

Oracle® Secure Enterprise Search

Installation and Upgrade Guide

11g Release 1 (11.1.2.0.0) for Linux x86-64

E14820-04

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This document describes how to install and upgrade Oracle Secure Enterprise Search (Oracle SES).

This document contains the following sections:

- [Installing Oracle Secure Enterprise Search](#)
- [Upgrading Oracle Secure Enterprise Search](#)
- [Starting and Stopping Oracle Secure Enterprise Search](#)
- [What To Do Next](#)
- [Additional Resources](#)
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Installing Oracle Secure Enterprise Search

This section provides the information and procedures for performing an installation of Oracle SES. This section contains the following topics:

- [Preinstallation Tasks](#)
- [Installation Tasks](#)
- [Silent Installation Tasks](#)
- [Postinstallation Tasks](#)
- [Deinstallation Tasks](#)

Preinstallation Tasks

This section describes the requirements and tasks to complete prior to installing Oracle SES and contains the following topics:

- [Oracle SES Linux Certifications](#)
- [Oracle SES Browser Certifications](#)
- [General Information and Requirements for Installing Oracle Software](#)
- [Checking the Hardware Requirements](#)
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- [Installing on a Port Number Less Than 1024](#)
- [Checking the Oracle Base Directory](#)
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For additional preinstallation tips, see the following Oracle SES tutorial:

http://www.oracle.com/pls/topic/lookup?ctx=E35215-01&id=tut_ses_administration

Oracle SES Linux Certifications

Oracle SES is certified to run on the following Linux operating systems:

- Oracle Linux 4 (Update 6 or higher to support WebLogic)
- Oracle Linux 5
- Red Hat Enterprise Linux 4 AS and ES (Update 3 or higher)
- Red Hat Enterprise Linux 5 AS and ES (or later updates)
- SUSE Linux Enterprise Server 10

These are the only supported distributions and versions. Do not install Oracle SES on other versions of Linux.

Note: Oracle advises the following recommendations:

- Red Hat Enterprise Linux 5.2 or later to ensure the correct GLIBC version is included. Perform the same tasks for Oracle Linux as for the corresponding version of Red Hat Enterprise Linux. The software requirements (such as kernel and package versions) are similar.
 - Service Pack 3 (SP3) or later for systems running SUSE Linux Enterprise Server 10. If installing on a system running Service Pack 2 (SP2), then you will need to contact Novell for a fix for Novell bug 416838.
 - Red Hat Enterprise Linux 4 AS and ES are supported in a production environment. Red Hat Enterprise Linux 4 WS (Workstation) is not supported for production server deployment.
 - Red Hat Enterprise Linux 5 AS and ES are supported in a production environment. Red Hat Enterprise Linux 5 WS (Workstation) is not supported for production server deployment.
-

To determine the distribution and version of Linux, enter the following command:

```
# cat /proc/version
```

Oracle SES Browser Certifications

The Oracle SES administration tool and default query application are certified on the following browsers:

- Firefox 1.0.4, 1.5, 2.0
- Internet Explorer 6.0 SP2, 7.0
- Netscape 7.2, 8.1

- Mozilla 1.7

General Information and Requirements for Installing Oracle Software

This section describes the general requirements for installing Oracle software and contains these sections:

- [About the location of Oracle SES 11g Release 1 \(11.1.2.0.0\) software](#)
- [Procedures for Logging In to the System as root](#)

About the location of Oracle SES 11g Release 1 (11.1.2.0.0) software

- ORACLE_BASE is the root of the directory structure where Oracle SES software and its supporting infrastructure software are installed. This directory path is typically stored in an environment variable. On Linux and UNIX systems, you can reference the variable as \$ORACLE_BASE. (On Windows, the equivalent is %ORACLE_BASE%.)
- ORACLE_HOME refers to the path ORACLE_BASE/seshome. The path is typically stored in an environment variable. On Linux and UNIX systems, you can reference the variable as \$ORACLE_HOME. (On Windows, the equivalent is %ORACLE_HOME%.)
- In previous releases, the base path of Oracle SES was referred to as ORACLE_HOME. In Oracle SES release 11g, the base path is referred to as ORACLE_BASE. This represents the **Software Location** that you specify at the time of installing Oracle SES.

Therefore, for Oracle SES, ORACLE_HOME now refers to the path ORACLE_BASE/seshome.

- There are many other directories (or folders) under ORACLE_BASE, which are created by the installation of Fusion Middleware components such as WebLogic. The most important directories for you to be aware of are:
 - wlsserver. The WebLogic home.
 - Oracle_WC. A portlet or portal component.
 - oracle_common. The location of a set of Java Required Files.

Procedures for Logging In to the System as root Before you install Oracle software, you must complete several tasks as the root user. For logging in as the root user, complete one of the following procedures:

- [To install the software from an X Window System workstation or X terminal](#)
- [To install the software from a PC or other system with X server software](#)

Note: Unless you intend to complete a silent installation, you must install the software from an X Window System workstation, an X terminal, or a PC or other system with X server software installed.

To install the software from an X Window System workstation or X terminal

1. Start a local terminal session, for example, an X terminal (xterm).
2. If you are not installing the software on the local system, then enter the following command to enable the remote host to display X applications on the local X server:

```
xhost fully_qualified_remote_host_name
```

For example:

```
xhost somehost.us.example.com
```

3. If you are not installing the software on the local system, then use the `ssh`, `rlogin`, or `telnet` command to connect to the system on which you want to install the software:

```
telnet full_qualified_remote_host_name
```

4. If you are not logged in as the `root` user, then enter the following command to switch user to `root`:

```
su - root
```

To install the software from a PC or other system with X server software

1. Start the X server software.
2. Configure the security settings of the X server software to permit remote hosts to display X applications on the local system.
3. Connect to the remote system on which you want to install the software and start a terminal session on that system, for example, an X terminal (`xterm`).
4. If you are not logged in as the `root` user on the remote system, then enter the following command to switch user to `root`:

```
su - root
```

Creating Required Operating System Group and User Depending on whether this is the first time Oracle software is being installed on this system and on the products that you are installing, you may need to create the following group and user account:

- [Oracle Inventory Group \(oinstall\)](#)
- [Oracle Software Owner \(oracle\)](#)

A single Oracle Inventory group is required for all installations of Oracle software on the system. After the first installation of Oracle software, you must use the same Oracle Inventory group for subsequent Oracle software installations on that system.

Note: As an alternative to creating local users and groups, you can create them in a directory service, for example, Network Information Services (NIS). Contact your system administrator, or refer to your operating system documentation for information about using directory services.

Oracle Inventory Group (oinstall)

You must create the Oracle Inventory group the first time you install Oracle software on the system. The usual name chosen for this group is `oinstall`. This group owns the Oracle inventory, which is a catalog of all Oracle software installed on the system. If Oracle software is already installed on the system, then the existing Oracle Inventory group must be the primary group of the `oracle` user. Oracle recommends that you use the group name `oinstall` for the Oracle Inventory group.

Oracle Software Owner (oracle)

You must create the Oracle software owner user the first time you install Oracle software on the system. The usual name chosen for this user is `oracle`. This user owns all of the software installed during a given installation. This user must have the Oracle Inventory group as its primary group.

In Oracle documentation, the Oracle software owner user is referred to as `oracle`.

Determining Oracle Inventory Group and Oracle Software Owner User

To determine whether the Oracle Inventory group and the Oracle software owner already exist, and if necessary, to create them, follow the procedure in this section.

To determine if `oinstall` and `oracle` exist, and to create them

1. When you install Oracle software on the system for the first time, Oracle Universal Installer creates the `oraInst.loc` file. This file identifies the name of the Oracle Inventory group and the path of the Oracle Inventory directory. To determine whether the `oinstall` group exists, enter the following command:

```
more /etc/oraInst.loc
```

If the output of this command shows the `oinstall` group name, then the group already exists. For example, if the output is similar to the following, then `oinstall` already exists:

```
inventory_loc=/u01/app/oraInventory
inst_group=oinstall
```

The `inst_group` parameter shows the name of the Oracle Inventory group, `oinstall`.

