Oracle Database 10*g* R2 (10.2.0.5)
on
SUSE Linux Enterprise Server 11 SP1

(How to Install)

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Introduction

Oracle Database 10g R2 (10.2.0.5) is certified for SUSE Linux Enterprise Server 11 Service Pack 1 (SLES11 and SLES11 SP1). This document is not a replacement of an official Oracle Installation manual but provided to help you to get Oracle Database installed on SLES11 SP1 with minimal efforts. Here, x86_64 version of both Oracle Database and SUSE Linux Enterprise Server is used. Similar steps applies to other platforms (x86, ia64, etc.). If you encounter any problem or have general question, please post your query to Novell mailing list suse-oracle@listx.novell.com.

Note: Information provided here will work for SUSE Linux Enterprise Desktop

Required Software

Novell

- SUSE Linux Enterprise Server 11 Service Pack 1 (http://www.novell.com/products/server/eval.html)

Oracle

- Oracle Database 10g Release 2 (10.2.0.1) Enterprise Edition (http://www.oracle.com/technology/software/products/database/oracle10g/index.html)
- Oracle Database 10g Release 2 (10.2.0.5) Patch Set 4 for Linux

Hardware Requirements

The system must meet the following minimum hardware requirements:

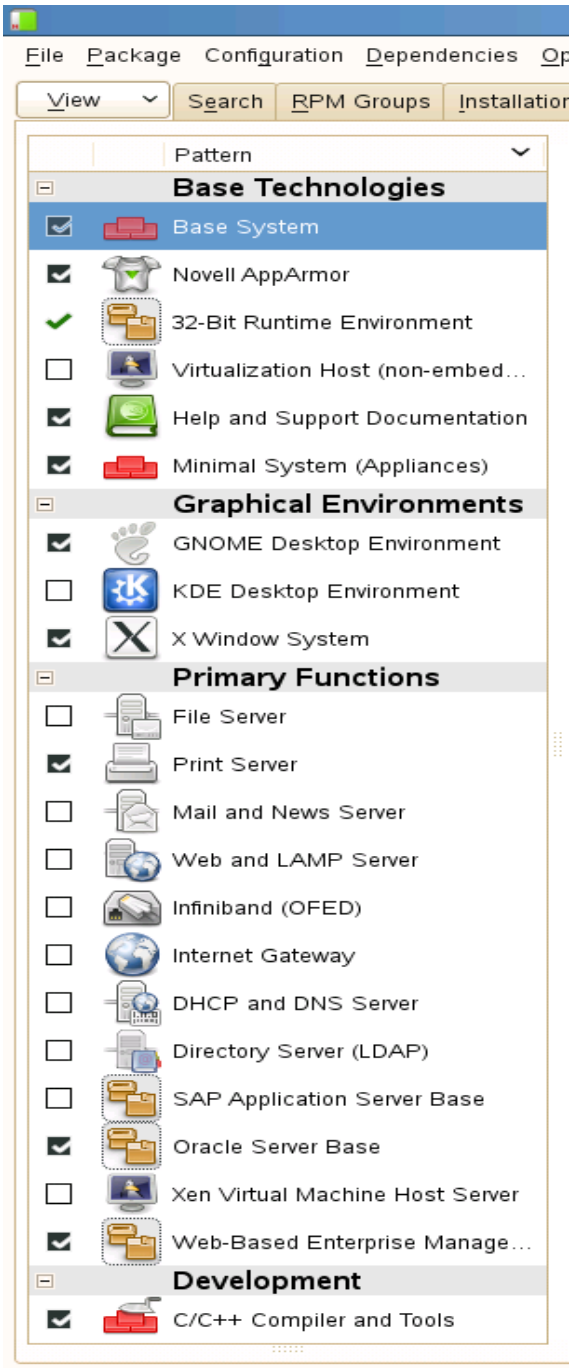
Requirement	**Minimum Value**
RAM	1024 MB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	400 MB
Disk space for software files	3.5 GB
Disk space for database files	1.2 GB

Installation Steps

1. Install SUSE Linux Operating System

Follow the Installation instructions provided in the SLES11 SP1 install manual. SLES11 SP1 with default packages along with Oracle Server Base, and “C/C++ Compiler and Tools” is sufficient for Oracle Database

10g R2 installation. Oracle Server Base provides orarun package, which does most of the Oracle pre-install requirement i.e. setting kernel parameters, oracle user creation, etc.. Here is screen-shot from SLES11 SP1 (x86_64) server.



Check whether C/C++ compiler is installed using“gcc --version”. If gcc is not installed, then use YaST setup tool to install “C/C++ Compiler and Tools”.

2. **/etc/hosts** - Comment out 127.0.0.2 and put your server's Static IP address.

```
# 127.0.0.2       sles11.novell.com sles11
  192.168.0.2     sles11.novell.com sles11
```

3. **Oracle Install prerequisites**

SUSE provides orarun packages to automate most of the Oracle pre-install task. Refer to Oracle installation document for complete list of prerequisites.

orarun :

1. If you have selected “Oracle Server Base” option at install time, orarun package is already installed on your server.

   Note: For SUSE Linux Enterprise Desktop 11 get orarun from SLES11 SP1 DVD and install manually:

   #rpm -ivh orarun-1.9-172.20.21.54.x86_64.rpm

2. The account for oracle user is disabled. Please enable it by:

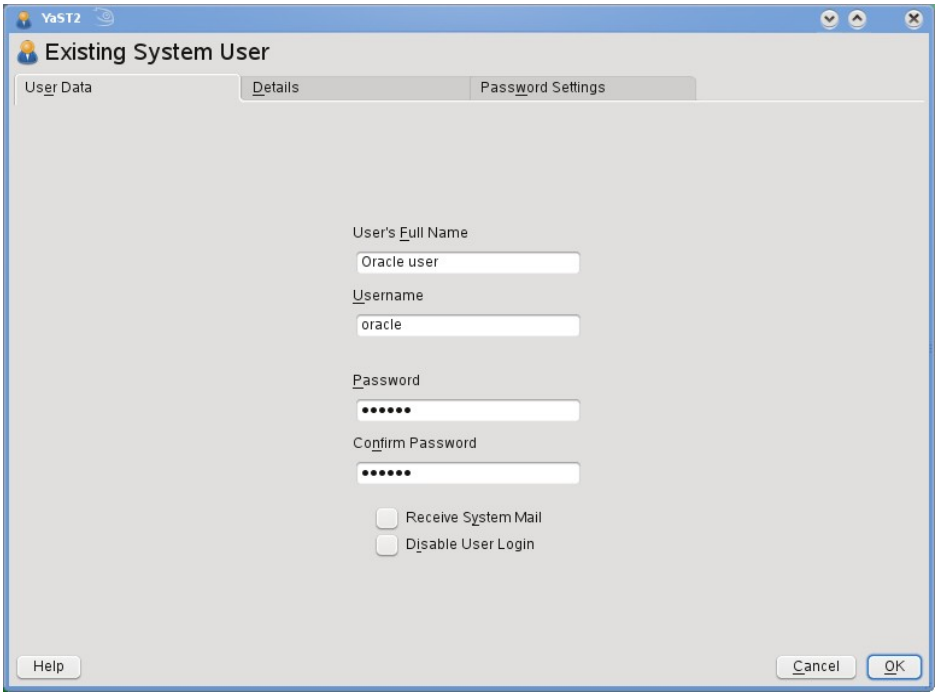
   1. Changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", either by editing the "/etc/passwd" file.

