

Oracle Application Server 10g (9.0.4)
on
SUSE LINUX Enterprise Server 9
(How-to Install)

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Introduction

This document is provided to get you started and avoid initial mistakes. Please consult Oracle documents for other add-on products.

1. Hardware Requirements

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

Item	Java Developer Topology	Portal and Wireless Developer Installation Type	OracleAS Infrastructure 10g
Memory	512 MB	1 GB	1 GB
Disk space	520 MB	1.10 GB	2.50 GB
Space in /tmp	250 MB	250 MB	250 MB
Swap space	1.5 GB	1.5 GB	1.5 GB

2. OS Requirements

Oracle Application Server 10g (9.0.4) has been certified to run on systems running SUSE LINUX Enterprise Server 9 (SLES 9).

3. Installation Steps

1. Install SUSE LINUX Enterprise Server 9

SUSE LINUX Enterprise Server 9 with default packages will be sufficient to install Oracle Application Server 10g (9.0.4).

- 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 software versions is: kernel 2.6.5-7.97

```
#uname -r
```

- c. Please comment out all IPv6 addresses in **/etc/hosts** file and make sure "**hostname**" command returns a fully qualified hostname and

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.

1. Install orarun package from SLES 9 (mount CD3). You can use YaST setup tool or manual installation instruction to install orarun package.

You will be needing following orarun dependency packages (CD3):

1. glibc-devel-2.3.3-98.28.i586.rpm
2. libaio-devel-0.3.98-18.3.i586.rpm

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

Note: You can download latest version of orarun from <http://ftp.novell.com/partners/oracle/sles-9/>

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:
 1. 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.
 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.

3. Install GCC compiler

1. Install the gcc_old package for SLES9. This provides the old compiler GCC 2.95.3 in the /opt/gcc295 directory.

This package (gcc_old-2.95.3-175.2.i586.rpm) is included in

SLES9 Service Pack CD1.

2. Create the following symbolic link if it does not already exist:

```
# ln -s /opt/gcc295/lib/gcc-lib/i486-suse-linux/2.95.3/libgcc.a /lib/libgcc.a
```

3. Check whether the following symbolic links exist:

```
# ls -l /usr/bin/gcc /usr/bin/cc
```

```
lrwxrwxrwx 1 root root      3 2004-11-09 07:39 /usr/bin/cc -> gcc
-rwxr-xr-x 1 root root 98665 2004-06-30 10:18 /usr/bin/gcc
```

1. If these links exist, then create a backup:

```
# mv /usr/bin/gcc /usr/bin/gcc.backup
# mv /usr/bin/cc /usr/bin/cc.backup
```

2. Create the symbolic links for newly installed gcc compiler:

```
# ln -s /opt/gcc295/bin/gcc /usr/bin/gcc
# ln -s /opt/gcc295/bin/gcc /usr/bin/cc
```

You can restore the original files if required, however you must recreate the links as described in this procedure for Oracle Application Server 10g Forms and Reports Services to relink properly.

4. Check Available Ports

Make sure that the following port ranges are available in **"/etc/services"**:

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 a patch (3167528), a small perl script to remove these entries.

5. Install Oracle Application Server 10g (9.0.4)

1. Make sure you are logged in as “**oracle**” user.
2. Get Oracle Application Server 10g (9.0.4) Software from oracle web or use your Oracle Disks. If you have downloaded SW then gunzip and cpio files.
 - a. gunzip “file_name”
 - b. cpio command: cpio -idmv < “file_name”

3. Make sure following variables are exported before starting installation.
“export LD_ASSUME_KERNEL=2.4.21”
“export LD_PRELOAD=/usr/lib/libInternalSymbols.so”