2. If necessary, enter the following command to create the `oinstall` group:

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

3. To determine whether the `oracle` user exists and belongs to the Oracle Inventory group, enter the following command:

```
# id -a oracle
```

If the `oracle` user exists, then this command displays information about the groups to which the user belongs. The output should be similar to the following, indicating that `oinstall` is the primary group:

```
uid=440(oracle) gid=200(oinstall) groups=201(dba),202(oper)
```

If the output includes a `groups=` clause, then it specifies secondary groups.

4. If necessary, complete one of the following actions:

- If the `oracle` user exists, but its primary group is not `oinstall`, then enter the following command:

```
/usr/sbin/usermod -g oinstall oracle
```

If you wish, you can include the `-G` option to specify secondary groups:

```
/usr/sbin/usermod -g oinstall -G dba[,oper] oracle
```

- If the `oracle` user exists, but you want to use another existing user as the Oracle software owner or you want to create a new Oracle software owner, then ensure that the user's primary group is the Oracle Inventory group.

Note: You may need to contact your system administrator before using or modifying an existing user.

- If the `oracle` user does not exist, then enter the following command to create it:

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

This command creates the `oracle` user and specifies `oinstall` as the primary group. You can also include the `-G` option to specify secondary groups as follows:

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

Configure the password of the `oracle` user as follows:

```
# passwd oracle
```

Checking the Hardware Requirements

The system must meet the following minimum hardware requirements:

- [Memory Requirements](#)
- [Available RAM and Swap Space Requirement](#)
- [Hardware Requirements](#)

Note: The number of CPUs on the server host will affect the performance of concurrent queries over a prolonged period of time. Oracle recommends that you use systems with two or more CPUs for production deployments that serve 1000 or more users.

Memory Requirements The memory requirements are determined by the physical memory consumed by the database and by services such as the WebLogic server. The memory requirements for installing Oracle SES 11g Release 1 (11.1.2.0.0) are as follows:

- At least 2 GB of physical RAM. To determine the physical RAM size, enter the following command:

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

If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

Available RAM and Swap Space Requirement The following table describes the relationship between installed RAM and the configured swap space requirement:

Note: On Linux, the Hugepages feature allocates non-swappable memory for large page tables using memory-mapped files. If you enable Hugepages, then you need to deduct the memory allocated to HugePages from the available RAM before calculating swap space.

| Available RAM | Swap Space Required |
|------------------------|----------------------------|
| Between 2 GB and 8 GB | Equal to the size of RAM |
| Between 8 GB and 14 GB | 0.75 times the size of RAM |
| More than 14 GB | 10 GB |

- To determine whether the system architecture can run the software, enter the following command:

```
grep "model name" /proc/cpuinfo
```

Note: This command displays the processor type. Verify that the processor architecture matches the Oracle software release that you want to install. If you do not see the expected output, then you cannot install the software on this system.

- To determine the size of the configured swap space, enter the following command:

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

If necessary, refer to the operating system documentation for information about how to configure additional swap space. To determine the available RAM and swap space, enter the following command:

```
free
```

Note: Oracle recommends that you take multiple values for the available RAM and swap space before finalizing a value. This is because the available RAM and swap space keep changing depending on the user interactions with the computer.

Hardware Requirements Oracle SES requires a minimum of 7.6 GB of disk space to install. This includes 6.0 GB for the software and approximately 1.6 GB to create the initial Oracle SES index. Additional Oracle SES requirements are based on the amount of data that you need to search.

For example, to index 100,000 documents:

- 4 GB disk space
- 2 GB RAM

To index 1,000,000 documents:

- 20 GB disk space
- 6 GB RAM

Checking the Software Requirements

A system must meet the minimum software requirements described in this section.

- [Operating System and Browser Requirements](#)
- [Kernel Requirements](#)
- [Package Requirements](#)

Operating System and Browser Requirements The operating system and browsers must be among those listed in "[Oracle SES Linux Certifications](#)" on page 2 of this document.

Kernel Requirements The Kernel requirements for Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0) are as follows:

- For Oracle Linux 4 (Update 6 or higher to support WebLogic) and Red Hat Enterprise Linux 4 AS and ES (Update 3 or higher):
2.6.9
- For Oracle Linux 5 and Red Hat Enterprise Linux 5 AS and ES (or later updates):
2.6.18
- For SUSE Linux Enterprise Server 10:
2.6.16.21

To determine whether the required kernel is installed, enter the following command:

```
uname -r
```

The following example shows sample output displayed by running this command on a Red Hat Linux 4 system. It shows a kernel version (2.6.9) and errata level (55.0.0.0.2.EL) on the system.

```
2.6.9-55.0.0.0.2.EL
```

The following example shows sample output displayed by running this command on a SUSE Linux 10 system. It shows kernel version 2.6.16.21 on the system.

```
2.6.16.21-0.8-bigsm
```

Note: If the kernel version does not meet the requirement specified earlier in this section, then contact the operating system vendor for information about obtaining and installing kernel updates.

Package Requirements The packages required for Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0) are as follows:

Note: Oracle recommends that you install your Linux operating system with the default software packages (RPMs). Do not customize the RPMs during installation. This installation includes most required packages, and will help you to limit manual checks of package dependencies.

- The following or later version of packages for Oracle Linux 4.0 and Red Hat Enterprise Linux 4.0 should be installed:


```

binutils-2.15.92.0.2
compat-libstdc++-33-3.2.3
compat-libstdc++-33-3.2.3 (32 bit)
elfutils-libelf-0.97
elfutils-libelf-devel-0.97
gcc-3.4.5
gcc-c++-3.4.5
glibc-2.3.4-2.19
glibc-2.3.4-2.19 (32 bit)
glibc-common-2.3.4
glibc-devel-2.3.4
glibc-devel-2.3.4 (32-bit)
libaio-0.3.105
libaio-0.3.105 (32 bit)
libaio-devel-0.3.105
libgcc-3.4.5
libgcc-3.4.5 (32-bit)
libstdc++-3.4.5
libstdc++-3.4.5 (32 bit)
libstdc++-devel 3.4.5
make-3.80
numactl-0.6.4.x86_64
sysstat-5.0.5

```

- The following or later version of packages for Oracle Linux 5.0 and Red Hat Enterprise Linux 5.0 should be installed:

```

binutils-2.17.50.0.6
compat-libstdc++-33-3.2.3
compat-libstdc++-33-3.2.3 (32 bit)
elfutils-libelf-0.125
elfutils-libelf-devel-0.125
gcc-4.1.1
gcc-c++-4.1.1
glibc-2.5-12
glibc-2.5-12 (32 bit)
glibc-common-2.5
glibc-devel-2.5
glibc-devel-2.5-12 (32 bit)
libaio-0.3.106
libaio-0.3.106 (32 bit)
libaio-devel-0.3.106
libgcc-4.1.1
libgcc-4.1.1 (32 bit)
libstdc++-4.1.1
libstdc++-4.1.1 (32 bit)
libstdc++-devel 4.1.1
make-3.81
numactl-devel-0.9.8.x86_64
sysstat-7.0.0

```

- The following or later version of packages for SUSE Linux Enterprise Server 10 should be installed:

```

binutils-2.16.91.0.5
compat-libstdc++-5.0.7-22.2
gcc-4.1.0
gcc-c++-4.1.0
glibc-2.4-31.2
glibc-32bit-2.4-31.2 (32 bit)

```

```

glibc-devel-2.4
glibc-devel-32bit-2.4 (32 bit)
libaio-0.3.104
libaio-32bit-0.3.104 (32 bit)
libaio-devel-0.3.104
libelf-0.8.5
libgcc-4.1.0
libstdc++-4.1.0
libstdc++-devel-4.1.0
make-3.80
numactl-0.9.6.x86_64
sysstat-6.0.2

```

If a package is not installed, then install it from the Linux distribution media or download the required package version from the Linux vendor's Web site. To determine whether the required packages are installed, enter commands similar to the following example:

```
rpm -q package_name
```

Configuring Kernel Parameters

Before starting the Oracle installation, verify that the parameters shown in the following table are set to values greater than or equal to the recommended value shown. The procedure following the table describes how to verify and set the values.

