

Oracle® Secure Enterprise Search

Installation and Upgrade Guide

11g Release 2 (11.2.2.2) for Linux x86 (64-Bit)

E29599-17

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This document describes how to install or upgrade to Oracle Secure Enterprise Search (Oracle SES) 11g Release 2 (11.2.2.2).

This document contains the following sections:

- [Installing Oracle SES](#)
- [Deinstalling Oracle SES](#)
- [Upgrading Oracle SES](#)
- [Starting and Stopping Oracle SES Instance](#)
- [What To Do Next](#)
- [Additional Resources](#)
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Installing Oracle SES

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](#)

Preinstallation Tasks

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

- [Oracle SES Linux Certifications](#)
- [Oracle SES Browser Support](#)
- [General Information and Requirements for Installing Oracle Software](#)
- [Checking the Hardware Requirements](#)

- [Checking the Software Requirements](#)
- [Configuring Kernel Parameters](#)
- [Configuring Shell Limits](#)
- [Installing Oracle SES on a Port Number less than 1024](#)
- [Setting the Correct Locale](#)
- [Installing Mandatory Oracle Database Patches](#)
- [Installing Mandatory WebLogic Server Patches](#)

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 5, Update 5 and later
- Oracle Linux 6
- Red Hat Enterprise Linux 5, Update 5 and later
- Red Hat Enterprise Linux 6
- SUSE Linux Enterprise Server 10 SP3 and later
- SUSE Linux Enterprise Server 11

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

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

```
cat /proc/version
```

Oracle SES Browser Support

The Oracle SES administration application and the default query application support the following browsers:

- Firefox 3.x and later
- Internet Explorer 7.x and later
- Safari 4.x and later

General Information and Requirements for Installing Oracle Software

This section describes the general requirements for installing Oracle SES 11.2.2.2 software and contains these sections:

- [Oracle SES Installation Modes](#)
- [Procedure for Logging in to the System as the root User](#)

- [Creating Required Operating System Group and User](#)

Oracle SES Installation Modes

Oracle SES 11.2.2.2 software can be installed in one of the following three modes:

- **Oracle SES along with the database and the middle tier:** Select this option to install Oracle SES 11.2.2.2 along with Oracle Database 11.2.0.3.0 and Oracle WebLogic Server 10.3.6.0.0. See "[Install and Configure Oracle Secure Enterprise Search with Database and Middle Tier](#)" for more information about this installation option.
- **Oracle SES along with the middle tier on an existing database:** Select this option to install Oracle SES 11.2.2.2 and Oracle WebLogic Server 10.3.6.0.0 on a system, when you already have Oracle Database 11.2.0.3.x (Enterprise Edition) or 11.2.0.4.x (Enterprise Edition) installed on a system in the same network where Oracle SES is to be installed. See "[Install and Configure Oracle Secure Enterprise Search with Middle Tier \(on an Existing Database\)](#)" for more information about this installation option.
- **Oracle SES only on an existing middle tier and an existing database:** Select this option to install only the Oracle SES software on a system, when you already have:
 - Oracle Database 11.2.0.3.x (Enterprise Edition) or 11.2.0.4.x (Enterprise Edition) installed on a system in the same network where Oracle SES is to be installed.
 - Oracle WebLogic Server 10.3.6.0.x installed on the same system where Oracle SES is to be installed.

See "[Install Oracle Secure Enterprise Search Software Only \(on an Existing Database and an Existing Middle Tier\)](#)" for more information about this installation option.

Note:

- Oracle SES supports only Oracle Database 11.2.0.3.x (Enterprise Edition), 11.2.0.4.x (Enterprise Edition), and 12.1.0.2.x (Enterprise Edition) as database server and WebLogic Server 10.3.6.0.x as middle tier server, because Oracle SES depends on certain features that are only provided by these software products.
 - Oracle SES supports Oracle Database 12.1.0.2.x, but it does not support installing Oracle SES directly on an existing Oracle Database 12.1.0.2.x. For using Oracle Database 12.1.0.2.x with Oracle SES, you must first install Oracle SES on Oracle Database 11.2.0.3.x or 11.2.0.4.x, and then upgrade the database to 12.1.0.2.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
 - Oracle SES support for Oracle Database 11.2.0.3.x ends in August 2015, so you must upgrade to either Oracle Database 11.2.0.4.x or Oracle Database 12.1.0.2.x before the support ends for Oracle Database 11.2.0.3.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
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Procedure for Logging in to the System as the root User

Before you install Oracle SES software, you must complete several tasks as the `root` user. For logging in as the `root` user, complete one of the following procedures:

- [Install the Software from an X Window System Workstation or X Terminal](#)
 - [Install the Software from a PC or Other System with X Server Software](#)
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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.

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
```

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 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 exist, and if necessary, to create them, follow the procedure described in this section.

To check if `oinstall` group and `oracle` user exist:

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 exists. For example, if the output is similar to the following, then `oinstall` 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 want, 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 using the `passwd` command as follows:

```
passwd oracle
```

Checking the Hardware Requirements

The system must meet the following minimum hardware requirements:

- [Memory Requirement](#)
- [Available RAM and Swap Space Requirement](#)
- [Disk Space Requirement](#)
- [Redo Log File Size Requirement](#)
- [Additional Hardware Requirements](#)

Note:

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

Memory Requirement

The memory requirement for installing and running Oracle SES 11.2.2.2 is as follows:

- At least 8 GB of physical RAM, if you are planning to have Oracle SES software, WebLogic Server middle tier, and Oracle Database server on the same system.
- At least 6 GB of physical RAM, if you are planning to have Oracle SES software and WebLogic Server middle tier on a system that is different from that of the Oracle Database server.

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 with the installation.

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 must deduct the memory allocated to HugePages from the available RAM before calculating swap space.

Available RAM	Swap Space Required
Between 2 GB and 16 GB	Equal to the size of RAM
More than 16 GB	16 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.

Disk Space Requirement

The disk space requirement for installing Oracle SES software depends upon the Oracle SES installation mode that you select.

- Oracle SES software installed along with the Oracle Database and the WebLogic Server middle tier, requires at least 11 GB of disk space.
- Oracle SES software installed along with the WebLogic Server middle tier, on an existing Oracle Database, requires at least 4.5 GB of disk space.
- Oracle SES software installed alone, on an existing WebLogic Server middle tier and an existing Oracle Database, requires at least 2 GB of disk space.

Redo Log File Size Requirement

When Oracle SES application is installed along with the Oracle Database and WebLogic Server middle tier, 200MB of disk space gets allocated for the redo log file. This redo log file size is sufficient to crawl up to 300GB of text.

If you are going to install Oracle SES application on an existing Oracle Database, then make sure that at least 200MB of disk space is allocated for the redo log file.

See Also:

Oracle Secure Enterprise Search Administrator's Guide for information about how to increase the redo log file size.

Additional Hardware Requirements

Additional hardware requirements are based on the amount of data that you expect to search.

For example, to index 100,000 documents:

- 13 GB disk space

To index 1,000,000 documents:

- 38 GB disk space

Note:

The above hardware requirements for the specific number of documents to index are based on an assumption that an average document size is 100KB and the documents to index contain a mix of various document types, such as, HTML, PDF, DOC, and PPT.

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](#)" of this document.

Kernel Requirements

The Kernel requirements for Oracle SES 11.2.2.2 are as follows:

- On Oracle Linux 5 Update 5 with Red Hat Compatible Kernel
2.6.18 or later
- On Oracle Linux 5 Update 5 with Unbreakable Enterprise Kernel
2.6.32-100.0.19 or later
- On Red Hat Enterprise Linux 5 Update 5
2.6.18 or later
- On Red Hat Enterprise Linux 5 Update 5 with Unbreakable Enterprise Kernel
2.6.32 or later
- On Oracle Linux 6
2.6.32-100.28.5.el6.x86_64 or later
- On Red Hat Enterprise Linux 6
2.6.32-71.el6.x86_64 or later
- On SUSE Linux Enterprise Server 10
2.6.16.21 or later
- On SUSE Linux Enterprise Server 11
2.6.27.19 or later

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

```
uname -r
```

The following is a sample output displayed by running this command on an Oracle Linux 5 system. It shows the kernel version of 2.6.18 and the errata level of -128.el5PAE.

```
2.6.18-128.el5PAE
```

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 following or later versions of packages are required for Oracle SES 11.2.2.2 on various Linux x86 (64-bit) platforms:

Note:

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

- On Oracle Linux 5 and Red Hat Enterprise Linux 5:

```
binutils-2.17.50.0.6
compat-libstdc++-33-3.2.3
elfutils-libelf-0.125
elfutils-libelf-devel-0.125
gcc-4.1.2
gcc-c++-4.1.2
glibc-2.5-24
glibc-common-2.5
glibc-devel-2.5
glibc-headers-2.5
ksh-20060214
libaio-0.3.106
libaio-devel-0.3.106
libgcc-4.1.2
libstdc++-4.1.2
libstdc++-devel 4.1.2
make-3.81
sysstat-7.0.2
```

- On Oracle Linux 6 and Red Hat Enterprise Linux 6:

```
binutils-2.20.51.0.2-5.11.el6 (x86_64)
compat-libcap1-1.10-1 (x86_64)
compat-libstdc++-33-3.2.3-69.el6 (x86_64)
compat-libstdc++-33-3.2.3-69.el6.i686
gcc-4.4.4-13.el6 (x86_64)
gcc-c++-4.4.4-13.el6 (x86_64)
glibc-2.12-1.7.el6 (i686)
glibc-2.12-1.7.el6 (x86_64)
glibc-devel-2.12-1.7.el6 (x86_64)
glibc-devel-2.12-1.7.el6.i686
ksh
libgcc-4.4.4-13.el6 (i686)
libgcc-4.4.4-13.el6 (x86_64)
libstdc++-4.4.4-13.el6 (x86_64)
libstdc++-4.4.4-13.el6.i686
libstdc++-devel-4.4.4-13.el6 (x86_64)
libstdc++-devel-4.4.4-13.el6.i686
libaio-0.3.107-10.el6 (x86_64)
libaio-0.3.107-10.el6.i686
libaio-devel-0.3.107-10.el6 (x86_64)
libaio-devel-0.3.107-10.el6.i686
```

```
make-3.81-19.el6
sysstat-9.0.4-11.el6 (x86_64)
```

- For SUSE Linux Enterprise Server 10:

```
binutils-2.16.91.0.5
compat-libstdc++-5.0.7
gcc-4.1.0
gcc-c++-4.1.2
glibc-2.4-31.63
glibc-devel-2.4-31.63
glibc-devel-32bit-2.4-31.63
ksh-93r-12.9
libaio-0.3.104
libaio-32bit-0.3.104
libaio-devel-0.3.104
libaio-devel-32bit-0.3.104
libelf-0.8.5
libgcc-4.1.2
libstdc++-4.1.2
libstdc++-devel-4.1.2
make-3.80
numactl-0.9.6.x86_64
sysstat-8.0.4
```

- For SUSE Linux Enterprise Server 11:

```
binutils-2.19
gcc-4.3
gcc-32bit-4.3
gcc-c++-4.3
glibc-2.9
glibc-32bit-2.9
glibc-devel-2.9
glibc-devel-32bit-2.9
ksh-93t
libaio-0.3.104
libaio-32bit-0.3.104
libaio-devel-0.3.104
libaio-devel-32bit-0.3.104
libstdc++33-3.3.3
libstdc++33-32bit-3.3.3
libstdc++43-4.3.3_20081022
libstdc++43-32bit-4.3.3_20081022
libstdc++43-devel-4.3.3_20081022
libstdc++43-devel-32bit-4.3.3_20081022
libgcc43-4.3.3_20081022
libstdc++-devel-4.3
make-3.81
sysstat-8.1.5
```

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 SES 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
semms	32000	
semopm	100	
semmni	128	
shmmax	40 to 50 percent of the total physical memory.	/proc/sys/kernel/shmmax
shmall	Should not be less than $n * (shmmax / PAGE_SIZE)$, where n is the number of databases installed on a system and <code>PAGE_SIZE</code> is generally 4096 by default on Linux and UNIX systems. The <code>PAGE_SIZE</code> value can be determined by executing the command <code>getconf PAGE_SIZE</code> .	/proc/sys/kernel/shmall
shmmni	4096	/proc/sys/kernel/shmmni
file-max	6815744	/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
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	<pre>/sbin/sysctl -a grep sem</pre> <p>This command displays the value of the semaphore parameters in the order listed.</p>
shmall, shmmax, and shmmni	<pre>/sbin/sysctl -a grep shm</pre> <p>This command displays the details of the shared memory segment sizes.</p>
file-max	<pre>/sbin/sysctl -a grep file-max</pre> <p>This command displays the maximum number of file handles.</p>
ip_local_port_range	<pre>/sbin/sysctl -a grep ip_local_port_range</pre> <p>This command displays a range of port numbers.</p>
rmem_default	<pre>/sbin/sysctl -a grep rmem_default</pre>
rmem_max	<pre>/sbin/sysctl -a grep rmem_max</pre>
wmem_default	<pre>/sbin/sysctl -a grep wmem_default</pre>
wmem_max	<pre>/sbin/sysctl -a grep wmem_max</pre>
aio-max-nr	<pre>/sbin/sysctl -a grep aio-max-nr</pre>

- 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 lesser than the recommended minimum value, then during the installation, you will be prompted for these prerequisite verification failures. Click **Fix & Check Again** to generate the script file `runfixup.sh`. You can run this script as the `root` user to complete the required preinstallation steps. The `runfixup.sh` script checks for and sets kernel parameters to the recommended minimum values.

Another way to fix the kernel parameter values that are lesser than the recommended minimum values is to execute 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 = 4294967295
kernel.shmni = 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. On SUSE Linux Enterprise Server systems, enter the following command to ensure that the system reads the `/etc/sysctl.conf` file when it restarts:

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

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 the vi editor to add the following text to /etc/sysctl.conf file, and enable the boot.sysctl script to run when the system restarts:

```
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.