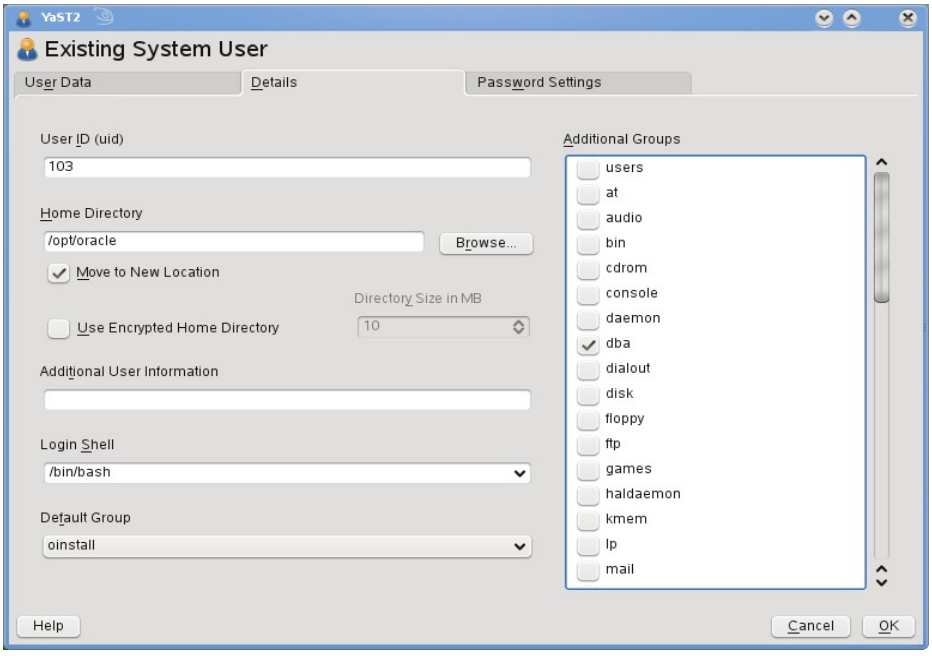
   2. Set a new password for user “oracle” i.e. “/usr/bin/passwd oracle”.

   You can use SUSE setup tool YaST to accomplish above task.

   /sbin/yast2 -> “security and Users” -> ”Edit and create groups”
   (Select users tab and set “System Users” filter to see oracle user.)

Following are the screen shots of “oracle” user properties:





3. Change Default Oracle environment set by orarun (If required)

    1. Change Oracle home directory by editing ORACLE_HOME variable in “/etc/profile.d/oracle.sh” file.

        ORACLE_HOME=$ORACLE_BASE/product/10gR2/db

2. Default ORACLE_SID set by orarun install is “orcl”. Change it to your preferred name in “/etc/profile.d/oracle.sh” file.

   Note: Oracle Installer will ask this database name and it should match to ORACLE_SID to avoid any problem.

4. Run “/usr/sbin/rcoracle start “ to set kernel parameters. Ignore ORACLE_HOME not set message as this will get fixed once Oracle Database is installed.

5. Exit from current session and login as new “**oracle**” user. Following is a snap-shot verifying current user:

```
oracle@sles11-sp1:~> uname -a
Linux sles11-sp1 2.6.32.12-0.7-default #1 SMP 2010-05-20 11:14:20 +0200 x86_64 x
86_64 x86_64 GNU/Linux
oracle@sles11-sp1:~> id
uid=102(oracle) gid=103(oinstall) groups=103(oinstall),104(dba)
oracle@sles11-sp1:~> cat /etc/SuSE-release
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 1
oracle@sles11-sp1:~>
```

4. Oracle 10g R2 Installation

Get Oracle Database 10g R2 (10.2.0.1) Software from oracle web site depending on your platform (10201_database_linux_x86_64.cpio.gz) and extract files:

```
#gunzip 10201_database_linux_x86_64.cpio.gz
#cpio -idmv < 10201_database_linux_x86_64.cpio
```

1. Make sure you are logged in as “**oracle**” user.

2. Run Oracle Universal installer : ./runInstaller

   You will get OS not supported error. This is due to the fact that Oracle 10gR2 was released before SLES11. To fix OS not supported error, apply any of the following fix:

   Note: You may get libxcb java Warning, please ignore this.

   1. Modify “database/install/oraparam.ini” file to add support for SUSE Linux 11. Also modify database/stage/prereq/db/refhost.xml to update OPERATING_SYSTEM from 9 to 11.

a) After modification oraparam.ini file will look like:

```
oracle@sles11:~/SW/database> grep SuSE install/oraparam.ini
Linux=redhat-3,SuSE-9,SuSE-10,SuSE-11,redhat-4,UnitedLinux-1.0,asianux-1,asianux-2
[Linux-SuSE-9-optional]
oracle@sles11:~/SW/database>
```

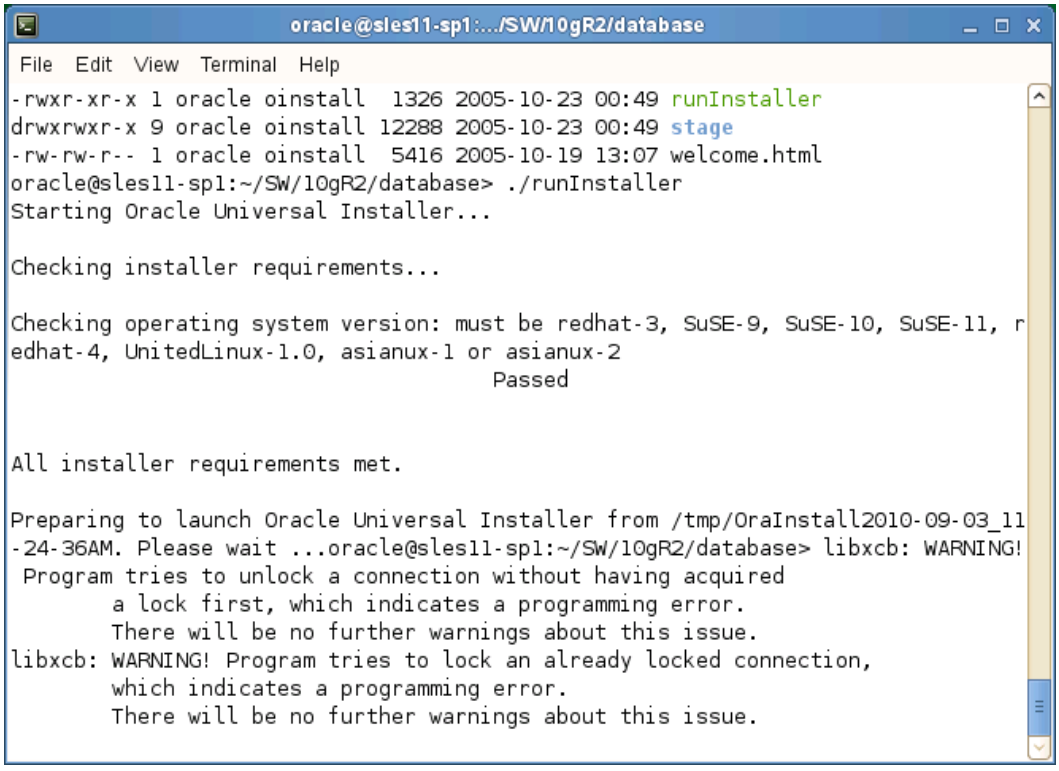
b) After modification refhost.xml will look like:

