Oracle Application Server 10g Release 2 (10.1.2) on SUSE LINUX Enterprise Server 9

> Arun Singh Novell Inc. http://www.novell.com/oracle



Introduction

Oracle Application Server is supported and certified on SUSE LINUX Enterprise Server. Visit Oracle MetaLink (<u>http://metalink.oracle.com</u>) for more details on certifications. This document is provided to get you started with Oracle Application Server "J2EE and Web Cache" middle tier with orarun. Oracle has provided excellenet documents, please consult them for other add-on products like Oracle AS Infrastructure, Portal and Wireless, etc..

Your feedback is always welcome (<u>arun.singh@novell.com</u>). Please post your questions on SUSE-Oracle forum (<u>suse-oracle@suse.com</u>).

1. Hardware Requirements

Check that your computer meets the following disk space and memory requirements:

| ltem | J2EE and Web Cache | Portal and Wireless | OracleAS Infrastructure |
|---------------|-----------------------|---------------------|----------------------------|
| Memory | 512 MB | 1 GB | 1 GB |
| Disk space | 700 MB | 1.10 GB | 3.3 GB |
| Space in /tmp | 400 MB | 400 MB | 400 MB |
| Swap space | 1.5 GB | 1.5 GB | 1.5 GB |

- 1. To determine Physical RAM : #grep MemTotal /proc/meminfo
- 2. To determine available swap space: #grep SwapTotal /proc/meminfo

2. OS Requirements

Oracle Application Server 10*g* Release 2 (10.1.2) has been certified to run on systems running SUSE LINUX Enterprise Server 9 (SLES 9). Evaluation Software can be downloaded from respective web sites.

- 1. Novell SUSE Linux Enterprise Server 9 with latest Service Packs (http://www.novell.com/products/linuxenterpriseserver/eval.html)
- 2. Oracle Application Server 10g R2 (10.1.2) Oracle Application Server J2EE and Web Cache (<u>as_linux_x86_core_101200.cpio</u>)

3.Installation Steps

1. Install SUSE LINUX Enterprise Server 9

If you have your SLES9 server pre-installed, just ensure you have required packages installed. Otherwise, follow Installation steps provided in SUSE LINUX Enterprise Server 9 manual. Make sure "C/C++ Compiler and Tools" and other required packages are installed i.e. db1, sysstat, etc.

a. Check that SUSE LINUX Enterprise Server 9 is installed:

#cat /etc/SuSE-release

SUSE LINUX Enterprise Server 9 (i586) VERSION = 9

b. The minimum supported kernel versions is: kernel 2.6.5-7.97 #uname -r

c. Check that the following software packages, or higher versions, are installed:

rpm -q package_name

```
glibc-2.3.3-98.28
gcc-3.3.3-43.24
gcc-c++-3.3.3-43.24
libstdc++-devel-3.3.3-43.24
openmotif21-libs-2.1.30MLI4-119.1
pdksh-5.2.14-780.1
make-3.80-184.1
gnome-libs-1.4.1.7-671.1
gnome-libs-devel-1.4.1.7-671.1
sysstat-5.0.1-35.1
binutils-2.15.90.0.1.1-32.5
db1-1.85-85.1
compat-2004.7.1-1.2
```

d. libdb.so.2: If this files is not there then create following symbolic link or install db1 package.

#In -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2

e. /etc/hosts: Please comment out IPv6 addresses for localhost

Make sure that the localhost entry in the /etc/hosts file is an IPv4 entry. If the IP entry for localhost is IPv6 format, installation cannot succeed. The following example shows

modified localhost entry:

special IPv6 addresses

#::1 localhost ipv6-localhost ipv6-loopback

Oracle provides perl script (patch 4015045) to fix above entries. These patches are available from http://metalink.oracle.com

f. /etc/services: Make sure that the following port ranges are available

- 1. Ports 1812-1829 required for Oracle Enterprise Manager (console)
- 2. Ports 1830-1849 required for Oracle Enterprise Manager (agent)
- 3. Ports 1850-1869 required for Oracle Enterprise Manager (RMI)
- 4. Ports 3060-3129 required for Oracle Internet Directory
- 5. Ports 3130-3199 required for Oracle Internet Directory (SSL)

If these ports are not available, the associated configuration assistants will fail during the installation. If necessary, remove entries from the "/etc/services" file and reboot the system. Oracle provides perl script (patch 3167528) to remove these entries.

