Oracle 10g R2 (10.2.0.3) on SUSE Linux Enterprise Server 10

(For Sentinel 6.0)

Introduction

Oracle 10g R2 is Oracle Certified and supported on SUSE Linux Enterprise Server 10 (SLES10). This document is not a replacement of Oracle Installation manual but help you to prepare your server for Sentinel 6.0 software install using orarun package. Visit (http://www.novell.com/products/server/oracle/documents.html) for complete list of Novell/Oracle documents.

Required Software (For x86_64 Server)

Novell

- 1. SUSE Linux Enterprise Server 10 (x86_64)
- 2. Sentinel 6.0

Oracle

- 1. Oracle Database 10g Release 2 (10.2.0.1) Enterprise Edition (x86_64)
- 2. Oracle 10g Release 2 (10.2.0.3) Patch Set 2 for Linux x86-64
- 3. Latest Oracle Critical Patch Update (for 10.2.0.3)

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 OS files	3.5 GB
Disk space for Oracle database files	1.2 GB
Disk Space for Sentinel database files	20+ GB

Installation Steps

1. Install SUSE Linux Operating System

If this is your first time Install, please follow the Installation instructions provided in the SLES10 install manual. For experienced SLES user, SLES10 with default packages along with Oracle Server Base, and "C/C++ Compiler and Tools" is sufficient for Oracle 10g R2 (10.2.0.1) install. Oracle Server Base pattern provides orarun package. Make sure 32bit Runtime Environment is selected (default).

📕 YaST2@sles10 <@sles10>
<u>F</u> ile <u>P</u> ackage <u>E</u> xtras <u>H</u> elp
Fi <u>l</u> ter: Patterns
Pattern
Base Technologies
Server Base System
🗌 Common Code Base
Movell AppArmor
🗆 High Availability
32Bit Runtime Environment
Graphical Environments
GNOME Desktop Environment for Server
KDE Desktop Environment for Server
X Window System
Primary Functions
☐ Mail and News Server
U Web and LAMP Server
Moracle Server Base

(Here is screen-shot showing selected packages for SLES10 (x86_64))

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 SLES10 Service Pack (Future: When Service Pack is released) At this point no Service Pack for SLES10 is released. Use SPident or 'cat /etc/SuSE-release' to verify.

oracle@sles10:~> cat /et SUSE Linux Enterprise Se VERSION = 10 oracle@sles10:~> SPident	c/SuSE- rver 10 -v	releas (x86_	e 64)			
Summary Product/ServicePack SLES-10-x86_64-current	(using conf Ø	778 p lict 0%	ackage 778	es) match 100%	update 0	(shipped) (2099 37.1%)
CONCLUSION: System is up found SLES-10-x86_6	-to-dat 4-curre	e! nt				

3. /etc/hosts - Comment out 127.0.0.2 and put your server's IP address.

# 1	.27.0.0.2	<pre>sles10.novell.com</pre>	sles10
1	.92.168.0.2	<pre>sles10.novell.com</pre>	sles10

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.

You can download and install orarun package manually i.e.

- 1. Download: http://ftp.novell.com/partners/oracle/sles-10/
- 2. Install: #rpm -ivh orarun-1.9-21.2.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.)

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

Change /bin/fasle to /bin/bash

* YaST2@sles10 <@sles10>	9	
Additional user data includes:	& Existing System User	
User ID (uid): Each user is known to the system by a unique number, the user ID.	User Data Details Password Settings User JD (uid)	Gr <u>o</u> ups
should use a UID larger than 499 because the smaller UIDs are used by the system for special	102 Home Directory	users at audio bin
purposes and pseudo logins. If you change the UID of an	/opt/oracle Browse	□ cdrom
existing user, the rights of the files this user owns must be changed. This is done automatically for the files in		☑ dba □ dialout ☑ disk □ floppy
the user's home directory, but not for files located elsewhere.	Login Shell //bin/bash	□ ftp □ games □ haldaemon
Home Directory: The home directory of the user. Normally this is /home/username. To	Default Group oinstall	□ kmem □ lp □ mail □ maildrop
select an existing directory, click Browse .		
	Cancel	Accept

Set new password.

