

Oracle® Application Server 10g

Quick Installation and Upgrade Guide

10g (9.0.4) for Linux x86

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1 Introduction

Oracle recommends reviewing the *Oracle Application Server 10g Installation Guide* and the *Oracle Application Server 10g Release Notes* before installing Oracle Application Server in a production environment or if there is an existing Oracle software installation on the computer

This Oracle Application Server Quick Installation Guide describes procedures for installation for the following Oracle Application Server installation types:

- **J2EE and Web Cache**
- **Portal and Wireless**

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Note: If you are installing on a computer with an existing Oracle home, Oracle recommends that you read the *Oracle Application Server 10g Installation Guide* before installation. To determine whether an Oracle installation exists, check whether the `/etc/oraInst.loc` file exists.

Note: If you are installing on a computer where DHCP is enabled, Oracle recommends that you read the *Oracle Application Server 10g Installation Guide* before installation.

See Also:

- *Oracle Application Server 10g Installation Guide*
- *Oracle Application Server 10g Upgrading to 10g (9.0.4)*

2 Requirements

This section describes pre-installation requirements for installation of Oracle Application Server. Oracle recommends that you review and complete the tasks listed in the following sections:

- [Section 2.1, "Check Hardware Requirements"](#)
- [Section 2.2, "Check Software Requirements"](#)
- [Section 2.3, "Create an Inventory Directory Group"](#)
- [Section 2.4, "Create Database Groups"](#)
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2.1 Check Hardware Requirements

Check that your computer has a Pentium 450 MHZ or better (32-bit) processor and 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

The installer may display inaccurate disk space requirement figures. Refer to the figures listed above for disk space requirements.

1. To determine the physical RAM size, enter the following command:

```
# grep MemTotal /proc/meminfo
```

2. To determine the amount of free disk space, enter the following command:

```
prompt> df -k dir.
```

Replace ***dir*** with the Oracle home directory or with the parent directory if the Oracle home directory does not exist yet. For example, if you plan to install Oracle Application Server in `/opt/oracle/infra`, you can replace ***dir*** with `/opt/oracle` or `/opt/oracle/infra`.

3. To determine the amount of available swap space, enter the following command:

```
# grep SwapTotal /proc/meminfo
```

If necessary, see your operating system documentation for information on how to configure additional swap space.

2.2 Check Software Requirements

Oracle Application Server is supported on Red Hat Enterprise Linux AS/ES Version 2.1, Version 3.0 and UnitedLinux 1.0 systems. For the most current list of supported Linux Operating Systems, check Oracle *MetaLink* (<http://metalink.oracle.com>). Oracle does not support customized kernels or modules not supported by the Linux vendor.

Depending on your distribution of Linux, see one of the following sections for information on checking the software requirements:

- [Software Requirements for Red Hat 2.1 Systems](#)
- [Software Requirements for Red Hat 3.0 Systems](#)
- [Software Requirements for UnitedLinux 1.0 Systems](#)

2.2.1 Software Requirements for Red Hat 2.1 Systems Complete the following steps before installing Oracle Application Server on Red Hat 2.1 systems:

Note: Oracle Application Server 10g (9.0.4) is certified with the following Operating System specific software. For the most current list of supported Operating System specific software, for example JDK version, Operating System version, check Oracle *MetaLink* (<http://metalink.oracle.com>).

1. Log in as the `root` user.
2. Check that Red Hat Enterprise Linux AS/ES 2.1 is installed:

```
# cat /etc/issue
```

3. Check that the errata 25 patch, or a higher errata patch approved by Red Hat, is applied using the following command:

```
# uname -r
```

For example, depending on the version of Red Hat installed, the errata 25 patch is listed in the output of the command as follows:

```
kernel-2.4.9-e.25  
kernel-smp-2.4.9-e.25  
kernel-enterprise-2.4.9-e.25
```

For information about Red Hat patches, see:

<http://www.redhat.com>

Note: You must have a Red Hat Network account to download errata files from the Red Hat web site.

4. Check that the `glibc-2.2.4-32` package is installed.
5. Check that the following software packages, or higher versions, are installed:
 - `gcc-2.96-108.1`
 - `pdksh-5.2.14-13`
 - `openmotif-2.1.30`
 - `sysstat-4.0.1`
 - `compat-glibc-6.2-2.1.3.2`
 - `libstdc++-2.96-108.1`

To determine whether a package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, download it and install it using the following command:

```
# rpm -i package_name
```

2.2.2 Software Requirements for Red Hat 3.0 Systems Complete the following steps before installing Oracle Application Server on Red Hat 3.0 systems:

Note: Oracle Application Server 10g (9.0.4) is certified with the following Operating System specific software. For the most current list of supported Operating System specific software, for example JDK version, Operating System version, check Oracle *MetaLink* (<http://metalink.oracle.com>).

1. Log in as the `root` user.
2. Check that Red Hat Enterprise Linux AS/ES 3.0 is installed:

```
# cat /etc/issue
Red Hat Enterprise Linux AS release 3 (Taroon)
```

The minimum supported kernel and glibc version are:

- 2.4.21-4-EL
- glibc-2.3.2-95.3

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

- gcc-3.2.3-20
- setarch-1.3-1
- pdksh-5.2.14
- openmotif21-2.1.30-8
- gnome-libs-1.4.1.2.90-34.1
- compat-glibc-7.x-2.2.4.32.5
- compat-gcc-7.3-2.96.122
- compat-libstdc++-7.3-2.96.122
- compat-libstdc++-devel-7.3-2.96.122
- compat-gcc-c++-7.3-2.96.122
- sysstat-4.0.7

Note: For Redhat 3.0, the equivalent version of openmotif 2.1.30-8 is openmotif21-2.1.30-8. The openmotif21-2.1.30-8 package can be

installed from disk number 3 of the Redhat 3.0 distribution by entering:

```
$ rpm -ivh openmotif21-2.1.30-8
```

To determine whether a package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, download it and install it using the following command:

```
# rpm -i package_name
```

