Oracle Database10g R2 (10.2.0.1) on SUSE Linux 10.0

Introduction

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Introduction

This white paper is designed to help you get started with Oracle 10g R2 on SUSE Linux 10.0. This will help you to work with latest SUSE OS and Oracle Database 10g R2. Oracle 10g R2 is supported and certified only on SUSE LINUX Enterprise Server 9 (SLES 9) but occasionally for development and testing purposes you will prefer to have it up and running on your desktop for quick access.

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 SUSE Linux 10.0 and Oracle 10g R2. Also, optional orarun package will help you to make Oracle pre-Install task simple.

Novell/SUSE

- 1. Novell SUSE Linux 10.0 (SUSE OSS version: http://www.opensuse.org)
- 2. orarun : Get latest version from (http://ftp.novell.com/partners/oracle/sles-9/)
- 3. Novell/SUSE Documents are available here: <u>http://www.novell.com/documentation/</u>
- 4. For more "Oracle on SUSE" related information visit <u>http://www.novell.com/oracle</u>.

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 : <u>http://www.oracle.com/technology/documentation/database10gr2.html</u>
- 3. 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 10.0 installation manual. We will focus on Oracle related component and make sure you meet Oracle software space requirement.

SUSE Linux 10.0 with default packages along with "C/C++ Compiler and Tools" is sufficient for Oracle 10g R2 install. Here is snap-shot:

Selection
Graphical Base System
KDE Desktop Environment
All of KDE
GNOME System
Help and Support Documentation
Office Applications
Games
Multimedia
Voice over IP
XEN Virtualization
Simple Web Server with Apache2
LDAP Server and Tools
Network and Server
Laptop
Mobile Computing
C/C++ Compiler and Tools
Kernel Development
KDE Development
GNOME Development
Tcl/Tk Development System
Java
Experienced User
LaTeX, SGML, and XML
Fonts
Mono/CLR

Check whether C/C++ compiler is installed. "gcc --version" will show "gcc (GCC) 4.0.2 (SUSE Linux)". If gcc is not installed, then use YaST setup tool to install "C/C++ Compiler and Tools".

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sl10:/ # gcc --version gcc (GCC) 4.0.2 20050901 (prerelease) (SUSE Linux) Copyright (C) 2005 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.

sl10:/ #

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 preinstall task. orarun package is not included in SUSE LINUX 10.0 as this is for SUSE LINUX Enterprise Server.

orarun :

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

rpm -ivh --nodeps orarun-1.8-109.15.i586.rpm

- 2. Install libaio and libaio-devel from SUSE LINUX 10.0 media.
- 3. You might see xshared and pdksh not available conflict next time you use YaST. Ignore this as this is cosmetic error. Here is snap-shot:

Dependency Conflict	
Orarun 1.8-109.15 conflict	
 Broken Dependencies of Installed: orarun requires xshared orarun requires pdksh Unresolved Requirements: orarun requires pdksh Conflict Resolution: O Ignore Conflict and Risk System Inconsistencies Pdksh not available	
State in the state is a state in the state in the state is a state in the state is a state in the state in the state is a state in the state in the state in the state is a state in the state in	
Required by: orarun requires xshared Gonflict Resolution: O Remove the Referring Package Delete orarun O Ignore Conflict and Risk System Inconsistencies	

- 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:

🔥 YaST2@sl93 🔍			_ 0 ×
YaST			
If you fill out the fields Full User Login , a new user account is created given in the corresponding field. When entering a password, distinguish between uppercase and lowercase. It should not content for a accented characters). With the current password characters. With the current password ength should be between 5 and 22 characters. Valid password characters are letters, digts, blanks, and characters are letters, digts, blanks, and characters are letters, digts, blanks, and thas content the file of the correctly, repeat it exactly in a second field. Do not forget your password characters. When you modify the User Login , use only Letters	Edit an Existing Sys	tem User	
	Cancer		[
Ya5T2@s193_9	5		
The meaning of the fields are described	an Existing System	tem User	SUSE
below: User ID (uid): Each user is known to the	User Data Details Passwo	ord Settings	
system by a unique number, the "User ID".	User ID (uid)	Gr <u>o</u> ups	
For normal users, you	59	users	

iser is known to the system by a unique sumber, the "User ID",	User ID (uid)	Groups
or normal users, you	59	users 🛋
hould use a UID bigger han 499 because the maller UIDs are used y the system for pecial purposes and seudo logins.	Home Directory /opt/oracle Browse	□ at □ audio □ bin □ cdrom □ console
		daemon
you change the UID f an existing user, the ghts of the files this ser owns must be	Additional User Information:	
anged. This is done		ftp
itomatically for the es in the user's home rectory, but not for es located elsewhere.	Login shell	ames haldaemon kmem
ome Directory: The	/bin/bash 🔻	
me directory of the er. Normally this /home/username.	Default Group	maildrop man messagebus modem
rectory, click Browse.	oinstall	named
dditional formation Some dditional user data uld be set here.		news nobody nogroup ntadmin oinstall

- 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/10gR2
 - 2. Default ORACLE_SID set by orarun install is "mydb". 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.