Configuring Shell Limits

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

Shell Limit	Item in limits.conf	Soft Limit	Hard Limit
Number of open file descriptors	nofile	at least 1024	65536
Number of processes available to a single user	nproc	at least 2047	16384
Size of the stack segment of the process	stack	at least 10240 KB	at least 10240 KB, and at most 32768 KB

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
oracle      soft  stack  10240
```

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 in again for the changes to take effect.

Installing Oracle SES on a Port Number less than 1024

During installation of Oracle SES, you specify a middle tier port number. This port number is included in the URL for accessing Oracle SES application (Oracle SES Administration application and Oracle SES Query application. Oracle SES Query application is also referred to as Search URL or Search application in this document). For example, if you specify 7777 as the port number, then the Search URL will look like this:

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

If you want 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/search/query/search.jsp
```

On Linux and UNIX 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 "[\(Optional\) Changing the Oracle SES Middle Tier Port](#)" to change the port to a number less than 1024.

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 crawl the multibyte files and paths. 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 restart the Oracle SES server instance.

Installing Mandatory Oracle Database Patches

If you are going to install Oracle SES 11.2.2.2 software on an existing Oracle Database 11.2.0.3.x or 11.2.0.4.x, then you must download the following patches from My Oracle Support Web site <https://support.oracle.com> and apply them over the existing Oracle Database instance before you proceed with the Oracle SES software installation.

Note:

- These database patches are also available in the `database_patches` directory present under the top-level directory of the Oracle SES 11.2.2.2 software distribution.
- Oracle SES support for Oracle Database 11.2.0.3.x ends in August 2015, so you must upgrade to either Oracle Database 11.2.0.4.x or Oracle Database 12.1.0.2.x before the support ends for Oracle Database 11.2.0.3.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
- Oracle SES supports Oracle Database 12.1.0.2.x, but it does not support installing Oracle SES directly on an existing Oracle Database 12.1.0.2.x. For using Oracle Database 12.1.0.2.x with Oracle SES, you must first install Oracle SES on Oracle Database 11.2.0.3.x or 11.2.0.4.x, and then upgrade the database to 12.1.0.2.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.

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-
- **Patches for Oracle Database 11.2.0.3.x:** 13404129, 12985184, 14256211, 13366199, 19049016, 12401111, 16059292, 16272008, 12919564, and 18997672. If the existing database is an Oracle RAC Database, then apply the additional patches 16921832 and 13387392. Apply these patches using Oracle OPatch utility.
 - **Patches for Oracle Database 11.2.0.4.x:** 20882647, 13073613, and 19249319. Apply these patches using Oracle OPatch utility.

After applying all the database patches, run the following SQL command as the SYS user to recompile all the invalid database objects.

```
SQL> exec utl_recomp.recomp_serial('CTXSYS');
```

Installing Mandatory WebLogic Server Patches

If you are going to install Oracle SES 11.2.2.2 software on an existing WebLogic Server 10.3.6.0.x middle tier, then you must download the patch 13583235 from My Oracle Support Web site <https://support.oracle.com> and apply it over the existing WebLogic Server instance before you proceed with the Oracle SES software installation.

Note:

- This WebLogic Server patch is also available in the `weblogic_patches` directory present under the top-level directory of the Oracle SES 11.2.2.2 software distribution.
 - This patch fix is already included in the WebLogic Server 10.3.6.0.7, which is a PSU to be applied on top of WebLogic Server 10.3.6.0.0.
-
-

See Also:

Master Note on WebLogic Server Patch Set Updates (PSUs) (Doc ID 1470197.1).

The following are the steps to apply this patch on Linux and UNIX system:

1. Create the directory `cache_dir` under the directory `MW_HOME/utills/bsu` and unzip the contents of the 13583235 patch file `p13583235_1036_Generic.zip` into it.
2. Navigate to the directory `MW_HOME/utills/bsu` and run the command `bsu.sh`.

Installation Tasks

This section contains the following topics:

- [Oracle SES Installation Procedure](#)
- [Oracle SES Configuration during Installation](#)
- [Verification of Successful Installation of Oracle SES](#)
- [Important Oracle SES Directories](#)
- [Installation Log Files](#)
- [Installation of Multiple Oracle SES Instances](#)
- [Allocating Custom Memory Size for Oracle SES Database](#)
- [Oracle SES Database User Password Expiration Policy](#)

For supplementary instructions on installing Oracle SES, see the Oracle SES tutorial:

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

Oracle SES Installation Procedure

Oracle SES installation software is provided by 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](#)" 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 four.
 - 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. Navigate to the top-level directory of the Oracle SES software distribution where the zip archives were unzipped.
6. Start Oracle SES installer from your system prompt using the following command:

```
./runInstaller
```

The Oracle SES install Wizard is displayed.

See Also:

- ["Installation of Multiple Oracle SES Instances"](#)
 - ["Allocating Custom Memory Size for Oracle SES Database"](#)
-
-

7. Follow the pages of the installation wizard as described in section "[Oracle SES Configuration during Installation](#)".
 8. When the *Finish* wizard page is displayed, click **Close** to exit from the Oracle SES installer.
-
-

See Also:

- ["Verification of Successful Installation of Oracle SES"](#)
 - ["Important Oracle SES Directories"](#)
-
-

Oracle SES Configuration during Installation

The Oracle SES installer wizard displays multiple pages containing the configuration information about the various Oracle SES software components, such as database and middle tier.

The Oracle SES 11.2.2.2 installation software contains the following software components:

- Oracle SES version 11.2.2.2
- Oracle Database version 11.2.0.3.0
- Oracle WebLogic Application Server version 10.3.6.0.0
- Oracle JRockit version 1.6.0_29-b11
- Perl v5.10.0

The Oracle SES installer provides the following three options for installing Oracle SES:

- [Install and Configure Oracle Secure Enterprise Search with Database and Middle Tier](#)
- [Install and Configure Oracle Secure Enterprise Search with Middle Tier \(on an Existing Database\)](#)
- [Install Oracle Secure Enterprise Search Software Only \(on an Existing Database and an Existing Middle Tier\)](#)

Note:

The Oracle SES installer will prompt you to run the following scripts as the `root` user at the end of the installation process:

- `root.sh` script present in the DB home directory, only if you have chosen the option of installing Oracle SES along with the database and the middle tier.
- `oraInstRoot.sh` script present in the inventory directory, only if this is the first Oracle product installation on the system.

The information about the option selected during Oracle SES installation is stored in the file `ses_home/install/install.properties`.

Install and Configure Oracle Secure Enterprise Search with Database and Middle Tier

Select this option to install Oracle SES 11.2.2.2 along with the Oracle Database 11.2.0.3.0 and Oracle WebLogic Server 10.3.6.0.0 middle tier.

When this installation option is selected, Oracle SES installer provides the Wizard pages for installing and configuring the following Oracle SES components:

- **Database Details**

Provide the following details for installing Oracle Database and Oracle SES schema:

- DB Oracle Base: The root directory where all the Oracle Database products are installed. This directory path is displayed by default. You can change this path by clicking the **Browse** button and then selecting a different directory path. In this document, this directory is referred to as *oracle_base*.

Note:

The members of the `oraInventory` group must have write permission to the DB Oracle Base directory.

-
-
- DB Oracle Home: The Oracle home directory where the database component of Oracle SES software is installed. The default is *oracle_base/product/11.2.0/sesdb_1*. You can change this path by either clicking the **Browse** button and then selecting a different directory path, or entering the directory path in the text box (the directory path must not contain spaces). In this document, this directory is referred to as *oracle_home*.
 - Data File Location: The directory where Oracle SES database stores its data files. The default is *oracle_base/oradata*. You can change this directory path by clicking the **Browse** button and then selecting a different directory path. The data storage location must be outside of the Oracle home directory, so that it will not be deleted during upgrade process in future.
 - Global DB Name: The name for the database that uniquely identifies it from the other databases in the network. Specify it in the format: *database_unique_name.database_domain_name*, where *database_unique_name* is the name of the database. It can contain a maximum of 30 characters, as long as the first eight characters are unique. (alphanumeric, underscore (_), dollar (\$), and pound (#)). Database domain name is the computer environment used for the database. It should not contain more than 128 characters (alphanumeric, underscore (_), and pound (#)), inclusive of all periods. Global DB Name value should not exceed 128 characters.

Example: *sales.us.example.com*, where the database unique name is *sales* and the database domain name is *us.example.com*.
 - Search Schema Password: Password for the Oracle SES schema. The password should contain minimum of 8 characters and maximum of 30 characters. Oracle recommends that the password should contain at least one lowercase letter, one uppercase letter, and one digit.

The Search schema password is the common password used for `SEARCHSYS`, `SYS`, `SEARCH_ESS`, `SEARCH_MDS`, and `SYSTEM` users.

See Also:

["Oracle SES Database User Password Expiration Policy"](#)

Note:

For the Oracle SES 11.2.2.2 release, the Oracle SES administrative user is `SEARCHSYS`. For the earlier Oracle SES release (11.1.2.2), the Oracle SES administrative user is `EQSYS`.

- Confirm Password: Re-enter password for the Oracle SES schema.
 - Language: Select all the languages to be installed for the database. English is a must, and it is selected by default.
-
-

Note:

The Advanced Compression Option feature of Oracle Database is enabled by default. The Advance Compression Option substantially reduces the crawler cache file space requirement on the system where Oracle SES database is installed.

- **Middle Tier Details**

Provide the following details for installing the middle tier:

- **Middleware Home:** The home directory of Oracle SES middle tier. This directory path is displayed by default. You can change this path by clicking the **Browse** button and then selecting a different directory path. The middleware home directory cannot be under the `oracle_base` directory. In this document, this directory is referred to as `mw_home`.
- **Domain Home:** The home directory of WebLogic Server domain. A domain is the basic administration unit for WebLogic Server. It consists of one or more WebLogic Server instances and logically related resources and services that are managed collectively, as one unit.

The default Domain Home directory is `mw_home/user_projects/domains`. You can change this path by clicking the **Browse** button and then selecting a different directory path. It is recommended to have the Domain Home directory under the Middleware Home directory. In this document, this directory is referred to as `wls_domain_home`.

- **Domain Name:** The name of the WebLogic Server domain used by the Oracle SES server. It is `search_domain` by default, and the directory with this name is created under the Domain home. In this document, this directory is referred to as `ses_domain_name`.

The domain name can include only alphanumeric characters, hyphen ('-'), and underscore character ('_'). The domain name must contain at least one letter or digit.

- **WLS Admin Port:** The WebLogic Server administration port. Its default value is the first available port starting 7001. You can specify any other available port. The specified port must be within a valid range, for example, for Linux and UNIX systems, it must be within the range of 1024 to 65535.

- Search HTTP Port: The port on which the Oracle SES server will listen. For example, if you install Oracle SES server on host `example.com` and you specify port `7777`, then your Search URL will be `http://example.com:7777/search/query/search`.

Its default value is the first available port starting 5720. You can specify any other available port. The specified port must be within a valid range, for example, for Linux and UNIX systems, it must be within the range of 1024 to 65535.

- Search Admin Password: The Oracle SES administrator (`SEARCHSYS`) password. This is a common password used by the `SEARCHSYS` LDAP user and WebLogic administrator. This is the password that you will later use to log on to the Oracle SES administration tool.

The password should contain minimum of 8 characters and maximum of 30 characters. Oracle recommends that the password should contain at least one lowercase letter, one uppercase letter, and one digit.

- Confirm Password: Re-enter the Search Admin password.

Note:

After the successful installation of Oracle SES, the directory `Oracle_SES1` gets created under the SES middle tier home directory. This is the SES home directory, referred to as `ses_home` in this document.

Install and Configure Oracle Secure Enterprise Search with Middle Tier (on an Existing Database)

Select this option to install Oracle SES 11.2.2.2 and WebLogic Server 10.3.6.0.0 middle tier on a system, when you have already installed Oracle Database 11.2.0.3.x (Enterprise Edition) or 11.2.0.4.x (Enterprise Edition).

Oracle SES application must be installed on a system that is in the same network where Oracle Database is installed. The Oracle Database can be either in a single node configuration or in an Oracle RAC configuration.

