Oracle Database10*g* R2 (10.2.0.1) on openSUSE 10.2

Introduction

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Novell

Introduction

This white paper is designed to help you get started with Oracle Database 10g R2 on openSUSE 10.2. Oracle 10g R2 Database is supported and certified only on SUSE LINUX Enterprise Server but occasionally for development and testing purposes you will prefer to have it up and running on your desktop.

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

Required Software

You need openSUSE 10.2 and Oracle Database 10g R2. Also, optional orarun package will help you to make Oracle pre-Install task simple.

Novell/SUSE

1. Novell openSUSE 10.2 (http://www.novell.com/products/opensuse/)
2. Get orarun from (ftp://ftp.novell.com/partners/oracle/sles-10)
3. Visit http://www.novell.com/oracle for more Novell/Oracle information.

Oracle

Oracle database 10g R2 Software is available for download from OTN.
File name: 10201_database_linux32.zip

1. URL to download SW:
   http://www.oracle.com/technology/software/products/database/oracle10g/htdocs/10201linuxsoft.html.
2. Oracle Documents are available on :
   http://www.oracle.com/technology/documentation/database10gr2.html

Installation

Instruction is divided into two sections, Quick Steps for experts and Detailed Steps for beginers. Follow based on your comfort level.

Quick Steps

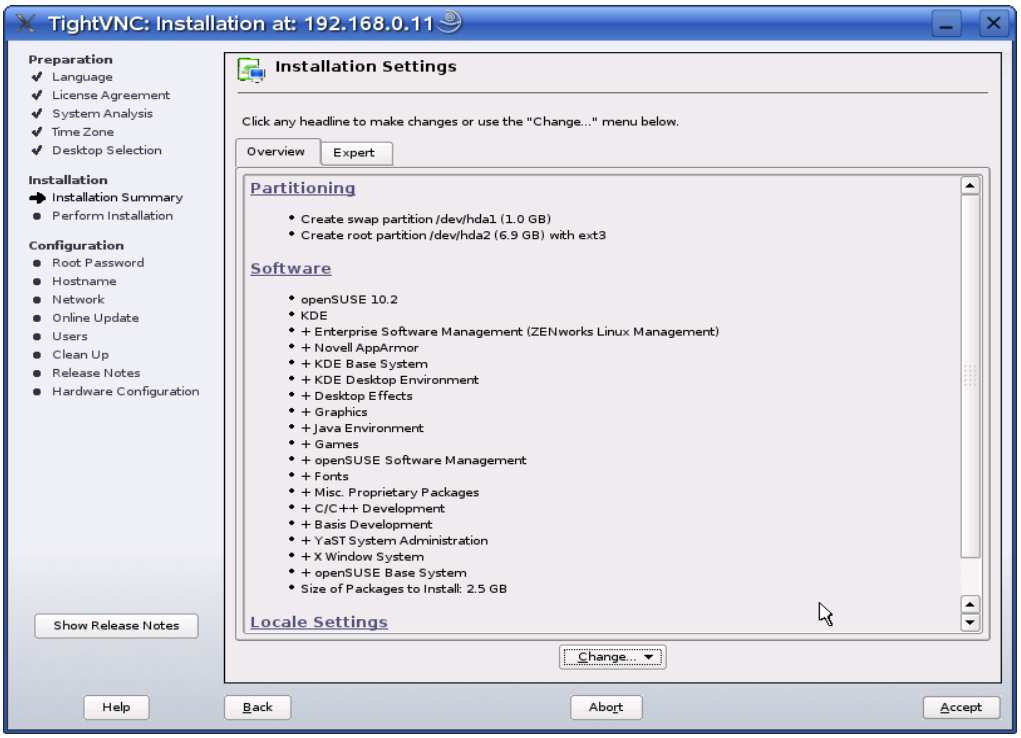
If you have installed Oracle database on SUSE Linux before using one of my old documents, then here are some quick steps to follow:

1. Install openSUSE 10.2 with "C/C++ Development" selection.
2. Download and Install orarun package.
3. Enable and set password for newly created user **oracle** by orarun.
4. Set updated kernel parameters by executing **/etc/init.d/oracle start**.
5. Download and unzip Oracle 10gR2 Database SW.
   Edit file **database/install/oraparam.ini** to add "**SuSE-10**" to line #39.
6. login as user oracle and run Oracle Universal Installer "database/runInstaller".

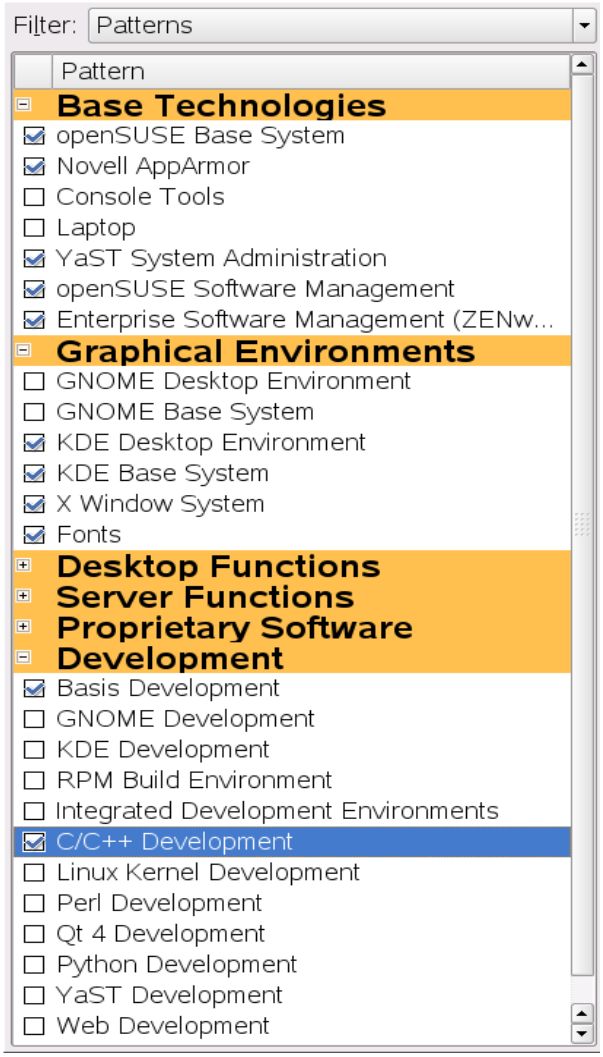
Detailed Steps

1. Install SUSE Linux Operating System

Follow the Installation instructions provided in the openSUSE 10.2 installation manual. Here is installation setting from my system:



Here we will focus here on components required to meet Oracle software Installation. openSUSE Linux 10.2 with default packages along with “C/C++ Development” is sufficient for Oracle 10g R2 install.



