Oracle 10g R2 (10.2.0.1) on SUSE LINUX Enterprise Server 9

(How to Install)

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Novell.

Introduction

Oracle 10g R2 is latest release and at the time of document creation is only supported on x86. Novell SUSE LINUX Enterprise Server 9 (SLES9) certification is in progress and will be updated on Metalink (http://metalink.oracle.com/). This document will help you to install Oracle 10g R2 on SLES9. If you encounter any problem, please post your question to <u>suse-oracle@suse.com</u>.

Note: Same instruction will work for SUSE LINUX Professional 9.3 but not supported by Novell/Oracle in production environment.

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 2 (10.2.0.1) Enterprise/Standard Edition for Linux x86. File name: 10201_database_linux32.zip (http://www.oracle.com/technology/software/products/database/oracle10g/htdocs/102011inuxsoft.html).
- Oracle Database 10g Release 2 Documentation
 <u>http://www.oracle.com/technology/documentation/database10gr2.html</u>

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 |

Installation Steps

1. Install SUSE LINUX Operating System

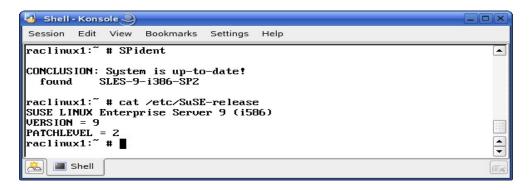
Follow the Installation instructions provided in the SLES9 install manual. SLES9 with default packages along with "C/C++ Compiler and Tools" is sufficient for Oracle 10g R2 (10.2.0.1) install.

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".

| 🚭 YaST2@raclinux1 <@raclinux1> 🎱 |
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| C |
| Filter: Selections |
| Selection |
| |
| 🛃 Basis Runtime System |
| YaST |
| 🐼 Graphical Base System |
| 🔄 Linux Tools |
| LSB Runtime Environment |
| 🐼 KDE Desktop Environment |
| Melp & Support Documentation |
| Authentication Server (NIS, LDAP, Kerberos) |
| C/C++ Compiler and Tools |
| Basis Sound Libraries and Tools |
| GNOME system |
| File Server (NFS, Samba) |
| DHCP and DNS Server |
| Mail and News Services |
| Print Server (CUPS) |
| Simple Webserver |
| Analyzing Tools |
| Various Linux Tools |
| Web Based Enterprise Management |
| High-Availability |
| |

2. Install SLES9 Service Pack 2

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:** For your convenience recent copy of 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:

| 🔒 YaST2@suse92 🥥 | | |
|--|------------------------|------|
| YaST | _ | |
| If you fill out the fields Full 🛓 🔒 Edit a | n Existing System User | |
| User Name and User | | |
| Login, a new user account | | |
| is created with the | | |
| Password given in the | | |
| corresponding field. | User Data | |
| When entering a password, | <u>F</u> ull User Name | |
| distinguish between | Oracle user | |
| uppercase and lowercase. | | |
| It should not contain any | <u>U</u> ser Login | |
| special characters (e.g., | oracle | |
| accented characters). | | |
| With the current password | Password | |
| encryption (Blowfish), the | ***** | |
| password length should be | Verify Password: | |
| between 5 and 72 | ***** | |
| characters. | ***** | |
| | | |
| Valid password characters | Password Settings | |
| are letters, digits, blanks, | | |
| and #*,.;:+1\$%&/ ? {[()]}=. | Details | |
| TION- | | |
| To ensure that the | | |
| password was entered | 🔲 Djsable User Login | |
| correctly, repeat it exactly | | |
| in a second field. Do not | | |
| forget your password. | | |
| When you modify the User 🛔 Back | Abo <u>r</u> t | Next |
| Login, use only letters (no 🔹 | | (|

| , Yastz@suse92 | | | | |
|--|------------------------------|-----------------|--------------------------|----------|
| The meaning of the fields are described below: User ID (uid): Each user is | a Detail User Properties | | | |
| known to the system by a unique number, the "User | User ID (uid) | | Additional Group Membe | ership |
| ID". For normal users, you should use a UID bigger | 59 | | users | |
| than 499 because the smaller UIDs are used by the system for special | Home Directory | | audio bin | |
| purposes and pseudo logins. | /opt/oracle | Bro <u>w</u> se | cdrom console | = |
| If you change the UID of an existing user, the rights of | Additional User Information: | | daemon dba dialout | |
| the files this user owns must be changed. This is done automatically for the | | | disk | |
| files in the user's home | Login <u>s</u> hell | | ftp | |
| directory, but not for files located elsewhere. | /bin/bash | Ŧ | games kmem | |
| Home Directory: The home directory of the user. | Default <u>a</u> roup | | □ Idap □ Ip | |
| Normally this | oinstall | Ŧ | 🗖 mail | |
| is /home/username. | | | maildrop | _ |
| To select an existing directory, click Browse . | | | man modem | ‡ |
| Additional Information | Back | Abast | | Next |
| Some additional user data | Back | Abort | | Next |

