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Introduction to Oracle 10g R1 (10.1.0.3) on SUSE Linux Professional 9.3

Novell Cool Solutions: Feature By Arun Singh

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Introduction

This paper is designed to help you get started with Oracle 10g on SUSE Linux 9.3. This will help you to work on latest SUSE OS and latest Oracle Database 10g from Oracle. Oracle 10g is supported and certified only on SUSE Linux Enterprise Server (SLES), but occasionally for development and testing purposes you will prefer to have it up and running on your desktop for quick access. Instruction provided here will also work on SUSE Linux 9.2.

Hardware Requirements

The system must meet the following minimum hardware requirements:

Requirement	Minimum Value
RAM	512 MB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	400 MB
Disk space for software files	2.5 GB (2621440 KB)
Disk space for database files	1.2 GB

Required Software

You need SUSE Linux 9.3 and Oracle 10g. Also, Novell/SUSE orarun package will help you to make Oracle pre-Install task simple.

Novell/SUSE

1. Novell SUSE Linux 9.3
(ftp install location: <ftp://ftp.suse.com/pub/suse/i386/9.3/>)
2. orarun : Get latest version from
(<http://ftp.novell.com/partners/oracle/sles-9/>)
3. Novell/SUSE Documents are available here:
<http://www.novell.com/documentation/>
4. For more "Oracle on SUSE" related information visit
<http://www.novell.com/oracle>.

Oracle

Oracle database 10g R1(10.1.0.3) Software is available for download from Oracle web site. File name: `ship.db.lnx32.cpio.gz`.

1. URL to Download:
(<http://www.oracle.com/technology/software/products/database/oracle10g/htdocs/linuxsoft.html>).

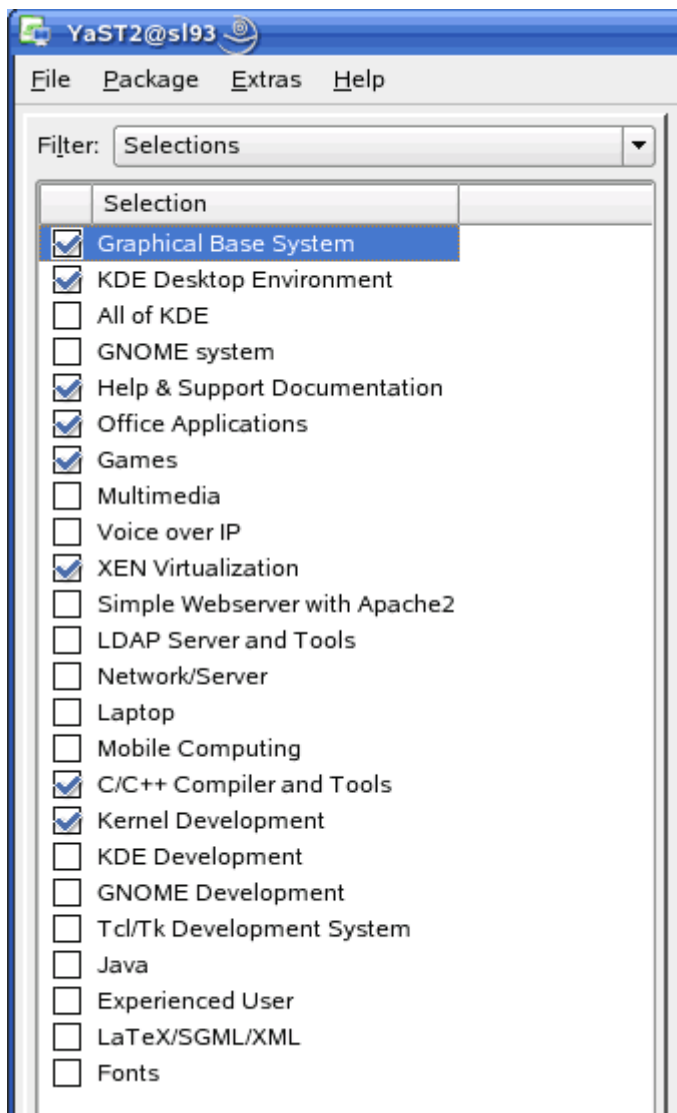
- Oracle Documents are available on
<http://www.oracle.com/technology/documentation/database10g.html>
- Oracle Development Tools:
<http://www.oracle.com/tools/index.html>

Installation Steps

1. Install SUSE Linux Operating System

Follow the Installation instructions provided in the SUSE Linux 9.3 installation manual. We will focus on Oracle related component and make sure you meet Oracle software space requirement.

SUSE Linux 9.3 with default packages along with "C/C++ Compiler and Tools" is sufficient for Oracle 10g R1 (10.1.0.3) install. Here is snap-shot from my system.



Check whether C/C++ compiler is installed. "gcc --version" will show "gcc (GCC) 3.3.3 (SUSE Linux)". If gcc is not installed, then use YaST setup tool to install "C/C++ Compiler and Tools".

```
s193:/mnt/temp # gcc --version
gcc (GCC) 3.3.5 20050117 (prerelease) (SUSE Linux)
Copyright (C) 2003 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.
s193:/mnt/temp #
```

2. Oracle Install prerequisites

Refer to Oracle 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 SUSE Linux 9.3 as this is for SUSE Linux Enterprise Server.