Check whether C/C++ compiler is installed. “gcc --version” will show gcc compiler version and If it is not installed, then use YaST setup tool to install “C/C++ Development”.

```
sl102:/ # cat /etc/SuSE-release
openSUSE 10.2 (i586)
VERSION = 10.2
sl102:/ # uname -a
Linux sl102 2.6.18.2-34-xen #1 SMP Mon Nov 27 11:46:27 UTC 2006 i686 i686 i386 GNU/Linux
sl102:/ # gcc --version
gcc (GCC) 4.1.2 20061115 (prerelease) (SUSE Linux)
Copyright (C) 2006 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

sl102:/ #
```

2. Oracle Database Install prerequisites

Refer to Oracle Database 10gR2 installation document for complete list of prerequisites. Novell/SUSE provides orarun packages to automate most of the Oracle pre-install task. orarun package is not included in openSUSE 10.2 as this is for SUSE LINUX Enterprise Server.

orarun :

1. Install orarun package.

```
sl102:/ # ls -al orarun.rpm
-r-------- 1 root root 31123 Dec 11 13:32 orarun.rpm
sl102:/ # rpm -ivh orarun.rpm
Preparing...                ########################################### [100%]
   1:orarun                 ########################################### [100%]
Updating etc/sysconfig/oracle...
sl102:/ #
```

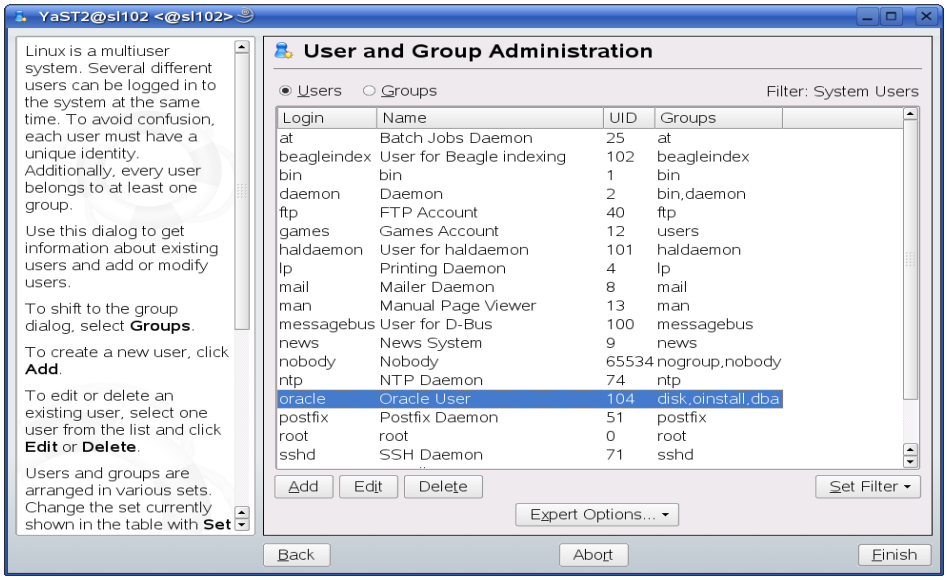
2. Enable newly created “oracle” user for Oracle installation.

    1. The account for oracle user is disabled. Enable it, by changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", either by using YaST setup tool or by editing the "/etc/passwd" file.

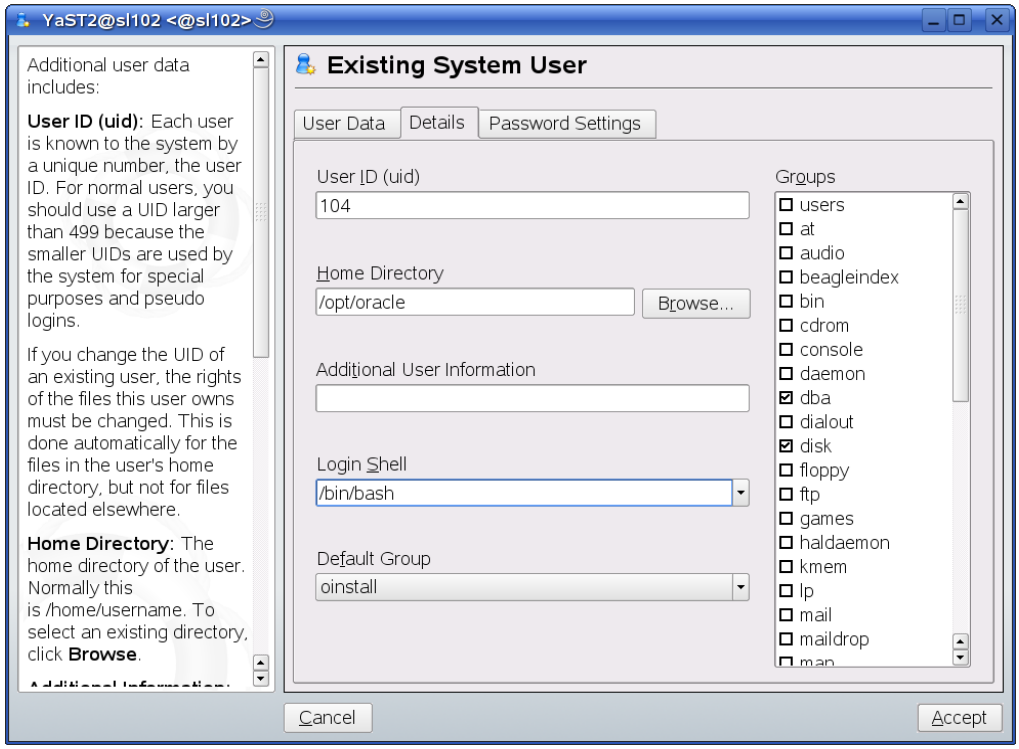
    2. Set a new password for user “oracle” i.e. “/usr/bin/passwd oracle”.

You can use YaST - SUSE setup tool to accomplish above tasks.

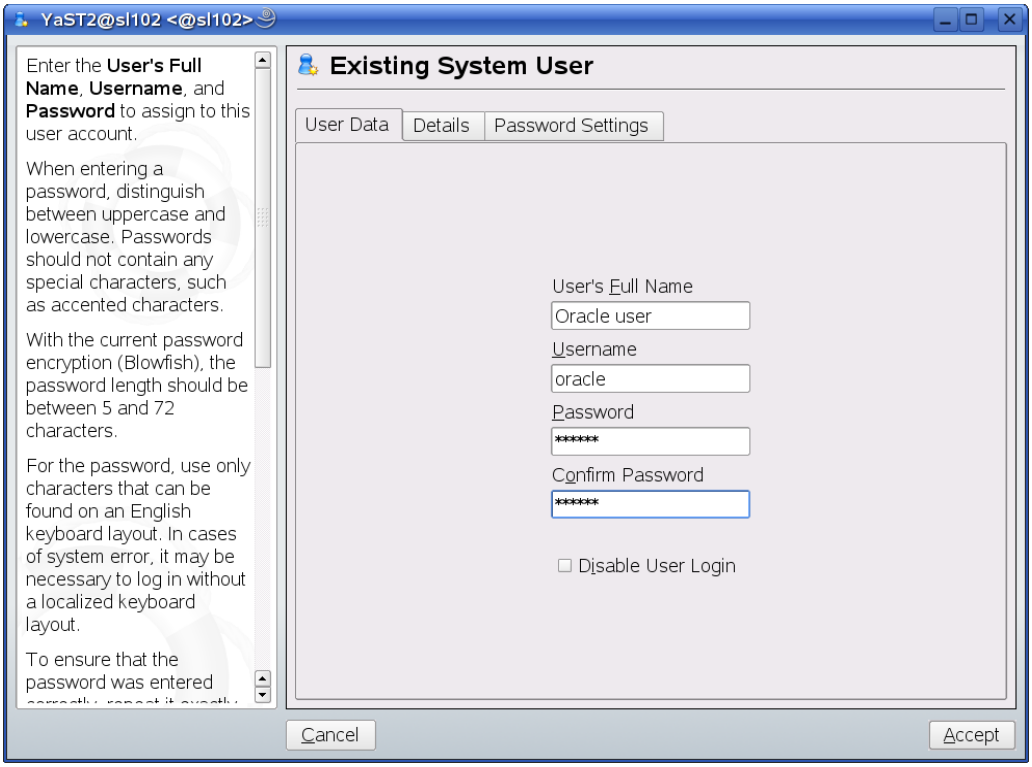
/sbin/yast2 -> “security and Users” -> ”Edit and create groups”
(Select users tab and set “System Users” filter to see oracle user.)