4. Check whether the following symbolic links exist:

```
# cd /usr/bin  
# ls -l gcc g++  
gcc -> gcc296  
g++ -> g++296
```

If these links do not exist, create them as follows:

a. Create a backup of the existing files:

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

```
# mv /usr/bin/g++ /usr/bin/g++.backup
```

b. Create the symbolic links:

```
# ln -s /usr/bin/gcc296 /usr/bin/gcc
```

```
# ln -s /usr/bin/g++296 /usr/bin/g++
```

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

- 5.** If the hugemem kernel is used, set the architecture using following command:

```
prompt> setarch i386
```

- 6.** Apply patch no. 3006854. You can download this patch from *OracleMetaLink* (<http://metalink.oracle.com>). This patch creates the `/etc/libcwait.so` file and appends the following line to the `/etc/ld.so.preload` file:

```
/etc/libcwait.so
```

2.2.3 Software Requirements for UnitedLinux 1.0 Systems

Complete the following steps before installing Oracle Application Server on UnitedLinux 1.0 systems:

Note: Oracle Application Server 10g (9.0.4) is certified with the following Operating System specific software. For the most current list of supported Operating System specific software, for example JDK version, Operating System version, check Oracle *MetaLink* (<http://metalink.oracle.com>).

1. Log in as the `root` user.
2. Check that UnitedLinux 1.0 is installed:

```
# cat /etc/issue
Welcome to UnitedLinux 1.0 (i586) - Kernel \r (\l)
```

3. Check that SP2a or SP3 are installed. To determine the service pack version, enter the following command:

```
# rpm -qf /boot/vmlinuz
```

If the kernel version contains the string 2.4.19, SP2a is installed. If the kernel version contains the string 2.4.21, SP3 is installed. SP2a and SP3 are certified for Oracle Application Server 10g (9.0.4).

For SP2a, the minimum supported kernel and glibc versions are:

- 2.4.19
- glibc-2.2.5-179

For SP3, the minimum supported kernel and glibc versions are:

- 2.4.21
- glibc-2.2.5-213

4. Check that the following software packages, or higher versions, are installed:
 - gcc_old-2.95.3
 - pdksh-5.2.14
 - openmotif-2.1.30MLI4
 - sysstat-4.0.3
 - libstdc++-3.2.2-38

To determine whether a package is installed, enter a command similar to the following:

```
# rpm -q package_name
```

If a package is missing, download it and install it using the following command:

```
# rpm -i package_name
```

5. Create the following symbolic link for the perl executable if it does not already exist:

```
prompt> ln -sf /usr/bin/perl /usr/local/bin/perl
```

6. Create the following symbolic link for the fuser executable if it does not already exist:

```
prompt> ln -sf /bin/fuser /sbin/fuser
```

7. Create the correct compiler environment:

- a. Install the `gcc_old` package. This provides the old compiler GCC 2.95.3 in the `/opt/gcc295` directory.
- b. Check whether the following symbolic links exist:

```
# cd /usr/bin
```

```
# ls -l gcc cc
gcc -> /opt/gcc295/bin/gcc
cc -> /opt/gcc295/bin/gcc
```

If these links do not exist, create a backup of the existing files:

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

Create the symbolic links:

```
# ln -s /opt/gcc295/bin/gcc /usr/bin/gcc
# ln -s /opt/gcc295/bin/cc /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 to relink properly.

- c.** Create the following symbolic link if it does not already exist:

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

Depending on the UnitedLinux distribution, the first path in the previous command may contain a string other than `suse`.

- 8.** If the `orarun` package was installed, complete the following steps as the `oracle` user to reset the environment:

- a.** Enter the following commands:

```
prompt> cd /etc/profile.d
prompt> mv oracle.csh oracle.csh.bak
prompt> mv oracle.sh oracle.sh.bak
prompt> mv alljava.sh alljava.sh.bak
prompt> mv alljava.csh alljava.csh.bak
```

- b.** Use any text editor to comment out the following line from the `$HOME/.profile` file:

```
. ./oracle
```

- c.** Log out of the `oracle` user account.
- d.** Log into the `oracle` user account for the changes to take effect.

9. If any Java packages are installed on the system, unset the Java environment variables, for example `JAVA_HOME`.

Note: Oracle recommends that you do not install any of the Java packages supplied with the UnitedLinux distribution.

10. Check the `/etc/services` file to make sure that the following port ranges are available:
 - Ports 3060-3129 required for Oracle Internet Directory
 - Ports 3130-3199 required for Oracle Internet Directory (SSL)
 - Ports 1812-1829 required for Oracle Enterprise Manager (console)
 - Ports 1830-1849 required for Oracle Enterprise Manager (agent)
 - Ports 1850-1869 required for Oracle Enterprise Manager (RMI)

If necessary, remove entries from the `/etc/services` file and reboot the system. To remove the entries, you can use the perl script included with the patch 3167528. This patch is available from:

<http://metalink.oracle.com>

If these ports are not available, the associated configuration assistants will fail during the installation.

11. If you use Network Information Service (NIS):

- a. Make sure that the following line exists in the `/etc/yp.conf` file:**

```
hostname.domainname broadcast
```

- b. Make sure that the following line exists in the `/etc/nsswitch.conf` file:**

```
hosts: files nis dns
```

2.3 Create an Inventory Directory Group

Create a local operating system group to own the product files. You can use any name for the group, this guide uses the name `oinstall`. To create the `oinstall` group, enter the following as the `root` user:

```
# /usr/sbin/groupadd oinstall
```

For more information about operating system users and groups, see your operating system documentation or contact your system administrator.

2.4 Create Database Groups

This section applies only if you are installing the Portal and Wireless Developer Topology.

Create two groups `dba` and `oper` using the following commands:

```
# /usr/sbin/groupadd dba
# /usr/sbin/groupadd oper
```

2.5 Create an Operating System User

You can use any name for the user, this guide uses the name `oracle`. This user must belong to the `oinstall` operating system group.

If you installing a Portal and Wireless Developer topology you must also add this user to the `dba` and `oper` operating system groups.

To create the `oracle` operating system user for the Java Developer topology, enter the following command as the root user:

```
# /usr/sbin/useradd -g oinstall oracle
```

To create the `oracle` operating system user for the Portal and Wireless Developer topology, enter the following command as the root user:

```
# /usr/sbin/useradd -g oinstall -G dba,oper oracle
```

For more information about operating system users and groups, see your operating system documentation or contact your system administrator.

Set the password for the `oracle` user by entering the following command and follow the instructions on screen:

```
# passwd oracle
```

2.6 Check Environment Variables

Check the values of the environment variables shown in [Table 2](#) when logged in as the `oracle` user.

Note: If you set the environment variables as a different user, and then switch to the `oracle` user using the "`su - oracle`" command, the environment variables are not passed to the `oracle` user. Always check the environment variables before you start the installer.

Table 2 *Environment Variables*

Environment Variable	Description
DISPLAY	Set to the current computer. Example (C shell): <pre>% setenv DISPLAY machine1.acme.com:0.0</pre> Example (Bourne, Bash or Korn shell): <pre>\$ DISPLAY=machine1.acme.com:0.0; export DISPLAY</pre>

Table 2 Environment Variables (Cont.)

Environment Variable	Description
TMPDIR and TMP	<p>If you want the installer to use a directory other than <code>/tmp</code>, set the <code>TMP</code> and <code>TMPDIR</code> environment variable to the full path of an alternate directory. The <code>oracle</code> user must have write permissions for this directory.</p> <p>Example (C shell):</p> <pre>% setenv TMP /tmp2 % setenv TMPDIR /tmp2</pre> <p>Example (Bourne or Korn shell):</p> <pre>\$ TMP=/tmp2; export TMP \$ TMPDIR=/tmp2; export TMPDIR</pre>
ORACLE_HOME	The installer unsets this variable for you.

Table 2 Environment Variables (Cont.)

Environment Variable	Description
PATH, CLASSPATH, and LD_LIBRARY_PATH	<p>Check that these variables do not contain references to any Oracle home directories. To view the value of an environment variable, use the <code>echo</code> command:</p> <p>Example (C shell):</p> <pre>% echo \$PATH</pre> <p>Example (Bourne, Bash or Korn shell):</p> <pre>\$ echo \$PATH</pre> <p>If the PATH environment variable contains Oracle home directories, set the variable to contain the current directories except for the Oracle home directories.</p>
TNS_ADMIN	<p>Ensure this environment variable is not set.</p> <p>Example (C shell):</p> <pre>% unsetenv TNS_ADMIN</pre> <p>Example (Bourne, Bash or Korn shell):</p> <pre>\$ unset TNS_ADMIN</pre>

Table 2 Environment Variables (Cont.)

Environment Variable	Description
ORA_NLS33	Ensure this environment variable is not set. Example (C shell): % unsetenv ORA_NLS33 Example (Bourne, Bash or Korn shell): \$ unset ORA_NLS33
LD_BIND_NOW	Ensure this environment variable is not set on Linux systems. Example (C shell): % unsetenv LD_BIND_NOW Example (Bourne, Bash or Korn shell): \$ unset LD_BIND_NOW

2.7 Configure Kernel Parameters

This section is applicable only if you are installing a Portal and Wireless Developer topology. You will be installing a database for the OracleAS Metadata Repository.

Verify that the kernel parameters shown in the following table are set either to the formula shown, or to values greater than or equal to the recommended value shown. The procedures following the table describe how to verify and set the values.

Note: The Linux threads model creates a process for each thread. Oracle Application Server is highly multi-threaded to improve performance. On Linux, this requires that the kernel can handle many hundreds of processes.

Parameter	Value	File
semmsl	256	/proc/sys/kernel/sem
semms	32000	
semopm	100	
semgni	142	
shmall	2097152	
		/proc/sys/kernel/shmall

Parameter	Value	File
shmmax	2147483648	/proc/sys/kernel/shmmax
shmmni	142	/proc/sys/kernel/shmmni
msgmax	8192	/proc/sys/kernel/msgmax
msgmnb	65535	/proc/sys/kernel/msgmnb
msgmni	2878	/proc/sys/kernel/msgmni
file-max	131072	/proc/sys/fs/file-max
ip_local_port_range	20000 65000	/proc/sys/net/ipv4/ip_local_port_range

Note: If the current value for any parameter is higher than the value listed in this table, do not change the value of that parameter.

To view the current value specified for these kernel parameters, and to change them if necessary, follow these steps:

1. Enter commands similar to the following to view the current values of the kernel parameters:

Note: Make a note of the current values and identify any values that you must change.

Parameter	Command
semmsl, semmns, semopm, and semmni	# /sbin/sysctl -a grep sem This command displays the value of the semaphore parameters in the order listed.
shmall, shmmax, and semgni	# /sbin/sysctl -a grep shm
msgmax, msgmnb, and msgmni	# /sbin/sysctl -a grep msg
file-max	# /sbin/sysctl -a grep file-max

Parameter	Command
ip_local_port_range	# /sbin/sysctl -a grep ip_local_port_range This command displays a range of port numbers.

2. If the value of any kernel parameter is different to the recommended value, complete the following steps:
 - a. Using any text editor, create or edit the `/etc/sysctl.conf` file and add or edit lines similar to the following:

Note: Include lines only for the kernel parameter values that you want to change. For the semaphore parameters (`kernel.sem`), you must specify all four values. However, if any of the current values are larger than the recommended value, specify the larger value.

```
kernel.shmall = 2097152
kernel.shmmax = 2147483648
kernel.shmmni = 142
# semaphores: semmsl, semmns, semopm, semmni
```

```
kernel.sem = 256 32000 100 142
fs.file-max = 131072
net.ipv4.ip_local_port_range = 20000 65000
kernel.msgmni = 2878
kernel.msgmax = 8192
kernel.msgmnb = 65535
```

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
```

Review the output from this command to verify that the values are correct. If the values are incorrect, edit the `/etc/sysctl.conf` file, then enter this command again.

