

Oracle® Secure Global Desktop

Enhancement Module Administration Guide for Release 5.5

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Preface

This manual provides instructions for installing and using the Oracle Secure Global Desktop Enhancement Module (SGD Enhancement Module).

Audience

This document is intended for SGD Administrators. It is assumed that readers are familiar with Web technologies and have a general understanding of Windows and UNIX platforms.

Related Documents

The documentation for this product is available at:

<https://www.oracle.com/technetwork/documentation/sgd-193668.html>

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Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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Chapter 1 Introducing the SGD Enhancement Module

The Oracle Secure Global Desktop Enhancement Module (SGD Enhancement Module) is an optional software component that can be installed on application servers.

The SGD Enhancement Module provides additional functionality when using applications displayed through SGD. For example, to enable users to access the drives on their client device.

[Table 1.1, “Features Provided by the SGD Enhancement Module for Supported Installation Platforms”](#) shows the additional feature support on each installation platform.

Table 1.1 Features Provided by the SGD Enhancement Module for Supported Installation Platforms

Feature	UNIX or Linux Platforms	Windows Platforms
Advanced load balancing	Yes	Yes
Seamless windows	No	Yes
Client drive mapping	Yes	Enhancement Module not required
Audio	Yes	Enhancement Module not required

Chapter 2 Installing the SGD Enhancement Module

This chapter describes how to install, upgrade, and remove the Oracle Secure Global Desktop Enhancement Module (SGD Enhancement Module).

For installations on Linux and Oracle Solaris platforms, a `temsys` user and a `temserv` group are required on the host. If this user and group are not present, they are created automatically when you install the Enhancement Module package.



Note

Before installing the SGD Enhancement Module, read the *Oracle Secure Global Desktop Platform Support and Release Notes*. The release notes contain the latest information on supported platforms and known issues.

2.1 Installing the SGD Enhancement Module for Microsoft Windows

The SGD Enhancement Module for Microsoft Windows contains modules for advanced load balancing and seamless windows. When you install the Enhancement Module, you can choose which of these modules to install.

By default, the Enhancement Module is installed in the `C:\Program Files (x86)\Oracle\Secure Global Desktop Enhancement Module` directory, but the installation program asks you for the installation directory.

After installation, the load balancing service is running. The load balancing service is listed as Secure Global Desktop Load Balancing Service in the Windows Services tool.

2.1.1 Installing the SGD Enhancement Module for Microsoft Windows

1. Log in to the Windows host as a user with administrator privileges.
2. Save the Enhancement Module installation program to a temporary directory on the host.

After you install the `oracle-sgd-tems-version.e17.noarch.rpm` package, you can download the installation program from an SGD web server at `https://server.example.com`, where `server.example.com` is the name of an SGD server. When the SGD web server Welcome page displays, click Install an Oracle Secure Global Desktop Enhancement Module.

The SGD Enhancement Module installation program is `temwin32.msi`.

3. Install the SGD Enhancement Module.

Double-click `temwin32.msi` and follow the instructions on the screen.

2.2 Installing the SGD Enhancement Module for UNIX and Linux Platforms

The SGD Enhancement Module for UNIX and Linux Platforms contains modules for advanced load balancing, CDM, and UNIX audio.

The UNIX audio module of the Enhancement Module is optional and is not installed by default. The following types of audio module are available:

- **PulseAudio**. This is the preferred audio emulation mode, and is available on most Oracle Linux and Oracle Solaris application server platforms.

- **Open Sound System (OSS)**. Used on some legacy platforms. On Oracle Solaris platforms, this is called Solaris Audio Device Architecture (SADA).

If you choose to install the OSS audio module, the SGD audio driver is installed in the kernel of the operating system. On Linux platforms, the audio driver is compiled before it is installed in the kernel. To compile the audio driver, the following must be available on the host:

- Header files for your Linux kernel version
- GNU Compiler Collection (GCC)
- `make` utility
- `soundcore` kernel module

On Oracle Solaris platforms, the UNIX audio module can be installed only in the global zone. Audio is not available for applications running in a non-global zone.