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

| Parameter | Recommended Value | File |
|---------------------|---|--|
| semmsl | 250 | /proc/sys/kernel/sem |
| semmns | 32000 | |
| semopm | 100 | |
| semmni | 128 | |
| shmall | 2097152 | /proc/sys/kernel/shmall |
| shmmax | Either: <ul style="list-style-type: none"> 4GB - 1 byte Or <ul style="list-style-type: none"> Half the size of the physical memory (in bytes) Whichever is lower. | /proc/sys/kernel/shmmax |
| shmmni | 4096 | /proc/sys/kernel/shmmni |
| file-max | 65536 | /proc/sys/fs/file-max |
| ip_local_port_range | Minimum: 9000 Maximum: 65500 | /proc/sys/net/ipv4/ip_local_port_range Note: Ignore any Oracle Universal Installer warnings related to this parameter. |
| rmem_default | 262144 | /proc/sys/net/core/rmem_default |
| rmem_max | 4194304 | /proc/sys/net/core/rmem_max |

| Parameter | Recommended Value | File |
|--------------|---|---------------------------------|
| wmem_default | 262144 | /proc/sys/net/core/wmem_default |
| wmem_max | 1048576 | /proc/sys/net/core/wmem_max |
| aio-max-nr | Maximum: 1048576 Note: This value limits concurrent outstanding requests and should be set to avoid I/O subsystem failures. | /proc/sys/fs/aio-max-nr |

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

- Enter commands similar to those shown in the following table to view the current values of the kernel parameters.

| 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, shmmmax, and shmmni | /sbin/sysctl -a grep shm |
| file-max | /sbin/sysctl -a grep file-max |
| ip_local_port_range | /sbin/sysctl -a grep ip_local_port_range |
| rmem_default | /sbin/sysctl -a grep rmem_default |
| rmem_max | /sbin/sysctl -a grep rmem_max |
| wmem_default | /sbin/sysctl -a grep wmem_default |
| wmem_max | /sbin/sysctl -a grep wmem_max |
| aio-max-nr | /sbin/sysctl -a grep aio-max-nr |

- Make a note of the current values of the kernel parameters and identify any values that you must change.
- If the value of any kernel parameter is different from the recommended value, then complete the following steps:
 1. 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 minimum value, then specify the larger value.

```
fs.aio-max-nr = 1048576
fs.file-max = 65536
kernel.shmall = 2097152
kernel.shmmax = 2147483648
```

```
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
```

Note: The minimum value required for `shmmax` is 0.5 GB. However, Oracle recommends that you set the value of `shmmax` to 2.0 GB for optimum performance of the system.

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

2. 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.

3. Enter the command `/sbin/sysctl -a` to confirm that the values are set correctly.
4. On SUSE systems only, enter the following command to cause the system to read the `/etc/sysctl.conf` file when it restarts:

```
/sbin/chkconfig boot.sysctl on
```

5. On SUSE systems only, you must enter the GID of the `oinstall` group as the value for the parameter `/proc/sys/vm/hugetlb_shm_group`. Doing this grants members of `oinstall` a group permission to create shared memory segments.

For example, where the `oinstall` group GID is 501:

```
echo 501 > /proc/sys/vm/hugetlb_shm_group
```

After running this command, use `vi` to add the following text to `/etc/sysctl.conf`, and enable the `boot.sysctl` script to run on system restart:

```
vm.hugetlb_shm_group=501
```

Note: Only one group can be defined as the `vm.hugetlb_shm_group`.

6. After updating the values of kernel parameters in the `/etc/sysctl.conf` file, either restart the computer, or run the command `sysctl -p` to make the changes in the `/etc/sysctl.conf` file available in the active kernel memory.

Setting Shell Limits for the oracle User

To improve the performance of the software, you must increase the following shell limits for the `oracle` user:

| Shell Limit | Item in limits.conf | Hard Limit |
|--|---------------------|------------|
| Maximum number of open file descriptors | nofile | 65536 |
| Maximum number of processes available to a single user | nproc | 16384 |

To increase the shell limits

1. Add the following lines in the `/etc/security/limits.conf` file:

```
oracle      soft    nproc    2047
oracle      hard    nproc    16384
oracle      soft    nofile   1024
oracle      hard    nofile   65536
```

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

```
session    required    pam_limits.so
```

3. Depending on the `oracle` user's default shell, make the following changes to the default shell startup file:

- For the Bourne, Bash, or Korn shell, add the following lines in the `/etc/profile` file (or the `/etc/profile.local` file on SUSE systems):

```
if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 65536
    else
        ulimit -u 16384 -n 65536
    fi
fi
```

- For the C shell, add the following lines in the `/etc/csh.login` file (or the `/etc/csh.login.local` file on SUSE systems):

```
if ( $USER == "oracle" ) then
    limit maxproc 16384
    limit descriptors 65536
endif
```

4. The files that you have modified are activated upon login. You must log out and log back in for the changes to take effect.

Installing on a Port Number Less Than 1024

During installation of Oracle SES, you specify a middle tier port number. This number is included in the URL for accessing Oracle SES. For example, if you specify 7777 as the port number, then the search URL will look like this:

```
http://<example.com.com>:7777/search/query/search.jsp
```

If you wish to hide the port number in the search URL, then the port must be set to 80, which is the default port for HTTP connections. For example, if you change the middle tier port shown in the previous example to 80, then the search URL does not need to include the port number as shown in the following example:

```
http://<example.com.com>/search/query/search.jsp
```

On Linux and UNIX operating systems, only root users can bind to ports less than 1024. Since Oracle SES must be installed by a non-root user, you must install Oracle SES on port 1024 or higher and then change it later.

To change the port number later, after installation

1. During installation, specify a port greater than or equal to 1024.
2. After the installation is complete, follow the instructions in ["Changing the Oracle SES Middle Tier Port \(Optional\)"](#) on page 19 to change the port to a number less than 1024.

Checking the Oracle Base Directory

The Oracle home directory is generally a subdirectory of the Oracle base directory. Before installing Oracle SES, check to see if the ORACLE_BASE environment variable is set. If it is set, then ensure that you have write permission to that location. ORACLE_BASE should not reside within another user's directory structure.

Setting the Correct Locale

The correct environment parameters (LANG, NLS_LANG and LC_ALL) should be set before Oracle SES is installed. For file sources to successfully crawl and display multibyte environments, the locale of the system that starts the Oracle SES server must be the same as the target file system. This way, the Oracle SES crawler can "see" the multibyte files and paths. If the locale is different in the installation environment, then Oracle SES needs to be restarted from the environment with the correct locale. For example, for a Korean environment: Either set LC_ALL to ko_KR, or set both LC_LANG and LANG to ko_KR.KSC5601, then run `searchctl restartall` from an xterm. The command `searchctl restartall` will take about two and one half minutes to complete. This is because of the midtier start and stop logic, and because of the WebLogic node manager and domain server, all of which are new in this release.

Installation Tasks

Oracle SES is provided through electronic download (preferred) or on physical media. Either way, the installable product image is the same.

To obtain the software and start the installer

1. Ensure that you have checked all the minimum requirements, as described in ["Preinstallation Tasks"](#) on page 1 of this document.
2. Log on to the system on which you are performing the installation as the user who will install Oracle SES. Oracle SES must be installed by a non-root user.
3. Download the Oracle SES software distribution.

Note: If you received the software for this release on DVD, then mount the DVD on your system as you normally would and continue with these procedures. (The DVD contains the same archives as available for electronic download.)

4. Unzip the Oracle SES software.
 - There will be more than one zip archive, typically two.

- After you download each archive, extract all from each zip archive into the same destination directory. Preserve the path information when you extract the zip files.
5. Change to the directory into which you unzipped the zip archives.
 6. Start Oracle Universal Installer from your system prompt with the following command:

```
./runInstaller
```

The Specify Installation Details page appears for Oracle SES.

