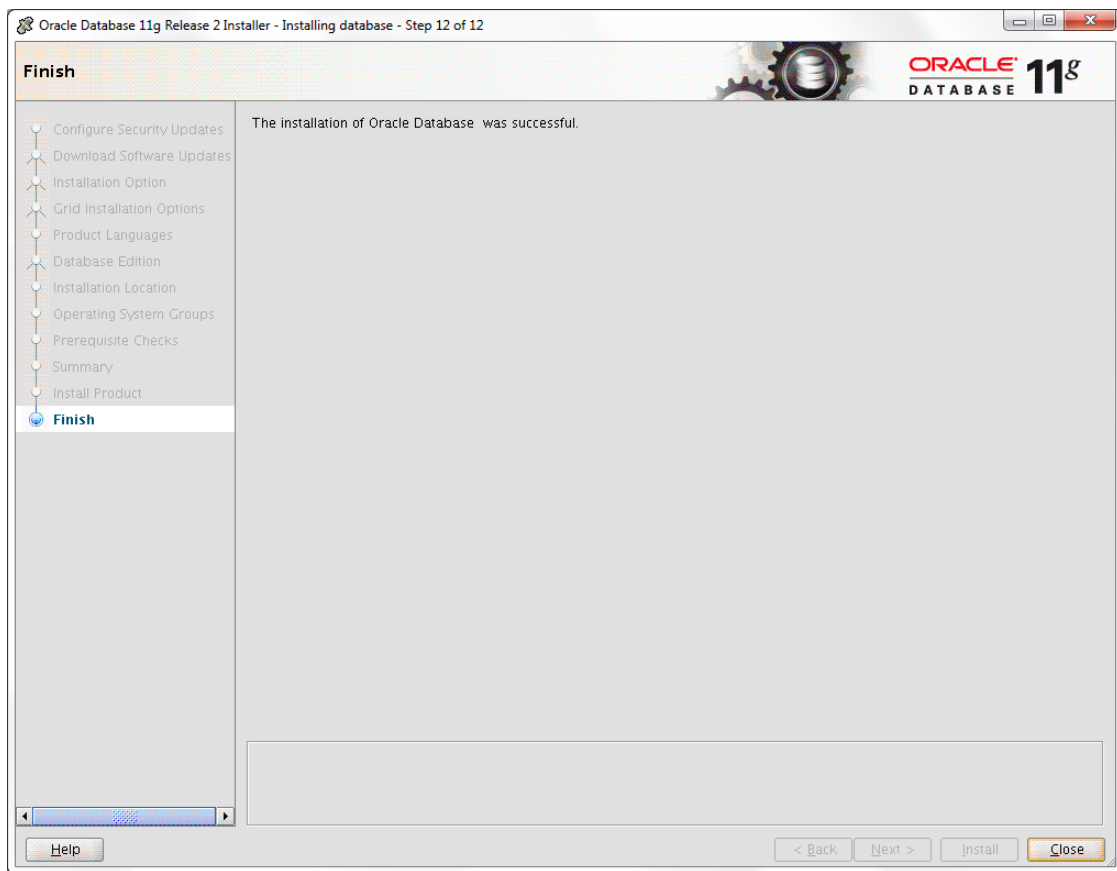
17. Open a second terminal, log on as "root" user, and run the script.

For Example:

```
cd /opt/oracle/product/11.2/db
./root.sh
```

Note /opt/oracle/product/11.2/db is the path in the example – you should go to the directory mentioned in the Execute Configuration scripts window.

When the script execution finishes, the *Finish* window opens.



18. To finish the installation, click Close.

Chapter 5

Installing the Oracle 11g Client

This chapter describes the steps required to install the Oracle Client 11g Release 2 (11.2.0.3).

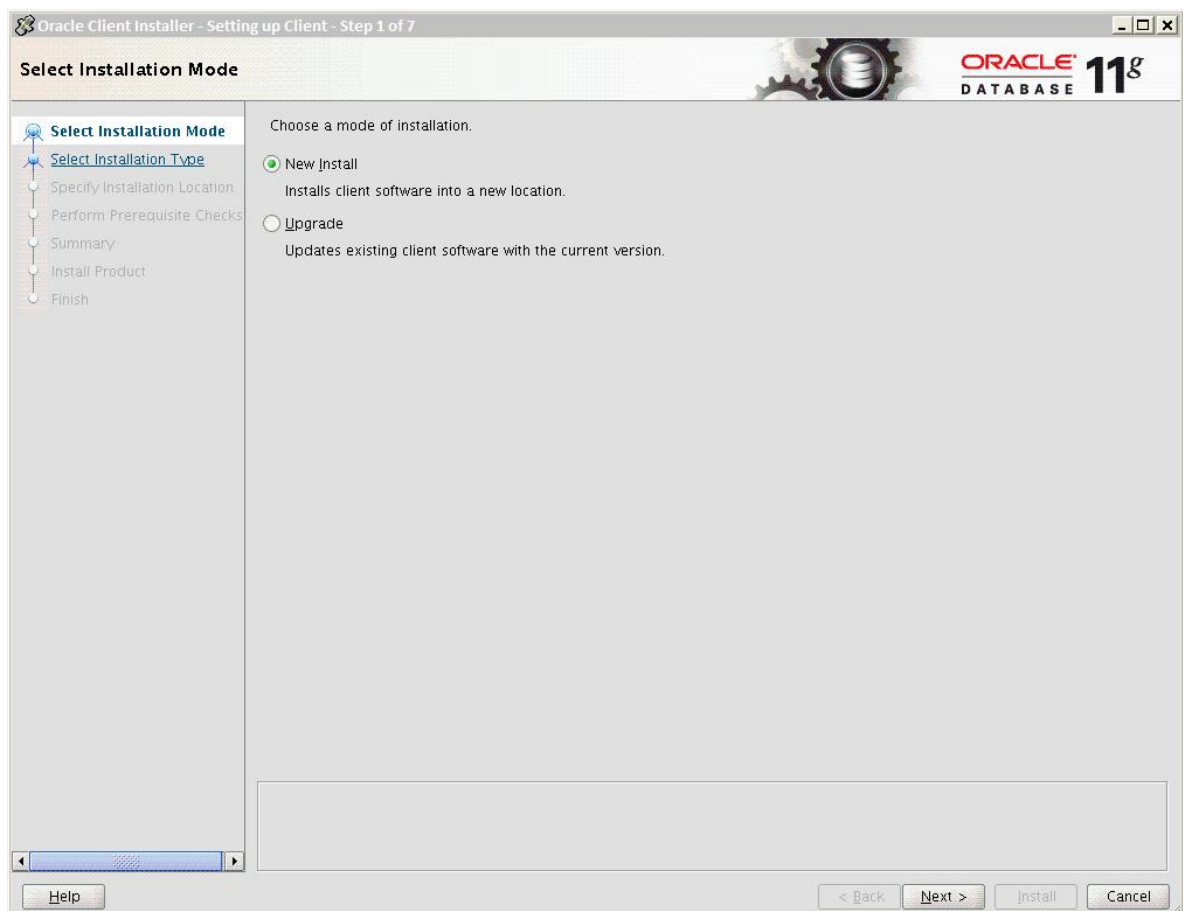
Note The 32-bit Oracle client must be installed on the machine where Agile e6.1.2.2 is installed. If the Agile e6.1.2.2 and the database are installed on the same machine, the 32-bit Oracle client must be installed on the same machine too.

To install the Oracle 11g Client:

1. Log in as oracle user.
2. Start the Oracle Universal Installer with the following command:

```
./runInstaller
```

The *Select Installation Mode* window appears.



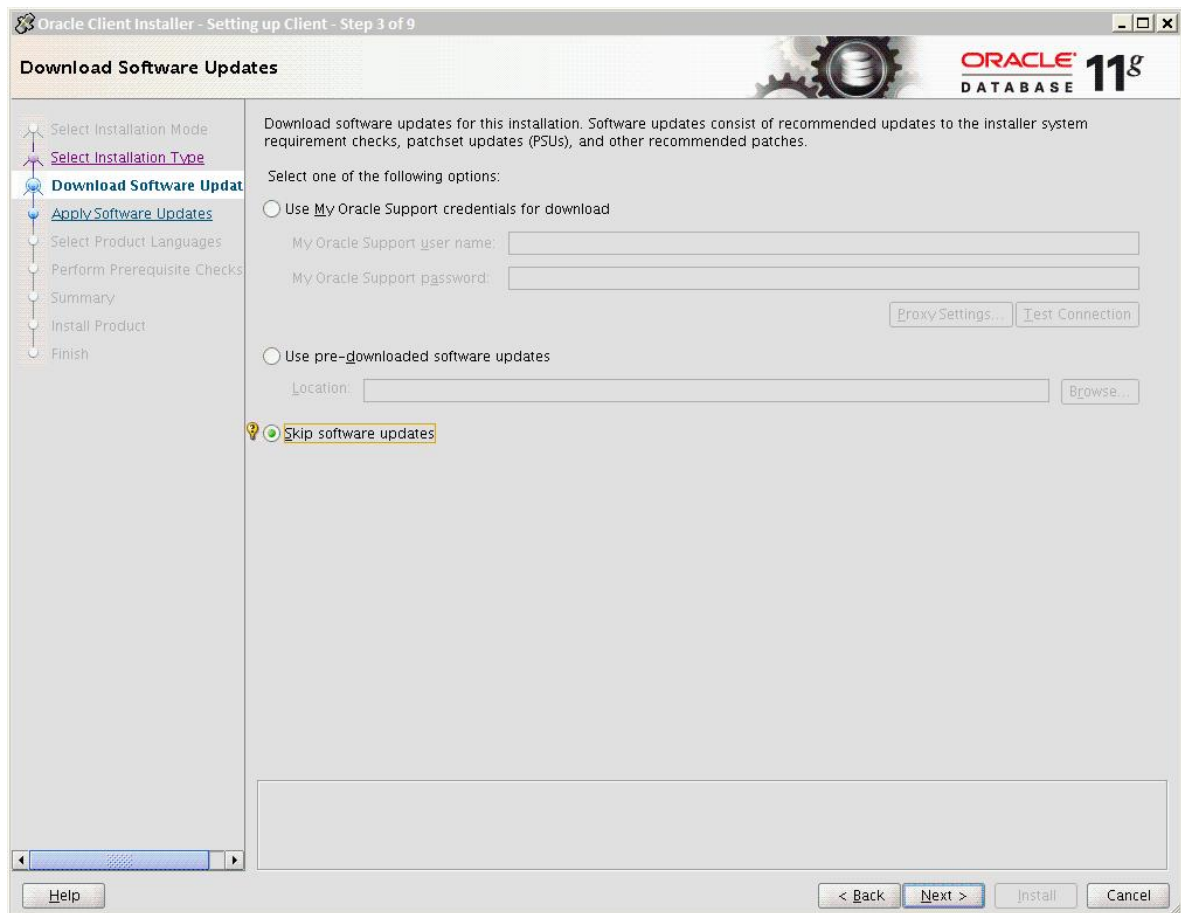
3. Select the default New Install and click Next.

The *Select Installation Type* window appears.



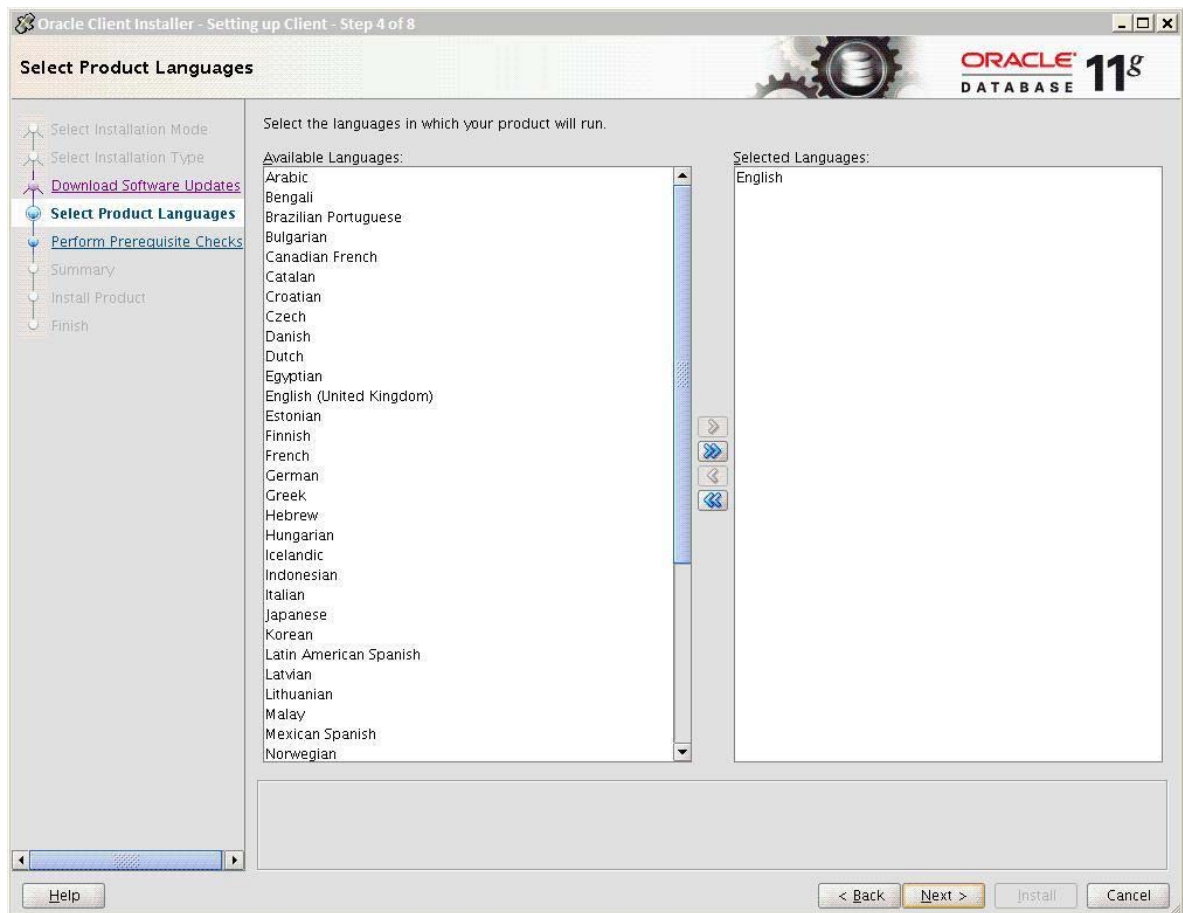
4. Select the Custom type of installation and click Next.