Note:

- Oracle Database version must be 11.2.0.3.x (**Enterprise Edition**) or 11.2.0.4.x (**Enterprise Edition**).
 - Oracle SES support for Oracle Database 11.2.0.3.x ends in August 2015, so you must upgrade to either Oracle Database 11.2.0.4.x or Oracle Database 12.1.0.2.x before the support ends for Oracle Database 11.2.0.3.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
 - Oracle SES supports Oracle Database 12.1.0.2.x, but it does not support installing Oracle SES directly on an existing Oracle Database 12.1.0.2.x. For using Oracle Database 12.1.0.2.x with Oracle SES, you must first install Oracle SES on Oracle Database 11.2.0.3.x or 11.2.0.4.x, and then upgrade the database to 12.1.0.2.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
-
-

Note:

- Oracle Database must be configured to use **AL32UTF8** character set
- The database schemas SEARCHSYS, SEARCH_ESS, and SEARCH_MDS must not be present in the Oracle Database instance.
- All the required database patches for Oracle SES must be applied on the Oracle Database instance. Refer to section "[Installing Mandatory Oracle Database Patches](#)" for more information about applying the mandatory database patches.
- Oracle Database with Edition-Based Redefinition (EBR) feature enabled is not supported.
- The Oracle Database instance must have the following components:
 - Oracle Text
 - Oracle JVM
 - Oracle XML DB
- The database resource settings, such as, "processes" and "sessions" should be configured based on the number of WebLogic Servers to be run in a cluster. If these resource settings are not configured properly, then an error similar to the following may appear in Oracle SES log file:

```
<BEA-000633> <Resource Pool "SearchQueryDS" suspending due to number of resource creation or test failures exceeding threshold of 2>
```

For example, Oracle Database's default settings for maximum sessions and maximum processes are 247 and 150 respectively, which are not adequate to allocate database connections when more servers come online. To resolve this issue, you need to increase the values for both these settings to around 1000.

Refer to the section "[Database Initialization Parameters](#)" in the *Oracle Secure Enterprise Search Administrator's Guide* for more information about these database resource settings.

- Oracle SES supports installing Patch Set Updates (PSUs) for Oracle Database base releases 11.2.0.3.0 and 11.2.0.4.0 as long as the set of mandatory Oracle Database patches listed on the Oracle support website is adhered to. For example, you can install PSU 11.2.0.3.11 over the Oracle Database base release 11.2.0.3.0 only and PSU 11.2.0.4.3 over the Oracle Database base release 11.2.0.4.0 only. For more information about installing PSUs, refer to the section "[Applying Critical Patch Updates \(CPUs\) and Patch Set Updates \(PSUs\)](#)".
-
-

See Also:

- *Oracle Real Application Clusters Administration and Deployment Guide* for the detailed information about Oracle RAC Database.
 - "Oracle RAC Deployment Best Practice" in *Oracle Secure Enterprise Search Administrator's Guide*.
-
-

When this installation option is selected, the Oracle SES installer provides Wizard pages for installing and configuring the following Oracle SES components:

- **Existing Database Details**

Provide the following details for the existing Oracle Database and for the new Oracle SES schema:

- **DB Host Name:** The system host name where the Oracle Database is installed. For Oracle RAC Database, specify SCAN name as DB host name.
- **DB Port:** The Oracle Database Listener port. The Oracle Database and the corresponding Listener should be up and running, and should be ready to accept database connections.
- **DB Service Name:** The Oracle Database service name. This is generally the Global database name.
- **DB SYS Password:** The Oracle Database SYS user password.
- **Search Schema Password:** Password for the Oracle SES schema. The password should contain minimum of 8 characters and maximum of 30 characters. Oracle recommends that the password should contain at least one lowercase letter, one uppercase letter, and one digit.

The Search schema password is the common password used for SEARCHSYS, SEARCH_ESS, and SEARCH_MDS users.

Note:

For the Oracle SES 11.2.2.2 release, the Oracle SES administrative user is SEARCHSYS. For the earlier Oracle SES release (11.1.2.2), the Oracle SES administrative user is EQSYS.

- **Confirm Password:** Re-enter password for the Oracle SES schema.
 - **Advanced Compression Option:** Select this option if you have the license for the Advanced Compression Option feature.
-
-

Note:

Selecting the Advance Compression Option substantially reduces the crawler cache file space requirement on the system where Oracle SES database is installed.

- Oracle Partitioning Option: Select this option if you have the license for the Oracle Partitioning Option feature.
- **Middle Tier Details**

Provide the following details for installing the middle tier:

- **Middleware Home:** The home directory of Oracle SES middle tier. This directory path is displayed by default. You can change this path by clicking the **Browse** button and then selecting a different directory path. The middleware home directory cannot be under the *oracle_base* directory. In this document, this directory is referred to as *mw_home*.
- **Domain Home:** The home directory of WebLogic Server domain. A domain is the basic administration unit for WebLogic Server. It consists of one or more WebLogic Server instances and logically related resources and services that are managed collectively, as one unit.

The default Domain Home directory is *mw_home/user_projects/domains*. You can change this path by clicking the **Browse** button and then selecting a different directory path. It is recommended to have the Domain Home directory under the Middleware Home directory. In this document, this directory is referred to as *wls_domain_home*.

- **Domain Name:** The name of the WebLogic Server domain used by the Oracle SES server. It is *search_domain* by default, and the directory with this name is created under the Domain home. In this document, this directory is referred to as *ses_domain_name*.

The domain name can include only alphanumeric characters, hyphen ('-'), and underscore character ('_'). The domain name must contain at least one letter or digit.

- **WLS Admin Port:** The WebLogic Server administration port. Its default value is the first available port starting 7001. You can specify any other available port. The specified port must be within a valid range, for example, for Linux and UNIX systems, it must be within the range of 1024 to 65535.
- **Search HTTP Port:** The port on which the Oracle SES server will listen. For example, if you install Oracle SES server on host *example.com* and you specify port *7777*, then your Search URL will be *http://example.com:7777/search/query/search*.

Its default value is the first available port starting 5720. You can specify any other available port. The specified port must be within a valid range, for example, for Linux and UNIX systems, it must be within the range of 1024 to 65535.

- **Search Admin Password:** The Oracle SES administrator (*SEARCHSYS*) password. This is a common password used by the *SEARCHSYS* LDAP user and WebLogic administrator. This is the password that you will later use to log on to the Oracle SES administration tool.

The password should contain minimum of 8 characters and maximum of 30 characters. Oracle recommends that the password should contain at least one lowercase letter, one uppercase letter, and one digit.

- Confirm Password: Re-enter the Search Admin password.

Note:

After the successful installation of Oracle SES, the directory `Oracle_SES1` gets created under the SES middle tier home directory. This is the SES home directory, referred to as `ses_home` in this document.

(Optional) Postinstallation Step - Register XML DB Protocol Port

This postinstallation step allows for WebDAV/HTTP(S) access to the Oracle XML DB repository data. Perform this step only if you want to use WebDAV protocol to customize the skin bundle.

For WebDAV/HTTPS(S) access to the Oracle XML DB repository, you need to register the XML DB protocol port. Perform this operation when Oracle SES is installed on an existing Oracle Database on a system that is different from the one where Oracle SES middle tier is installed.

Perform the following steps to register the XML DB protocol port:

1. Log on to the system where the Oracle SES database is installed.
2. Run the following commands at the command line:

```
setenv ORACLE_HOME path_of_the_DB_Oracle_Home
setenv ORACLE_SID Oracle_Database_SID

$ORACLE_HOME/bin/sqlplus "sys/password as sysdba"

SQL> exec dbms_xdb.sethttpport(port)
```

Here, *port* can be any free port greater than 1024.

You can verify the successful registration of the XML DB protocol port by running the following command:

```
SQL> SELECT dbms_xdb.gethttpport() FROM dual;
```

Install Oracle Secure Enterprise Search Software Only (on an Existing Database and an Existing Middle Tier)

Select this option to install only the Oracle SES software on a system, when you have already installed:

- **Oracle Database 11.2.0.3.x (Enterprise Edition) or Oracle Database 11.2.0.4.x (Enterprise Edition)**

Oracle SES application must be installed on a system that is in the same network where Oracle Database is installed. The Oracle Database can be either in single node configuration or in Oracle RAC configuration.

Note:

- Oracle SES support for Oracle Database 11.2.0.3.x ends in August 2015, so you must upgrade to either Oracle Database 11.2.0.4.x or Oracle Database 12.1.0.2.x before the support ends for Oracle Database 11.2.0.3.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
 - Oracle SES supports Oracle Database 12.1.0.2.x, but it does not support installing Oracle SES directly on an existing Oracle Database 12.1.0.2.x. For using Oracle Database 12.1.0.2.x with Oracle SES, you must first install Oracle SES on Oracle Database 11.2.0.3.x or 11.2.0.4.x, and then upgrade the database to 12.1.0.2.x. Refer to the Oracle SES Release Notes section "Mandatory Upgrade to either Oracle Database 11.2.0.4 or Oracle Database 12.1.0.2" for more information.
-
-

Note:

- Oracle Database version must be 11.2.0.3.x (**Enterprise Edition**) or 11.2.0.4.x (**Enterprise Edition**).
- Oracle Database must be configured to use **AL32UTF8** character set.
- The database schemas SEARCHSYS, SEARCH_ESS, and SEARCH_MDS must not be present in the Oracle Database instance.
- All the required database patches for Oracle SES must be applied on the Oracle Database instance. Refer to section "[Installing Mandatory Oracle Database Patches](#)" for more information about applying the mandatory database patches.
- Oracle Database with Edition-Based Redefinition (EBR) feature enabled is not supported.
- The Oracle Database instance must have the following components:
 - Oracle Text
 - Oracle JVM
 - Oracle XML DB

- The database resource settings, such as, "processes" and "sessions" should be configured based on the number of WebLogic Servers to be run in a cluster. If these resource settings are not configured properly, then an error similar to the following may appear in Oracle SES log file:

```
<BEA-000633> <Resource Pool "SearchQueryDS" suspending due to number of  
resource creation or test failures exceeding threshold of 2>
```

For example, Oracle Database's default settings for maximum sessions and maximum processes are 247 and 150 respectively, which are not adequate to allocate database connections when more servers come online. To resolve this issue, you need to increase the values for both these settings to around 1000.

Refer to the section "[Database Initialization Parameters](#)" in the *Oracle Secure Enterprise Search Administrator's Guide* for more information about these database resource settings.

- Oracle SES supports installing Patch Set Updates (PSUs) for Oracle Database base releases 11.2.0.3.0 and 11.2.0.4.0 as long as the set of mandatory Oracle Database patches listed on the Oracle support website is adhered to. For example, you can install PSU 11.2.0.3.11 over the Oracle Database base release 11.2.0.3.0 only and PSU 11.2.0.4.3 over the Oracle Database base release 11.2.0.4.0 only. For more information about installing PSUs, refer to the section "[Applying Critical Patch Updates \(CPUs\) and Patch Set Updates \(PSUs\)](#)".
-
-

See Also:

- *Oracle Real Application Clusters Administration and Deployment Guide* for the detailed information about Oracle RAC Database.
- "Oracle RAC Deployment Best Practice" in *Oracle Secure Enterprise Search Administrator's Guide*.

- **Oracle WebLogic Server 10.3.6.0.x**

Oracle SES application must be installed on the same system where WebLogic Server is installed. All the required WebLogic Server patches for Oracle SES must be applied on it. Refer to section "[Installing Mandatory WebLogic Server Patches](#)" for more information about applying the mandatory WebLogic Server patches.

Note:

- The existing middle tier must have WebLogic Server version 10.3.6.0.x.
- If the WebLogic Server middle tier contains any Oracle Fusion Middleware product installed on it, then Oracle SES must be installed on a separate middle tier home. Oracle SES cannot have the same middle tier home as that of any other Oracle product.
- Oracle SES software must be installed on the same system where WebLogic Server is installed.
- If you want to use WebLogic Server in a clustered environment, then refer to the support note 1611280.1 "Implementing High Availability for Oracle SES 11.2.2.2". You can search for this support note on My Oracle Support Web site <https://support.oracle.com> by entering the string 1611280.1 in the Global Search field.

When this installation option is selected, the Oracle SES installer provides the Wizard pages for installing and configuring the following Oracle SES components:

- **Existing Middle Tier Details**

Provide the following details for the existing WebLogic Server middle tier:

- **Middleware Home:** The home directory of an existing middle tier installation containing the WebLogic Server software. In this document, this directory is referred to as *mw_home*.
- **Search Home Directory:** The name of the home directory where Oracle SES must be installed. This directory is created under the Middleware home (*mw_home*), and is also referred to as SES home. In this document, this directory is referred to as *ses_home*.

