

ArcGIS® 9

Installation Guide: ArcSDE® for Oracle®



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Introduction

This installation guide includes information on installing ArcSDE[®] for Oracle[®], setting up your geodatabase, and creating an ArcSDE service.

Each ArcSDE disk contains folders named by platform. These contain the following:

- Folders named for each database—These contain the installation files for the ArcSDE component for the database indicated.
- Software development kit (SDK) folders ArcSdeSDK and documentation_sdk—These contain the installation file for the developer kit and the developer documentation respectively.
- A documentation_server folder—This contains the ArcSDE administration command reference and the installation guides, one of which you are reading now. The administration command reference contains syntax and usage for the ArcSDE commands, the installation guides contain instructions for the installation and setup of the ArcSDE component and geodatabase.
- A license folder—This folder holds the ArcGIS Server license file.

The installation of the ArcSDE component of ArcGIS Server Enterprise for Oracle is a two step process.

1. **Install ArcSDE for Oracle.** On Windows, the ArcSDE setup program will install the Microsoft Windows Installer if required before continuing with the ArcSDE for Oracle installation. After ArcSDE for Oracle is installed on Windows, you will have the option to start the Post Installation wizard. On UNIX machines, you will manually proceed with the postinstallation setup.
2. **Perform the postinstallation setup**, which defines the ArcSDE administrative user's (the SDE user's) environment, sets up the geodatabase repository, authorizes ArcSDE, and creates the ArcSDE service.

For guidelines on optimizing both your Oracle server and ArcSDE server configurations, see the help topics in the section Geodatabases and ArcSDE/Administering ArcSDE geodatabases in the ArcGIS Server help or ArcGIS Desktop online help at <http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm> prior to installing the ArcSDE component.

Installations on Windows

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System requirements

ESRI's ArcSDE component has certain minimum computer system requirements. Your computer system is required to meet these minimum requirements to successfully install and use ArcSDE for Oracle.

Operating system

Which operating system (OS) is supported depends on the release of Oracle and ArcSDE being used. For specifics and the latest information on supported system environments for ArcSDE for Oracle, see <http://support.esri.com>, and navigate to Software > ArcGIS Server > System Requirements. In general, though, the following Windows OS is supported:

- Microsoft Windows Server 2003[®] (32- or 64-bit)

Free disk space

The ArcSDE component installed on the computer system requires approximately 70 MB of disk space.

Oracle requirements

Separate from ArcSDE requirements, Oracle has certain minimum computer system requirements. Your computer system is required to meet these minimum requirements to successfully install and use Oracle. For the latest in Oracle's requirements, consult the [Oracle Web site](http://www.oracle.com/index.html) (<http://www.oracle.com/index.html>).

Installation overview

The installation requires system administrator privileges on the server where ArcSDE is to be installed.

The installation procedure includes the following steps:

1. Obtain an authorization file.

Each machine on which the ArcSDE component of ArcGIS Server Enterprise Edition is installed requires an authorization file, which must be written to each geodatabase. Each new version of the ArcSDE component requires a new authorization file.

There are several ways to obtain an authorization file and register ArcSDE. You can visit <https://service.esri.com> to obtain an authorization file (by email, fax, phone, or mail) before installing the ArcSDE component. You can also obtain an authorization file and register ArcSDE using the Post Installation wizard after installing. (This is the recommended method.) See [ArcSDE authorization](#) for registration methods using the Post Installation wizard.

2. Start the setup program.

Insert the ArcSDE component media into the appropriate drive, choose the ArcSDE for Oracle option on the ArcSDE installation dialog box, and follow the installation instructions in the wizard to install the ArcSDE component. For detailed installation instructions, see the topic [Installing the ArcSDE component](#).

3. Complete the postinstallation setup.

The postinstallation setup requires a valid DBMS to be installed, a database set up and available for connections, and access to the Oracle client files (this can be from an Oracle client only or database software installation). The Post Installation wizard will create an administrative user (sde) and tablespace, grant the user permissions in the database necessary for installation, set up the geodatabase repository in the database, authorize ArcSDE, and create and start an ArcSDE service. The Post Installation wizard will automatically launch after installation is complete. Postinstallation must be completed to successfully set up an ArcSDE geodatabase in the database. For detailed instructions, see the topic [Postinstallation overview](#).

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Installing the ArcSDE component

Follow the steps below to install the ArcSDE component on Windows.

How to prepare to install the ArcSDE component

1. Obtain an authorization file for the machine on which you will be installing the ArcSDE component of ArcGIS Server Enterprise Edition. This is not required to install the ArcSDE component but is required to complete the postinstallation setup.
2. Log in as a user with administrative privileges.
3. Close all applications on your computer.
4. Insert the ArcSDE component media into the appropriate drive and follow the directions on How to install the ArcSDE component.

How to install the ArcSDE component

1. Choose ArcSDE for Oracle on the ArcSDE installation dialog box. If the installation dialog box does not open automatically, open Windows Explorer, navigate to your DVD drive, and launch the ESRI.exe. Or, navigate to the ArcSDE\windows\ArcSDEOracle<version> folder and launch setup.exe to begin the installation. During the installation, you will be asked to read the license agreement and accept it or exit if you do not agree with the terms. The license agreement dialog contains a link to view the license agreement in another language.
2. To complete the component installation, follow the directions in the setup program.
3. After the ArcSDE component installation completes, the setup program provides the opportunity to begin the Post Installation wizard. The Post Installation wizard provides the options to create an SDE DBMS user and tablespace, set up the geodatabase repository in the database, authorize ArcSDE, and create and start an ArcSDE service. See the [Postinstallation overview](#) for more information.

Note: If you are installing ArcSDE on a different server than Oracle, see [Installing the ArcSDE component and Oracle on separate machines](#).

Also note that new installations of ArcSDE 9.3 for Oracle do not install public synonyms for use with ST functions and operators. That means when using ST functions and operators, you must qualify them with the sde schema. For example, you would type "SELECT id, sde.st_is3d (geometry)" rather than "SELECT id, st_is3d (geometry)".

If you are upgrading from a previous release of ArcSDE, the public synonyms will still be present and you do not need to qualify ST functions and operators.

Installing the ArcSDE component and Oracle on separate machines

If you are installing the ArcSDE component on a different server than Oracle, there are additional steps you must take.

1. Make sure Oracle is installed and running on the remote server.
2. Install the Oracle Net Software on the server where ArcSDE is to be installed. Ensure SQL will operate from this remote machine to the Oracle server.
3. Copy the shared libraries used by EXTPROC to the Oracle server. These libraries include st_shapelib plus the Geometry library and the Projection Engine library. (The names of these files vary depending on what operating system (OS) you are using.) Be sure the files copied to the Oracle server are designed to run on the operating system of the Oracle server. For example, if ArcSDE is installed on a Linux machine, but Oracle is installed on a Solaris machine, the dll and lib files you copy to the Oracle server must be for Solaris. To get the files for different operating system, you can install the software files of the ArcSDE component on the Oracle server, creating the SDEHOME files, and delete everything but the three required library files.

Library name	OS-dependent file names
st_shapelib	st_shapelib.dll (Windows), libst_shapelib.so (Solaris, Linux, and HP-UX Itanium), libst_shapelib_64.so (IBM), or libst_shapelib.sl (HP-UX PA-RISC)
Projection Engine	pe.dll (Windows), libpe.so (Solaris, Linux, and HP-UX Itanium), libpe_64.so (IBM) or libpe.sl (HP-UX PA-RISC)
Geometry	sg.dll (Windows), libsg.so (Solaris, Linux, and HP-UX Itanium), libsg_64.so(IBM) or libsg.sl (HP-UX PA-RISC)

4. These files can be found in the bin (Windows) or lib (UNIX/Linux) directory of SDEHOME after you've installed the ArcSDE component. You can copy these files to the %ORACLE_HOME%\lib (Windows) or \$ORACLE_HOME/lib (UNIX/Linux) directory on the Oracle server, which is the default location that Oracle looks in for shared libraries. Or, you can leave these files where they were installed or move them into any directory that is accessible to the user that owns ORACLE_HOME.
5. If you do not use the default location under ORACLE_HOME for the library files, you will need to define the environment variable EXTPROC_DLLS for the EXTPROC so it can find st_shapelib. This is done in the listener configuration file listener.ora. See [Configuring Oracle Net Services to use ST_Geometry SQL functions](#) for more information.

6. The library definition in the Oracle data dictionary must be updated with the correct library path to the file containing `st_shapelib`. Altering the definition of the library path will invalidate package bodies that refer to it, so the package bodies of some ArcSDE stored procedure packages should be recompiled using Oracle.
7. Perform the preinstallation tasks and install the ArcSDE component on the ArcSDE server as described in the topics [Installing the ArcSDE component \(Windows\)](#) or [Preinstallation requirements](#) and [Installing the ArcSDE component \(UNIX/Linux\)](#).
8. Perform the ArcSDE postinstallation steps as described in the topics relevant to each OS.

- [Windows](#)

[Postinstallation overview](#), [Setting up the SDE user environment](#), [Setting up the geodatabase repository](#), and [ArcSDE authorization](#)

To create the service on Windows, you must use the `sdeservice -o create` command. The Post Installation wizard is not designed to create a service for ArcSDE setups that are on a remote server.

The `-d` option for the `sdeservice` is required and you must enter the name of the Oracle Instance (SID). However, since it is not possible for a Windows service to have a dependency on a service that is on a remote server, you will need to add to the `sdeservice` syntax the `-n` parameter to negate the dependency.

At a command prompt, type `sdeservice -h` for syntax information or refer to the ArcSDE Administration Command Reference for syntax and explanation of the `sdeservice` command.

- [UNIX/Linux](#)

[ArcSDE postinstallation setup](#), [ArcSDE authorization](#), and [Starting the ArcSDE service on UNIX](#)

9. For Oracle to connect to a remote instance, an environment variable must be set to identify the remote Oracle instance through the net service name.

If the ArcSDE server is on Windows, set `LOCAL` to the Oracle net service name in the `SDEHOME\etc\dbinit.sde` file. If the ArcSDE server is on UNIX, set `TWO_TASK` to the Oracle net service name. The `ORACLE_HOME` variable must also be set. Consult your Oracle documentation for further information on these environment variables.

Note: You could use the `TWO_TASK` or `LOCAL` variable to specify the Net Service Name of a local Oracle database. However, this is not recommended because it results in additional overhead when making a connection to the database. For local connections, you should use the `Oracle_SID`.

10. The `TNS_ADMIN` variable must be set if the default location of the `tnsnames.ora` file is not used.

Related concepts found in the help

You can get more information related to the SDE user and permissions in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system

installed with ArcGIS Server or ArcGIS Desktop. Use the links below to open the online topics, or open the help and search for the following titles:

[Configuring Oracle Net Services to use SQL functions](#)

[The dbinit.sde file](#)

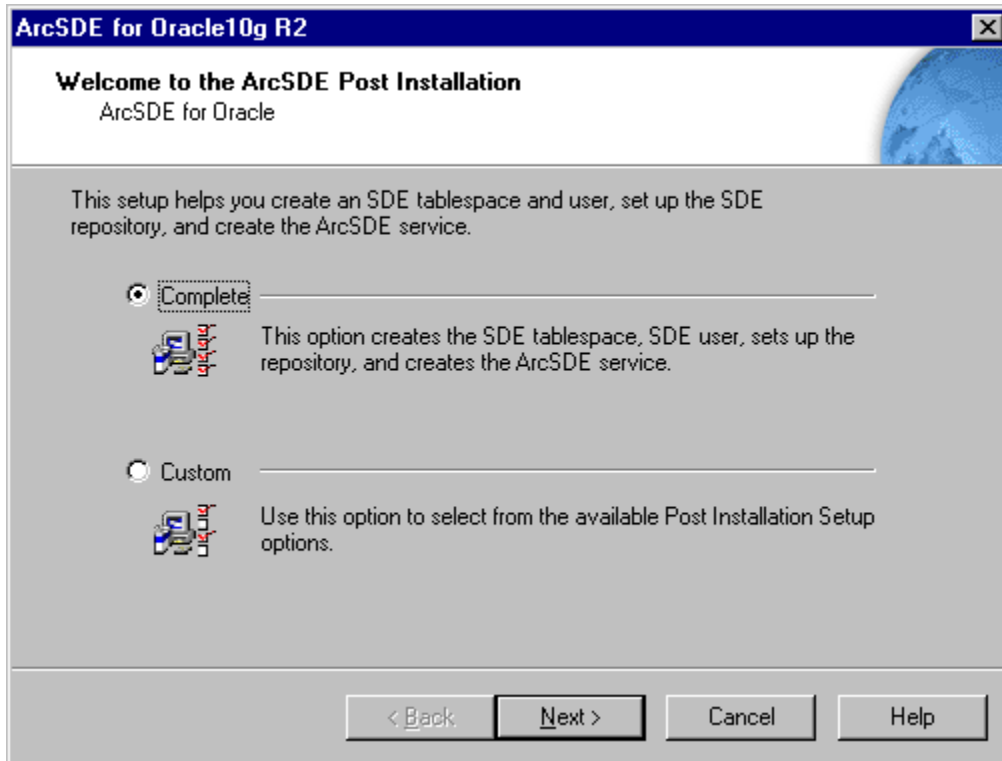
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Postinstallation overview