On Oracle Solaris platforms, install the Enhancement Module with the `pkgadd` command.

On Oracle Linux platforms, install the Enhancement Module with the `yum` command. To ensure that any package dependencies are resolved automatically, `yum` should be configured to use a suitable Linux package repository. See [Creating a Linux Package Repository From an ISO Image](#) if an online repository is not available.

By default, the Enhancement Module is installed in the `/opt/tta_tem` directory. You can change the installation directory as follows:

- **Oracle Solaris platforms** – The installation program asks you for the installation directory when you install the software.
- **Oracle Solaris Trusted Extensions platforms** – The installation program asks you for the installation directory when you install the software. You *must* select another installation directory because the `/opt` directory is a read-only directory. You must also install the Enhancement Module in a labeled zone. Do not install the Enhancement Module in the global zone.

After installation, the advanced load balancing module and the UNIX audio module, if selected, are running. The CDM module is not running, because this requires additional configuration. The additional configuration needed is described in the *Oracle Secure Global Desktop Administration Guide*.

The Enhancement Module installation program adds a file to the system startup directory to ensure that the Enhancement Module starts when the system reboots. For example, if you install the software in run level 3, the file is in the `/etc/rc3.d` directory and named `*sun.com-sgd-em`.

2.2.1 How To Install the SGD Enhancement Module on Solaris Platforms

1. Save the SGD Enhancement Module package to a temporary directory on the host.

After you install the `oracle-sgd-tems-version.el7.noarch.rpm` package, you can download the installation program from an SGD web server at `https://server.example.com`, where `server.example.com` is the name of an SGD server. When the SGD web server Welcome page displays, click Install an Oracle Secure Global Desktop Enhancement Module.

The package files are:

- `tem-version.sol11-x86.pkg` for Oracle Solaris 11 on x86 platforms
- `tem-version.sol11-sparc.pkg` for Oracle Solaris 11 on SPARC technology platforms

- `tem-version.sol10-x86.pkg` for Oracle Solaris 10 on x86 platforms
- `tem-version.sol10-sparc.pkg` for Oracle Solaris 10 on SPARC technology platforms

where *version* is the SGD version number.



Note

In SGD Release 5.5, the *version* for these packages are taken from SGD Release 5.4.

2. Log in as superuser (root) on the host.
3. Install the SGD Enhancement Module.

If the package file is compressed, you must expand it before installing.

To install on Oracle Solaris 11 on x86 platforms:

```
# pkgadd -d /tempdir/tem-version.sol11-x86.pkg
```

To install on Oracle Solaris 11 on SPARC technology platforms:

```
# pkgadd -d /tempdir/tem-version.sol11-sparc.pkg
```

To install on Oracle Solaris 10 on x86 platforms:

```
# pkgadd -d /tempdir/tem-version.sol10-x86.pkg
```

To install on Oracle Solaris 10 on SPARC technology platforms:

```
# pkgadd -d /tempdir/tem-version.sol10-sparc.pkg
```

When you install, the Enhancement Module installation program presents the following settings that you can accept or change:

- The installation directory.
 - The amount of virtual memory the host has. This is used for load balancing.
 - Options for installing the UNIX audio module.
4. Verify that the Enhancement Module package is registered in the package database.

```
# pkginfo -x tem
```

2.3 How To Install the SGD Enhancement Module on Linux Platforms

1. Save the SGD Enhancement Module package to a temporary directory on the host.

After you install the `oracle-sgd-tems-version.el7.noarch.rpm` package, you can download the installation program from an SGD web server at <https://server.example.com>, where `server.example.com` is the name of an SGD server. For more information, see [Section 2.4, “How](#)

To Make the SGD Enhancement Modules Available on the SGD Web Server". When the SGD web server Welcome page displays, click Install an Oracle Secure Global Desktop Enhancement Module.

