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

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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:

Item	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 instane	r: Welcome 🅞	-
Welcome		
The Oracle Universal Installer your Oracle products.	guides you through the	installation and configuration of
Click "Installed Products" to	see all installed product	:5,
		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:

	rectory and credenti
Specify Inventory directory and crede	entials
You are starting your first installation on this host. As part of this in directory for installer files. This is called the "inventory directory". installer automatically sets up subdirectories for each product to c consume typically 150 Kilobytes per product.	istall, you need to specify a Within the inventory directory, the ontain inventory data and will
Enter the full path of the inventory directory.	
/opt/oracle/oralnventory	Browse)
You can specify an Operating System group that has write permiss You can leave the field blank if you want to perform the above operation of the second se	ion to the above inventory directory. erations as a Superuser.
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You can specify an Operating System group that has write permiss You can leave the field blank if you want to perform the above op Specify Operating System group name: oinstall Help) Installed Products) Back Nex	ion to the above inventory directory. erations as a Superuser. t

🚼 Orac	le Univer	sal Installer	9		X
Certain before shell so	actions neec the install ca ript named /	i to be performed n continue. These opt/oracle/oralnv	with root priv actions are sti entory/orainsti	ileges pred in a Root.sh.	
Please script r continu	execute the , iow from ano e the install.	/opt/oracle/orain\ ther window, then	rentory/orainst click "Continu	Root.sh e" to	
	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 m configuring the chosen product. You are required to manua lagged as warnings or manual checks. For details on perfo see the details at the bottom.	inimum requirement ally verify and confirn rrming those checks,	s for n the click	r installing and e items that are < on the item a	a Ind
Check	Type		Status	
Checking operating system certification	Automatic		Succeeded	-0
Checking recommended operating system packages	Automatic		User Verified	17
Checking recommended glibc version	Automatic	P	Succeeded	1
Validating ORACLE BASE location (if set)	Automatic	R	Succeeded	-
a	1717).	14	1	3
			Retry	qo
0 requirements to be verified.				
Checking recommended operating system packages Checking for pdksh-5.2.14-780.1; found pdksh-5.2.14- Checking for sysstat-5.0.1-35.1; found Not found. Failed Checking for openmotif21-ilibs-2.1.30ML4-119.1; found Checking for libstdc++-3.3.3-43.24; found libstdc++-3.	780.7. Passed d <<<< Not found. Failed 3.3-43.34. Passe	< < d	<<	
Help Installed Products Back	Next) Ir	nstal	Can	cel

* ignore openmotif warning. SLES9 comes with latest version.

······		
Pracle Application Server 10g		
he following are components that you can install as part of Orac nese components do you want to install?	le Application Server 10	3. Which of
Iomponents	Install Status	
🕀 🗹 Oracle Application Server 10g 10.1.2.0.0	NewInstall	
Oracle Process Management Notification 10.1.2.0.0	New Install	
🕀 🗹 Enterprise Manager plugin Common Files 10.1.0.2.0 Beta	NewInstall	

Confirm Pre-Installation Requirements:

Confirm Pre-Installation Requirements Verify that you have met all of the minimum pre-installation requirements listed below, and then select all of the checkboxes. For details on performing these checks, click the Help button. If your computer does not meet the minimum requirements, you will get errors later in the installation or when you run OracleAS 10g. Requirement Description Root privileges You must have access to the root user on this . Help Installed Products Back Next Install Pack	Oracle Universal Installer: Confirm P	re-Installation Requirements
Verify that you have met all of the minimum pre-installation requirements listed below, and then select all of the checkboxes. For details on performing these checks, click the Help button. If your computer does not meet the minimum requirements, you will get errors later in the installation or when you run OracleAS 10g. Requirement Description Root privileges You must have access to the root user on this . Help Installed Products Back Next	Confirm Pre-Installation Req	uirements
f your computer does not meet the minimum requirements, you will get errors later in the installation or when you run OracleAS 10g. Requirement Description I Root privileges You must have access to the root user on this . Help) Installed Products) Back Next) Install (Cancel	/erify that you have met all of the minimum pre-inst all of the checkboxes. For details on performing the	tallation requirements listed below, and then select se checks, click the Help button.
Requirement Description ✓ Root privileges You must have access to the root user on this	f your computer does not meet the minimum requir or when you run OracleAS 10g.	ements, you will get errors later in the installation
Root privileges You must have access to the root user on this You must have access to the root user on this Help Installed Products	Requirement	Description
Help) Installed Products) Back Next) Install) Cancel	Root privileges	You must have access to the root user on this
Help) (Installed Products) (Back Next) (Install) (Cancel		
Help) Installed Products) Back Next) Install Cancel	a	E E E E E E E E E E E E E E E E E E E
	Help Installed Products Bac	k Next Install Cancel