See Also: ["Installing on a System with an Existing Oracle SES Installation"](#) on page 16 in this document

7. Continue with the installation procedure:
 - [Performing a Fresh Installation for Oracle SES](#)

See Also: For a tutorial on Oracle SES, see:
http://www.oracle.com/pls/topic/lookup?ctx=E35215-01&id=tut_ses_administration

Performing a Fresh Installation for Oracle SES

Oracle Universal Installer provides the Specify Installation Details page for setting parameters for the location and home for Oracle SES. You must specify the administrative password. The remaining values are set to a default, but they can be overridden.

Figure 1 *Specify Installation Details page*

The installation parameters are as follows:

- **Search Server Name:** Name for your search server. To connect multiple Oracle SES instances to the same directory (authorization) server, each instance must have a distinct name.
- **Administrative Password and Confirm Password:** The password that you will later use to log on to the Oracle SES administration tool. This password must be at least eight characters long with at least one alpha character and one number.
- **HTTP Port:** The port on which the Oracle SES middle tier will listen. For example, if you install Oracle SES on host `example.com` and you specify port `7777`, then your search page URL will be as follows:

`http://example.com:7777/search/query/search`

Note: You must specify a number greater than or equal to 1024 for **HTTP Port**. You can change the port number after completing the installation, if needed. See ["Changing the Oracle SES Middle Tier Port \(Optional\)"](#) on page 19 and ["Installing on a Port Number Less Than 1024"](#) on page 13 in this document.

- **Software Location:** The location where Oracle SES home will be created, which is `ORACLE_BASE` by default. `ORACLE_BASE` is the root of the directory structure where Oracle SES software and its supporting infrastructure software are installed. See ["About the location of Oracle SES 11g Release 1 \(11.1.2.0.0\) software"](#) on page 3 in this document.
- **SES Home Location:** The default installed path is `ORACLE_BASE/seshome`.
- **Data Storage Location:** The default is `ORACLE_BASE/oradata`. This is the location where Oracle SES will store its data. The data storage location should not be within the Oracle SES software installation directory. Data storage should be outside of the `ORACLE_BASE/seshome` directory so that it will not be deleted during a future upgrade.

The following URLs indicate a successful installation:

- Search application: `http://host:port/search/query/search`
- Administration tool: `http://host:port/search/admin/index.jsp` (Log on using the password specified during installation.)

Installing on a System with an Existing Oracle SES Installation

You can install this release (or previous releases) of Oracle SES more than once on the same system as long as each installation is installed in a separate Oracle home. Follow the procedures under [Performing a Fresh Installation for Oracle SES](#). Use different values for **Search Server Name**, **HTTP Port**, and **Software Location** parameters.

Silent Installation Tasks

A silent installation has no graphical output and no input by the user. It is accomplished by supplying Oracle Universal Installer with a response file and specifying the `-silent` flag on the command line. Use silent installation when you want the same installation parameters on more than one computer. Additionally, you can use silent installation from the command line to push the installation of Oracle SES from a remote location to various computers in the organization.

This section contains these topics:

- [Selecting a Response File](#)
- [Editing the Response File](#)
- [Specifying a Response File and Starting the Installation](#)
- [Silent Installation Log Files](#)

Note: The SES Home Location for Oracle SES software is \$ORACLE_BASE/seshome. Do not specify Oracle home as the location of Oracle SES. However, the silent response file must also ask for ORACLE_HOME to support the current OUI architecture.

Selecting a Response File

Before performing a silent installation, you must provide information specific to your installation in a response file. The installer will fail if you attempt an installation using a response file that is not configured correctly. Response files are text files that you can create or edit in a text editor. Response files like (`server.rsp`) are located in the `/response` directory of the Oracle SES product image. Edit the response file according to your requirements for silent installation.

To use a response file, you must first extract `server.rsp` to your system from the Oracle SES tar or zip archive that comprises the software distribution for this release. There may be two compressed archives and you may need to look in each to find the `/response` directory. For example:

1. Open the tar or zip archive and find the `/response` directory.
2. Extract the `server.rsp` file to your system hard drive.
3. Edit `server.rsp` as described in ["Editing the Response File"](#) in the next section.

Note: Response files like `server.rsp` are located in the `/response` directory of the Oracle SES product image.

Editing the Response File

Use any text editor to edit the response file to include information specific to your system. You must specify values for variables in your response file. Each variable listed in the response file is associated with a comment, which identifies the variable type.

For example:

```
string = "Sample Value"
Boolean = True or False
Number = 1000
StringList = {"StringValue 1", "String Value 2"}
```

The values that are given as `<Value Required>` must be specified for silent installation.

Specifying ORACLE_HOME Properly in Response Files

You must ask for ORACLE_HOME in the silent response file due to the current OUI release 11.1 architecture. Therefore, you have to ask for both ORACLE_HOME and ORACLE_BASE. This is different from GUI behavior where you only need to ask for ORACLE_BASE (Software Location).

If you do not ask for both Oracle homes in the response file, then at install time users will need to make sure to input ORACLE_HOME as ORACLE_BASE + /seahome manually. An error pops up if users do not specify ORACLE_HOME properly.

The explanation for this is in the comment section of the response file examples.

Specifying a Response File and Starting the Installation

Before you specify a response file, ensure that all values in the response file are correct. To make Oracle Universal Installer use the response file at installation time, specify the location of the response file as a parameter when starting Oracle Universal Installer. To perform a silent installation, use the `-silent` parameter as follows:

```
./runInstaller -silent -responseFile absolute_path_and_filename
```

Caution: During installation, response files may be copied to subdirectories in the Oracle home. Oracle recommends that you do not hard-code passwords and confidential information in your response files. You should prompt the user to enter passwords and anything confidential or that might pose a security risk.

If you must provide passwords or other sensitive information in your response files, then for security purposes, delete them after completing and verifying the installation.

Silent Installation Log Files

The success or failure of silent installations is logged in the `installActions.log` file. Additionally, the silent installation creates the `silentInstall.log` file. The log files are created in the `/oraInventory/logs` directory. The `silentInstallDate_Time.log` file contains the following line if the installation was successful:

```
The installation of Oracle Secure Enterprise Search was successful.
```

The corresponding `installActionsDate_Time.log` file contains specific information regarding installation.

Security Tips for Silent Installations

The response file contains the installation password in clear text. To minimize security issues, follow these guidelines:

- Set the permissions on the response files so that they are readable only by the operating system user performing the silent installation.
- If possible, remove the response files from the system after the silent installation is completed.

Error Handling

Values for variables that are of the wrong context, format, or type are treated as if no value were specified. Variables that are outside any section are ignored. If you attempt a silent installation with an incorrect or incomplete response file, or if Oracle Universal Installer encounters an error, such as insufficient disk space, then the installation will fail.

Postinstallation Tasks

This section describes the tasks to perform after installing Oracle SES and contains the following topics:

- [Check for Critical Patches](#)
- [Check for Additional Documentation and Support Services](#)
- [Changing the Oracle SES Middle Tier Port \(Optional\)](#)

Check for Critical Patches

After installing Oracle SES, check for a patch set or critical patch update (CPU). A CPU is a collection of patches for security vulnerabilities. It also includes non-security fixes required (because of interdependencies) by those security patches. CPUs are cumulative, and they are provided quarterly on Oracle Technology Network. For more information about CPUs, see <https://support.oracle.com>

Check for Additional Documentation and Support Services

Up-to-date Release Notes are posted on Oracle Technology Network (OTN). You must register online before using OTN. Registration is free and can be done at <http://www.oracle.com/technetwork/community/join/index.html>

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

<http://www.oracle.com/technetwork/indexes/documentation/index.html>

Changing the Oracle SES Middle Tier Port (Optional)

If needed, you can change the Oracle SES middle tier port as described in this section.

To change the Oracle SES middle tier port

1. Shut down the middle tier with the following command:

```
$ORACLE_HOME/bin/searchctl stopall
```

See Also: ["Starting and Stopping Oracle Secure Enterprise Search"](#) on page 33

2. Open the file `$ORACLE_HOME/search/base_domain/config/config.xml`.

Note: Oracle recommends that you back up this file before you open it in this step.