These are the package files:

- `oracle-sgd-tem-version.el7.x86_64.rpm` for Oracle Linux 7 platforms
- `tem-version.el6.i386.rpm` for Oracle Linux 6 and Oracle Linux 7 platforms
- `tem-version.el5.i386.rpm` for Oracle Linux 5 platforms

where `version` is the SGD version number.



Note

In SGD Release 5.5, the `version` for these packages are taken from SGD Release 5.4.

2. Log in as superuser (root) on the host.
3. Install the SGD Enhancement Module.

To install on Oracle Linux 7 platforms:

```
# yum install oracle-sgd-tem-version.el7.x86_64.rpm
```

To install on Oracle Linux 6 platforms:

```
# yum install --nogpgcheck tem-version.el6.i386.rpm
```

To install on Oracle Linux 5 platforms:

```
# yum install --nogpgcheck tem-version.el5.i386.rpm
```

4. Verify that the Enhancement Module package is registered in the package database.

```
# rpm -q tem
```

5. Start the Enhancement Module installation program.

```
# /opt/tta_tem/bin/tem start
```

6. Configure settings for the Enhancement Module.

The Enhancement Module installation program presents the following settings that you can accept or change:

- The amount of virtual memory the host has. This is used for load balancing.
- Options for installing the UNIX audio module.

2.4 How To Make the SGD Enhancement Modules Available on the SGD Web Server

All Enhancement Modules for supported UNIX and Linux platforms are provided in a single package. When this is installed on the SGD host, users can download Enhancement Module software from the SGD web server.

1. Obtain the software. A single package provides Enhancement Modules for all supported UNIX and Linux platforms.

The following options are available:

- Download the software from the [Oracle Software Delivery Cloud](#) and save the software package file to a temporary directory on the host.
- Download the package from the Unbreakable Linux Network (ULN) channel.

The package file is named `oracle-sgd-tems-version.el7.noarch.rpm`, where `version` is the SGD Enhancement Module software version number.

This package installs all of the Enhancement Modules for all platforms on to the SGD web server and makes them available for download.

2. Log in as superuser (root) on the host.
3. Install the SGD Enhancement Modules package.

If the package file is compressed, you must expand it before installing.

From a temporary directory:

```
# yum install /tempdir/oracle-sgd-tems-version.el7.noarch.rpm
```

2.5 Troubleshooting Installation of the UNIX Audio Module on Linux Platforms

On Linux platforms, if the UNIX audio module does not install, the SGD Enhancement Module installation program asks you whether to cancel the installation or to continue the installation without installing the UNIX audio module.

If the OSS audio module does not install, check the following:

- Are the header files for your Linux kernel version installed?
- Do the version numbers of the header files and the Linux kernel match?
- Does the GCC version match the version used to compile the Linux kernel?
- Does the `dmesg` utility reveal any other errors?
- If the `ARCH` environment variable is set in your environment, does it contain the path to a directory that exists on the system?

2.6 Upgrading the SGD Enhancement Module

This section describes how you upgrade the SGD Enhancement Module on supported platforms.

2.6.1 Upgrading the SGD Enhancement Module for Microsoft Windows

1. (Optional) If the current version of the SGD Enhancement Module is before version 4.7, remove the current version manually.



Caution

The upgrade process will fail if the current version is not removed manually.

See [Section 2.7.1, “Removing the SGD Enhancement Module for Microsoft Windows”](#).

2. Install the new version of the Enhancement Module.

See [Section 2.1.1, “Installing the SGD Enhancement Module for Microsoft Windows”](#).

2.6.2 Upgrading the SGD Enhancement Module for UNIX and Linux Platforms

When you upgrade the SGD Enhancement Module and you install the UNIX audio module, you may see a message that says the UNIX audio module is already running. This message is displayed because the SGD audio driver is currently in use and cannot be stopped. The upgraded SGD audio driver is loaded when you next restart the host.