Note: orarun is only available on x86. You can use orarun on other platforms (x86-64), but on these platforms please comment out the following line from the file "/etc/profile.d/oracle.sh" and "/etc/init.d/oracle":

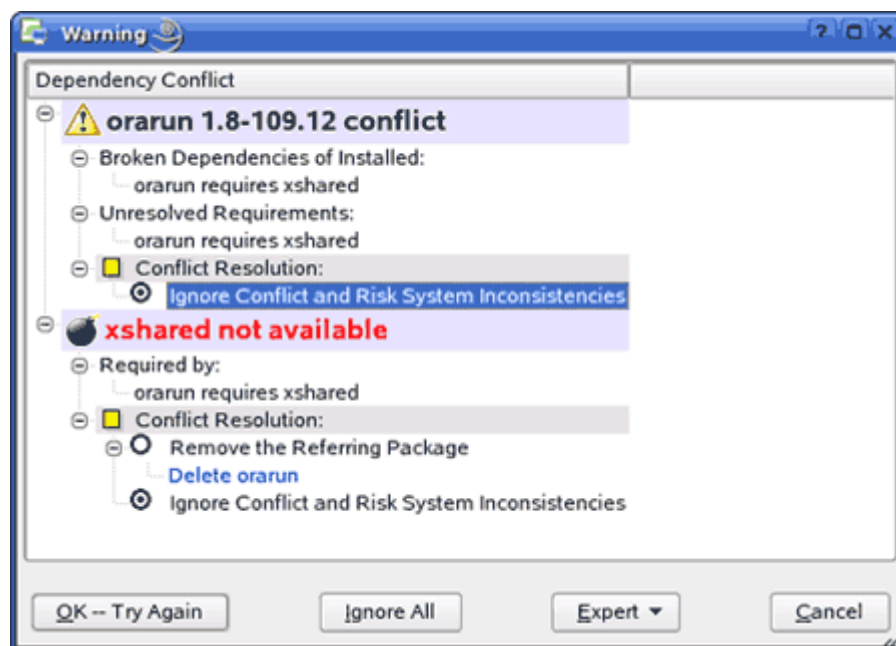
```
#test -d /lib/i686 && export LD_ASSUME_KERNEL=2.2.5
```

orarun :

1. Install orarun package. It will ask to install dependent packages first.

```
# rpm -ivh --nodeps orarun-1.8-109.12.i586.rpm
```

2. Install libaio, libaio-devel and pdksh from SUSE Linux 9.3 media.
3. Please ignore xshared not available conflict reported by YaST. Here is snap-shot:

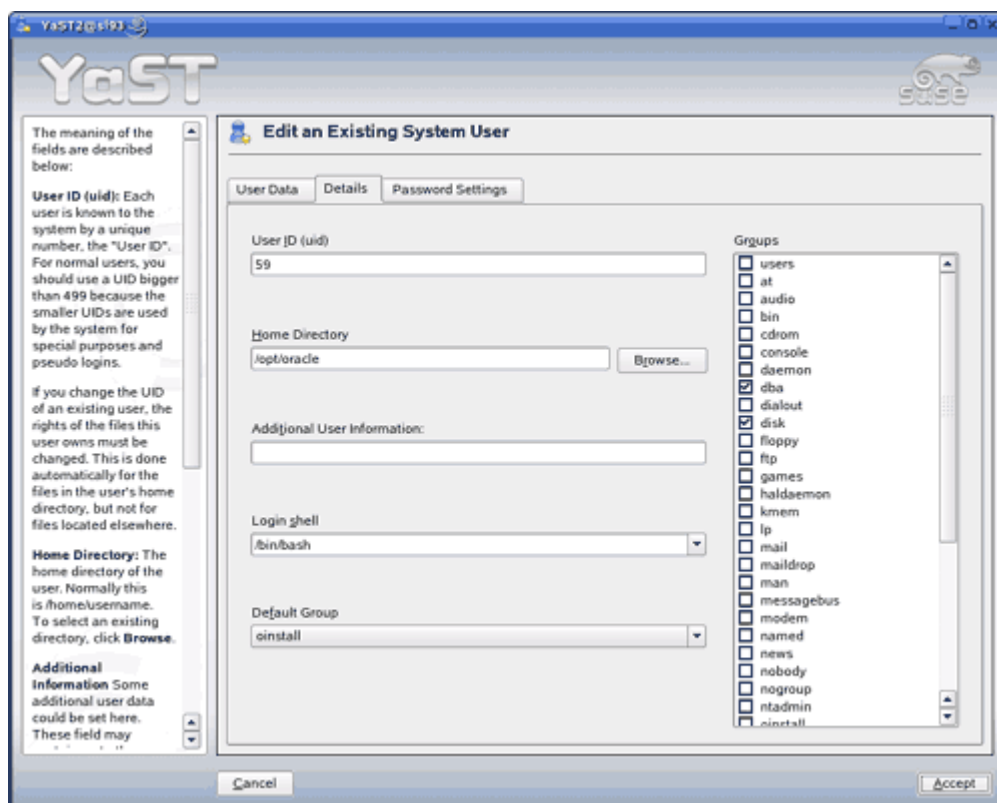
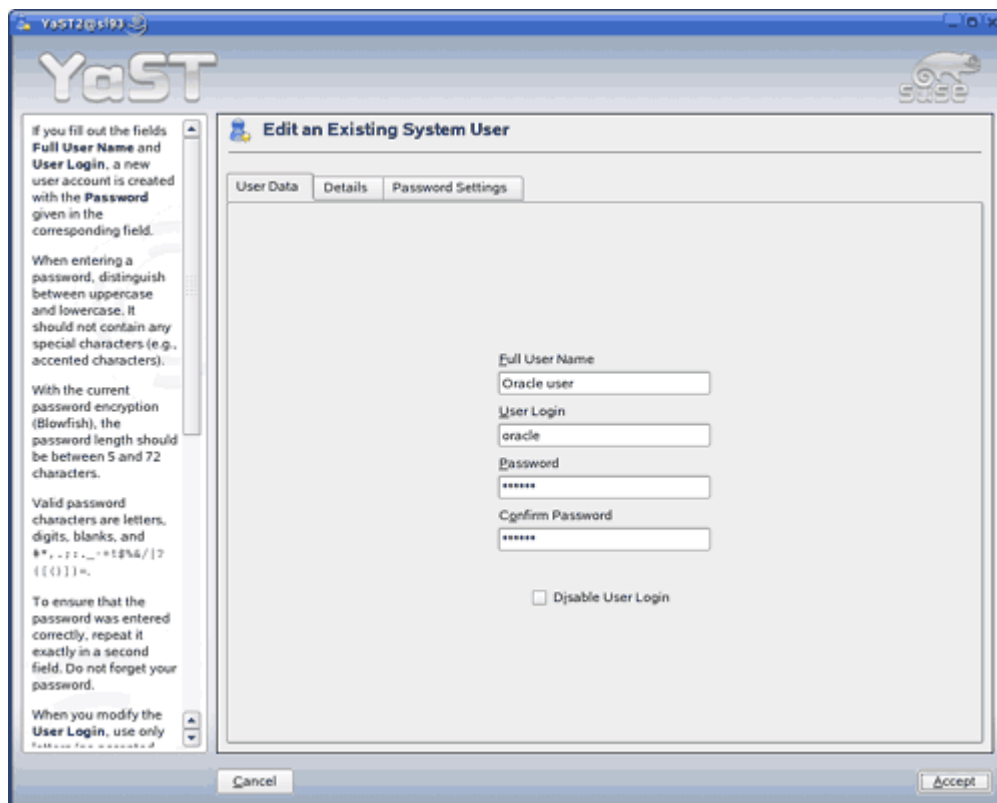


4. Now orarun package is installed. Please enable newly created "oracle" user for Oracle 10g installation.
 1. The account for oracle user is disabled. Enable it, by changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", either by using YaST setup tool or by editing the "/etc/passwd" file.
 2. Set a new password for user "oracle" i.e. "/usr/bin/passwd oracle".

You can use SUSE setup tool YaST 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.)
```

Following are the screen shots of "oracle" user properties:



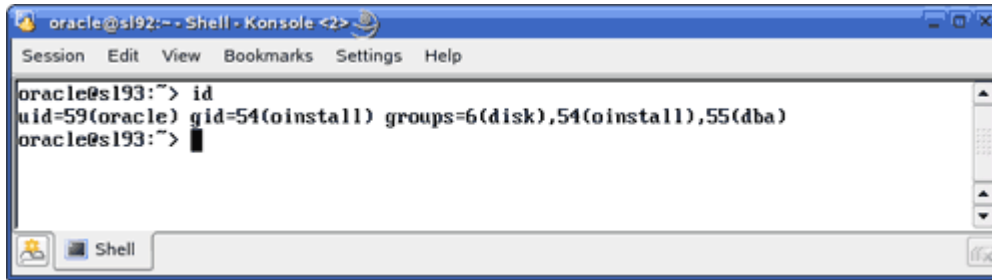
5. Now set your Oracle environment variables.

1. Change Oracle home directory by editing ORACLE_HOME variable in "/etc/profile.d/oracle.sh" file. ORACLE_HOME=\$ORACLE_BASE/product/10g
2. Default ORACLE_SID set by orarun install is "mydb". Change it to your preferred name in "/etc/profile.d/oracle.sh" file.

6. 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.

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

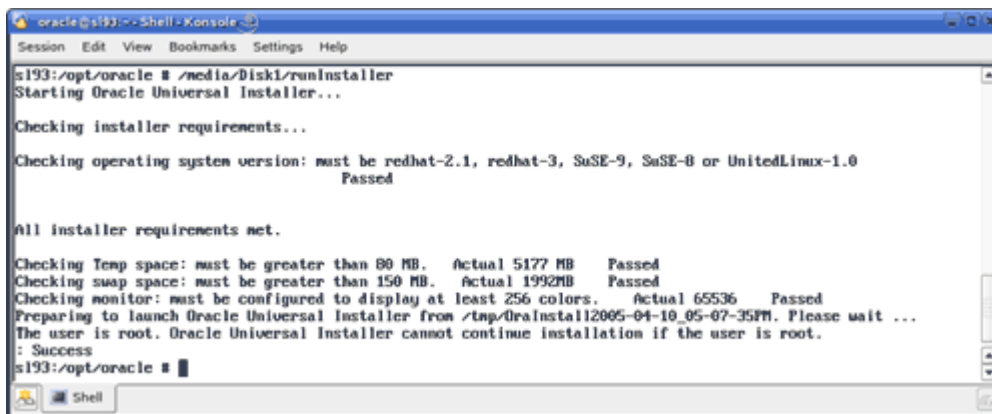
verifying current user.



