

SDE user Dos and Don'ts for Microsoft SQL Server

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Editor's note: ArcSDE stores system tables and stored procedures in Microsoft SQL Server to manage spatial databases. The ArcSDE geomgr process must be able to connect to SQL Server as a user called SDE in order to create and manage these system tables. This article describes the best practices for creating SDE user, mapping logins, and setting permissions to avoid conflicts and errors.

The SDE user is required in every ArcSDE geodatabase. If you choose to perform a manual postinstallation setup of ArcSDE on a SQL Server database, you must create both the sde database and SDE user. Performing postinstallation using the wizard will automate this process. The SDE user owns all of the ArcSDE repository tables stored in the sde database. The ArcSDE repository tables, which are prefaced by SDE_ or GDB_, store information about spatial and nonspatial geodatabase data as well as the geodatabase schema. Database object permissions and ownership are controlled by the user account in SQL Server. Each database can have a unique set of users that own objects.

Within the sde database, give the SDE user the following permissions—Create Table, Create Stored Procedure, and Create View. For SQL Server 2000, also include the Create Function permission. This will allow the SDE user to create the ArcSDE repository tables. In addition, the SDE user must have access to all databases that contain spatial data.

The SDE login should not be mapped to the dbo (database owner) user in any database. SQL Server Authentication uses a login to validate a connection to a database. When a login creates a database in SQL Server, the login is mapped within that database to the dbo user. Consequently, SDE login should never create the sde database because the repository tables will not be able to be created inside the sde database.

Additionally, the SDE user should not be assigned to the sysadmin fixed server role or any role that inherits this permission. *[Roles are collections of users with like permissions that are used to simplify administration.]* When placed in this role, the SDE login is automatically mapped to the dbo user in every database and any objects the SDE login creates are now owned by dbo. If the SDE login is mapped to the dbo user inside the SDE database, permission conflicts will arise during version compression. SDE user automatically owns the sde.DEFAULT version of the geodatabase and has access to all versions created within the geodatabase. Therefore, if the SDE login is the dbo user, the dbo user will own the DEFAULT version. The sde_versions table will list dbo in the OWNER column, and the version will be referred to as dbo.DEFAULT. If you make a connection as the SDE user to perform a compress, you will receive an insufficient permissions error because the SDE login does not match the owner (i.e., dbo) that is listed in the sde_versions table.

Note: Compressing from ArcCatalog or using the compress method programmatically will produce errors when SDE is the dbo user. In this case use the alternative compression method: sdeversion-o compress command.

To summarize—the SDE user is a required user in the ArcSDE geodatabase. The recommendations listed in the accompanying table can help simplify management of the SDE user. For more information on using ArcSDE with Microsoft SQL Server, consult the ArcSDE Online Developer Help, Microsoft SQL Server Books Online, and the ESRI Support Web site (support.esri.com).

Role	Create Table	Create Stored Procedure	Create Default	Create Rule	Create Function
qc9	X				
SDE	X	X			X
st1	X				
st10	X				

SDE user permissions for the sde database

Recommendations for managing SDE user

- DO** give the SDE user Create Table, View, Stored Procedure, and Function permissions in the sde database.
- DO** set a secure password for the SDE user and avoid giving it out.
- DO** make the SDE user a user in every database containing spatial data.
- DON'T** create the sde database with SDE login.
- DON'T** load data as the SDE user.
- DON'T** allow the SDE login to be the dbo user.