Select components you would like to Install:

se	lect Configuration Optio	ns
Sele nsta	ct the components that you would like to co allation.	nfigure and automatically start at the end of the
doci Drai	can aways component after n umentation for each component. cle HTTP Server and OracleAS 10g Containe Available Components:	ers for J2EE are always configured.
	Oracle HTTP Server	Serves both static and dynamic web content.
	OracleAS 10g Containers for J2EE	Runs enterprise JAVA applications.
4	OracleAS 10g Web Cache	Accelerates the delivery of both static and dyn
	OracleAS 10g Farm Repository	OracleAS 10g Farm Repository
	Identity Management Access	Enables Single Sign-On for J2EE and web appli

Specify Port Configuration Options: Select Automatic

Oracle	Universal Installer: Speci	y Port Configuration Option	s 🧶 –)
Specif	y Port Configuratior	n Options	
Select the you decid a text file	method which you want to use to cr e to manually configure the ports, th and enter the filename below. Ports	onfigure the ports for Oracle10g Application of the port numbers you must specify the port numbers the port numbers and the port numbers are possible to the port numbers are possible to the	ation Server. If for each port in
 Automa 	tic		
C Manual:	le/OracleAS/staticports.ini	Browse	
Help	Installed Products	Back Next Install) <u>C</u> ancel

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	I Installer: Specify Instance Name and ias_admin P	. ×
Specify Insta	Ince Name and ias_admin Password	
All OracleAS 10g insta name of the host are a	nces installed on a host must have unique names. The hostname and domain appended to the instance name.	
Each OracleAS 10g ins Passwords are not sha	tance has its own password, regardless of which user performed the installation ared across instances, even if the instances were installed by the same user.	n.
The password must h least one of the charac	ave a minimum of 5 alphanumeric characters, maximum 30 characters, and at cters must be a number.	
Administrator Usernan	ne: las_admin	
Instance N <u>a</u> me:	SLES9	
ias_admin Pass <u>w</u> ord:	*****	
Confirm Password:		
	Illed Products) Back Next Install Cancel	
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 Name	Status	Туре	f
ADT business components configuration Assistant	Jucceeueu	Recommended	10
OracleAS Instance Configuration Assistant	Succeeded	Recommended	
OC4J Instance Configuration Assistant	Succeeded	Recommended	
OPMN Configuration Assistant	Succeeded	Recommended	
Register DCM Plug-Ins With EM	Succeeded	Recommended	
Application Server Control Configuration Assistant	Succeeded	Recommended	
DCM Repository Backup Assistant	Succeeded	Recommended	l,
etails (see full log at /opt/oracle/oralnventory/logs/ins	stallActions2005-0	Betry Sto	p

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	
http://sles9.site:7782	erage.
Use the following URL to access the Oracle Enterprise Manager Applicati Server Control:	on
Thep://siesd.site:1012	
Belease Information)	
Help Installed Products Back Next Install	<u> </u>
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: ******** Use Password Manager to remember this password.	User Name:	
Password: ********** © Use Password Manager to remember this password.	ias_admin	
••••••••••• Use Password Manager to remember this password.	Password:	
Use Password Manager to remember this password.	****	
	Use Password Manager to reme	ember 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		1
Processes in Inst	tance: SLES9.sles9.si	te .		•	
ias-component	l process-type	i	pid	l status	
DSA	 I DSA	I I	N∕A	l Down	
HTTP_Server	I HTTP_Server	- I	11661	l Alive	
LogLoader	logloaderd	- I	N/A	l Down	-
dcm-daemon	l dcm-daemon	- I	11478	l Alive	
OC4J	l home	- T	11662	l Alive	
WebCache	l WebCache	- I.	11665	l Alive	
WebCache	l WebCacheAdmin	I	11664	l Alive	
oracle0sles9.~~/D	acleAS(onen/hin)				

Sample Script (ias):

	#! /bin/sh #				
	≁ # Author : Arun Singh, Novell 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 lasconsole				
	### BEGIN INIT INFO				
	# Provides: las				
	# Required-Start: \$network \$systog \$remote_ts raw				
	# Required-Stop. # Default-Start: 3.5				
	# Default-Stop: 0.1.2.6				
	# Description: Start the Oracle iAS				
### FND INIT INFO					
	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!