- a. Search for the word "listen-port." The XML statement that specifies the port number looks like the following example:

```
<listen-port>33333</listen-port>
```

- b. Edit the value of the `<listen-port>` attribute. The following example changes the port to 44444:

```
<listen-port>44444</listen-port>
```

Note: Make sure that the new port is not already in use.

3. Edit `$ORACLE_HOME/bin/searchctl` and change the value of `WLS_LISTENER_PORT` to the new port value.
4. If you change the port from a number *greater* than or equal to 1024 to a number less than 1024, then perform the following steps:
 - a. Start the database with the following command:

```
$ORACLE_HOME/bin/searchctl start_backend
```
 - b. Log in as root.
 - c. Grant SQL*Plus EXECUTE permission to root:

```
chmod o+x $ORACLE_HOME/bin/sqlplus
```
 - d. Run the following command:

```
chgrp -R root $ORACLE_BASE/jdk6
```
 - e. Start the middle tier with the following command:

```
$ORACLE_HOME/bin/searchctl start
```
5. If you change the port from a number *less* than 1024 to a number greater than or equal to 1024, then perform the following steps:
 - a. Log in as root.
 - b. Run the following commands:

```
chown -R <install user> $ORACLE_HOME/search/base_domain
```



```
chgrp -R <install user group> $ORACLE_HOME/search/base_domain
```

```
chgrp -R <original user group> $ORACLE_HOME/./jdk6
```


where *install user* is the user installing Oracle SES.
 - c. Log off the root user.
 - d. Log in as the Oracle SES installation user and perform step 6 of this procedure.
6. Start the middle tier with the following command:

```
$ORACLE_HOME/bin/searchctl startall
```

See Also: ["Starting and Stopping Oracle Secure Enterprise Search"](#) on page 33

Deinstallation Tasks

This section provides the procedure for deinstalling Oracle SES. Deinstallation of Oracle SES removes the contents of the `oradata` directory. Refer also to ["Removing the Oracle SES 10g Home"](#) on page 33 in this document.

To deinstall Oracle SES

1. Connect as the Oracle SES installation user.
2. Shut down the middle tier and the database.

```
$ORACLE_HOME/bin/searchctl stopall
```
3. Run the deinstallation script as follows:

\$ORACLE_HOME/install/deinstall_ses

4. If the Oracle SES instance was bound to a port less than 1024 and the middle tier ran as the root user, then after deinstallation there could be files left under \$ORACLE_HOME. After the deinstall completes, log on as the root user and delete those remaining files.

Upgrading Oracle Secure Enterprise Search

This section provides the information and procedures for upgrading from a previous release of Oracle SES to Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0). Also discussed are preupgrade and postupgrade tasks.

Note:

- If you are running a release of Oracle SES earlier than 10.1.8.4.0, then you must first upgrade to release 10.1.8.4.0.
 - For index optimization, this release sets smart defaults for clean installations. Since the user setting for upgrade scenarios cannot be modified, Oracle SES preserves the default settings in release 10g for the upgrade process.
 - After you upgrade to this release, the two identity plug-ins Oracle E-Business Suite release 11i and Oracle E-Business Suite release 12 are consolidated into one identity plug-in named Oracle E-Business Suite. Similarly, the two source types Oracle E-Business Suite 11i and Oracle E-Business Suite release 12 are consolidated into one source type named Oracle E-Business Suite.
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This section contains the following topics:

- [Preupgrade Tasks](#)
- [Common Preupgrade Tasks](#)
- [Upgrade Tasks](#)
- [Silent Upgrade Tasks](#)
- [Postupgrade Tasks](#)

See Also: "Upgrade Issues" in *Oracle Secure Enterprise Search Release Notes*

Preupgrade Tasks

This section provides the information and tasks specific to preparing an upgrade from Oracle SES release 10.1.8.4.0 to Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0).

- [Confirm that Free Memory and Disk Space Requirements are Met](#)
- [Apply Mandatory One-Off Patches](#)
- [Back Up the Oracle SES 10.1.8.4.0 Instance](#)
- [Upgrade OracleAS Portal Server \(Optional\)](#)

Confirm that Free Memory and Disk Space Requirements are Met

Before performing the upgrade tasks for this release of Oracle SES, at least 2 GB of free RAM and 10 GB of free disk space must be available on the system.

Note: Depending on the number of documents to process and how many custom attributes are meta-tagged, extra space might be needed.

Apply Mandatory One-Off Patches

The patches described in this section are required before performing the upgrade tasks.

- Apply patch 5632264 to the Oracle SES 10.1.8.4.0 instance. Patch 5632264 updates the database time zone files to version 4. The timezone files for Oracle Database 11g must be version 4 or greater. After applying the patch, you must restart the Oracle SES 10.1.8.4.0 instance before upgrading to 11g Release 1 (11.1.2.0.0). Patch 5632264 is available on My Oracle Support (formerly OracleMetaLink) at <https://support.oracle.com>.

Important: If the required one-off patches are not applied to the Oracle SES 10.1.8.4.0 instance, then the Oracle SES 11.1.2.0.0 upgrade will fail during Oracle Search Upgrade Assistant with the following error:

```
oracle.search.config.OESEException: Error while executing action:
"upgrade_all"
Caused by: oracle.search.config.OESEException:
Upgrade assistant failed.
Caused by: oracle.search.config.OESEException:
Fatal exception. Database upgrade failed.
```

Back Up the Oracle SES 10.1.8.4.0 Instance

There is no downgrade support from Oracle SES 11g Release 1 (11.1.2.0.0), so you must create a backup copy of the existing installation in case you need to restore the 10.1.8.4.0 instance.

To back up Oracle SES using the copy command, create copies of each of the following directories:

To back up Oracle SES using the copy command

- Create a copy of the following directories:
 - Oracle home: the Oracle SES 10.1.8.4.0 installation directory.
 - oradata: the repository for data files, control files, and log files.
 - oraInventory: the central inventory of all Oracle homes. Its location is specified in `/etc/oraInst.loc`

To back up Oracle SES using the tar command

1. Shut down the Oracle SES instance.

```
$ORACLE_HOME/bin/searchctl stopall
```

See Also: ["Starting and Stopping Oracle Secure Enterprise Search"](#) on page 33

2. If you are not already logged in as root, then enter the following command to become the root user:

```
su - root
```

3. Change (cd) into the backup location of the operating system and execute the following commands:

```
tar cvf ses_orahome.tar {full path to Oracle home}
tar cvf ses_orainv.tar {full path to oraInventory}
tar cvf ses_oradat.tar {full path to oradata}
```

Upgrade OracleAS Portal Server (Optional)

If you are using the portlet feature in Oracle SES Release 10.1.8.4.0, then you must upgrade to OracleAS Portal Server 10.1.4.2.0, and apply Patch Set Exception (PSE) 7560661 to OracleAS Portal Release 10.1.4.2.0.

Common Preupgrade Tasks

This section contains information and procedures for preupgrade tasks for all upgrades from previous releases of Oracle SES.

Important: Before following the procedures in this section, refer to ["Apply Mandatory One-Off Patches"](#) on page 22 in this document.

This section contains the following topics:

- [Setting JOB_QUEUE_PROCESSES To Zero](#)
- [Ensuring Adequate Disk Space and Optimizing Indexes](#)
- [Ensuring Adequate Memory](#)
- [Upgrading Oracle Single Sign-On Server \(Optional\)](#)
- [Upgrading Oracle HTTP Server \(Optional\)](#)
- [Upgrading on a Port Number Less than 1024](#)

Setting JOB_QUEUE_PROCESSES To Zero

During upgrading of Oracle SES, scheduled jobs should not be started, and crawl and optimization processes should not be running in the background. To prevent scheduled jobs from executing, set the JOB_QUEUE_PROCESSES parameter to 0.

