Oracle Database 11*g* R2 (11.2.0.1)
on
SUSE Linux Enterprise Server 11

(How to Install)

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Novell

Introduction

Oracle Database 11g R2 (11.2.0.1) is certified on SUSE Linux Enterprise Server 11 (SLES11). This document is not a replacement of official Oracle Installation manual but provided to help you to get Oracle Database installed on SLES11 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 suse-oracle@listx.novell.com.

Note: Information provided here will work for SUSE Linux Enterprise Desktop 11

Required Software

Novell

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

Oracle

- Oracle Database 11g Release 2 (11.2.0.1) Enterprise Edition (http://www.oracle.com/technology/software/products/database/index.html)

Hardware Requirements

The system must meet the following minimum hardware requirements:

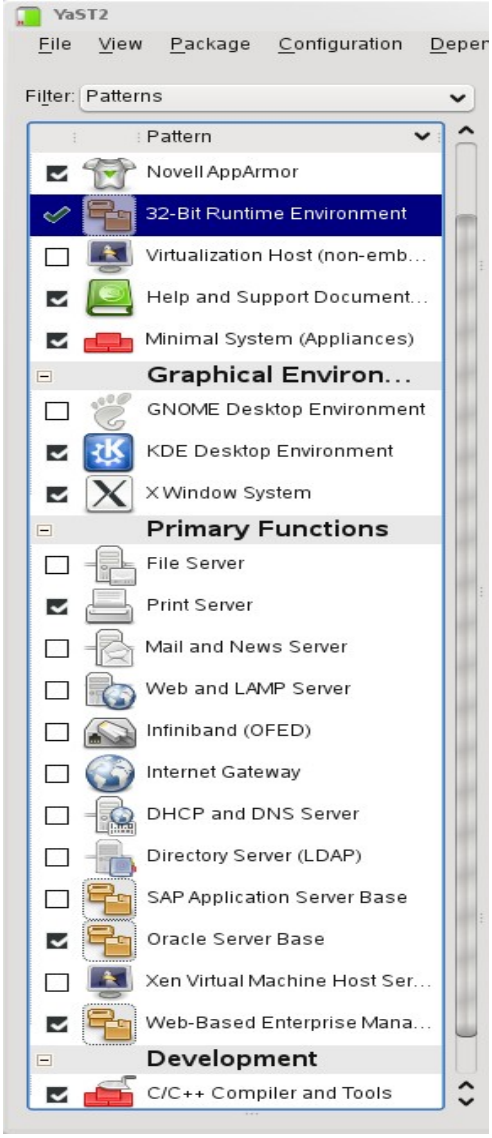
Requirement	**Minimum Value**
RAM	1024 MB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	1024 MB
Disk space for software files	4 GB
Disk space for database files	1.7 GB

Installation Steps

1. Install SUSE Linux Operating System

Follow the Installation instructions provided in the SLES11 install manual. SLES11 with default packages along with Oracle Server Base, and “C/C++ Compiler and Tools” is sufficient for Oracle Database 11g 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 (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. **Install SLES11 Service Pack**
   At this time no Service Pack is available but check for availability kernel update. If available bring your server to latest released kernel.

3. **/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
```

4. 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 DVD and install manually: #rpm -ivh orarun-1.9-172.19.x86_64.rpm

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

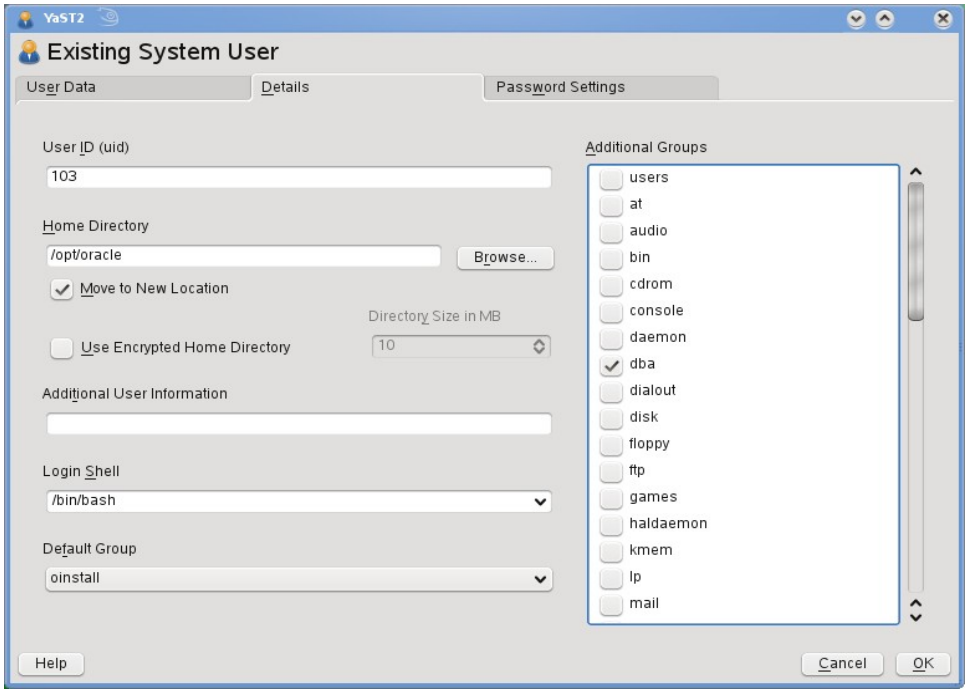
   1. Changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", either by editing the "/etc/passwd" file.

   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.)

   Here is 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/11gR2/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. Modify following parameters to meet Oracle 11gR2 kernel requirements

```
File  Edit  View  Scrollback  Bookmarks  Settings  Help
1. Update following in /etc/sysconfig/oracle
#AIO_MAX_SIZE="262144"
AIO_MAX_SIZE="1048576"

#FILE_MAX_KERNEL="131072"
FILE_MAX_KERNEL="6815744"

#IP_LOCAL_PORT_RANGE="1024 65000"
IP_LOCAL_PORT_RANGE="9000 65500"

#WMEM_MAX="262144"
WMEM_MAX="1048586"

