Oracle Database 11g 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 <u>suse-oracle@listx.novell.com</u>.

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:

💡 YaST2 🍥						۲	٥	۲
🚨 Existing System Us	ser							
Us <u>e</u> r Data	<u>D</u> etails		Pass <u>w</u> ord S	Settings	5			
User ID (uid) 103				Addit	ional Groups users at			ì
<u>H</u> ome Directory					audio			
/opt/oracle		Ві	owse		bin			
✓ Move to New Location					cdrom			
Use Encrypted Home Dir	ectory	Directory Size in N	AB ♦		console daemon dba			
Additional User Information				Ö	dialout			
					disk			
					floppy			
Login <u>S</u> hell) ftp			
/bin/bash			~		games			
Default Croup					haldaemon			
oinstall					In			
Unistan					mail			
							`	
Help						<u>C</u> ancel		<u>o</u> ĸ

- 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



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

```
oracle@slesl1:~> id
uid=103(oracle) gid=105(oinstall) groups=105(oinstall),106(dba)
oracle@slesl1:-> cat /etc/SuSE-release
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 0
oracle@slesl1:~> uname -a
Linux slesl1 2.6.27.19-5-default #1 SMP 2009-02-28 04:40:21 +0100 x86_64 x86_64 x86_64 GNU/Linux
oracle@slesl1:~> env |grep ORA
ORACLE_SID=orcl
ORACLE_BASE=/opt/oracle
ORACLE_HOME=/opt/oracle/product/11gR2/db
oracle@slesl1:~>
```

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 - Ste	p 1 of 9 🥘	S S
Configure Security Update	5		DATABASE 118
Configure Security Updates	Provide your email address to be and initiate configuration manag	informed of security issues, install the er. <u>View details</u> .	e product
Installation Option Grid Options Install Type	E <u>m</u> ail:	Easier for you if you use your My Ora address/username.	 icle Support email
Typical Installation Prerequisite Checks Summary Install Product Finish	I wish to receive security upd My Oracle Support Password:	ates via My Oracle Support.	
Help		< <u>B</u> ack	Next > Einish Cancel

🙀 Oracle Database 11g Release 2 I	nstaller - Installing database - Step 2 of 9 🏾 🌀	ی ک ک
Select Installation Option		DATABASE 11 ^g
Configure Security Updates Installation Option Grid Options Install Type Typical Installation Prerequisite Checks Summary Install Product Finish	Select any of the following install options.	DATABASE
Help		< Back Next > Einish Cancel



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Node Selection			11 ^g	
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.			
Help	< <u>B</u> ack	<u>N</u> ext > <u>F</u> inish	Cance	el

🙀 Oracle Database 11g Release 2 I	nstaller - Installing database - Step 5 of 10 🥘	
Select Install Type		DATABASE 118
Configure Security Updates Installation Option System Class Grid Options Install Type Install Type Prerequisite Checks Summary	 Typical install Perform full Oracle Database installation with basic configuration. Advanced install Allows advanced selections such as different passwords for the SYS accounts, database character set, product languages, automated ba alternative storage options such as Automatic Storage Management 	5, SYSMAN, SYSTEM and DBSNMP ackups, custom installation, and t.
install Product		
<u>H</u> elp	< <u>B</u> ack	<u>N</u> ext > <u>F</u> inish Cancel

🤾 Oracle Database 11g Release 2 I	nstaller - Installing database	- Step 6 of 10 🥥 📀 😒
Typical Install Configuration	on	
Configure Security Updates	Perform full Database insta	Illation with basic configuration.
Installation Option	Oracle ba <u>s</u> e:	/opt/oracle Browse
System Class	Software <u>l</u> ocation:	/opt/oracle/product/11gR2/db
Grid Options	Storage <u>T</u> ype:	File System
Typical Installation	Database file location:	/opt/oracle/oradata Browse
Prerequisite Checks	ASMSNMP Password:	
 Summary Install Product 	Database <u>e</u> dition:	Enterprise Edition (4.29GB)
O Finish	OSDB <u>A</u> Group:	dba 🔹
	<u>G</u> lobal database name:	orcl
	Administrative <u>p</u> assword:	****
	<u>C</u> onfirm Password: 💡	hananana
Help		< <u>Back</u> <u>N</u> ext> <u>Einish</u> Cancel