Postinstallation Steps

You must execute the following postinstallation steps when you install Oracle SES on an existing middle tier and an existing database:

1. Load Oracle SES schema in the database:

- a. Set the environment variable `JRE_DIR` to point to the JDK installation directory used by the existing WebLogic Server middle tier.

```
setenv JRE_DIR wls_server_java_home_directory
```

- b. Run the Repository Creation Utility (RCU) to load the Oracle SES schema into the database.

```
cd ses_home/rcu/bin
./rcu
```

See Also:

- *Oracle Fusion Middleware Repository Creation Utility User's Guide* for detailed information about creating database schema using RCU
- *Oracle Fusion Middleware 11g Repository Creation Utility (RCU) - FAQ (Doc ID 1304790.1)* on Oracle Support Web site <https://support.oracle.com>

-
-
- c. In the Welcome screen, click **Next**.
- d. In the Create Repository screen, select **Create**, and click **Next**.
- e. In the Database Connection Details screen, enter the information related to the existing Oracle Database and user credentials of the `sys` user. Click **Next**.
- f. In the Select Components screen, select **Create a new Prefix** option and enter **SEARCH** string as prefix. Select the schemas **SEARCHSYS**, **MDS**, and **ESS**, and click **Next**.

Note:

For the Oracle SES 11.2.2.2 release, the Oracle SES administrative user is `SEARCHSYS`. For the earlier Oracle SES release (11.1.2.2), the Oracle SES administrative user is `EQSYS`.

-
-
- g. In the Schema Passwords screen, enter passwords for the selected schemas. You may specify either the same password or different passwords for the selected schemas. Click **Next**.
- h. In the Custom Variables screen, enter **Y** for Advance Compression Option and Oracle Partitioning Option, if you have license for these features; else enter **N**. Click **Next**.

Note:

Selecting the Advance Compression Option substantially reduces the crawler cache file space requirement on the system where Oracle SES database is installed.

- i. In the Map Tablespaces screen, you may choose to use the existing tablespaces, and click **Next**.
 - j. In the Summary screen, verify the database details information provided by you, and click **Create**. This will create the Oracle SES schema in the existing database specified by you.
2. Create WebLogic domain:

If you want to use an existing WebLogic domain that is already used by applications, such as, Oracle WebCenter or Oracle PeopleSoft or others, then go to step 3.

If you want to create a new WebLogic domain, then execute the following steps.

Note:

For detailed information about creating a new WebLogic domain, refer to *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

- a. Run the WebLogic configuration tool using the following command:

```
mw_home/oracle_common/common/bin/config.sh
```
 - b. In the Welcome screen, select **Create a new WebLogic domain** option and click **Next**.
 - c. In the Select Domain Source screen, the template "Basic Weblogic Template" is selected by default. Click **Next**.
 - d. In the Specify Domain Name and Location screen, enter the domain name (example, *search_domain*) and domain location information, and click **Next**.
 - e. In the Configure Administrator User Name and Password screen, enter the WebLogic Server administrator user name and password, and click **Next**.
 - f. In the Configure Server Start Mode and JDK screen, select the **Production Mode** option, specify the installation directory for JDK 1.6 or later versions, and click **Next**.
 - g. Click **Create** to create the new WebLogic domain.
3. Extend the WebLogic domain with SES, ESS, and EM templates:

After you create a new WebLogic domain as explained in the earlier step, or if you already have an existing WebLogic domain that you want to use, then you should extend this WebLogic domain with SES, ESS, and EM templates by executing the following steps.

Note:

For detailed information about extending a WebLogic domain, refer to *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

- a. Run the WebLogic configuration tool using the following command:

```
mw_home/oracle_common/common/bin/config.sh
```
- b. In the Welcome screen, select **Extend an existing WebLogic domain** option and click **Next**.
- c. In the Select a WebLogic Domain Directory screen, select the domain name that you want to extend for Oracle SES, for example, `search_domain`, and click **Next**.
- d. In the Select Extension Source screen, select **Extend my domain automatically to support the following added products** option, select the following check boxes, and click **Next**.
 - Oracle Secure Enterprise Search ESS Core Hosting Application–11.2.2.2.0 [ORACLE_SES1]
 - Oracle Secure Enterprise Search–Standalone Mode 11.2.2.2.0 [ORACLE_SES1]
 - Oracle Enterprise Scheduler Service Basic–11.1.1.0 [ORACLE_SES1]
 - Oracle Enterprise Manager Plugin for ESS–11.1.1.0 [ORACLE_SES1]
 - Oracle Enterprise Manager–11.1.1.0 [oracle_common]
- e. In the Configure JDBC Component Schema screen, select all the schemas, enter the following database connection information, and click **Next**.
 - Vendor: Oracle
 - DBMS/Service: Database service name
 - Driver: Oracle's Driver (Thin) for service connections
 - Host Name: Name of the database server host for non-Oracle RAC database or SCAN Name for Oracle RAC database
 - Schema Owner: Name of the database schema
 - Port: Database server listener port
 - Schema Password: Database schema password

Note:

When entering the schema owner, make sure that MDS and ESS have the prefix name SEARCH as part of the schema owner, for example, SEARCH_MDS and SEARCH_ESS. There must not be any prefix for SEARCHSYS. There must not be a schema by the name DEV_ORAESS.

- f. In the Test JDBC Component Schema screen, click **Test Connections** button to verify that all the schema details entered are correct.
- g. In the Select Optional Configuration screen, select **Managed Servers, Deployments and Services** check box.

- h. In the Configure Managed Servers screen, add the Managed server names - `search_server1` for the Search server and `ess_server1` for the ESS server. Specify the listen address of the system on which the WebLogic Server middle tier is installed and listen port as any of the available ports on that system. Note down the port number for the Search server `search_server1`. This information will be used in the URLs for accessing the Oracle SES Administration and Query applications.

Note:

- At least one Managed server should be created for the ESS server and the Search server. For WebLogic Server cluster environment, you should create Managed servers for the ESS server and the Search server for each WebLogic Server node. For example, for two WebLogic Server nodes `WLS1` and `WLS2`, create two ESS servers - `ess_server1` and `ess_server2`, and two Search servers - `search_server1` and `search_server2`.
- Configuration Steps (3) (i) to (3) (l) are optional for a single node WebLogic Server instance, but it is strongly advised to do this configuration for achieving scalability in future by adding multiple ESS servers and Search servers to the WebLogic Server clusters created in Step (3) (i).

-
-
- i. In the Configure Clusters screen, add the two cluster names:

- `SESCluster` (for Search server cluster)

- `ESSCluster` (for ESS server cluster)

For both these clusters, set the messaging mode to `unicast`.

For `SESCluster`, in the Cluster address field, enter the system name and port of `search_server1` that was specified in Step (3) (h). If multiple Search servers are created in Step (3) (h) for multiple WebLogic Server nodes, then enter comma-separated list of system names and ports of the multiple Search servers. For example: `wls1:5720, wls2:5720`.

For `ESSCluster`, in the Cluster address field, enter the system name and port of `ess_server1` that was specified in Step (3) (h). If multiple ESS servers are created in Step (3) (h) for multiple WebLogic Server nodes, then enter comma-separated list of system names and ports of the multiple ESS servers. For example: `wls1:13101, wls2:13101`.

- j. In the Assign Servers to Clusters screen, assign the Search servers to the Search server cluster **SESCluster** and assign ESS servers to the ESS server cluster **ESSCluster**.

- k. In the Configure Machines screen, add the node names, node manager listen addresses, and node manager listen ports for all the WebLogic Server nodes.

- l. In the Assign Servers to Machines screen, assign SES servers and ESS servers to their respective WebLogic Server nodes.

- m. Continue clicking **Next** button until you reach the Target Services to Clusters or Servers screen.

- n. Select **SESCluster** in the left panel.
- o. In the right panel, select **Service > JDBC > JDBC System Resource**.
- p. Select **EssDS, EssXADS, EssInternalDS, mds-ESS_MDS_DS, mds-owsm, SearchAdminDS, and SearchQueryDS**.

Note:

- For a single node WebLogic Server instance (that is, when WebLogic Server cluster is not configured), all the JDBC system resources under Service should have `ess_server1` and `ses_server1` as targets. The `mds-owsm` should have `AdminServer, ess_server1, and ses_server1` as targets.
- For the WebLogic Server cluster environment, all the JDBC system resources under Service should have `ESSCluster` and `SESCluster` as targets. The `mds-owsm` should have `AdminServer, ESSCluster, and SESCcluster` as targets.

-
-
- q. Click **Extend** to extend the domain.

Note: If the WebLogic Server middle tier is deployed across multiple systems, then you can use the `pack` and `unpack` commands to create the managed server domain directory structure on the remote servers. Refer to *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard* for more information.

4. Configure `nodemanager.properties` file:
 - a. Go to `mw_home/wlserve/common/nodemanager`.
 - b. Open the `nodemanager.properties` file in a text editor.
 - c. Set `StartScriptEnabled=true`.
 - d. Save and close the `nodemanager.properties` file.
5. Start WebLogic Server, ESS managed server, and Search managed server:
 - a. Start WebLogic Admin Server by navigating to the WebLogic domain directory and running the `startWeblogic.sh` script.

```
wls_domain_home/ses_domain_name/startWebLogic.sh
```
 - b. Start SES and ESS managed servers by executing the following commands:

```
wls_domain_home/ses_domain_name/bin/startManagedWebLogic.sh ess_server1
```

```
wls_domain_home/ses_domain_name/bin/startManagedWebLogic.sh search_server1
```
6. If you are *not* using an external LDAP server, then execute step 6A, else execute step 6B.

Note:

If the WebLogic Server middle tier is deployed across multiple systems, then you must configure an LDAP-based identity store and an Oracle Platform Security Services (OPSS) security store as described in Step 6B.

6A. If you are not using an external LDAP server, create users FUSION_APPS_SEARCH_APPID and SEARCHSYS in the WebLogic Server domain:

- a. Log on to the WebLogic Console (<http://host:port/console>) as an administrator user.
- b. Navigate to Security Realms > myRealm > Users and Groups.
- c. Click **NEW** and create a new user FUSION_APPS_SEARCH_APPID. Provide a password for this user.
- d. Save the changes.
- e. Click **NEW** and create new user SEARCHSYS. Provide a password for this user.
- f. Save the changes.

6B. If you are using an external LDAP server, then create two users in the external LDAP server. One user must be an internal user (for example, APPID user) and the other user must be an Oracle SES administrator (for example, ADMIN user).

See Also:

- *Oracle Fusion Middleware Securing Oracle WebLogic Server* guide at http://docs.oracle.com/cd/E23943_01/web.1111/e13707/atn.htm#SECMG175 for information about configuring an LDAP-based identity store as WebLogic Server authentication provider.
 - *Oracle Fusion Middleware Application Security Guide* at http://docs.oracle.com/cd/E23943_01/core.1111/e10043/cfgauthr.htm#JISEC2291 for information about configuring an LDAP-based or a DB-based OPSS security store.
-
-

7. Create CSF entries SES_ADMIN-KEY and SEARCH_DATABASE:

Run the script `mw_home/oracle_common/common/bin/wlst.sh`, and execute the following WLST commands:

- a. `wls:/offline>connect()`

Enter the user name, password, and the appropriate connection information of the WebLogic console.

Make sure the domain run-time server is enabled, that is, the prompt will become "wls:/>".

- b. If you are *not* using an external LDAP server, then execute the command:

```
wls:/>createCred(map="oracle.apps.security",
key="FUSION_APPS_SEARCH_APPID-KEY",
user="FUSION_APPS_SEARCH_APPID", password="password")
```

Provide password for FUSION_APPS_SEARCH_APPID-KEY in the *password* field.

If you are using an external LDAP server, then execute the above command by replacing the FUSION_APPS_SEARCH_APPID user credentials with the APPID user of the external LDAP server.

- c. If you are *not* using an external LDAP server, then execute the command:

```
wls:/>createCred(map="oracle.apps.security",
key="FUSION_APPS_ECSF_SES_ADMIN-KEY", user="searchsys",
password="password")
```

Provide password for the database user SEARCHSYS in the *password* field.

If you are using an external LDAP server, then execute the above command by replacing the searchsys user credentials with the ADMIN user credentials of the external LDAP server.

- d.

```
wls:/>createCred(map="oracle.search",
key="SEARCH_DATABASE", user="SES_DB_JDBC_Connect_String",
password="SES_DB_Password")
```

Provide appropriate value for the *SES_DB_Connect_String* field in the format `jdbc:oracle:thin:@host:port:SID`.

Note:

For the Oracle Database in Oracle RAC configuration, you should use Oracle RAC SCAN name and fully qualified service name in the value for the *SES_DB_Connect_String* field in the following format:

```
jdbc:oracle:thin:@RAC_SCAN_Name:port/fully_qualified_service_name
```

To know the Oracle RAC SCAN name, run the command:

```
oracle_home/bin/srvctl config scan
```

The Oracle RAC SCAN name is also available in the file `oracle_home/network/admin/tnsnames.ora`.

After successfully completing this task, you can exit the `wlst.sh` script.

8. Configure ESS standalone job type:

Run the script `ses_home/common/bin/wlst.sh`, and execute the following WLST commands:

- a.

```
wls:/offline>connect()
```

Enter the user name, password, and the appropriate connection information of the WebLogic console.

Make sure the domain run-time server is enabled, that is, the prompt will become "wls:/>".

