Oracle 10*g* R1 (10.1.0.3)
on
SUSE LINUX Enterprise Server 9

(How to Install)

Arun Singh
Novell Inc.
arun.singh@novell.com
http://www.novell.com/oracle

Novell.

Introduction

Oracle 10g R1 (10.1.0.3) is Novell SUSE LINUX Enterprise Server 9 (SLES9) certified. This document will help you to install Oracle 10g R1 on SLES9. If you encounter any problem, please post your question to suse-oracle@suse.com.

Note: For SUSE LINUX 9.2/9.3 you can refer "Introduction to Oracle 10g on SUSE LINUX 9.3 (http://ftp.novell.com/partners/oracle/docs/10gR1_sl93_introduction.pdf)".

Required Software and Reference Documents

Novell

- SUSE LINUX Enterprise Server 9 and Service Pack 2. You can download Eval copy from http://www.novell.com/products/linuxenterpriseserver/eval.html

- SUSE Linux Enterprise Server 9 Documentation
  http://www.novell.com/documentation/sles9/index.html

Oracle

- Oracle Database 10g Release 1 (10.1.0.3) Enterprise/Standard Edition for Linux x86. File name: ship.db.lnx32.cpio.gz
  (http://www.oracle.com/technology/software/products/database/oracle10g/htdocs/linuxsoft.html).

- Oracle Database 10g Release 1 Documentation
  http://www.oracle.com/technology/documentation/database10g.html

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

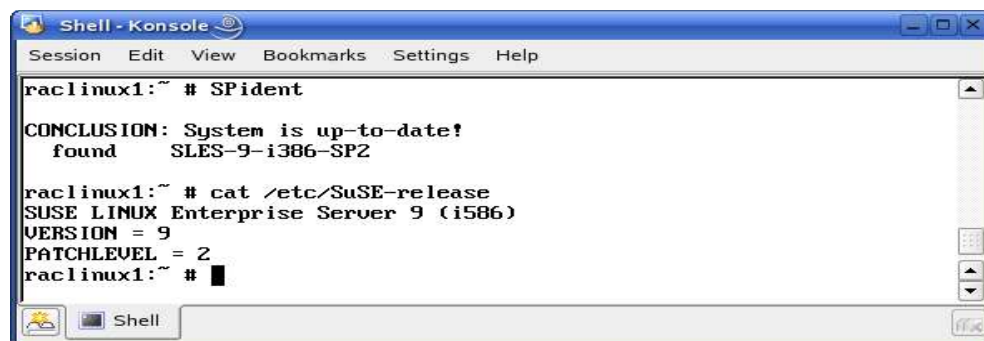## Installation Steps

1. Install SUSE LINUX Operating System

Follow the Installation instructions provided in the SLES9 install manual. SLES9 with default packages along with "C/C++ Compiler and Tools" is sufficient for Oracle 10g R1 (10.1.0.3) install.

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".
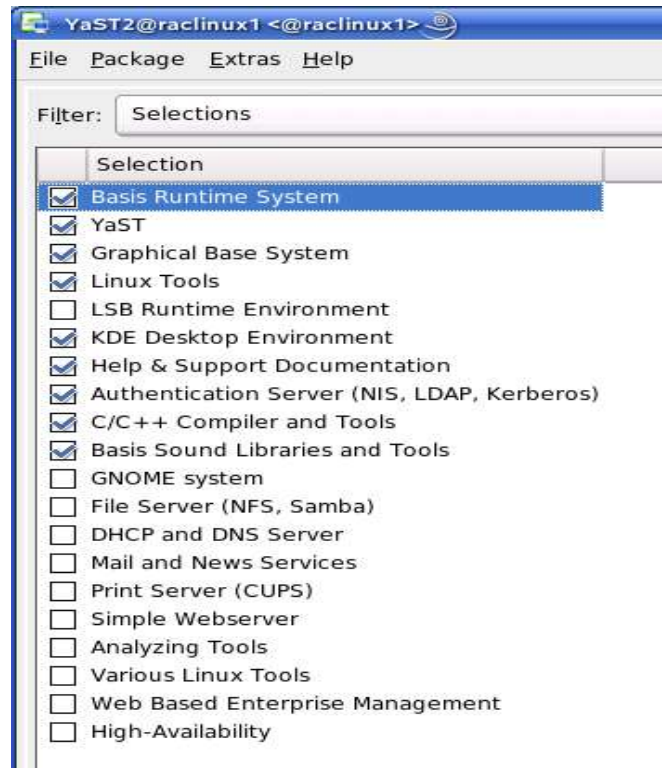
2. Install SLES9 Service Pack 2 (Optional)