Once the ArcSDE component is installed, you must create an administrative user, set up your ArcSDE geodatabase, and authorize ArcSDE for use. You can also create an ArcSDE service to be used by client applications to connect to the geodatabase. The Post Installation wizard provides an easy way to complete these tasks. These steps can also be performed manually. The Post Installation wizard will guide you through the following options:

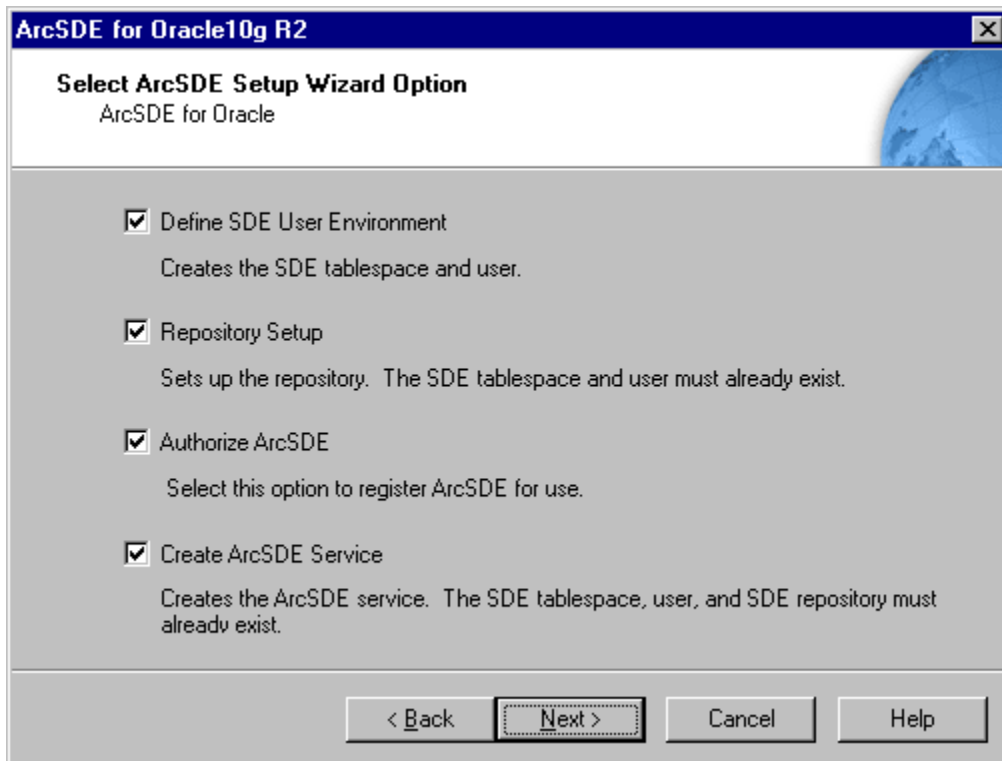
- **Setting up the SDE user environment**—If you do not already have an SDE user and tablespace, the Post Installation wizard will create them by connecting to Oracle as the sys user. The SDE user and tablespace must exist before the rest of the postinstallation setup will succeed. Security at your site may dictate you skip this part of the setup and allow your Oracle database administrator (dba) to manually create the SDE user and tablespace. To skip this step, select the custom postinstallation setup option. There are SQL scripts provided to set up the SDE user environment manually if necessary. See [Creating the SDE user and tablespace script](#) for details.
- **Setting up the ArcSDE repository**—This is a crucial step in the postinstallation setup. This postinstallation option allows you to define the ArcSDE configuration files to be used by ArcSDE in the database. If you modified a dbtune.sde, dbinit.sde, or giomgr.defs file and want to use one or all of those, you will have a chance to include them here. Accept the defaults if you do not have any custom files to use. The ArcSDE system tables, geodatabase system tables, stored procedures, and locators are all created when setting up the geodatabase repository. This must be done logged in as the SDE user. The SDE user requires specific permissions to successfully run this part of the postinstallation setup. See [Required Oracle permissions to create the geodatabase](#) for a list of these permissions. If this step does not run successfully, you will not be able to start an ArcSDE service or connect to the geodatabase. This step can be performed manually with the sdesetup command.
- **Authorizing ArcSDE**—Each machine on which the ArcSDE component of ArcGIS Server Enterprise Edition is installed requires a unique authorization file. This postinstallation option authorizes your geodatabase repository using the authorization file. The ArcSDE service will not start and direct connections will be refused unless your geodatabase repository has been configured using a valid authorization file. You can reconfigure your geodatabase repository using the sdesetup command with the update_key operation. See the ArcSDE Command Reference for details.
- **Creating the ArcSDE service**—Once ArcSDE has been authorized for use, an ArcSDE service can be created. If the information provided to create the ArcSDE service is complete, the Post Installation wizard will start the ArcSDE service for you.

Choose a Complete or a Custom postinstallation setup.



A Complete installation will guide you through all of the postinstallation options.

If you select a custom installation, you can choose from any of the available postinstallation options.



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The Custom installation is recommended for advanced users or users upgrading an existing ArcSDE geodatabase. See the topic [Upgrade information](#) for details.

You would use a custom postinstallation if any of the following are true:

- You or your DBA manually created the SDE DBMS user so you do not need the Post Installation wizard to perform the first option.
- You do not yet have your authorization file. You can complete the first two options then come back to complete the last two.
- You are upgrading the geodatabase from a previous release, so you do not need to repeat the first option.
- If none of your client applications will connect using an ArcSDE service, you do not have to complete the last option.

If you need to run the Post Installation wizard again at a later time, it is also available from Start > All Programs > ArcGIS > ArcSDE > ArcSDE for Oracle Post Installation.

Required Oracle permissions to create the geodatabase

To run sdesetup and create the ArcSDE geodatabase in your Oracle instance, you have to grant the following additional permissions to the SDE user in Oracle for the setup to succeed. On Windows, if you use the Post Installation wizard to create the SDE user, these permissions are granted automatically.

All the same permissions are necessary for the schema owner if creating a user-schema geodatabase, except ADMINISTER DATABASE TRIGGER; that permission is only necessary when installing or upgrading the SDE master geodatabase.

```
ADMINISTER DATABASE TRIGGER
CREATE SESSION
CREATE TABLE
CREATE TRIGGER
CREATE PROCEDURE
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PUBLIC SYNONYM
CREATE SEQUENCE
CREATE TYPE
CREATE VIEW
DROP PUBLIC SYNONYM
```

If you plan to use autoregistration for SDO_GEOMETRY tables, you must also grant the SDE user SELECT ANY TABLE. **Note:** The SELECT ANY TABLE privilege is also required for the SDE user to run a geodatabase compress operation. You can grant the SDE user that privilege now, or wait to grant it prior to each compress operation.

For an explanation of why each of these are needed, see the topic [User permissions for geodatabases in Oracle](#) in the ArcGIS Server or ArcGIS Desktop help.

After the geodatabase has been created, you may revoke the following permissions from the SDE user or schema owner user account:

```
ADMINISTER DATABASE TRIGGER
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PUBLIC SYNONYM
CREATE SEQUENCE
CREATE TYPE
CREATE VIEW
DROP PUBLIC SYNONYM
```

The Oracle SYS user must also grant EXECUTE permissions on a number of packages to the PUBLIC role. These permissions cannot be revoked.

```
sqlplus sys/*****

GRANT EXECUTE ON dbms_pipe TO public;

GRANT EXECUTE ON dbms_lock TO public;
```

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ArcSDE uses DBMS_PIPE to store row ids during the insert process and uses DBMS_LOCK to mark entries in the PROCESS_INFORMATION table as active. Access for PUBLIC is required because these packages are used both directly and via definers-rights stored procedures. A stored procedures with definers-rights cannot use permission from roles.

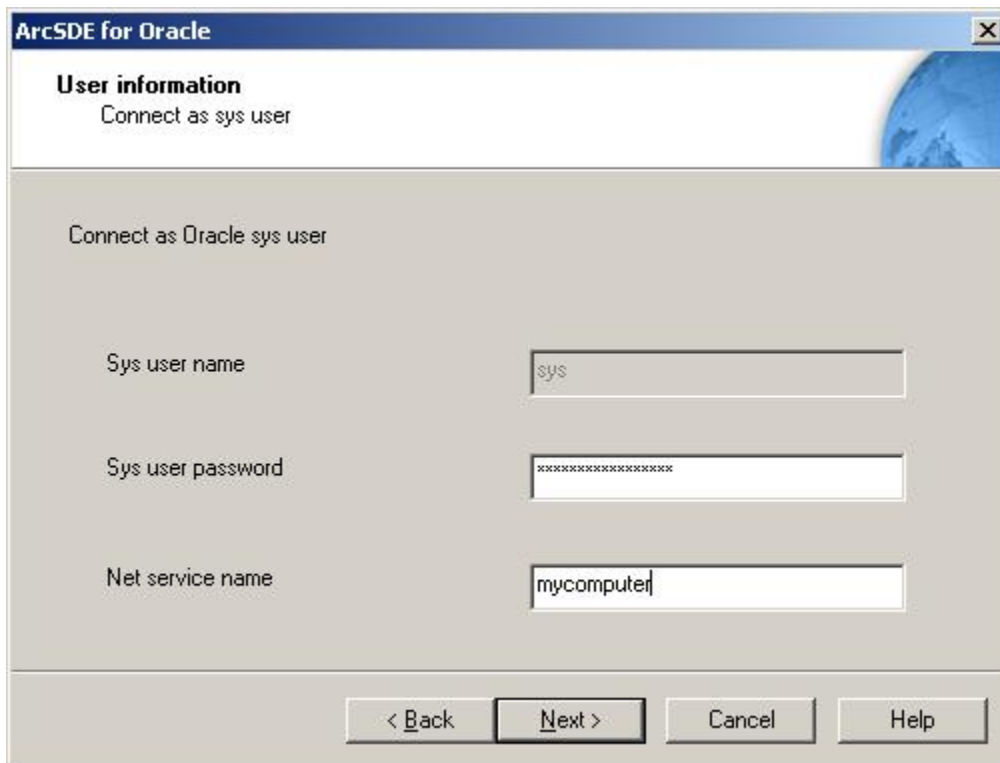
See [Creating the SDE user and tablespace script](#) in the next topic.

Setting up the SDE user environment

This postinstallation setup option will do the following:

- Grant EXECUTE on DBMS_PIPE and DBMS_LOCK to Public.
- Create the SDE user's default tablespace.
- Create the SDE user if it does not already exist.
- Grant the SDE user the required privileges to create the geodatabase. See the section [Creating SDE user and tablespace script](#) for privileges granted.

To set up the SDE user and tablespace, the Post Installation wizard connects to Oracle as the sys user. You must provide the sys user password. Leaving the net service name blank will result in connecting to Oracle using the default net service name on your local machine.



The screenshot shows a dialog box titled "ArcSDE for Oracle". The main heading is "User information" with the instruction "Connect as sys user". Below this, it says "Connect as Oracle sys user". There are three input fields: "Sys user name" with "sys" entered, "Sys user password" with "*****" entered, and "Net service name" with "mycomputer" entered. At the bottom are four buttons: "< Back", "Next >", "Cancel", and "Help".

Once connected to Oracle as the sys user, you are required to set a password for the SDE user. You may also enter a tablespace name and assign a path to the tablespace file or accept the defaults provided. If the SDE user and tablespace of the required size already exist, this step is skipped.



The SDE tablespace and SDE user are created and the required privileges granted to the SDE user to manage the geodatabase repository.

Note: ArcSDE requires an SDE tablespace of at least 400 MB in size. If an SDE tablespace already exists (for example, from an earlier SDE or ArcSDE installation), the Post Installation wizard will detect it and increase its size to a minimum of 400 MB. If the tablespace is already 400 MB or larger, the tablespace size will not be changed. For more information on upgrading, please see the topic [Upgrade information](#).