Change login shell from false to bash :



Set new password and uncheck Disable User Login:



3. Now set your Oracle environment variables.

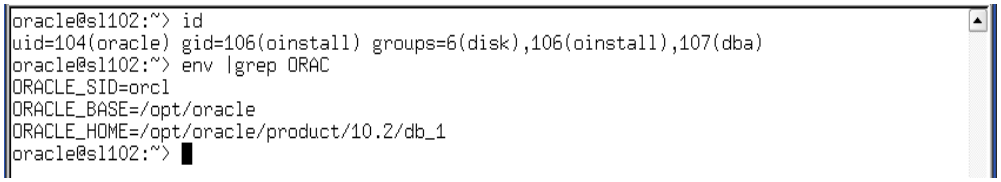
    1. Set Oracle home directory by editing ORACLE_HOME variable in "/etc/profile.d/oracle.sh" file.

    2. Default ORACLE_SID set by orarun package 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 post installation problem.

4. Run "/usr/sbin/rcoracle start " to set kernel parameters. Ignore ORACLE_HOME not set message as this will get fixed once Oracle 10g is installed.

5. Exit from current root user session and login as new "**oracle**" user. Following is snap-shot verifying current user.



3. Oracle Database 10g R2 (10.2.0.1) Installation

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

2. Get Oracle Database 10g R2 (10.2.0.1) Software:

    1. #unzip 10201_database_linux32.zip

    2. Modify Certified Versions section of "database/install/oraparam.ini" file to add support for openSUSE Linux 10.2. After modifying oraparam.ini file "[Certified Versions]" line will look like:

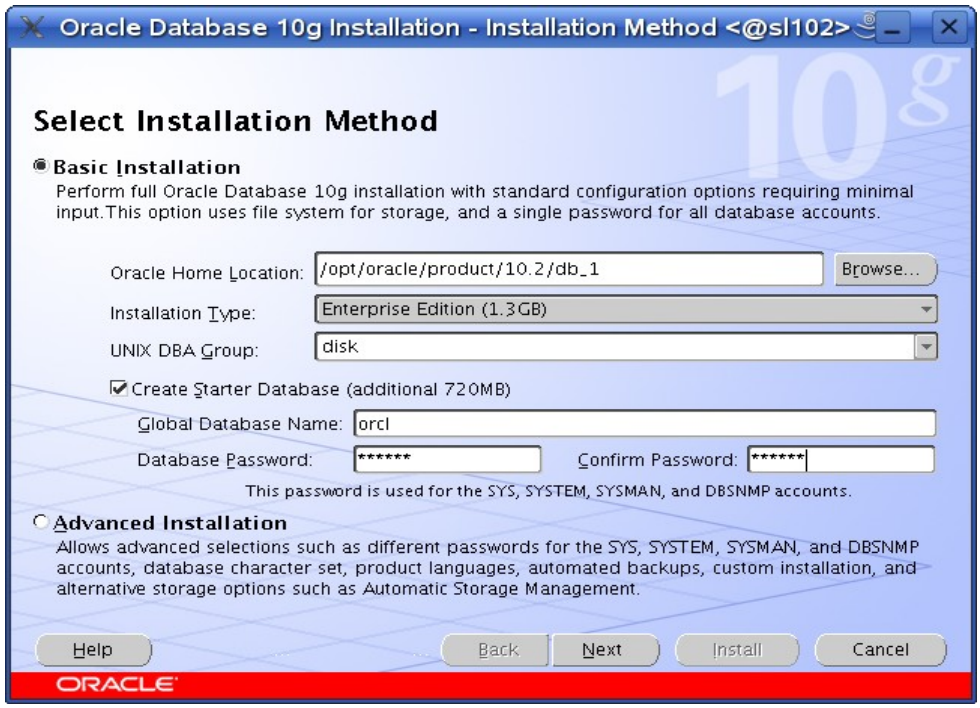
```
[Certified Versions]
Linux=redhat-3,SuSE-9,SuSE-10,redhat-4,UnitedLinux-1.0,asianux-1,asianux-2
```

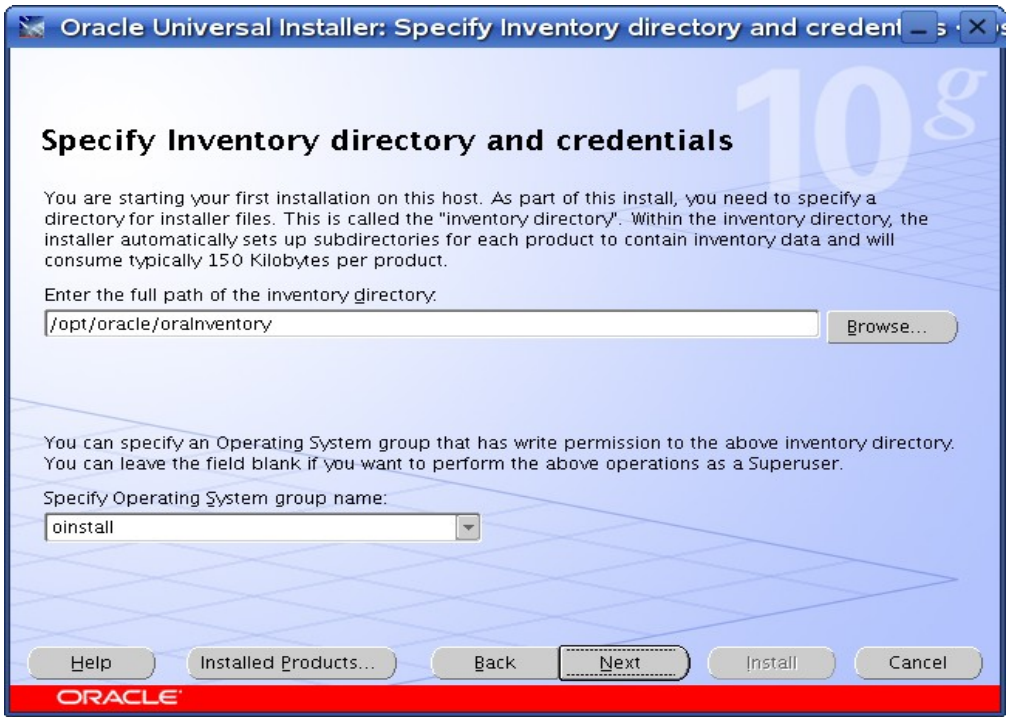
    3. You can avoid above step #2 by passing "-ignoresysprereqs" to runInstaller.