Please install SLES9 SP2, as it contains latest patches and updated orarun. Verify SLES9 SP2 is installed by SPident or 'cat /etc/SuSE-release'.

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. Install orarun package from SLES9 SP2 CD2. You can use YaST setup tool or manual installation instruction to install orarun packages.

    rpm -i /media/cdrom/suse/i586/orarun-1.8-109.15.i586.rpm

 **Note:** orarun is also available at http://ftp.novell.com/partners/oracle/sles-9/

2. 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.
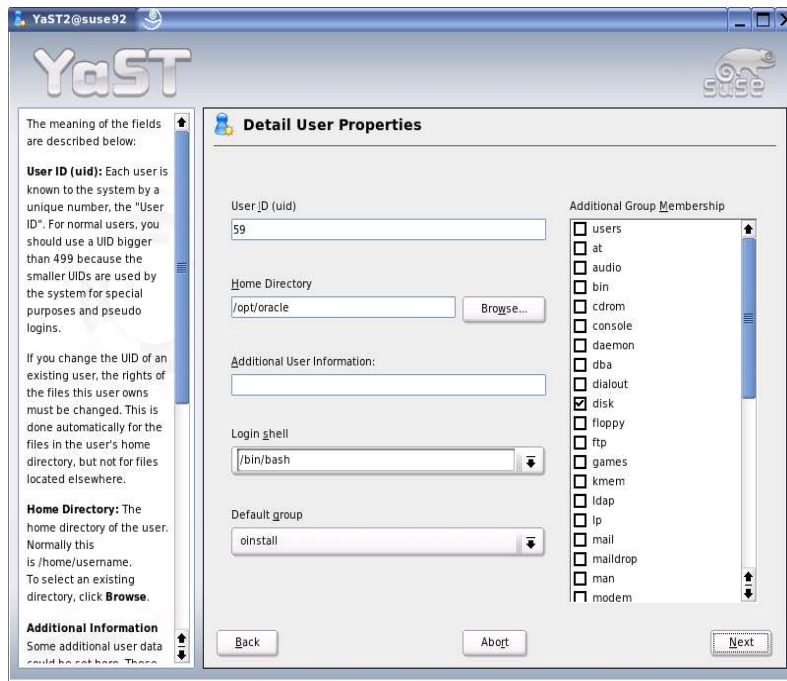
    Also, set a new password for user "oracle" i.e. "/usr/bin/passwd oracle".