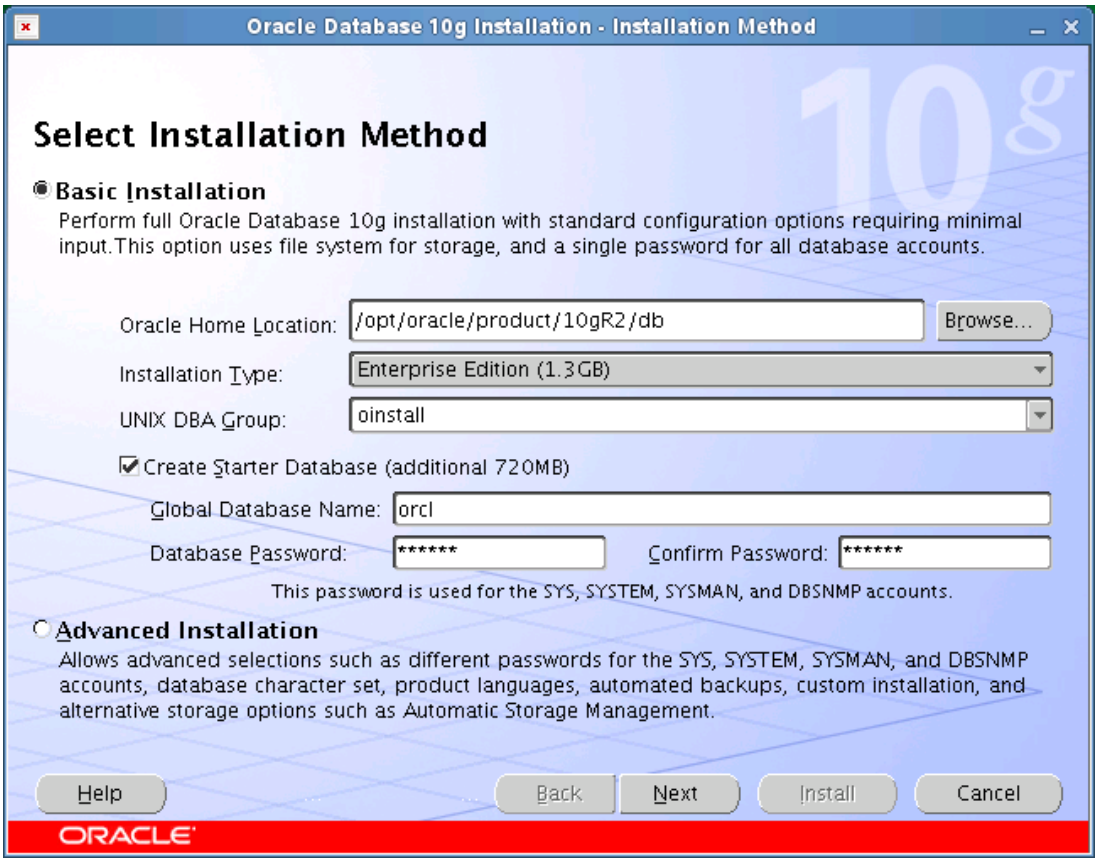
```
<OPERATING_SYSTEM>
  <VERSION VALUE="11"/>
  <ARCHITECTURE VALUE="x86"/>
  <NAME VALUE="Linux"/>
  <VENDOR VALUE="SuSE"/>
```

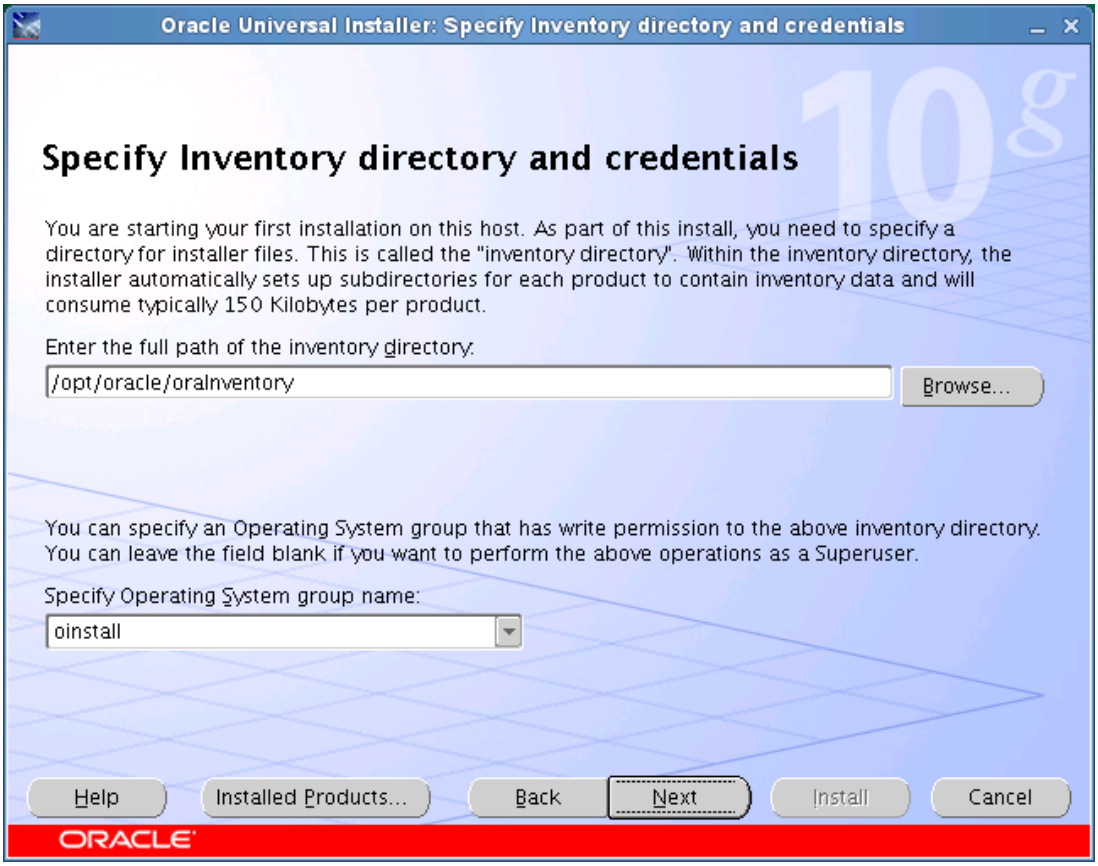
2. You can skip step #1 (or if you are installing from read only media), by using "**-ignoreSysPrereqs**" install option to bypass prerequisites checks.

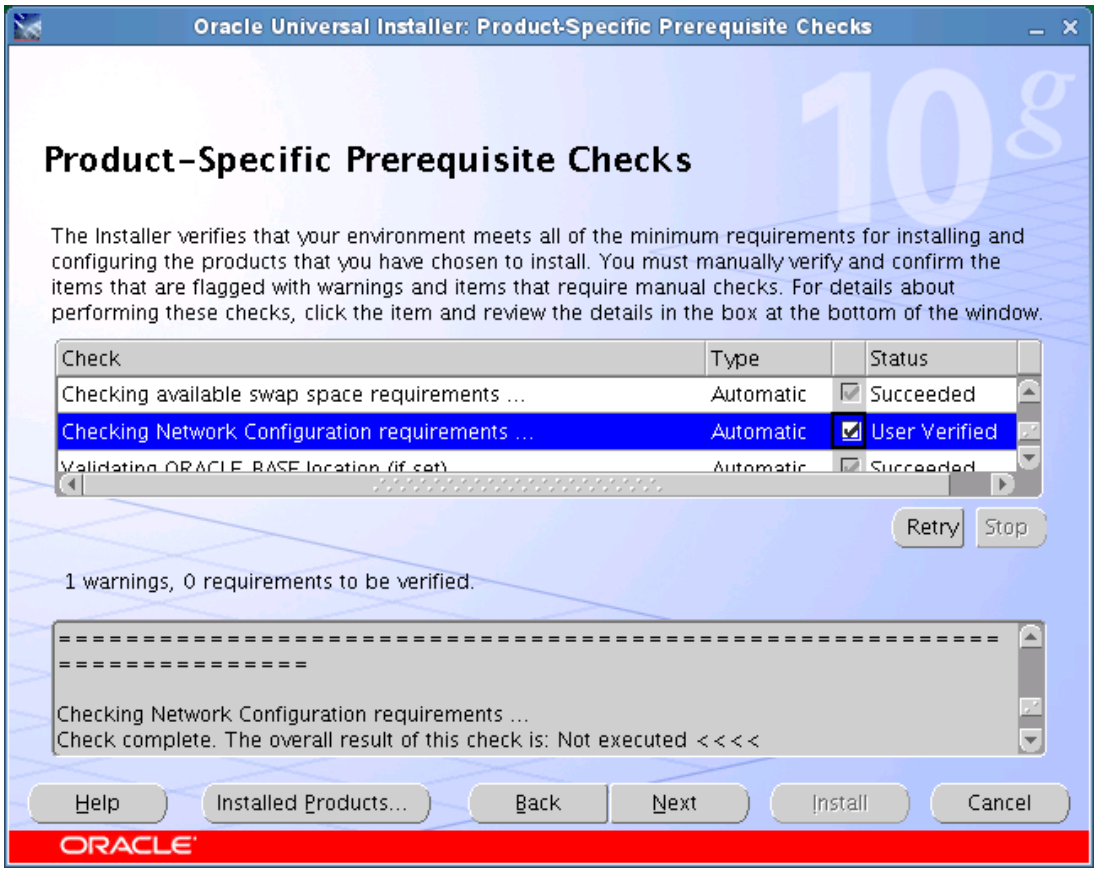
   i.e. ./runInstaller -ignoreSysPrereqs