To set the JOB_QUEUE_PROCESSES parameter to 0

1. Start SQL*Plus and connect as the EQSYS user.
2. Check the current value of JOB_QUEUE_PROCESSES, so that you can later restore it. By default, JOB_QUEUE_PROCESSES is 10, but it may be set differently in this database. Execute this query to obtain the value of JOB_QUEUE_PROCESSES.

```
SQL> SELECT name, value from v$parameter WHERE name='job_queue_processes';
```

3. Execute this SQL statement to set JOB_QUEUE_PROCESSES to zero.

```
SQL> ALTER SYSTEM SET job_queue_processes=0 scope=both
```

Note: The postupgrade migration scripts must be run with `JOB_QUEUE_PROCESSES` set to 0. See ["Running Postupgrade Migration Scripts"](#) on page 27. After upgrading and running the postupgrade migration scripts, restore the original value as described in ["Restoring JOB_QUEUE_PROCESSES"](#) on page 29.

Ensuring Adequate Disk Space and Optimizing Indexes

You must confirm that multiple factors of free space are available prior to performing the upgrade processes. In addition to the disk space required for a second installation, you will need sufficient resources for postupgrade index migration and other space-intensive reconfiguration. To maximize performance, you can optimize indexes and reduce fragmentation to near 0% before upgrading.

Ensuring Adequate Memory

When upgrading, if you have changed the SGA size manually, then follow the steps in this section to confirm that Oracle SES has enough memory.

Note: You must allocate at least 2GB free memory for upgrading to Oracle SES release 11.1.2.

To confirm that available memory for Oracle SES meets the requirements

- Verify that Automatic Shared Memory Management is turned on by confirming that `SGA_TARGET` is greater than 0. If `SGA_TARGET` is set to 0, then you must restore the value to the original (which is smaller one either 40% of the physical memory size or 1536M). If you change the `SGA_TARGET` parameter value, then restart Oracle SES to reflect the change and to check if the Oracle SES instance can be started without any problem.
- Check the `SGA_TARGET` size with the following command:

```
SELECT name, value/1024/1024 || ' M'
FROM V$PARAMETER
WHERE name = 'sga_target';
```

Note: `SGA_TARGET` specifies the total size of all SGA components. If `SGA_TARGET` is specified as a number greater than zero, then several of the memory pools in the SGA are automatically sized. If any of those automatically tuned memory pools are individually set to nonzero values, then those values are used as minimum levels by Automatic Shared Memory Management. Other memory pools are not affected by Automatic Shared Memory Management.

Upgrading Oracle Single Sign-On Server (Optional)

If you previously configured Oracle SES release 10.1.8.4.0 with Oracle Single Sign-On, then you must upgrade to Oracle Single Sign-On 10.1.4.0.1 before you upgrade to Oracle SES release 11.1.2. After you complete the upgrade procedures for Oracle SES 11.1.2, you will need to reconfigure Oracle SES with Single Sign-On server. Schedule downtime accordingly during the upgrade process.

See ["Upgrading Oracle HTTP Server \(Optional\)"](#) for the correct version of Oracle HTTP Server to use with Oracle Single Sign-On.

Upgrading Oracle HTTP Server (Optional)

If you have enabled Oracle Single Sign-On for Oracle SES release 10.1.8.4.0, then ensure that the Oracle HTTP server is release 10.1.3 or 11g.

If you have enabled SSL for Oracle SES release 10.1.8.4.0, then ensure the Oracle HTTP server is release 11g.

Upgrading on a Port Number Less than 1024

This step is only necessary if the release of Oracle SES that you are upgrading is bound to a port number less than 1024. You must change the port to a number greater than or equal to 1024 before starting the upgrade. After the upgrade completes, you can change the port back to a number less than 1024. Follow the instructions in ["Changing the Oracle SES Middle Tier Port \(Optional\)"](#) on page 19 in this document.

Upgrade Tasks

This section contains the procedures for upgrading Oracle SES to release 11.1.2.0.0.

To upgrade Oracle SES

1. Ensure that the Oracle SES 10.1.8.4.0 instance is running.
2. Start the Oracle Universal Installer for Oracle SES 11g Release 1 (11.1.2.0.0).
3. When the installation process detects the existing Oracle SES instance on the computer, it will give you the option of either upgrading the existing installation or creating a fresh installation.
4. Choose to upgrade the existing installation.
5. Follow the prompts to select:
 - The location where the Oracle SES 10.1.8.4.0 software is installed
 - The administrative password that was set in the Oracle SES 10.1.8.4 installation
 - The location where the new Oracle SES 11.1.2.0.0 software will be installed. This location must be different from the release 10.1.8.4.0 location. You cannot install Oracle SES 11g Release 1 (11.1.2.0.0) inside the Oracle home for Oracle SES release 10.1.8.4.0.

Restoring Oracle SES If Upgrading Fails

If the upgrade fails, then restore the previous Oracle SES release from your backup.

To restore Oracle SES from backup using the tar command

1. Delete the Oracle home, oradata, and oraInventory directories.
2. If you are not already logged in as root, then enter the following command to become the root user:

```
su - root
```

3. Execute the following commands using the full path to the Oracle SES release 10.1.8.4.0 home:

```
tar xvf ses_orahome.tar
```

```
tar xvf ses_orainv.tar
tar xvf ses_oradat.tar
```

After restoring the previous release, you can retry the Oracle SES upgrade.

Note: If you use zip instead of tar for the backup, then create separate archives for Oracle home, inventory, and data directories.

Silent Upgrade Tasks

A silent upgrade has no graphical output and no input by the user. To perform a silent upgrade, you provide Oracle Universal Installer with a response file and specify the `-silent` flag on the command line. Response files are located in the `/response` directory of the Oracle SES software distribution. You must edit the response file according to your upgrade requirements.

To use a response file

1. Go to the `/response` directory.
2. Copy the `upgrade.rsp` file to your system hard drive. For example:

```
cp upgrade.rsp /private/ses/response/upgrade.rsp
```

3. Using any text editor, replace each variable in the response file with the value specific to your system. The variables are clearly marked with the text `<Value Required>`. Each variable has an associated comment that identifies the variable type. For example:

```
string = "Sample Value"
Boolean = True or False
Number = 1000
StringList = {"StringValue 1", "String Value 2"}
```

Be sure to delete the comments before starting the silent upgrade.

4. Go to the installation directory.
5. Run Oracle Universal Installer with the following command:

```
./runInstaller -silent -responseFile absolute_path_and_filename
```

Caution: During upgrade, response files may be copied to subdirectories in the Oracle home directory. If you provided passwords or other sensitive information in your response files, then delete any copies of the response files that remain in your file system.

Postupgrade Tasks

This section describes the procedures that must be performed after the upgrade process completes.

This section contains the following topics:

- [Running Postupgrade Migration Scripts](#)
- [Restoring JOB_QUEUE_PROCESSES](#)
- [Updating Configure Search Results List for CSS and XSLT \(Optional\)](#)

- [Configuring Secure Sockets Layer for Oracle SES \(Optional\)](#)
- [Configuring Oracle Single Sign-On for Oracle SES \(Optional\)](#)
- [Configuring Oracle SES Portlet \(Optional\)](#)
- [Updating Configure Search Results List for CSS and XSLT \(Optional\)](#)
- [Migrating to Secure Cache](#)
- [Removing the Oracle SES 10g Home](#)

Important:

- The script `enable_SES1112_improve.sql` must be executed immediately after the Oracle SES upgrade is completed. Do not start a crawl or an optimization before `enable_SES1112_improve.sql` completes.
 - The **Data Storage Location** specified in Oracle SES installation is shared by the previous Oracle SES release from which you are upgrading. For example, the 10.1.8.4.0 and 11.1.2.0.0 releases of Oracle SES use the same data storage area. If this data storage directory is *inside* the release 10.1.8.4.0 Oracle home, then be very careful *not to remove* this directory after upgrading to release 11.1.2.0.0.
 - If index migration is interrupted and fails to complete, then Searchable Content Stats will be inaccurate. Failed or abandoned attempts to migrate an index and its data will result in inaccurate reporting about what is available for search in the Oracle SES instance. In this case, this is expected behavior until a proper cleanup is performed with `eq_idx_mig.cleanup`. See *Oracle Secure Enterprise Search Administrator's Guide* for procedures.
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Running Postupgrade Migration Scripts

Oracle SES 11g Release 1 (11.1.2.0.0) introduces new features that provide search performance improvements. These features are incorporated automatically in fresh installations of Oracle SES. To incorporate these features in Oracle SES after upgrading, you must run the following scripts:

- **`enable_SES1112_improve.sql`** to activate performance enhancements in the new release. You must run this script with administrator privileges after upgrading to Oracle SES 11g Release 1 (11.1.2.0.0). See the section "[enable_SES1112_improve.sql](#)" on page 28 for more information.
- (Optional) **`enable_Japanese_bigram.sql`** to activate search performance enhancements for Japanese text. You only need to run this script if your Oracle SES includes Japanese text, or if you anticipate future searches of Japanese text. See "[enable_Japanese_bigram.sql](#)" on page 28 for more information.