    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:
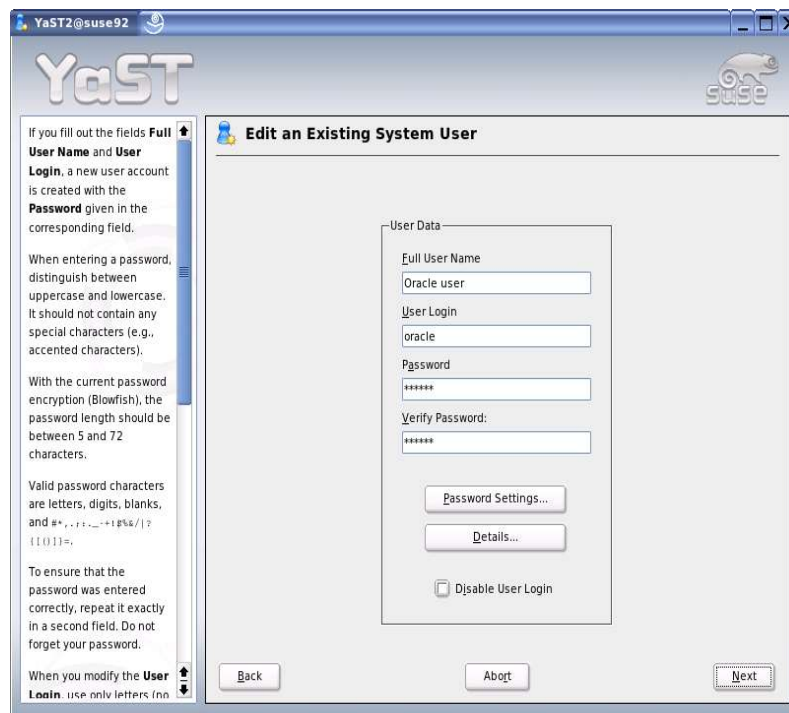
3. Change Oracle home directory by editing ORACLE_HOME variable in "/etc/profile.d/oracle.sh" file.
   ORACLE_HOME=$ORACLE_BASE/product/10.1.0/db_1

4. Default ORACLE_SID set by orarun install is "mydb". Change it to your preferred name in "/etc/profile.d/oracle.sh" file.

5. Run "/usr/sbin/rcoracle start " to set kernel parameters. Ignore any errors.

6. Exist from current session and login as new "**oracle**" user.

4. Oracle 10g R1 (10.1.0.3) Installation

1. Get Oracle 10g R1 (10.1.0.3) Software from oracle web (http://www.oracle.com/technology/software/products/database/oracle10g/htdocs/linuxsoft.html) or use your Oracle 10g_DB 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.

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: SLES9 comes with latest version of openmotif package. If you are planning to use "Forms and Reports", please install suggest version. Otherwise, ignore openmotif warning and continue with the installation.

5. Installation will walk you through with self explanatory instructions. Here are screen-shots from simple Oracle 10g Installation:
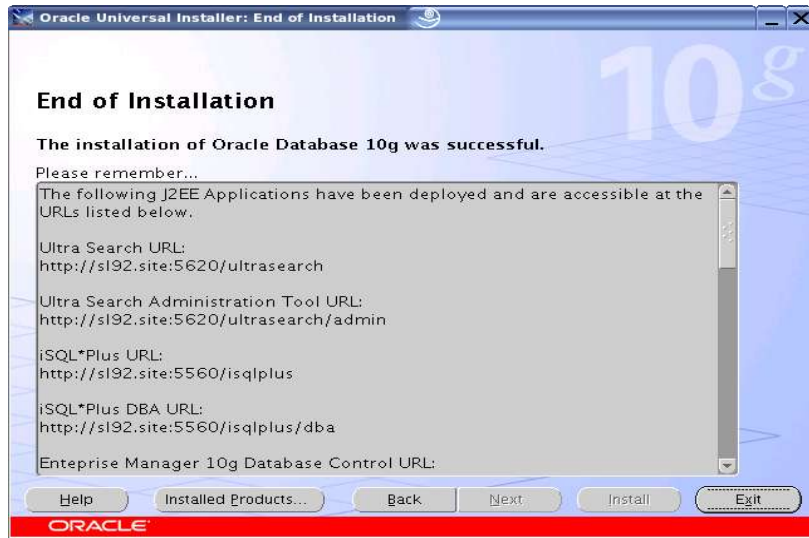
5. Oracle Database Start at boot time

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".