4. Create following symbolic link (as a root user).

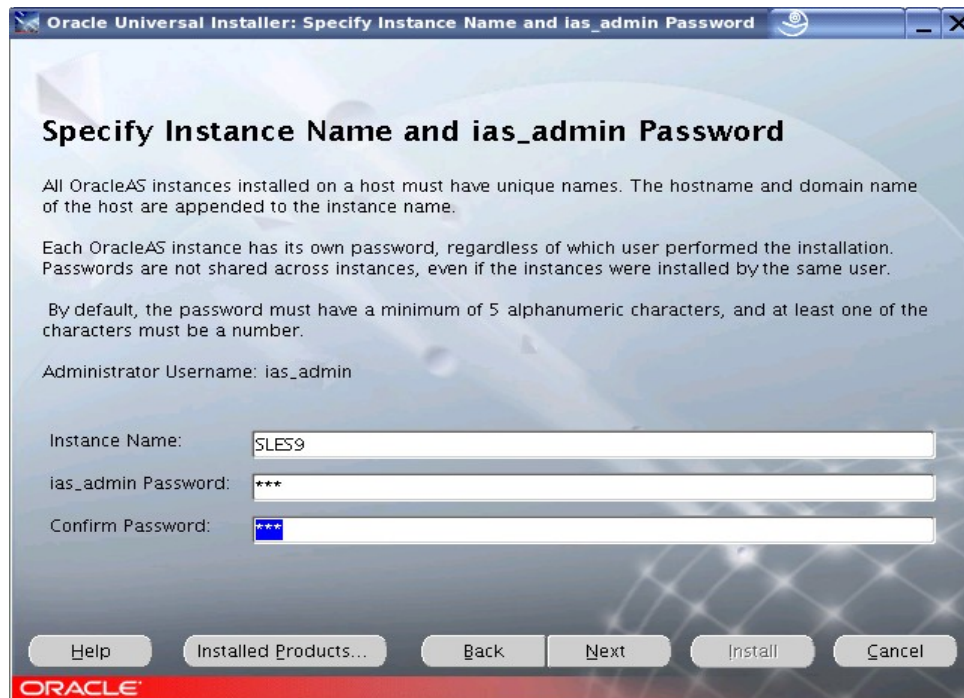
```
#ln -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2
```