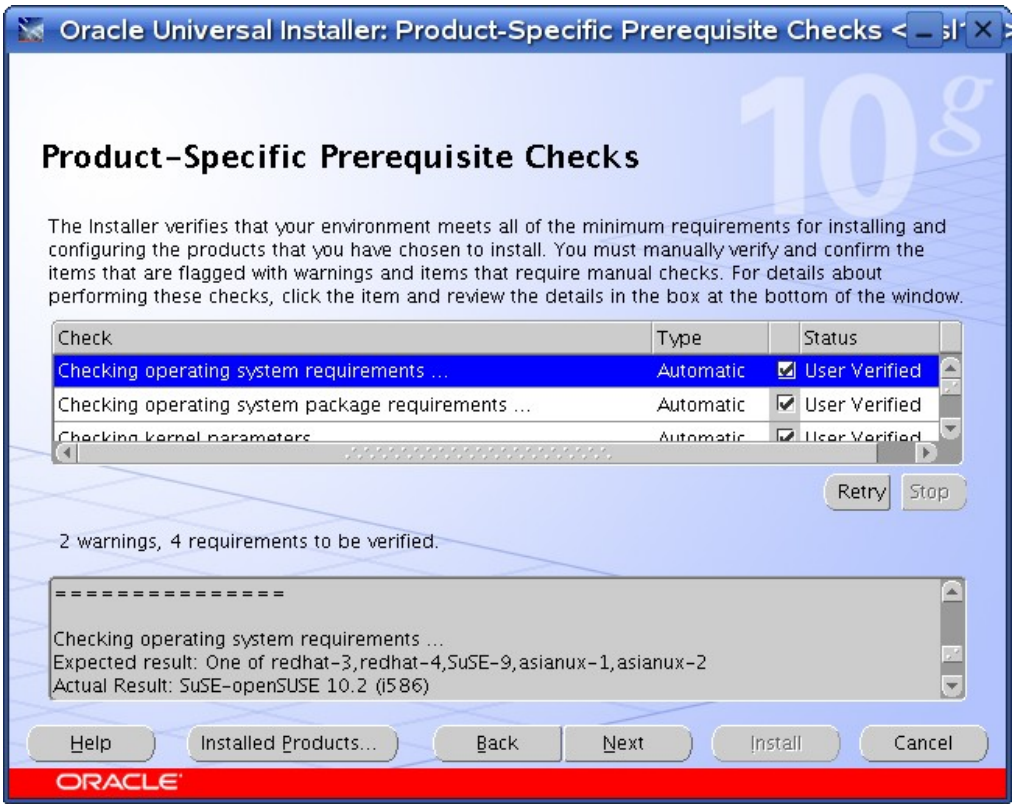
3. Run Oracle Universal installer : ./runInstaller

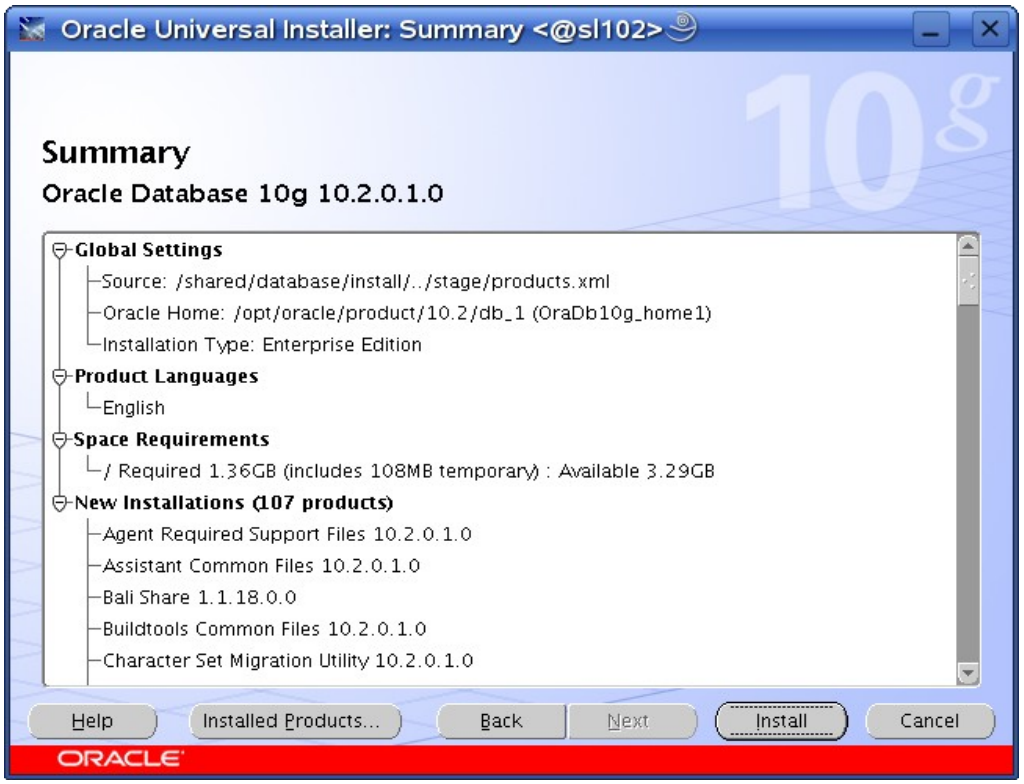
   Note: Installer will not detect openSUSE Linux 10.2. Do manual check in "Product-Specific Prerequisites Checks" for OS.

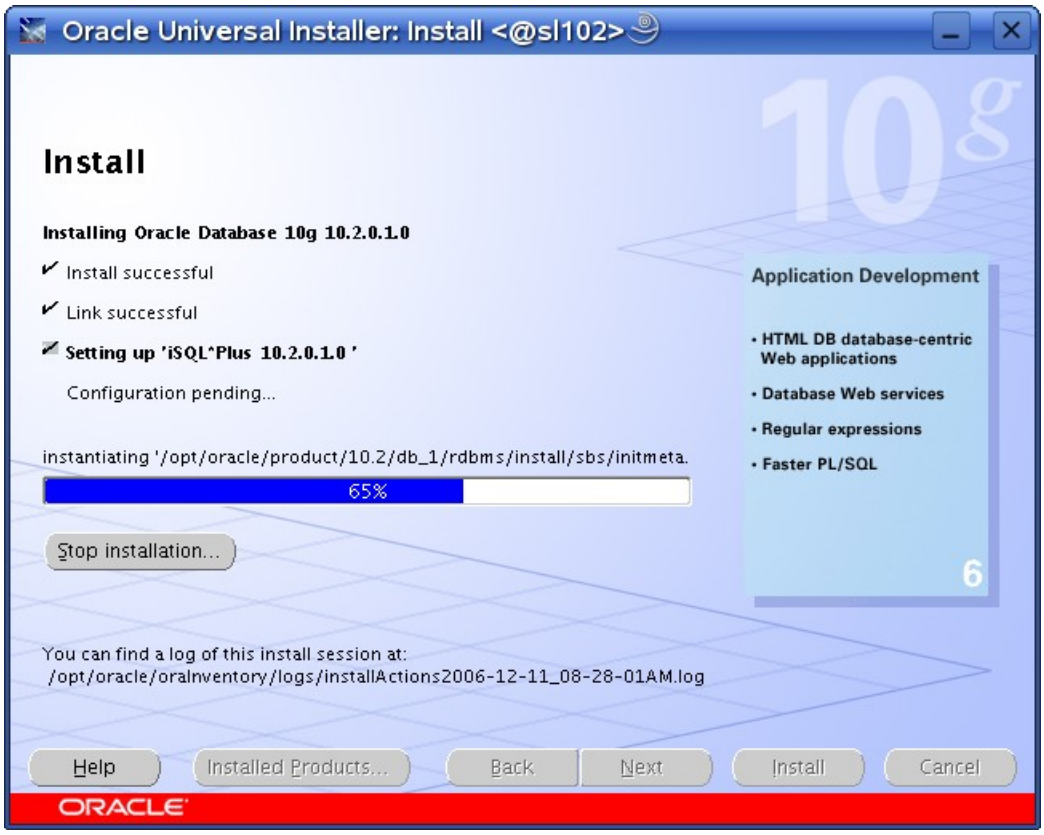
4. Installation will walk you through with self explanatory instructions. Here are some screen-shots from simple Oracle Database 10g R2 Installation:

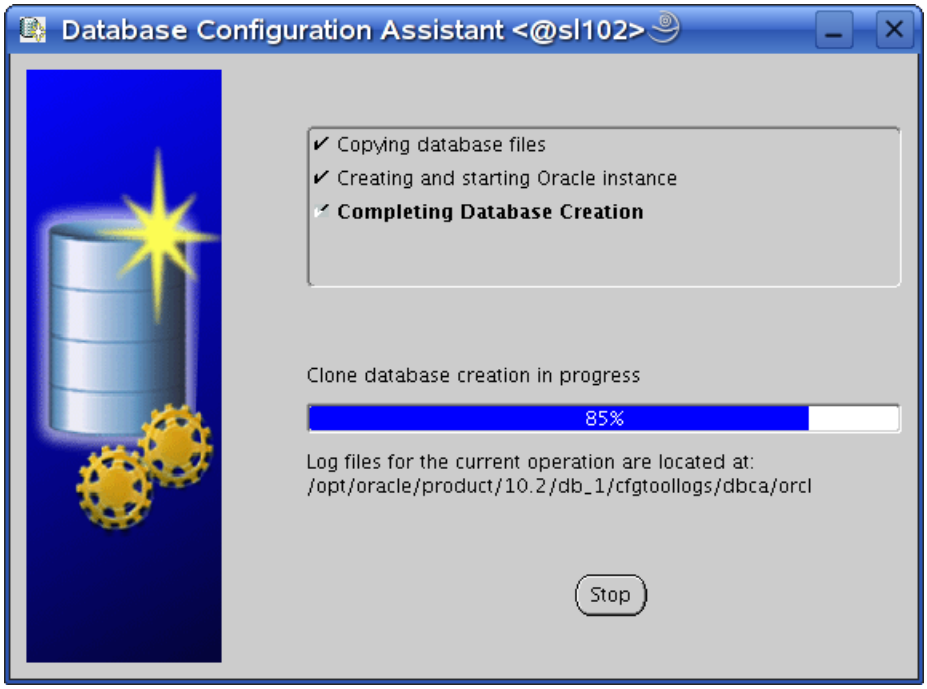

Oracle Database 10g Installation - Installation Method <@sl102>
Select Installation Method
Basic Installation
Perform full Oracle Database 10g installation with standard configuration options requiring minimal input.This option uses file system for storage, and a single password for all database accounts.
Oracle Home Location: /opt/oracle/product/10.2/db_1
Browse...
Installation Type: Enterprise Edition (1.3GB)
UNIX DBA Group: disk
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

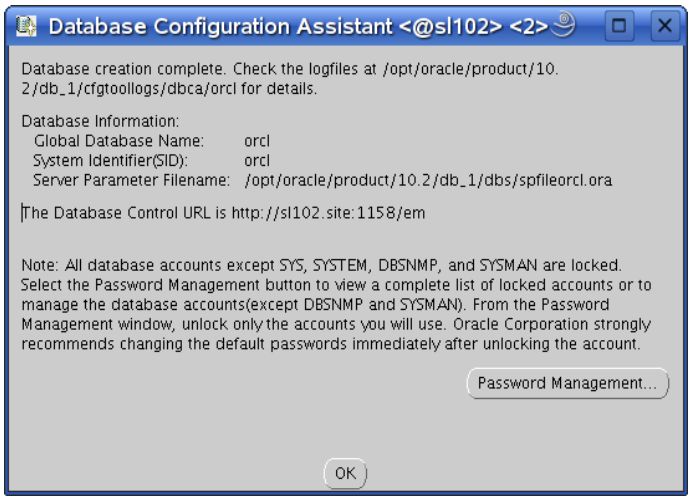

Oracle Universal Installer: Specify Inventory directory and credentials
Specify Inventory directory and credentials
You are starting your first installation on this host. As part of this install, you need to specify a directory for installer files. This is called the "inventory directory". Within the 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

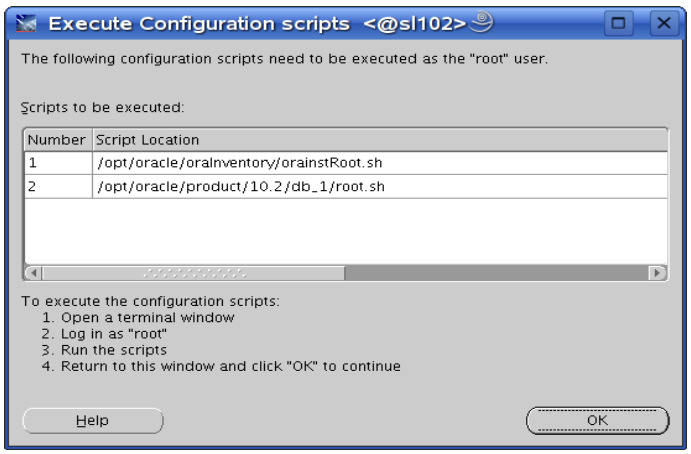

Oracle Universal Installer: Product-Specific Prerequisite Checks
Product-Specific Prerequisite Checks
The Installer verifies that your environment meets all of the minimum requirements for installing and configuring the products that you have chosen to install. You must manually verify and confirm the 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 operating system requirements ...
Automatic
User Verified
Checking operating system package requirements ...
Automatic
User Verified
Retry
Stop
2 warnings, 4 requirements to be verified.
==========
Checking operating system requirements ...
Expected result: One of redhat-3,redhat-4,SuSE-9,asianux-1,asianux-2
Actual Result: SuSE-openSUSE 10.2 (i586)
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE

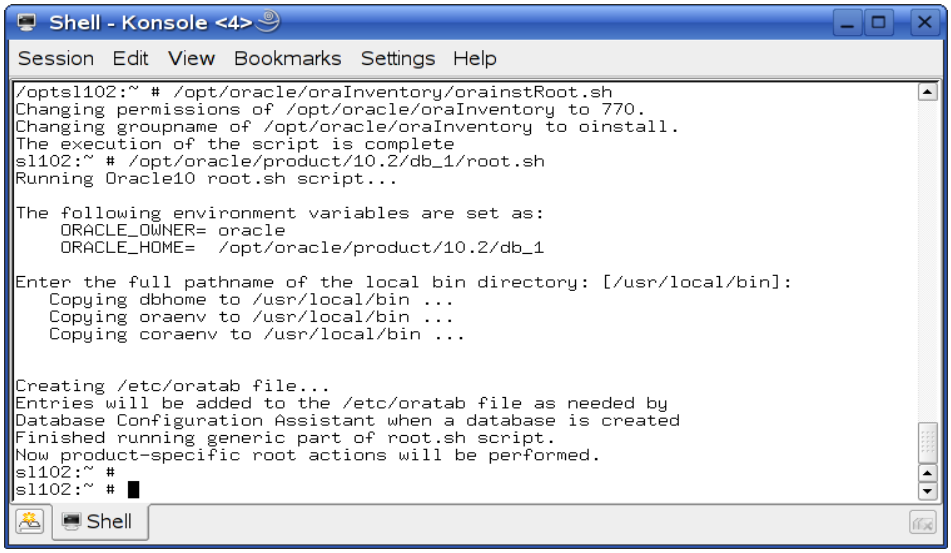

Oracle Universal Installer: Summary <@sl102>
Summary
Oracle Database 10g 10.2.0.1.0
Global Settings
Source: /shared/database/install/../stage/products.xml
Oracle Home: /opt/oracle/product/10.2/db_1 (OraDb10g_home1)
Installation Type: Enterprise Edition
Product Languages
English
Space Requirements
/ Required 1.36GB (includes 108MB temporary) : Available 3.29GB
New Installations (107 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