🕴 YaST2@sles10 <@sles10>	9
Enter the User's Full Name, Username, and Password to assign to this user account.	Existing System User User Data Details Password Settings
When entering a password, distinguish between uppercase and lowercase. Passwords should not contain any special characters, such as accented characters. With the current password encryption (Blowfish), the password length should be between 5 and 72 characters.	User's <u>E</u> ull Name Oracle user Username oracle <u>P</u> assword ******
Valid password characters are letters, digits, blanks, and #*,.;:+! \$%&/ ?{[()]}=.	C <u>o</u> nfirm Password ******
To ensure that the password was entered correctly, repeat it exactly in a second field. Do not forget your password. For the Username use	Djsable User Login
	<u>C</u> ancel

- 3. Change Default Oracle environment set by orarun (If required)
 - Change Oracle home directory by editing ORACLE_HOME variable in "/etc/profile.d/oracle.sh" file.
 ORACLE HOME=\$ORACLE BASE/product/10gR2/db
 - 2. Default ORACLE_SID set by orarun install is "orcl". Change it to ESEC in "/etc/profile.d/oracle.sh" file.

Note: Sentinel SW creates it's own database name ESEC.

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

```
oracle@sles10:~> id
uid=102(oracle) gid=103(oinstall) groups=6(disk),103(oinstall),104(dba)
oracle@sles10:~>
```

5. Oracle 10g R2 Installation

Get Oracle 10g R2 (10.2.0.1) Software from oracle web site depending on your platform (<u>10201_database_linux_x86_64.cpio.gz</u>) and extract files:

#gunzip 10201_database_linux_x86_64.cpio.gz
#cpio -idmv < 10201_database_linux_x86_64.cpio</pre>

- 1. Make sure you are logged in as "oracle" user.
- 2. Change to database directory.
- 3. Run Oracle Universal Installer (OUI): ./runInstaller

You will get an error such as.

```
oracle@ca-sent4:/shared/SW/database> id
uid=102(oracle) gid=103(oinstall) groups=6(disk),103(oinstall),104(dba)
oracle@ca-sent4:/shared/SW/database> ./runInstaller
Starting Oracle Universal Installer...
Checking installer requirements...
Checking operating system version: must be redhat-3, SuSE-9, redhat-4, UnitedLin
ux-1.0, asianux-1 or asianux-2
Failed <<<<
Exiting Oracle Universal Installer, log for this session can be found at /tmp/Or
aInstal12007-02-10_01-00-19PM/instal1Actions2007-02-10_01-00-19PM.log
oracle@ca-sent4:/shared/SW/database> ■
```