Note: Upgrading requires specific permissions be granted to the SDE user. Please see [Required Oracle permissions to upgrade](#) for specifics.

Creating the SDE user and tablespace script

If you decide to not use the Post Installation wizard to set up your SDE user environment, you can modify and use the `createsdeoracle.sql` script to manually create the SDE user and tablespace. The `createsdeoracle.sql` script is located at `%SDEHOME%/tools/oracle`.

Related concepts found in the help

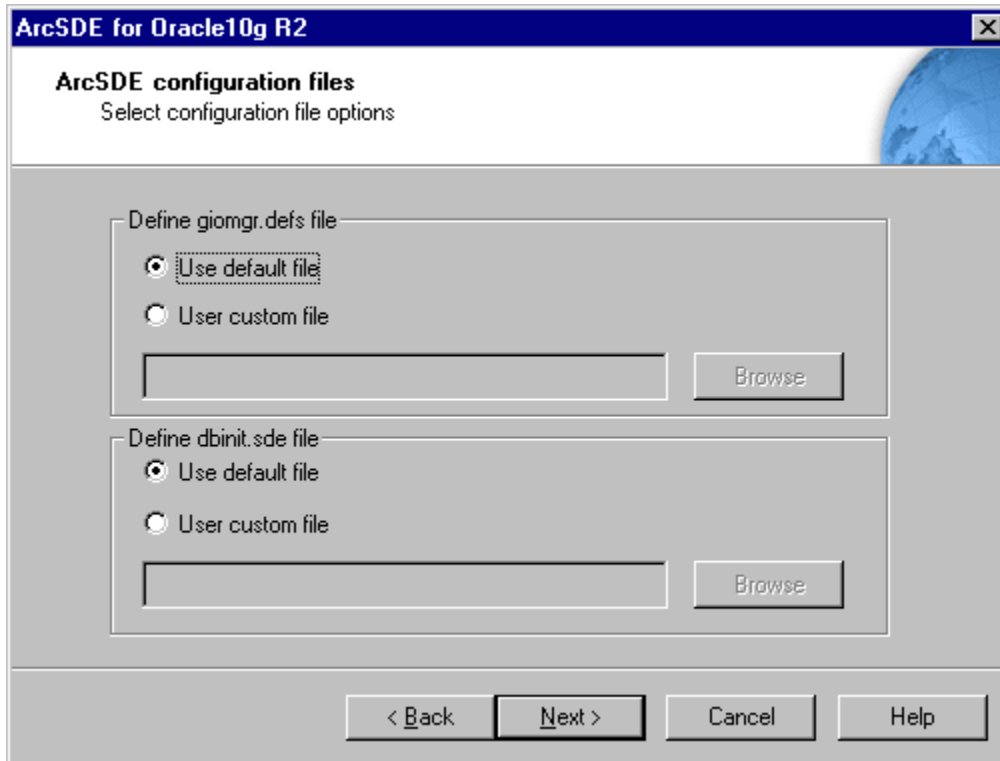
You can get more information related to the SDE user and permissions in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

[The ArcSDE administrative account](#)

[User permissions](#)

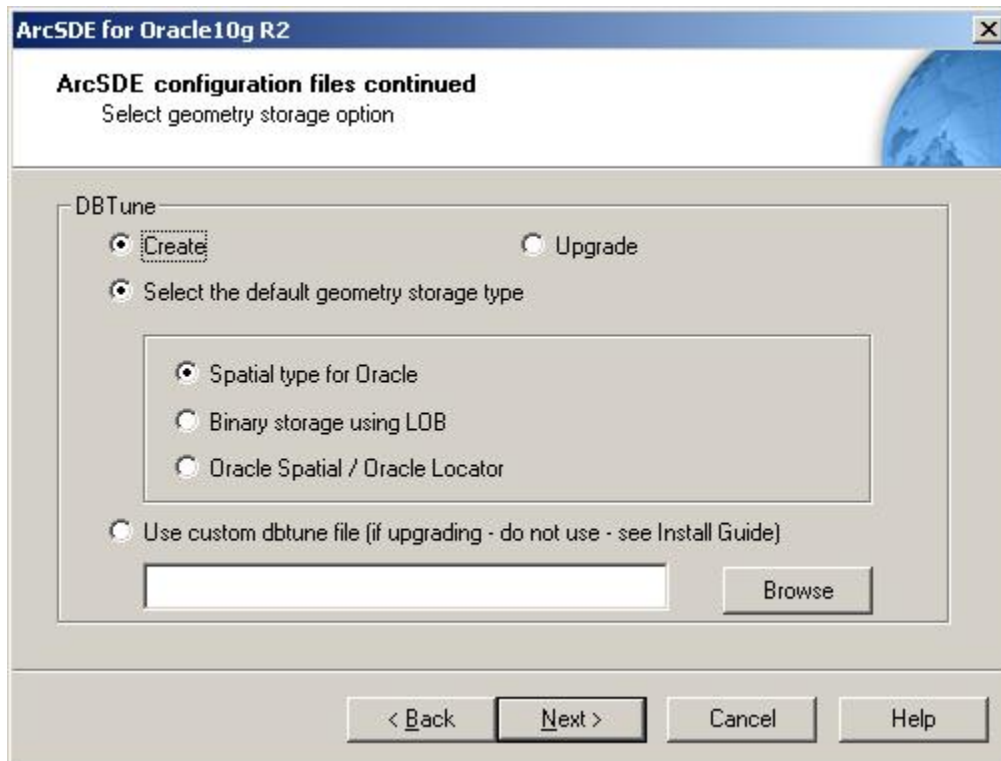
Setting up the geodatabase repository

Once the SDE tablespace and user are created, you can set up the geodatabase repository. Options are provided to specify custom `giomgr.defs*`, `dbinit.sde`, and/or `dbtune.sde` files.



*The `giomgr.defs` file contains a parameter—TEMP—that is used to specify the full path name to a temporary disk space directory. This parameter is commented out. If left commented out, the default location for this is the temporary folder of the user logged into the Windows machine at the time the geodatabase is created. If that location is acceptable, you do not have to uncomment and change this parameter value. If not, alter the `giomgr.defs` file, uncommenting the TEMP parameter and setting it to the full path name you want to use, then save the `giomgr.defs` file. If you do not alter this value before setting up the ArcSDE geodatabase repository, you can alter it after the geodatabase is created using the `sdeconfig alter` operation. See the ArcSDE administration command reference installed with the ArcSDE component of ArcGIS Server Enterprise for information on this command.

You have the option of using the default `dbtune.sde` file provided with ArcSDE, using your own custom `dbtune.sde` file (which could include such things as altering the default [geometry storage type](#) for your geodatabase to use when storing data and defining the tablespaces used to store the geodatabase tables), or use the default `dbtune.sde` file but alter the default geometry storage type by selecting one of the three geometry storage types offered on this dialog box.



The geometry storage options equate to the following in the DBTUNE table:

- Binary storage using LOB = SDELOB
- Oracle spatialOracle Locator = SDO_GEOMETRY
- Spatial type for Oracle = ST_GEOMETRY

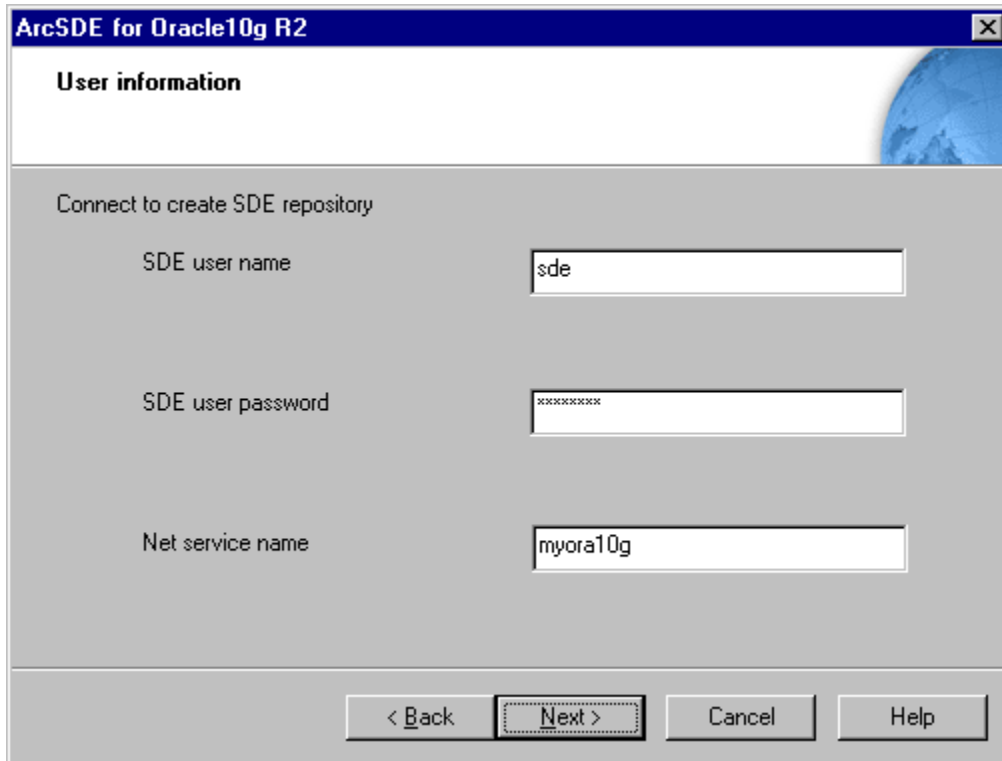
If you do not have custom files and do not want to change the default geometry storage type, accept the default configuration files.

If you are upgrading ArcSDE: The Post Installation wizard will not import a custom dbtune.sde file. In the Define dbtune.sde file section, as shown in the above dialog box, do not choose to use a custom dbtune.sde file when upgrading ArcSDE. If you want to use a custom dbtune.sde file, you must manually import the custom file using the sdedbtune -o import command. For more information on the sdedbtune command, see the ArcSDE Administration Command References help available from Start > Programs > ArcGIS > ArcSDE > Command References, on the ArcSDE media at \documentation_server\Admin_Cmd_Ref, or in %SDEHOME%\Documentation\Admin_Cmd_Ref.

After the configuration files are defined, you can connect to Oracle to set up the geodatabase repository. Setting up the repository is a crucial step in the postinstallation setup. If you do not choose to perform this postinstallation option using the Post Installation wizard, you must manually execute the sdesetup command at the DOS prompt.

The geodatabase repository contains all the ArcSDE metadata for administering the ArcSDE geodatabase. Refer to the sdesetup command in the ArcSDE Administration Command Reference (%SDEHOME%\Documentation\Admin_Cmd_Ref) for specifics on what is occurring with this operation.

Provide your SDE user password and Oracle net service name to connect to Oracle as the SDE user and create the repository.



The screenshot shows a dialog box titled "ArcSDE for Oracle10g R2" with a close button in the top right corner. The dialog is titled "User information" and contains the instruction "Connect to create SDE repository". It has three input fields: "SDE user name" with the value "sde", "SDE user password" with masked characters "xxxxxxx", and "Net service name" with the value "myora10g". At the bottom, there are four buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Cancel", and "Help".

If you are performing an upgrade of an existing ArcSDE geodatabase, you will have to grant additional permissions to the SDE user in Oracle for the upgrade to take place successfully. Refer to the topic [Required Oracle permissions to upgrade](#) for further information.

To manually set up the repository

If you choose not to use the Post Installation wizard to set up the repository, you must manually execute the `sdesetup` command at the DOS prompt.

Refer to the `sdesetup` command reference in the ArcSDE Administration Command Reference (`%SDEHOME%\Documentation\Admin_Cmd_Ref`) for specifics on what is occurring with this operation.

Provide your SDE user password and Oracle net service name to connect to Oracle as the SDE user and create the geodatabase repository.