- c.** On **UnitedLinux** only, enter the following command to cause the system to read the `/etc/sysctl.conf` file when it reboots:

```
# chkconfig boot.sysctl on
```

Set Shell Limits for the oracle User

To improve the performance of the software on Linux systems, you must increase the following shell limits for the `oracle` user, depending on the user's default shell:

Bourne or Bash Shell Limit	Korn Shell Limit	C or tcsh Shell Limit	Hard Limit
<code>nofile</code>	<code>nofile</code>	<code>descriptors</code>	16384
<code>noproc</code>	<code>processes</code>	<code>maxproc</code>	16384

To increase the shell limits:

1. Add the following lines to `/etc/security/limits.conf` file where `->` represents the tab character:

```
* -> -> soft -> nproc -> -> 2047
* -> -> hard -> nproc -> -> 16384
* -> -> soft -> nofile -> -> 2048
* -> -> hard -> nofile -> -> 16384
```

2. Add the following line to the `/etc/pam.d/login` file, if it does not already exist:

```
session    required    /lib/security/pam_limits.so
```

3. Depending on the oracle user's default shell, make the following changes to the default shell start-up file:

For the Bourne, Bash, or Korn shell, add the following lines to the `/etc/profile` file:

```
if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 16384
    else
        ulimit -u 16384 -n 16384
    fi
fi
```

For the C or tcsh shell, add the following lines to the `/etc/csh.login` file:

```
if ( $USER == "oracle" ) then
    limit maxproc 16384
    limit descriptors 16384
endif
```

2.8 Check Port Use

This section is applicable only if you are installing a Portal and Wireless Developer topology.

If you have other applications listening on port 1521, you may need to configure them so that they listen on a different port.

Verify whether port 1521 is in use by an application on your computer with the following command:

```
prompt> netstat -an | grep 1521
```

Review the output to verify if port 1521 is in use.

If port 1521 is in use by your OracleAS Metadata Repository, then you may share the port with your installation of Portal and Wireless. Refer to the *Oracle Application Server 10g Installation Guide* for documentation on sharing ports.

If port 1521 is in use by a third-party application, you need to configure the application to use a different port. Refer to the *Oracle Application Server 10g Installation Guide* or third-party documentation for information on sharing ports.

2.9 Mounting Your CD-ROM or DVD

Oracle CD-ROMs are in ISO 9660 format with Rockridge extensions. The DVD is in DVD-ROM format.

On UNIX systems, mounting or unmounting the disc manually requires `root` privileges. Unmount the disc before removing it from the drive, using the `umount` command.

To check whether the disc mounted automatically on Red Hat systems, enter the following command:

```
# ls /mnt/cdrom
```

To check whether the disc mounted automatically on UnitedLinux systems, enter the following command:

```
# ls /media/cdrom
```

If the disc is not mounted, you must mount the disc manually.

In the following instructions, the disc mount point is referred to as `/cdrom`. If your mount point is different, substitute the correct mount point name for all references to `cdrom`.

To mount the disc manually:

1. Place the disc in the disc drive.

2. Log in as the `root` user and create a disc mount point directory accessible by all users:

```
% su
Password:
# mkdir /cdrom
# chmod 777 /cdrom
```

3. Mount the disc drive on the disc mount point directory.

For Red Hat systems, enter:

```
# mount -t iso9660 /dev/cdrom /mnt/cdrom
```

For UnitedLinux systems, enter:

```
# mount -t iso9660 /dev/cdrom /media/cdrom
```

4. Exit the root account.

```
# exit
```

2.10 Starting up the Installer

1. Log in as the `oracle` user. If you switched to the `oracle` user using the "`su - oracle`" command, check the values of the

environment variables again because the variables are not passed to the `oracle` user.

2. Insert Disk 1 into the disc drive.
3. Run the following commands (shown below the notes) to start up the Oracle Universal Installer from the disc.

Notes:

- Be sure you are not logged in as the root user when you start the Oracle Universal Installer. If you are, then only the root user will have permissions to manage Oracle Application Server.
 - Do not start the installation inside the `mount_point` directory. If you do, then you may not be able to eject the installation disk. The `cd` command, shown below, changes the current directory to your home directory.
 - The Oracle Universal Installer cannot display Korean or Chinese fonts on Linux because JDK 1.4.2_02 does not support these fonts
-
-

CD-ROM users on Red Hat systems enter:

```
prompt> cd  
prompt> /mnt/cdrom/runInstaller
```

CD-ROM users on UnitedLinux systems enter:

```
prompt> cd  
prompt> /media/cdrom/runInstaller
```

DVD users on Red Hat systems enter:

```
prompt> cd  
prompt> /mnt/cdrom/application_server/runInstaller
```

DVD users on UnitedLinux systems enter:

```
prompt> cd  
prompt> /media/cdrom/application_server/runInstaller
```

3 Installation

This section describes how to install these two Oracle Application Server topologies:

- **Java Developer topology:** Install this topology if you need a simple container for deploying and testing J2EE applications. See [Section 3.1, "Installing a Java Developer Topology"](#).
- **Portal and Wireless Developer topology:** Install this topology if you plan to develop applications that use OracleAS Portal, Oracle Application Server Wireless, or Identity Management services, such as Oracle Internet Directory and OracleAS Single Sign-On. You must install OracleAS Infrastructure 10g to install this topology. See [Section 3.2, "Installing a Portal and Wireless Developer Topology"](#).

These topologies are intended for development environments. See the *Oracle Application Server 10g Installation Guide* for additional topologies, including deployment topologies. Oracle recommends reviewing the *Oracle Application Server 10g Installation Guide* to verify coexistence of Oracle Application Server components for your deployment topology.

3.1 Installing a Java Developer Topology

A Java Developer topology consists of a J2EE and Web Cache instance, on which you can deploy and run J2EE applications.