```
oracle@sl92:~ - Shell - Konsole <2>
Session Edit View Bookmarks Settings Help
oracle@sl92:~$ id
uid=59(oracle) gid=54(oinstall) groups=6(disk),54(oinstall),55(dba)
oracle@sl92:~$
```

3. Oracle 10g R1 (10.1.0.3) Installation

1. Get Oracle 10g R1 (10.1.0.3) Software from oracle web or use your Oracle Database 10g CD. If you have downloaded SW (ship.db.lnx32.cpio.gz) then use gunzip and cpio to extract files:
 - a. gunzip ship.db.lnx32.cpio.gz
 - b. cpio -idmv < ship.db.lnx32.cpio
2. Make sure you are logged in as "**oracle**" user.
You will get following Oracle Install error If logged as a root:



```
oracle@sl92:~ - Shell - Konsole
Session Edit View Bookmarks Settings Help
sl92:/opt/oracle # ./media/Disk1/runInstaller
Starting Oracle Universal Installer...

Checking installer requirements...

Checking operating system version: must be redhat-2.1, redhat-3, SuSE-9, SuSE-8 or UnitedLinux-1.0
Passed

All installer requirements met.

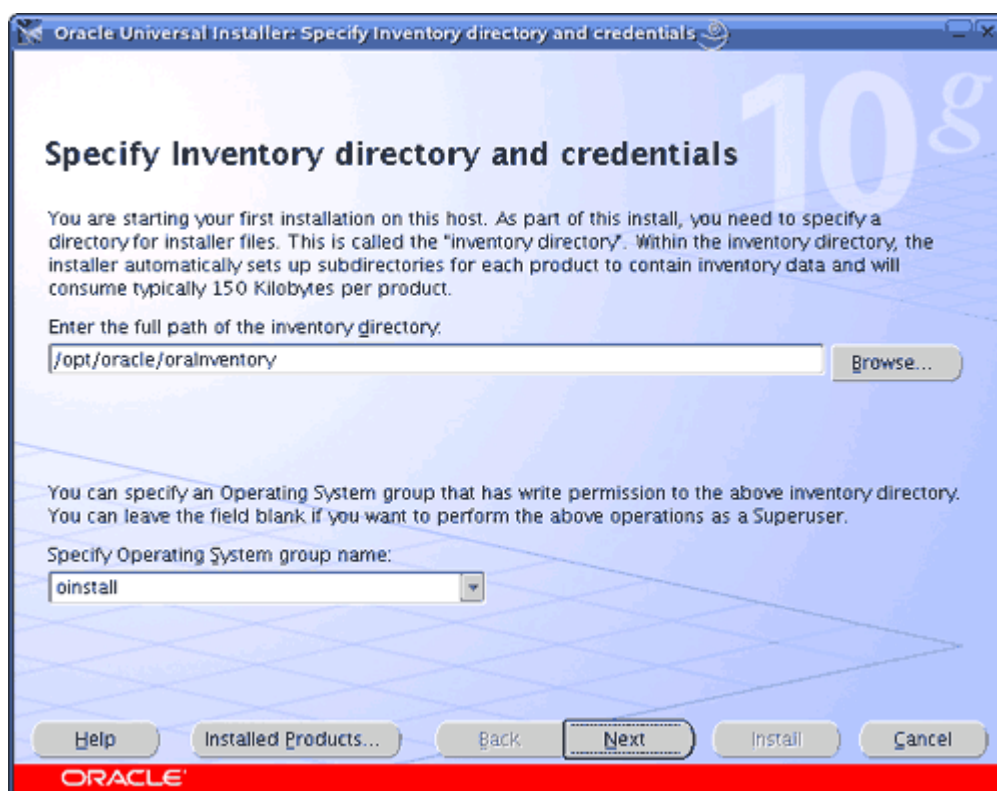
Checking Temp space: must be greater than 80 MB. Actual 5177 MB Passed
Checking swap space: must be greater than 150 MB. Actual 1992MB Passed
Checking monitor: must be configured to display at least 256 colors. Actual 65536 Passed
Preparing to launch Oracle Universal Installer from /tmp/OraInstall2005-04-10_05-07-35PM. Please wait ...
The user is root. Oracle Universal Installer cannot continue installation if the user is root.