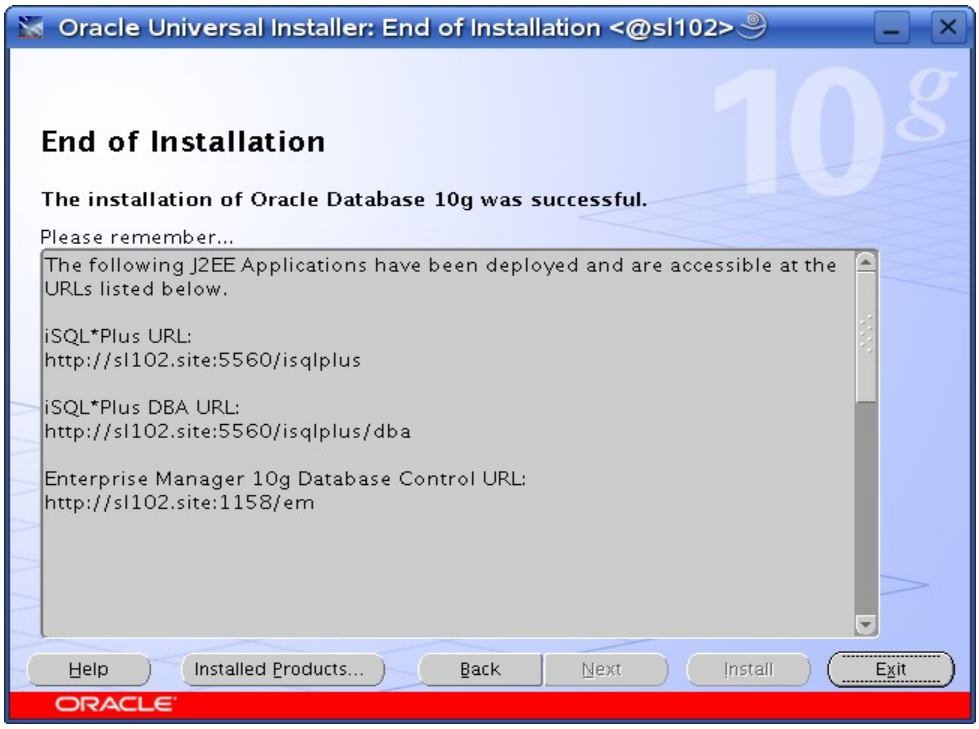

Oracle Universal Installer: Install <@sl102>
Install
Installing Oracle Database 10g 10.2.0.1.0
Install successful
Link successful
Setting up 'iSQL*Plus 10.2.0.1.0 '
Configuration pending...
instantiating '/opt/oracle/product/10.2/db_1/rdbms/install/sbs/initmeta.
65%
Stop installation...
Application Development
• HTML DB database-centric Web applications
• Database Web services
• Regular expressions
• Faster PL/SQL
6
You can find a log of this install session at:
/opt/oracle/oraInventory/logs/installActions2006-12-11_08-28-01AM.log
Help
Installed Products...
Back
Next
Install
Cancel
ORACLE


Database Configuration Assistant <@sl102>
Copying database files
Creating and starting Oracle instance
Completing Database Creation
Clone database creation in progress
85%
Log files for the current operation are located at:
/opt/oracle/product/10.2/db_1/cfgtoollogs/dbca/orcl
Stop


Database Configuration Assistant <@sl102> <2>
Database creation complete. Check the logfiles at /opt/oracle/product/10.2/db_1/cfgtoollogs/dbca/orcl for details.
Database Information:
Global Database Name: orcl
System Identifier(SID): orcl
Server Parameter Filename: /opt/oracle/product/10.2/db_1/dbs/spfileorcl.ora
The Database Control URL is http://sl102.site:1158/em
Note: All database accounts except SYS, SYSTEM, DBSNMP, and SYSMAN are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts(except DBSNMP and SYSMAN). From the Password Management window, unlock only the accounts you will use. Oracle Corporation strongly recommends changing the default passwords immediately after unlocking the account.
Password Management...
OK

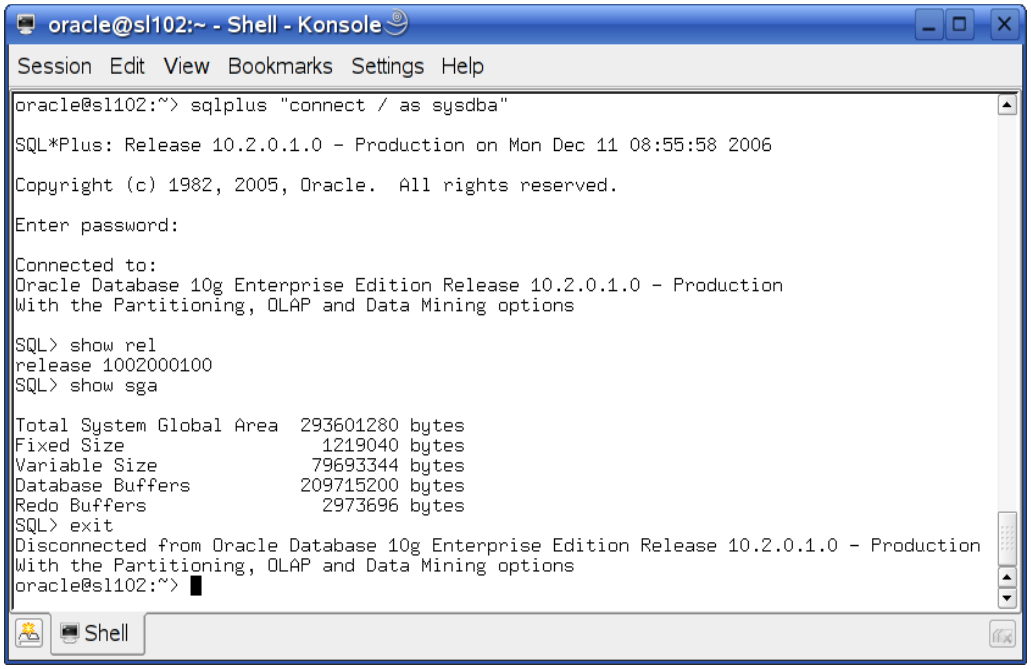

Execute Configuration scripts <@sl102>
The following configuration scripts need to be executed as the "root" user.
Scripts to be executed:
Number
Script Location
1
/opt/oracle/oraInventory/orainstRoot.sh
2
/opt/oracle/product/10.2/db_1/root.sh
To execute the configuration scripts:
1. Open a terminal window
2. Log in as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue
Help
OK


Shell - Konsole <4>
Session Edit View Bookmarks Settings Help
/optsl102:~ # /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
sl102:~ # /opt/oracle/product/10.2/db_1/root.sh
Running Oracle10 root.sh script...
The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /opt/oracle/product/10.2/db_1
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.
sl102:~ #
sl102:~ #
Shell



4. 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:
   sl10$ sqlplus /nolog
   SQL> connect / as sysdba
   SQL> startup