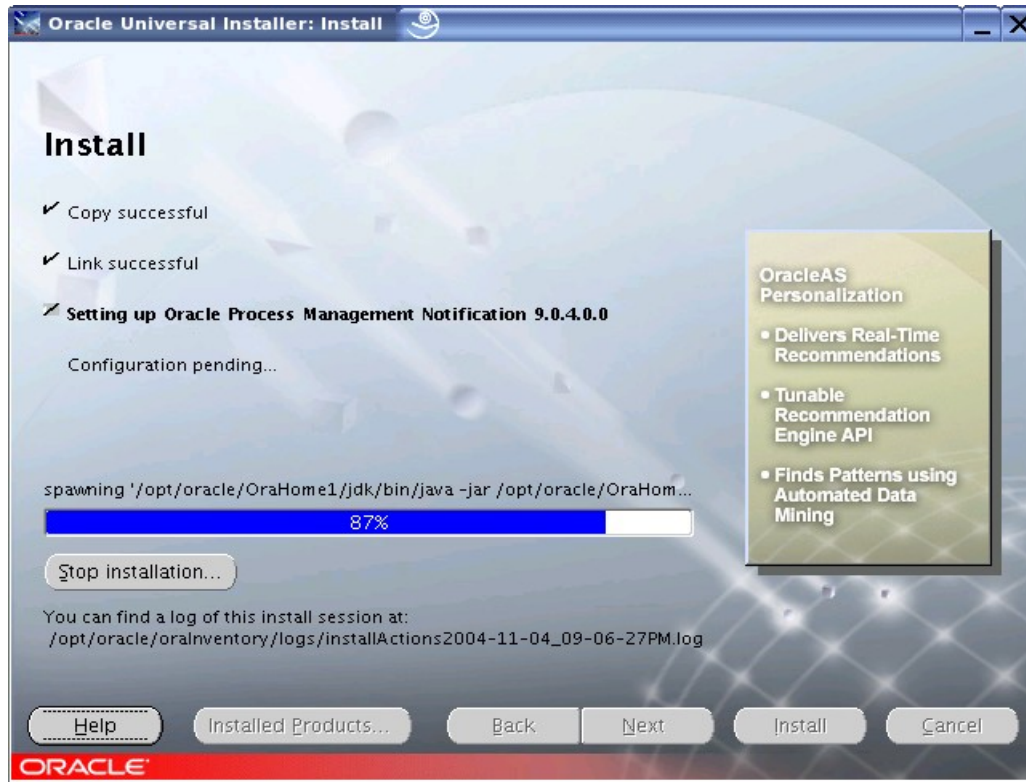
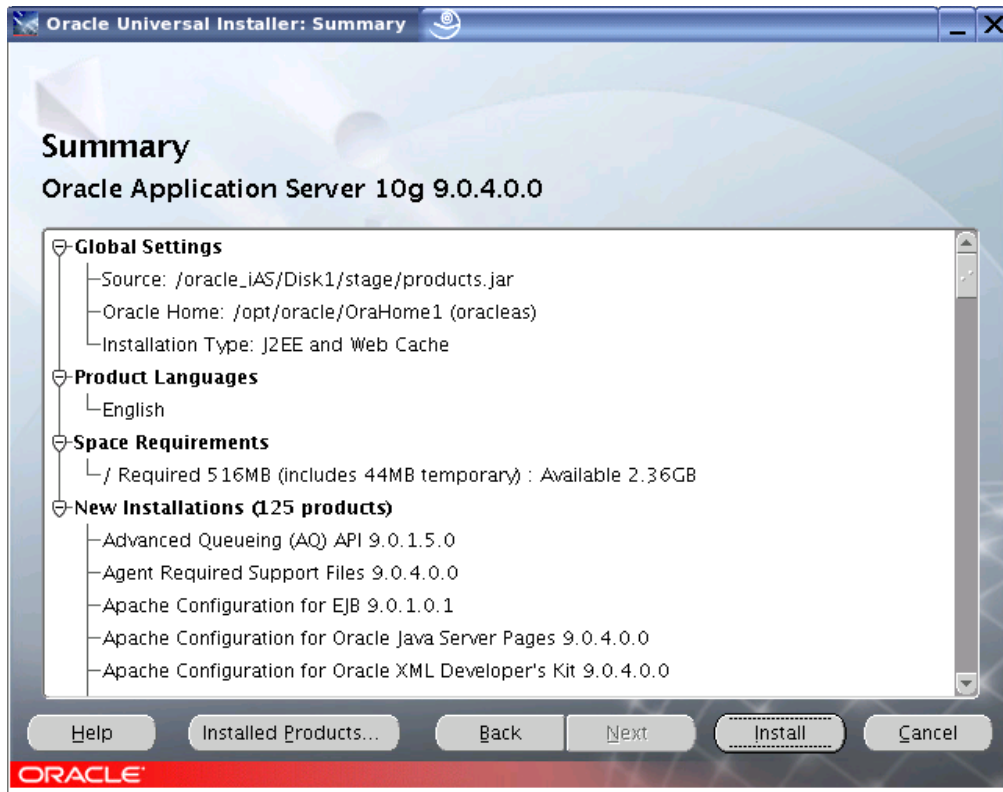
5. Before starting the installer, apply patch 3809117. This patch provides new oraparam.ini to be used with Oracle Universal Installer.
6. Run Oracle Universal Installer:
\$ runInstaller -paramFile /tmp/oraparam.ini