The *Download Software Updates* window appears.



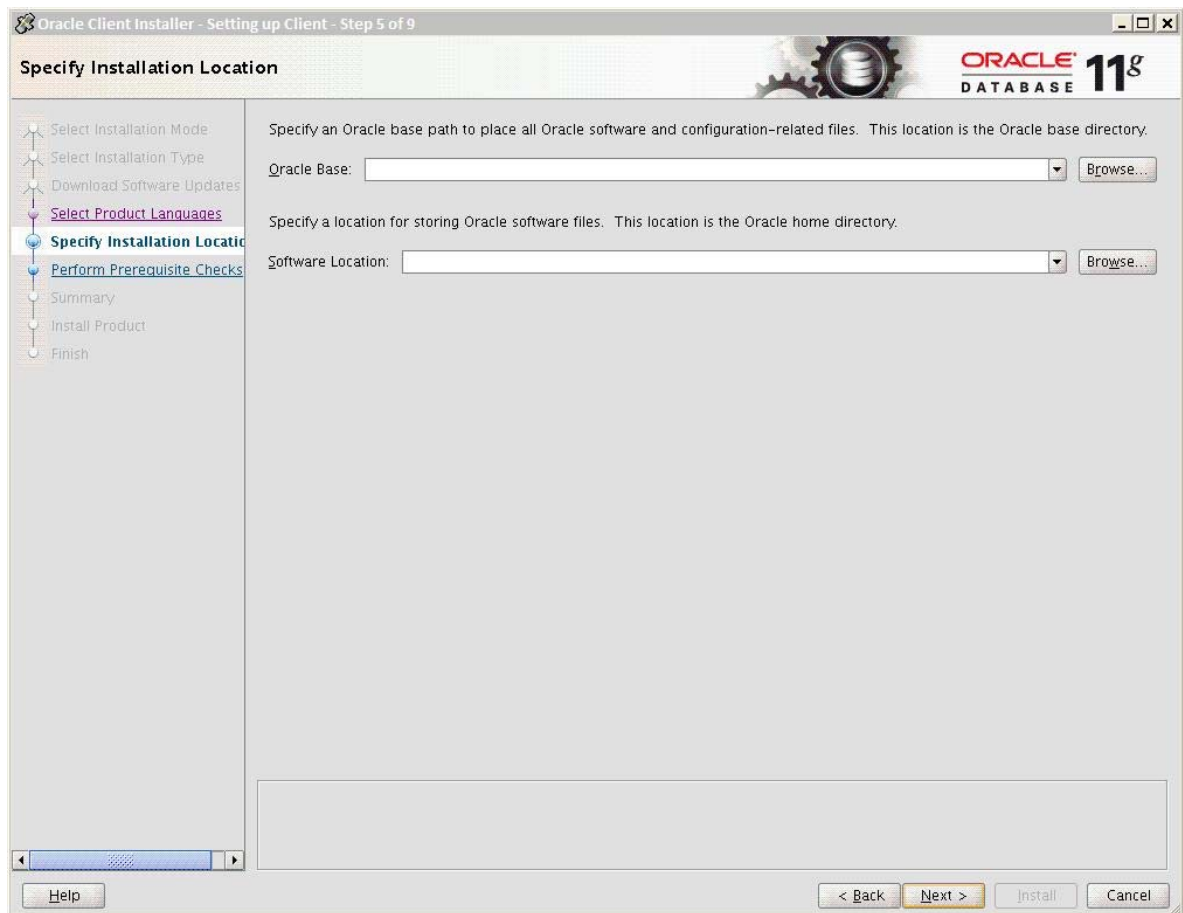
5. Select the default Skip software updates and click Next.

The *Select Product Languages* window appears.



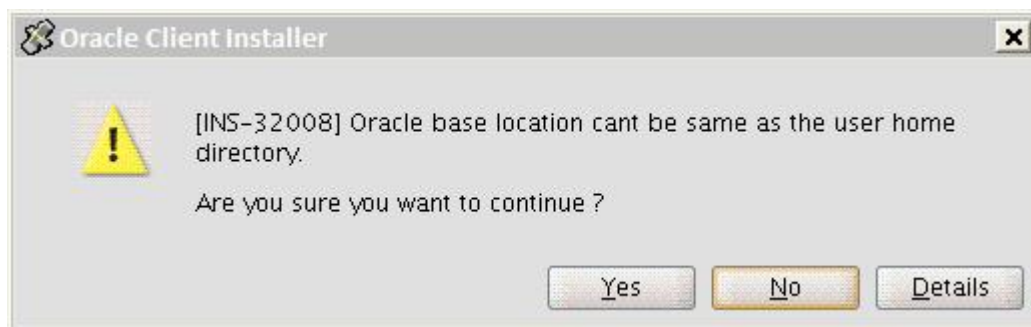
6. Select English as the product language and click Next.

The *Specify Installation Location* window opens.



7. Specify the installation location for the Oracle Base directory and the Software Location, which is the Oracle Home directory.
8. Click Next.

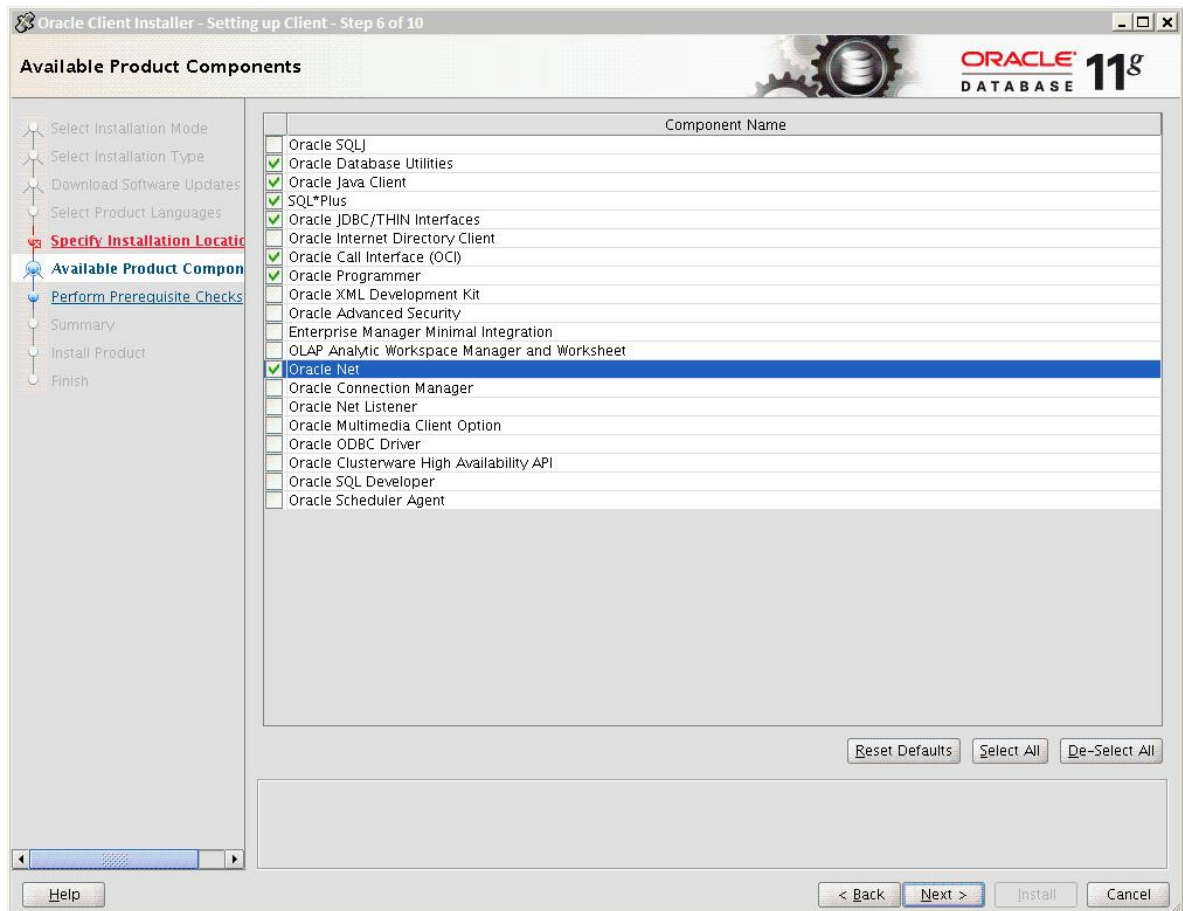
If the Oracle Base location is in the home directory, the following warning message appears:



Note If possible avoid having the same directory for the Oracle Base and the Oracle home directory.

9. Click Yes to override the warning.

The *Available Product Components* window appears.



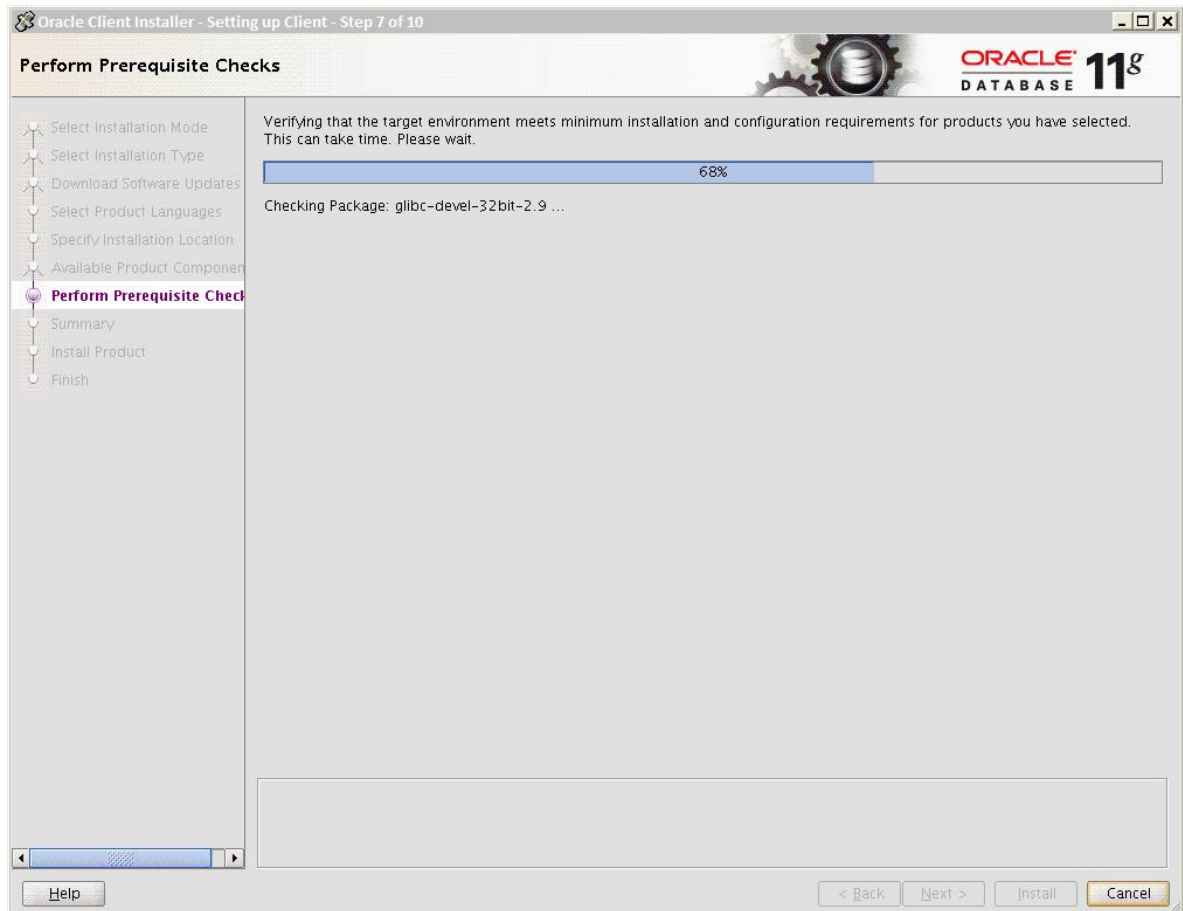
10. Select the following components to install (as shown in the image above):