Perform the following procedure to install a J2EE and Web Cache instance:

1. Start up the installer. See [Section 2.10, "Starting up the Installer"](#) for details.
2. Welcome screen: Click **Next**.
3. If this is the first Oracle product to be installed on this computer, you have to set up the "inventory" directory, as prompted by these screens:
 - a. Specify Inventory Directory screen

Enter the full destination path for the inventory directory:

Enter the full destination path for the directory where you want the installer to store its files. Enter a directory that is different from the Oracle home directory.

Example: `/opt/oracle/oraInventory`

Click **OK**.

b. UNIX Group Name screen

Enter the name of the operating system group to have write permission for the inventory directory.

Example: oinstall

Click **Next**.

- c. Run orainstRoot.sh:** Run the orainstRoot.sh script in a different shell as the root user. The script is located in the oraInventory directory.

Click **Continue**.

4. Specify File Locations screen:

Name: Enter a name to identify this Oracle home.

Example: OH_J2EE_904

Destination Path: Enter the full path to the destination directory. This is the Oracle home directory.

Example: /opt/oracle/OraJ2EE_904

If the destination directory does not exist, Oracle Universal Installer creates it.

If you want to create the destination directory beforehand, create it as the `oracle` user; do not create it as the `root` user.

Click **Next**.

5. Specify Hardware Cluster Installation Mode screen: This screen appears only on a computer that is part of a hardware cluster. This instance cannot be automatically installed on all computers of a cluster.

For information on installing Oracle Application Server in a clustered environment, see the *Oracle Application Server 10g Installation Guide*.

If you want to continue this installation, select **Single Node Installation** and click **Next**.

6. Select a Product to Install screen: Select Oracle Application Server and click **Next**.
7. Select Installation Type screen: Select **J2EE and Web Cache** and click **Next**.
8. Preview of Steps for Middle Tier Installation screen: Click **Next**.
9. Confirm Pre-Installation Requirements screen: Verify that your computer meets all the requirements, and click **Next**.

10. Select Configuration Options screen:

Select OracleAS Web Cache if you want to use caching capabilities with this Oracle Application Server instance.

Do not select **Identity Management Access**.

Do not select **OracleAS Database-Based Cluster**.

Do not select **OracleAS File-Based Cluster**.

Click **Next**.

11. Specify OracleAS Instance Name and ias_admin Password screen:

Instance Name: Enter a name for this instance. If you have more than one Oracle Application Server instance on a computer, the instance names must be unique.

Example: J2EE_904

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.

Click **Next**.

12. Summary screen

Verify your selections and click **Install**.

Oracle Universal Installer is now installing the files and configuring Oracle Application Server components. This may take a while.

13. Run root.sh dialog

Note: Do not run `root.sh` until prompted. Oracle Universal Installer will display a screen prompting you to run `root.sh`.

In a different window, login as the root user and run the `root.sh` script. The script is located in this instance's Oracle home directory. After the `root.sh` script has completed, click **OK** on the Run root.sh dialog.

The Configuration Assistants screen display shows the progress of the configuration assistants. The Configuration Assistants configure Oracle Application Server components.

14. End of Installation screen

Click **Exit** to quit the installer.

3.2 Installing a Portal and Wireless Developer Topology

In this topology, you install a Portal and Wireless middle tier, which enables you to deploy applications that use components such as OracleAS Portal and OracleAS Wireless. The Portal and Wireless middle tier requires an OracleAS Infrastructure 10g, which you will install before installing the Portal and Wireless middle tier.

3.2.1 Installing an OracleAS Infrastructure 10g

This procedure installs an infrastructure with a new database and a new Oracle Internet Directory.

1. Start up the installer. See [Section 2.10, "Starting up the Installer"](#) for details.
2. Welcome screen: Click **Next**.

3. If this is the first Oracle product to be installed on this computer, you have to set up the "inventory" directory, as prompted by these screens:

- a. Specify Inventory Directory screen

Enter the full destination path for the inventory directory:

Enter the full destination path to the directory where you want the installer to store its files. Enter a directory that is different from the Oracle home directory.

Example: `/opt/oracle/oraInventory`

Click **OK**.

- b. UNIX Group Name screen

Enter the name of the operating system group to have write permission for the inventory directory.

Example: `oinstall`

Click **Next**.

- c. Run orainstRoot.sh: Run the `orainstRoot.sh` script in a different shell as the root user. The script is located in the `oraInventory` directory.

Click **Continue**.

4. Specify File Locations screen:

Name: Enter a name to identify this Oracle home.

Example: OH_INFRA_904

Destination Path: Enter the full destination path to the Oracle home directory.

Example: /opt/oracle/OraInfra_904

If the destination directory does not exist, Oracle Universal Installer creates it.

If you want to create the destination directory beforehand, create it as the `oracle` user; do not create it as the `root` user.

Click **Next**.

5. Specify Hardware Cluster Installation Mode screen: This screen appears only on a computer that is part of a hardware cluster.

For information on installing Oracle Application Server in a clustered environment, see the *Oracle Application Server 10g Installation Guide*.

If you want to continue this installation, select **Single Node Installation** and click **Next**.

6. Select a Product to Install screen: Select **OracleAS Infrastructure 10g** and click **Next**.
7. Select Installation Type screen: Select **Identity Management and OracleAS Metadata Repository** and click **Next**.
8. Preview of Steps for Infrastructure Installation screen: Click **Next**.
9. Confirm Pre-Installation Requirements screen: Verify that your computer meets all the requirements, and click **Next**.

Refer to [Section 2.8, "Check Port Use"](#) to verify availability of port 1521.

10. Select Configuration Options screen:

Select **Oracle Internet Directory**.

Select **OracleAS Single Sign-On**.

Select **Oracle Delegated Administration Services**.

Select **Oracle Directory Integration and Provisioning**.

Do not select **OracleAS Certificate Authority**.

Do not select **High Availability Addressing**.

Click **Next**.

11. Specify Namespace in Internet Directory screen: Select **Suggested Namespace** and click **Next**.

12. Enter information to create the OracleAS Metadata Repository database:

a. Specify Privileged Operating System Groups screen

This screen appears if you are running the installer as a user who is not in the `dba` operating system groups.