- Change Oracle home directory by editing ORACLE_HOME variable in "/etc/profile.d/oracle.sh" file. ORACLE_HOME=\$ORACLE_BASE/product/10gR2
- 3. Default ORACLE_SID set by orarun install is "mydb". Change it to your preferred name in "/etc/profile.d/oracle.sh" file.
- 4. Run "/usr/sbin/rcoracle start " to set kernel parameters (Ignore any errors).
- 5. Exist from current session and login as new "oracle" user.

4. Oracle 10g R2 Installation

1. Get Oracle 10g R2 (10.2.0.1) Software from oracle web (<u>http://www.oracle.com/technology/software/products/database/oracle10</u> g/htdocs/10201linuxsoft.html) and extract files:

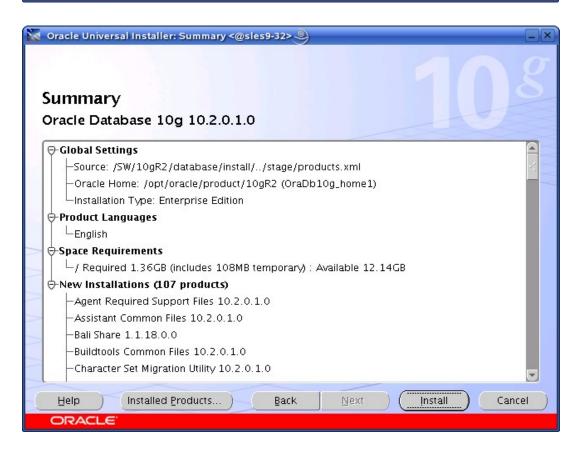
#unzip 10201_database_linux32.zip

- 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.

Installation will walk you through with self explanatory instructions. Here are screen-shots from simple Oracle 10g Installation:

| 🗙 Oracle Database 10g Installation - Installation Method <@sles9-32>🍚 📃 🔍 |
|---|
| 102 |
| 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 Browse |
| Installation Type: Enterprise Edition (1.3GB) |
| UNIX DBA Group: dba |
| 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. |
| C 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 |
| |
| 🙀 Oracle Universal Installer: Specify Inventory directory and credentials <@sles9-32> 🤐 💷 🗙 |
| |
| Specify Inventory directory and credentials |
| You are starting your first installation on this host. As part of this install, you need to specify a directory for installer files. This is called the "inventory directory". Within the inventory directory, the installer automatically sets up subdirectories for each product to contain inventory data and will consume typically 150 Kilobytes per product. |
| Enter the full path of the inventory girectory. |
| /opt/oracle/oralnventory |
| |
| |
| You can specify an Operating System group that has write permission to the above inventory directory. You can leave the field blank if you want to perform the above operations as a Superuser. |
| Specify Operating System group name: |
| oinstall |
| |
| |
| Help) (Installed Products) Back Next) (Install) Cancel) |

| Dracle Universal Installer: Product-Specific Prerequisite C | hecks <@sles9-32> | 9 | (|
|---|--|---------------|-----------------------------|
| | | | |
| roduct-Specific Prerequisite Che | cks | | |
| roduct-specific frerequisite che | CK3 | | |
| he Installer verifies that your environment meets all of the i onfiguring the products that you have chosen to install. You tems that are flagged with warnings and items that require performing these checks, click the item and review the deta | must manually veri manual checks. For | fy an deta | d confirm the ails about |
| Check | Type | | Status |
| Checking Network Configuration requirements | Automatic | | User Verified 🛛 |
| Validating ORACLE_BASE location (if set) | Automatic | | Succeeded |
| Checking Oracle Home nath for snaces | Automatic | 12 | Succeeded |
| | | | Retry Stop |
| 1 warnings, 0 requirements to be verified. | | | |
| Checking operating system requirements Expected result: One of redhat-3,redhat-4,SuSE-9,asianux Actual Result: SuSE-9 Check complete. The overall result of this check is: Passed | -1, asianux-2 | | F |
| | | _ | |
| | | | |
| Help Installed Products Back | Next) [r | nstall |) (Cancel |