2. To shutdown the database:
   sl10$ sqlplus /nolog
   SQL> connect / as sysdba
   SQL> shutdown

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

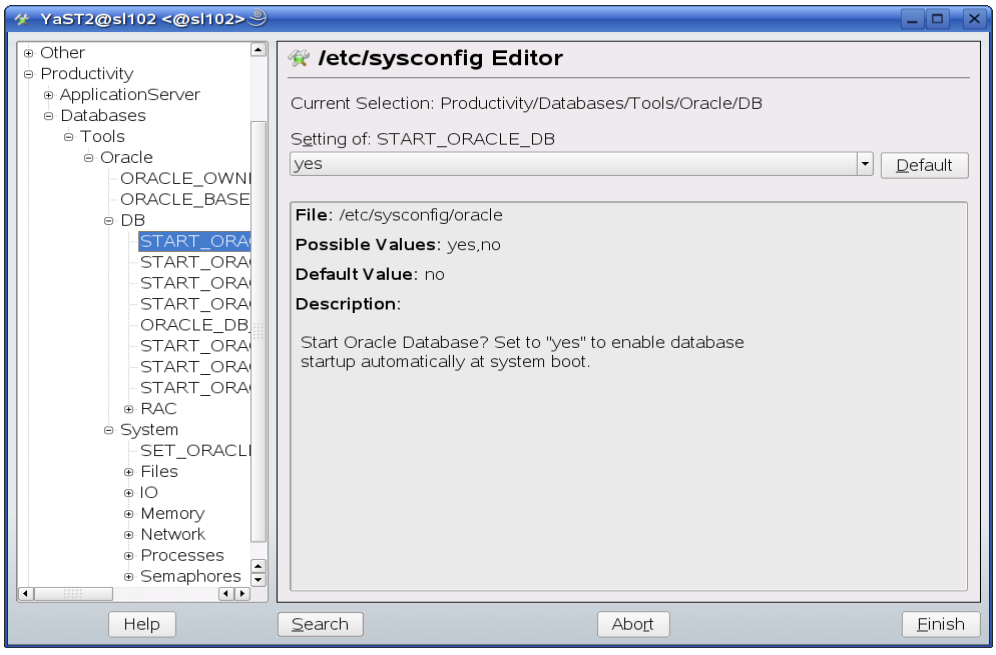
5. Un-Installing incomplete Installation : Clean-up

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:

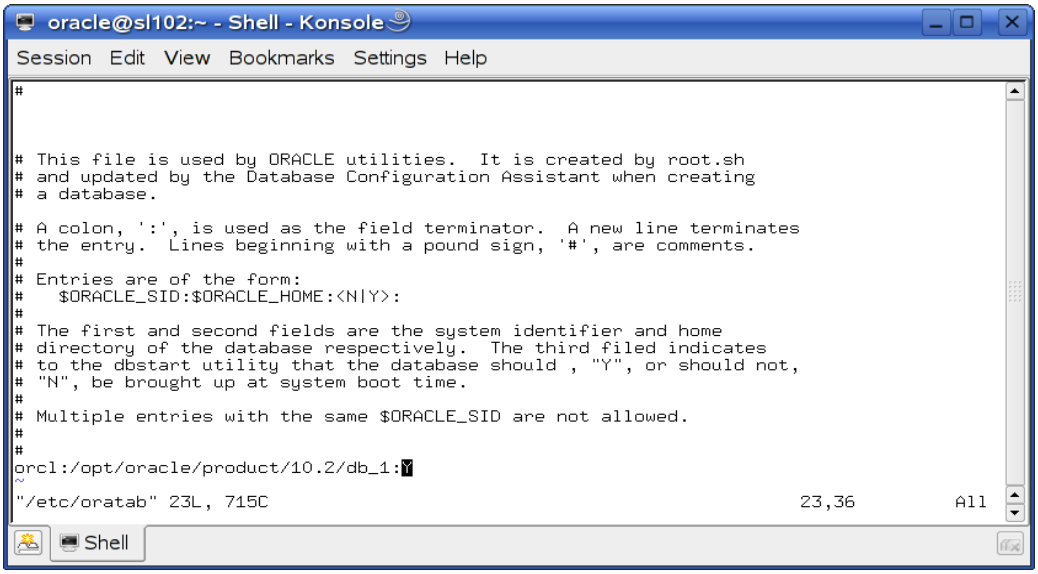
1. Remove /usr/local/bin/{coraenv, dbhome, oraenv}
2. Remove /etc/oratab, /etc/oraInst.loc, and /etc/oracle directory
3. Remove all files created by Oracle installer in /opt/oracle (Install Directory) i.e. Directory /opt/oracle/{product, admin, oradata, oraInventory}

6. Oracle Database Start at boot time

1. Set parameter START_ORACLE_DB="yes" in "/etc/sysconfig/oracle" file.
   Edit "/etc/sysconfig/oracle" manually or use YaST :
   "/sbin/yast2->System->/etc/sysconfig Editor ->Productivity->Databases"



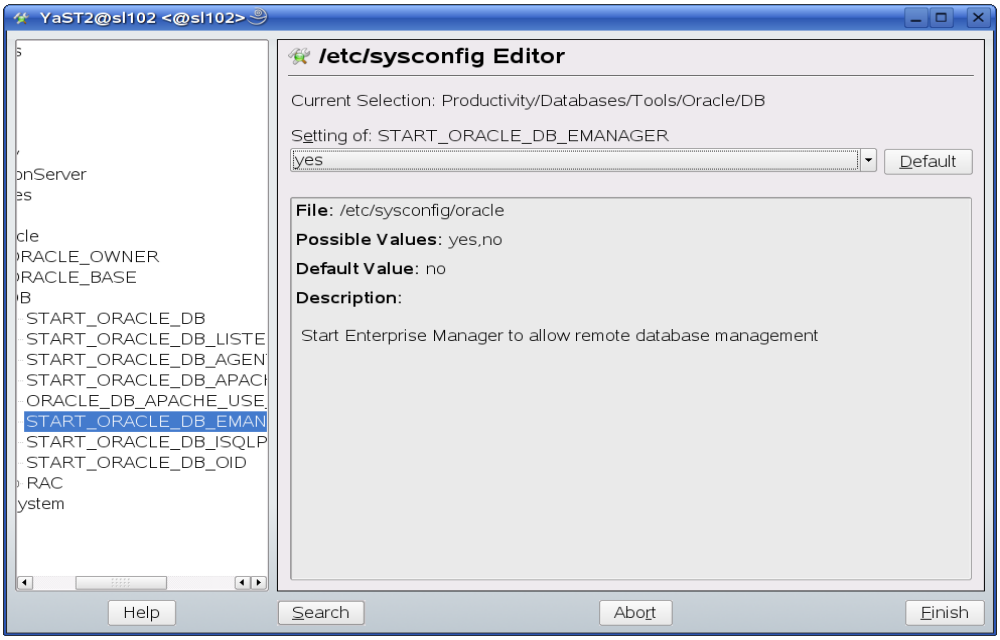
2. Edit /etc/oratab entry corresponding to your database to “Y”.