- b.

```
wls: /
>essManageRuntimeConfig("SearchEss","APP",operation="add",
,name="SEARCH_TOP",val="search_top_location")
```

Replace *search_top_location* with the absolute file path of the Oracle SES home directory (that is, *ses_home* directory).

- c.

```
wls:/>essManageRuntimeConfig("SearchEss","ESS",
operation="add",name="PerlCommand",val="perl_location")
```

Replace *perl_location* with the absolute file path of the perl executable: *ses_home/perl/bin/perl*.

After completing this task, exit the *wlst.sh* script.

9. Grant admin user role to SEARCHSYS/ADMIN user:

Run the script *mw_home/oracle_common/common/bin/wlst.sh*, and execute the following WLST commands:

- a.

```
wls:/offline>connect()
```

Enter the user name, password, and the appropriate connection information of the WebLogic console.

Make sure the domain run-time server is enabled, that is, the prompt will become "wls:/>".

- b. If you are not using an external LDAP server, then execute the command:

```
wls: /
>grantAppRole(appStripe="search",appRoleName="SearchAdmin
SuperUserRole",
principalClass="weblogic.security.principal.WLSUserImpl",
principalName="searchsys")
```

If you are using an external LDAP server, then execute the above command by replacing the *searchsys* user with the *ADMIN* user of the external LDAP server.

After successfully completing this task, exit the *wlst.sh* script.

10. Set default index optimization frequency:

For the index optimizer to work properly, the following command must be executed:

```
ses_home/bin/searchadmin -u searchsys -p password -c http://
sesAdminHost:sesAdminPort/search/api/admin/AdminService update indexOptimizer
-i ses_home/search/data/config/weekly_optimize.xml -a overwrite
```

where,

password= SEARCHSYS user password (This user is created during step 5)

sesAdminHost = SES Server Host

sesAdminPort= SES Server Port

11. (Optional) Register XML DB protocol port:

This postinstallation step allows for WebDAV/HTTP(S) access to the Oracle XML DB repository data. Perform this step only if you want to use WebDAV protocol to customize the skin bundle.

For WebDAV/HTTPS(S) access to the Oracle XML DB repository, you need to register the XML DB protocol port. Perform this operation when Oracle SES is installed on an existing database on a system that is different from the one where Oracle SES middle tier is installed.

Perform the following steps to register the XML DB protocol port:

- a. Log on to the system where Oracle SES database is installed.
- b. Run the following commands at the command line:

```
setenv ORACLE_HOME path_of_DB_Oracle_home
setenv ORACLE_SID Oracle_Database_SID

$ORACLE_HOME/bin/sqlplus "sys/password as sysdba"

SQL> exec dbms_xdb.sethttpport(port)
```

Here, *port* can be any free port greater than 1024.

You can verify the successful registration of the XML DB protocol port by running the following command:

```
SQL> SELECT dbms_xdb.gethttpport() FROM dual;
```

Verification of Successful Installation of Oracle SES

To verify whether Oracle SES 11.2.2.2 is properly installed on your system, check the following things:

- In the WebLogic Server Console, navigate to Services > Data Sources, and verify that the following targets have the appropriate values:
 - EssDS: *ess_server1*, *search_server1*
 - EssInternalDS: *ess_server1*, *search_server1*
 - EssXADS: *ess_server1*, *search_server1*
 - mds-ESS_MDS_DS: *ess_server1*, *search_server1*
 - mds-owsm: *AdminServer*, *ess_server1*, *search_server1*
 - SearchAdminDS : *search_server1*
 - SearchQueryDS : *ess_server1*, *search_server1*
- Check the following URLs in a Web browser:
 - Oracle SES Query application: `http://ses_host:ses_port/search/query/search`

- Oracle SES Administration application: `http://ses_host:ses_port/search/admin/index.jsp` (Log on using the `searchsys` admin user and its password specified during the Oracle SES installation.)

Note:

The information about the options selected during the Oracle SES installation is stored in the `ses_home/install/install.properties` file.

Important Oracle SES Directories

This document uses the following names for describing various directories of Oracle SES 11.2.2.2 software components:

Directory Name	Description
<code>oracle_base</code>	The directory where all the Oracle Database products are installed.
<code>oracle_home</code>	The directory where the Oracle Database component specific to Oracle SES software is installed. The default <code>oracle_home</code> directory is <code>oracle_base/product/11.2.0/sesdb_1</code> .
<code>mw_home</code>	The middleware home directory where the middle tier components of Oracle SES software (that is, WebLogic Server, Oracle SES server, Oracle Fusion Middleware common files) are installed.
<code>wls_home</code>	The directory where the WebLogic Server is installed. The default <code>wls_home</code> directory is <code>mw_home/wlserver</code> .
<code>wls_domain_home</code>	The directory where multiple instances of a WebLogic Server middle tier are created. The default <code>wls_domain_home</code> directory is <code>mw_home/user_projects/domains</code> .
<code>ses_domain_name</code>	The directory where the WebLogic Server instance specific to Oracle SES is created under <code>wls_domain_home</code> directory. The default <code>ses_domain_name</code> directory is <code>search_domain</code> .
<code>ses_home</code>	The directory where the Oracle SES server is installed. The <code>ses_home</code> directory is created under the <code>mw_home</code> directory. When Oracle SES 11.2.2.2 software is installed along with the WebLogic Server middle tier, the <code>ses_home</code> directory is <code>mw_home/Oracle_SES1</code> .

Installation Log Files

The installation process generates following log files in the `oraInventory_directory/logs` directory:

- **installActionstimestamp.log:** Contains all informational messages generated during the installation. This log is created for both silent and interactive installations. For a successful installation, this message appears at the end of the log file:

*** End of Installation Page***

The installation of Oracle Secure Enterprise Search was successful.

- **OPatchtimestamp.log**: Contains an inventory of installed software following installation of an interim patch. One log file is created for each patch.

Installation of Multiple Oracle SES Instances

You cannot install multiple Oracle SES instances (current release or a previous release) that use the same database or the same middle tier. But, you can configure multiple Oracle SES servers and Oracle ESS servers in a clustered environment.

See Also:

Support note 1611280.1 "Implementing High Availability for Oracle SES 11.2.2.2".

You can search for this support note on My Oracle Support Web site <https://support.oracle.com> by entering the string *1611280.1* in the Global Search field.

Allocating Custom Memory Size for Oracle SES Database

When Oracle SES software is installed along with the database and the middle tier, 40% of the total available physical memory is allocated for the database by default. You can override this default behavior by allocating a custom memory size for the database during the Oracle SES installation. Use the parameter `oracle_install_db_AllocatedMemory` of the Oracle SES installer to achieve this.

For example, on Linux and UNIX system, execute the following command:

```
runInstaller oracle_install_db_AllocatedMemory=<db_memory_size>
```

where, `<db_memory_size>` is the amount of memory in megabytes to allocate for the Oracle SES database instance.

See Also:

["Install and Configure Oracle Secure Enterprise Search with Database and Middle Tier"](#)

Oracle SES Database User Password Expiration Policy

Oracle SES uses three Oracle SES application specific schemas `SEARCHSYS`, `SEARCH_ESS`, and `SEARCH_MDS`. When Oracle SES is installed along with the database, the password for these three schemas never expire. When Oracle SES is installed on an existing database, then the password expiry for these three schemas follows the Oracle Database default password expiry policy. Refer to the *Oracle Database 2 Day DBA* guide for more information about the default password expiry policy for an Oracle Database.

Silent Installation Tasks

A silent installation has no graphical output and no input by the user. It is accomplished by supplying Oracle SES installer with a response file and specifying the `-silent` flag on the command line. Use silent installation when you want to use the same Oracle SES installation configuration on more than one system.

Performing Silent Installation

To perform the silent installation of Oracle SES:

1. Download and unzip the installation files, as described in steps 1 to 5 of "[Oracle SES Installation Procedure](#)".
2. Edit the response file in a text editor, such as Windows Notepad, as described in the section "[Editing a Response File](#)". Ensure that all the values in the response file are correct.

Note:

Values for variables that are of the wrong context, format, or type are treated as if no values 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 SES installer encounters an error, such as insufficient disk space, then the installation will fail.

Caution:

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

3. Navigate to the top level directory of the Oracle SES software distribution and run the following command to start the silent installation:

```
./runInstaller -silent -responseFile response_file_name_with_absolute_path
```

4. Check the status of silent installation by referring to the log file *oraInventory_directory/logs/installActionsDate_Time.log*
On successful completion of the silent installation, the installer displays the message "Successfully Setup Software." on the command line.

Editing 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.

There are two ways to use a response file:

- Use the response file that was generated during the earlier installation of Oracle SES on a different system. The summary page of Oracle SES installer contains Save Response File button that can be used to save the Oracle SES installation settings to a response file.
- Use the response file template after editing it according to your requirement. Oracle SES provides three response file templates that you can use depending upon the Oracle SES installation option that you choose. The following response file templates are located in the directory *install/response* under the top level directory of the Oracle SES software distribution:

- `search_standalone.rsp`

Use this response file template when installing Oracle SES along with the database and the middle tier.

- `search_midtier.rsp`

Use this response file template when installing Oracle SES along with the middle tier (on an existing database).

- `search_swnly.rsp`

Use this response file template when installing Oracle SES only (on an existing middle tier and an existing database).

Use any text editor to edit one of the above response files to include information specific to your system. You must specify values for variables in your response file.

Note:

You need to specify values to all the variables in a response file, except for `INVENTORY_LOCATION` and `UNIX_GROUP_NAME`, which are required only during the first time installation of an Oracle product on a system. The response file also 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.

Postinstallation Tasks

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

- [Applying Mandatory Oracle SES Patches](#)
- [Applying Critical Patch Updates \(CPUs\) and Patch Set Updates \(PSUs\)](#)
- [Checking for Additional Documentation and Support Services](#)
- [\(Optional\) Changing the Oracle SES Middle Tier Port](#)
- [\(Optional\) Configuration Steps when Oracle Database Server is Changed](#)
- [\(Optional\) Changing Password for WebLogic User in Oracle SES Instance](#)

Applying Mandatory Oracle SES Patches

After installing Oracle SES 11.2.2.2, apply the mandatory Oracle SES patches mentioned in the section "Mandatory Software Patches" of *Oracle Secure Enterprise Search Release Notes*.

Applying Critical Patch Updates (CPUs) and Patch Set Updates (PSUs)

After installing Oracle SES, apply the latest Patch Set Updates (PSUs) and Critical Patch Updates (CPUs) for Oracle products.

Critical Patch Updates (CPUs) are collections of security fixes for Oracle products. They are available to customers with valid support contracts. To check the latest Critical Patch Updates, visit the Oracle Technology Network website:

<http://www.oracle.com/technetwork/topics/security/alerts-086861.html>

Patch Set Updates (PSUs) are proactive cumulative patches containing recommended bug fixes for Oracle products. To check the latest Patch Set Updates for Oracle products, see the support note 854428.1, *Patch Set Updates for Oracle Products* on My Oracle Support website: <https://support.oracle.com>.

To locate the support note 854428.1:

1. Log on to My Oracle Support website.
2. Enter 854428.1 in the search field and click the Search icon.

Checking 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 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>

(Optional) Changing the Oracle SES Middle Tier Port

Perform these steps only if, after installation, you find that there is a port number conflict requiring you to change the port number of the Oracle SES middle tier.

If needed, you can change the Oracle SES middle tier port as described in this section. There are two methods to change the Search HTTP port, depending upon whether the port that you want to change to is greater than or equal to 1024, or is less than 1024.

To change the Search HTTP port to a value greater than or equal to 1024:

1. In the WebLogic Server Administration Console, select **Servers** > **search_server1**.
2. Select **Configuration** > **General**.
3. Click **Lock & Edit** in the Change Center.
4. Enter the port number that you want to change to in the **Listen Port** box.
5. Click **Save**.
6. Restart the Oracle SES managed server, that is, *search_server1*.

To change the Search HTTP port to a value less than 1024, execute the following additional steps after executing the above mentioned steps:

1. In the Change Center of the Administration Console, click **Lock & Edit**.
2. In the left pane of the Console, expand Environment and select **Machines**.

3. Click **New**.
4. Enter a name for the new system in the **Name** attribute field. This name is used to identify the system within the WebLogic Server domain. This name does not have to correspond to the system's network name.
5. Select UNIX in the **Machine OS** field.
6. Click **OK**. The new system name is displayed in the Machines table.
7. Select the name of the system you just created.
8. Select **Configuration > General**.
 - a. To specify a non-privileged user account under which the server instance runs, place a check mark in the **Enable Post-bind UID** field and enter the user ID in the **Post-Bind UID** field. The user ID that you enter must have read, write, and execute privileges within the Oracle Middleware directory, the WebLogic Server product directory tree, and your domain directory.

The default value of the **Post-Bind UID** field, *nobody*, is a standard UNIX account that provides the least possible privileges. While the *nobody* account is acceptable for use in a development environment, in a production environment, Oracle recommends that you create an operating-system user account specifically for running instances of WebLogic Server.
 - b. To specify a non-privileged group instead of (or in addition to) providing a user ID, place a check mark in the **Enable Post-bind GID** field and enter the group ID in the **Post-Bind GID** field.
9. Click **Save**.
10. Click **Activate Changes** in the Change Center.
11. Restart the Oracle SES managed server, that is, *search_server1*.