2. Install orarun

SUSE provides orarun package to automate most of the Oracle pre-install task. Refer to Oracle installation document for complete list of prerequisites, If you choose to do on your own.

 Install orarun package for SLES 9. You can download latest version of orarun from http://ftp.novell.com/partners/oracle/sles-9/. You can use YaST (/sbin/yast2) setup tool or install manually using rpm.

#rpm -i /media/cdrom/suse/i586/orarun-1.8-109.5.i586.rpm

- 2. The account for "oracle" user is disabled.
 - 1. Enable it, by changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", by editing the file "/etc/passwd".
 - 2. Set a new password for user "oracle" i.e. "/usr/bin/passwd oracle".
- 3. Run "/usr/sbin/rcoracle start " to set kernel parameters.
- 4. After installing the orarun package, complete the following steps to reset the environment for Oracle Application Server:

 If any Java packages are installed on the system, unset the Java environment variables JAVA_HOME. Oracle Application Server installs and uses its own Java packages. Following will disable java at boot time on your server:

mv /etc/profile.d/alljava.sh /etc/profile.d/alljava.sh.bak

- 2. Edit /etc/profile.d/oracle.sh file to set/unset following environment variables:
 - a) Command to unset JAVA and other environment variables: "unset JAVA_HOME TNS_ADMIN ORA_NLS33"
 - b) Set proper ORACLE_HOME, ORACLE_SID. Unfortunately AS doesn't uses these but you should set it correct anyways.
 - c) Set environment variable TMP i.e. export TMP=/tmp

3. Install Oracle Application Server 10*g* **R2(10.1.2)**

- 1. Make sure you are logged in as "oracle" user.
- Get Oracle Application Server 10g R2 (10.1.2) Software from oracle web or use your Oracle Disks.
- 3. Run Oracle Universal Installer: \$./runInstaller

Note: If you start runInstaller from Disk1 then it will complain about oracle.sh file. Ignore this or start runInstaller from Disk1/install.

Following welcome screen will appear and follow directions carefully.

| oracle oniversal instant | er: Welcome 🏼 🎐 | - |
|--|--------------------------|---------------------------------------|
| | | |
| Welcome | | |
| The Oracle Universal Installe /our Oracle products. | r guides you through 1 | the installation and configuration of |
| Click "Installed Products" to | o see all installed prod | lucts. |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | Deinstall Products |
| | | |
| | | About Oracle Universal Installer |

If this is the first Oracle product to be installed on this computer, the installer displays these additional screens:

| Oracle Universal Installer: Specify Inventory directo | ry and credenti |
|--|-----------------------------|
| Specify Inventory directory and credentia | als |
| You are starting your first installation on this host. As part of this install, y directory for installer files. This is called the "inventory directory". Within t installer automatically sets up subdirectories for each product to contain consume typically 150 Kilobytes per product. | he inventory directory, the |
| Enter the full path of the inventory directory. | |
| /opt/oracle/oralnventory | Browse) |
| You can specify an Operating System group that has write permission to t You can leave the field blank if you want to perform the above operations | |
| Specify Operating System group name: | |
| Louisvan 🔊 | |
| | |
| | |
| | |
| Help Installed Products Back Next | Install Cancel |

| 🚼 Orac | le Univer | sal Installer | 9 | | X |
|----------|----------------|---|-----------------|-----------|---|
| before | the install ca | i to be performed n continue. These opt/oracle/oralnv | actions are sti | ored in a | |
| script r | | /opt/oracle/orain\ ther window, then | | | |
| | Helt | o) (Continue) | <u>C</u> ancel | | |

Specify File Locations:



Product-specific Prerequisite Checks:

A warning is displayed if the system does not meet the requirements. If you need to change a kernel parameter, exit the installer and start the installation again.