- 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@sl10:~> id uid=59(oracle) gid=54(oinstall) groups=6(disk),54(oinstall),55(dba) oracle@sl10:~>

3. Oracle 10g R2 (10.2.0.1) Installation

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

Get Oracle 10g R2 (10.2.0.1) Software from oracle OTN web.

- 1. #unzip 10201_database_linux32.zip
- modify "database/install/oraparam.ini" file to add support for SUSE Linux 10.0. 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 step #2 by passing "-ignoresysprereqs" to runInstaller.
- 4. Run Oracle Universal installer : ./runInstaller

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

Note: Installer will not detect SUSE Linux 10.0. Do manual check in "Product-Specific Prerequisites Checks" for OS. 5. Installation will walk you through with self explanatory instructions. Here are screen-shots from simple Oracle 10g Installation:

💥 Oracle Database 10g Installation	- Installation Method	_ ×
	Method 10g installation with standard configuration options requirin tem for storage, and a single password for all database act	
Oracle Home Location:	/opt/oracle/product/10gR2	Browse)
Installation Type:	Enterprise Edition (1.3GB)	*
UNIX DBA <u>G</u> roup:	dba	
Create Starter Datab	ase (additional 720MB)	
Global Database Na	me: orcl]
Database Password	*** <u>C</u> onfirm Password: ***	
This pas	sword is used for the SYS, SYSTEM, SYSMAN, and DBSNMP accou	nts.
accounts, database character	ich as different passwords for the SYS, SYSTEM, SYSMAN, ar set, product languages, automated backups, custom instal ch 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 spe directory for installer files. This is called the "inventory directory". Within the inventory dir installer automatically sets up subdirectories for each product to contain inventory data consume typically 150 Kilobytes per product.	rectory, the
Enter the full path of the inventory girectory.	
/opt/oracle/orainventory	Browse)
You can specify an Operating System group that has write permission to the above inven You can leave the field blank if you want to perform the above operations as a Superuse Specify Operating System group name:	
oinstall	
Help Installed Products Back Next Install) (Cancel)
ORACLE	

roduct-Specific Prerequisite Chec	ks	
he Installer verifies that your environment meets all of the mi onfiguring the products that you have chosen to install. You n ems that are flagged with warnings and items that require m performing these checks, click the item and review the details	nust manually verit anual checks. For	fy and confirm the details about
Check	Type	Status
Checking operating system requirements	Automatic	🗹 User Verified 🧧
Checking operating system package requirements	Automatic	🔽 User Verified
Checking kernel harameters	Autometic	Ilcor Verified
2 warnings, 4 requirements to be verified.		Retry Stop
Checking operating system requirements Expected result: One of redhat-3,redhat-4,SuSE-9,asianux-1 Actual Result: SuSE-SUSE LINUX 10.0 (1586) Check complete. The overall result of this check is: Failed <<	<<	Ê
Problem: Oracle Database 10g is not certified on the current		



🐱 Oracle Universal Installer: Install 🥹	
Install	
Installing Oracle Database 10g 10.2.0.1.0	Analization Development
	Application Development
✓ Setup successful	HTML DB database-centric Web applications
Configuration pending	Database Web services
deleting	Regular expressions Faster PL/SQL
67%	
(<u>Stop installation</u>)	6
You can find a log of this install session at: /opt/oracle/oralnventory/logs/installActions2005-09-22_03-02-44PM.log	
Help Installed Products Back Next	Install Cancel
ORACLE	

Oracle Universal Installer: Configuration Assistants	9	8
Configuration Assistants	and start the componer	its vou selected earlier.
Tool Name	Status	Type
Oracle Database 10g	A contract to de la contract de la c	
Oracle Net Configuration Assistant	Succeeded	Recommended
Oracle Database Configuration Assistant	Succeeded	Recommended
iSQL*Plus Configuration Assistant	Succeeded	Optional
Details (see full log at /opt/oracle/oralnventory/log The "/opt/oracle/product/10gR2/cfgtoollogs/conf commands to be executed by the configuration as configuration assistants outside of OUI. Note that y	igToolAllCommands" scri sistants. This file may be	pt contains all
passwords (if any) before executing the same.	ou may have to update t	ins script with

Execut	e Configuration scripts 🍚	
	ving configuration scripts need to be executed as the "root" user. be executed:	
Number	Script Location	
1	/opt/oracle/oralnventory/orainstRoot.sh	
2	/opt/oracle/product/10gR2/root.sh	
1. Ope 2. Log	e the configuration scripts: n a terminal window in as "root" the scripts	D
4. Reti	Irn to this window and click "OK" to continue	
🗧 Oracle Un	iversal installer: End of 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.