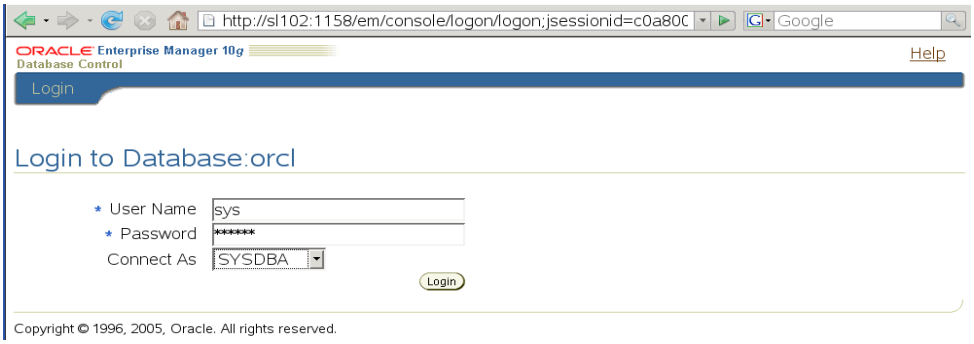
7. Oracle Enterprise Manager

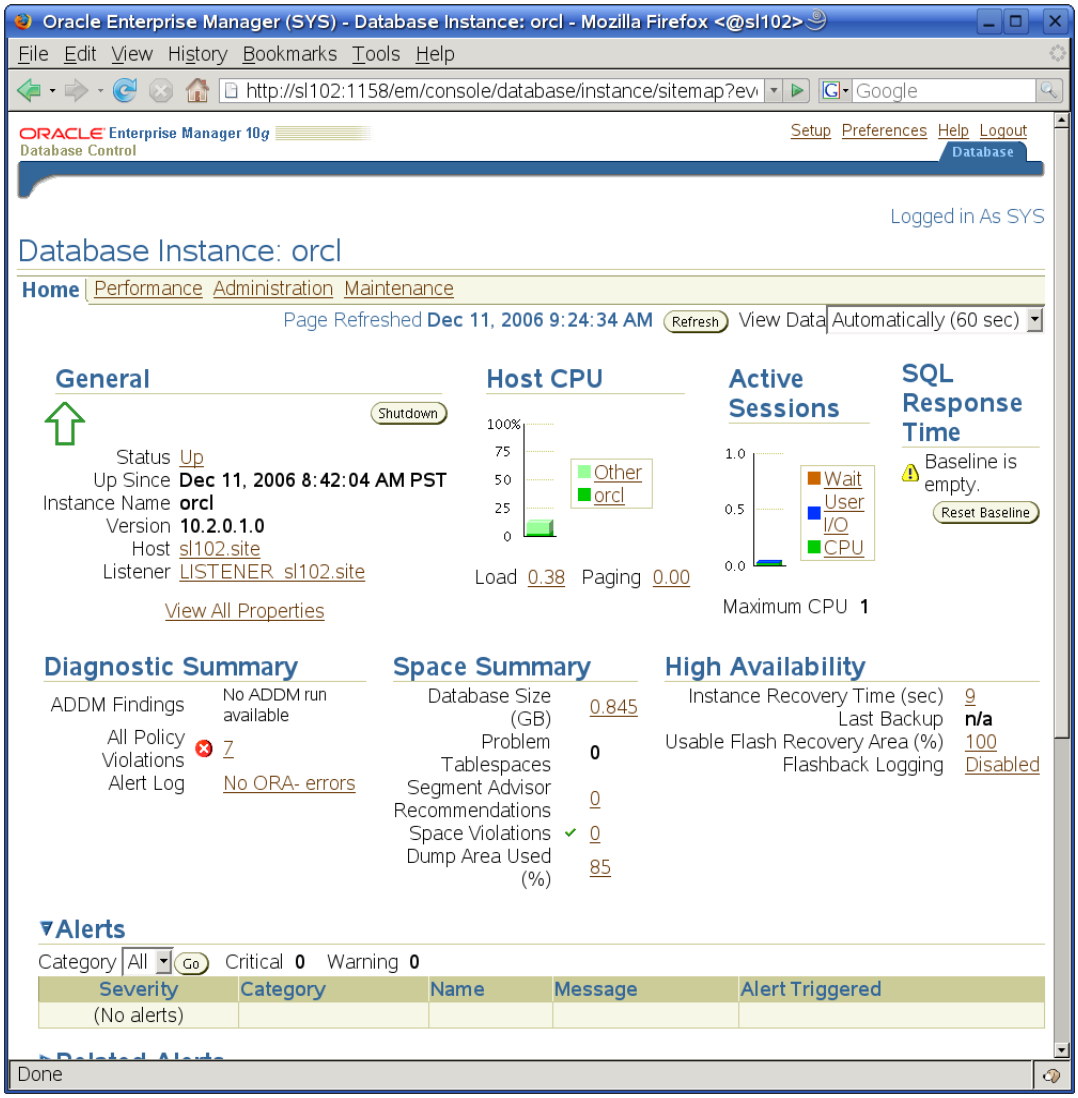
1. Start Oracle listener, If it is not already started by “lsnrctl start”. Set START_ORACLE_DB_LISTENER using YaST to start at boot time.

2. If Enterprise manager services is not started, then start it manually by entering following command “emctl start dbconsole”. Set START_ORACLE_DB_EMANAGER using YaST to start at boot time.



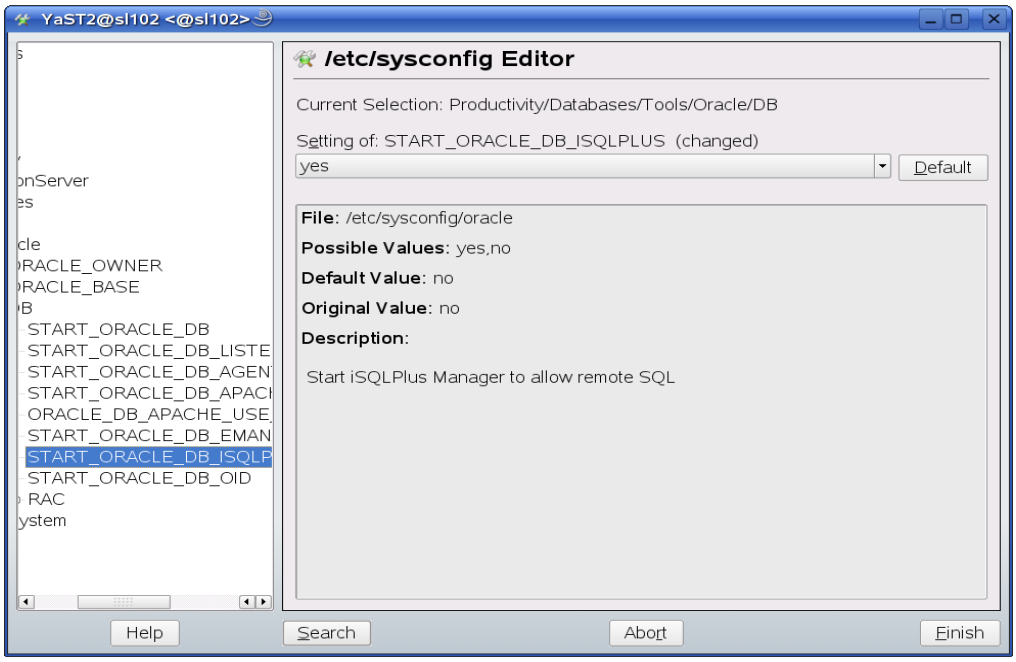
3. Enterprise Manager web interface (http://localhost:1158/em) to perform routine database administration and tuning tasks.



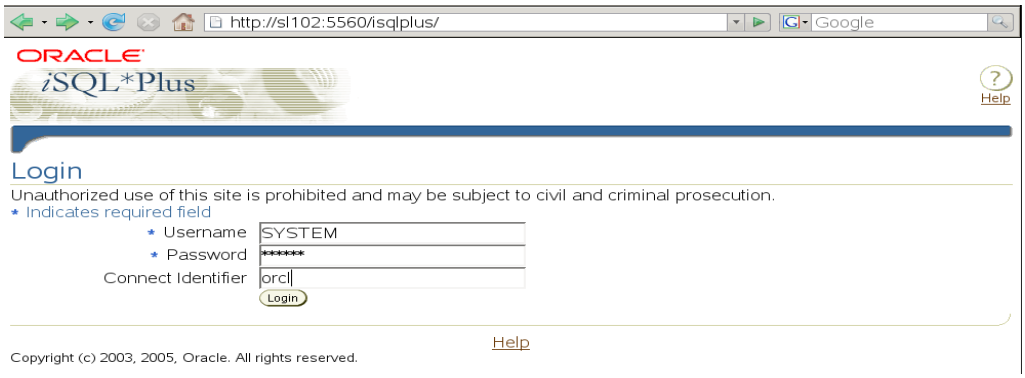


8. Oracle *i*SQL*Plus

Start iSQL *Plus If not running i.e. **isqlplusctl start**
Set START_ORACLE_DB_ISQLPLUS using YaST to start at boot time.



Access Oracle *i*SQL Plus by : http://localhost:5560/isqlplus



Conclusion

Hope you will find this paper useful. For production related use, I will recommend to use SUSE Linux Enterprise Server as it's supported by Novell support team.

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