(Optional) Configuration Steps when Oracle Database Server is Changed

The following are the steps to configure new database listener name and port in Oracle SES when Oracle Database server is moved to another system or it is configured as Oracle RAC database.

1. Stop all the running schedules and index optimizer using Oracle SES Administration GUI:
 - To stop the running schedules, navigate to **Home > Schedules**, select each of the running schedules, and click **Stop**.
 - To stop the index optimizer, navigate to **Global Settings > Index Optimization**, and click **Stop Index Optimizer**.
2. Configure the new Oracle SES database listener name and port at the back-end and restart the database listener.
3. Log in to the WebLogic Server Administration Console and navigate to **Services > Data Sources**.

4. Update the database connection URL for all the following data sources with the new database listener port and service name by selecting each of the data sources and navigating to **Configuration > Connection Pool**.
 - EssDs
 - EssInternalDS
 - EssXADS
 - mds-ESS_MDS_DS
 - mds-owsm
 - SearchAdminDS
 - SearchQueryDS
5. Update the `SES_DB_JDBC_Connect_String` configuration setting using the WLST script by executing the following steps:
 - a. Run the WLST command:

```
$MW_HOME/oracle_common/common/bin/wlst.sh
```
 - b. `wls:/offline>connect()`

For the above command, enter user name, password, and appropriate connection information of the WebLogic Administration server.
 - c. `wls:/>updateCred(map="oracle.search", key="SEARCH_DATABASE", user="SES_DB_JDBC_Connect_String", password="SES_DB_Password")`

Provide the new database connection string value for the `SES_DB_Connect_String` field in the format `jdbc:oracle:thin:@host:port:SID`.

Note:

For the Oracle Database in Oracle RAC configuration, you should use Oracle RAC SCAN name and fully qualified service name in the value for the `SES_DB_Connect_String` field in the following format:

```
jdbc:oracle:thin:@RAC_SCAN_Name:port/fully_qualified_service_name
```

To know the Oracle RAC SCAN name, run the command:

```
oracle_home/bin/srvctl config scan
```

The Oracle RAC SCAN name is also available in the file `oracle_home/network/admin/tnsnames.ora`.

6. Restart all the WebLogic servers, including `AdminServer`, `ess_server1`, and `search_server1`.
7. Verify the updated database connection string status:

- a. Log in to the WebLogic Server Administration Console.
- b. Navigate to **Services > Data Sources > SearchQueryDS > Monitoring > Testing**.
- c. Select **search_server1** and click the **Test Data Source** button to check the new database connection string status.

(Optional) Changing Password for WebLogic User in Oracle SES Instance

The following are the steps to change WebLogic user password in an Oracle SES instance:

To change the WebLogic user password:

1. Log in to the WebLogic Server Administration Console.
2. Under the **Domain Structure** in the left panel, click **Security Realm**.
3. In the **Summary of Security Realms** section, click **myrealm**.
4. Click the **Users and Groups** tab.
5. Click **weblogic** from the list of users.
6. Click the **Passwords** tab.
7. Enter and confirm the new password.
8. Save the changes.

After changing the WebLogic user password, if you want to use the `startWebLogic.sh` command to start the WebLogic Administration server, then manually edit the `$wls_domain_home/servers/AdminServer/security/boot.properties` file and update the following information:

```
username=weblogic
password=<weblogic user new password>
```

After changing the WebLogic user password, if you want to use the `searchctl` command (when both the Oracle Database and the WebLogic Server middle tier are installed as part of the Oracle SES software installation), then change the node manager password as described below:

To change the node manager password:

1. Log in to the WebLogic Server Administration Console.
2. Under the **Domain Structure** in the left panel, click **base_domain**.
3. In the **Settings for base_domain** section, click **Security** tab.
4. Click the **Users and Groups** tab.
5. Click **Advanced**.
6. Click **Lock & Edit**.
7. Enter and confirm the new node manager password.

8. Click **Activate Changes**.

Note:

After changing the node manager password, if you fail to start `search_server1` using the command `searchctl start` and get the following error in the log file `search_server1_yyyy_MM_dd_hh_mm.log`:

```
Authentication denied: Boot identity not valid
```

then remove the following file and directory from the system where Oracle SES is installed:

```
$wls_domain_home/servers/search_server1/security/boot.properties  
$wls_domain_home/servers/search_server1/data/ldap
```

Deinstalling Oracle SES

This section provides the procedure for deinstalling Oracle SES. The Oracle SES deinstallation process depends upon the installation option that you chose while installing Oracle SES.

Before you deinstall Oracle SES, you must stop all the crawler schedules and the index optimizer by using either Administration GUI or Administration API.

To stop all the crawler schedules and the index optimizer using Administrator GUI:

1. Log in to the Administration GUI.
2. Stop the crawler schedules:
 - a. Navigate to Home > Schedules.
 - b. Select each schedule and click **Stop**.
3. Stop the index optimizer:
 - a. Navigate to Global Settings > Index Optimization.
 - b. Click **Stop Index Optimizer** button.

To stop all the crawler schedules and the index optimizer using Administrator API:

1. Get the list of all the schedules:

```
ses_home/bin/searchadmin -u searchsys -p password -c http://  
sesAdminHost:sesAdminPort/search/api/admin/AdminService getAllObjectKeys  
schedule
```

2. Stop each of the schedules returned by the above command:

```
ses_home/bin/searchadmin -u searchsys -p password -c http://
sesAdminHost:sesAdminPort/search/api/admin/AdminService stop schedule --
NAME="source_name"
```

3. Stop the index optimizer:

```
ses_home/bin/searchadmin -u searchsys -p password -c http://
sesAdminHost:sesAdminPort/search/api/admin/AdminService stop indexOptimizer
```

Run the following deinstallation scripts depending upon the installation option that you chose while installing Oracle SES.

To deinstall Oracle SES when Oracle SES is installed along with the database and the middle tier:

1. Connect to the system where Oracle SES is installed as the Oracle SES installation user.

2. Run the middle tier deinstallation script:

```
ses_home/deinstall/deinstall.sh
```

3. Run the database deinstallation script:

```
oracle_home/deinstall/deinstall
```

To deinstall Oracle SES when Oracle SES is installed along with the middle tier (on an existing database):

1. Connect to the system where Oracle SES is installed as the Oracle SES installation user.

2. Run the middle tier deinstallation script:

```
ses_home/deinstall/deinstall.sh
```

To deinstall Oracle SES when only Oracle SES is installed (on an existing middle tier and an existing database):

1. Connect to the system where Oracle SES is installed, as the Oracle SES installation user.

2. Stop the Oracle ESS managed servers:

```
wls_domain_home/ses_domain_name/bin/stopManagedWebLogic.sh server_name
admin_URL user_name password
```

3. Stop the Oracle SES managed servers:

```
wls_domain_home/ses_domain_name/bin/stopManagedWebLogic.sh server_name
admin_URL user_name password
```

4. Stop the WebLogic Server:

```
wls_domain_home/ses_domain_name/bin/stopWeblogic.sh
```

5. Drop the Oracle SES and Oracle ESS schemas (make sure that the environment variable JRE_DIR is already set to the JDK installation directory):

```
ses_home/rcu/bin/rcu
```

6. Run the middle tier deinstallation script:

```
ses_home/deinstall/deinstall.sh
```

Directories to Remove Manually

After deinstalling Oracle SES, you must manually remove the following directory, if it exists:

- `data/cache/mail` directory present under the DB Oracle home on the system where the database is installed.

Upgrading Oracle SES

This section provides the information and procedures for upgrading from Oracle SES 11.1.2.2 to Oracle SES 11.2.2.2. Also discussed are pre-upgrade and post-upgrade tasks.

Note:

- You must already have installed both the Oracle SES versions - Oracle SES 11.1.2.2 and Oracle SES 11.2.2.2 - on the same system or on different systems before starting the upgrade process. Both the Oracle SES instances must be present on the same operating system, that is, cross-platform upgrade is not supported.
 - All the database patches and the middle tier patches should be applied on the Oracle SES 11.2.2.2 instance before starting the upgrade process. Refer to the sections "[Installing Mandatory Oracle Database Patches](#)" and "[Installing Mandatory WebLogic Server Patches](#)" of this guide for more information about the database and the middle tier patches for the Oracle SES 11.2.2.2 software.
-
-

This section contains the following topics:

- [Pre-upgrade Tasks](#)
- [Upgrade Tasks](#)
- [Post-upgrade Tasks](#)

Pre-upgrade Tasks

This section provides the information and tasks specific to preparing an upgrade from Oracle SES 11.1.2.2 to Oracle SES 11.2.2.2.

- [Confirm that Free Memory and Disk Space Requirements are Met](#)
- [Back Up the existing Oracle SES Instance](#)
- [Export the existing Oracle SES Crawler Schedules](#)
- [Stop All the Scheduled Jobs](#)

- [\(Optional\) Change the Search Service HTTP Port if less than 1024](#)
- [Shut down Oracle SES 11.1.2.2 and Oracle SES 11.2.2.2 Middle Tiers](#)
- [Apply the Database Patches 8353098 and 9581727 for Oracle SES 11.1.2.2 Instance](#)

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.

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

Back Up the existing Oracle SES Instance

You must create a backup copy of the existing Oracle SES 11.1.2.2 instance, so that you can restore it back in case you face any major issue while upgrading to Oracle SES 11.2.2.2.

To back up Oracle SES using the copy command:

- Create a copy of the following directories:
 - oracle_base*: Oracle products installation directory.
 - oracle_home*: Oracle SES 11.1.2.2 database directory.
 - oradata*: repository for data files, control files, and log files.
 - oraInventory*: central inventory for all the 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 using the following command:

```
ses_home/bin/searchctl stopall
```

See Also:

["Starting and Stopping Oracle SES Instance"](#)

2. If you are not 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_orabase.tar {full path to Oracle base}
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}
```

Export the existing Oracle SES Crawler Schedules

You must export all the crawler schedules of the existing Oracle SES 11.1.2.2 instance, so that you can import them back into the Oracle SES 11.2.2.2 instance while upgrading to Oracle SES 11.2.2.2.

To export all the Oracle SES 11.1.2.2 crawler schedules:

1. In the Oracle SES 11.2.2.2 instance, open the script file `ses_home/search/admin/upgrade/11.1.2.2/pre_11122_export.sh` in a text editor, specify Oracle SES 11.1.2.2 Administration URL and password, and copy this file to the Oracle home directory of the Oracle SES 11.1.2.2 instance. See that `ORACLE_HOME` variable is defined in the Oracle SES 11.1.2.2 instance.

2. Start the Oracle SES 11.1.2.2 instance using the `searchctl startall` command:

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

3. In the Oracle SES 11.1.2.2 instance, run the script file `pre_11122_export.sh` that was copied in step 1:

```
sh pre_11122_export.sh
```

This script exports two files, `all_schedules.xml` and `index_optimizer.xml`, to the directory `ses_home/search/data/config`. These two XML files need to be imported into the Oracle SES 11.2.2.2 instance as described in the section "[Running Upgrade Scripts](#)".

Stop All the Scheduled Jobs

During the upgrade of Oracle SES 11.1.2.2 instance, 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. Run sqlplus and connect as 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
```

(Optional) Change the Search Service HTTP Port if less than 1024

This step is necessary only if the Oracle SES instance 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 "[\(Optional\) Changing the Oracle SES Middle Tier Port](#)" of this document.

Shut down Oracle SES 11.1.2.2 and Oracle SES 11.2.2.2 Middle Tiers

Shut down the middle tiers for both the Oracle SES instances - 11.1.2.2 and 11.2.2.2, before continuing with the upgrade process.

- Shut down the Oracle SES 11.1.2.2 middle tier using the following command:

```
ses_home/bin/searchctl stop
```

- Shut down the Oracle SES 11.2.2.2 middle tier. Refer to the section "[Starting and Stopping Oracle SES Instance](#)" for information about the procedure to start and stop an Oracle SES instance.

Apply the Database Patches 8353098 and 9581727 for Oracle SES 11.1.2.2 Instance

Download the Oracle Database 11.1.0.7.0 patches 8353098 and 9581727 from My Oracle Support Web site <https://support.oracle.com> and apply them over the Oracle SES 11.1.2.2 database instance.

Upgrade Tasks

This section contains the procedures for upgrading Oracle SES 11.1.2.2 to Oracle SES 11.2.2.2. This section contains the following topics that should be followed in the same sequence:

- [Exporting Oracle SES 11.1.2.2 Tablespaces](#)
- [Exporting Oracle SES 11.1.2.2 Skin Bundle Resources](#)
- [Importing Oracle SES 11.1.2.2 Tablespaces into Oracle SES 11.2.2.2 Instance](#)
- [Importing Oracle SES 11.1.2.2 Skin Bundle Resources into Oracle SES 11.2.2.2 Instance](#)
- [Running Upgrade Scripts](#)
- [Applying Patch 17246573](#)
- [Manually Configuring Oracle SES 11.2.2.2 Instance](#)
- [Restoring Oracle SES 11.1.2.2 if Upgrade Fails](#)

Note:

The scripts for upgrade are located in the `ses_home /search/admin/upgrade/11.1.2.2` directory of the Oracle SES 11.2.2.2 instance.