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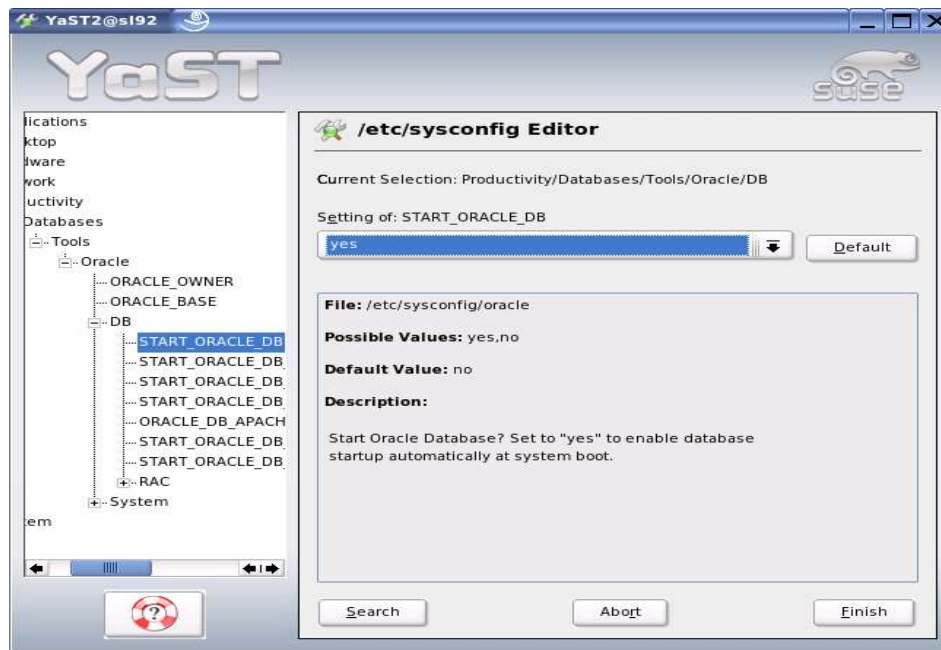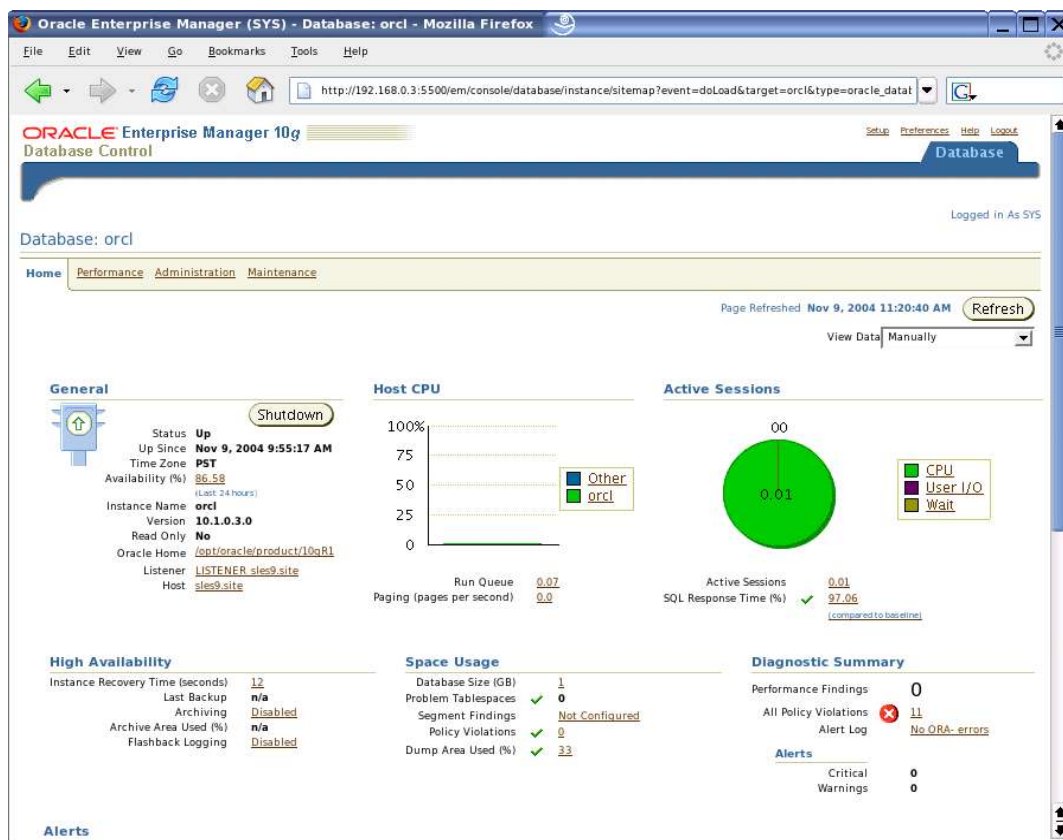
6. Oracle Enterprise Manager