🤾 Oracle Database 11g Release 2 I	nstaller - Installing database - Step 7 of 11 🧕 📀 👔	<u> </u>
Create Inventory		1 ^g
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 product to contain inventory data. The subdirectory for each product typically requires 150 kllc disk space. Inventory Directory? /opt/oracle/braInventory Specify an operating system group whose members have write permission to the inventory directory (oralnventory). oralnventory @roup Name: oinstall	rr each Ibytes of B <u>r</u> owse ctory
Help	< <u>Back</u> <u>N</u> ext > <u>Einish</u>	Cancel

🤾 Oracle Database 11g Release 2 Ir	nstaller - Installing database - Step 8 of 11 🥥	<u> </u>
Perform Prerequisite Check	s	ORACLE 118
Configure Security Updates Installation Option System Class Grid Options Install Type Typical Installation <u>Create Inventory</u> Prerequisite Checks Summary Install Product Finish	Some of the minimum requirements for installation are not complet the following table, and recheck the system. <u>Check Again</u> Eix & Check Again Show Failed <u>Checks</u> Checks <u>Swap Size</u> This is a prerequisite condition to test whether sufficient total swa system. (more details) Expected Value : 2.75GB (2884206.0KB) Actual Value : 2.01GB (2104472.0KB)	ted. Review and fix the issues listed in
Help		Next > Einish Cancel

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

🤾 Oracle Database 11g Release 2 li	nstaller - Installing database - Step 9 of 11 🥘	<u> </u>
Summary		DATABASE 11 ^g
Configure Security Updates Installation Option System Class Grid Options Install Type Typical Installation Create Inventory Prerequisite Checks Summary Install Product Finish	Oracle Database 11g Release 2 Installer Global settings Disk space: required 4.29 GB available 8.1 GB Source location: /opt/oracle/SW/database/install//sta Install method: Typical installation Database edition: Enterprise Edition (Create and configu Oracle base: /opt/oracle Software location: /opt/oracle/product/11gR2/db OSDBA group: dba Inventory information Inventory location: /opt/oracle/oralnventory oralnventory group: oinstall Database information Configuration: General Purpose / Transaction Processir Global database name: orcl Oracle system identifier (SID): orcl Allocated memory: 751 MB	age/products.xml ire a database) ng Save Response File
Help	< <u>B</u> ack	Next > Einish Cancel

🙀 Oracle Database 11g Release 2 li	nstaller - Installing database - Step 10 of 11 🧕	e e e
Install Product		TABASE 11 ^g
Configure Security Updates Installation Option System Class Grid Options Install Type	Progress 76% Setting up 'Oracle Database 11g 11.2.0.1.0 '	
Typical Installation Create Inventory Prerequisite Checks Summary Install Product Finish	 Oracle Database installation Prepare Copy files Link binaries Setup files Oracle Database configuration Execute Root Scripts for Oracle Database installation 	Succeeded Succeeded Succeeded Succeeded Succeeded Pending Pending
Help	CRACLE 118 DATABASE 118 Grid Computing	Details Retry Skip Consolidate on Fast, Reliable, and Scalable Low-Cost Grids



🕺 Execute Configurati	ion scripts 🍥	٥	۲
The following configu	ration scripts need to be executed as the "root" (user.	
Scripts to be executed Number Script Loca 1 /opt/oracle 2 /opt/oracle	d: tion e/oralnventory/orainstRoot.sh e/product/11gR2/db/root.sh		
	33333		•
To execute the config 1. Open a terminal 2. Log in as "root" 3. Run the scripts 4. Return to this wi	uration scripts: I window indow and click "OK" to continue		
<u>H</u> elp		ок	
Finish		ORACLE DATABASE	11 ^g
Finish	The installation of Oracle Database was successful.	ORACLE DATABASE	11 ^g
Finish Configure Security Updates Installation Option System Class Grid Options Install Type Typical Installation Create Inventory Prerequisite Checks Summary Install Product Finish	The installation of Oracle Database was successful. Note: Enterprise Manager Database Control URL - (orcl) : https://sles11:1158/em	ORACLE DATABASE	11 g
Finish Configure Security Updates Installation Option System Class Grid Options Install Type Typical Installation Create Inventory Prerequisite Checks Summary Install Product Finish	The installation of Oracle Database was successful. Note: Enterprise Manager Database Control URL - (orcl) : https://sles11:1158/em	ORACLE DATABASE	11 g
Finish Configure Security Updates Installation Option System Class Grid Options Install Type Typical Installation Create Inventory Prerequisite Checks Summary Install Product Finish	The installation of Oracle Database was successful. Note: Enterprise Manager Database Control URL - (orcl) : https://sles11:1158/em	ORACLE DATABASE	11 g