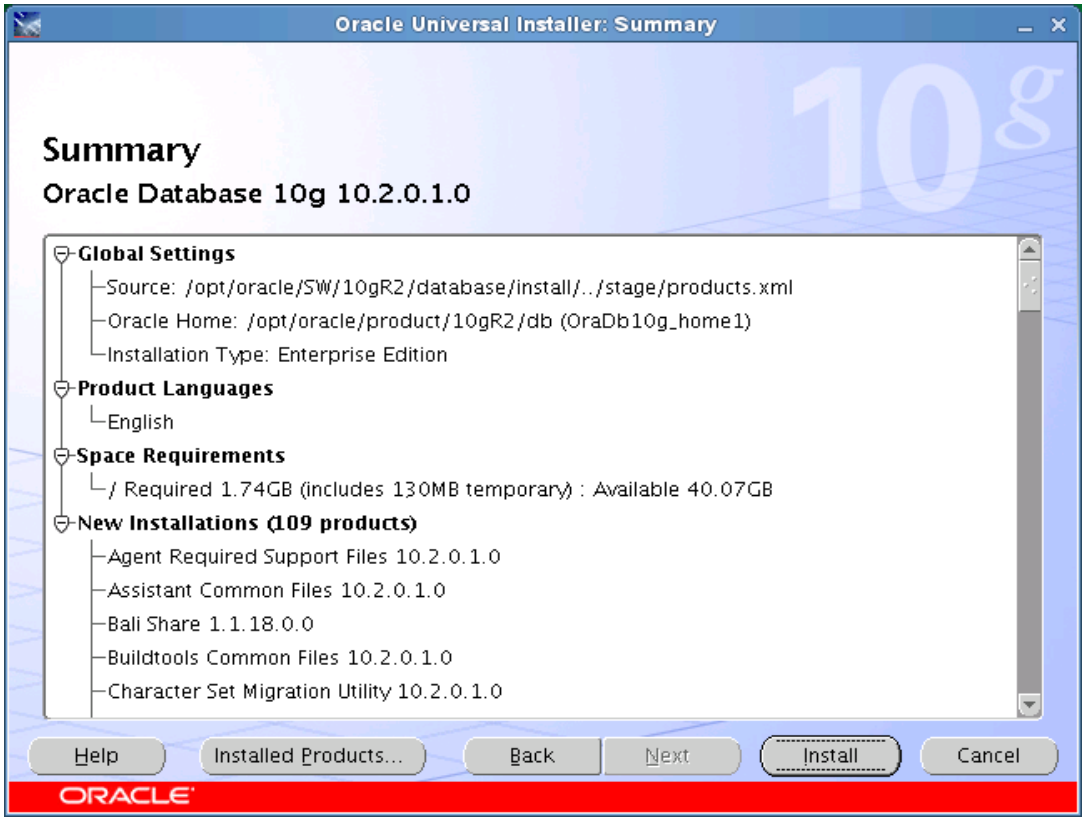
Installation will walk you through with self explanatory instructions. Here are screen-shots from simple Oracle Database 10gR2 Installation:

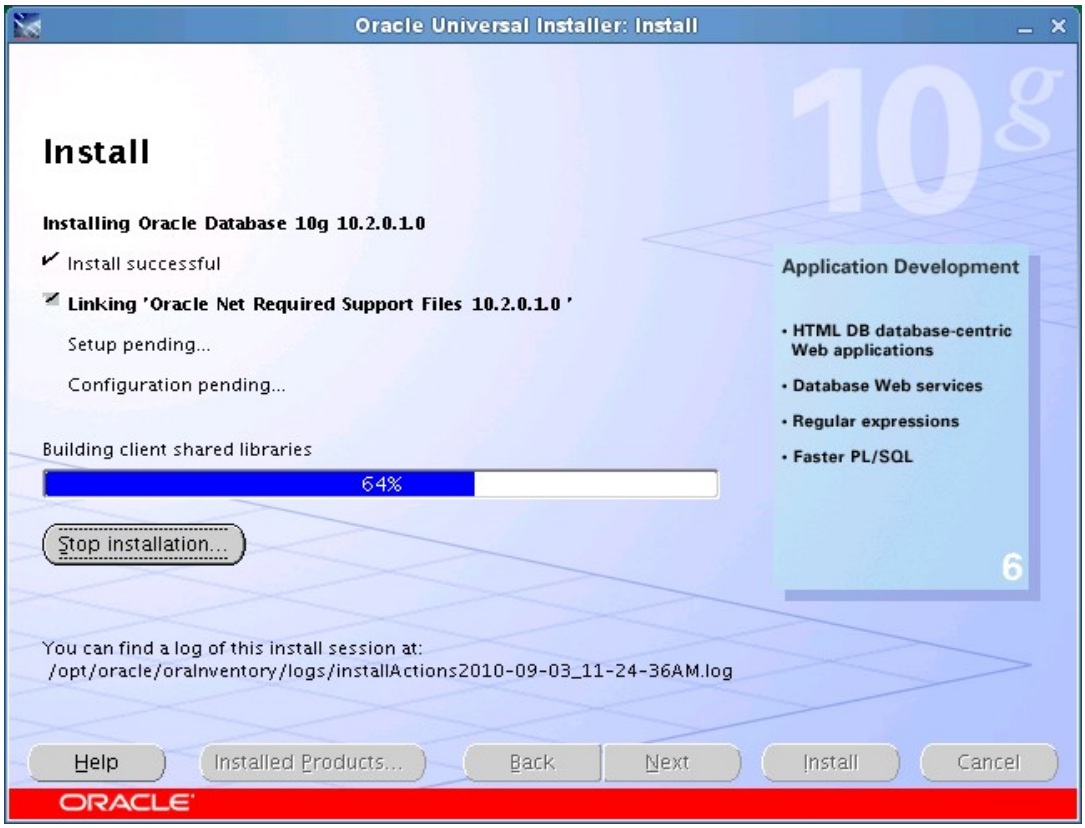


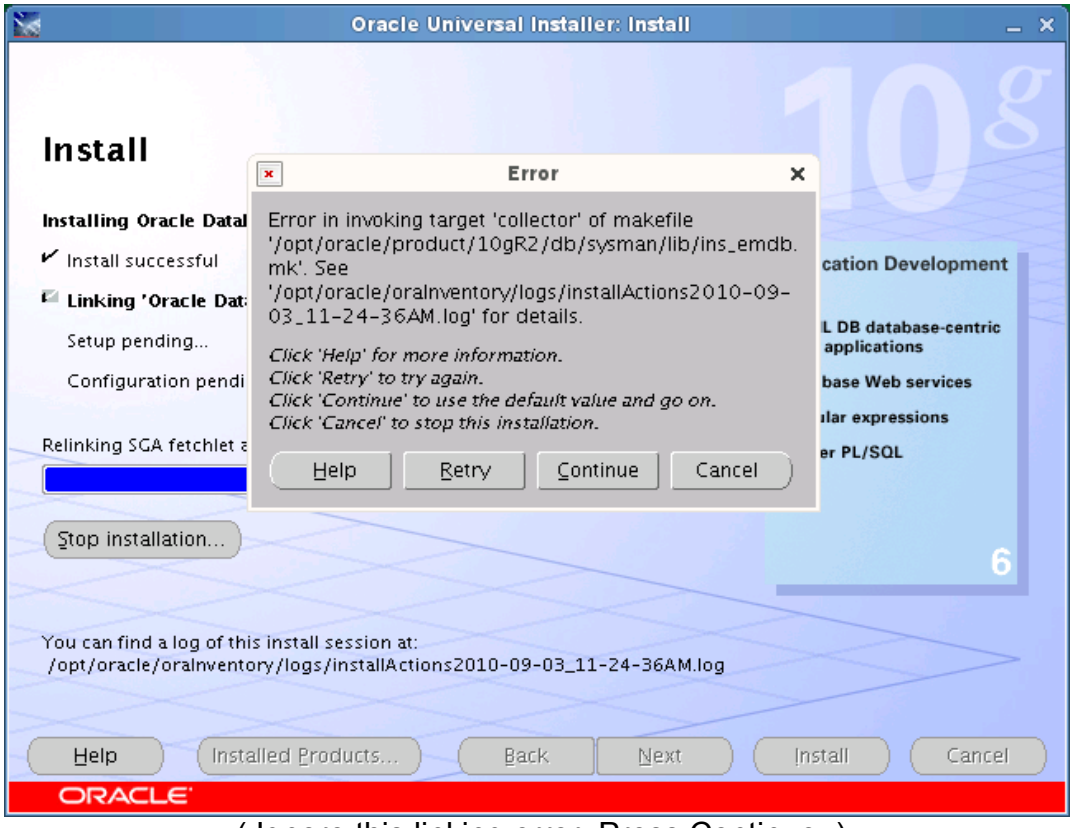

Oracle Database 10g Installation - Installation Method
Select Installation Method
Basic Installation
Perform full Oracle Database 10g installation with standard configuration options requiring minimal input.This option uses file system for storage, and a single password for all database accounts.
Oracle Home Location:
/opt/oracle/product/10gR2/db
Browse...
Installation Type:
Enterprise Edition (1.3GB)
UNIX DBA Group:
oinstall
Create Starter Database (additional 720MB)
Global Database Name:
orcl
Database Password:
******
Confirm Password:
******
This password is used for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts.
Advanced Installation
Allows advanced selections such as different passwords for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.
Help
Back
Next
Install
Cancel
ORACLE


Oracle Universal Installer: Specify Inventory directory and credentials
Specify Inventory directory and credentials
You are starting your first installation on this host. As part of this install, you need to specify a directory for installer files. This is called the "inventory directory". Within the inventory directory, the installer automatically sets up subdirectories for each product to contain inventory data and will consume typically 150 Kilobytes per product.
Enter the full path of the inventory directory:
/opt/oracle/oraInventory
Browse...
You can specify an Operating System group that has write permission to the above inventory directory. You can leave the field blank if you want to perform the above operations as a Superuser.
Specify Operating System group name:
oinstall
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE

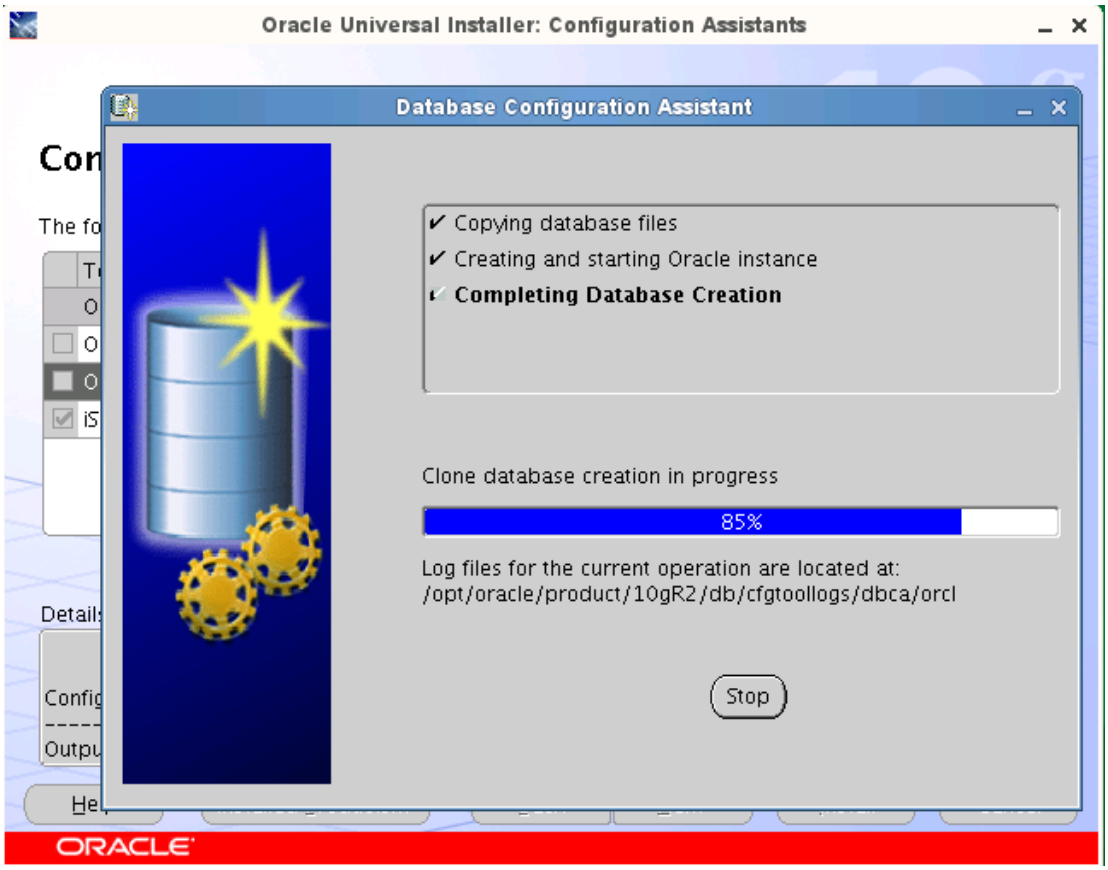

Oracle Universal Installer: Product-Specific Prerequisite Checks
Product-Specific Prerequisite Checks
The Installer verifies that your environment meets all of the minimum requirements for installing and configuring the products that you have chosen to install. You must manually verify and confirm the items that are flagged with warnings and items that require manual checks. For details about performing these checks, click the item and review the details in the box at the bottom of the window.
Check
Type
Status
Checking available swap space requirements ...
Automatic
Succeeded
Checking Network Configuration requirements ...
Automatic
User Verified
Retry
Stop
1 warnings, 0 requirements to be verified.
Checking Network Configuration requirements ...
Check complete. The overall result of this check is: Not executed <<<<
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE

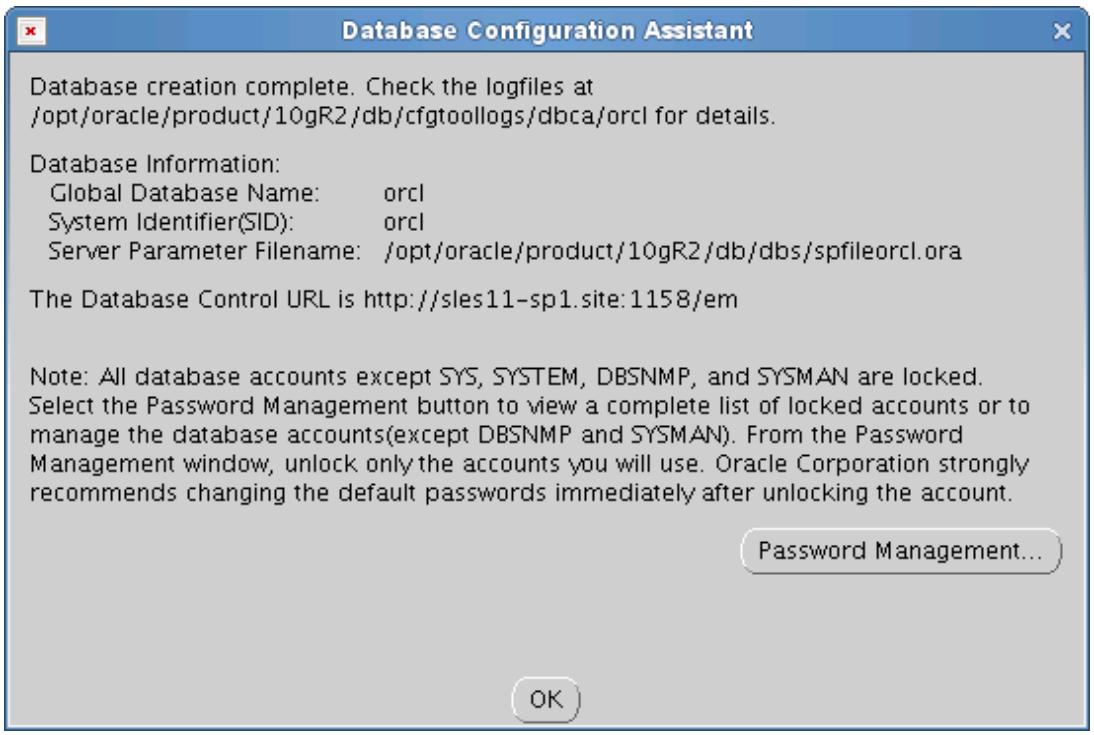

Oracle Universal Installer: Summary
Summary
Oracle Database 10g 10.2.0.1.0
Global Settings
Source: /opt/oracle/SW/10gR2/database/install/../stage/products.xml
Oracle Home: /opt/oracle/product/10gR2/db (OraDb10g_home1)
Installation Type: Enterprise Edition
Product Languages
English
Space Requirements
/ Required 1.74GB (includes 130MB temporary) : Available 40.07GB
New Installations (109 products)
Agent Required Support Files 10.2.0.1.0
Assistant Common Files 10.2.0.1.0
Bali Share 1.1.18.0.0
Buildtools Common Files 10.2.0.1.0
Character Set Migration Utility 10.2.0.1.0
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE



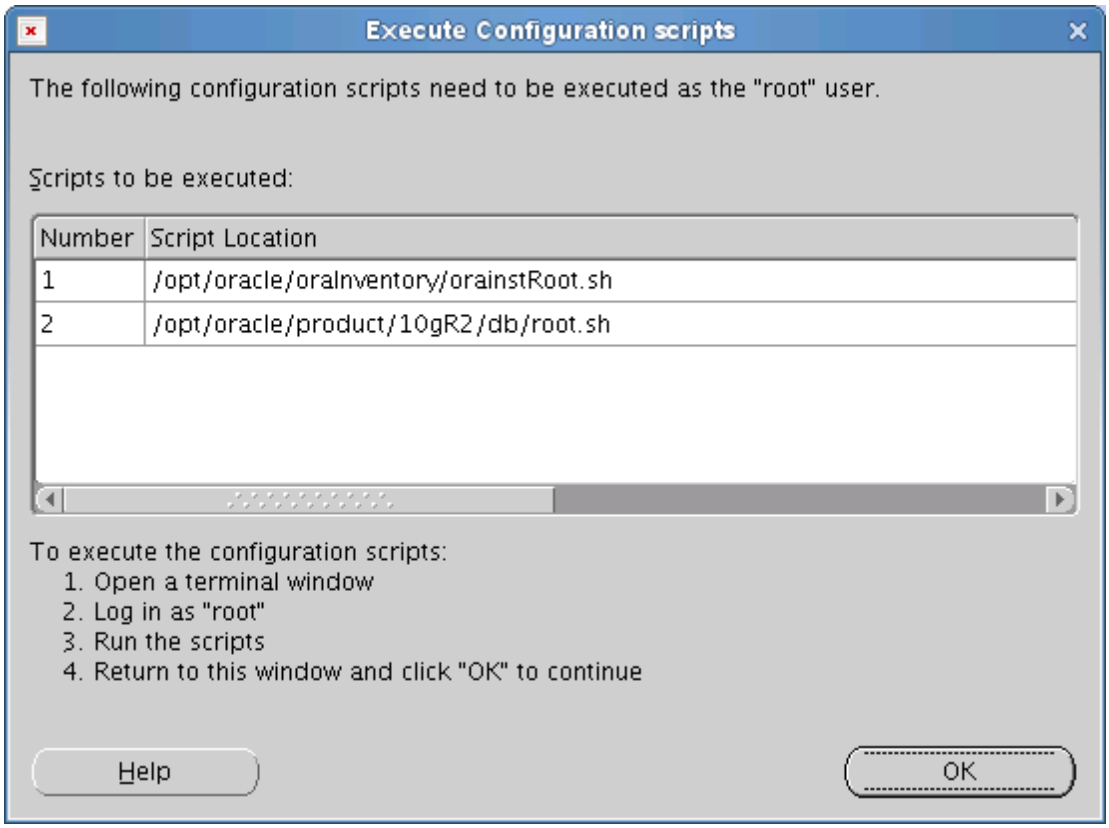


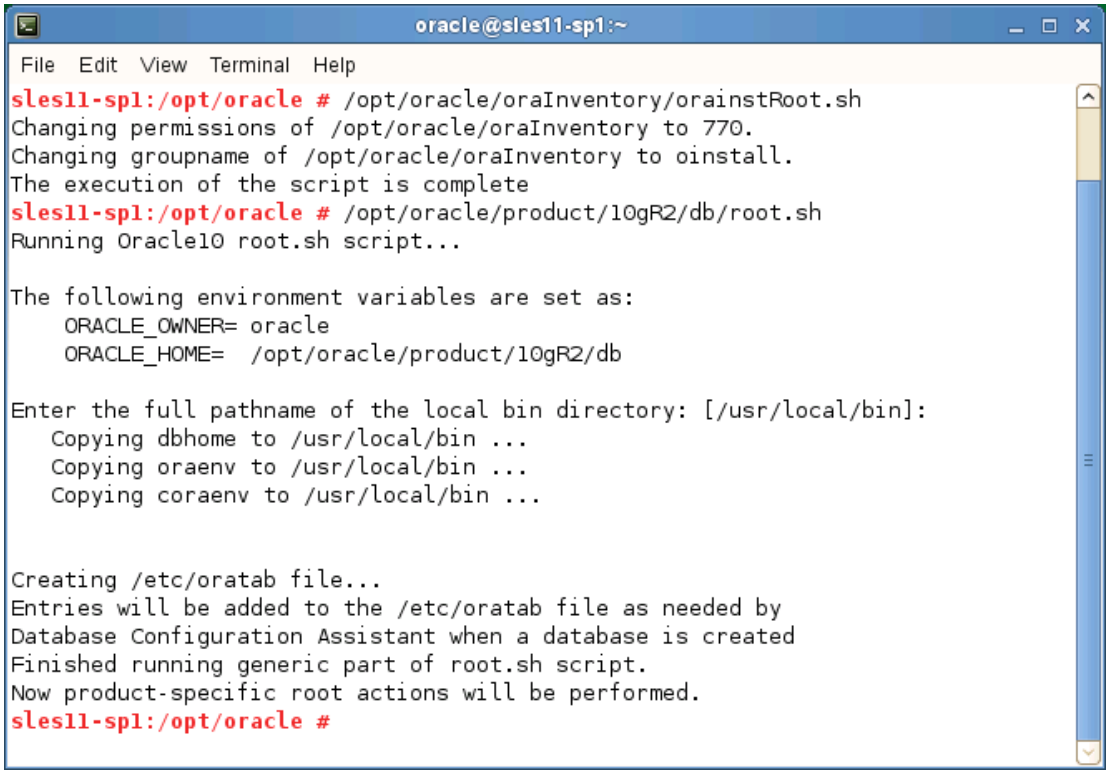
(Ignore this linking error. Press Continue.)