: Success
sl92:/opt/oracle #
```

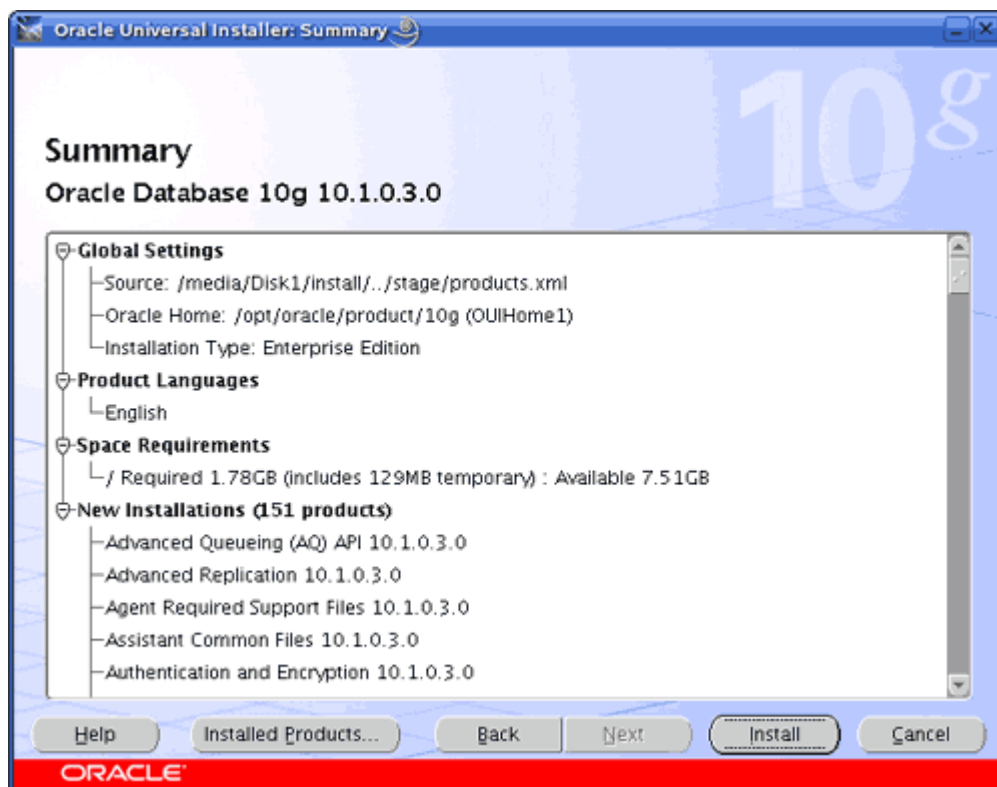
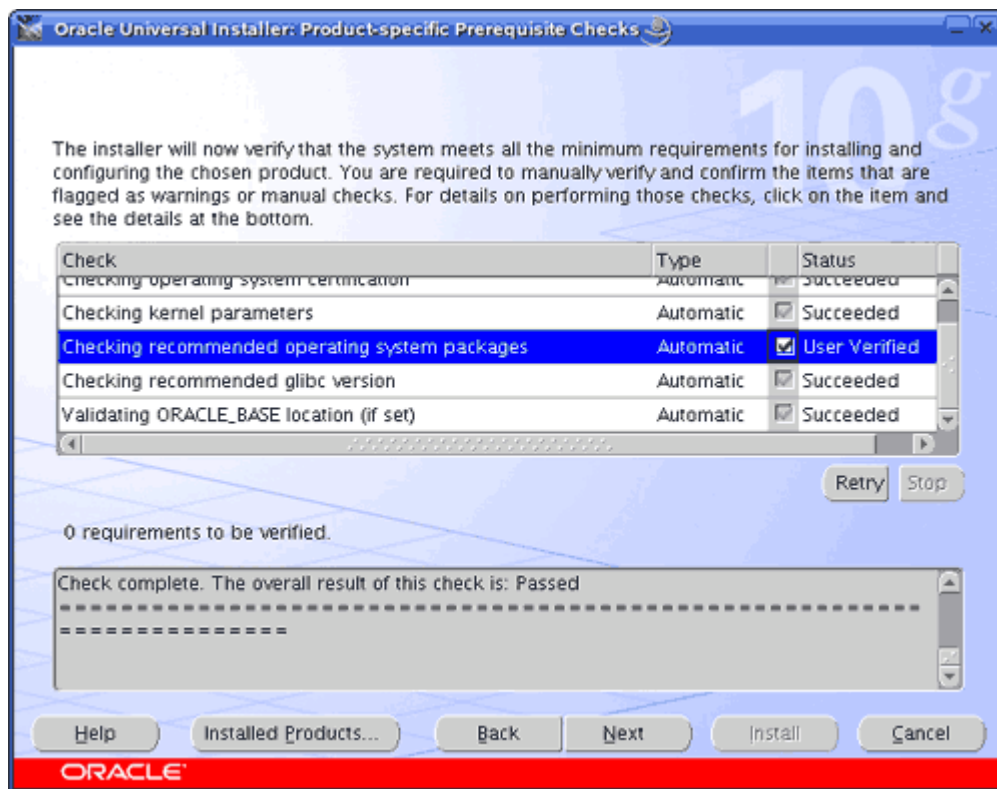
3. Run Oracle Universal installer : ./runInstaller

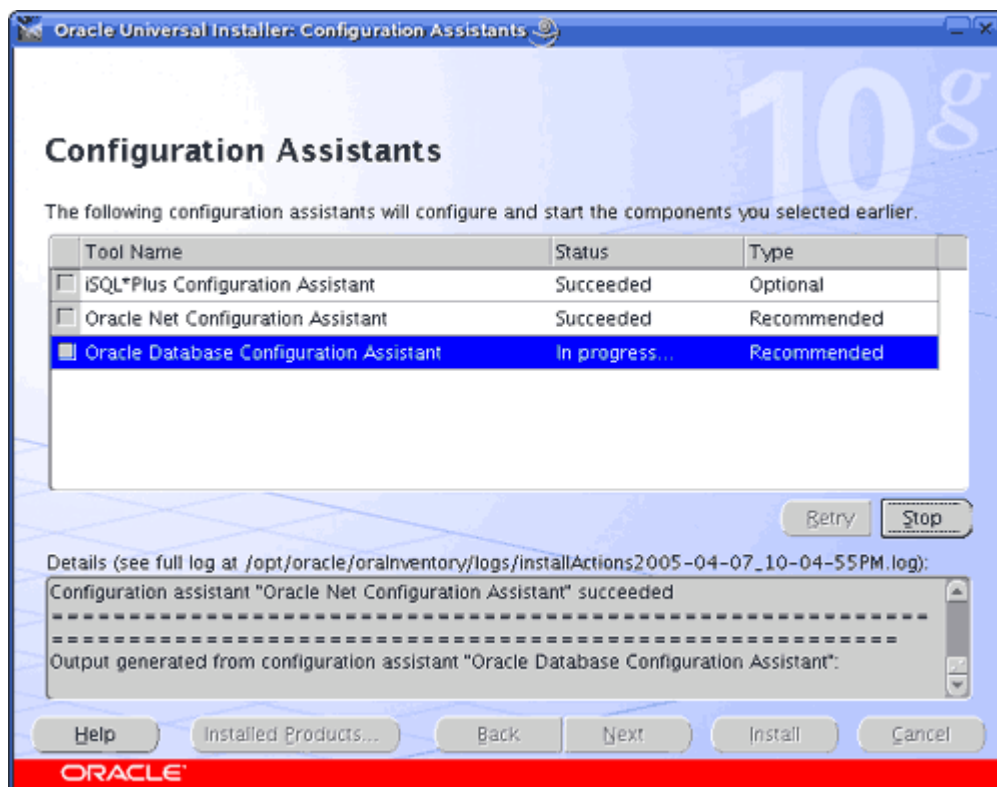
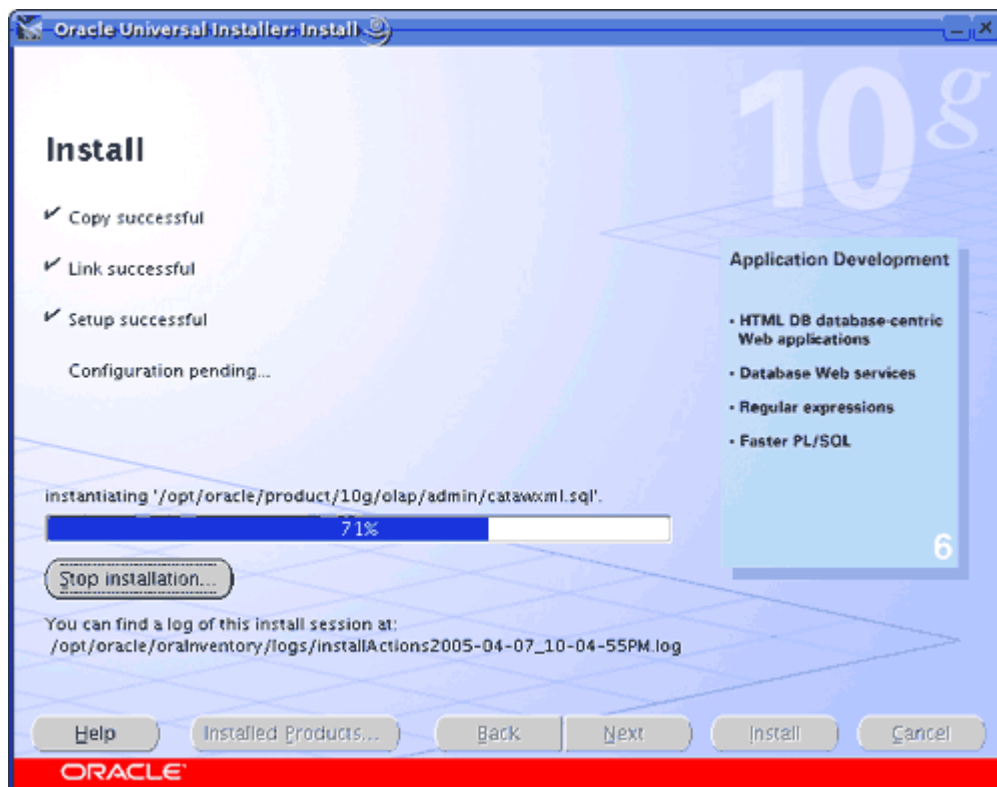
If you are installing from CD mounted as /media/cdrom then "cd /tmp && /media/cdrom/runInstaller" will be helpful.

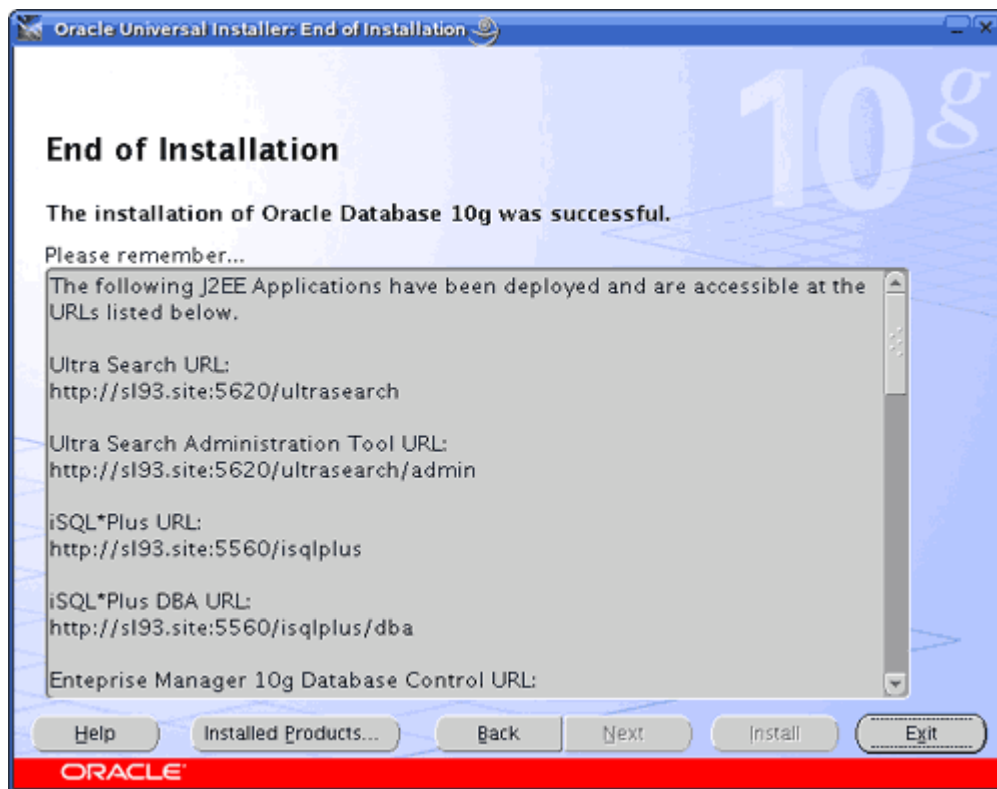
Note: SUSE Linux 9.3 comes with latest version of openmotif package. Please ignore openmotif warning and continue with the installation.

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



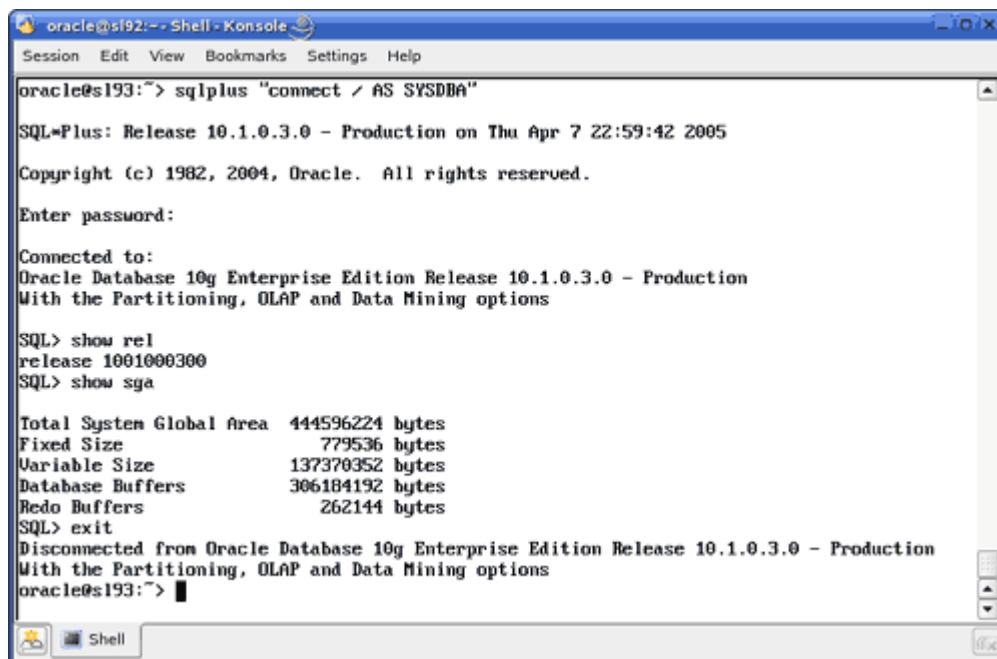






4. sqlplus: Startup and Shutdown of the Oracle10g Database (Manual)