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"

🗽 YaST2 🥘		S S S
> Vast2 > plications > sktop ardware etwork oductivity - Databases - Tools - Oracle ORACLE_DASE - DB START_ORACLE_DB_LISTER - START_ORACLE_DB_APACH - ORACLE_DB_APACHE_USE - START_ORACLE_DB_BAPACH - ORACLE_DB_APACHE_USE - START_ORACLE_DB_BISUPH - START_ORACLE_DB_BISUPH - START_ORACLE_DB_BOID + RAC + System	// /etc/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 Default Value: no Description: Start Oracle Database? Set to 'yes" to enable database startup automatically at system boot.	Cetault
	Help	Cancel Search OK

- 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 (<u>https://localhost:1158/em</u>) to perform routine database administration and performance tuning tasks.

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🌩 🝷 🔁 😂 🖀	🔯 192.168.0.10 https://192.168.0.10:1158/em/console/logon/logon 😭 🔻 🕻] •	
ORACLE Enterprise Manager 11 g			
Login			
* User Name	SYS		
* Password	•••••		
Connect As	SYSDBA \$		
Copyright © 1996, 2009, Oracle. Al Oracle, JD Edwards, PeopleSoft, a Unauthorized access is strictly pro	rights reserved. nd Retek are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owne hibited.	rs.	

) Oracle Enterprise Manager (SYS) - Database Instance: o	rcl - Mozilla Firefox 🔇	9			
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	Pa	je Refreshed Sep	29, 2009 3:32:20 PM PDT	Refresh View Data Automatical	y (60 sec) 🗘
General	Host CPU		Active Sessions	SOL Response Time	
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T	100%		4.0	1.0	
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Instance Name orci	50	<u>ircl</u>	2.0 User I/O	0.9	
Version 11.2.0.1.0 Host localhost	25		1.0	0.0	
Listener LISTENER_localhost	0		0.0	Reference collection is no	it available.
View All Properties	Load <u>0.38</u> Pa	ging <u>0.01</u>	Core Count 4	SQL Response Time (%)	Unavailable
				Reset Reference	Collection
Diagnostic Summary	Space Su	nmary		High Availability	
Alert Log No ORA- errors		Problem Tables	paces <u>O</u>	Oracle Restart	n/a
Active Incidents 🕢 🧕	Segment Ac	visor Recommend	ations <u>Details</u>	Instance Recovery Time (sec)	8
Key SQL Profiles Unavailable		Policy Viol Dump Area Use	ations 🗸 0 ed (%) 81	Last Backup Usable Flash Recovery Area (%)	n/a 100
Database Instance Health		Dump / tou oot	<u>or</u>	Flashback Database Logging	Disabled
¥ Alerts					
Category All Co Critical O Warning O		Inc. and		All and Westmann and	
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All Z Critical Rules Violated Z	Critical Security	Patches <mark>0</mark> , Comp	liance Score (%) 95		
lab Activity					
Jobs scheduled to start no more than 7 days ago					
Scheduled Executions 0		Susper	nded Executions 🗹 0		
Running Executions 0		Prol	olem Executions 🗹 0		

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.

🗾 oracle : bash 🍥	🛛 🛇 🕥	×
File Edit View Scrollback Bookmarks Settings Help		
oracle@slesl1:~> sqlplus / as sysdba		^
SQL*Plus: Release 11.2.0.1.0 Production on Tue Sep 29 15:33:54 2009		
Copyright (c) 1982, 2009, Oracle. All rights reserved.		
Connected to: Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production With the Partitioning, OLAP, Data Mining and Real Application Testing option:	s	
SQL> show sga		
Total System Global Area 588746752 bytes Fixed Size 2215584 bytes Variable Size 20551248 bytes Database Buffers 373293056 bytes Redo Buffers 7716864 bytes		
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 With the Partitioning, OLAP, Data Mining and Real Application Testing option: oracle@sles11:~> ∎	- 64bit Production s	
📾 oracle : bash		

- 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!