- Oracle Database Utilities
- Oracle Java Client
- SQL*Plus
- Oracle JDBC/THIN Interfaces
- Oracle Call Interface (OCI)
- Oracle Programmer

- Oracle Net

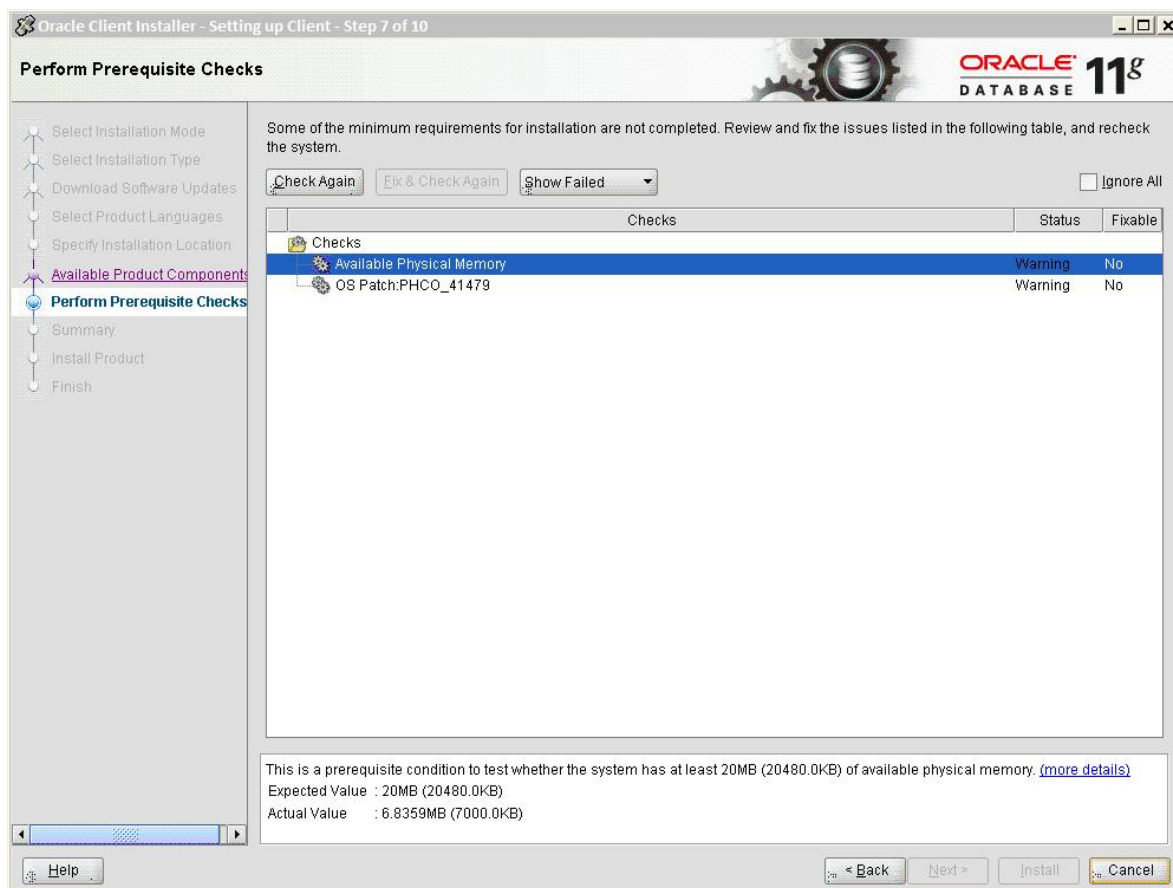
11. Click Next.

The *Perform Prerequisites Checks* window appears, displaying the verification process.



Upon completion of the checks, the installer displays the results for review.

If any of the requirements is not met, the installer displays a list of failed checks and their actual and expected values.



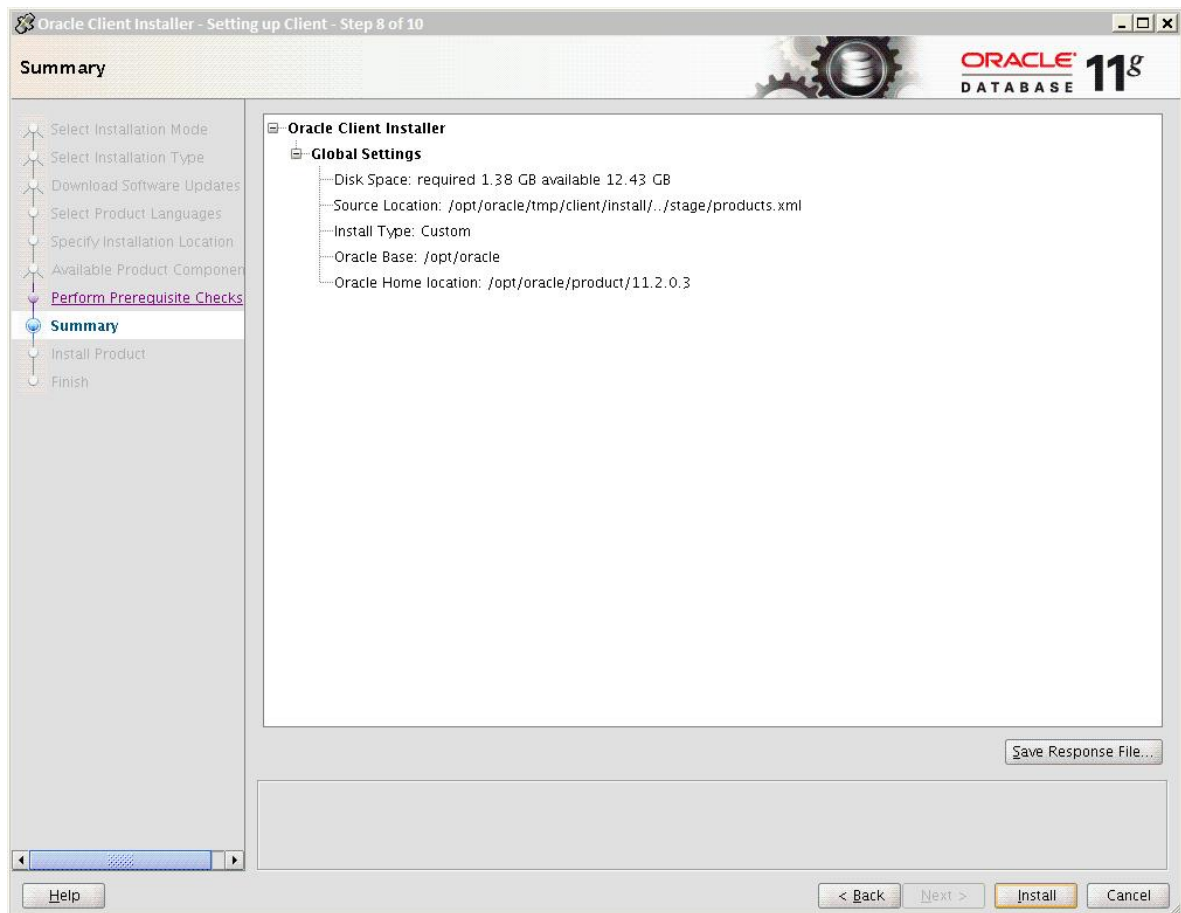
You may click the Fix & Check Again button to generate a fixup script.

The nodes on which the prerequisites failed are listed in the Execute Fixup Script window. You can run the fixup script as a root user to complete the required pre-installation steps.

Note Using the fixup scripts does not ensure that all the prerequisites for installing the Oracle database are satisfied. You must still verify that all the pre-installation requirements are met to ensure a successful installation.

If any of the requirements are not met, the failed checks will be displayed in the Perform Prerequisite Checks window. You will have to fix and check them again.

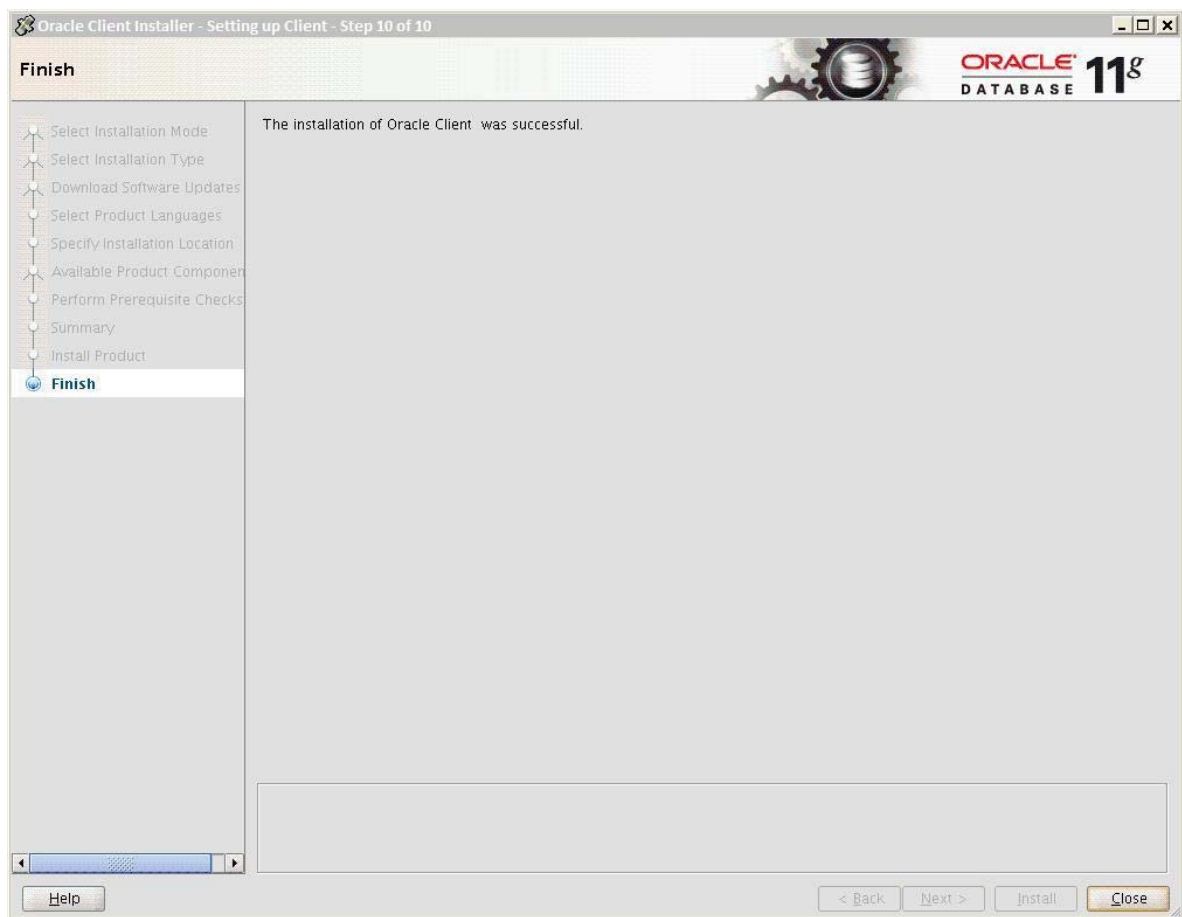
When all of the minimum requirements are met, a *Summary* window appears.



12. In the Summary window, review the global settings you have chosen and click Finish to start the installation.

The installation takes some time to complete.

Upon completion, the *Finish* window appears.



13. Click Close to exit the Oracle client installer.

Chapter 6

Creating the Database

This chapter describes the steps required to create the database.

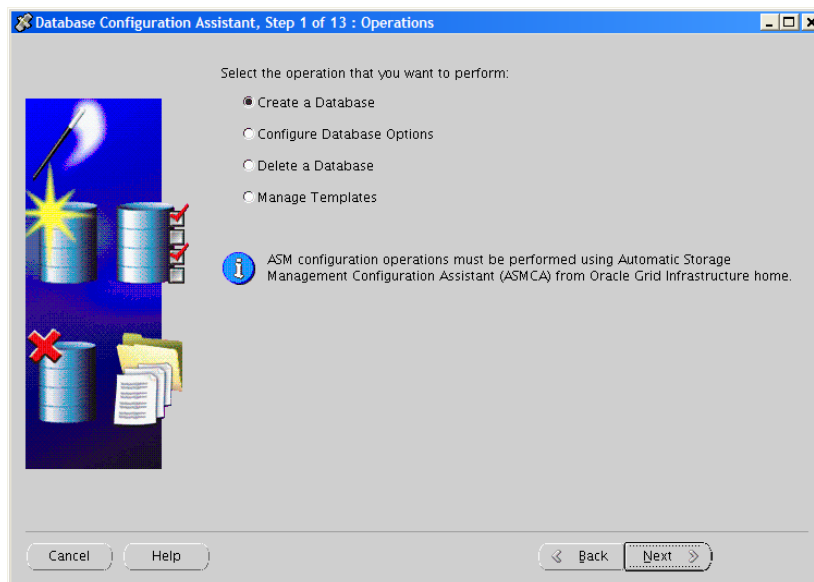
The database is created by using the Database Configuration Assistant (DBCA) templates. DBCA templates include database options, initialization parameters, and storage information for data files, table spaces, control files and redo logs.