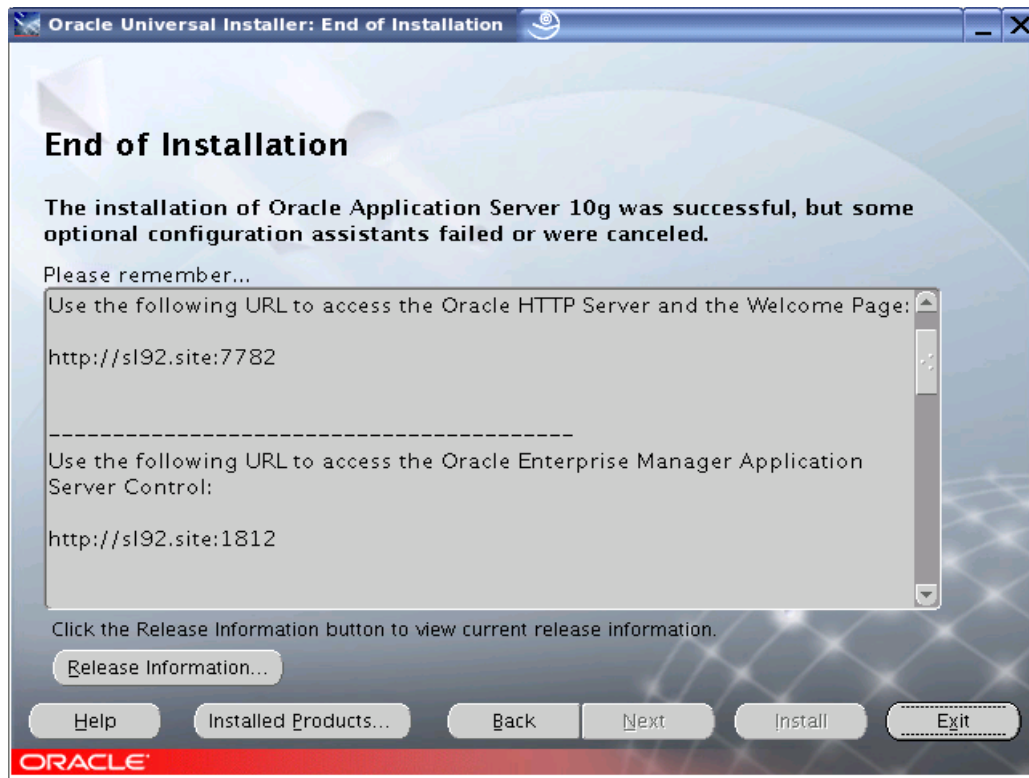
Note: During the installation ignore the message reporting insufficient memory. This is due to a known bug (bug no. 365639). Also, Installer unset the ORACLE_HOME, so enter correct Installation path.

Following install screen will appear and follow directions carefully.







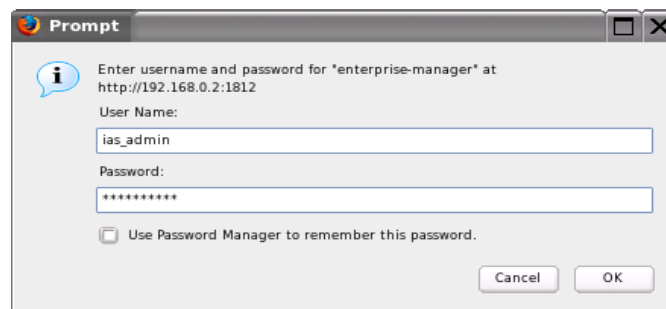


6. Oracle Enterprise Manager Application Server Control

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

```
oracle@sl92:~/OraHome1/bin> ./emctl start iasconsole
TZ set to US/Pacific
Oracle Enterprise Manager 10g Application Server Control 9.0.4.0.0
Copyright (c) 2002, 2003 Oracle Corporation. All rights reserved.
Starting Oracle 10g Application Server Control ..... started.
```

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



Oracle Enterprise Manager 10g
Application Server Control

Application Server: SLES9.s192.site

Home | J2EE Applications | Ports | Infrastructure

Page Refreshed Nov 9, 2004 1:15:28 PM

General

Stop All | Restart All

Status: Up
Host: s92.site
Installation Type: J2EE and Web Cache
Oracle Home: /opt/oracle/OraHome1

CPU Usage

- Application Server (0%)
- Idle (93%)
- Other (7%)

Memory Usage

- Application Server (100% 503MB)
- Free (0% 0MB)
- Other (0% 0MB)

System Components

Enable/Disable Components | Configure Component | Create OC4J Instance

Start | Stop | Restart | Delete OC4J Instance

Select Name	Status	Start Time	CPU Usage (%)	Memory Usage (MB)
<input type="checkbox"/> home	↑	Nov 9, 2004 1:00:02 PM	0.00	270.00
<input type="checkbox"/> HTTP_Server	↑	Nov 9, 2004 1:00:03 PM	0.30	90.45
<input type="checkbox"/> Management	↑	Nov 9, 2004 12:59:32 PM	0.10	541.75

TIP This table contains only the enabled components of the application server. Only components that have the checkbox enabled can be started or stopped.