1. Install the new version of the Enhancement Module.

See [Section 2.2, “Installing the SGD Enhancement Module for UNIX and Linux Platforms”](#).

2.7 Removing the SGD Enhancement Module

This section describes how you remove the SGD Enhancement Module on supported platforms.

2.7.1 Removing the SGD Enhancement Module for Microsoft Windows

1. Log in to the Windows host as a user with administrator privileges.
2. In the Windows Control Panel, select the option to uninstall or change a program.
3. Select **Oracle Secure Global Desktop Enhancement Module**.
4. Click **Uninstall**.

2.7.2 Removing the SGD Enhancement Module for UNIX and Linux Platforms

1. Log in as superuser (root) on the application server.
2. Remove the Enhancement Module.

The following commands stop all Enhancement Module processes before removing the software.

On Oracle Solaris platforms:

```
# pkgrm tem
```

On Oracle Linux 5, 6, and 7 platforms running the legacy `tem-version.el5.i386.rpm` or `tem-version.el6.i386.rpm` package:

```
# rpm -e tem
```



Note

The Enhancement Module installation directory, and some configuration files in this directory, are not removed. The default installation directory for the Enhancement Module is `/opt/tta_tem`.

On Oracle Linux 7 platforms running the `oracle-sgd-tem-version.e17.x86_64.rpm` package:

```
# yum remove oracle-sgd-tem
```

Chapter 3 Controlling the SGD Enhancement Module

This chapter describes how you control the SGD Enhancement Module.

On UNIX and Linux platforms, a command line is available for controlling the various Enhancement Module modules manually.

3.1 Controlling the SGD Enhancement Module for Microsoft Windows

When you install the SGD Enhancement Module for Microsoft Windows, the load balancing service starts immediately. The load balancing service also starts automatically whenever the Windows host is restarted.

Manually Controlling the Load Balancing Service

Use the following procedure to manually stop and start the load balancing service on a Windows host.

1. Log in to the Windows host as a user with administrative privileges.
2. In the Windows Control Panel, click **Administrative Tools**.
3. Click **Computer Management**.
4. In the tree, expand **Services and Applications**.
5. Click **Services**.
6. Double-click the **Tarantella Load Balancing Service**.
7. Click **Stop** or **Start** to stop or start the service.

3.2 Controlling the SGD Enhancement Module for UNIX and Linux Platforms

When you install the SGD Enhancement Module for UNIX and Linux Platforms, the load balancing and UNIX audio modules start immediately. The client drive mapping module has to be started manually, because extra configuration is required.

Whenever the host is rebooted, all the Enhancement Module modules are started automatically.

On UNIX and Linux platforms, you can control the Enhancement Module modules manually with the `tem` command. The `tem` command is a script installed in the `install-dir/bin` directory. By default, `install-dir` is `/opt/tta_tem`.

You run the `tem` commands as superuser (root).

The supported `tem` commands are shown in [Table 3.1, “Commands for Controlling the SGD Enhancement Module”](#).

Table 3.1 Commands for Controlling the SGD Enhancement Module

Subcommand	Description
<code>tem start</code>	Starts the SGD Enhancement Module

Subcommand	Description
<code>tem stop</code>	Stops the SGD Enhancement Module
<code>tem startcdm</code>	Starts the client drive mapping module
<code>tem stopcdm</code>	Stops the client drive mapping module
<code>tem startaudio</code>	Starts the UNIX platform audio module
<code>tem stopaudio</code>	Stops the UNIX platform audio module
<code>tem startloadprobe</code>	Starts the advanced load balancing module
<code>tem stoploadprobe</code>	Stops the advanced load balancing module
<code>tem restart</code>	Restarts the SGD Enhancement Module
<code>tem version</code>	Displays version information for the SGD Enhancement Module
<code>tem status</code>	Displays the status of the various modules in the SGD Enhancement Module