Five different templates are predefined to meet different requirements according to purpose, size and number of users of the Agile e6.1.2.2 database installation.

Refer to the Hardware Sizing Recommendation for Agile e6.1.2.2 document for additional information on significant database parameters and settings of each template. All templates are in the **addon/db/unix/templates** directory.

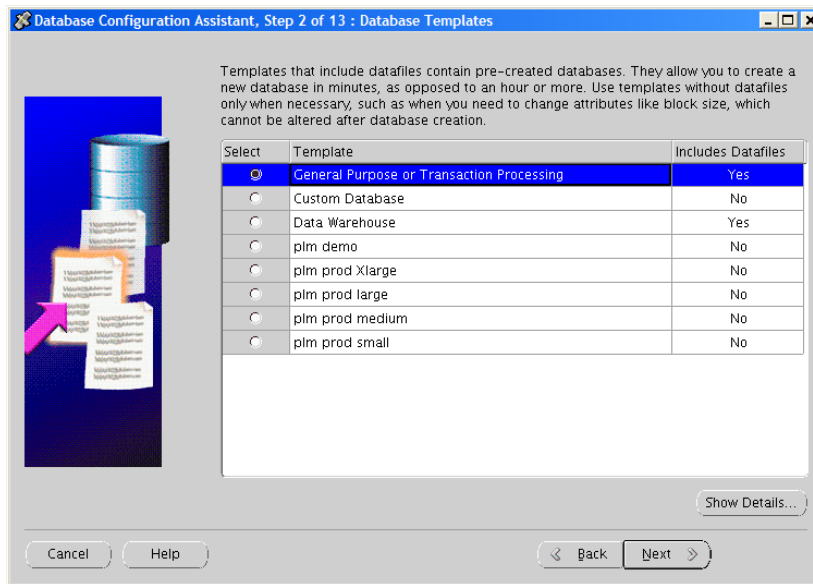
1. Refer to the downloaded media pack - Oracle Agile Engineering Data Management Application (Release e6.1.2.2).
2. Copy the required DBCA template file from `addon/db/unix/templates` (e.g. `plm_prod_medium.dbt`) to `$ORACLE_HOME/assistants/dbca/templates` directory.
3. Start the Oracle Database Configuration Assistant
`$ORACLE_HOME/bin/dbca`

The *Database Configuration Assistant* window opens.

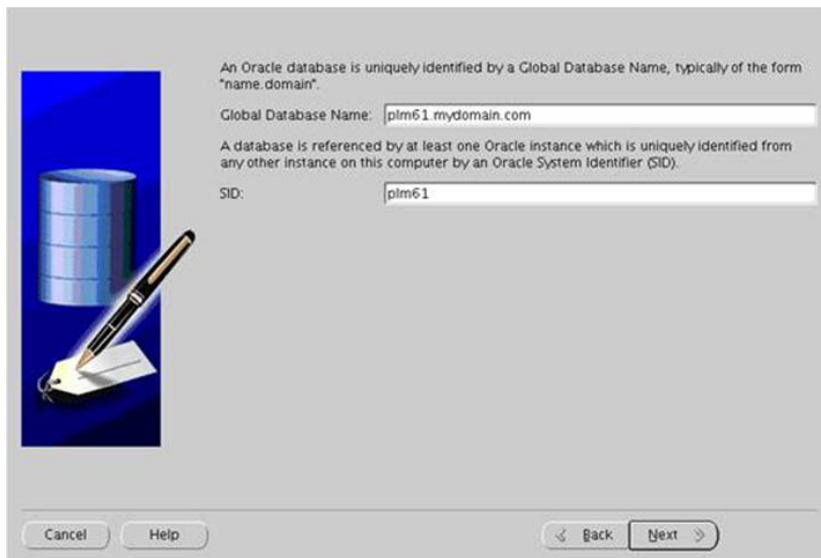


4. Select **Create a Database** and click **Next**.

A list of different templates is provided. You should also see the templates that you have chosen and copied in step 2.

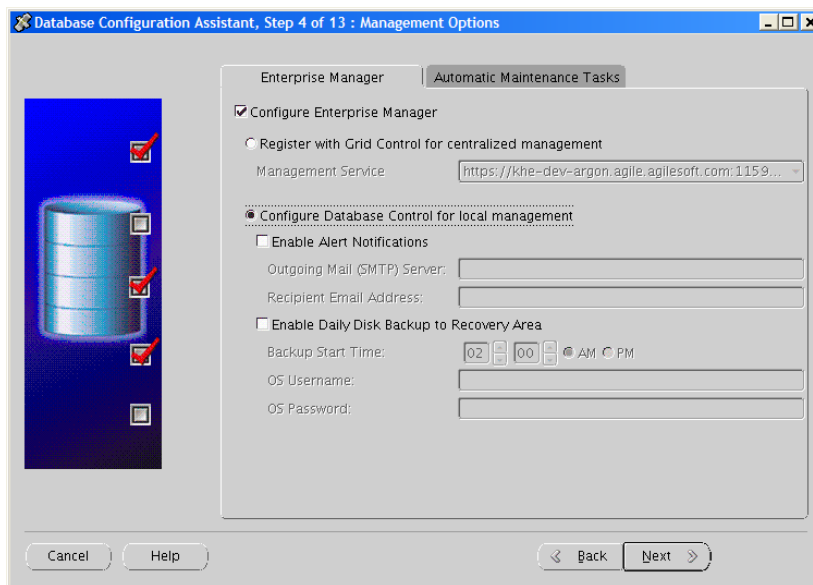


5. Select the template you want to use and click **Next**.
6. Enter the global database name and database SID and click **Next**.



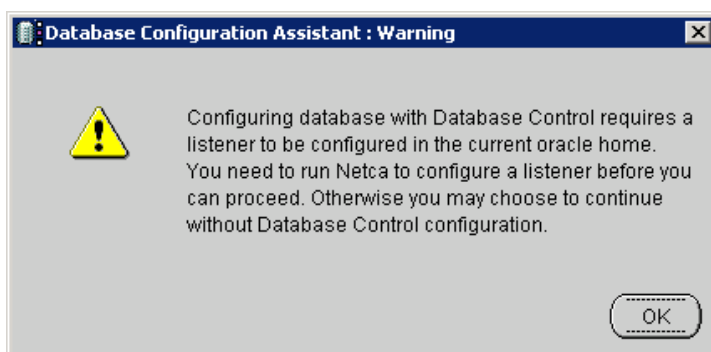
A good practice is to set the global database name to SID<domain name>, e.g. plm61.mydomain.com.

The next window provides the possibility to centrally manage Oracle databases using the Oracle Enterprise Manager Database Control.



7. Select the options **Configure Enterprise Manager** and **Configure Database Control for local management**.
8. Click on the Automatic Maintenance Tasks tab.

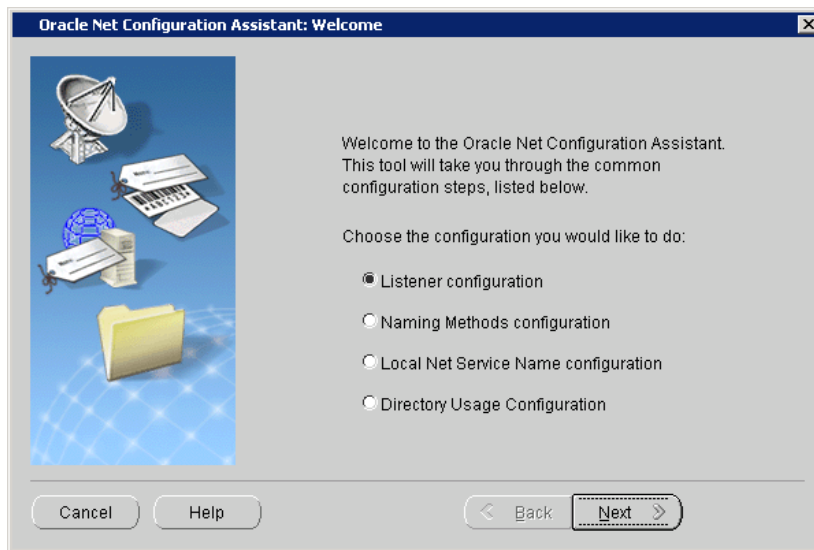
If the following message is displayed continue with step 9 otherwise continue with step 18.



9. Click **OK** to close the warning message.
10. Open a new terminal and start the Oracle Net Services Configuration Tool with the following command:

```
$ORACLE_HOME/bin/netca
```

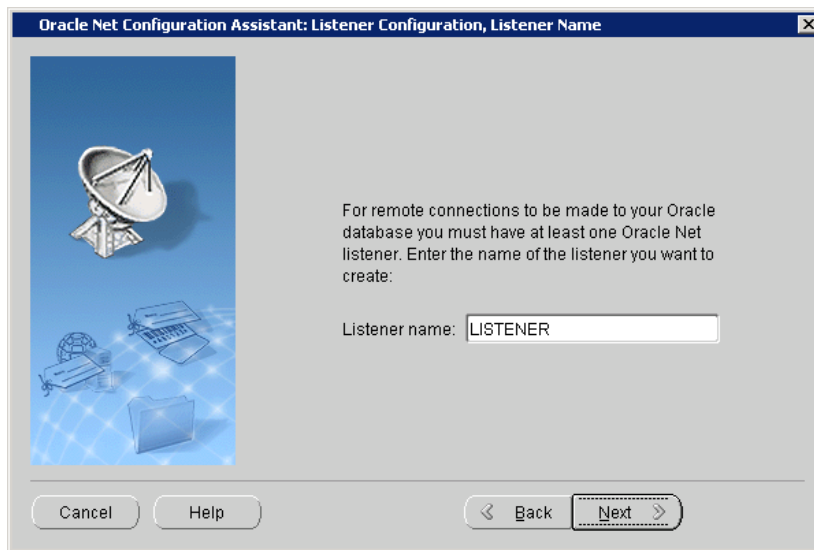
The *Welcome* window opens.



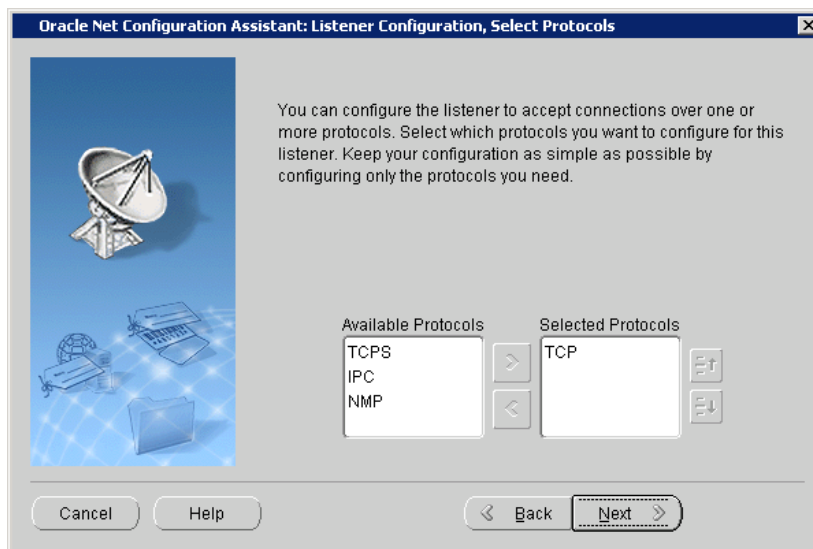
11. Select the Listener configuration and click **Next**.
12. In the next window select **Add** from the list and click **Next**.