- 4. Any of the following will fix OUI install Error:
 - Modify "database/install/oraparam.ini" file to add support for SUSE Linux 10. 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
```

2. Install with option -ignoreSysPrereqs i.e. ./runInstaller -ignoreSysPrereqs

Installation will walk you through with simple self explanatory instructions. Here are screen-shots from Oracle 10g R2 Installation (Database Software Only):

Select "Advanced Installation"

💥 Oracle Database 10g Installation - Installation Method <@ca-sent4》×				
	108			
Select Installation Method				
Basic Installation Perform full Oracle Database 10g installation with standard configuration options requiring minimal input. This option uses file system for storage, and a single password for all database accounts.				
Oracle Home Location:	/opt/oracle/product/10gR2/db Browse)			
Installation <u>Type</u> :	Enterprise Edition (1.3GB)			
UNIX DBA <u>G</u> roup:	disk			
Create Starter Database (additional 720MB)				
Global Database Name: orcl				
Database Password:	Confirm Password:			
This password is used for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts.				
Advanced Installation Allows advanced selections such as different passwords for the SYS, SYSTEM, SYSMAN, and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.				
Help	Back Next Install Cancel			
ORACLE				

Select Default values for Inventory and Click "Next"

🛣 Oracle Universal Installer: Specify Inventory directory and creden 💶 s 🗙			
4			
Specify Inventory directory and credentials			
You are starting your first installation on this host. As part of this install, you need to sp directory for installer files. This is called the "inventory directory". Within the inventory o installer automatically sets up subdirectories for each product to contain inventory data consume typically 150 Kilobytes per product.	ecify a directory, the a and will		
Enter the full path of the inventory girectory.			
/opt/oracle/oralnventory	Browse)		
You can specify an Operating System group that has write permission to the above inve You can leave the field blank if you want to perform the above operations as a Supervis	entory directory. ser.		
Specify Operating System group name:			
oinstall			
Help Installed Products Back Next Install	Cancel		
ORACLE			

Select Default option "Enterprise Edition" and Click "Next".

📓 Oracle Universal Installer: Select Installation Type <@ca-sent4> 🧶 📃 🗙
Select Installation Type
Oracle Database 10g 10.2.0.1.0
What type of installation do you want? Enterprise Edition (1.60CB) Oracle Database 10g Enterprise Edition, the first database designed for the grid, is a self-managing database that has the scalability, performance, high availability and security features required to run the most demanding, mission critical applications.
C Standard Edition (1.60CB)
Oracle Database 10g Standard Edition is ideal for workgroups, departments and small-to-medium sized businesses looking for a lower-cost offering.
C <u>C</u> ustom
Enables you to choose individual components to install.
Product Languages)
Help Installed Products Back Next Install Cancel

Select 'User Verified" for Checks and Click "Next"

🐱 Oracle Universal Installer: Product-Specific Prerequisite Checks <;a×			
Product-Specific Prerequisite Checks The Installer verifies that your environment meets all of the minimu configuring the products that you have chosen to install. You must r items that are flagged with warnings and items that require manua performing these checks, click the item and review the details in th	m requireme manually verif I checks. For e box at the	nts for installing and y and confirm the details about bottom of the window.	
Check	Туре	Status	
Checking available swap space requirements	Automatic	🔽 Succeeded 🛛 🖻	
Checking Network Configuration requirements	Automatic	🗹 User Verified 🗾	
Validating ORACLE RASE location (if set)	Automatic	Succeeded	
1 warnings, 0 requirements to be verified.		Retry Stop	
Checking Network Configuration requirements Check complete. The overall result of this check is: Not executed <<<<			
Help Installed Products Back Next	_) [n	stall Cancel	
ORACLE			

Select "Install Database Software Only" option and Click "Next"

📓 Oracle Universal Installer: Select Configuration Option <@ca-sent 🗕 🎐 🗙
Select Configuration Option
Select the configuration that suits your needs. You can choose either to create a database or to configure Automatic Storage Management (ASM) for managing database file storage. Alternatively, you can choose to install just the software necessary to run a database, and perform any database configuration later.
⊂ <u>C</u> reate a database
C Configure Automatic Storage Management (ASM)
Specify ASM SYS Password:
Confirm ASM-SYS Password:
Install database Software only