Important: Before running the postupgrade migration scripts, ensure that the `JOB_QUEUE_PROCESSES` parameter is set to 0, as described in "[Setting JOB_QUEUE_PROCESSES To Zero](#)" on page 23. After both scripts have completed, set `JOB_QUEUE_PROCESSES` to 10, as described in "[Restoring JOB_QUEUE_PROCESSES](#)" on page 29.

enable_SES1112_improve.sql This script rebuilds your index structures to support performance improvement features in Oracle SES 11g Release 1 (11.1.2.0.0) and implements a change to the internal text index structure, which improves query performance especially for custom attribute search.

enable_SES1112_improve.sql may take several hours to run, depending on the size of the index, number of documents to be indexed, and the number of custom attributes. Also, the enable_SES1112_improve.sql script generates log files enable_bigio.log and zone_to_field.log under the \$ORACLE_HOME/ctx/log directory. First, enable_bigio.log is generated, and then zone_to_field.log is generated.

Important: The enable_SES1112_improve.sql script has significant disk space requirements. You may need to allocate additional tablespace before you run the script. The script will give you a warning message if there is not enough free space. At that point, you can cancel, allocate additional space, and rerun the script. If there is insufficient temporary tablespace, the script will display an error message. If this should occur, you should add a temp file to OES_TEMP tablespace and rerun the script. To add a temp file to OES_TEMP tablespace:

```
SQL>ALTER TABLESPACE OES_TEMP
      ADD TEMPFILE 'filePath/OES_TEMP_02.dbf' SIZE 10M
      AUTOEXTEND ON;
```

For *filePath*, specify the path to OES_TEMP_01.dbf. You can find this path with the following query:

```
SQL> SELECT file_name FROM dba_temp_files
      WHERE tablespace_name = 'OES_TEMP';
```

To run enable_SES1112_improve.sql

1. Ensure that JOB_QUEUE_PROCESSES is set to 0, as described in "[Setting JOB_QUEUE_PROCESSES To Zero](#)" on page 23 in this document.
2. Start SQL*Plus as the EQSYS user.
3. Run \$ORACLE_HOME/search/admin/scripts/enable_SES1112_improve.sql.

enable_Japanese_bigram.sql This script enables bi-gram token generation for Japanese text. Bi-gram lexing improves the performance of Japanese document indexing. If there is no Japanese text in your SES instance, or if cache files are not preserved, the script updates index metadata to use the bi-gram lexer for future Japanese indexing.

Important: The `enable_Japanese_bigram.sql` script will re-index Japanese documents *only if* cache files are preserved. Before running this script, you should ensure that cache files exist for all crawled Japanese documents and that the "clear cached files after indexing" crawling option is disabled. If cache files are not preserved and there are Japanese documents in your SES instance, you must run a full recrawl after the script completes. Otherwise Japanese search will not work. The script will list all the data sources that need a full crawl. Please run a full crawl for these data sources. At the end of the script, you may be advised to check the `CTXSYS.CTX_INDEX_ERRORS` view to see if indexing encountered any errors. If some of your documents do not have cached files, then indexing raises **ORA-22288** and the error is logged in the view. However, you can ignore the error because these data sources need to be crawled again.

To run `enable_Japanese_bigram.sql`

1. Ensure that `JOB_QUEUE_PROCESSES` is set to 0, as described in ["Preupgrade Tasks"](#) on page 21 in this document.
2. Start SQL*Plus as the `EQSYS` user.
3. Run `$ORACLE_HOME/search/admin/scripts/enable_Japanese_bigram.sql`

The script will check if all the cached files exist for crawled Japanese documents. If there are missing files, `enable_Japanese_bigram.sql` will show a warning message that displays the number of missing cached files. If you choose to proceed, `enable_Japanese_bigram.sql` will re-index the cached files only. You cannot search Japanese documents while `enable_Japanese_bigram.sql` is running.

Restoring `JOB_QUEUE_PROCESSES`

To prepare for the upgrade process, the `JOB_QUEUE_PROCESSES` parameter was set to 0 prior to the upgrade. After you run the migration scripts, as described in ["Running Postupgrade Migration Scripts"](#) on page 27, you must restore the original value of the `JOB_QUEUE_PROCESSES` parameter. (You will need the original value of this parameter that existed before the preupgrade steps in order to complete this procedure.)

To reset the `JOB_QUEUE_PROCESSES` parameter

1. Start SQL*Plus and connect as the `EQSYS` user.
2. Execute the following SQL statement, and specify the original value of `JOB_QUEUE_PROCESSES` for *n*.

```
SQL> ALTER SYSTEM SET job_queue_processes=n scope=both;
```

Note: If you do not restore `JOB_QUEUE_PROCESSES` after running the postupgrade scripts, crawling and optimization will fail.

Updating Configure Search Results List for CSS and XSLT (Optional)

This section describes how to modify your custom CSS and XSLT if you made changes in Oracle SES release 10.1.8.4.

In Advanced Configuration under Global Settings and then **Configure Search Results List**, the default CSS now includes the CSS classname `ses-results-list` at the beginning of each selector.

Note that in the following examples the dot (.) before a name denotes a class selector in CSS syntax.

To update CSS that has been previously customized in an earlier release of Oracle SES:

- Prepend the class `ses-results-list` to the beginning of each selector.

For example, if a previously customized CSS rule uses two selectors as in this example:

```
.infoSrcGroup,  
.infoSrcPath  
{  
    font-size: 12pt;  
}
```

then each selector should have `.ses-results-list` prepended as follows:

```
.ses-results-list .infoSrcGroup,  
.ses-results-list .infoSrcPath  
{  
    font-size: 12pt;  
}
```

In addition, the default XSLT has been slightly modified in this release. The previous default XSLT content contained the following section:

```
<!-- Links link -->  
<a class="cacheUrl" href="{eqlinkurl}">  
    <xsl:call-template name="translate">  
        <xsl:with-param name="strKey" select="'LINKS'" />  
    </xsl:call-template>  
</a>
```

The new XSLT corrects the *class* attribute value, resulting in the following section:

```
<!-- Links link -->  
<a class="linksUrl" href="{eqlinkurl}">  
    <xsl:call-template name="translate">  
        <xsl:with-param name="strKey" select="'LINKS'" />  
    </xsl:call-template>  
</a>
```

Configuring Secure Sockets Layer for Oracle SES (Optional)

When Oracle SES is fronted by an Oracle HTTP Server, Oracle recommends that Oracle SES be configured to require Secure Sockets Layer (SSL) with client-side authentication for communication with the Oracle HTTP Server. If you have configured SSL for Oracle SES release 10.1.8.4, then you must manually reconfigure SSL for Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0). You configure SSL through the admin console in WebLogic. The steps for configuring SSL are described in *Oracle Secure Enterprise Search Administrator's Guide*.

See Also: "SSL and HTTPS Support in Oracle Secure Enterprise Search" in *Oracle Secure Enterprise Search Administrator's Guide*

Configuring Oracle Single Sign-On for Oracle SES (Optional)

If you configured Oracle Single Sign-On (SSO) for Oracle SES release 10.1.8.4, then you must upgrade SSO before upgrading to Oracle SES 11.1.2, as described in ["Upgrading Oracle Single Sign-On Server \(Optional\)"](#) on page 24.

After upgrading, you must manually reconfigure SSO for Oracle Secure Enterprise Search 11g Release 1 (11.1.2.0.0). You configure SSO through the admin console in WebLogic. The steps for configuring SSO are described in *Oracle Secure Enterprise Search Administrator's Guide*.