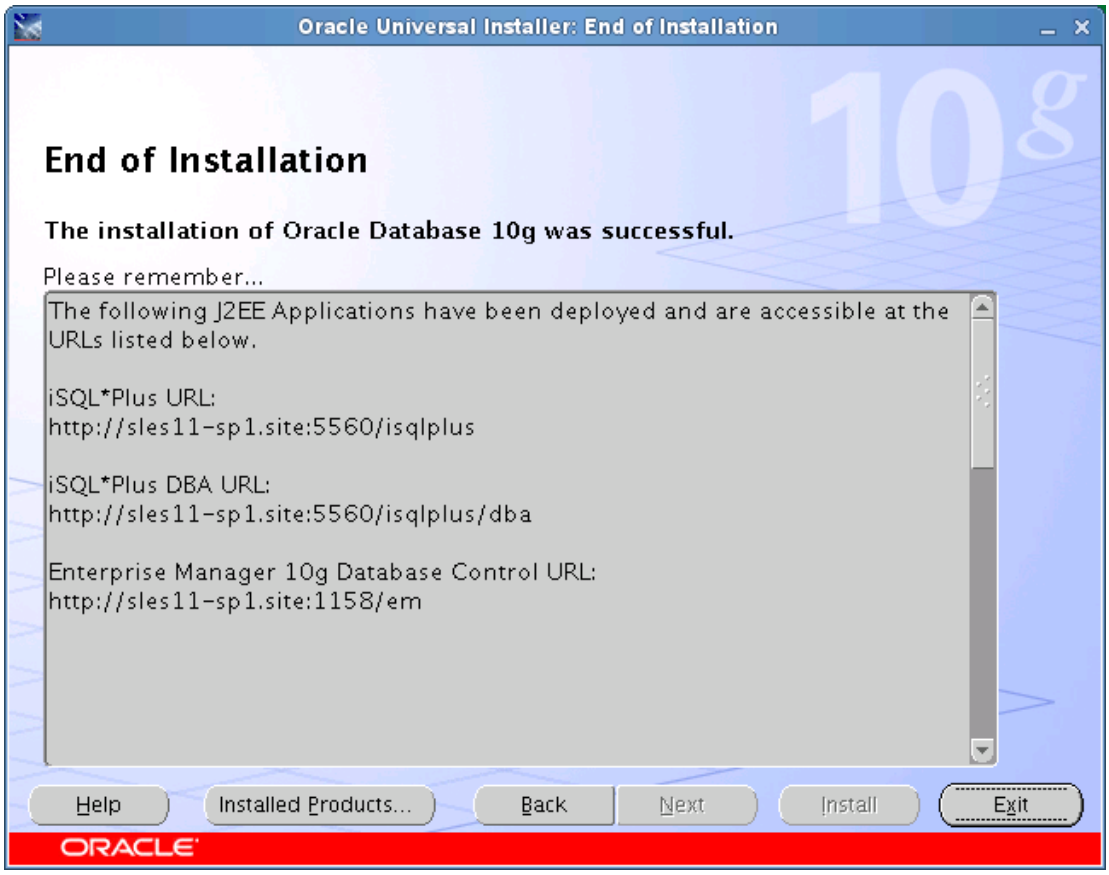




(Press OK to continue)


Execute Configuration scripts
The following configuration scripts need to be executed as the "root" user.
Scripts to be executed:
Number
Script Location
1
/opt/oracle/oraInventory/orainstRoot.sh
2
/opt/oracle/product/10gR2/db/root.sh
To execute the configuration scripts:
1. Open a terminal window
2. Log in as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue
Help
OK


oracle@sles11-sp1:~
File Edit View Terminal Help
sles11-sp1:/opt/oracle # /opt/oracle/oraInventory/orainstRoot.sh
Changing permissions of /opt/oracle/oraInventory to 770.
Changing groupname of /opt/oracle/oraInventory to oinstall.
The execution of the script is complete
sles11-sp1:/opt/oracle # /opt/oracle/product/10gR2/db/root.sh
Running Oracle10 root.sh script...
The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /opt/oracle/product/10gR2/db
Enter the full pathname of the local bin directory: [/usr/local/bin]:
Copying dbhome to /usr/local/bin ...
Copying oraenv to /usr/local/bin ...
Copying coraenv to /usr/local/bin ...
Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root.sh script.
Now product-specific root actions will be performed.
sles11-sp1:/opt/oracle #



(Press Exit to complete the installation.)

5. Un-Installing incomplete Installation (Clean-up)

Oracle Installer will give you an option to remove installed product but sometimes your installation is not complete and you would like to restart the clean installation. Here are some quick and dirty steps to clean-up your system:

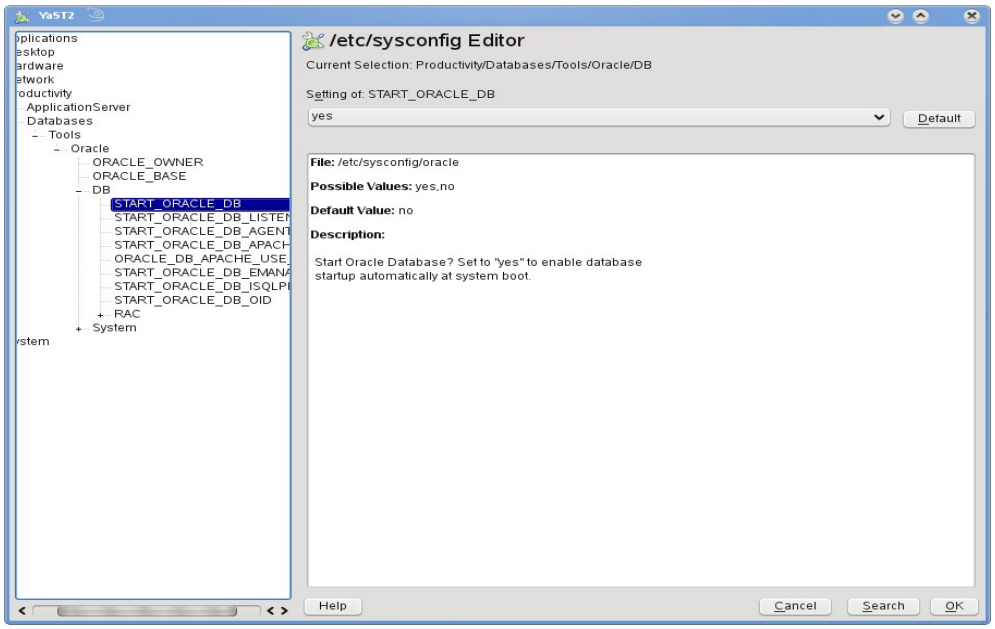
1. Remove /usr/local/bin/{coraenv, dbhome, oraenv}
2. Remove /etc/oratab, /etc/oraInst.loc, and /etc/oracle directory
3. Remove all files created by Oracle installer in /opt/oracle (Install Directory) i.e. Directory /opt/oracle/{product, admin, oradata, oraInventory}

6. Oracle Database Start at boot time

Set parameter START_ORACLE_DB="yes" in “/etc/sysconfig/oracle” file.
You can edit file “/etc/sysconfig/oracle” manually or use YaST setup tool to change oracle specific parameters.

“/sbin/yast2->System->/etc/sysconfig Editor ->Productivity->Databases”

Edit /etc/oratab entry corresponding to your database to “Y”.