Help Installed Products Back Next Install Cancel

Review Installation Summary and Click "Install"



Installation Progress window...

📡 Oracle Universal Installer: Install <@ca-sent4>🎐	_ ×		
install	108		
	Thank you for choosing		
✓ Link successful	Oracle		
🖾 Setting up 'Oracle interMedia 10.2.0.1.0 '			
Configuration pending			
deleting '/opt/oracle/product/10gR2/db/bin/emtgtctl.template' 87% Stop installation	8		
You can find a log of this install session at: /opt/oracle/oralnventory/logs/installActions2007-02-10_01-45-05PM.log			
Help Installed Products Back Next	(Install Cancel		
ORACLE			

Execute specified scripts as root and Click "OK" after completion.



Sample out-put showing orainstRoot.sh and root.sh script execution.

📮 Shell - Konsole 🎐	
Session Edit View Bookmarks Settings Help	
ca-sent4:~ # /opt/oracle/oraInventory/orainstRoot.sh Changing permissions of /opt/oracle/oraInventory to 770. Changing groupname of /opt/oracle/oraInventory to oinstall. The execution of the script is complete ca-sent4:~ # /opt/oracle/product/10gR2/db/root.sh Running Oracle10 root.sh script	•
The following environment variables are set as: ORACLE_OWNER= oracle ORACLE_HOME= /opt/oracle/product/10gR2/db	
Enter the full pathname of the local bin directory: [/usr/local/bin]: Copying dbhome to /usr/local/bin Copying oraenv to /usr/local/bin Copying coraenv to /usr/local/bin	
Creating /etc/oratab file Entries will be added to the /etc/oratab file as needed by Database Configuration Assistant when a database is created Finished running generic part of root.sh script. Now product-specific root actions will be performed. ca-sent4:~ #	
🔏 🗏 Shell	(iii)

Oracle Database	10g	Installation	is com	pleted.	Click	"Exit".
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📓 Oracle Universal Installer: End of Installation <@ca-sent4> 🎐 📃 🗙
End of Installation
The installation of Oracle Database 10g was successful.
Please remember
The following J2EE Applications have been deployed and are accessible at the URLs listed below.
iSQL*Plus URL: http://ca-sent4.is.lab.novell.com:5560/isqlplus
iSQL*Plus DBA URL: http://ca-sent4.is.lab.novell.com:5560/isqlplus/dba
Help Installed Products Back Next Install
ORACLE

6. Apply Required Oracle Patches

Refer Sentinel 6.0 Install document for required version of Oracle patches. Oracle patches are available on http://metalink.oracle.com, and you need Oracle support contract to get these patches.

1. Apply Oracle 10gR2 (10.2.0.3) Patch (using runInstaller)

Download required Oracle 10gR2 patch (p5337014_10203_Linux-x86-64.zip) and unzip in /tmp directory.

- 1. Make sure you are logged in as "oracle" user.
- 2. #unzip p5337014_10203_Linux-x86-64.zip
- 3. cd Disk1 and run Oracle Universal Installer : ./runInstaller (Installer will fail to detect OS. Apply same changes ass in step #5)

2. Apply Oracle Critical Patch (using opatch)

Download Oracle 10gR2 patch (p5881721_10203_Linux-x86-64.zip) in /tmp directory.

- 1. Make sure you are logged in as "oracle" user.
- 2. #unzip p5881721_10203_Linux-x86-64.zip
- 3. cd 5881721 and run \$ORACLE HOME/OPatch/opatch apply -local
- 4. Follow README attached with this patch for any post installation task.

3. Oracle Patch Status Check: \$ORACLE_HOME/OPatch/opatch lsinventory

💌 oracle@sles10:~ - Shell - Konsole 🍭	- 6 ×
Session Edit View Bookmarks Settings Help	
oracle@sles10:~> /opt/oracle/db/OPatch/opatch lsinventory Invoking OPatch 10.2.0.3.0	<u> </u>
Oracle interim Patch Installer version 10.2.0.3.0 Copyright (c) 2005, Oracle Corporation. All rights reserved	
Oracle Home : /opt/oracle/db Central Inventory : /opt/oracle/oraInventory from : /etc/oraInst.loc OPatch version : 10.2.0.3.0 OUI version : 10.2.0.3.0 OUI location : /opt/oracle/db/oui Log file location : /opt/oracle/db/cfgtoollogs/opatch/opatch2007-05-2	21_05-37-58AM.log
Lsinventory Uutput file location : /opt/oracle/db/cfgtoollogs/opatch/	/lsinv/lsinventory200/-05-21_05-3/-58AM.txt
Installed Top-level Products (2):	
Oracle Database 10g Oracle Database 10g Release 2 Patch Set 2 There are 2 products installed in this Oracle Home.	10.2.0.1.0 10.2.0.3.0
Interim patches (3) :	
Patch 5881721 : applied on Mon May 21 05:30:30 PDT 2007 Created on 19 Feb 2007, 02:16:34 hrs US/Pacific Bugs fixed: 5885186, 5881721	
Patch 5556081 : applied on Mon May 21 05:24:19 PDT 2007 Created on 9 Nov 2006, 22:20:50 hrs PST8PDT Bugs fixed: 5556081	
Patch 5557962 : applied on Mon May 21 05:24:10 PDT 2007 Created on 9 Nov 2006, 23:23:06 hrs PST8PDT Bugs fixed: 4269423, 5557962, 5528974	
	A
😹 🖷 Shell	ffix

Screen-shot showing Oracle version and Patch status.

Congratulations! You are all set to Install Novell Sentinel 6.0 Software.

History

Date	Changes		
02/10/2007	Initial Document created Arun Singh		
05/17/2007	Update to Oracle 10gR2 (10.2.0.3) - Arun Singh		