See Also: "Configuring Secure Search with OracleAS Single Sign-On" in *Oracle Secure Enterprise Search Administrator's Guide*

Configuring Oracle SES Portlet (Optional)

If you configured a portlet on an Oracle SES release 10.1.8.4 instance that was registered and working with Oracle Application Server Portal (OracleAS Portal), then upgrade OracleAS Portal, as described in ["Upgrade OracleAS Portal Server \(Optional\)"](#) on page 23. After the upgrade, follow the configuration steps, which are described in "Configuring an OracleAS Portal for a Secure Portlet" in *Oracle Secure Enterprise Search Administrator's Guide*.

Migrating to Secure Cache

In Oracle SES release 10g, the document cache is stored in plain text in disk files managed by the operating system. In Oracle SES release 11g, the cache files are stored as LOBs within Oracle Database in the Secure Cache storage area. (One exception is the Mailing List data source, which still uses storage managed by the operating system.)

Important: The Mailing List data source uses storage on the operating system. Therefore, all new Mailing List sources must use the same cache location as the default parent Mailing List source.

The default location of the Secure Cache is the OES_ASSM2 tablespace. When you upgrade to Oracle SES 11g, the cache files for data sources created in Oracle SES 10g are *not* automatically migrated to the Secure Cache. Oracle SES continues to store the cache for earlier data sources within the file system, but uses the Secure Cache for all new data sources. To migrate Oracle SES 10g data sources to the Secure Cache, you must run several migration routines. The migration process works on one data source at a time. During migration, crawling operations are suspended, but query services are uninterrupted. When migration is complete, the cache files for the data source are deleted from the file system.

To migrate to Secure Cache

1. You can use the `GET_CACHE_LOCATION` function to determine which data sources are cached in the file system and which are cached in the database Secure Cache. The function returns the cache location for a given data source. Supply the numeric identifier of the data source as an argument.

```
return_value := EQ_CACHE.GET_CACHE_LOCATION(dsid)
```

The return values of `EQ_CACHE.GET_CACHE_LOCATION` are:

| Return Value (VARCHAR2) | Description |
|-------------------------|---|
| OS | The cache for this data source is in the file system. |
| DB | The cache for this data source is in the database Secure Cache. |

2. Execute the `EQ_CACHE.PREPARE_MIGRATION` procedure to set up a migration status tracking table. This procedure only needs to be called once for all cache migrations. You can query the migration status table to find the status of cache migration. The migration status table is described in [Table 1, "EQ\\$CACHE_MIGRATION Migration Status Table"](#) on page 32 in this document.
3. Stop the schedule for the data source you want to migrate.
4. Execute the `MIGRATE_TO_SECURE_CACHE` function to migrate a data source. Supply the numeric identifier of the data source as an argument.

```
return_value := EQ_CACHE.MIGRATE_TO_SECURE_CACHE (dsid)
```

The return values of `EQ_CACHE.MIGRATE_TO_SECURE_CACHE` are:

| Return Value (NUMBER) | Description |
|-----------------------|---|
| 0 | The migration was successful. |
| 1 | This data source has already been migrated. No action is taken. |
| 2 | The schedule is running for this data source. No action is taken. |

5. Repeat steps 3 and 4 for each data source that was created before you upgraded to this release of Oracle SES.
6. When all data sources have been migrated, run the `CLEANUP_MIGRATION` procedure to drop the status tracking table for cache migration.

The Migration Status Table The `EQ_CACHE.PREPARE_MIGRATION` procedure creates a table called `eq$cache_migration`, which contains status information about the migration process. The columns of the table are described in [Table 1](#).

Table 1 EQ\$CACHE_MIGRATION Migration Status Table

| Column Name | Data Type | NULL? | Description |
|--------------------------|----------------|----------|---|
| <code>mig_id</code> | NUMBER | NOT NULL | Migration sequence number |
| <code>ds_id</code> | NUMBER | NOT NULL | Data source ID |
| <code>task_id</code> | NUMBER | | Task ID |
| <code>task_desc</code> | VARCHAR2(100) | | Description of the task |
| <code>status</code> | VARCHAR2(30) | | Status of the task |
| <code>check_point</code> | VARCHAR(50) | | Checkpoint within a task. Default is NULL |
| <code>error</code> | VARCHAR2(1000) | | Error message. Default is NULL |
| <code>time_stamp</code> | DATE | | Timestamp of the record |

Example 1 Migrate a Data Source to Secure Cache

```
SET SERVEROUTPUT ON;
```



```

DECLARE
    status NUMBER;
    dsid NUMBER := 9;
BEGIN
    EQ_CACHE.PREPARE_MIGRATION;
    status := EQ_CACHE.MIGRATE_TO_SECURE_CACHE (dsid);
    DBMS_OUTPUT.PUT_LINE('migration returned with status ' || status);
    EQ_CACHE.CLEANUP_MIGRATION;
END;
/

```

Removing the Oracle SES 10g Home

After you have verified that the upgraded Oracle SES release 11g instance is working, you may remove the Oracle SES release 10g home.

To remove the Oracle SES 10g home

- If oradata is not within the Oracle SES 10g home:
 1. Go to the Oracle SES 11g home and shut down the Oracle SES instance (to facilitate the execution of the deinstallation script).
 2. Go to the Oracle SES 10g home and run the deinstall_ses script in the install directory.
- If oradata is within the Oracle SES 10g home:
 1. Go to the Oracle SES 10g home and enter this command from the oui/bin directory:

```
runInstaller -detachHome $ORACLE_HOME=your_SES_10g_ORACLE_Home
```

2. Run an operating system command to remove all the directories from the Oracle SES 10g home *except* for the path that holds oradata.

Important: If oradata is located under the Oracle SES 10g home, then you should *not* remove the 10g home. Even after upgrade, the location of oradata does not change.

Starting and Stopping Oracle Secure Enterprise Search

The command for starting and stopping the search engine in Oracle SES is searchctl. The executable is located in the \$ORACLE_HOME/bin directory:

```
$ORACLE_HOME/bin/searchctl
```

The command syntax is as follows.

| Command | Description |
|----------------------|---|
| searchctl start | Start Oracle SES middle tier |
| searchctl startall | Start Oracle SES middle tier and database |
| searchctl stop | Shut down Oracle SES middle tier |
| searchctl stopall | Shut down Oracle SES middle tier and database |
| searchctl restart | Restart Oracle SES middle tier |
| searchctl restartall | Restart Oracle SES middle tier and database |

On Linux and UNIX platforms, you must supply the Oracle SES administrative password when running `searchctl` commands. If you have shut down both the database and the middle tier with the `searchctl stopall` command, then to successfully start them both, run `searchctl startall`. If the Middle Tier Port is less than 1024, then the following commands must be run by the root user:

- `searchctl start/stop`
- `searchctl startall`
- `searchctl stopall`
- `searchctl restartall`

Note: The root user must belong to the DBA group to properly run the `searchctl startall/stopall/restartall` command.

What To Do Next

To become familiar with Oracle Secure Enterprise Search, Oracle suggests that you complete the following tasks:

- Follow the Oracle SES tutorial at:
http://www.oracle.com/pls/topic/lookup?ctx=E35215-01&id=tut_ses_administration
- Log on to the Oracle SES administration tool using the user name and password set in the installation. Click the **Help** link in the top right corner of any page in the administration tool for context-sensitive help. With the administration tool, you can:
 - Define sources to search
 - Configure and schedule the crawling of the sources
 - Monitor the status and performance of crawling and search
- In a production environment, where a load balancer or other monitoring tools are used, Oracle SES can also be monitored through the following URL:
<http://host:port/monitor/check.jsp>. The URL should return the following message: **Oracle Secure Enterprise Search instance is up**. If Oracle Secure Enterprise Search is not available, then the URL returns either a connection error or the HTTP error code 503.

Additional Resources

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

<http://www.oracle.com/technetwork/community/join/index.html>

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

<http://www.oracle.com/technetwork/indexes/documentation/index.html>

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Oracle Secure Enterprise Search Installation and Upgrade Guide, 11g Release 1 (11.1.2.0.0) Linux x86-64
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