2. Update following in /etc/init.d/oracle
#        test -f /proc/sys/fs/aio-max-size && echo "  AIO_MAX_SIZE=${AIO_MAX_SIZE:-262144}"
#        test -f /proc/sys/fs/aio-max-size && echo ${AIO_MAX_SIZE:-262144} > /proc/sys/fs/aio-max-size
#        test -f /proc/sys/fs/aio-max-size || echo
        test -f /proc/sys/fs/aio-max-nr && echo "  AIO_MAX_SIZE=${AIO_MAX_SIZE:-1048576}"
        test -f /proc/sys/fs/aio-max-nr && echo ${AIO_MAX_SIZE:-1048576} > /proc/sys/fs/aio-max-nr
        test -f /proc/sys/fs/aio-max-nr || echo
screen : bash
```

5. 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.

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

```
oracle@sles11:~> id
uid=103(oracle) gid=105(oinstall) groups=105(oinstall),106(dba)
oracle@sles11:~> cat /etc/SuSE-release
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 0
oracle@sles11:~> uname -a
Linux sles11 2.6.27.19-5-default #1 SMP 2009-02-28 04:40:21 +0100 x86_64 x86_64 x86_64 GNU/Linux
oracle@sles11:~> env |grep ORA
ORACLE_SID=orcl