| The installer will now verify that the system meets all the mi configuring the chosen product. You are required to manua Tagged as warnings or manual checks. For details on perfor see the details at the bottom. | ly verify and confirm | n the | e items that are | 2 |
|--|-----------------------|------------|------------------|------|
| Check | Type | | Status | |
| Checking operating system certification Checking kernel parameters | Automatic | | Succeeded | - 6 |
| Checking recommended operating system packages | Automatic | Num | User Verified | 1 |
| Checking recommended glibc version | Automatic | | Succeeded | - 23 |
| Validating ORACLE_BASE location (if set) | Automatic | The second | Succeeded | |
| | Automatic | 1.000 | Jaccecaca | 3 |
| 0 requirements to be verified. Checking recommended operating system packages Checking for pdksh-5.2.14-780.1; found pdksh-5.2.14-7 Checking for sysstat-5.0.1-35.1; found Not found. Failed Checking for openmotif21-libs-2.1.30MLI4-119.1; found | <<<< | | | qo |

* ignore openmotif warning. SLES9 comes with latest version.

| Overla Application Service 10a | | |
|--|-----------------------|---------------|
| Dracle Application Server 10g | | |
| The following are components that you can install as part of Orac hese components do you want to install? | te Application Server | 10g. Which of |
| Components | Install Status | |
| 🖓 🗹 Oracle Application Server 10g 10.1.2.0.0 | New Install | |
| Oracle Process Management Notification 10.1.2.0.0 | NewInstall | |
| ⊕ 🗹 Enterprise Manager plugin Common Files 10.1.0.2.0 Beta | New Install | |
| | | |

Confirm Pre-Installation Requirements:

| ontirm Pre-Install | |
|--|--|
| onnin ne motan | ation Requirements |
| | minimum pre-installation requirements listed below, and then sel |
| of the checkboxes. For details o | on performing these checks, click the Help button. |
| our computer does not meet the when you run OracleAS 10g. | e minimum requirements, you will get errors later in the installatio |
| Requiremer | nt Description |
| Root privileges | You must have access to the root user on thi |
| | X ¹ |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Select components you would like to Install:

| | ct Configuration Option | ns – |
|------------------------|--|--|
| Select tl installat | | figure and automatically start at the end of the |
| docume | entation for each component. HTTP Server and OracleAS 10g Container | |
| | Available Components: | Description |
| Constanting of the | acle HTTP Server | Serves both static and dynamic web content. |
| OI OI | acleAS 10g Containers for J2EE | Runs enterprise JAVA applications. |
| 0 | acleAS 10g Web Cache | Accelerates the delivery of both static and dyn. |
| D Or | acleAS 10g Farm Repository | OracleAS 10g Farm Repository |
| 🗆 Id | entity Management Access | Enables Single Sign-On for J2EE and web appli. |
| | | |
| | | |

Specify Port Configuration Options: Select Automatic

| Oracle | Universal Installer: Specify Port Co | nfiguration Options 🏐 🔔 |
|----------------------------|---|-------------------------|
| Specif | fy Port Configuration Optior | IS 105 |
| you decio | method which you want to use to configure the p te to manually configure the ports, then you must and enter the filename below. | |
| Automa | | |
| C Manual | : cle/OracleA5/staticports.inl | Browse |
| | | |
| | Installed Products | Next Install Cancel |

OracleAS Instance Name and ias_admin Password:

Instance Name: Enter a name for this instance. Instance names can contain alphanumeric and _ (underscore) characters. If you have more than one Oracle Application Server instance on a computer, the instance names must be unique.

Example: J2EE

ias_admin Password and Confirm Password: Enter and confirm the password for the ias_admin user. This is the administrative user for this instance. Passwords must consist of at least five characters, and one of the characters must be a number.

| 😽 Oracle Universa | l Installer: Specify Instance Name and ias_admin P | _ × |
|-------------------------|---|------|
| Specify Insta | nce Name and ias_admin Password | |
| | nces installed on a host must have unique names. The hostname and domain ppended to the instance name. | |
| | tance has its own password, regardless of which user performed the installation red across instances, even if the instances were installed by the same user. | on. |
| | ave a minimum of 5 alphanumeric characters, maximum 30 characters, and a ters must be a number. | ıt |
| Administrator Usernam | ie: ias_admin | |
| Instance N <u>a</u> me: | SLES9 | |
| ias_admin Password: | ***** | |
| Confirm Password: | ********** | |
| | | |
| Help Insta | Iled <u>Products</u> <u>Back</u> <u>Next</u> Install <u>Cance</u> | ≅I) |
| ORACLE | | |

Summary: Verify your selections and click Install.