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/admin/listener.ora
# 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. Use Enterprise Manager web interface to do routine database administration and performance tuning tasks.

   URL: http://localhost:5500/em

7. HTML DB Install

It must be installed in a different Oracle home than the database. Please do following before starting Oracle Universal Installer.

1. Make sure Oracle database is up and It is manageable via Enterprise Manager web interface.

2. Edit **/etc/profile.d/oracle.sh** file to unset ORA_NLS33 variables.
   #unset ORA_NLS33

3. Create symbolic link to start Apache Server.
   #ln -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2

8. Async I/O : How to enable and verify

1. Check SPFILE has the following parameters:Use Enterprise Manager or SQLPLUS to alter AIO parameters.

   disk_asynch_io=TRUE
   filesystemio_options=SETALL

   You can issue following in "sqlplus "connect / as SYSDBA":
   ALTER SYSTEM SET filesystemio_options = "asynch" SCOPE=SPFILE;

2. cd $ORACLE_HOME/rdbms/lib
   make PL_ORALIBS=-laio -f ins_rdbms.mk async_on
   make PL_ORALIBS=-laio -f ins_rdbms.mk ioracle

Restart your database by dbshut; dbstart to make this change effective. Then check in the proc if the value are increasing while using async i/o in your Database. i.e. cat /proc/slabinfo | grep kio

9. AMD64 Server : libc.so.6 error

If you have installed old orarun on AMD64 server and getting libc.so.6 error, while doing "su - oracle" then comment following lines in /etc/init.d/oracle and /etc/profile.d/oracle.[c]sh

#test -d /lib/i686 && export LD_ASSUME_KERNEL=2.x.x

10. Installation Notes: EM64T Servers

Please make sure you have selected proper Oracle and SLES9 Software i.e x86-64 based.

1. Follow all the steps above and make sure gcc-3.3.3 and gcc-c++ and libaio-devel packages are installed.

2. If you are getting "dircolors: error while loading shared libraries: /usr/lib/libInternalSymbols.so: cannot open shared object file: No such file or directory..." or not able to login as user "oracle"
   commenting the line "test -f /usr/lib/libInternalSymbols.so && export LD_PRELOAD=/usr/lib/libInternalSymbols.so" or by changing LD_PRELOAD into LD_PRELOAD_32 in /etc/profile.d/oracle.sh will help.

3. make sure glibc-devel-32bit-9-200407011229 is installed to avoid linking of **ins_sysman.mk** error.

   Here is a brief list of required packages (or later versions):
   1. gcc-3.3.3-43
   2. gcc-c++-3.3.3-43
   3. glibc-2.3.3-98
   4. glibc-devel-32bit-9-*
   5. libaio-0.3.98-18
   6. libaio-devel-0.3.98-18
   7. make-3.80
   8. openmotif-libs-2.2.2-519.1

History:

Date	Changes
10/01/04	Initial Document created.
03/01/05	Updated with new orarun and EM64T Information.
04/15/05	Updated EM64T Server Section, Added 10gR1 download URL
07/12/05	Update with SP2 information. Corrected AIO section.

Enjoy!