ORACLE_BASE=/opt/oracle
ORACLE_HOME=/opt/oracle/product/11gR2/db
oracle@sles11:~>
```

5. Oracle 11g R2 Installation

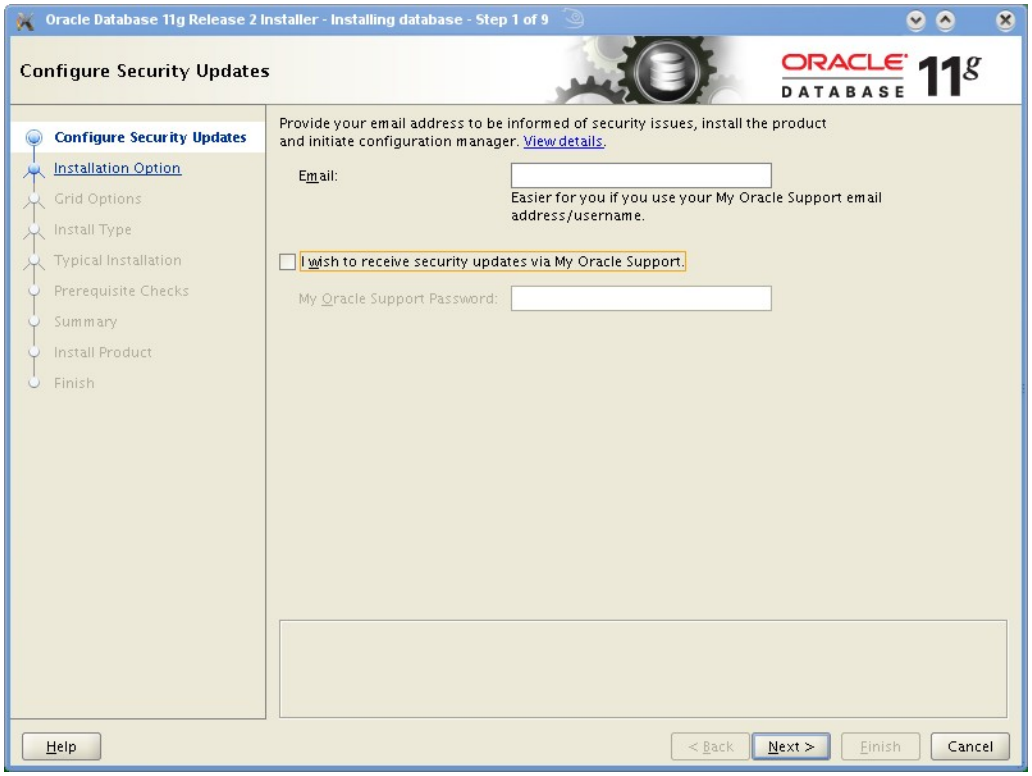
Download Oracle 11g R2 Software from oracle web site depending on your platform and extract files in a local directory:

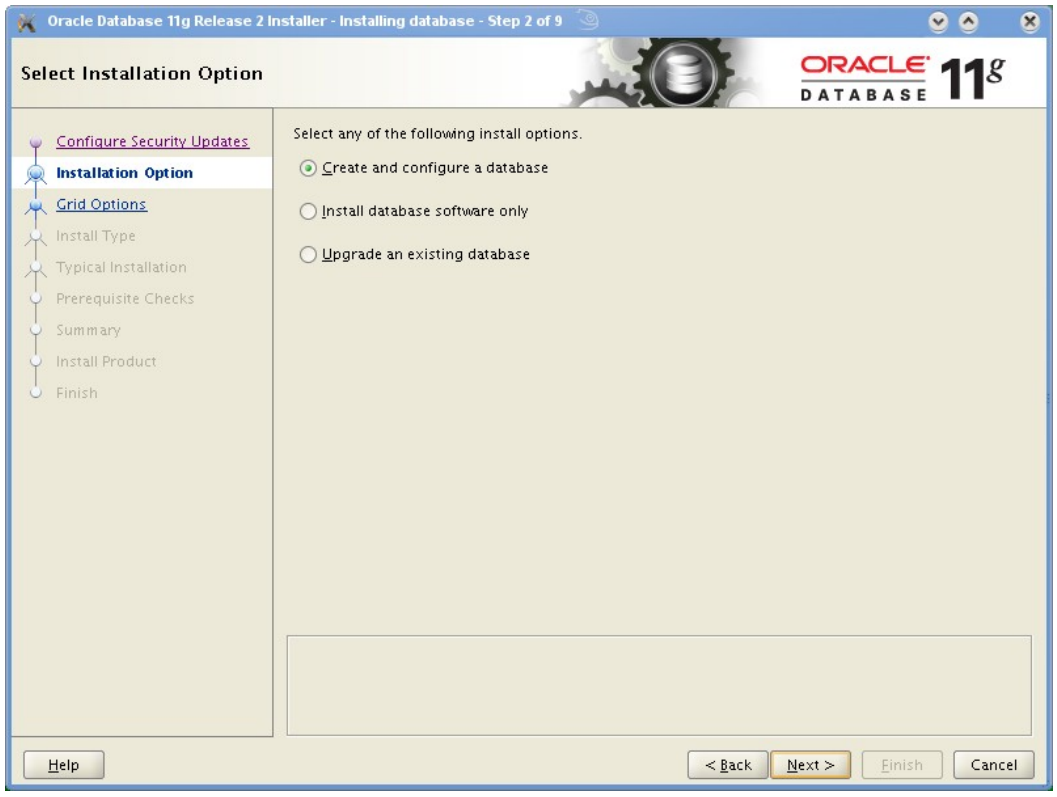
```
#unzip linux.x64_11gR2_database_1of2.zip
#unzip linux.x64_11gR2_database_2of2.zip
```

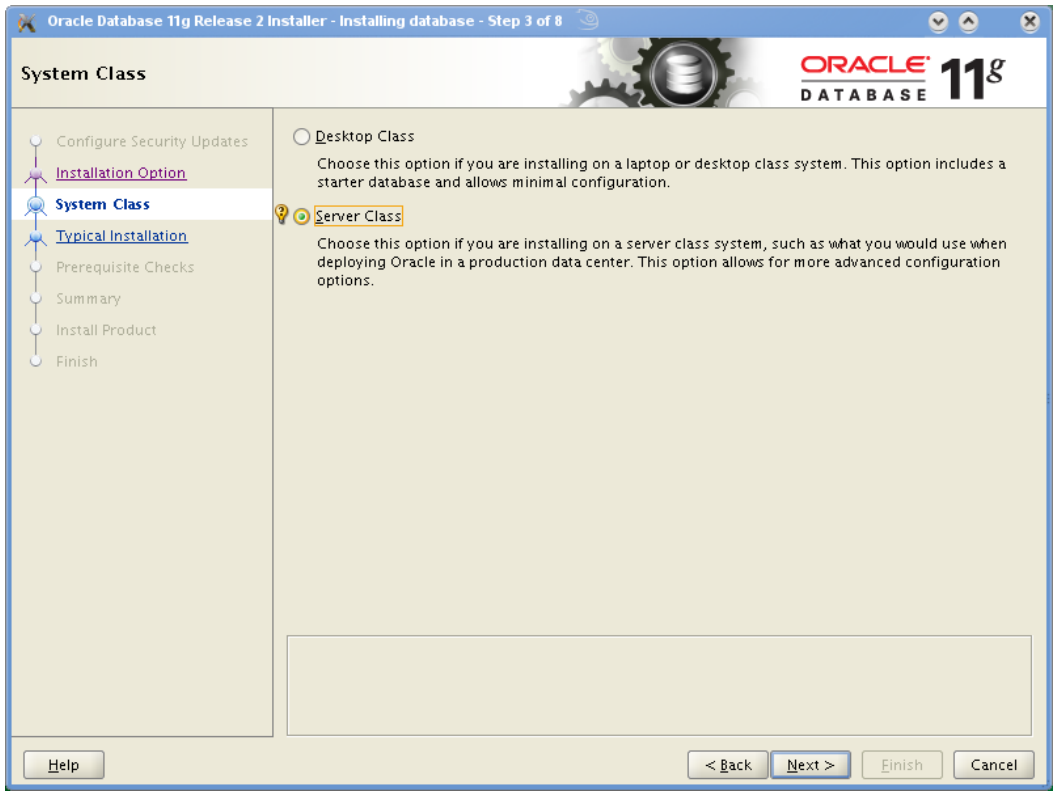
1. Make sure you are logged in as "**oracle**" user.

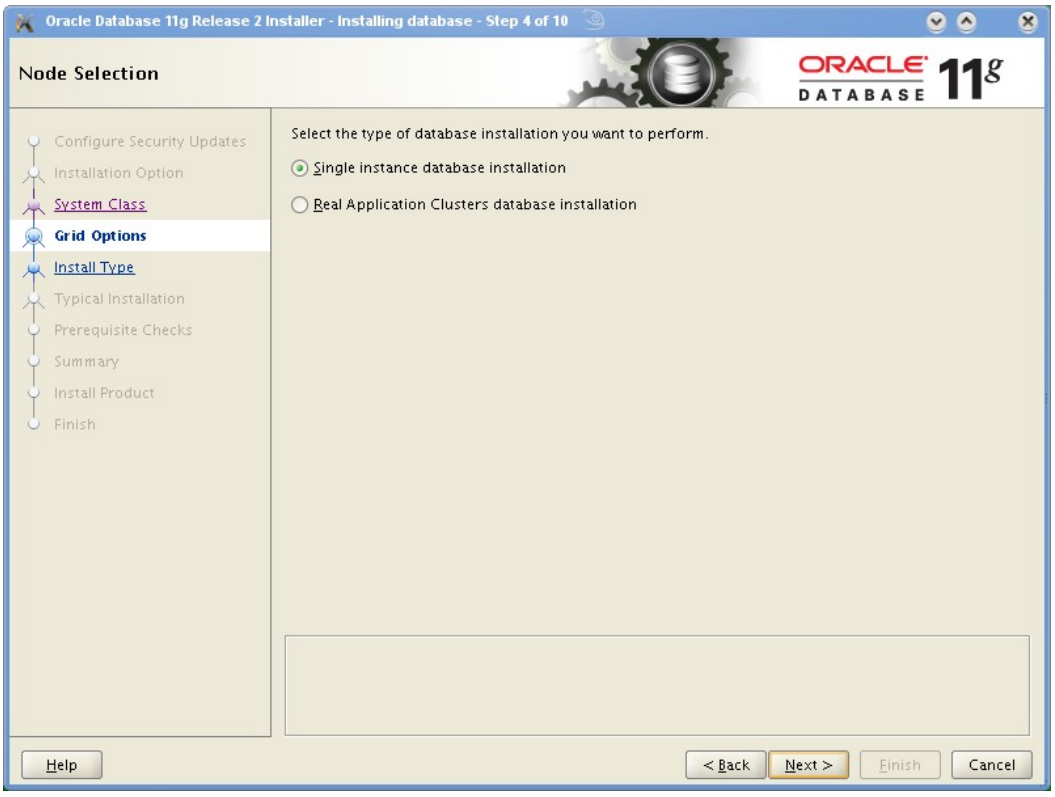
2. Run Oracle Universal installer : ./runInstaller

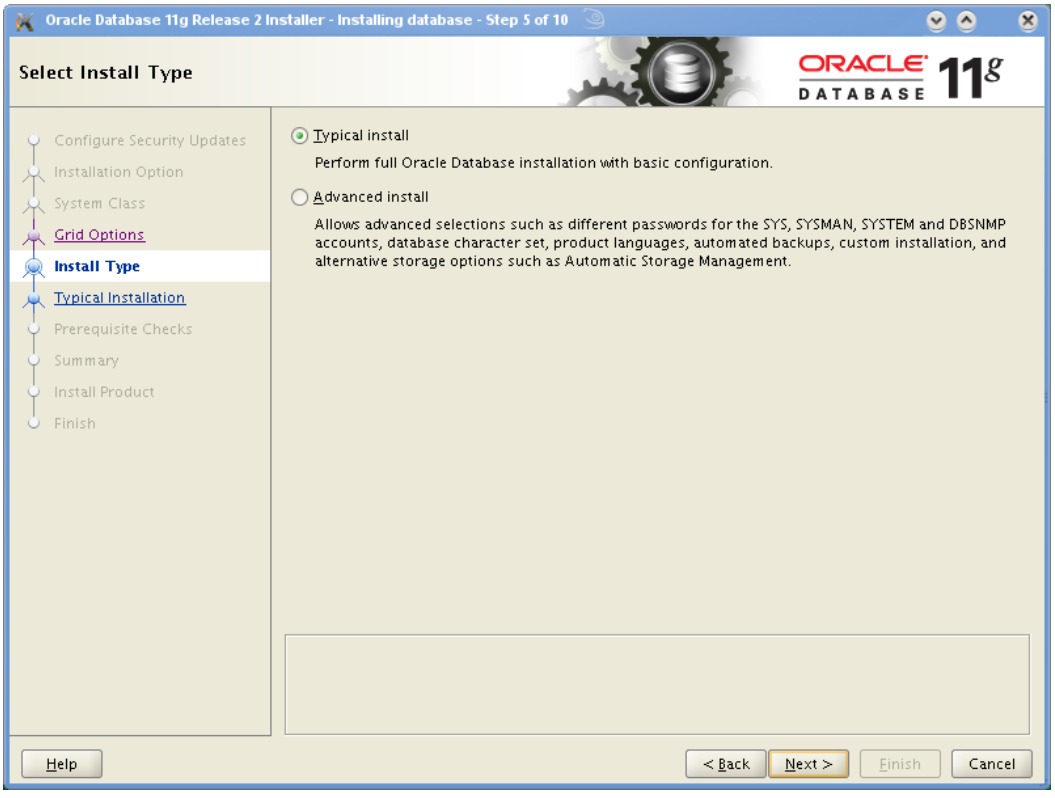
Installation will walk you through with self explanatory instructions. Here are screen-shots from simple Oracle Database 11gR2 Installation:

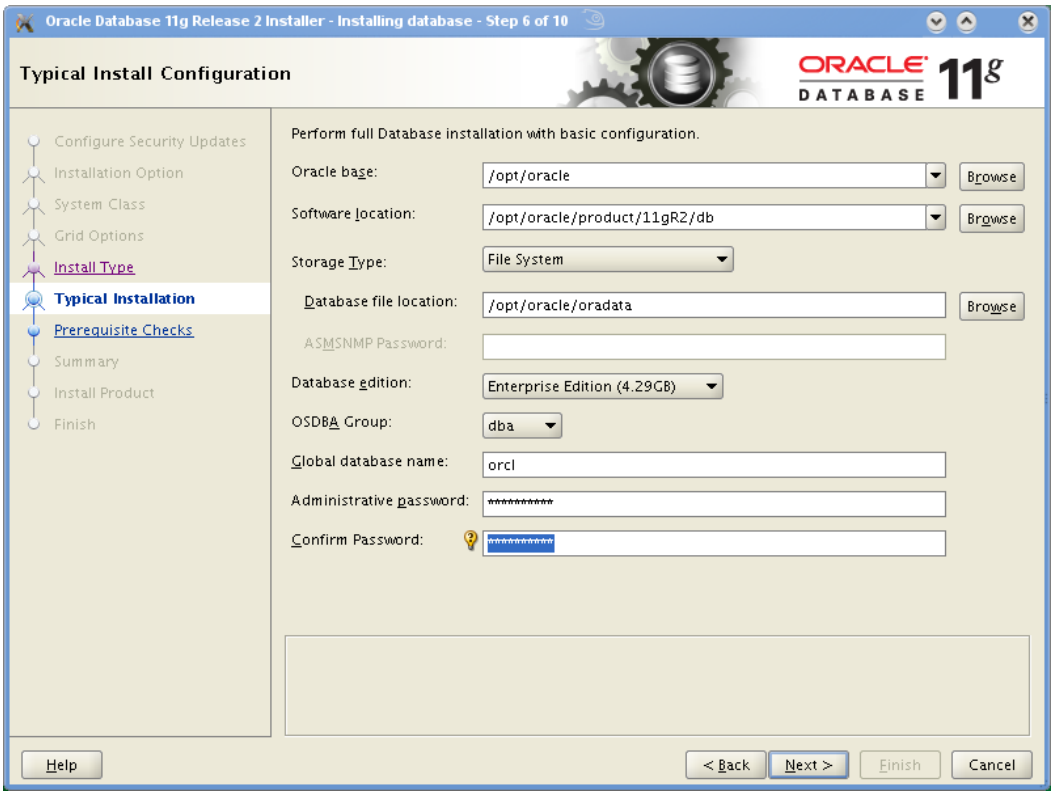



Oracle Database 11g Release 2 Installer - Installing database - Step 2 of 9
Select Installation Option
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Select any of the following install options.