Related concepts found in the help

You can get more information related to setting up the repository in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

[The dbtune file and the DBTUNE table](#)

[DBTUNE configuration keywords](#)

[DBTUNE configuration parameter name-configuration string pairs](#)

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About geometry storage types

A spatial type for Oracle

The ST_Geometry storage type

Using the Oracle Spatial geometry type

ArcSDE Compressed Binary storage

The OGC Well-Known Binary representation for geometry

The geomgr.defs file and the SERVER_CONFIG table

The dbinit.sde file

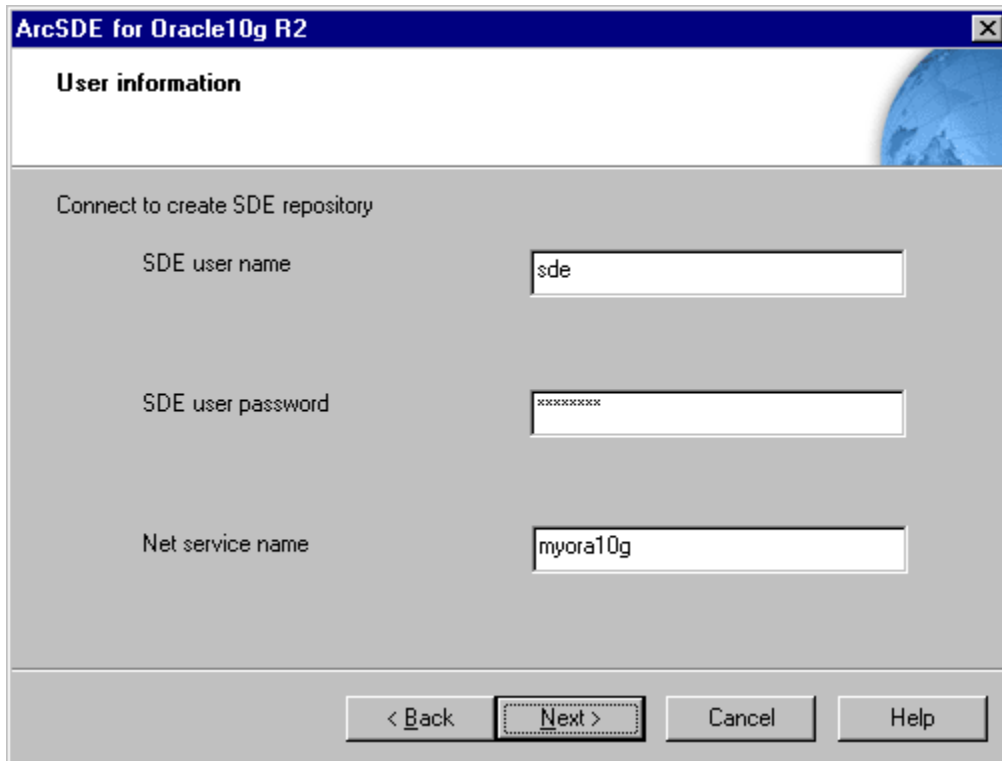
System tables of a geodatabase stored in Oracle

ArcSDE authorization

Each machine on which the ArcSDE component of ArcGIS Server Enterprise Edition is installed requires a unique authorization file. You can obtain an authorization file using the Post Installation wizard. If you have already obtained your authorization file, the Post Installation wizard will configure your geodatabase repository using your authorization file.

Every ArcSDE geodatabase that resides on the same machine must be authorized using the authorization file because the authorization information is stored in the geodatabase repository. This includes geodatabases stored in the schemas of users other than the SDE schema. You will not be able to make any connections to the geodatabase unless your geodatabase repository has been configured using a valid authorization file.

To reconfigure the repository with an updated authorization file, run through this portion of the Post Installation wizard again. To launch the Post Installation wizard at a later time, go to Start > All Programs > ArcGIS > ArcSDE > ArcSDE for Oracle Post Installation. If the software authorization option is not selected with the repository setup option, you will also be required to provide the following information to connect to the spatial database:



ArcSDE for Oracle10g R2

User information

Connect to create SDE repository

SDE user name: sde

SDE user password: *****

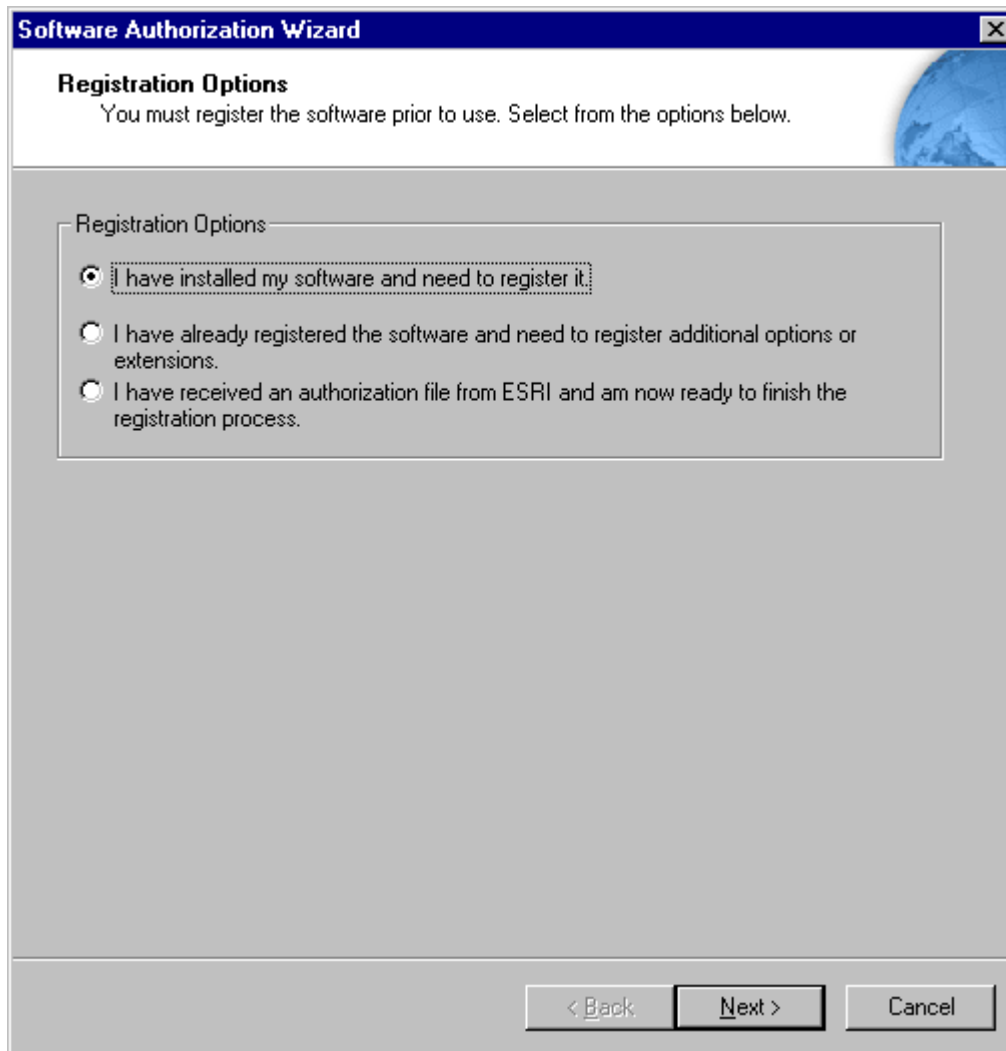
Net service name: myora10g

< Back Next > Cancel Help

Provide your SDE user password and Oracle net service name to connect to Oracle as the SDE user and write the license file to the geodatabase repository. No additional permissions are required.

To successfully register and authorize ArcSDE:

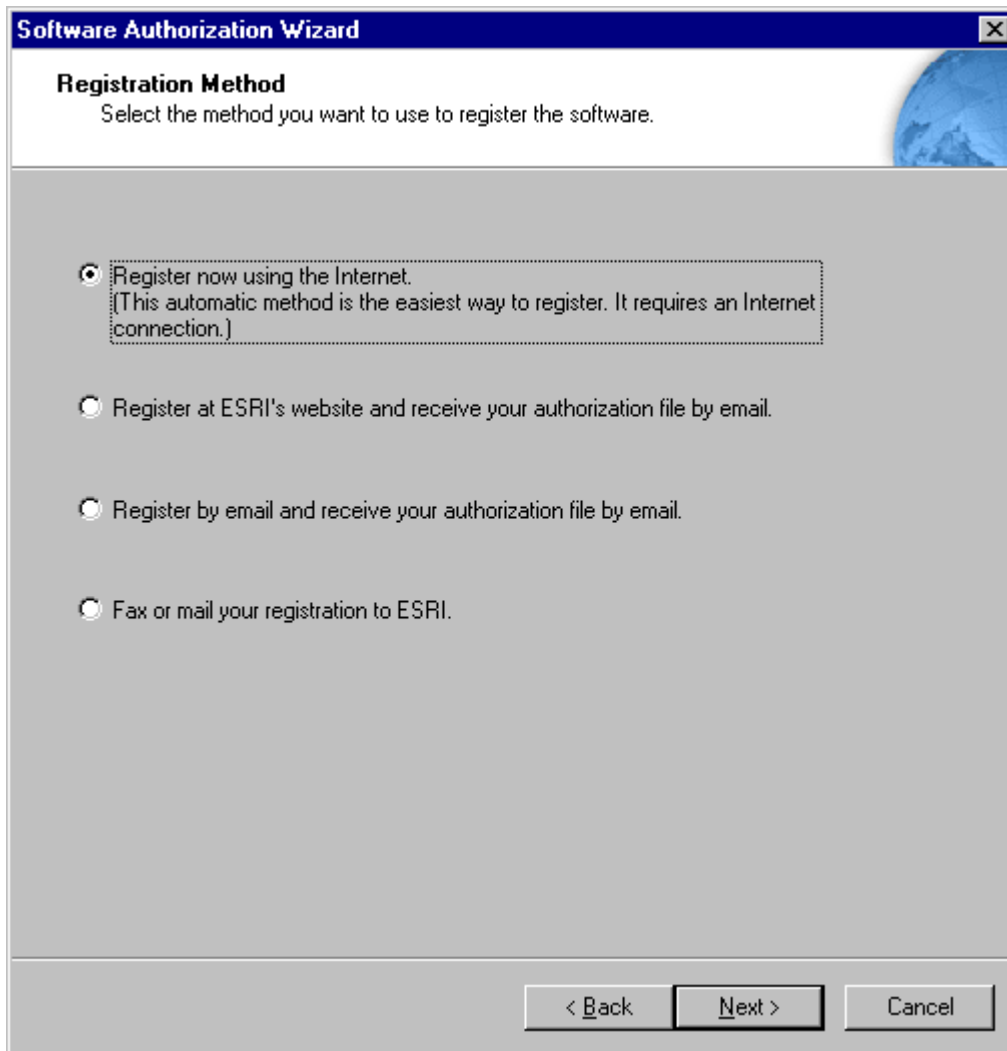
Choose your registration option



You can configure the geodatabase repository using two methods:

1. I have installed my software and need to register it.

Select this option if you do not already have an authorization file. There are several methods to provide your registration information.



Select the registration method you would like to use. This is the method in which you will provide your registration information, including the registration number you received with the software. After providing your registration information, your authorization file will be emailed to you.

Tip

- Register now using the Internet enables you to authorize the software immediately. It requires an Internet connection.

2. I have received an authorization file from ESRI and am now ready to finish the registration process.

Select this option if you have already received your authorization file from ESRI Customer Service. If you select this option, you can either browse to the location of the file (if you received the file by email), or you can manually enter the authorization information.

If you choose the option to browse to an authorization file on disk, you are required to Choose or enter the location of the authorization file that you received from Customer Service.

If you choose the option to manually enter the authorization information, you are required to provide the following information: (This information can be obtained from the authorization file you received by mail, email, telephone, or fax)

- Feature name
- Version number
- Time-out date
- Registration number
- Authorization code

To manually authorize ArcSDE

If you choose to manually authorize ArcSDE, you must use the `sdesetup` command.

You can manually register ArcSDE with an authorization file in two ways:

1. If you already have your authorization file, run the `sdesetup` command using the `install` or `upgrade` operations and designate the location of the authorization file with the `-l` option.
2. If you do not yet have your authorization file, run the `sdesetup` command with the `install` or `upgrade` operations but without the `-l` option. Once you receive your authorization file from ESRI, run `sdesetup` again using the `update_key` operation and the `-l` option.