Database Administrator (OSDBA) Group: Enter the name of an operating system group that you belong to.

Example: `dbadmin`

Database Operator (OSOPER) Group: Enter the name of an operating system group that you belong to.

Example: `dbadmin`

Click **Next**.

b. Specify Database Identification screen

Global Database Name: Enter a name for the OracleAS Metadata Repository database, and append the domain name of your computer to the database name.

Example: `asdb.acme.com`

SID: Enter the system identifier for the OracleAS Metadata Repository database. Typically this is the unique global database name, but without the domain name. The SID must be unique across all databases.

Example: `asdb`

Click **Next**.

- c. Specify and confirm the Passwords for the SYS and SYSTEM Users screen: Set the passwords for these database users, which are privileged accounts used for database administration.

Click **Next**.

- d. Specify Database File Location screen:

Enter or select a directory for database files: Enter the directory where you want the installer to create data files for the OracleAS Metadata Repository database.

Example: `/data_partition/ias_dbfiles/`

Click **Next**.

- e. Specify Database Character Set screen: Select **Use the default character set**.

Click **Next**.

- 13. Specify OracleAS Instance Name and ias_admin Password screen:

Instance Name: Enter a name for this instance. If you have more than one Oracle Application Server instance on a computer, the instance names must be unique.

Example: INFRA_904

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.

Click **Next**.

- 14. Summary screen

Verify your selections and click **Install**.

Oracle Universal Installer is now installing the files and configuring Oracle Application Server components. This may take a while.

Note: If you are installing on UnitedLinux 1.0 and an error is displayed during the relinking phase, refer to "[Additional Installation Steps for UnitedLinux](#)" on page 61 for information on resolving this error.

15. Run root.sh screen

Note: Do not run `root.sh` until prompted. Oracle Universal Installer will display a screen prompting you to run `root.sh`.

In a different window, login as the root user and run the `root.sh` script. The script is located in this instance's Oracle home directory. After the `root.sh` script has completed, click **OK** on the Run root.sh dialog.

16. End of Installation screen

Click **Exit** to quit the installer.

3.2.2 Installing a Portal and Wireless Instance This procedure installs a Portal and Wireless instance and configures it to use the infrastructure installed in [Section 3.2.1, "Installing an OracleAS Infrastructure 10g"](#).

1. Start up the installer. See [Section 2.10, "Starting up the Installer"](#) for details.
2. Welcome screen: Click **Next**.
3. Specify File Locations screen:

Name: Enter a name to identify a new Oracle home.

Example: `OH_PORTAL_904`

Destination Path: Enter the full destination path to the Oracle home directory.

Example: `/opt/oracle/OraPortal_904`

If the destination directory does not exist, Oracle Universal Installer creates it.

If you want to create the destination directory beforehand, create it as the `oracle` user; do not create it as the `root` user.

Click **Next**.

4. Specify Hardware Cluster Installation Mode screen: This screen appears only if you are installing on a computer that is part of a hardware cluster.

For information on installing Oracle Application Server in a clustered environment, see the *Oracle Application Server 10g Installation Guide*.

If you want to continue this installation, select **Single Node Installation** and click **Next**.

5. Select a Product to Install screen: Select **Oracle Application Server** and click **Next**.
6. Select Installation Type screen: Select **Portal and Wireless** click **Next**.
7. Preview of Steps for Middle Tier Installation screen: Click **Next**.
8. Confirm Pre-Installation Requirements screen: Verify that your computer meets all the requirements, and click **Next**.
9. Select Configuration Options screen:
Select **OracleAS Portal**.
Select **OracleAS Wireless**.
Click **Next**

10. Enter connect information for Oracle Internet Directory:

a. Register with Oracle Internet Directory screen

Hostname: Enter the name of the computer where Oracle Internet Directory is running.

Port: Enter the port number at which Oracle Internet Directory is listening. To determine Oracle Internet Directory's port number, look in the `portlist.ini` file located in the `ORACLE_HOME/install` directory of the infrastructure.

If you select **Use only SSL connections with this Oracle Internet Directory**, then you must obtain the port number from Oracle Internet Directory (SSL) parameter in the `portlist.ini` file.

Click **Next**.

b. Specify Login for Oracle Internet Directory screen

Username: Enter `orcladmin`. This is the name of the Oracle Internet Directory administrator.

Password: The password for `orcladmin` is the same as the password for the `ias_admin` user in the infrastructure. You entered this password when you installed the infrastructure

(see step 13 in [Section 3.2.1, "Installing an OracleAS Infrastructure 10g"](#)).

Click **Next**.

11. Select Metadata Repository screen

Repository: Select the OracleAS Metadata Repository that you want to use for this middle tier instance and click **Next**.

12. Specify OracleAS Instance Name and ias_admin Password screen:

Instance Name: Enter a name for this instance. If you have more than one Oracle Application Server instance on a computer, the instance names must be unique.

Example: PORTAL_904

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.

Click **Next**.

13. Summary screen

Verify your selections and click **Install**.

Oracle Universal Installer is now installing the files and configuring Oracle Application Server components. This may take a while.

Note: If you are installing on UnitedLinux 1.0 and an error is displayed during the relinking phase, refer to "[Additional Installation Steps for UnitedLinux](#)" on page 61 for information on resolving this error.

14. Run root.sh dialog

Note: Do not run `root.sh` until prompted. Oracle Universal Installer will display a screen prompting you to run `root.sh`.

In a different window, login as the root user and run the `root.sh` script. The script is located in this instance's Oracle home directory. After the `root.sh` script has completed, click **OK** on the Run root.sh dialog.

The Configuration Assistants screen display shows the progress of the configuration assistants. The Configuration Assistants configure Oracle Application Server components.

15. End of Installation screen:

Click **Exit** to quit the installer.