Create and configure a database
Install database software only
Upgrade an existing database
Help
< Back
Next >
Finish
Cancel

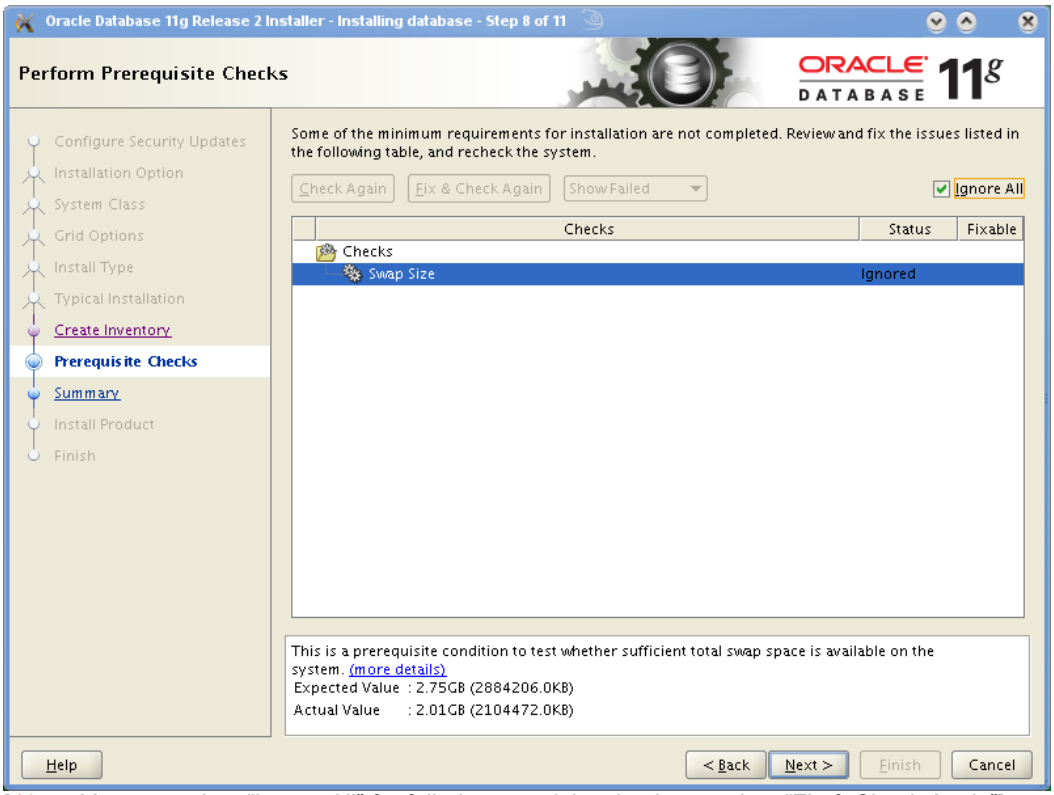

Oracle Database 11g Release 2 Installer - Installing database - Step 3 of 8
System Class
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Desktop Class
Choose this option if you are installing on a laptop or desktop class system. This option includes a starter database and allows minimal configuration.
Server Class
Choose this option if you are installing on a server class system, such as what you would use when deploying Oracle in a production data center. This option allows for more advanced configuration options.
Help
< Back
Next >
Finish
Cancel


Oracle Database 11g Release 2 Installer - Installing database - Step 4 of 10
Node Selection
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Select the type of database installation you want to perform.
Single instance database installation
Real Application Clusters database installation
Help