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



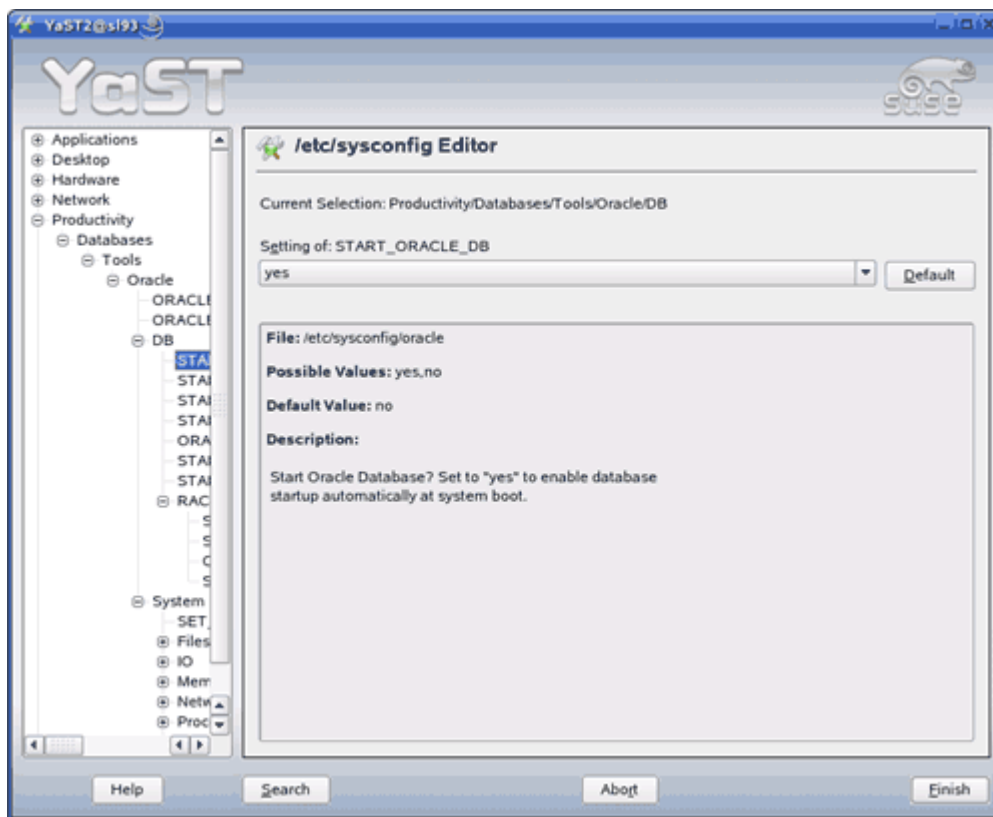
1. To startup the database:
sl93\$ sqlplus /nolog
SQL> connect / as sysdba
SQL> startup
2. To shutdown the database:
sl93\$ sqlplus /nolog
SQL> connect / as sysdba
SQL> shutdown

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

5. 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"`



1. Edit `/etc/oratab` entry corresponding to your database to "Y".
i.e. `mydb:/opt/oracle/product/10g:Y`
2. Edit `dbstart`, `dbshut` and `dbhome` scripts to reflect correct location for `ORATAB` entry. i.e. `ORATAB=/etc/oratab`

Note: If you are lazy in editing `/etc/oratab` entries then following will do:

```
#ln -s /etc/oratab /var/opt/oracle/oratab
```

3. Create symbolic link to start Apache Server.

```
#ln -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2
```

6. Oracle Enterprise Manager

1. Start Oracle listener, If it is not already started by `"lsnrctl start"`. If it fails, then make sure your `listener.ora` file has proper `SID_DESC` entry.

```
# listener.ora Network Configuration File: /opt/oracle/product/10gR1/network/a
# Generated by Oracle configuration tools.
...
(SID_DESC =
  (SID_NAME = orcl)
  (ORACLE_HOME = /opt/oracle/product/10gR1)
  (GLOBAL_NAME = ORCL)
)
....
```

2. If dbconsole Oracle services is not started, then start it manually by entering following command "emctl start dbconsole".
3. Enterprise Manager web interface (http://localhost:5500/em) to perform routine database administration and tuning tasks.

The screenshot displays the Oracle Enterprise Manager 10g web interface for a database named 'orcl'. The browser address bar shows 'http://localhost:5500/em/console/database/instance/summary?target=orcl&type=oracle_database'. The page is titled 'Database: orcl' and shows the user is logged in as 'SYS'. The interface is divided into several sections:

- General:** Shows the database status as 'Up', up since 'Apr 7, 2005 10:25:22 PM', and availability at 100%. It also lists the instance name 'orcl', version '10.1.0.3.0', and Oracle home path.
- High Availability:** Shows backup and archiving settings, all of which are 'Disabled'.
- Space Usage:** Shows database size (0 GB), problem tablespaces (0), segment findings (Not Configured), policy violations (0), and dump area usage (Unavailable).
- Diagnostic Summary:** Shows performance findings (No ADDM run available), alert log status (No ORA- errors), and zero critical or warning alerts.
- Alerts:** A table with columns for Severity, Category, Name, Message, Alert Triggered, Last Value, and Last Value Collected. It currently shows '(No alerts)'. Below the table is a 'Done' button.

Conclusion

This is first step in getting familiar with Oracle Database. Enjoy and don't forget Oracle 10g is only supported and certified to be used on SUSE Linux Enterprise Server.

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