3.2.3 Additional Installation Steps for UnitedLinux

If an error is displayed during the relinking phase on UnitedLinux, do not close the Installer window. Complete the following steps to resolve the error:

1. Open a new terminal window.
2. Edit the `$ORACLE_HOME/lib/sysliblist` file and add the following entry to the end of the line:

```
-lgcc -L/opt/gcc295/lib/gcc-lib/i486-suse-linux/2.95.3
```

Depending on the UnitedLinux distribution, the required path may contain a string other than `suse`.

3. Make sure that the `ORACLE_HOME` environment variable is set correctly.

4. Make sure that the `LD_LIBRARY_PATH` environment variable includes the `$ORACLE_HOME/lib` directory.
5. Run the following command:

```
prompt> $ORACLE_HOME/bin/genclntsh
```
6. Click **Retry** in the Installer window. The installation will continue without displaying further errors.

3.3 Accessing the Welcome Page

After installation, access the Oracle Application Server Welcome page to verify that the installation was successful. The URL for the Welcome page is:

```
http://hostname:http_port
```

Determine the *http_port* by looking in the `portlist.ini` file, located in the `ORACLE_HOME/install` directory. The *http_port* is listed on the "Oracle HTTP Server listen port" line.

Note: If you have multiple instances of Oracle Application Server installed on a computer, each instance has its own set of port numbers. Check the `portlist.ini` file to be sure you are using the correct port numbers.

The Welcome page provides links to these useful pages:

- What is new in Oracle Application Server 10g (9.0.4)
- Oracle Enterprise Manager Application Server Control (Application Server Control), which is a browser-based administrative tool.
- Release Notes
- Demos

4 Installing OracleAS Metadata Repository in an Existing Database

If you want to install the OracleAS Metadata Repository in an existing Oracle database, you can run a tool called the Oracle Application Server Repository Creation Assistant (OracleAS RepCA). This tool loads the OracleAS Metadata Repository data into an existing database.

You can find the OracleAS RepCA and associated documentation in the *Installing the Oracle Application Server Metadata Repository into an Existing Database* document on the "OracleAS RepCA and Utilities" CD-ROM.

5 Upgrade

This section describes how to upgrade the J2EE and Web Cache installation type, and the OracleAS Portal component of the Portal and Wireless installation type from Release 2 (9.0.2) or Release 2 (9.0.3) to Oracle Application Server 10g (9.0.4).

This section does not explain how to upgrade the OracleAS Portal schema in the Infrastructure.

This section also includes instructions for using the Oracle Application Server Upgrade Assistant (OracleAS Upgrade Assistant), a tool that automates much of the upgrade process.

See Also: *Oracle Application Server 10g
Upgrading to 10g (9.0.4)*

This section features the following topics:

- [Section 5.1, "Conventions"](#)
- [Section 5.2, "Performing Pre-Upgrade Tasks"](#)
- [Section 5.3, "Performing a J2EE and Web Cache Upgrade"](#)
- [Section 5.4, "Performing a Portal and Wireless Upgrade"](#)

5.1 Conventions

In [Section 5](#), references to Oracle homes use the following conventions:

- The Release 2 (9.0.2) or Release 2 (9.0.3) Oracle Application Server instance is designated in path names as `<source_MT_OH>`.
- The 10g (9.0.4) instance is designated in path names as `<desination_MT_OH>`.

5.2 Performing Pre-Upgrade Tasks

Before upgrading, perform the tasks in the following sections:

- [Section 5.2.1, "Install Oracle Application Server 10g \(9.0.4\)"](#)
- Refer to the *Oracle Application Server 10g Upgrading to 10g (9.0.4)* for component specific pre-upgrade tasks.

5.2.1 Install Oracle Application Server 10g (9.0.4)

Before upgrading, you must install Oracle Application Server 10g (9.0.4). Select the J2EE and Web Cache or Portal and Wireless installation type during Oracle Application Server 10g (9.0.4) installation. The upgrade cannot take place unless there is a destination Oracle Application Server instance. (Do not install a new infrastructure.)

The installation type of the source instance must match the installation type of the destination instance. The source and destination Oracle Application Server instance must exist on the same computer. If the source instance uses an infrastructure, the destination instance must use the same Oracle Internet Directory and Metadata Repository. (Do not install a new infrastructure.) The 9.0.4 installation should use the same oraInventory directory as the source 9.0.2 installation.

Caution: It is critical that all pre-installation requirements are met and all associated manual steps are performed. If they are not, the 10g (9.0.4) installation will not function with a Release 2 (9.0.2) Infrastructure. Specifically, the OracleAS Single Sign-on configuration will fail.

Note: During installation, the OracleAS Wireless schema in the OracleAS Metadata Repository is upgraded.

See Also:

- [Section 3.1, "Installing a Java Developer Topology"](#)
- [Section 3.2, "Installing a Portal and Wireless Developer Topology"](#)

5.3 Performing a J2EE and Web Cache Upgrade

This procedure enables you to upgrade a J2EE and Web Cache instance:

1. Stop the Application Server Control with the following commands:

```
<source_MT_OH>/bin/emctl stop  
<destination_MT_OH>/bin/emctl stop iasconsole
```

2. In the J2EE and Web Cache instances, stop Web Cache, OPMN and the Oracle Application Server processes managed by it with the following command:

```
<source_MT_OH>/opmn/bin/opmnctl stopall  
<source_MT_OH>/webcache/bin/webcachectl stop  
<destination_MT_OH>/opmn/bin/opmnctl stopall
```

3. Start the OracleAS Upgrade Assistant with the following command:

```
<destination_MT_OH>/upgrade/iasua.sh
```

4. Welcome screen: Click **Next**.
5. Oracle Homes screen:

Select the source J2EE and Web Cache Oracle home from the drop-down list and click **Next**.

6. Examining Components dialog screen:

Click **OK**.

7. Requirements screen:

Ensure that all the requirements are met, and check all checkboxes then click **Next**.

8. Summary screen:

Click **Finish** to start the upgrade processing.

9. Upgrade Succeeded dialog screen:

Click **OK**.