< Back
Next >
Finish
Cancel

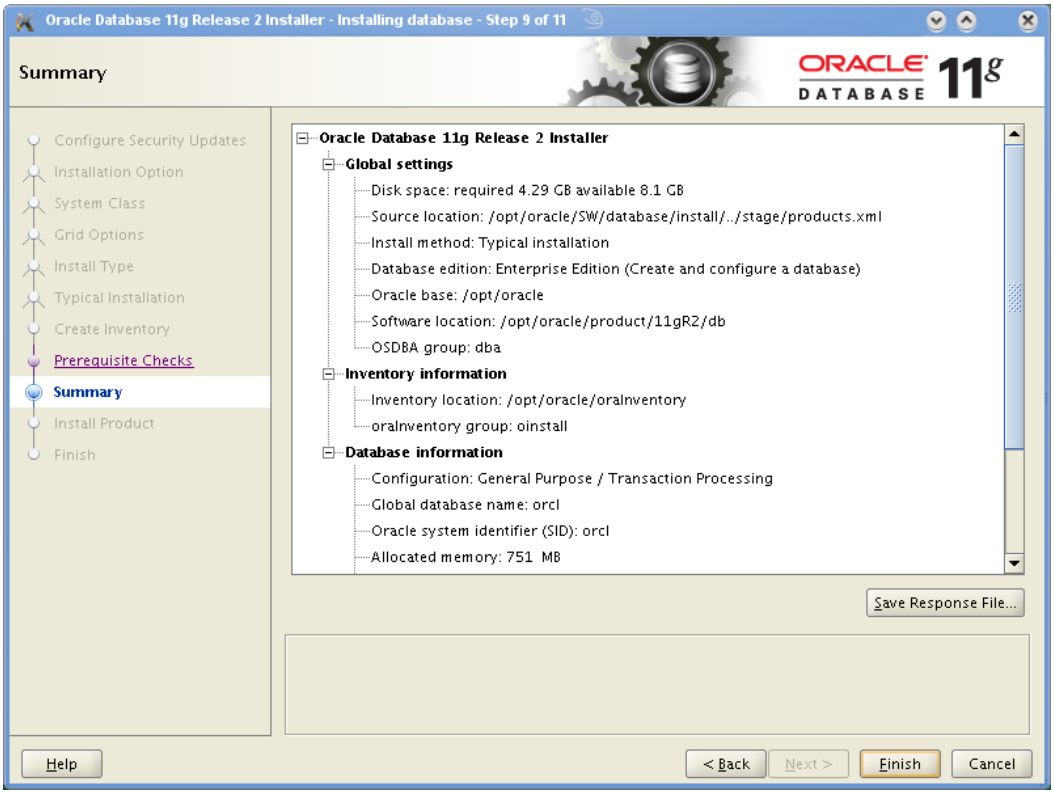

Oracle Database 11g Release 2 Installer - Installing database - Step 5 of 10
Select Install Type
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Typical install
Perform full Oracle Database installation with basic configuration.
Advanced install
Allows advanced selections such as different passwords for the SYS, SYSMAN, SYSTEM and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.
Help
< Back
Next >
Finish
Cancel

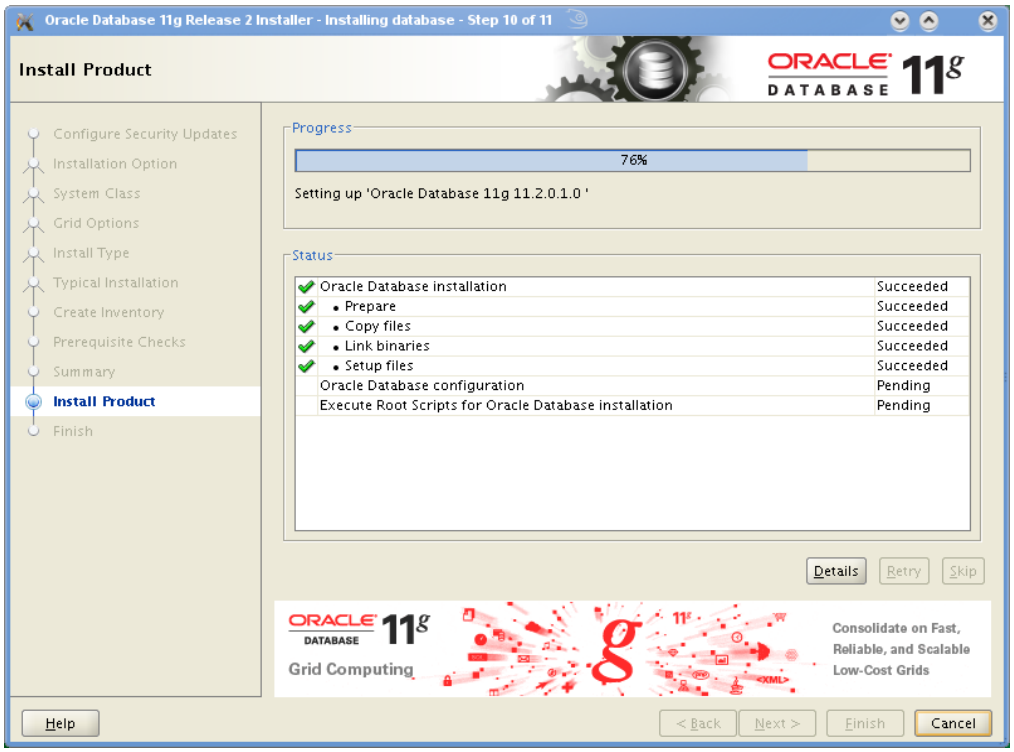

Oracle Database 11g Release 2 Installer - Installing database - Step 6 of 10
Typical Install Configuration
ORACLE 11g DATABASE
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Perform full Database installation with basic configuration.
Oracle base: /opt/oracle Browse
Software location: /opt/oracle/product/11gR2/db Browse
Storage Type: File System
Database file location: /opt/oracle/oradata Browse
ASMSNMP Password:
Database edition: Enterprise Edition (4.29GB)
OSDBA Group: dba