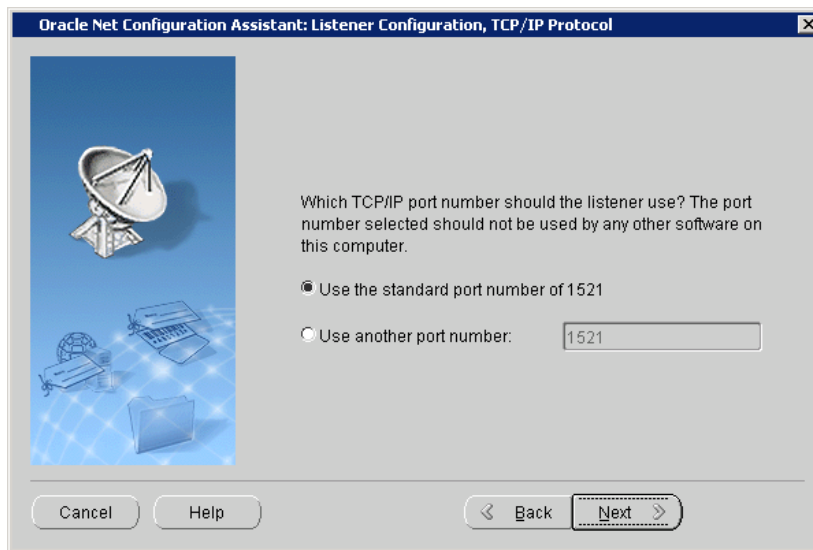
13. Create the name for the listener and click **Next**.



14. Select **TCP** from the Available Protocols list (selected by default) and click **Next**.



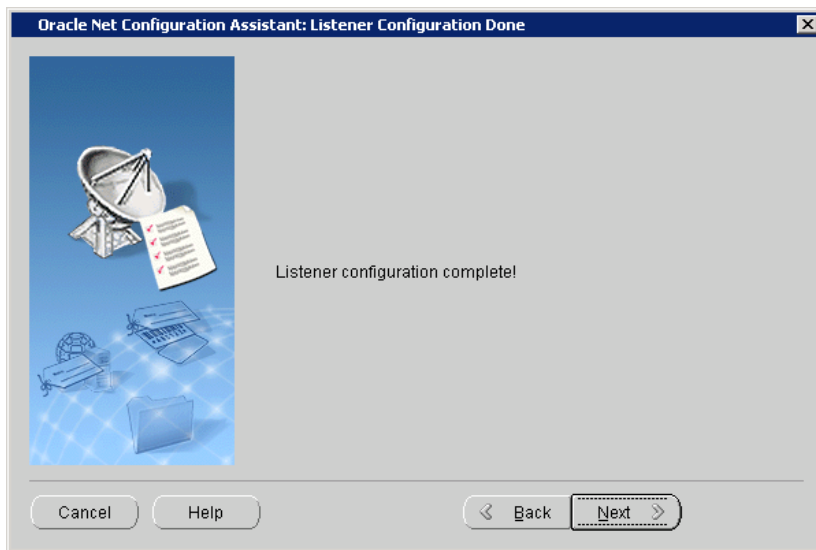
15. Select the standard port number of 1521 (or one that has not been used yet) and click **Next**.



16. Select No for not to configure another listener and click **Next**.

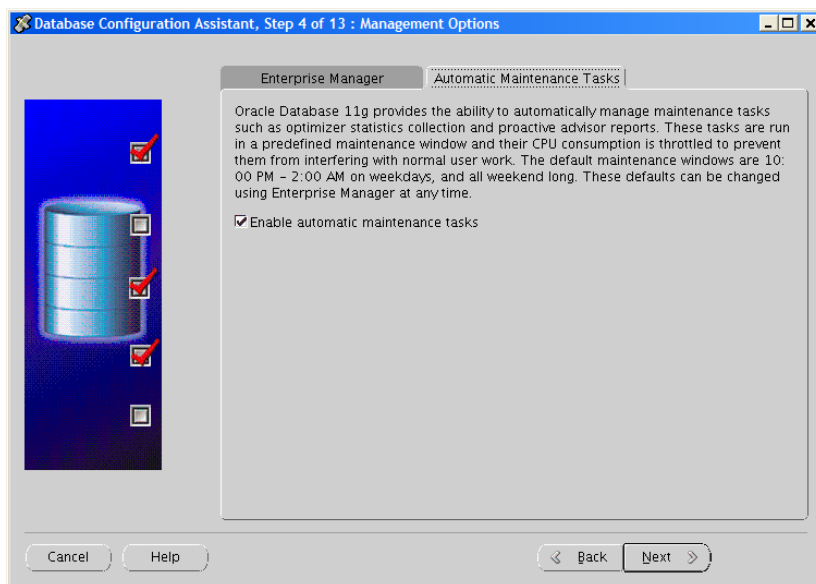


17. Click **Next**.



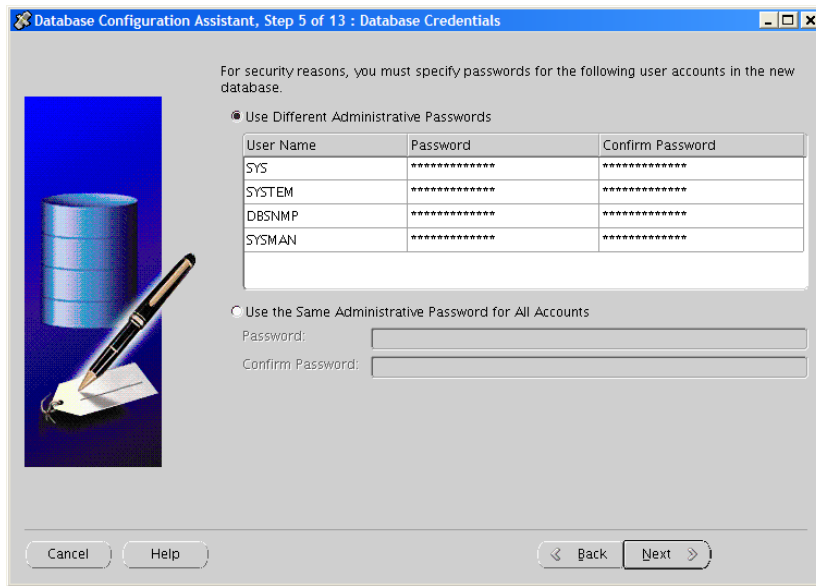
The Listener configuration is completed.

18. On the Automatic Maintenance Tasks tab, ensure that the option Enable automatic maintenance tasks is enabled.



19. Click **Next**.

The *Database Configuration Assistant – Database Credentials* window opens.



Database Configuration Assistant, Step 5 of 13 : Database Credentials

For security reasons, you must specify passwords for the following user accounts in the new database.

☒ Use Different Administrative Passwords

User Name	Password	Confirm Password
SYS	*****	*****
SYSTEM	*****	*****
DBSNMP	*****	*****
SYSMAN	*****	*****

☐ Use the Same Administrative Password for All Accounts

Password:

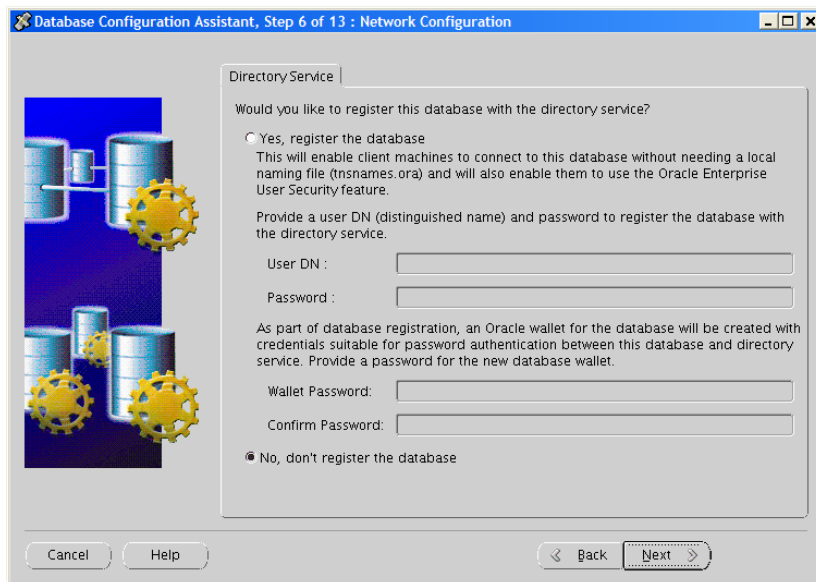
Confirm Password:

Buttons: Cancel, Help, Back, Next

- Enter passwords for SYS, SYSTEM, SYSMAN and DBSNMP. It is highly recommended to use different passwords for these accounts. Click Next.

Note It is recommended for the password to have a minimum of 8 characters in length. In addition, the password must contain at least one upper case character, one lower case and one digit.

The *Database Configuration Assistant – Network Configuration* window opens.



Database Configuration Assistant, Step 6 of 13 : Network Configuration

DirectoryService

Would you like to register this database with the directory service?

☐ Yes, register the database

This will enable client machines to connect to this database without needing a local naming file (tnsnames.ora) and will also enable them to use the Oracle Enterprise User Security feature.

Provide a user DN (distinguished name) and password to register the database with the directory service.

User DN :

Password :

As part of database registration, an Oracle wallet for the database will be created with credentials suitable for password authentication between this database and directory service. Provide a password for the new database wallet.

Wallet Password:

Confirm Password:

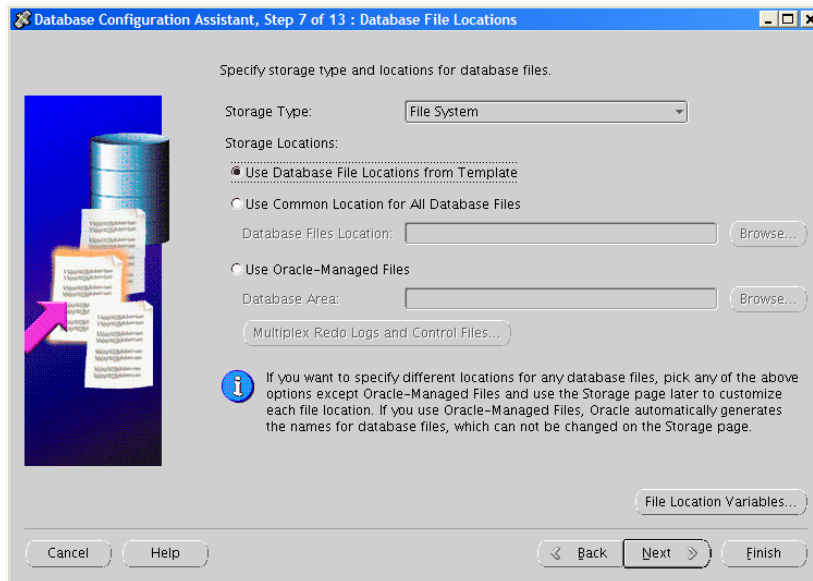
☒ No, don't register the database

Buttons: Cancel, Help, Back, Next

- Select No, don't register the database and click Next.

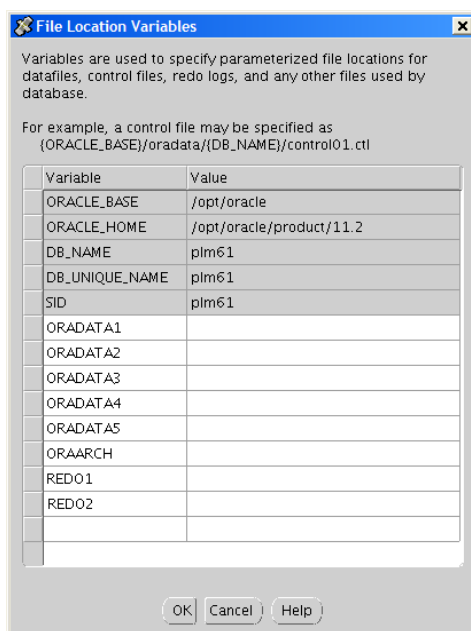
Note Database registration and wallet creation is not a subject of this document.

The *Database Configuration Assistant – Database File Locations* window opens.



22. Activate the option Use Database File Locations from Template.
23. Click the File Location Variables button.

The *File Location Variables* window opens.



1. Enter a value for the variables in the table.

As values you should provide the directories created in Chapter 3 (in this example /data1, /data2, /data3). DBCA will create the subdirectory plm61 in those directories where database data files will be created. See the table for detailed information on predefined file destination variables.

Variable	Description
ORADATA1	Directory for data files of tablespaces EDB, EDB_LOB, EDB_TMPIDX
ORADATA2	Directory for data files of tablespaces EDB_IDX, EDB_TMP
ORADATA3	Directory for data files of temporary tablespace TEMP
ORADATA4	Directory for data files of undo tablespace
ORADATA5	Directory for data files of tablespaces SYSTEM, TOOLS, USERS
ORAARCH	Directory for Archive log files
REDO1	Directory for redo log files
REDO2	Directory for redo log files

Follow the instructions below to set the value for variables by different number of disks.