The syntax for the `sdesetup` command with the `update_key` operation is as follows:

```
sdesetup -o update_key -d <ORACLE9I|ORACLE10G|ORACLE11G>  
        -l <key> [-u <DB_Admin_user>] [-p <DB_Admin_password>]  
        [-H <sde_directory>] [-s datasource] [-i <service>]  
        [-N] [-q]
```

Where `<key>` is the location of your authorization file

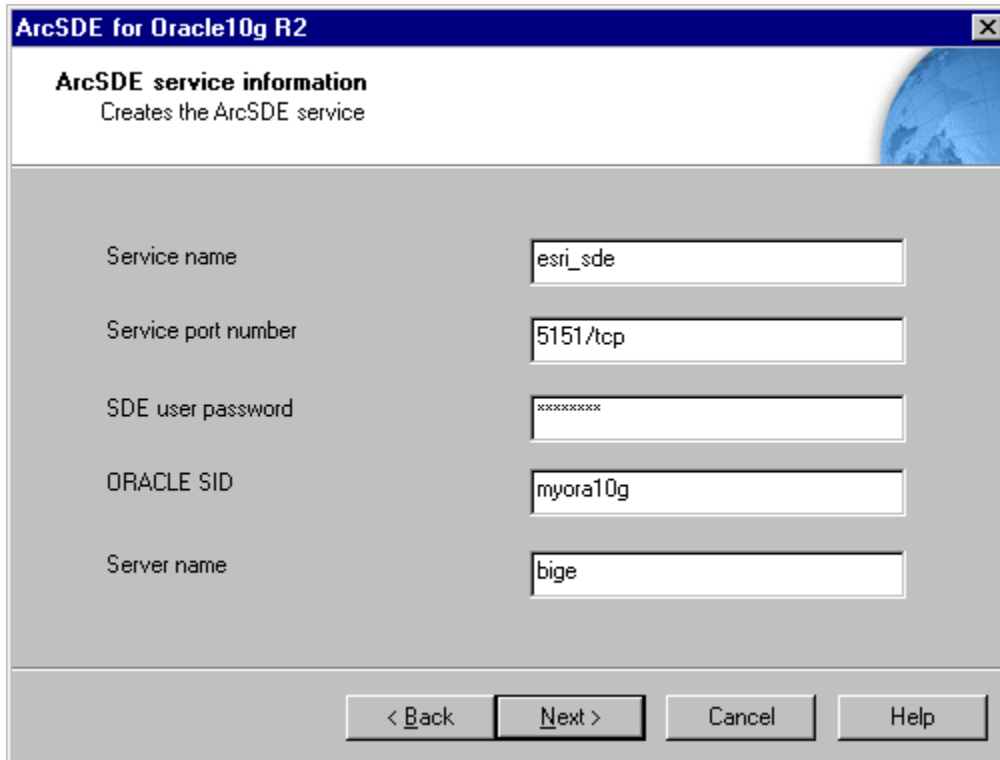
For example:

```
sdesetup -o update_key -d ORACLE10G -l c:\license\keycode.txt -u sde -p  
sde
```

Refer to the `sdesetup` command in the ArcSDE Administration Command Reference (%SDEHOME%\Documentation\Admin_Cmd_Ref) for specifics on what is occurring with this operation.

Creating an ArcSDE service

This option of the Post Installation wizard allows you to create an ArcSDE service. You must provide a unique TCP/IP port number and service name, the password that you used for your SDE user, the ORACLE SID, and server name. Your Oracle_SID is the Oracle Service Name Identifier, the unique name for your Oracle instance. The server name is required to determine the server to which you will be connecting; by default, your machine name is provided. All fields in this dialog box are required.



ArcSDE for Oracle10g R2

ArcSDE service information
Creates the ArcSDE service

Service name	<input type="text" value="esri_sde"/>
Service port number	<input type="text" value="5151/tcp"/>
SDE user password	<input type="password" value="*****"/>
ORACLE SID	<input type="text" value="myora10g"/>
Server name	<input type="text" value="bigc"/>

< Back Next > Cancel Help

This portion of the Post Installation wizard adds an entry to the services file of your server machine (usually, this is c:\WINDOWS\system32\drivers\etc\services). If you need to modify your service later, you can use the sdeservice command at the DOS prompt, or run through this option in the Post Installation wizard again. Information on the sdeservice command can be found in the ArcSDE Administration Command Reference (%SDEHOME%\Documentation\Admin_Cmd_Ref).

To manually create the ArcSDE service

You can use the sdeservice command at the DOS prompt to manually create or modify the ArcSDE service. Information on the sdeservice command can be found in the ArcSDE Administration Command Reference (%SDEHOME%\Documentation\Admin_Cmd_Ref).

Note: Creating an ArcSDE service is not required if all clients connecting to the geodatabase will use a direct connection. For information on setting up the client machines for a direct connection, see the topic "Setting up a direct connection to Oracle" in the ArcGIS Server or Desktop help.

Related concepts found in the help

Installation Guide: ArcSDE for Oracle

You can get more information related to the ArcSDE service in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

An overview of ArcSDE geodatabase connections

Starting an ArcSDE service

Stopping an ArcSDE service

Pausing and resuming an ArcSDE service

Accessing an ArcSDE service through a firewall

Troubleshooting the ArcSDE service

Running multiple installations on the same machine

There are two possible scenarios for running multiple installations on the same machine.

- **Running ArcSDE for two different DBMS installations on the same machine**—It is possible to install more than one ArcSDE service for different DBMSs on the same machine. Some ESRI products share the same administrator commands (for example, `sdeservice` and `sdemon`). To successfully run more than one ArcSDE service on the same machine, do the following:

1. Before running the postinstallation setup, make sure the ArcSDE service that you want to administer is the ESRI product listed first in your System PATH.
2. Make sure the SDEHOME variable in your PATH is set to your current ArcSDE installation location.

Steps 1 and 2 above apply whenever administrator commands for ESRI products are run. If you do not change your System PATH, the administrator commands for the wrong product may be run.

3. Run the ArcSDE postinstallation setup for the chosen DBMS.
 4. You can now manage the multiple ArcSDE services/installations by switching back and forth between ArcSDE environments through the System Control Panel or by using the ArcSDE administrative commands with the `-H` option set to the appropriate SDEHOME location.
- **Running more than one ArcSDE service for the same DBMS installation**—For instructions on doing this, see the topic [Using multiple geodatabases within a DBMS](#) in the ArcGIS Server or ArcGIS Desktop help.

 **ArcGIS Installation Guide**

The next steps

After you finish the postinstallation setup, you are ready to add other users, set up client connections, and add data to your geodatabase. The following is a list of help topics to assist you in these tasks. Topics can be found in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Use the links below to open the online topics, or open the help and search for the titles.

TASK	RELATED TOPICS
Geodatabase users	Adding users to an ArcSDE geodatabase User permissions Grouping users by access needs
Client connections	Configuring Oracle Net Services to use SQL functions An overview of ArcSDE geodatabase connections Setting up clients for a direct connection Creating spatial database connections
Adding data	An overview of adding datasets to the geodatabase

Upgrading an ArcSDE geodatabase

The goal of upgrading an ArcSDE geodatabase is to install a newer version of the ArcSDE component, upgrade the geodatabase system tables, and install updated stored procedures and locators.

The following is a summary of the steps you must take to upgrade an ArcSDE geodatabase on Oracle. Be sure to read the information at the end of this topic for important notes about upgrading.

1. Create a backup of your database and configuration files. If you intend to keep your existing ArcSDE application server (service) for transition purposes, also make a backup copy of the entire SDEHOME directory and see the topic [Upgrading while keeping the existing service for transition purposes](#) for instructions on upgrading.
2. Grant the permissions required for the ArcSDE administrative user to upgrade the geodatabase. For most geodatabases, this is the SDE user. For geodatabases created in a user's schema, this is the owner of the schema. See the topic [Required Oracle permissions to upgrade](#) for a list of the necessary permissions.
3. Check the size of the SDE user's default tablespace to be sure it is large enough. If it is not, alter it. See the topic [Tablespace size requirements](#) for details.
4. Stop any ArcSDE services that are running on the server using the sdemon -o shutdown command or stop the service in the Windows Services dialog box.
5. Make sure there are no users currently making a direct connection to the geodatabase.
6. Save the old SDEHOME in case you need it. You may want to copy configuration files (dbtune.sde, dbinit.sde, giomgr.defs) from the old SDEHOME\etc into the new SDEHOME\etc.
7. Uninstall the previous version of the ArcSDE component. During uninstallation, you will be prompted to delete the services. If you choose not to delete the services because you want them for the transition from one release to the next, see [Upgrading while keeping the existing service for transition purposes](#). Otherwise, delete the services.

Note: If you are installing a patch or service pack, you do not uninstall the existing ArcSDE component before applying the patch or service pack. This installation guide deals with installing a new release of the ArcSDE component. For the complete instructions on installing a patch or service pack, be sure to read the instructions that are provided with the downloaded patch or service pack.

8. Run the ArcSDE installation executable to install the new version of the ArcSDE component. Follow the instructions in the topic [Installing the ArcSDE component](#) to accomplish this.
9. Run the Post Installation wizard to upgrade the geodatabase. Choose a Custom installation, uncheck Define SDE user environment, and click Next. The Post Installation wizard will take you through upgrading the system tables and installing

updated stored procedures and locators, [authorizing your ArcSDE component with your new software key](#), and [creating a new ArcSDE service](#).

Alternatively, you can execute the `sdesetup -o upgrade` command to upgrade the geodatabase system tables, install updated stored procedures and locators, and authorize the ArcSDE component using a new software key. You can then use the `sdeservice` command to create and register a new ArcSDE service and the `sdemon` command or Windows services dialog box to start the ArcSDE service. For information on using the `sdesetup`, `sdeservice`, and `sdemon` commands, consult the ArcSDE Administration Command Reference installed in SDEHOME. **Note:** No other users should be connected to the geodatabase when you perform the upgrade operation.

Be sure you run the Post Installation wizard or `sdesetup -o upgrade` separately for each geodatabase. For example, if you have two user-schema geodatabases, you must upgrade the master SDE geodatabase and each of the user-schema geodatabases.

The following is IMPORTANT information for upgrading:

- **Always create a backup of your existing database before upgrading.** You may also want to create backup versions of the current configuration files. Contact your database administrator for correct protocol for database backups.
- **If you are upgrading from ArcSDE 9.2 SP 4 or a lower release, you must re-create the spatial indexes on all datasets that use ST_Geometry storage.** You can use ArcCatalog to rebuild the spatial indexes after you upgrade or you can use SQL to rebuild the indexes. To rebuild using SQL, first determine all the ST_Geometry spatial indexes that exist in the geodatabase by executing the following command:

```
SELECT owner || '.' || index_name
FROM sde.st_geometry_index
ORDER BY owner, index;
```

Next, use the following SQL command to rebuild each index.

```
ALTER INDEX <indexname> REBUILD;
```

Remember that to rebuild an index, you must be the owner of the index or have been granted the Oracle system privilege ALTER ANY INDEX.

- **Direct upgrades are only supported from ArcSDE 9.0, 9.1, and 9.2. Upgrading directly from ArcSDE 8.3.x, 8.2.x, 8.0.x, or 3.x is not supported.** Moving from any of these unsupported released versions of ArcSDE to the current ArcSDE release will require the server to first be upgraded to ArcSDE 9.0, 9.1, or 9.2 and then upgraded to ArcSDE 9.3. It is also possible to export all your data using the `sdeexport` command and then import it in to ArcSDE 9.3, or import and export your data using ArcCatalog.
- **Upgrades from Beta or Prerelease are NOT supported.**
- **If you are upgrading to ArcSDE 9.3 for Oracle and you are currently using Oracle8i, you will first be required to upgrade your Oracle database to at least Oracle9iR2 then use the ArcSDE Oracle9iR2 setup.exe to install the**

ArcSDE component. (It is recommended, though, that you upgrade your database to Oracle 10gR2 then install the ArcSDE component using the setup.exe for ArcSDE Oracle 10gR2.) See Oracle's documentation for information on how to migrate your existing Oracle installation and database to a new release of Oracle database.

For details on exact Oracle versions and patch levels supported by each ArcSDE for Oracle installation, see the ArcSDE System Requirements online at <http://support.esri.com>, and navigate to Software > ArcGIS Server > System Requirements. See the DBMS notes section under each System Requirements entry for any additional setup information.