See Also: *Oracle Application Server 10g Upgrading to 10g (9.0.4)*, section titled “Manual Upgrade Tasks You May Need to Perform” if the J2EE and Web Cache configuration you upgraded from has any of these conditions:

- Files in non-default locations
- Configuration files that refer to custom files and directories
- Static documents and directories in the default document root directory that you want to use in 10g (9.0.4)
- Web Cache configured as the first listener

5.4 Performing a Portal and Wireless Upgrade

Follow the steps below to upgrade the Portal and Wireless middle tier.

1. Stop the Application Server Control with the following commands:

```
<source_MT_OH>/bin/emctl stop  
<destination_MT_OH>/bin/emctl stop iasconsole
```

2. In the J2EE and Web Cache instance, stop Web Cache, OPMN and the Oracle Application Server processes managed by it with the following command:

```
<source_MT_OH>/opmn/bin/opmnctl stopall  
<source_MT_OH>/webcache/bin/webcachectl stop  
<destination_MT_OH>/opmn/bin/opmnctl stopall
```

3. Start the OracleAS Upgrade Assistant with the following command:

```
<destination_MT_OH>/upgrade/iasua.sh
```

4. Welcome screen:

Click **Next**.

5. Oracle Homes screen:

Select the Portal and Wireless source Oracle home from the drop-down list and click **Next**.

6. Examining Components dialog screen:

Click **OK**.

7. Requirements screen:

Ensure that all the requirements are met, and check all checkboxes. Click **Next**.

8. Summary screen:

Click **Finish** to start the upgrade processing.

9. Upgrade Succeeded dialog screen:

Click **OK**.

See Also: *Oracle Application Server 10g Upgrading to 10g (9.0.4)*, section titled “Completing the OracleAS Portal Upgrade” if the Parallel Page Engine or the Portal Development Kit Services for Java were customized. These customizations must be copied from the files in `<source_MT_OH>` to the corresponding files in `<destination_MT_OH>`.

6 Additional Resources

For more information, see these Oracle resources:

- Oracle Application Server Documentation Library CD-ROM
- Oracle Application Server platform-specific documentation on Oracle Application Server Disk 1

Printed documentation is available for sale in the Oracle Store at:

<http://oraclestore.oracle.com/>

You can also contact your Oracle representative to purchase printed documentation.

To download free release notes, installation documentation, white papers, or other collateral, visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

<http://otn.oracle.com/membership/index.htm>

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

<http://otn.oracle.com/docs/index.htm>

6.1 Oracle Support Services

If you purchased Oracle Product Support, you can call Oracle Support Services for assistance. Oracle Support Services include phone assistance, version updates and access to our service offerings. You have access to phone support 24 hours a day, 7 days a week. In the U.S.A., you can call Product Support at **1-800-223-1711**.

Make sure you have your CSI (CPU Support Identifier) number ready when you call. (Keep the CSI number for your records, because it is your key to Oracle Support Services.) The Oracle Store sends the CSI number to you in an e-mail alert when it processes your order. If you do not have your CSI number and you are in the U.S.A., you can look up your CSI number by accessing our online Order Tracker which provides detailed order information. Go to the Oracle Store and click on Order Tracker located above the top navigation bar.

For Oracle Support Services locations outside the U.S.A., call your local support center for information on how to access support. To find the local support center in your country, visit the Support Web Center at:

`http://www.oracle.com/support`.

At the Support Web Center you will find information on Oracle Support Services, such as:

- Contact information
- Instructions on how to access electronic services
- Helpful Web sites
- Support Resources
- Oracle Support Portfolio
- Oracle Support Services news

With Oracle Product Support, you have round-the-clock access to Oracle*MetaLink*, Oracle Support Services premier Web support offering. Oracle*MetaLink* offers you access to installation assistance, product documentation, and a technical solution knowledge base.

It has technical forums, where you can post questions about your Oracle products and receive answers from Oracle Technical Support Analysts and other Oracle users. The questions and answers remain posted for the benefit of all users.

Oracle*MetaLink* options include:

- Technical Assistance Request (TAR) access
- Patch downloads
- Bug database query access
- Product life-cycle information

You can access Oracle*MetaLink* at:

<http://metalink.oracle.com/>.

6.2 Version Updates

If you do not have a currently supported license, you can purchase the most recent version of an Oracle product from the Oracle Store (<http://oraclestore.oracle.com>).

If you do have a currently supported license, you can place non-urgent requests for version update shipments through the iTAR feature on Oracle*MetaLink*. You will need to log the iTAR type as a U.S. Client Relations/Non-Technical Request.

You can also request Version Update shipments in the U.S.A. by calling Client Relations. When requesting a Version Update, provide the following information to the Client Relations Analyst:

- CSI number
- Contact information
- Platform
- Product name
- Shipping address
- Version number of the product

Outside the U.S.A., call your local Oracle Support Center.

6.3 Premium Services

For information on our Premium Services, including onsite support, Oracle*GOLD*, Oracle*PLATINUM*, remote services, and upgrade packages, visit the Support Web Center at

<http://www.oracle.com/support> or call your Support Sales Representative in the U.S.A at **1-800-833-3536**.

6.4 Quick Reference

Resource	Contact Information/ Web Site
Purchase additional products, full-use licenses, version updates, and documentation in the U.S.A.	http://oraclestore.oracle.com
Access technical resources for developers	http://otn.oracle.com
Access installation documentation	http://otn.oracle.com
Access information about technical support	http://www.oracle.com/support
Locate local Oracle Support Centers outside the U.S.A.	http://www.oracle.com/support
	select Contact Support Services
Locate local Oracle offices outside the U.S.A.	http://www.oracle.com/international/html/
Call Client Relations in the U.S.A.	1-800-223-1711
Speak with your sales representative in the U.S.A.	1-800-ORACLE-1

Resource**Contact Information/ Web Site**

TTY Access to technical support 1-800-446-2398
in the U.S.A.

7 Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at:

<http://www.oracle.com/accessibility/>

7.1 Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

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