- Number of disks: 1 (there is only one directory – e.g. /data1)

Disk1: ORADATA1, ORADATA2, ORADATA3, ORADATA4, ORADATA5,
REDO1, REDO2, ORAARCH – all variables will be set to /disk1

- Number of disks: 2 (there are two directories – e.g. /data1, /data2)

Disk1: ORADATA1, ORADATA4, ORADATA5, REDO1 – they get the value of /data1

Disk2: ORADATA2, ORADATA3, ORAARCH, REDO2 – they get the value of /data2

- Number of disks: 3

Disk1: ORADATA1, ORADATA5

Disk2: ORADATA2, ORADATA4, REDO1

Disk3: ORADATA3, ORAARCH, REDO2

- Number of disks: 4

Disk1: ORADATA1, REDO1

Disk2: ORADATA2, REDO2

Disk3: ORADATA3, ORAARCH

Disk4: ORADATA4, ORADATA5

- Number of disks: 5

Disk1: ORADATA1, REDO1
Disk2: ORADATA2, ORAARCH
Disk3: ORADATA3, ORADATA5
Disk4: ORADATA4
Disk5: REDO2

- Number of disks: 6

Disk1: ORADATA1
Disk2: ORADATA2, ORAARCH
Disk3: ORADATA3
Disk4: ORADATA4
Disk5: ORADATA5, REDO1
Disk6: REDO2

- Number of disks: 7

Disk1: ORADATA1
Disk2: ORADATA2
Disk3: ORADATA3
Disk4: ORADATA4
Disk5: ORADATA5, ORAARCH
Disk6: REDO1
Disk7: REDO2

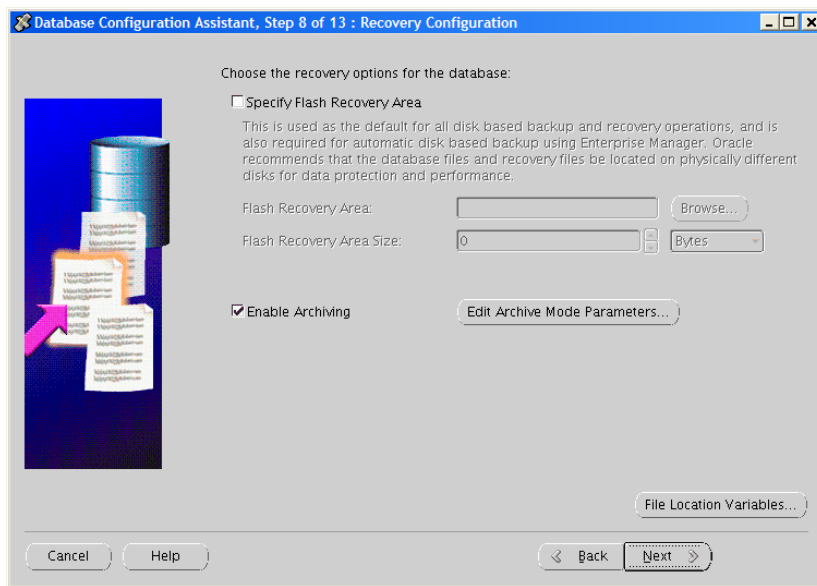
- Number of disks: 8

Disk1: ORADATA1
Disk2: ORADATA2
Disk3: ORADATA3
Disk4: ORADATA4
Disk5: ORADATA5
Disk6: ORAARCH
Disk7: REDO1
Disk8: REDO2

2. When you are finished, click OK.

24. On the Database Configuration Assistant – Database File Locations window click **OK**.

The *Database Configuration Assistant – Recovery Configuration* window opens.

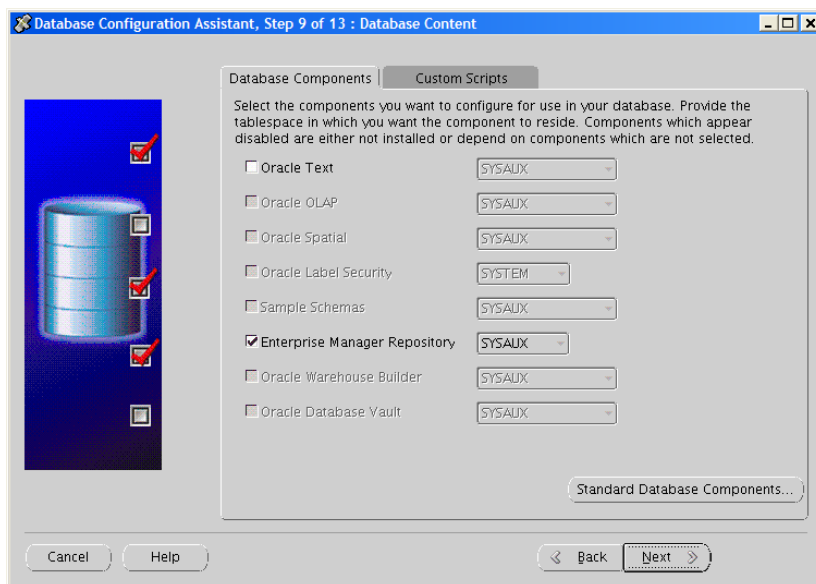


25. Deactivate the option Specify Flash Recovery Area and click Next.

Depending on your backup strategy and used template, archiving can be enabled or disabled.

Note For a productive database it is highly recommended to archive the database. The destination of the archive directory can be specified by clicking on the Edit Archive Mode Parameters button (predefined by variable ORAARCH).

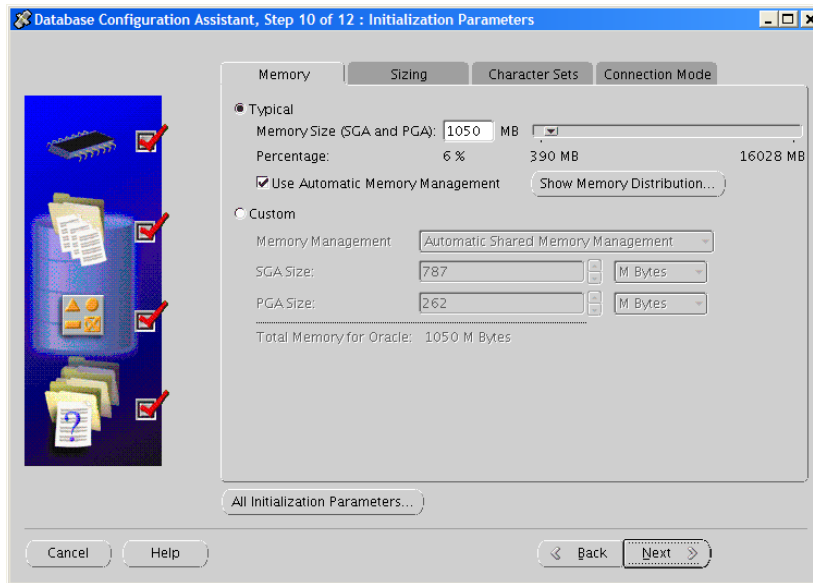
The *Database Configuration Assistant – Database Content* window opens.



This mask provides database features as well as the possibility to run custom scripts after the database creation. It is not recommended to change the settings provided by the template.

26. Click Next.

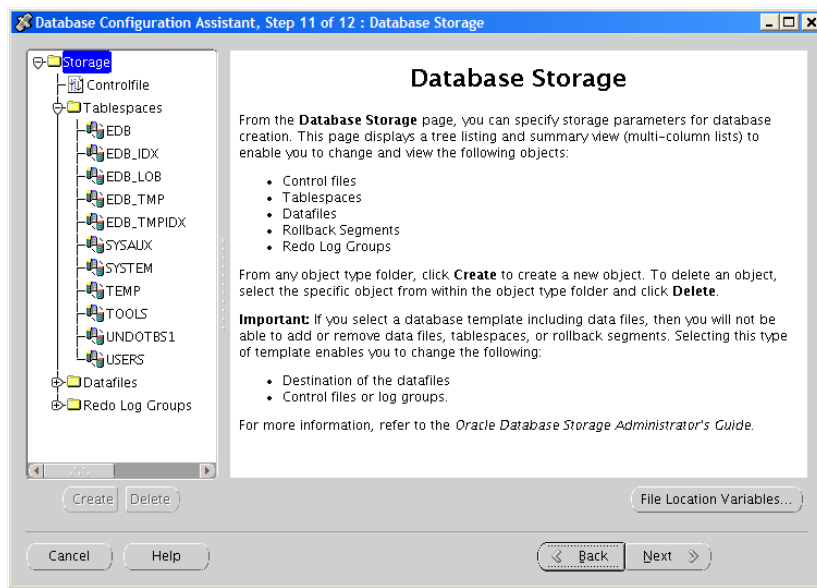
The *Database Configuration Assistant – Initialization Parameters* window opens.



This window provides different database parameters. You can navigate to the settings of memory, character sets, database sizing, and connection mode. Usually all parameters are set by the selected template and you don't need to change them, but experienced users can modify some parameters depending on the database size and number of users.

27. Click Next.

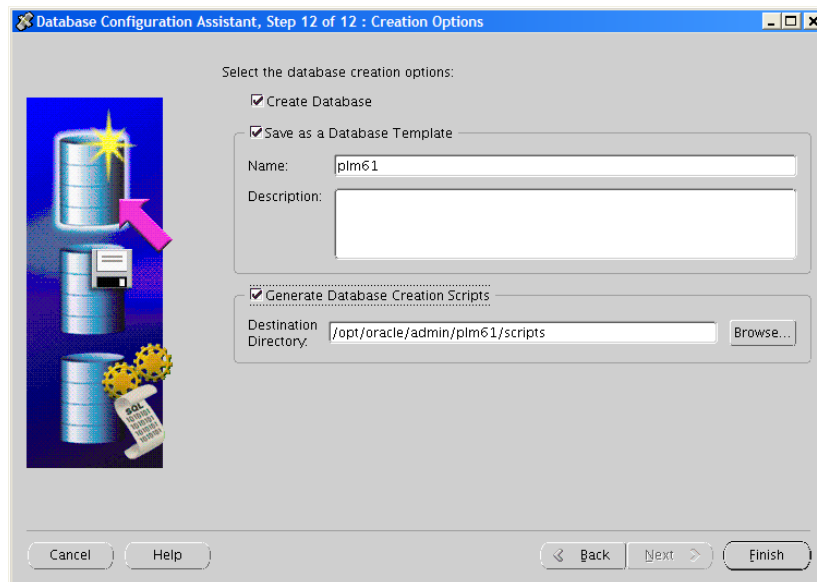
The *Database Configuration Assistant – Database Storage* window opens.



The Database storage window shows table spaces, data files, control files and redo log groups/files to be created.

28. Click Next.

The *Database Configuration Assistant – Creation Options* window opens.

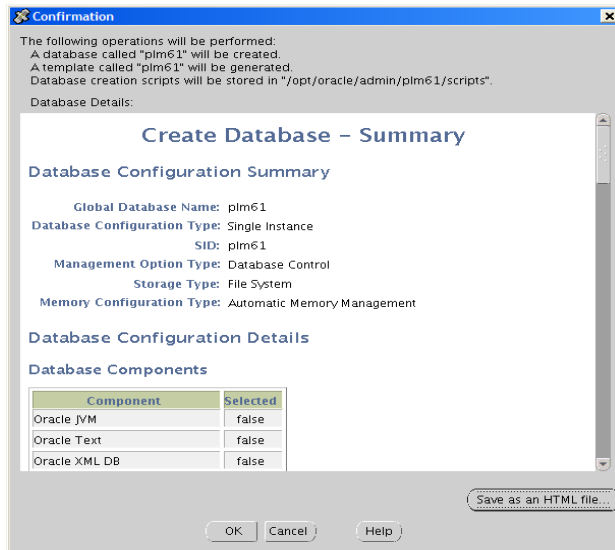


29. Activate the checkbox for the following options and click Finish.

- Create Database

- Save as a Database Template
- Generate Database Creation Scripts

A summary of the database parameter is displayed in the Confirmation window.



30. Click OK to start the database creation process.
31. When the database creation is done, click Exit to finish the process.