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Upgrading while keeping the existing service for transition purposes

Upgrading the ArcSDE component while keeping the existing service for transition purposes is a more involved upgrade scenario. Follow these steps to maintain both a previous version of the ArcSDE service and this new version of the ArcSDE service on the same machine:

1. Before installing this version of ArcSDE, shut down the previous version of the ArcSDE service and remove it by executing the `sdeservice` command with the delete operation. See the administrator command reference for more information on the `sdeservice` command. Go to Start > All Programs > ArcGIS > ArcSDE > Command References.
2. It is important to make a copy of the previous version of SDEHOME before proceeding with installing the new version of ArcSDE. You will have to copy SDEHOME back after installing this version of ArcSDE.
3. Install the new version of ArcSDE. The installation will remove your previous installation (SDEHOME and contents) without affecting the Oracle database on which it was running. Do not run the ArcSDE Post Installation wizard; you will have to manually perform the postinstallation steps.
4. The new version of the ArcSDE service and the previous version of the ArcSDE service cannot use the same Oracle database. Create a new Oracle database giving it a unique ORACLE_SID name. This is the ORACLE_SID you will use for the new version of the ArcSDE service. Create a tablespace named SDE and a user named SDE. Grant the SDE database user the correct database privileges as outlined in the [Creating the SDE user and tablespace script](#).
5. Open a DOS prompt and change directories to %SDEHOME%\bin folder of the new ArcSDE installation. Run the `sdesetup -o install` command as the SDE database user. Make sure you connect using the correct service name for the newly created ORACLE_SID. You cannot point two instances of ArcSDE at the same ORACLE_SID.
6. Copy the previous version of %SDEHOME% that you copied in step 2 to its original location. From the previous version of the %SDEHOME%\bin directory, run the `sdeservice -o create` command to re-create the previous version of the ArcSDE service.
7. Before starting both ArcSDE services, make sure that your services are correct by checking the ORACLE_SID entry in %SDEHOME%\etc\dbinit.sde

For example, for a previous version of ArcSDE:

```
% cd C:\arcgis\ArcSDE\ora9iexe\etc
% type dbinit.sde
ORACLE_SID=ORCLold
```

For the new version of ArcSDE:

```
% cd C:\Program Files\arcsde\ora10Gexe\etc
% type dbinit.sde
```

ORACLE_SID=ORCLnew

Note that in this example, each service has its own SDEHOME. If you put %SDEHOME%\bin in your path, remember that the system- or user-level environment variable can contain only one path for SDEHOME. Also note that each service has its own ORACLE_SID. In the example, the previous version of the ArcSDE service points to ORCLold ORACLE_SID while the new ArcSDE service points to the ORCLnew ORACLE_SID.

8. Start one or both instances.

Note: You must have the appropriate licensing to perform this upgrade. You can run both instances to test your data under the new ArcSDE configuration. You can move data from the previous versions of the ArcSDE instance by copying and pasting with ArcCatalog, or exporting/importing with the commands sdeexport/sdeimport, sde2shp/shp2sde, etc.

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Tablespace size requirements

The minimum tablespace requirement for upgrading is 400 MB. For larger geodatabases, the SDE tablespace requirement may be larger. If you choose to define the SDE user environment using the Post Installation wizard, the wizard will check that your SDE user's default tablespace is at least 400 MB. If the tablespace is less than 400 MB, it will be extended automatically.

Required Oracle permissions to upgrade

To upgrade the ArcSDE geodatabase in your Oracle instance, you have to grant the following additional permissions to the SDE user in Oracle for the upgrade to succeed. All the same permissions are necessary for the schema owner if upgrading a user-schema geodatabase, except ADMINISTER DATABASE TRIGGER; that permission is only necessary when installing or upgrading the SDE master geodatabase.

```
ADMINISTER DATABASE TRIGGER
ALTER ANY INDEX
ALTER ANY TABLE
ANALYZE ANY
CREATE ANY INDEX
CREATE ANY PROCEDURE
CREATE ANY SEQUENCE
CREATE ANY TRIGGER
CREATE ANY VIEW
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PROCEDURE
CREATE PUBLIC SYNONYM
CREATE SESSION
CREATE TABLE
CREATE TYPE
DROP ANY INDEX
DROP ANY PROCEDURE
DROP ANY SEQUENCE
DROP ANY TABLE
DROP ANY VIEW
DROP PUBLIC SYNONYM
EXECUTE ANY PROCEDURE
SELECT ANY SEQUENCE
SELECT ANY TABLE
```

After the upgrade completes, you may revoke the following permissions from the SDE user or schema owner user account:

```
ADMINISTER DATABASE TRIGGER
ALTER ANY INDEX
ALTER ANY TABLE
ANALYZE ANY
CREATE ANY INDEX
CREATE ANY SEQUENCE
CREATE ANY TRIGGER
CREATE ANY VIEW
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE TYPE
DROP ANY INDEX
DROP ANY VIEW
DROP ANY PROCEDURE
DROP ANY SEQUENCE
```

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```
EXECUTE ANY PROCEDURE  
SELECT ANY SEQUENCE
```

Uninstalling the ArcSDE component

To uninstall the ArcSDE component:

1. Before uninstalling, make a copy of any custom files (such as the dbtune.sde file) you want to keep for future use.
2. From the Start menu, open the Control Panel and double-click the Add/Remove Programs icon.
3. Select ArcSDE for Oracle from the program list, and click the Remove button.

Installing the ArcSDE component on UNIX or Linux

System requirements

ESRI's ArcSDE component has certain minimum computer system requirements. Your computer system is required to meet these minimum requirements to successfully install and use ArcSDE for Oracle.

Which operating system (OS) is supported depends on the release of Oracle and ArcSDE being used. For specifics and the latest information on supported system environments for ArcSDE for Oracle, see <http://support.esri.com>, and navigate to Software > ArcGIS Server > System Requirements. In general, though, the following are supported:

Minimum system requirements

PLATFORM	OPERATING SYSTEM	COMPILER
Sun™ Solaris2™	SunOS 5.9 (Solaris 9) 64-bit	Sun Solver C 5.8 2005/10/13 and C++ 5.8 Patch 121017-11 2007/05/02
Red Hat® Linux®	Red Hat Linux AS/ES 4	gcc version 3.4.6 20060404 (Red Hat Linux 3.4.6-8)
SUSE® Linux	SUSE Linux Enterprise 10	gcc version 3.2.3 20030502
IBM®	AIX Rev 5.2 64-bit	IBM VisualAge C and C++ version 6.0.0.5
HP-UX PA-RISC®	HP-UX B.11.11 64bit®	HP ANSI C++ B3910B A.03.31
HP-UX Itanium®	HP-UX 11.23	HP ANSI C++ C.11.23.12

Higher releases may, and usually do, work. Lower versions of releases are not supported.

Note: For any given operating system, if the DBMS is not supported on that version of the operating system, ArcSDE is not supported either.

64-bit support

For those platforms on which ArcSDE does support 64-bit Oracle, the 64-bit operating system must also support 64-bit Oracle. Visit <http://support.esri.com> for current information on support levels and certification. Another alternative is to use 64-bit Oracle with the direct connect configuration from your client machine. See the topic "Setting up clients for a direct connection" in the ArcGIS Server or Desktop help for more information.

Disk space

Installation of the ArcSDE component will require approximately this amount of disk space:

Server Environment	Disk Space
SUN	125 MB approx.
HP	105 MB approx.
IBM	160 MB approx.
LINUX	102 MB approx.

Fortran Run-Time Environment

ESRI distributes IBM version 6.1.0.0 Fortran Run-Time Environment (RTE) libraries with ArcSDE. An additional Fortran RTE is not required. A Fortran RTE that is already installed on a machine will be used by the system and for all other applications other than ArcSDE.

Older versions of ArcSDE use their own Fortran RTE's, located in \$SDEHOME/lib, and work fine on AIX. However, you must have a LIBPATH variable set to \$SDEHOME/lib:/usr/lib:/lib with the appropriate \$SDEHOME to work correctly.

IBM file sets required

The following file sets (or higher) are required for IBM:

- x1C.aix50.rte 6.0.0.0
- x1C.msg.en_US.rte 6.0.0.0
- x1C.rte 6.0.0.0

Information on obtaining these file sets can be found on the **IBM site** (<http://publib.boulder.ibm.com/infocenter/comphelp/v9v111/index.jsp?topic=/com.ibm.xlf111.aix.doc/install/filesets.htm>).

Oracle requirements

Separate from ArcSDE requirements, Oracle has certain minimum computer system requirements. Your computer system is required to meet these minimum requirements to successfully install and use Oracle. For the latest in Oracle's requirements, consult the [Oracle Web site](http://www.oracle.com/index.html) (<http://www.oracle.com/index.html>).

Preinstallation requirements

The installation of the ArcSDE component on UNIX systems requires the following:

- A [system administrator account on UNIX](#) that will own the SDEHOME files
- An [Oracle SDE account with a default tablespace](#)
- An authorization file to authorize ArcSDE; see [ArcSDE authorization](#)

Creating the ArcSDE operating system account on UNIX/Linux

To install the ArcSDE component for Oracle, you must create an ArcSDE account on your UNIX or Linux server. By convention, this account is named SDE, but you may use any name. The ArcSDE login must own all ArcSDE system files and directories. Keep the password in strict confidence to maintain system security. Only those users who must administer the ArcSDE system should have access to the ArcSDE administrator login. To create the ArcSDE login, use the system administration procedures outlined by the host operating system. The following is a sample UNIX configuration for the ArcSDE administrator account using SDE as the name.

Login name:	sde
User Id:	<Any unused user id>
Group Id:	<Any group id>
Home Directory:	<home directory for user sde>
Default Shell:	/bin/sh or /bin/csh

Add the following to the SDE user's .cshrc or .profile file, depending on which shell it will use. By adding the lines below, all ArcSDE administration and utility software programs can be located without specifying absolute paths. Application programs will also be able to find the necessary program files located within the ArcSDE installation directory.

There are several environment variables you should set. For the Bourne shell, add variable definitions to the .profile file. Syntax is:

```
<VARIABLE> = <value for variable>

export <VARIABLE>
```

For the C shell, add variable definitions to the .cshrc file (or the SDEHOME/etc/dbinit.sde file). Syntax is:

```
setenv <VARIABLE> <variable_value>
```

The list of variables you should set is as follows:

```
SDEHOME <location of ArcSDE>
```

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```
ORACLE_HOME <location of Oracle>

ORACLE_SID <Oracle SID value>

TNS_ADMIN <location of the tnsnames.ora file>

PATH $PATH:$SDEHOME/bin:$ORACLE_HOME/bin

LD_LIBRARY_PATH $SDEHOME/lib:/usr/lib:/lib:$ORACLE_HOME/lib (All
platforms except HP and IBM)

SHLIB_PATH $SDEHOME/lib:/usr/lib:/lib:$ORACLE_HOME/lib (for HP only)

LIBPATH $SDEHOME/lib:/usr/lib:/lib:$ORACLE_HOME/lib (for IBM only)

TWO_TASK <value for TWO_TASK> (if ArcSDE and Oracle on different machines)
```

The ORACLE_HOME and ORACLE_SID variables locate an Oracle database installed on the local host. However, when the TWO_TASK variable is set, ORACLE_HOME and ORACLE_SID are not used. The TWO_TASK variable identifies the location of a remote Oracle database. The TNS_ADMIN must be set if the default location of the tnsnames.ora file is not used. You do not need to set the TWO_TASK variable if the Oracle database is on the local host.

Note 1: You could use the TWO_TASK variable to specify the Net Service Name of a local Oracle database. However, this is not recommended because it results in additional overhead when making a connection to the database. For local connections, you should use the Oracle_SID.

Note 2: When the ArcSDE service is started, the giomgr process reads the variable settings in the \$SDEHOME/etc/dbinit.sde file. These variable settings override the variables set by .cshrc or .profile files. The role of the dbinit.sde file is further explained in the help topic [The dbinit.sde file](#) in the ArcGIS Server and Desktop help.

Creating the Oracle SDE user and tablespace

Before you can start the ArcSDE service, you must install and configure the Oracle database and create the Oracle SDE user.

Unlike the ArcSDE for Windows installation, the UNIX/Linux installation of ArcSDE does not provide any interface for creating the Oracle SDE user or its tablespace. Therefore, the task must be performed using SQL. You may modify and use the createsdeoracle.sql script to manually create the SDE user and tablespace. The createsdeoracle.sql script is located at \$SDEHOME/tools/oracle.

Related concepts found in the help

You can get more information related to the SDE user and permissions in the ArcGIS Server help and the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>). Open the help and search for the following titles:

[The ArcSDE administrative account](#)

[User permissions](#)

Installing the ArcSDE component

1. Make sure the ArcSDE account, which was created during the preinstallation stage, is used to install the ArcSDE software and that this account has write permissions to the installation directory.
2. Place the ArcSDE component media into the appropriate drive and mount the drive.
3. Change directories into the appropriate database directory.

```
% cd /cdrom/oracle
```

4. To start the ArcSDE component installation, type the install command at the operating system prompt:

```
% ./install -load
```

(Note: The usage for the install command is: install <-help | -load | -remove | -verify >. To read more about the installation procedure, type: ./install -help.)

Running the install command starts the command-driven dialog for the ArcSDE component installation procedure. Default selections are noted in brackets, []. To obtain a list of options or online help, type '?' at any prompt. You can quit the installation procedure at any time by typing 'quit' or 'q'. To return to a previous question, type the caret, '^'.