Global database name: orcl
Administrative password: **********
Confirm Password: **********
Help
< Back
Next >
Finish
Cancel

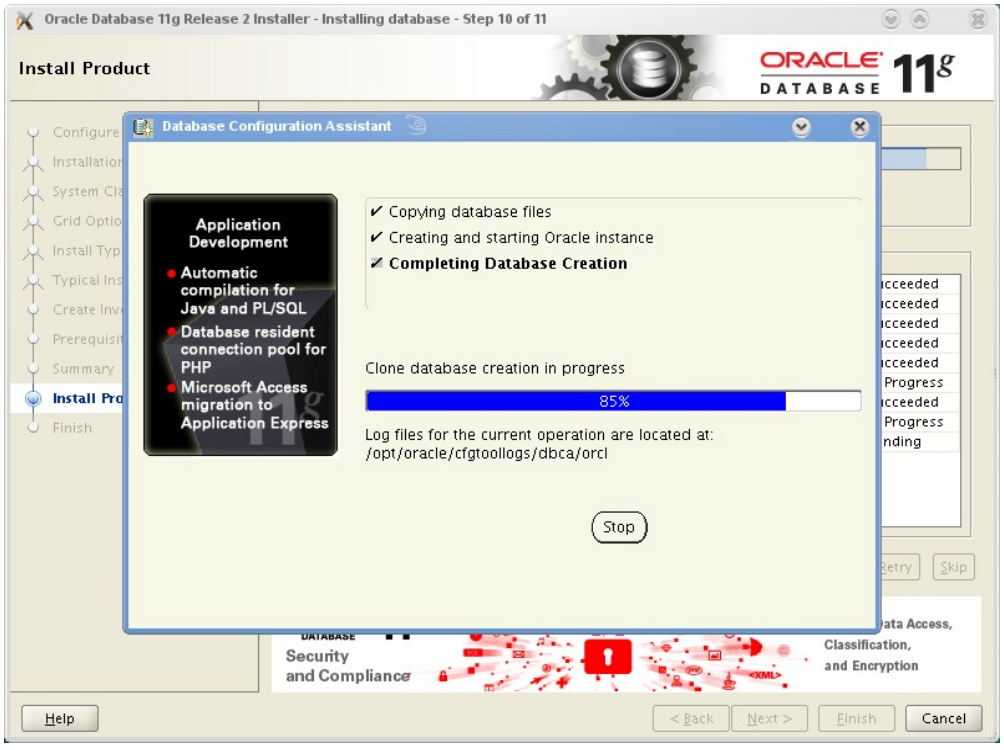

Oracle Database 11g Release 2 Installer - Installing database - Step 7 of 11
Create Inventory
ORACLE 11g DATABASE
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
You are starting your first installation on this host. Specify a directory for installation files. This directory is called the "inventory directory". The installer automatically sets up subdirectories for each product to contain inventory data. The subdirectory for each product typically requires 150 kilobytes of disk space.
Inventory Directory: /opt/oracle/oraInventory Browse
Specify an operating system group whose members have write permission to the inventory directory (oraInventory).
oraInventory Group Name: oinstall
Help
< Back
Next >
Finish
Cancel

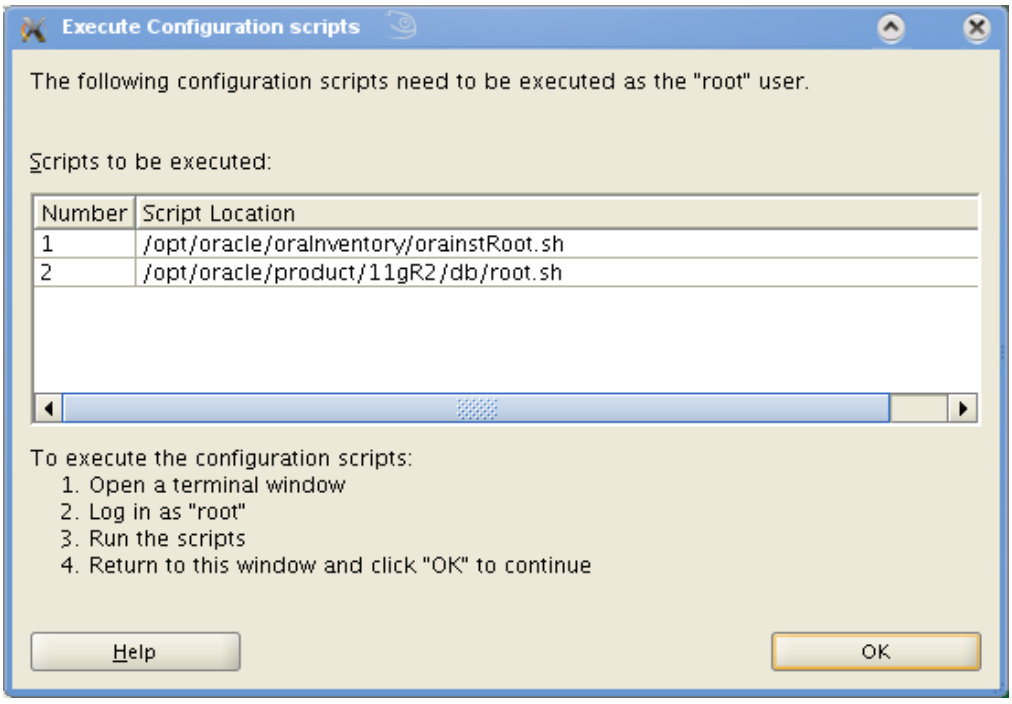


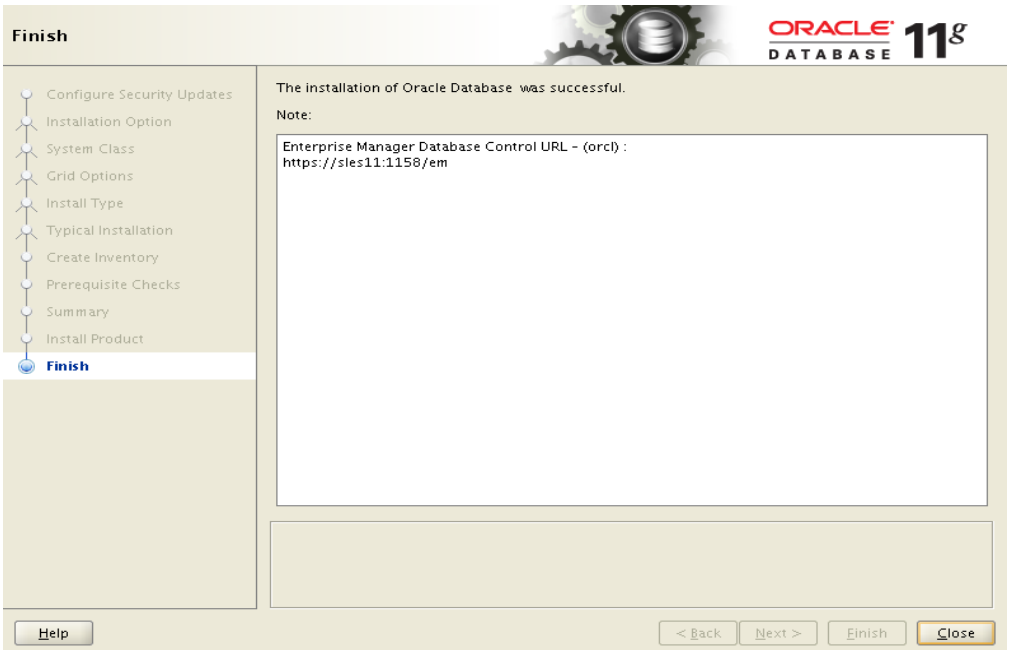