🧧 oracle@si10:~- Shell - Konsole <2> 🥥	
Session Edit View Bookmarks Settings Help	
oracle@sl10:~> sqlplus "connect / as sysdba"	-
SQL*Plus: Release 10.2.0.1.0 - Production on Thu Sep 22 15:54:17 2005	
Copyright (c) 1982, 2005, Oracle. All rights reserved.	
Enter password:	
Connected to: Oracle Database 10g Enterprise Edition Release 10.2.0.1.0 - Production With the Partitioning, OLAP and Data Mining options	
SQL> show rel release 1002000100 SQL> show sga	
Total System Global Area444596224 bytesFixed Size1219904 bytesVariable Size134218432 bytesDatabase Buffers306184192 bytesRedo Buffers2973696 bytesSQL> exitDatabase 10g Enterprise Edition Release 10.2.0.1.0	9 - Pr
oduction With the Partitioning, OLAP and Data Mining options oracle@sl10:~> Shell	

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/oralnst.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, oralnventory}

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"

₩ YaST2@sl93 9		
Yası		SEE
 Applications Desktop Hardware Network Productivity Databases Tools Oracle ORACLE ORACLE DB STA 	Image: Wetc/sysconfig Editor Current Selection: Productivity/Databases/Tools/Oracle/DB Setting of: START_ORACLE_DB yes File: /etc/sysconfig/oracle Possible Values: yes,no Default Value: no Description: Start Oracle Database? Set to "yes" to enable database start up automatically at system boot.	▼ Default
Proc		
Help	Search	Einish

2. Edit /etc/oratab entry corresponding to your database to "Y". i.e. mydb:/opt/oracle/product/10gR2:Y

7. Oracle Enterprise Manager

- 1. Start Oracle listener, If it is not already started by "Isnrctl start".
- 2. If Enterprise manager services is not started, then start it manually by entering following command "emctl start dbconsole".
- 3. Enterprise Manager web interface (<u>http://localhost:1158/em</u>) to perform routine database administration and tuning tasks.

🥹 Oracle Enterprise Manager (SYS) - Database Instance	e: orci - Mozilla Firefox 🧕)				
Elle Edit View Go Bookmarks Tools Help						
🜀 🕟 🗞 🛜 http://sl10.site:1158/em/console/database/instance/sitemap?event=doLoad⌖=orcl&type=oracle_datat 🗸 🖓 🗔						
🖹 SUSE LINUX 🚔 Entertainment 🚔 News 🚔 Internet Search 🚔 Reference 🚔 Maps and Directions 🚔 Shopping 🚔 People and Compani						
ORACLE Enterprise Manager 10g			Setup Preferences Help Locout Database Logged in As S	NS I		
Database Instance: orcl						
Home Performance Administration Maintenance						
		Page Refreshed Sep 22, 2005 3:43:01 PM	Refresh View Data Automatically (60 sec)	-		
General	Host CPU	Active Sessions	SQL Response Time	-		
Status Up Up Since Sep 22, 2005 3:28:20 PM MDT Instance Name orcl Version 10:20.1.0 Host <u>sl10.site</u> Listener <u>LISTENER sl10.site</u> View All Properties	100% 75 50 25 0 Load <u>150</u> Paging					
Diagnostic Summary	Spa	ce Summary	High Availability			
ADDM Findings No ADDM run availa All Policy Violations	able	Database Size (GB) Unavailable Problem Tablespaces 0 Segment Advisor Details Recommendations ✓ Space Violations ✓ Dump Area Used (%) Unavailable	Instance Recovery Time (sec) <u>8</u> Last Backup n/a Usable Flash Recovery Area (%) <u>100</u> Flashback Logging <u>Disabled</u>			
▼ Alerts						
Category All Co Critical 0 Warning 0 Severity Category	Name	Message	Alert Triggered			
(No alerts)	THETOL	meanage	- Protect in a grant of			
▶Related Alerts						
Job Activity						
Jobs scheduled to start no more than 7 days ago						
Scheduled Executions 0 Running Executions 0 Suspended Executions 🗸 0 Problem Executions 🗸 0						
Done						

Enjoy!