5. Before continuing with the installation, you will be asked to read the license agreement and accept it or exit if you do not agree with the terms. The default is set to "no" and you have to type "yes" to proceed with the installation. The license agreement can be found under the License folder at the root level of the DVD under each platform's installation folder (ArcSDE/<platform>/License). The license agreement also can be viewed in a different language at <http://www.esri.com/licenseagreement/>. Please read the license agreement file appropriate for your locale.

```
ESRI is willing to license the software to you only if you accept
and agree to the enclosed license agreement. If you have read and
agree with the terms in the enclosed license agreement type 'yes' to
continue the installation process, if not press <return> or type
'no' to exit installation process. [no]
```

Once the installation is complete, please continue with the postinstallation setup.

Note: If you are installing ArcSDE on a different server than Oracle, see [Installing the ArcSDE component and Oracle on separate machines](#).

Also note that new installations of ArcSDE 9.3 for Oracle do not install public synonyms for use with ST functions and operators. That means when using ST functions and operators, you must qualify them with the sde schema. For example, you would type "SELECT id, sde.st_is3d (geometry)" rather than "SELECT id, st_is3d (geometry)".

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If you are upgrading from a previous release of ArcSDE, the public synonyms will still be present and you do not need to qualify ST functions and operators.

Note for AIX users only:

If you are installing on AIX, it is recommended that you run `slibclean` before installing or upgrading the ArcSDE component to clear inactive libraries from memory. If you are upgrading, see the [Upgrading the ArcSDE component](#) topic. To run `slibclean` (as root user):

```
# /usr/sbin/slibclean
```

(optional) To list the libraries as root user, type:

```
# /usr/sbin/genkld
```

For more information on the `slibclean` or the `genkld` commands, refer to your AIX system administrator documentation.

ArcSDE postinstallation setup on UNIX or Linux

After your ArcSDE component is installed and before you attempt to start the ArcSDE service, you must complete the postinstallation setup.

To successfully complete the postinstallation setup, perform the following steps:

1. Modify files in \$SDEHOME/etc and /etc.

Once the ArcSDE component is installed, you need to modify one or more files.

- **/etc/services**—This is a system file that requires root access to change. You will need to add a line to that file defining the TCP/IP port number and name to use for your ArcSDE service. Add a line similar to the following:

```
esri_sde      5151/tcp      # ArcSDE service on pinetree
```

Users connecting to your service can use the TCP/IP port number 5151 as the service name. If they prefer to use the name `esri_sde`, they will need to add this same line to their local system services file.

- **\$SDEHOME/etc/services.sde**—Enter the same line in this file that you entered for the `/etc/services`.
- Other configuration files in `$SDEHOME/etc` you may want to edit include:

dbinit.sde—In this file, you can set variables the application server will use. Syntax is:

```
set <variablename>=<value>
```

See the ArcGIS Server and Desktop help topic [The dbinit.sde file](#) for more information.

giomgr.defs—This file contains parameters that define how ArcSDE uses memory. The default parameters are usually sufficient for most applications. This file gets loaded into the database as a table called `SERVER_CONFIG` as part of the `sdesetup` command (step 3). For more information on the `giomgr.defs` file, see the ArcGIS Server and Desktop help topic [The giomgr.defs file and the SERVER_CONFIG system table](#). To modify these settings after running the `sdesetup` command, see the `sdeconfig` command in the ArcSDE Administration Command Reference.

dbtune.sde—This file controls the physical storage parameters for tables in the database. This file gets loaded into the database as a table called `DBTUNE` as part of the `sdesetup` command (next step). For more information, see the ArcGIS Server and Desktop help topic [The dbtune file and the DBTUNE table](#). To modify these settings after running the `sdesetup` command, see the `sdedbtune` command in the ArcSDE Administration Command Reference.

2. Grant execute privileges.

Make sure the PUBLIC role has EXECUTE privileges on the dbms_pipe and dbms_lock packages. As the Oracle SYS user, execute the following SQL commands:

```
sqlplus sys/***** as sysdba

GRANT EXECUTE ON dbms_pipe TO public;

GRANT EXECUTE ON dbms_lock TO public;
```

3. Run \$SDEHOME/bin/sdesetup.

The sdesetup command must be run by the SDE user. See [Required Oracle permissions to create the geodatabase](#) for a list of privileges required for the SDE user to run sdesetup.

The sdesetup command does the following:

- Creates all the ArcSDE and geodatabase system tables in the DBMS.
- Creates ArcSDE stored procedures.
- Populates the LOCATORS and METADATA system tables with data from \$SDEHOME/geocode/templates.

The sdesetup command must execute successfully for ArcSDE to function correctly.

The usage for the sdesetup -o install command is as follows:

```
-o install -d <ORACLE9I|ORACLE10G|ORACLE11G >
[-H <sde_directory>] [-u <DB_Admin_user>] [-p <DB_Admin_password>]
[-s <datasource>] [-i <master_gdb_service>:<user_schema>]
[-N] [-l <key>] [-q]
```

Where:

```
-o install  Creates geodatabase tables and procedures ArcSDE requires
-d          Underlying RDBMS used to store the ArcSDE geodatabase
-H          Location where ArcSDE files are installed (not required if
           $SDEHOME is set)
-i          Only used for a user-schema geodatabase; consisting of the
           port number for the master SDE geodatabase followed by the schema name
           (for example, 5151:tyort).
-l          ArcSDE authorization key or location to authorization file
-N          No verification
-o          Operation
-p          DBMS DBA user password
-q          Quiet; all titles and warnings are suppressed.
```

-s Datasource name
-u DBMS DBA user name

For example, this command sets up the geodatabase in an Oracle 11g database on a remote server, gisdb:

```
sdesetup -o install -d ORACLE11G -s gisdb -u sde -l  
/usr/sde/server93_Ent.ecp
```

Please enter ArcSDE DBA password:

For more information on the sdesetup command, consult the ArcSDE Administration Command Reference (\$SDEHOME/documentation/Admin_Cmd_Ref).

To authorize the software, use the -l <key> option during with the install operation. To authorize ArcSDE later, use the update_key operation. For additional information see [ArcSDE authorization](#).

Related concepts found in the help

You can get more information related to setting up the repository in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

[The dbtune file and the DBTUNE table](#)

[DBTUNE configuration keywords](#)

[DBTUNE configuration parameter name-configuration string pairs](#)

[About geometry storage types](#)

[A spatial type for Oracle](#)

[The ST_Geometry storage type](#)

[Using the Oracle Spatial geometry type](#)

[ArcSDE Compressed Binary storage](#)

[The OGC Well-Known Binary representation for geometry](#)

[The giomgr.defs file and the SERVER_CONFIG table](#)

[The dbinit.sde file](#)

[System tables of a geodatabase stored in Oracle](#)

Required Oracle permissions to create the geodatabase

To run `sdesetup` and create the ArcSDE geodatabase in your Oracle instance, you have to grant the following additional permissions to the SDE user in Oracle for the setup to succeed. On Windows, if you use the Post Installation wizard to create the SDE user, these permissions are granted automatically.

All the same permissions are necessary for the schema owner if creating a user-schema geodatabase, except `ADMINISTER DATABASE TRIGGER`; that permission is only necessary when installing or upgrading the SDE master geodatabase.

```
ADMINISTER DATABASE TRIGGER
CREATE SESSION
CREATE TABLE
CREATE TRIGGER
CREATE PROCEDURE
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PUBLIC SYNONYM
CREATE SEQUENCE
CREATE TYPE
CREATE VIEW
DROP PUBLIC SYNONYM
```

If you plan to use autoregistration for `SDO_GEOMETRY` tables, you must also grant the SDE user `SELECT ANY TABLE`. **Note:** The `SELECT ANY TABLE` privilege is also required for the SDE user to run a geodatabase compress operation. You can grant the SDE user that privilege now, or wait to grant it prior to each compress operation.

For an explanation of why each of these are needed, see the topic [User permissions for geodatabases in Oracle](#) in the ArcGIS Server or ArcGIS Desktop help.

After the geodatabase has been created, you may revoke the following permissions from the SDE user or schema owner user account:

```
ADMINISTER DATABASE TRIGGER
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PUBLIC SYNONYM
CREATE SEQUENCE
CREATE TYPE
CREATE VIEW
DROP PUBLIC SYNONYM
```

The Oracle `SYS` user must also grant `EXECUTE` permissions on a number of packages to the `PUBLIC` role. These permissions cannot be revoked.

```
sqlplus sys/*****

GRANT EXECUTE ON dbms_pipe TO public;
```

```
GRANT EXECUTE ON dbms_lock TO public;
```

ArcSDE uses DBMS_PIPE to store row ids during the insert process and uses DBMS_LOCK to mark entries in the PROCESS_INFORMATION table as active. Access for PUBLIC is required because these packages are used both directly and via definers-rights stored procedures. A stored procedures with definers-rights cannot use permission from roles.

See [Creating the SDE user and tablespace script](#).

ArcSDE authorization

Each machine on which the ArcSDE component of ArcGIS Server Enterprise Edition is installed requires an authorization file. Each new version of the ArcSDE component requires a new authorization file.

To authorize the ArcSDE component for use, you must obtain an authorization file from ESRI Customer Service (.ecp file). For more information on obtaining an authorization file see: <https://service.esri.com>

Every ArcSDE geodatabase that resides on the same machine must be authorized using the authorization file because the authorization information is stored in the geodatabase repository. This includes geodatabases stored in the schemas of users other than the SDE schema. You will not be able to make any connections to the geodatabase unless your geodatabase repository has been configured using a valid authorization file.

You can register ArcSDE with an authorization file in two ways:

1. If you already have your authorization file, run the `sdesetup` command with the `install` or `upgrade` operation and specify the authorization key information with the `-l` option. See [ArcSDE postinstallation setup](#).
2. If you don't yet have your authorization file, you can run the `sdesetup` command with either the `install` or `upgrade` operation but without the `-l` option. Then when you receive your authorization file from ESRI, run `sdesetup` again using the `update_key` operation and the `-l` option.

The syntax for the `sdesetup` command with the `update_key` operation is as follows:

```
sdesetup -o update_key -d <ORACLE9I|ORACLE10G|ORACLE11g>  
-l <key> [-u <DB_Admin_user>] [-p <DB_Admin_password>]  
[-H <sde_directory>] [-D <database>] [-s <datasource>] [-i <service>]  
[-N] [-q]
```

Where `<key>` is the authorization key information or the location of your authorization file

For example:

```
sdesetup -o update_key -d ORACLE10G -l /machine/keycode.txt -u sde -p  
sde
```

More information on the `sdesetup` command can be obtained from the ArcSDE Administration Command Reference (`$SDEHOME/documentation/Admin_Cmd_Ref`).

Starting the ArcSDE process on UNIX or Linux

An ArcSDE service can be started and used for connections from clients to the geodatabase. Start the ArcSDE service by logging in as the ArcSDE administrator and using the `sdemon` command.

```
sde on edsel > sdemon -o start
```

```
Please enter ArcSDE DBA password: <enter your Oracle sde password here>
```

Once the service is accepting connections, it is ready for use.

If you encounter problems starting the service, consult the topic [Troubleshooting the ArcSDE service](#) in the ArcGIS Server or Desktop help. This help topic is also available from <http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm>.

For more information on the `sdemon` command, see the ArcSDE Administration Command Reference (`$SDEHOME/documentation/Admin_Cmd_Ref`).

Related concepts found in the help

You can get more information related to the ArcSDE service in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

[An overview of ArcSDE geodatabase connections](#)

[Stopping an ArcSDE service](#)

[Pausing and resuming an ArcSDE service](#)

[Accessing an ArcSDE service through a firewall](#)

[Troubleshooting the ArcSDE service](#)

Installing the ArcSDE component and Oracle on separate machines

If you are installing the ArcSDE component on a different server than Oracle, there are additional steps you must take.

1. Make sure Oracle is installed and running on the remote server.
2. Install the Oracle Net Software on the server where ArcSDE is to be installed. Ensure SQL will operate from this remote machine to the Oracle server.
3. Copy the shared libraries used by EXTPROC to the Oracle server. These libraries include st_shapelib plus the Geometry library and the Projection Engine library. (The names of these files vary depending on what operating system (OS) you are using.) Be sure the files copied to the Oracle server are designed to run on the operating system of the Oracle server. For example, if ArcSDE is installed on a Linux machine, but Oracle is installed on a Solaris machine, the dll and lib files you copy to the Oracle server must be for Solaris. To get the files for different operating system, you can install the software files of the ArcSDE component on the Oracle server, creating the SDEHOME files, and delete everything but the three required library files.