Chapter 7

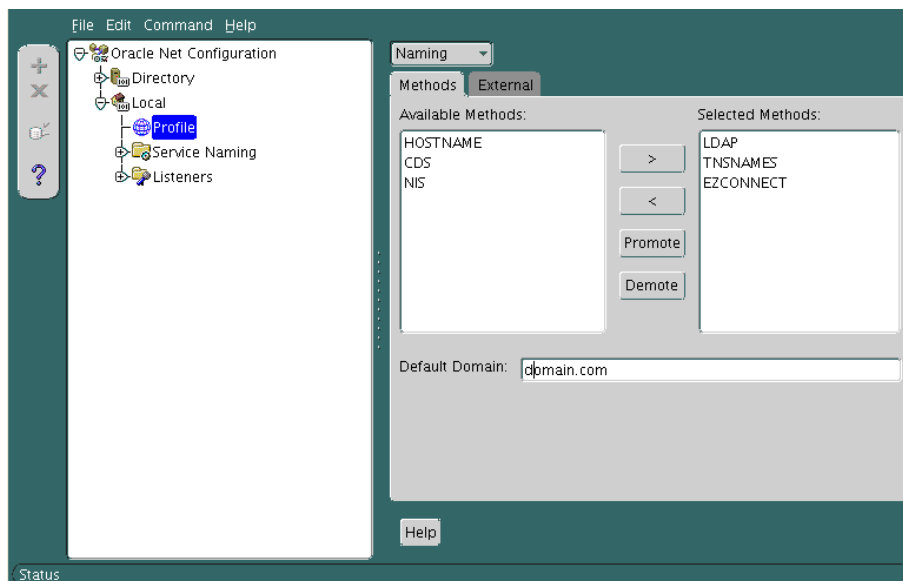
Configuring the DB Services

Configuring tnsnames.ora and sqlnet.ora

1. Start the Oracle Net Manager with the following command:

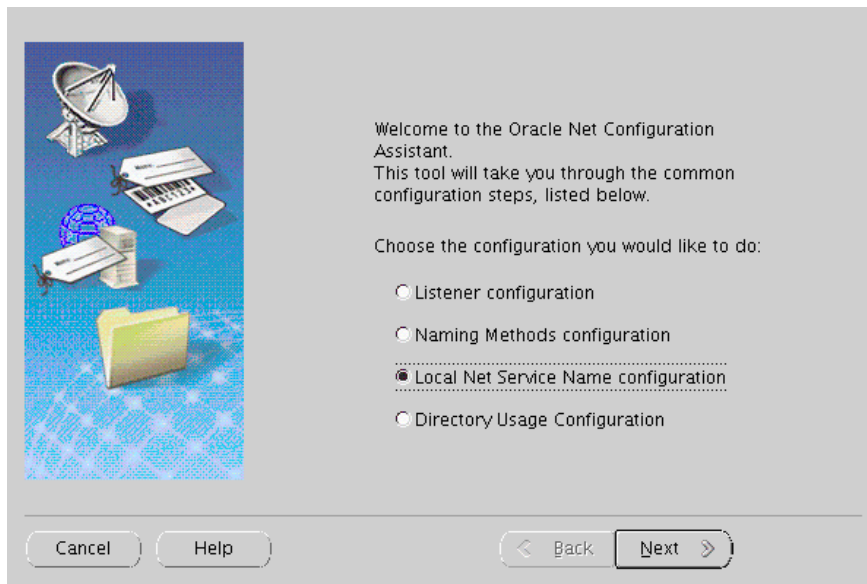
```
$ORACLE_HOME/bin/netmgr
```

2. Expand the view for “Local” and click **Profile**.

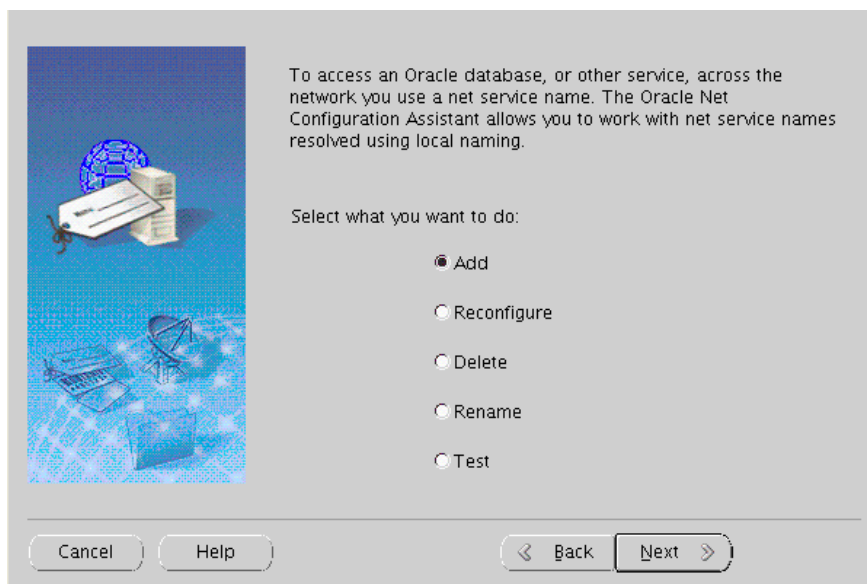


3. Enter your domain name in the field **Default Domain**.
4. Save the configuration (File>Save Network Configuration) and exit the Oracle Net Manager by clicking on File>Exit.
5. Start the Oracle Net Services Configuration Tool with the following command:

```
$ORACLE_HOME/bin/netca
```
6. Select **Local Net Service Name configuration** and click **Next**.




7. Select **Add** and click **Next**.



8. Enter the service name and click **Next**.


The service name is the global database name you provided with the database creation. In this example the database name is **plm61.domain.com**.



Each Oracle database or service has a service name. An Oracle database's service name is normally its global database name. Enter the service name of the database or other service you want to access.


Service Name:

9. Select **TCP** as the network protocol and click **Next**.



To communicate with the database across a network, a network protocol is used. Select the protocol used for the database you want to access.

10. Enter the fully qualified machine name (where the Oracle database is located) and click **Next**.



To communicate with the database using the TCP/IP protocol, the database computer's host name is required. Enter the host name for the computer where the database is located.


Host name:

A TCP/IP port number is also required. In most cases the standard port number should be used.

☒ Use the standard port number of 1521

☐ Use another port number:

11. Select not to perform a test and click on **Next**.



You can verify that an Oracle database can be reached, using the information provided, by performing a connection test.

Would you like to test that a connection can be made to the database?

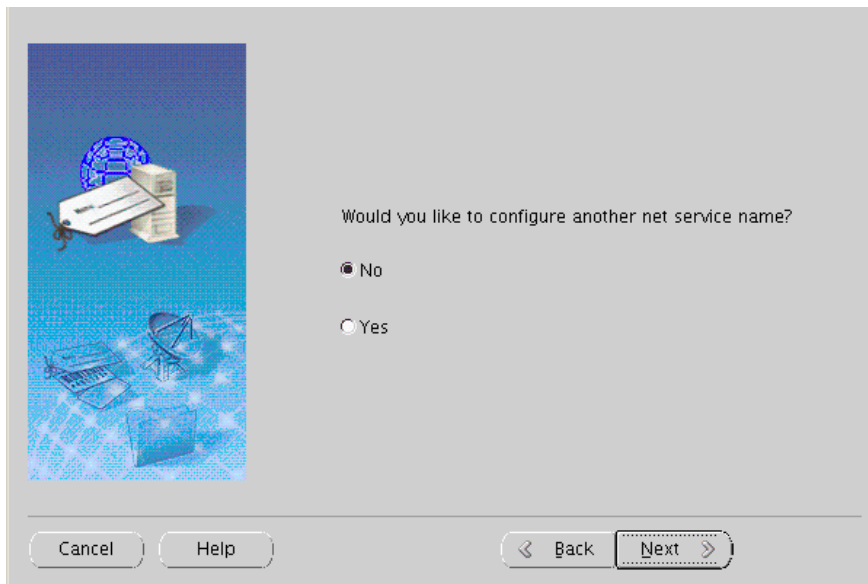
☒ No, do not test

☐ Yes, perform a test

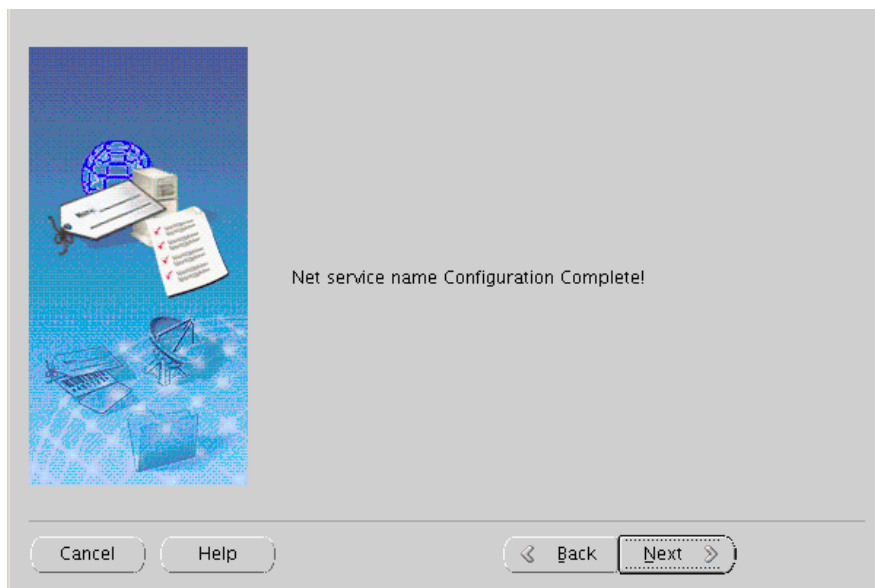
12. Finally, provide the Net Service Name and click **Next**.



13. Select not to configure another net service and click **Next**.



14. The Net service name configuration is completed. Click on **Next** and then on **Finish** to quit.



15. Test the database connection with the following command:

```
sqlplus system@plm61/<SYSTEM password>
```

Chapter 8

Modifying the Oracle Database

Creating Directories for Oracle Data Pump Utility

1. Create a directory which will be used for Oracle Data Pump Export/Import Utility with two subdirectories - system and user (for instance /opt/dpump/system; /opt/dpump/user).

2. Open a sqlplus session and connect as 'system'.

```
sqlplus system/<system password>
```

3. Run the script ddl_pump_dir.sql which is located in the addon/db/sql directory.

```
SQL>@<full path to the file ddl_pump_dir.sql>
```

4. Enter the path to the main directory created under step 1 (for instance /opt/dpump).

The script will create two directory objects – one for system users and one for normal users and will give rights for the second directory to user PLM.

Creating a Database User and Role

You will need to create the Agile e6.1.2.2 database user and role and provide the necessary privileges and quotas. You can do this using the following commands or using the Oracle Enterprise Manager Database Control as described in the section below.

You can also create AGILE_E_ROLE role and the plm schema by executing the script cre_plm_usr.sql in the directory addon/db/sql.

```
SQL>@<full path to the file cre_plm_usr.sql>
```

Username (e.g. PLM) and password have to be provided.

Using SQL to Create a Role

1. Check if the plm role exists – open a sqlplus session, connect as SYS or SYSTEM and execute

```
select role from dba_roles where role='AGILE_E_ROLE';
```

2. If string 'AGILE_E_ROLE' is returned, the role exists. Thus, skip the role creation and continue with the user creation. Otherwise, the role has to be created.

3. Use the sql code below to create the role AGILE_E_ROLE:

```
CREATE ROLE AGILE_E_ROLE;
GRANT CONNECT TO AGILE_E_ROLE;
GRANT CREATE TABLE TO AGILE_E_ROLE;
GRANT CREATE VIEW TO AGILE_E_ROLE;
GRANT CREATE SYNONYM TO AGILE_E_ROLE;
GRANT CREATE DATABASE LINK TO AGILE_E_ROLE;
GRANT CREATE SEQUENCE TO AGILE_E_ROLE;
GRANT ALTER SESSION TO AGILE_E_ROLE;
GRANT CREATE PROCEDURE TO AGILE_E_ROLE;
GRANT CREATE TRIGGER TO AGILE_E_ROLE;
GRANT ALL ON DIRECTORY ORA_DMP TO AGILE_E_ROLE;
```

Using SQL to Create a User

1. Use the sql code below to create the plm schema (named, e.g. PLM):

```
CREATE USER PLM
IDENTIFIED BY <PASSWORD>
DEFAULT TABLESPACE "EDB"
TEMPORARY TABLESPACE "TEMP"
PROFILE DEFAULT
QUOTA UNLIMITED ON "EDB"
QUOTA UNLIMITED ON "EDB_IDX"
QUOTA UNLIMITED ON "EDB_TMP"
QUOTA UNLIMITED ON "EDB_TMPIDX"
QUOTA UNLIMITED ON "EDB_LOB"
ACCOUNT UNLOCK;
GRANT "AGILE_E_ROLE" TO PLM;
ALTER USER PLM DEFAULT ROLE AGILE_E_ROLE;
```

Using the Enterprise Manager Database Control to Create a User

1. Start the Enterprise Manager Database Control.

By default it can be invoked on <https://localhost.localdomain:5501/em/console>, but it can be configured manually to use another port. DB Control port and url can be found by checking the status of the DB Control.