Run root.sh dialog: In a different window, log in as the root user and run the root.sh script. After you have run the root.sh script, click OK.





Configuration Assistants:

This screen displays the progress of configuration assistants. Configuration assistants configure Oracle Application Server components.

| Tool Nam | | Status | Type | |
|-----------------|--|--------------------|-------------|------|
| | iess components configuration Assistant | Jucceeueu | Recommended | |
| | Instance Configuration Assistant | Succeeded | Recommended | - 1 |
| OC4J Inst | ance Configuration Assistant | Succeeded | Recommended | |
| OPMN Co | nfiguration Assistant | Succeeded | Recommended | |
| 🗖 Register 🛛 | DCM Plug-Ins With EM | Succeeded | Recommended | |
| Application | on Server Control Configuration Assistant | Succeeded | Recommended | |
| 📃 DCM Rep | ository Backup Assistant | Succeeded | Recommended | - |
| Details (see fi | III log at /opt/oracle/orainventory/logs/in: | stallActions2005-0 | Betry Sto | a or |

End of Installation: Click Exist.

| Oracle Universal Installer: End of Installation | |
|---|-------|
| End of Installation | |
| The installation of Oracle Application Server 10g was successful. | |
| Please remember | |
| The following information is available in: /opt/oracle/OracleAS/install/setupinfo.txt | |
| Use the following URL to access the Oracle HTTP Server and the Welcome http://sles9.site:7782 | raye. |
| Use the following URL to access the Oracle Enterprise Manager Applicatio Server Control: http://sles9.site:1812 | on |
| Click the Release Information button to view current release information. | |
| Release Information | |
| Help Installed Products Back Next Install | Exit |
| ORACLE' | |

4. Oracle Enterprise Manager Application Server Control

If **iasconsole** services is not started, then start it manually by entering following command "emctl start iasconsole".



Use a browser to do routine Application Server administration tasks via web interface. URL: <u>http://IP_Address:1812/</u>

| ias_admin Password: The second | User Name: | |
|--|------------------------------|---------------------|
| ******* | ias_admin | |
| | Password: | |
| 🗇 Use Password Manager to remember this password. | *** | |
| | Use Password Manager to reme | mber this password. |



5. Oracle Application Server Automatic Startup/Shutdown

This section explains how to make Oracle Application Server start and stop automatically during server startup and shutdown on SUSE Linux.

- 1. Login as a root user and create a file called "/etc/init.d/ias" . Sample file is provided here.
- 2. Use chmod command to set the privileges to 750: chmod 750 /etc/init.d/ias
- 3. Add root user to the "dba and oinstall" groups to allow the script to function correctly.
- 4. Use "chkconfig" to enable/disbale ias script or create link manually to appropriare run-level.
 - i.e. chkconfig ias on
- Note: If you are expert in scrpting, you can merge above instructions to existing oracle script (/etc/init.d/oracle).

| oracle@sles9:~/O | racleAS/opmn/bin> ./o | pmnct | l status | 3 | | 1 |
|-------------------------------|-----------------------|-------|----------|----|--------|---|
| Processes in Ins [.] | tance: SLES9.sles9.si | te | | | | |
| ias-component | l process-type | i | pid | ī | status | |
| DSA | I DSA | t | N∕A | 1 | Down | |
| HTTP_Server | I HTTP_Server | - I | 11661 | T | Alive | |
| LogLoader | logloaderd | - I | N/A | T | Down | |
| dcm-daemon | l dcm-daemon | - E | 11478 | I. | Alive | |
| OC4J | l home | - T | 11662 | T | Alive | |
| WebCache | l WebCache | - I. | 11665 | T | Alive | |
| WebCache | l WebCacheAdmin | 1 | 11664 | T | Alive | |
| | racleAS/opmn/bin> | 10 | 11001 | | mile | |