Related Links: [Process Management](#)

7. 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/disable ias script or create link manually to appropriate run-level.

i.e. `chkconfig ias on`

Note: If you are expert in scripting, you can merge above instructions to existing oracle script (/etc/init.d/oracle).

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 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
### END INIT INFO

ORACLE_BASE=/opt/oracle
ORACLE_HOME=$ORACLE_BASE/oracleas
ORA_OWNER=oracle

case "$1" in
  start)
    echo -n "Starting Oracle iAS"
    su - $ORA_OWNER --command="$ORACLE_HOME/dcm/bin/dcmctl start" &
    su - $ORA_OWNER --command="$ORACLE_HOME/opmn/bin/opmnctl start" &
    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
```

4. Known Issues - Workaround

The following known issues exist for SUSE LINUX Enterprise Server 9. Please visit Oracle Metalink for latest updates.

1. APACHE WEB SERVER FAILED TO START.

Create symbolic link.

```
#ln -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2
```

2. DISCOVERER SESSION GETS SUSPENDED IN SUSE LINUX Enterprise Server 9.

Add the following line to the \$ORACLE_HOME/discoverer/discwb.sh file:

```
#export LD_ASSUME_KERNEL=2.4.21
```

3. WEBCACHE START/RESTART FROM ADMIN GUI GIVES ERROR ON SUSE LINUX Enterprise Server 9

Use the following command instead of the GUI interface:

```
#webcachectl stop/start/restart
```

4. **f90webm** defunct process hogs 99% of CPU with Forms & Reports 10gR1 due to usage of NPPL.

Normally, exporting LD_ASSUME_KERNEL in the environment before starting Forms & Reports should work.

To verify that f90webm uses linuxthreads instead of NPPL, pick a f90webm process ID and do

```
lsf -p 1493 | grep i686
f90webm 1493 oracle mem REG 8,2 84896
189637 /lib/i686/libpthread.so.0
f90webm 1493 oracle mem REG 8,2 175353 189636 /lib/i686/libm.so.6
f90webm 1493 oracle mem REG 8,2 1355218 19358 /lib/i686/libc.so.6
```

/lib/i686 indicates the use of linuxthreads.

/lib/tls/something indicates NPPL, like below.

```
lsf -p 31012 | grep tls
oracle 31012 oracle mem REG 8,2 175353
189648 /lib/tls/libm.so.6
oracle 31012 oracle mem REG 8,2 88694
189649 /lib/tls/libpthread.so.0
oracle 31012 oracle mem REG 8,2 1375249
189647 /lib/tls/libc.so.6
```

Alternatively, Add following section to \$ORACLE_HOME/opmn/conf/opmn.xml

```
<variable id="LD_ASSUME_KERNEL" value="2.4.21"/>
Like in this example excerpt:
<process-type id="OC4J_BI_Forms" module-id="OC4J">
  <environment>
    <variable id="DISPLAY" value="localhost:0"/>
    ...
    <variable id="LD_ASSUME_KERNEL" value="2.4.21"/>
  </environment>
...
...
</process-type>
```

5. Refernces

1. Oracle® Application Server 10g Release Notes 10g (9.0.4) for Linux x86 , (Part No. B12261-12)
2. Oracle Application Server 10g (9.0.4) *Documentation*
<http://www.oracle.com/technology/documentation/appserver10g.html>

History:

Date	Changes
10/01/04	Initial Document created.
04/15/05	Added Introduction, History
04/26/05	Added ias start/stop script
04/17/06	Added Forms & Report to Known Issues

Enjoy!