[Note: You can select “Ignore All” for failed prerequisite checks or select “Fix & Check Again”]




Oracle Database 11g Release 2 Installer - Installing database - Step 10 of 11
Install Product
ORACLE 11g DATABASE
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Create Inventory
Prerequisite Checks
Summary
Install Product
Finish
Progress
76%
Setting up 'Oracle Database 11g 11.2.0.1.0 '
Status
Oracle Database installation Succeeded
• Prepare Succeeded
• Copy files Succeeded
• Link binaries Succeeded
• Setup files Succeeded
Oracle Database configuration Pending
Execute Root Scripts for Oracle Database installation Pending
Details
Retry
Skip
ORACLE 11g DATABASE
Grid Computing
Consolidate on Fast, Reliable, and Scalable Low-Cost Grids
Help
< Back
Next >
Finish
Cancel


Oracle Database 11g Release 2 Installer - Installing database - Step 10 of 11
Install Product
ORACLE 11g DATABASE
Database Configuration Assistant
Application Development
Automatic compilation for Java and PL/SQL
Database resident connection pool for PHP
Microsoft Access migration to Application Express
✔ 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/cfgtoollogs/dbca/orcl
Stop
Security and Compliance
Classification, and Encryption
Help
< Back
Next >
Finish
Cancel

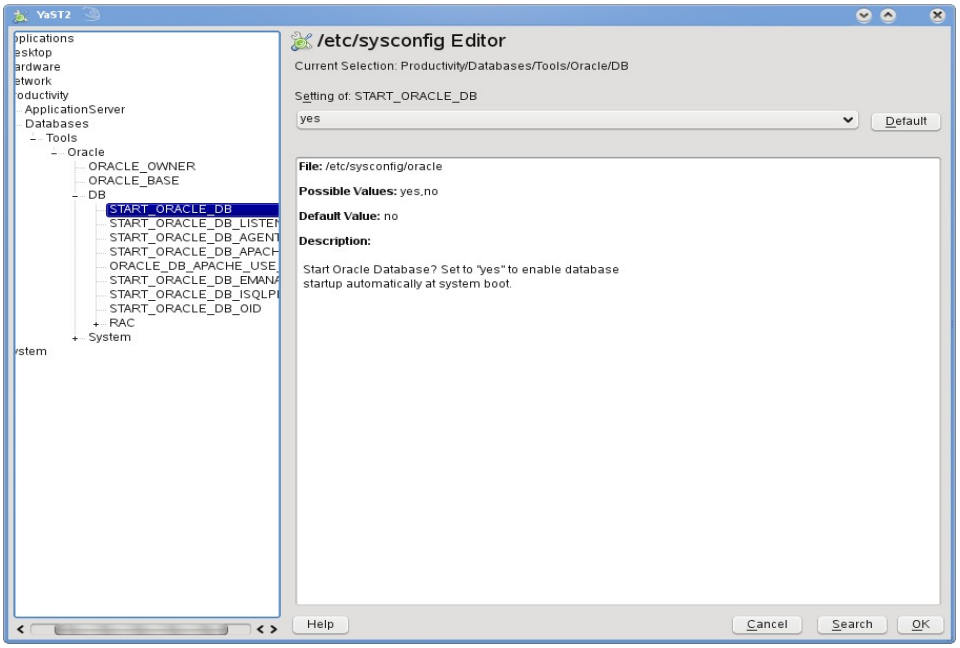




6. Oracle Database Start at boot time

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”



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

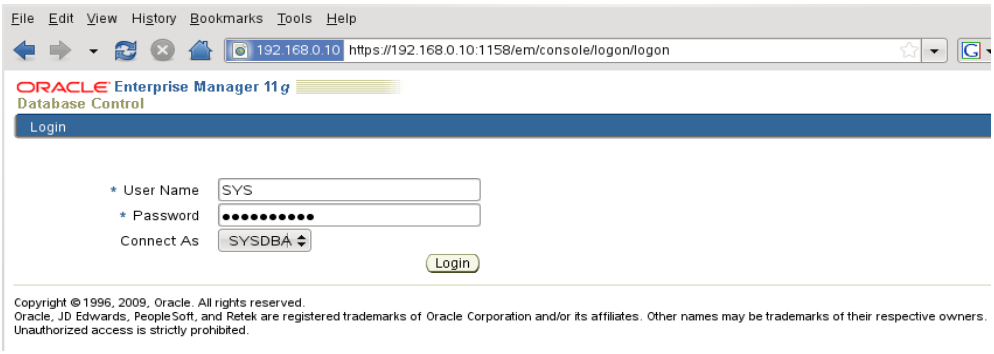
2. Edit dbstart, dbshut and dbhome scripts to reflect correct location for ORATAB entry. i.e ORATAB=/etc/oratab

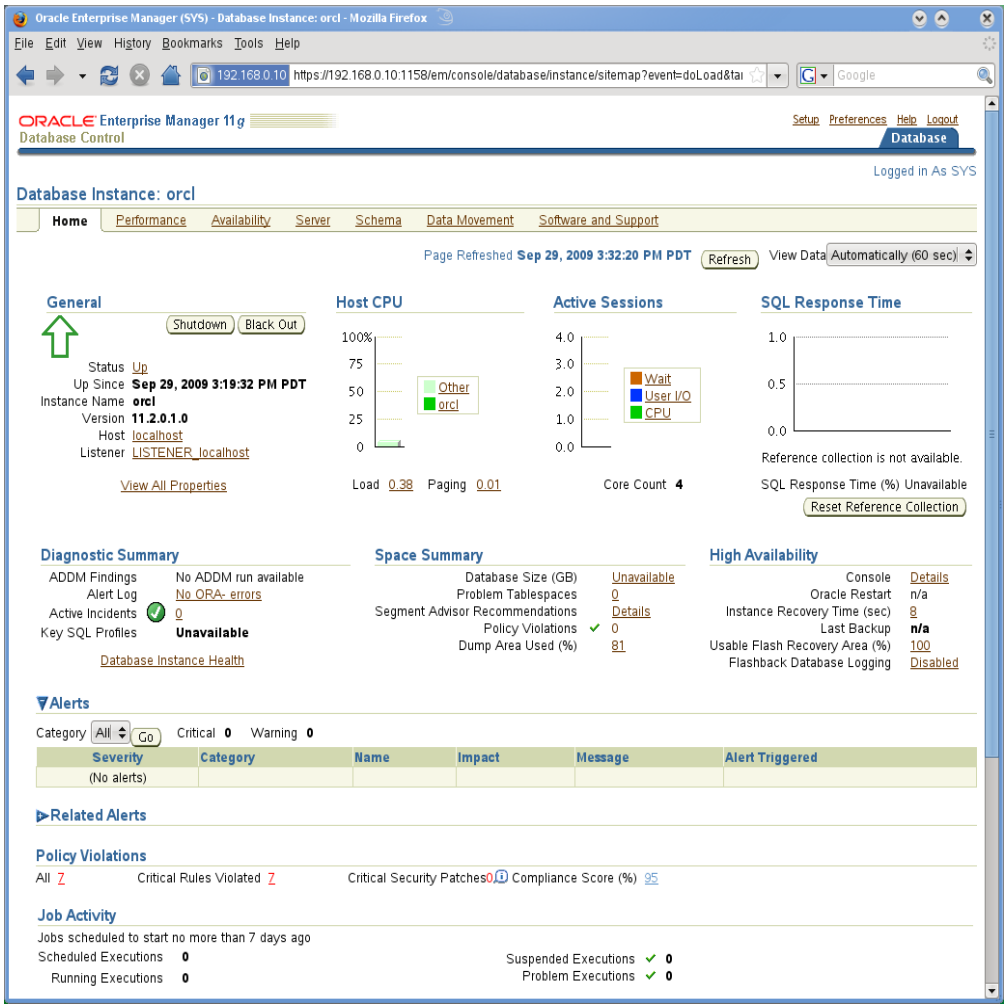
7. Oracle Enterprise Manager

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.

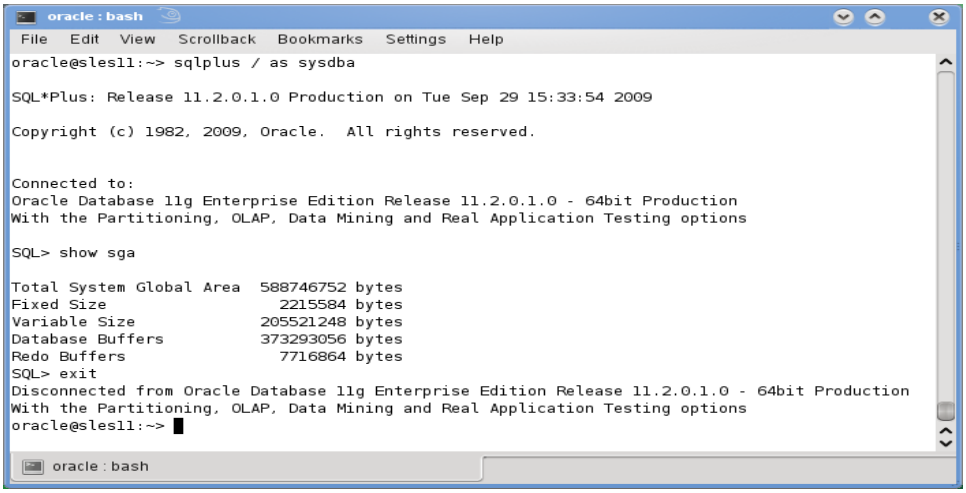
2. Use Enterprise Manager web interface (https://localhost:1158/em) to perform routine database administration and performance tuning tasks.





8. sqlplus: Startup and Shutdown (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.

History:

Date	Changes
09/29/09	Initial Document created.

Enjoy!