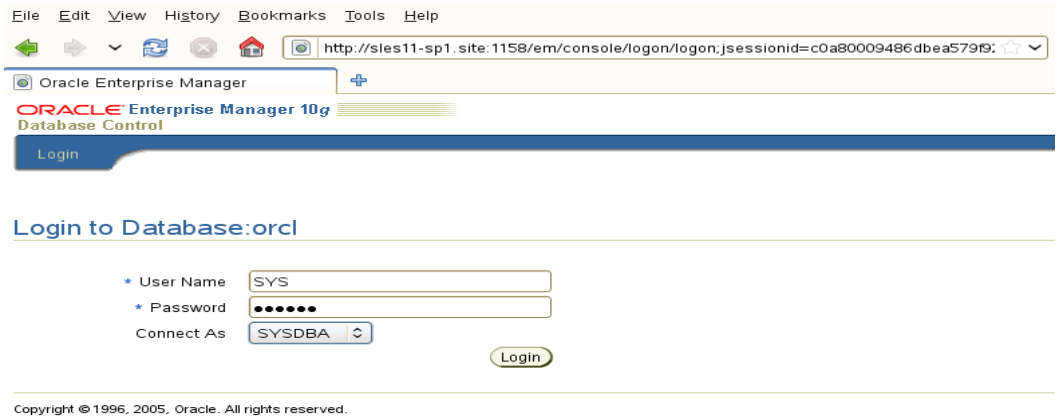
Edit dbstart, dbshut and dbhome scripts to reflect correct location for ORATAB entry. i.e ORATAB=/etc/oratab

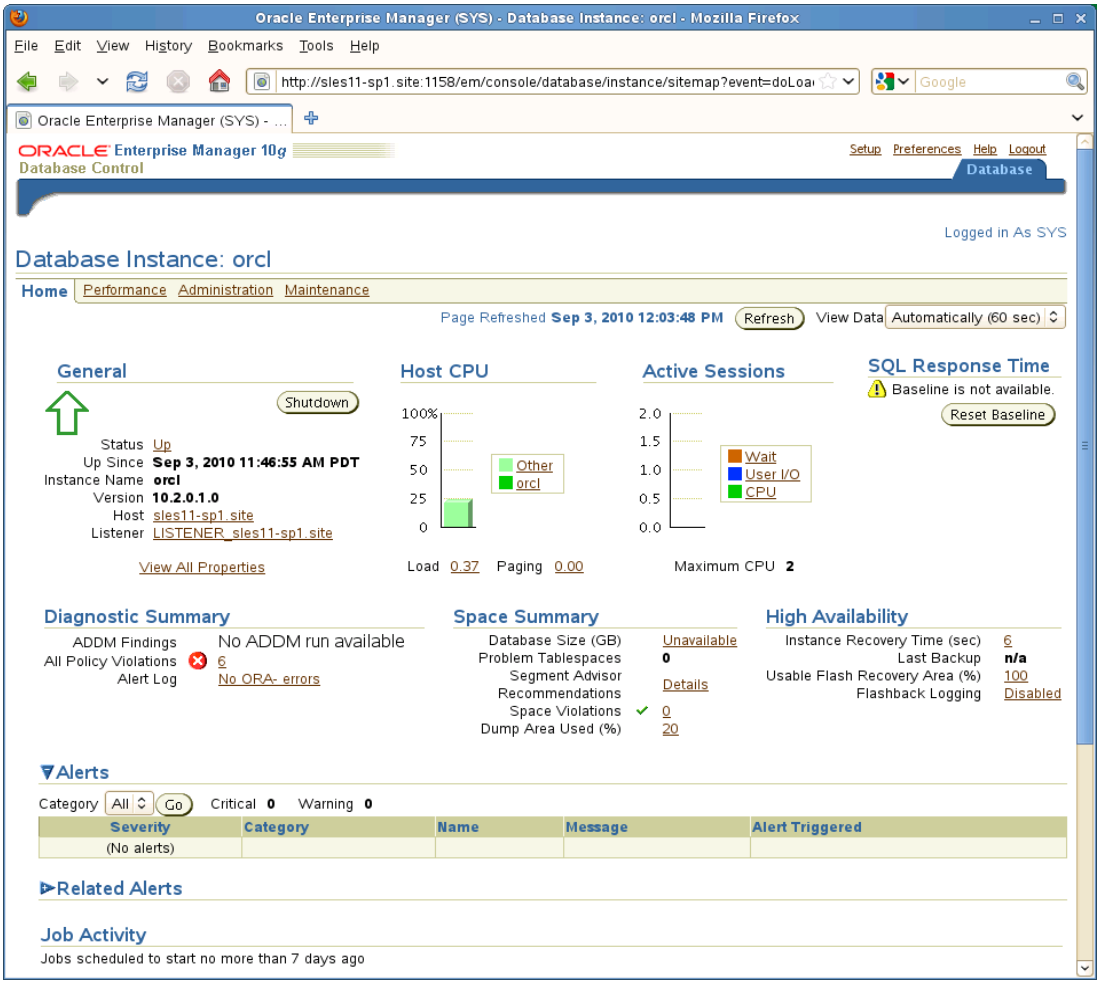
7. Oracle Enterprise Manager

1. Start Enterprise Manager services, if is not running: "emctl start dbconsole"

   Note: If you want to start dbconsole services at boot-time, then set Listener (START_ORACLE_DB_LISTENER) and Enterprise Manager parameter (START_ORACLE_DB_EMANAGER) in /etc/sysconfig/oracle to yes.

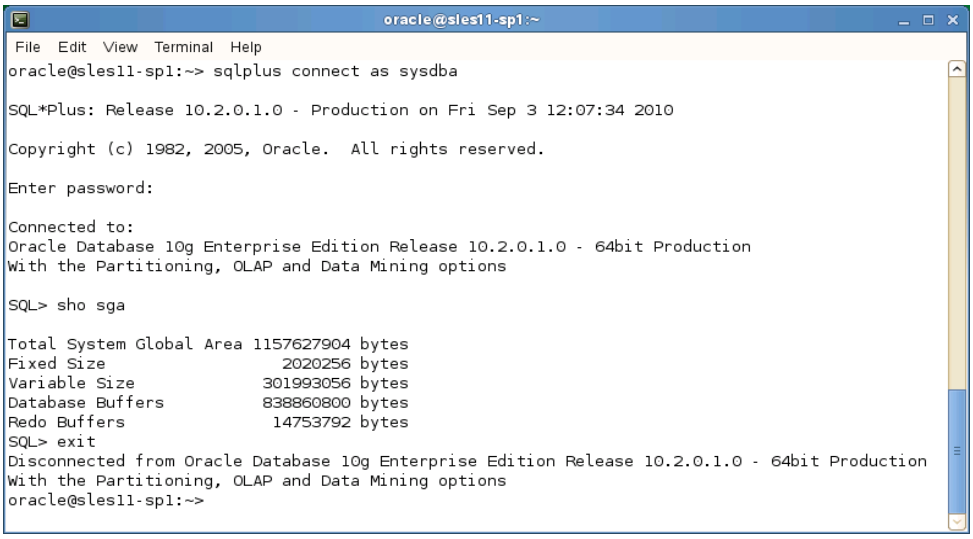
2. Use Enterprise Manager web interface (http://localhost:1158/em) to perform routine database administration and performance tuning tasks.





8. sqlplus: Startup and Shutdown of the Oracle10g Database (Manual)

From diagnostic point of view it is very important to check sqlplus is functioning properly. If not then your installation is having problems.



1. To startup the database:
   sles10$ sqlplus /nolog
   SQL> connect / as sysdba
   SQL> startup

2. To shutdown the database:
   sles10$ sqlplus /nolog
   SQL> connect / as sysdba
   SQL> shutdown

Note: "/" connects you to the schema owned by SYS with the privilege SYSDBA.

9. Async I/O : Enable by Default

Unlike previous releases, AIO is enable by default. You can disable/enable using init.ora parameter (filesystemio_options).

10. 10gR2 patch 10.2.0.5

Download the 10205 (or latest) patch set from Oracle Metalink (p8202632_10205_Linux-x86-64.zip) and install. You need Oracle support contract to get this patch set. You will be fine without this patch but for production server, install 10205.

1. Make sure you are logged in as "**oracle**" user.
2. #unzip p8202632_10205_Linux-x86-64.zip
3. Read README.html included with this patch & follow direction..
4. cd Disk1 and run Oracle Universal Installer:
   ./runInstaller -ignoreSysPrereqs

History:

Date	Changes
09/03/10	Initial Document created.

Enjoy!