Library name	OS-dependent file names
st_shapelib	st_shapelib.dll (Windows), libst_shapelib.so (Solaris, Linux and HP-UX Itanium), libst_shapelib_64.so (IBM), or libst_shapelib.sl (HP-UX PA-RISC)
Projection Engine	pe.dll (Windows), libpe.so (Solaris, Linux, and HP-UX Itanium), libpe_64.so (IBM) or libpe.sl (HP-UX PA-RISC)
Geometry	sg.dll (Windows), libsg.so (Solaris, Linux, and HP-UX Itanium), libsg_64.so (IBM) or libsg.sl (HP-UX PA-RISC)

4. These files can be found in the bin (Windows) or lib (UNIX/Linux) directory of SDEHOME after you've installed the ArcSDE component. You can copy these files to the %ORACLE_HOME%\lib (Windows) or \$ORACLE_HOME/lib (UNIX/Linux) directory on the Oracle server, which is the default location that Oracle looks in for shared libraries. Or, you can leave these files where they were installed or move them into any directory that is accessible to the user that owns ORACLE_HOME.
5. If you do not use the default location under ORACLE_HOME for the library files, you will need to define the environment variable EXTPROC_DLLS for the EXTPROC so it can find st_shapelib. This is done in the listener configuration file listener.ora. See

[Configuring Oracle Net Services to use ST_Geometry SQL functions](#) for more information.

6. The library definition in the Oracle data dictionary must be updated with the correct library path to the file containing st_shapelib. Altering the definition of the library path will invalidate package bodies that refer to it, so the package bodies of some ArcSDE stored procedure packages should be recompiled using Oracle.
7. Perform the preinstallation tasks and install the ArcSDE component on the ArcSDE server as described in the topics [Installing the ArcSDE component \(Windows\)](#) or [Preinstallation requirements and Installing the ArcSDE component \(UNIX/Linux\)](#).
8. Perform the ArcSDE postinstallation steps as described in the topics relevant to each OS.

- [Windows](#)

[Postinstallation overview](#), [Setting up the SDE user environment](#), [Setting up the geodatabase repository](#), and [ArcSDE authorization](#)

To create the service on Windows, you must use the sdeservice -o create command. The Post Installation wizard is not designed to create a service for ArcSDE setups that are on a remote server.

The -d option for the sdeservice is required and you must enter the name of the Oracle Instance (SID). However, since it is not possible for a Windows service to have a dependency on a service that is on a remote server, you will need to add to the sdeservice syntax the -n parameter to negate the dependency.

At a command prompt, type sdeservice -h for syntax information or refer to the ArcSDE Administration Command Reference for syntax and explanation of the sdeservice command.

- [UNIX/Linux](#)

[ArcSDE postinstallation setup](#), [ArcSDE authorization](#), and [Starting the ArcSDE service on UNIX](#)

9. For Oracle to connect to a remote instance, an environment variable must be set to identify the remote Oracle instance through the net service name.

If the ArcSDE server is on Windows, set LOCAL to the Oracle net service name in the SDEHOME\etc\dbinit.sde file. If the ArcSDE server is on UNIX, set TWO_TASK to the Oracle net service name. The ORACLE_HOME variable must also be set. Consult your Oracle documentation for further information on these environment variables.

Note: You could use the TWO_TASK or LOCAL variable to specify the Net Service Name of a local Oracle database. However, this is not recommended because it results in additional overhead when making a connection to the database. For local connections, you should use the Oracle_SID.

10. The TNS_ADMIN variable must be set if the default location of the tnsnames.ora file is not used.

Related concepts found in the help

Installation Guide: ArcSDE for Oracle

You can get more information related to the SDE user and permissions in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Open the help and search for the following titles:

Configuring Oracle Net Services to use SQL functions

The dbinit.sde file

The next steps

After you finish the postinstallation setup, you are ready to add other users, set up client connections, and add data to your geodatabase. The following is a list of help topics to assist you in these tasks. Topics can be found in the ArcGIS Desktop online help (<http://webhelp.esri.com/arcgisdesktop/9.3>) or the help system installed with ArcGIS Server or ArcGIS Desktop. Use the links below to open the online topics, or open the help and search for the titles.

TASK	RELATED TOPICS
Geodatabase users	Adding users to an ArcSDE geodatabase User permissions Grouping users by access needs
Client connections	Configuring Oracle Net Services to use SQL functions An overview of ArcSDE geodatabase connections Setting up clients for a direct connection Creating spatial database connections
Adding data	An overview of adding datasets to the geodatabase



Upgrading an ArcSDE geodatabase

The goal of upgrading an ArcSDE geodatabase is to install a newer version of the ArcSDE component, upgrade the geodatabase system tables, and install updated stored procedures and locators.

This topic provides important notes about upgrading and a summary of the steps you must take to upgrade an ArcSDE geodatabase. Be sure to read both before proceeding with the upgrade operation.

IMPORTANT information for users upgrading

- **Direct upgrades are only supported from ArcSDE 9.0, 9.1, and 9.2. Upgrading directly from ArcSDE 8.3.x, 8.2.x, 8.0.x, or 3.x is not supported.** Moving from any of these unsupported released versions of ArcSDE to the current release requires you first upgrade to ArcSDE 9.0, 9.1, or 9.2 and then upgrade to ArcSDE 9.3. It is also possible to export all your data using the `sdeexport` command and then import it into ArcSDE 9.3, or import and export your data using ArcCatalog.
- **If you are upgrading from ArcSDE 9.2 SP 4 or a lower release, you must re-create the spatial indexes on all datasets that use ST_Geometry storage.** You can use ArcCatalog to rebuild the spatial indexes after you upgrade or you can use SQL to rebuild the indexes. To rebuild using SQL, first determine all the ST_Geometry spatial indexes that exist in the geodatabase by executing the following command:

```
SELECT owner || '.' || index_name
FROM sde.st_geometry_index
ORDER BY owner, index;
```

Next, use the following SQL command to rebuild each index.

```
ALTER INDEX <indexname> REBUILD;
```

Remember that to rebuild an index, you must be the owner of the index or have been granted the Oracle system privilege ALTER ANY INDEX.

- **Upgrades from Beta or Prerelease are NOT supported.**
- **If you are upgrading to ArcSDE 9.3 for Oracle and you are currently using Oracle8i, you will first be required to upgrade your Oracle database to at least Oracle9iR2 then use the ArcSDE Oracle9iR2 installation file to install the ArcSDE component.** (It is recommended, though, that you upgrade your database to Oracle 10gR2 then install the ArcSDE component using the `setup.exe` for ArcSDE Oracle 10gR2.) See Oracle's documentation for information on how to migrate your existing Oracle installation and database to a new release of Oracle database.

For details on exact Oracle versions and patch levels supported by each ArcSDE for Oracle installation, see the ArcSDE System Requirements online at <http://support.esri.com>, and navigate to Software > ArcGIS Server > System

Requirements. See the DBMS notes section under each System Requirements entry for any additional setup information.

- **Always create a backup of your existing database before upgrading the Oracle installation and/or the ArcSDE component.** Contact your database administrator for correct backup protocol.

- **Note for AIX users only:**

If you are installing on AIX, it is recommended that you run slibclean before installing or upgrading ArcSDE to clear inactive libraries from memory. If you are upgrading stop your current ArcSDE service before running slibclean (as root user):

1. Stop your current ArcSDE service

```
% sdemon -o shutdown
```

2. run slibclean as root user

```
# /usr/sbin/slibclean
```

3. (optional) To list the libraries as root user, type:

```
/usr/sbin/genkld
```

For more information on the slibclean or the genkld commands, refer to your AIX system administrator documentation.

Beginning with ArcGIS Server Enterprise 9.3, HP TRU64 is not a supported operating system. See the ArcSDE System Requirements online at <http://support.esri.com>, and navigate to Software > ArcGIS Server > System Requirements to see the latest information on supported environments.

Steps to upgrade an ArcSDE geodatabase

1. Create a backup of your database and configuration files. If you intend to keep your existing ArcSDE application server (service) for transition purposes, also make a backup copy of the entire SDEHOME directory.
2. Grant upgrade permissions to the ArcSDE administrative user. For most geodatabases, this is the SDE user. For geodatabases created in a user's schema, this is the owner of the schema. See the section [Required Oracle permissions to upgrade](#) later in this topic for a list of the necessary permissions.
3. Check the size of the SDE user's default tablespace to be sure it is large enough. If it is not, alter it. See the section [Tablespace size requirements](#) in this topic for details.
4. Stop any ArcSDE services that are running on the server using the sdemon -o shutdown command.
5. Make sure there are no users currently making a direct connection to the geodatabase.
6. Uninstall the previous version of the ArcSDE component. **Note:** If you are installing a patch or service pack, do **not** uninstall the existing ArcSDE component before

applying the patch or service pack. This installation guide deals with installing a new release of the ArcSDE component. For the complete instructions on installing a patch or service pack, be sure to read the instructions provided with the downloaded patch or service pack.

7. Install the new version of the ArcSDE component to a new location. Follow the instructions in the topic [Installing the ArcSDE component](#) to accomplish this. Save the old SDEHOME in case you need it. You may want to copy configuration files (dbtune.sde, dbinit.sde, giomgr.defs) from the old SDEHOME/etc into the new SDEHOME/etc.

8. If necessary, modify the configuration files.

9. Execute the `sdesetup -o upgrade` command to upgrade the geodatabase system tables and install updated stored procedures and locators. **Note:** No other users should be connected to the geodatabase when you perform the upgrade operation.

Be sure you run `sdesetup -o upgrade` separately for each geodatabase. For example, if you have two user-schema geodatabases, you must run `sdesetup -o upgrade` on the master SDE geodatabase and each of the user-schema geodatabases.

10. Start the ArcSDE service using the `sdemon -o start` command.

For details on using the `sdesetup` and `sdemon` commands, consult the ArcSDE Administration Command Reference (`$SDEHOME/documentation/Admin_Cmd_Ref`).

Required Oracle permissions to upgrade

To upgrade your Oracle instance, you will also have to grant the following additional permissions to the SDE user in Oracle for the upgrade to succeed. All the same permissions are necessary for the schema owner if upgrading a user-schema geodatabase, except ADMINISTER DATABASE TRIGGER; that permission is only necessary when installing or upgrading the SDE master geodatabase.

```
ADMINISTER DATABASE TRIGGER
ALTER ANY INDEX
ALTER ANY TABLE
ANALYZE ANY
CREATE ANY INDEX
CREATE ANY PROCEDURE
CREATE ANY SEQUENCE
CREATE ANY TRIGGER
CREATE ANY VIEW
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE PROCEDURE
CREATE PUBLIC SYNONYM
CREATE SESSION
CREATE TABLE
CREATE TYPE
DROP ANY INDEX
DROP ANY PROCEDURE
DROP ANY SEQUENCE
DROP ANY TABLE
DROP ANY VIEW
```

```
DROP PUBLIC SYNONYM
EXECUTE ANY PROCEDURE
SELECT ANY SEQUENCE
SELECT ANY TABLE
```

After the upgrade operation completes, you may revoke the following permissions from the SDE (or schema-owner) user account:

```
ADMINISTER DATABASE TRIGGER
ALTER ANY INDEX
ALTER ANY TABLE
ANALYZE ANY
CREATE ANY INDEX
CREATE ANY SEQUENCE
CREATE ANY TRIGGER
CREATE ANY VIEW
CREATE INDEXTYPE
CREATE LIBRARY
CREATE OPERATOR
CREATE TYPE
DROP ANY INDEX
DROP ANY TABLE
DROP ANY VIEW
DROP ANY PROCEDURE
DROP ANY SEQUENCE
EXECUTE ANY PROCEDURE
SELECT ANY SEQUENCE
```

For the ArcSDE for Oracle installation, the Oracle SYS user must also grant execute permissions on a number of packages to the public role:

```
sqlplus sys/***** as sysdba

grant execute on dbms_pipe to public;

grant execute on dbms_lock to public;
```

You may modify and use the createsdeoracle.sql script to manually create the SDE user and tablespace. The createsdeoracle.sql script is located at \$SDEHOME/tools/oracle.

Tablespace size requirements

The minimum tablespace requirement for upgrading ArcSDE is 400 MB. For larger geodatabases, the SDE tablespace requirement may be larger.

Uninstalling the ArcSDE component

Uninstalling an existing version of the ArcSDE component consists of the following:

1. Stopping the service

```
sdaemon -o shutdown
```

2. Using an operating system command to remove the software

```
rm -r $SDEHOME
```

You may also want to remove the service entry from the `/etc/services` file.

These two steps stop the service and remove the software from disk. The ArcSDE geodatabase system tables, stored procedures, and user data are still in your Oracle database. If upgrading, leave them there and see the topic [Upgrading an ArcSDE geodatabase](#).