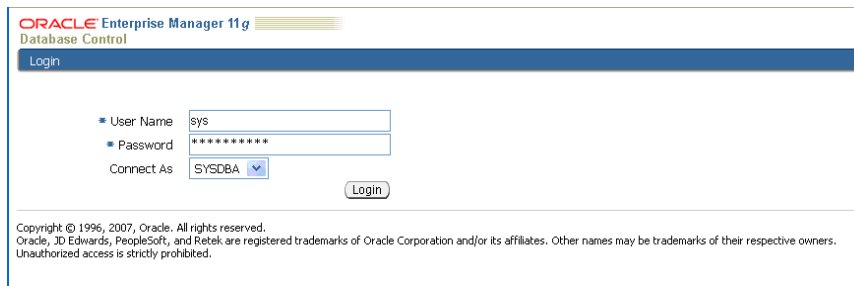
```
emctl status dbconsole
```

Oracle Enterprise Manager 11g Database Control Release 11.2.0.3

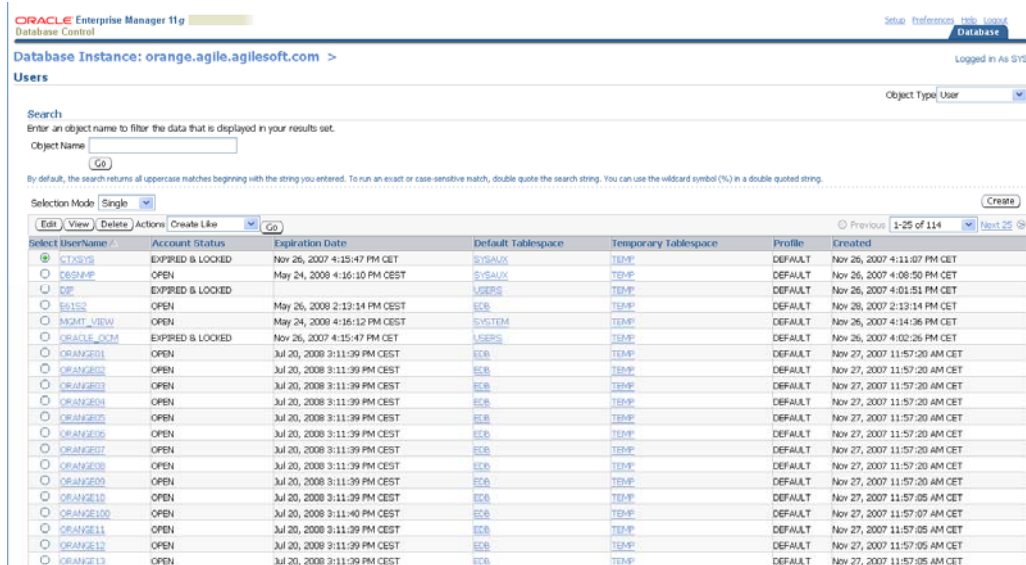
Copyright (c) 1996, 2012 Oracle Corporation. All rights reserved.

<https://hostname:port/em/console/aboutApplication> (output)

- Click on **Login**.



- Click on the **Server** tab and in the **Security** section on **Users**.
- Click **Create**.



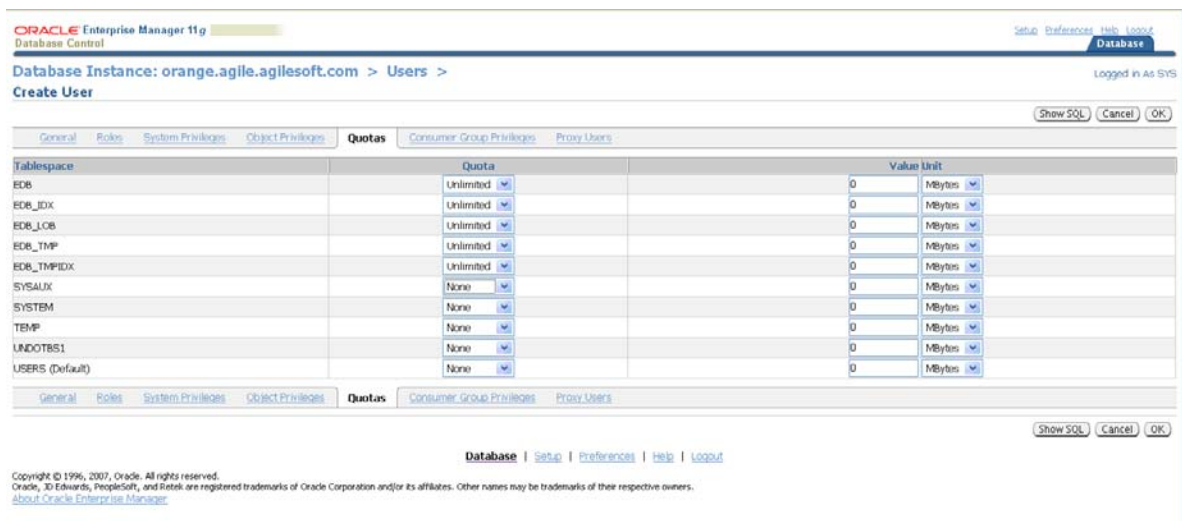
Select Username	Account Status	Expiration Date	Default Tablespace	Temporary Tablespace	Profile	Created
CTXSYS	EXPIRED & LOCKED	Nov 26, 2007 4:15:47 PM CET	SYSAUX	TEMP	DEFAULT	Nov 26, 2007 4:11:07 PM CET
DSNAMP	OPEN	May 24, 2008 4:16:10 PM CEST	SYSAUX	TEMP	DEFAULT	Nov 26, 2007 4:08:50 PM CET
DDP	EXPIRED & LOCKED		USERS	TEMP	DEFAULT	Nov 26, 2007 4:01:51 PM CET
EXFS2	OPEN	May 26, 2008 2:13:14 PM CEST	SCB	TEMP	DEFAULT	Nov 26, 2007 2:13:14 PM CET
MGMT_VIEW	OPEN	May 24, 2008 4:16:12 PM CEST	SYSTEM	TEMP	DEFAULT	Nov 26, 2007 4:14:06 PM CET
ORACLE_OCM	EXPIRED & LOCKED	Nov 26, 2007 4:15:47 PM CET	USERS	TEMP	DEFAULT	Nov 26, 2007 4:02:26 PM CET
ORANGE01	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE02	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE03	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE04	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE05	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE06	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE07	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE08	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE09	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:20 AM CET
ORANGE10	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:05 AM CET
ORANGE11	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:05 AM CET
ORANGE12	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:05 AM CET
ORANGE13	OPEN	Jul 20, 2008 3:11:39 PM CET	SCB	TEMP	DEFAULT	Nov 27, 2007 11:57:05 AM CET

- Click on the **General** tab, insert a user name and password, and assign the default and temporary table space.
- On the **Roles** tab click **Edit List**.
- Select role **AGILE_E_ROLE** from the list with available roles and click **Move**.

The role is moved to the Selected Roles.



8. Click **OK**.
9. Open the Quotas tab on the Create User mask and assign unlimited quota to EDB, EDB_IDX, EDB_LOB, EDB_TMP and EDB_TMPIDX.



10. Click **OK** to finish the database user creation.

Importing the Database Dump

1. Import the Agile e6.1.2.2 dump using the following commands, and then check the logfile for errors. Make sure that the correct value is set for the environment variable NLS_LANG (value from the file csh_ORA11.2 - AMERICAN_AMERICA.WE8MSWIN1252).

```
imp username/pass@plm61 file=plm61.dmp log=plm61.log buffer=500000
commit=y statistics=none full=y
```

username, pass are the name and the password of the user you created in the database.

commit=y	Rollback segments cannot get too small
statistics=n	No statistics will be created
buffer=500000	Necessary for lobs, better performance
full=y	Imports full dump even if the dump was exported by different user

Compiling All Invalid Objects in the Schema PLM

After importing the Agile e6.1.2.2 dump some objects might be invalid. This can be verified in the following way:

1. Open a sqlplus session and connect as user 'sys' – as sysdba.

```
sqlplus sys/<sys password> as sysdba
SQL>select count(*) from dba_objects where status <> 'VALID' and
owner='PLM' ;
```

If the returned message is 'no rows selected', then you have no invalid objects.

2. Otherwise, execute the script utlrp.sql – the script will compile all invalid objects in the database.

```
SQL> @?/rdbms/admin/utlrp.sql
```

3. Verify once again that there are no invalid objects:

```
SQL>select count(*) from dba_objects where status <> 'VALID' and
owner='PLM' ;
```

Gathering the Statistics

In Oracle 11gR2 the default value for the OPTIMIZER_MODE initialization parameter is ALL_ROWS, which means that a cost-based approach will be used for all SQL statements. Oracle highly recommends creating statistics in order to avoid performance loss. This should be done after the dump import and has to be repeated periodically.

1. Calculate statistics of all tables and indexes in db schema PLM:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS('PLM', CASCADE =>true);
```

2. Calculate statistics of all tables and indexes in db schema PLM with 5% of the rows:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS('PLM', estimate_percent =>
5, CASCADE =>true);
```

3. Drop all statistics of PLM schema objects. Optimizer is now running in rule mode.

```
SQL> EXECUTE DBMS_STATS.DELETE_SCHEMA_STATS('PLM') ;
```

For all schema objects, statistics have to be available to support the cost based optimizer. If tables and indexes are modified or created, statistics must be established.

4. Calculate statistics on all tables without statistics and their indexes in db schema PLM with 5% of the rows:

```
SQL> EXECUTE DBMS_STATS.GATHER_SCHEMA_STATS(ownname => 'PLM',options
=> 'GATHER EMPTY', estimate_percent => 5, CASCADE =>true);
```

5. Calculate statistics on tables t_master_dat and their indexes in db schema PLM with 10% of the rows:

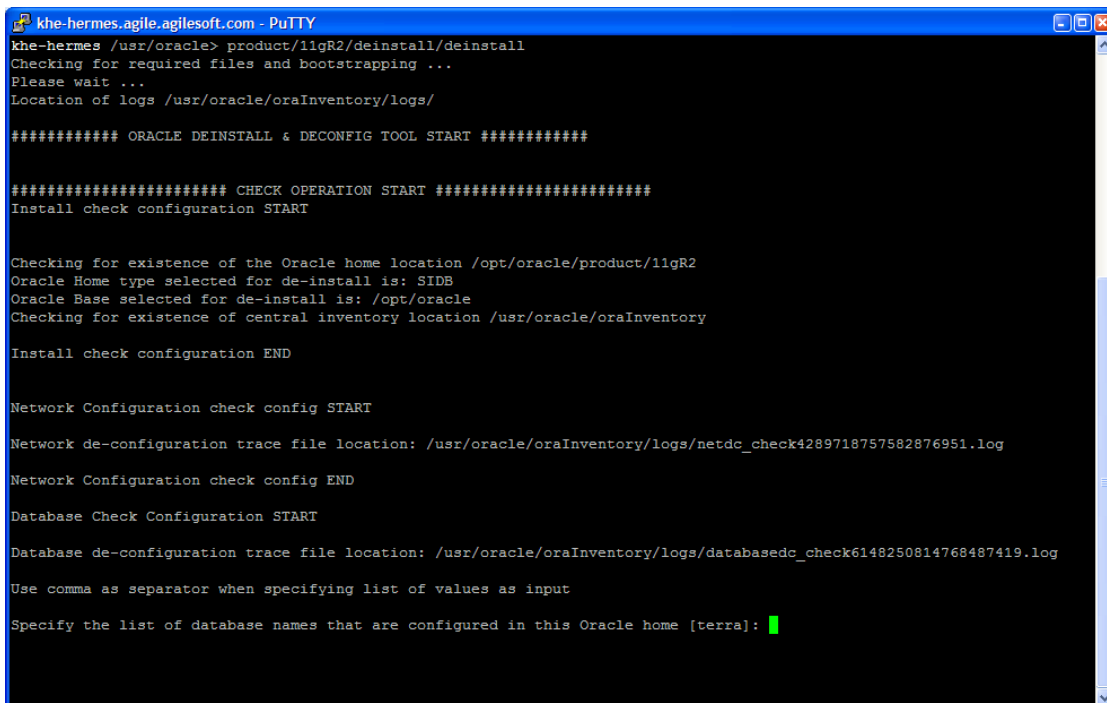
```
SQL> exec sys.dbms_stats.gather_table_stats(ownname=> 'PLM', tablename=>
'T_MASTER_DAT', partname=> NULL , estimate_percent=> 10 ,cascade=>
true);
```

Note Statistic information can be viewed, e.g. in user_tables and user_indexes. These views provide information about average width of the row and number of rows.

Uninstalling the Oracle 11gR2

It is not possible to uninstall Oracle 11gR2 database with Oracle Universal Installer shipped with 11gR1 or an earlier version.

Oracle 11gR2 comes with an uninstall utility. If you want to uninstall Oracle 11gR2, start the script deinstall in the directory \$ORACLE_HOME/deinstall.



```
khe-hermes.agile.agilesoft.com - PuTTY
khe-hermes /usr/oracle> product/11gR2/deinstall/deinstall
Checking for required files and bootstrapping ...
Please wait ...
Location of logs /usr/oracle/oraInventory/logs/

##### ORACLE DEINSTALL & DECONFIG TOOL START #####

##### CHECK OPERATION START #####
Install check configuration START

Checking for existence of the Oracle home location /opt/oracle/product/11gR2
Oracle Home type selected for de-install is: SIDB
Oracle Base selected for de-install is: /opt/oracle
Checking for existence of central inventory location /usr/oracle/oraInventory

Install check configuration END

Network Configuration check config START

Network de-configuration trace file location: /usr/oracle/oraInventory/logs/netdc_check4289718757582876951.log
Network Configuration check config END

Database Check Configuration START

Database de-configuration trace file location: /usr/oracle/oraInventory/logs/databasedc_check6148250814768487419.log

Use comma as separator when specifying list of values as input

Specify the list of database names that are configured in this Oracle home [terra]: █
```

Specify all single instance listeners that are to be deconfigured as well as database names that are configured in this Oracle home. Finally, confirm the deinstallation with 'y'.

The \$ORACLE_HOME directory will be deleted after the deinstallation.