Exporting Oracle SES 11.1.2.2 Tablespaces

This section describes the steps for exporting Oracle SES 11.1.2.2 tablespaces using the *expdp* command.

Prepare Directory and Tablespaces for Export

1. Copy `prepare_11122_export.sql` file from Oracle SES 11.2.2.2 instance to Oracle SES 11.1.2.2 instance. This file is located in the directory `ses_home / search/admin/upgrade/11.1.2.2` in the Oracle SES 11.2.2.2 instance.
2. Connect to the Oracle SES 11.1.2.2 database as administrator using sqlplus.

```
oracle_home/bin/sqlplus sys/SES_admin_password as sysdba
```

3. Run the `prepare_11122_export.sql` file from the sqlplus prompt:

```
SQL> @prepare_11122_export.sql dump_dir_name dump_dir_path
```

where, *dump_dir_name* is the name of the directory where the exported files will be stored, and *dump_dir_path* is the absolute path of the *dump_dir_name* directory that already exists on the system.

After running the `prepare_11122_export.sql` file, the `dump_tts.info` file is generated under the *dump_dir_path* directory. This file contains the information required to run the *expdp* command.

The contents of a sample `dump_tts.info` file are as follows:

(1) expdp options for tablespaces:

```
oracle_home/bin/expdp system/password dumpfile=expTTS.dmp directory=DUMP
logfile=expTTS.log
transport_tablespaces=OES_PUSH,OES_ITAB,OES,OES_ASSM,OES_ASSM2
```

(2) expdp options for sequences:

```
oracle_home/bin/expdp system/password SCHEMAS=EQSYS,EQ_TEST INCLUDE=SEQUENCE
dumpfile=expSEQ.dmp directory=DUMP logfile=expSEQ.log
```

(3) expdp options for views:

```
oracle_home/bin/expdp system/password SCHEMAS=EQSYS,EQ_TEST INCLUDE=VIEW
dumpfile=expVIEW.dmp directory=DUMP logfile=expVIEW.log
```

(4) expdp options for types:

```
oracle_home/bin/expdp system/password SCHEMAS=EQSYS,EQ_TEST INCLUDE=TYPE
dumpfile=expTYPE.dmp directory=DUMP logfile=expTYPE.log
```

(5) Tablespace file names:

```
oradata_directory/ses/OES_01.dbf
oradata_directory/ses/OES_02.dbf
oradata_directory/ses/OES_ASSM.dbf
oradata_directory/ses/OES_ASSM2.dbf
oradata_directory/ses/OES_ITAB.dbf
oradata_directory/ses/OES_PUSH.dbf
```

Export Tablespaces, Sequences, Views, and Types

Run the *expdp* command in the Oracle SES 11.1.2.2 instance to export the Oracle SES 11.1.2.2 tablespaces, views, sequences, and types. Refer to the **expdp options** sections in the `dump_tts.info` file before running the following commands.

Note:

In case you get the error message "ORA-28001: the password has expired" while running the *expdp* commands, then reset the SYSTEM password using the following SQL scripts:

```
oracle_home/bin/sqlplus sys/password as sysdba
```

```
SQL> ALTER user SYSTEM identified by new_sytem_user_password;
```

- **Export tablespaces**

```
oracle_home/bin/expdp system/SES_admin_password dumpfile=expTTS.dmp
directory=db_directory_object
transport_tablespaces=OES,OES_ASSM,OES_ASSM2,OES_ITAB,OES_PUSH,SA1,SA2
logfile=expTTS.log
```

- **Export sequences**

```
oracle_home/bin/expdp system/SES_admin_password SCHEMAS=EQSYS,EQ_TEST
INCLUDE=SEQUENCE dumpfile=expSEQ.dmp directory=db_directory_object
logfile=expSEQ.log
```

- **Export views**

```
oracle_home/bin/expdp system/SES_admin_password SCHEMAS=EQSYS,EQ_TEST
INCLUDE=VIEW dumpfile=expVIEW.dmp directory=db_directory_object
logfile=expVIEW.log
```

- **Export types**

```
oracle_home/bin/expdp system/SES_admin_password SCHEMAS=EQSYS,EQ_TEST
INCLUDE=TYPE dumpfile=expTYPE.dmp directory=db_directory_object
logfile=expTYPE.log
```

Note:

After running the *expdp* command, the Oracle SES 11.1.2.2 tablespaces are set to *read only*. If you want to use the Oracle SES 11.1.2.2 instance, then you will have to set these tablespaces to *read write* using the following SQL command after importing the tablespaces into the Oracle SES 11.2.2.2 instance as described in the section "[Importing Oracle SES 11.1.2.2 Tablespaces into Oracle SES 11.2.2.2 Instance](#)":

```
SQL> ALTER TABLESPACE tablespace_name read write;
```

Exporting Oracle SES 11.1.2.2 Skin Bundle Resources

Run the *exp* command of Oracle sqlplus in the Oracle SES 11.1.2.2 instance to export the Oracle SES 11.1.2.2 Skin Bundle resources from the XDB repository.

```
oracle_home/bin/exp \'sys/password as sysdba\' tables=eqsys_resource_dump
file=skin_bundle_resource.dmp log=exp_resource.log
```

where,

skin_bundle_resource.dmp is the name of the Skin Bundle resource dump file along with its full file path.

exp_resource.log is the name of the log file along with its full file path that is generated by the export operation.

Importing Oracle SES 11.1.2.2 Tablespaces into Oracle SES 11.2.2.2 Instance

This section describes the steps for importing Oracle SES 11.1.2.2 tablespaces into Oracle SES 11.2.2.2 database.

Create Directory and Cleanup Tablespaces for Import

1. Connect to the Oracle SES 11.2.2.2 database as administrator using sqlplus.

```
oracle_home/bin/sqlplus sys/SES_admin_password as sysdba
```

2. Run the *prepare_11222_import.sql* file present in the directory *ses_home / search/admin/upgrade/11.1.2.2* in the Oracle SES 11.2.2.2 instance:

```
SQL> @prepare_11222_import.sql SES_admin_password dump_dir_name  
dump_dir_path
```

where, *dump_dir_name* is the name of the directory where the dump files to be imported should be stored, and *dump_dir_path* is the absolute path of the *dump_dir_name* directory that already exists on the system.

3. Shut down the SES managed server *search_server1* and ESS managed server *ess_server1*.

Transfer Data Files

1. Transfer all the dump files (*expTTS.dmp*, *expSEQ.dmp*, *expVIEW.dmp*, and *expTYPE.dmp*) to the import directory that was created after running the *prepare_11222_import.sql* file.
2. Transfer all the DBF files listed in the *dump_tts.info* file to the Oracle SES 11.2.2.2 database DBF file location.

Import Tablespaces, Sequences, Views, and Types

1. Set the DBFDIR environment variable to the absolute path of the directory containing the DBF files. For example, if the DBF files are in the directory */scratch/aime/ses11222/oradata*, then run the following command:

```
setenv DBFDIR /scratch/aime/ses11222/oradata
```
2. Run the *impdp* command in the Oracle SES 11.2.2.2 instance to import Oracle SES 11.1.2.2 tablespaces, views, sequences, and types into the Oracle SES 11.2.2.2 database.

a. Import tablespaces

```
oracle_home/bin/impdp system/SES_admin_password dumpfile=expTTS.dmp  
directory=db_directory_object  
REMAP_SCHEMA=EQSYS:SEARCHSYS,EQ_TEST:SEARCHSYS  
transport_datafiles=$DBFDIR/OES_01.dbf,$DBFDIR/OES_02.dbf,$DBFDIR/  
OES_ASSM.dbf,
```

```
$DBFDIR/OES_ASSM2.dbf,$DBFDIR/OES_ITAB.dbf,$DBFDIR/OES_PUSH.dbf,$DBFDIR/
SA1.dbf,$DBFDIR/SA2.dbf logfile=impTTS.log
```

b. Import sequences

```
oracle_home/bin/impdp system/SES_admin_password
REMAP_SCHEMA=EQSYS:SEARCHSYS,EQ_TEST:SEARCHSYS dumpfile=expSEQ.dmp
directory=db_directory_object logfile=impSEQ.log
```

c. Import views

```
oracle_home/bin/impdp system/SES_admin_password
REMAP_SCHEMA=EQSYS:SEARCHSYS,EQ_TEST:SEARCHSYS dumpfile=expVIEW.dmp
directory=db_directory_object logfile=impVIEW.log
```

d. Import types

```
oracle_home/bin/impdp system/SES_admin_password
REMAP_SCHEMA=EQSYS:SEARCHSYS,EQ_TEST:SEARCHSYS dumpfile=expTYPE.dmp
directory=db_directory_object logfile=impTYPE.log
```

Note:

After you run the `impdp` command, you will see hundreds of error messages in the log files `impTTS.log`, `impTYPE.log`, and `impVIEW.log`. You can safely ignore these error messages. The following are some of the error messages that will be shown in the log files:

```
ORA-39082: Object type .... created with compilation warnings
ORA-39083: Object type .... failed to create with error:
ORA-31684: Object type .... already exists
ORA-39111: Dependent object type OBJECT_GRANT:.... skipped, base object ....
already exists
ORA-01775: looping chain of synonyms
ORA-00942: table or view does not exist
```

Importing Oracle SES 11.1.2.2 Skin Bundle Resources into Oracle SES 11.2.2.2 Instance

Copy the exported Skin Bundle resource dump file (*skin_bundle_resource.dmp*) from the Oracle SES 11.1.2.2 instance to the Oracle SES 11.2.2.2 instance.

Run the *imp* command of Oracle sqlplus in the Oracle SES 11.2.2.2 instance to import the Oracle SES 11.1.2.2 Skin Bundle resources into the Oracle SES 11.2.2.2 instance.

```
oracle_home/bin/imp userid='sys/password as sysdba\' file=skin_bundle_resource.dmp
fromuser=sys touser=searchsys log=imp_resource.log
```

where,

skin_bundle_resource.dmp is the name of the Skin Bundle resource dump file with its full file path.

imp_resource.log is the name of the log file along with its full file path that is generated by the import operation.

Running Upgrade Scripts

After importing Oracle SES 11.1.2.2 tablespaces into Oracle SES 11.2.2.2, run the following scripts to upgrade the schemas, reload types and packages, recreate views and triggers, and repopulate the initial data in the Oracle SES 11.2.2.2 instance:

1. Set the `SES_HOME` environment variable to the absolute path of the SES home directory. For example, if the SES home directory absolute path is `/scratch/aime/ses11222/middleware_home/Oracle_SES1`, then run the following command:

```
setenv SES_HOME /scratch/aime/ses11222/middleware_home/Oracle_SES1
```

2. Connect to the Oracle SES 11.2.2.2 database as the `sys` user by using `sqlplus`.

```
oracle_home/bin/sqlplus sys/SES_admin_password as sysdba
```

3. Run the SQL script `eq0upgrade-11-122.sql` present in the Oracle SES 11.2.2.2 instance directory `ses_home/search/admin/upgrade/11.1.2.2`.

```
SQL> @eq0upgrade-11-122.sql 'SEARCHSYS'
```

Note:

The `EQ$UPG_STATUS_11222` table stores the status of running the script `eq0upgrade-11-122.sql`. The status shows `COMPLETE` for the event type of `TASK` when the script is executed successfully.

4. Connect to the Oracle SES 11.2.2.2 database as Oracle SES administrator using `sqlplus`.

```
oracle_home/bin/sqlplus searchsys/SES_admin_password
```

5. Run the SQL script `equ11-122-skinrc.sql` present in the Oracle SES 11.2.2.2 instance directory `ses_home/search/admin/upgrade/11.1.2.2`. Running this script completes the migration of Skin Bundle resources from Oracle SES 11.1.2.2 instance to Oracle SES 11.2.2.2 instance.

```
SQL> @equ11-122-skinrc.sql
```

6. Copy `all_schedules.xml` and `index_optimizer.xml` files that were exported from Oracle SES 11.1.2.2 instance as described in the section "[Export the existing Oracle SES Crawler Schedules](#)", to the Oracle SES 11.2.2.2 directory `ses_home/search/data/config`.

7. Open the script file `ses_home/search/admin/upgrade/11.1.2.2/post_11222_import.sh` in a text editor and specify Oracle SES 11.2.2.2 Administration URL and password.

8. Check that the Oracle SES 11.2.2.2 instance is up by accessing the Oracle SES Administration URL.

9. Run the script file `post_11222_import.sh`:

```
sh post_11222_import.sh
```

Note:

In Oracle SES 11.1.2.2, the crawler job is a database job. In Oracle SES 11.2.2.2, the crawler job is an Oracle ESS job. Due to this difference, after migrating the crawler schedules from Oracle SES 11.1.2.2 instance to Oracle SES 11.2.2.2 instance, all the migrated jobs have the status Scheduled in Oracle SES 11.2.2.2 instance.