Sample Script (ias):

| #! /bin/sh # |
|---|
| # # Author : Arun Singh, Novell Inc. |
| # Adulti : Arun Shigh, Noven inc. |
| # 1. Add root to dba and oinstall group to function this script properly |
| |
| # 2. Create this file in /etc/init.d directory (ias) and use "chkconfig ias on" |
| # You can put these and other commands in a single file (startup or shutdown) |
| # and use as single command. This example is to make instruction clear. |
| # \$ORACLE_HOME/dcm/bin/dcmctl startup |
| # \$ORACLE_HOME/opmn/bin/opmnctl start |
| # \$ORACLE_HOME/bin/emctl start iasconsole |
| # |
| ### BEGIN INIT INFO |
| # Provides: ias |
| # Required-Start: \$network \$syslog \$remote_fs raw |
| # Required-Stop: |
| # Default-Start: 3 5 |
| # Default-Stop: 0 1 2 6 |
| # Description: Start the Oracle iAS |
| |
| ORACLE_BASE=/opt/oracle |
| ORACLE_HOME=\$ORACLE_BASE/oracleas |
| ORA_OWNER=oracle |
| |

```
case "$1" in
 start)
    echo -n "Satring Oracle iAS"
            su - $ORA_OWNER --command="$ORACLE_HOME/dcm/bin/dcmctl start" &
            su - $ORA_OWNER --command="$ORACLE_HOME/opmn/bin/opmnctl startall" &
            su - $ORA_OWNER --command="$ORACLE_HOME/bin/emctl start iasconsole" &
    ;;
  stop)
    echo -n "Stopping Oracle iAS"
            su - $ORA_OWNER --command="$ORACLE_HOME/dcm/bin/dcmctl shutdown" &
            su - $ORA OWNER --command="$ORACLE HOME/opmn/bin/opmnctl stopall" &
            su - $ORA_OWNER --command="$ORACLE_HOME/bin/emctl stop iasconsole" &
    ;;
  status)
    echo -n "Checking for Oracle iAS"
            su - $ORA_OWNER --command="$ORACLE_HOME/bin/emctl status iasconsole" &
    ;;
  *)
    echo "Usage: $0 {start|stop|status}"
    exit 1
esac
```

6. Changing Kernel Parameters

If you are using orarun then recommended values are set. You can change and verify using YaST (/sbin/yast2->System->/etc/sysconfig Editor ->Productivity->Databases->Tools->Oracle->System).

If you want to change the value of kernel parameter not provided by orarun, then complete the following steps:

 a. Using any text editor, create or edit the /etc/sysctl.conf file and add new kernel parameter values. For example message queues kernel parameter will looks like:

```
kernel.msgmni = 2878 (number of messages)
kernel.msgmax = 8192 (max no of bytes per message)
kernel.msgmnb = 65535 (total size of the queue)
```

By specifying the values in the /etc/sysctl.conf file, they persist when you reboot the system.

b. Enter the following command to change the current values of the kernel parameters.

/sbin/sysctl -p

c. Enter the following command to make the system read the /etc/sysctl.conf file when it reboots:

chkconfig boot.sysctl on

d. To view current values of kernel parameters: #/sbin/sysctl -a

4. Known Issues - Workaround

1. OC4J : DCM Error - /usr/lib/libdb.so.2 is missing.

Install db1 package or create soft link for /usr/lib/libdb.so.2

2. OC4J: java.net.ConnectException: Connection refused

Check /etc/hosts file for IPv6 entries.

3. EM64T/AMD64: comment out following lines from / etc/profile.d/oracle.sh

#test -d /lib/i686 && export LD_ASSUME_KERNEL=2.4.21 #test -f /usr/lib/libInternalSymbols.so && export LD_PRELOAD=/usr/lib/libInternalSymbols.so

5. Refernces

Oracle Application Server10g Release 2 (10.1.2) Documentation Library http://download-west.oracle.com/docs/cd/B15790_05/docs.htm

History:

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

Enjoy!