| 🙀 Oracle Universal Installer: Install <@sles9-32> 🍭 | | _)> |
|---|--|---|
| | | A O |
| Install | | |
| Installing Oracle Database 10g 10.2.0.1.0 | | |
| Install successful | | Application Development |
| Linking 'Oracle Net Required Support Files 10.2.0.1.0 ' | | - the second s |
| Setup pending | | HTML DB database-centric Web applications |
| Configuration pending | | Database Web services |
| | | Regular expressions |
| Building client shared libraries 62% | | Faster PL/SQL |
| | | |
| (<u>Stop installation</u>) | | 8 |
| | | |
| You can find a log of this install session at: | | |
| /opt/oracle/oralnventory/logs/installActions2005-07-19_0 | 2-18-24PM.log | |
| | | |
| Help Installed Products Back | Next) | (Install) (Cancel) |
| ORACLE | | |
| | | |
| NT | | |
| 🖌 Oracle Universal Installer: Configuration Assistants <@ | وsles9-32> | -(|
| Oracle Universal Installer: Configuration Assistants <@ | ହsles9-32>_ 9 | |
| | ⊉sles9-32> ම | ۵ 102 |
| Section Assistants < Configuration Assistants < Configuration Assistants | وsies9-32> ک | 108 |
| | | nts you selected earlier. |
| Configuration Assistants | | nts you selected earlier. |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g | tart the compone Status | Туре |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant | tart the components Status | Type Recommended |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g | tart the compone Status | Туре |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant | tart the compone Status Succeeded In progress | Type Recommended Recommended |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant | tart the compone Status Succeeded In progress | Type Recommended Recommended |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant | tart the compone Status Succeeded In progress | Type Recommended Recommended Optional |
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| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant | tart the componen Status Succeeded In progress Pending | Type Recommended Recommended Optional Betry Stop |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant ISQL*Plus Configuration Assistant Details (see full log at /opt/oracle/oralnventory/logs/inst | tart the componen Status Succeeded In progress Pending | Type Recommended Recommended Optional Betry Stop |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant Oracle Database Configuration Assistant ISQL*Plus Configuration Assistant Details (see full log at /opt/oracle/oralnventory/logs/inst Configuration assistant "Oracle Net Configuration Assistant | tart the components Status Succeeded In progress Pending allActions2005-0 | Type Recommended Recommended Optional Betry Stop 7-19_02-18-24PM.log): |
| Configuration Assistants The following configuration assistants will configure and s Tool Name Oracle Database 10g Oracle Net Configuration Assistant Oracle Database Configuration Assistant ISQL*Plus Configuration Assistant Details (see full log at /opt/oracle/oralnventory/logs/inst | tart the components Status Succeeded In progress Pending allActions2005-0 | Type Recommended Recommended Optional Betry Stop 7-19_02-18-24PM.log): |

| Execut | te Configuration scripts <@sles9-32> | |
|--|--|------------|
| The follov | ving configuration scripts need to be executed as the "root" user. | |
| Scripts to | be executed: | |
| Number | Script Location | |
| 1 | /opt/oracle/oralnventory/orainstRoot.sh | |
| 2 | /opt/oracle/product/10gR2/root.sh | |
| | | |
| | | |
| 1. Ope 2. Log 3. Run | ie the configuration scripts: n a terminal window in as "root" the scripts irn to this window and click "OK" to continue | |
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| Unacle Un | niversal Installer: End of Installation <@sles9-32> 🥥 | _ × |
| S Oracle Or | niversal Installer: End of Installation <@sles9-32> | _ X |
| | niversal Installer: End of Installation <@sles9-32> | 8 |
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| End of The inst Please re The follo URLs list iSQL*Plu http://sl | f Installation allation of Oracle Database 10g was successful. member owing J2EE Applications have been deployed and are accessible at the ed below. s URL: es9-32.site:5560/isqlplus s DBA URL: | <u>s</u> |
| End of The inst Please re The follo URLs list iSQL*Plu http://sl | f Installation allation of Oracle Database 10g was successful. member owing J2EE Applications have been deployed and are accessible at the ed below. s URL: es9-32.site:5560/isqlplus | 8 |
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| End of The inst Please re The folio URLs list iSQL*Plu http://sl Enterpris http://sl | f Installation allation of Oracle Database 10g was successful. member wwing J2EE Applications have been deployed and are accessible at the ed below. s URL: es9-32.site:5560/isqlplus s DBA URL: es9-32.site:5560/isqlplus/dba se Manager 10g Database Control URL: es9-32.site:1158/em | 8 |
| End of The inst Please re The follo URLs list iSQL*Plu http://sl iSQL*Plu http://sl Enterpris | f Installation allation of Oracle Database 10g was successful. member wwing J2EE Applications have been deployed and are accessible at the ed below. s URL: es9-32.site:5560/isqlplus s DBA URL: es9-32.site:5560/isqlplus/dba se Manager 10g Database Control URL: es9-32.site:1158/em Installed Products Back Next Install | |