Applying Patch 17246573

Download patch 17246573 from My Oracle Support Web site <https://support.oracle.com> and apply it over the Oracle SES 11.2.2.2 database instance.

Manually Configuring Oracle SES 11.2.2.2 Instance

After executing the upgrade scripts, you must manually configure the Oracle SES 11.2.2.2 instance to complete the upgrade process.

- [Copy Oracle SES 11.1.2.2 Plug-in Files to Oracle SES 11.2.2.2 Instance](#)
- [Copy Oracle SES 11.1.2.2 Identity Plug-in Truststore Files to Oracle SES 11.2.2.2 Instance](#)
- [Configure Oracle SES 11.2.2.2 Data Source Types](#)
- [Configure Oracle SES 11.2.2.2 Single Sign-On Settings](#)
- [Configure Other Oracle SES 11.2.2.2 Settings](#)

Copy Oracle SES 11.1.2.2 Plug-in Files to Oracle SES 11.2.2.2 Instance

All the JAR files and configuration files of the Oracle SES 11.1.2.2 plug-ins that are not shipped out-of-box must be copied to the directories accessible from the Oracle SES 11.2.2.2 instance. The configuration information about these plug-ins should then be updated using the Oracle SES 11.2.2.2 Administration application (Administration GUI or Administration API). The following are the plug-in types for which you should verify the configuration information in the Oracle SES 11.2.2.2 instance:

- Source Types
- Identity Plug-in
- Authorization Plug-in
- Document Service Plug-in
- UrlRewriter

Copy Oracle SES 11.1.2.2 Identity Plug-in Truststore Files to Oracle SES 11.2.2.2 Instance

Verify the Truststore location file paths of the following Identity plug-ins using the Oracle SES 11.2.2.2 Administration GUI page Global Settings - Identity Management Setup and make sure that the file paths specified in the configuration parameter `Truststore location for SSL` of these Identity plug-ins are accessible from the Oracle SES 11.2.2.2 instance.

- OpenLDAP Directory

- Sun Java System Directory Server
- Active Directory

Configure Oracle SES 11.2.2.2 Data Source Types

Verify various file paths of the following data source types using the Oracle SES 11.2.2.2 Administration GUI page Home - Sources - Edit - Source Configuration and make sure that these file paths are accessible from the Oracle SES 11.2.2.2 instance.

The following table lists various data source types with their file path configuration parameters in the Oracle SES 11.2.2.2 Administration GUI.

Data Source Types	Configuration Parameters
Database, Siebel 7.8, Siebel 7.8 (Public)	Query File
Oracle Fusion, PeopleSoft, Oracle WebCenter, Oracle Content, Oracle E-Business, Siebel 8	Configuration, Scratch Directory
E-mail	Archive
Federated User Authorization	Remote Cache Config File

Configure Oracle SES 11.2.2.2 Single Sign-On Settings

If Oracle SES 11.1.2.2 instance was configured for single sign-on, then apply the same settings to Oracle SES 11.2.2.2 instance using the Administration GUI page Global Settings - Configure Single Sign-On Settings.

Configure Other Oracle SES 11.2.2.2 Settings

The configuration settings that are stored in the following files in Oracle SES 11.1.2.2 are no longer stored in files in Oracle SES 11.2.2.2 and are stored in database instead:

- *oracle_home/search/data/config/crawler.dat*
- *oracle_home/search/webapp/config/search.properties*
- *oracle_home/search/webapp/config/ranking.xml*
- *oracle_home/search/tools/weblogic/deploy/plans/QueryPlan.xml*

Oracle SES 11.2.2.2 contains the following object types corresponding to the above mentioned Oracle SES 11.1.2.2 configuration files.

Oracle SES 11.2.2.2 Object Type	Corresponding Oracle SES 11.1.2.2 Configuration File	Description
<code>crawlerSetting</code>	<code>crawler.dat</code>	Crawler configuration
<code>queryUiConfig, clustering</code>	<code>search.properties</code>	Query application configuration
<code>relevanceRanking</code>	<code>ranking.xml</code>	Query ranking configuration

The following are the steps to copy the configuration settings from the above Oracle SES 11.1.2.2 configuration files to Oracle SES 11.2.2.2 instance:

1. Run the `searchadmin` command of Oracle SES 11.2.2.2 Admin API to export XML files for the object types - `queryUiConfig`, `clustering`, `crawlerSetting`, and `relevanceRanking`.

```
ses_home/bin/searchadmin -u username -p password -c http://ses_admin_url/  
search/api/admin/AdminService export objectType -o filename.xml
```

where,

`objectType` is one of the object types - `queryUiConfig`, `clustering`, `crawlerSetting`, or `relevanceRanking`.

`filename.xml` is the name of the XML file to which the specified object type configuration setting are exported to.

2. Update the exported XML configuration file with the settings in the Oracle SES 11.1.2.2 configuration files.

See Also:

Oracle Secure Enterprise Search Administration Java API Guide for information about the configuration settings of the Oracle SES 11.2.2.2 object types.

3. Run the `searchadmin` command of Oracle SES 11.2.2.2 Admin API to store the updated object type configuration settings in the Oracle SES 11.2.2.2 database.

```
ses_home/bin/searchadmin -u username -p password -c http://ses_admin_url/  
search/api/admin/AdminService update objectType -i filename.xml -a overwrite
```

where,

`objectType` is the name of the object type and `filename.xml` is the name of the updated XML file for that object type.

4. Repeat the steps 1, 2, and 3 for the object types - `queryUiConfig`, `clustering`, `crawlerSetting`, and `relevanceRanking`.
5. To copy the configuration settings from the Oracle SES 11.1.2.2 configuration file `QueryPlan.xml` to Oracle SES 11.2.2.2 instance, go to the Oracle SES 11.2.2.2 Administration GUI page Global Settings - Query UI Configuration and update the appropriate configuration settings.

Restoring Oracle SES 11.1.2.2 if Upgrade Fails

If the upgrade fails, then restore the previous Oracle SES release (11.1.2.2) instance from the 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 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 11.1.2.2 home:

```
tar xvf ses_orabase.tar
tar xvf ses_orahome.tar
tar xvf ses_orainv.tar
tar xvf ses_oradat.tar
```

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

Note:

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

Post-upgrade Tasks

This section describes the steps to be performed after the upgrade process completes.

This section contains the following topics:

- [\(Optional\) Running the SQL Script eq0flat_attr.sql](#)
- [\(Optional\) Configuring Secure Sockets Layer for Oracle SES](#)
- [\(Optional\) Configuring Oracle Single Sign-On for Oracle SES](#)

(Optional) Running the SQL Script eq0flat_attr.sql

You may run the optional post-upgrade SQL script `eq0flat_attr.sql` to improve the crawler performance. Make sure that no crawling process or query is running when this script is being executed.

To run the SQL script eq0flat_attr.sql:

1. Connect to the Oracle SES 11.2.2.2 database as Oracle SES administrator using `sqlplus`:

```
oracle_home/bin/sqlplus searchsys/SES_admin_password as sysdba
```

2. Run the SQL script `eq0flat_attr.sql` present in the directory `ses_home/search/admin/scripts`.

```
SQL> @eq0flat_attr.sql
```

Note:

The SQL script `eq0flat_attr.sql` may take several minutes to complete. You can monitor the progress of this script by opening another `sqlplus` session as SES admin user and periodically checking the output of the script:

```
SQL> SELECT count(*) FROM eq$attr_val_tab;
```

(Optional) Configuring Secure Sockets Layer for Oracle SES

As Oracle SES uses Oracle HTTP Server, Oracle recommends that Oracle SES be configured to use Secure Sockets Layer (SSL) with the client-side authentication for communication with the Oracle HTTP Server. If you have configured SSL for Oracle SES 11.1.2.2, then you must manually reconfigure SSL for Oracle SES 11.2.2.2. You can configure SSL using the WebLogic Administration Console. Refer to the section "SSL and HTTPS Support in Oracle Secure Enterprise Search" of *Oracle Secure Enterprise Search Administrator's Guide* for the steps to configure SSL for Oracle SES.

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

If you have configured Oracle Single Sign-On (SSO) for Oracle SES 11.1.2.2, then after upgrading to Oracle SES 11.2.2.2, you must manually reconfigure SSO for Oracle SES 11.2.2.2. You can configure SSO using the WebLogic Server Administration Console. Refer to the section "Configuring Secure Search with OracleAS Single Sign-On" of *Oracle Secure Enterprise Search Administrator's Guide* for the steps to configure SSO for Oracle SES.

Starting and Stopping Oracle SES Instance

You can start and stop the Oracle SES instance (Oracle SES server, Oracle ESS server, WebLogic server, and Oracle Database server) using any of the following methods:

- [Using WebLogic Administration Console](#)
- [Using WebLogic Server Scripts](#)
- [Using searchctl Command](#)

Using WebLogic Administration Console

You can start and stop the Oracle SES middle tier components (WebLogic Server, Oracle ESS Server, and Oracle SES Server) using the WebLogic Administration Console.

Using WebLogic Server Scripts

You can use the following WebLogic Server scripts to start and stop the Oracle SES middle tier components (WebLogic Server, Oracle ESS Server, and Oracle SES Server):

WebLogic Server Script	Description
<code>wls_domain_home/ses_domain_name/startWebLogic.sh</code>	Start the WebLogic Server middle tier
<code>wls_domain_home/ses_domain_name/bin/stopWeblogic.sh</code>	Stop the WebLogic Server middle tier
<code>wls_domain_home/ses_domain_name/bin/startManagedWebLogic.sh ess_server_name</code>	Start the Oracle ESS server
<code>wls_domain_home/ses_domain_name/bin/stopManagedWebLogic.sh ess_server_name admin_URL user_name password</code>	Stop the Oracle ESS server

WebLogic Server Script	Description
wls_domain_home/ses_domain_name/bin/ startManagedWebLogic.sh ses_server_name	Start the Oracle SES server
wls_domain_home/ses_domain_name/bin/ stopManagedWebLogic.sh ses_server_name admin_URL user_name password	Stop the Oracle SES server

Using searchctl Command

You can use the `searchctl` command for starting and stopping the Oracle SES instance only when both the Oracle Database and the WebLogic Server middle tier are installed by selecting the Oracle SES installation option **Install and configure Oracle Secure Enterprise Search with Database and Middle Tier**.

Note:

The `searchctl` command is not supported by Oracle SES, if the Oracle SES software is installed by selecting the installation option **Install and configure Oracle Secure Enterprise Search with Middle Tier** or **Install Oracle Secure Enterprise Search software only**.

The `searchctl` executable is located in the `ses_home/bin` directory. The `searchctl` command syntax is as follows:

Command	Description
<code>searchctl start</code>	Start Oracle SES server
<code>searchctl stop</code>	Shut down Oracle SES server
<code>searchctl restart</code>	Restart Oracle SES server
<code>searchctl start_midtier</code>	Start WebLogic Server middle tier
<code>searchctl stop_midtier</code>	Shut down WebLogic Server middle tier
<code>searchctl restart_midtier</code>	Restart WebLogic Server middle tier
<code>searchctl start_backend</code>	Start Oracle Database server
<code>searchctl stop_backend</code>	Shut down Oracle Database server
<code>searchctl restart_backend</code>	Restart Oracle Database server
<code>searchctl startall</code>	Start Oracle SES server, WebLogic Server middle tier, and Oracle Database server
<code>searchctl stopall</code>	Stop Oracle SES server, WebLogic Server middle tier, and Oracle Database server

Command	Description
<code>searchctl restartall</code>	Restart Oracle SES server, WebLogic Server middle tier, and Oracle Database server

Note:

You must provide the Oracle SES administrator password when running the `searchctl` command on Linux and UNIX systems. If the middle tier port is less than 1024, then the `searchctl` command for starting or stopping the WebLogic Server middle tier must be run by the `root` user.

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:
http://www.oracle.com/pls/topic/lookup?ctx=E35215-01&id=tut_ses_administration
- Log on to the Oracle SES Administration GUI, using the user name and password set during the installation. With the Administration GUI you can:
 - Define sources to search
 - Configure and schedule the crawling of the sources
 - Monitor the status and performance of crawling and search operations

Click the Help link on the top right corner of any page in the Administration GUI for context-sensitive help.

- In a production environment, where a load balancer or other monitoring tools are used to ensure system availability, Oracle SES can also be easily monitored using the URL: `http://host:port/monitor/check.jsp`. When the Oracle SES instance is available, the URL displays the message:

Oracle Secure Enterprise Search instance is up.

Note:

This message is not translated to other languages, because system monitoring tools may byte-compare this string.

If the Oracle SES instance is not available because the database server is down, but the WebLogic Server middle tier is running, then the URL displays the message:

Oracle Secure Enterprise Search instance is down !!!

If the Oracle SES instance is not available because the WebLogic Server middle tier is down, then the URL displays either the 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 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 2 (11.2.2.2) for Linux x86 (64-Bit)
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