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

| બ YaST2@sl92 🕘 | | _ 🗆 × |
|-----------------|---|---------|
| Yast | | |
| lications | 🙀 /etc/sysconfig Editor | |
| ktop | × ,,., | |
| tware | | |
| vork | Current Selection: Productivity/Databases/Tools/Oracle/DB | |
| uctivity | Satting of START ORACLE DR | |
| Databases | Setting of: START_ORACLE_DB | |
| - Tools | yes 🐺 | Default |
| | | |
| ORACLE_OWNER | | |
| ORACLE_BASE | File: /etc/sysconfig/oracle | |
| START ORACLE DB | Possible Values: yes,no | |
| START_ORACLE_DB | | |
| START ORACLE DB | Default Value: no | |
| START ORACLE DB | Description: | |
| ORACLE DB APACH | | |
| START ORACLE DB | Start Oracle Database? Set to "yes" to enable database | |
| START_ORACLE_DB | startup automatically at system boot. | |
| +- RAC | | |
| + System | | |
| em | | |
| | | |
| + | | |
| | <u>S</u> earch Abo <u>r</u> t | Einish |

6. Oracle Enterprise Manager

- 1. Start Oracle dbconsole services if is not started: emctl start dbconsole
- 2. Use Enterprise Manager web interface (<u>http://localhost:1158/em</u>) to perform routine database administration and performance tuning tasks.

|) Oracle Enterprise Manager (SYS) - Database Instance: orol - Mozilla Firefox 🎐 📃 🗖 |
|---|
| le Edit View Go Bookmarks Iools Help |
| 💭 💭 🕼 👔 🚰 http://192.168.0.2:1158/em/console/database/instance/sitemap?event=doLoad⌖=orcl&type=oracl 🔽 🛛 🗔 |
| 🖹 SUSE LINUX 🚔 Entertainment 🚔 News 🚔 Internet Search 🚔 Reference 🚔 Maps and Directions 🚔 Shopping 🚔 People and Companies |
| ORACLE Enterprise Manager 10g Setue Perlemons Heb Looput Database Control Logged in As SYS |
| Database Instance: orcl |
| Home Performance Administration Maintenance |
| Page Refreshed Jul 19, 2005 2:36:43 PM Refresh View Data Automatically (60 sec) 🗹 |
| General Host CPU Active Sessions SQL Response Time Image: Shutdown 100% 4.0 Edit Baseline |
| Status Up 75 3.0 Up Since Jul 19, 2005 2:30:45 PM PDT 50 Other 2.0 Instance Name orcl 2.0 Other 2.0 Version 10.2.0.1.0 25 1.0 Host seles 32.site 0 0.0 |
| View All Properties Load 0.00 Paging 0.00 Maximum CPU 4 |
| Diagnostic Summary High Availability |
| ADDM Findings All Policy Violations Alert Log No ADDM run available Database Size (GB) Problem Tablespaces Unavailable Instance Recovery Time (sec) Z All Policy Violations Alert Log 6 No ORA- errors 6 No ORA- errors Database Size (GB) Problem Tablespaces Unavailable Instance Recovery Time (sec) Z Segment Advisor Becommendations 0 Last Backup n/a Dump Area Used (%) 0 Disabled |
| ▼Alerts |
| Category All (Go) Critical 0 Warning 0 Severity Category Name Message Alert Triggered |
| (No alerts) |
| ▶Related Alerts |
| Jobs scheduled to start no more than 7 days ago |
| Scheduled Executions 0 Running Executions 0 Suspended Executions 🗸 0 Problem Executions 🗸 0 |
| Home Performance Administration Maintenance |
| Done |

7. Async I/O : Enable by Default

Unlike previous releases this is enable by default. You can disable/enable using init.ora parameters. You can check /proc/slabinfo if kio values are increasing while async i/o is in use. i.e. cat /proc/slabinfo | grep kio

History:

| Date | Changes |
|----------|---------------------------|
| 07/19/05 | Initial Document created. |

Enjoy!