

Creating Desktop and Workgroup Geodatabases

Transcript

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Hello, and welcome to ESRI's Instructional Series Podcast. My name is Olena Smith. I work in Educational Services at the ESRI Washington D.C. office. I specialize in ArcSDE technology and geodata management.

This is the second podcast in a series of podcasts on implementing and managing desktop and workgroup geodatabases. Both are ArcSDE geodatabases implemented on SQL Server Express. In the first podcast, I discussed *installation* of ArcSDE technology for Microsoft SQL Server Express licensed for ArcGIS Desktop or ArcGIS Server Workgroup. In this podcast, I will talk about *creating* desktop or workgroup geodatabases, and I will briefly talk about the role of the database server administrative account.

Once the software is installed, you use ArcCatalog to create geodatabases and administer them. All administrative tasks and operations for desktop and workgroup geodatabases are performed through ArcCatalog.

There are two ways to connect to a desktop or workgroup geodatabase within ArcCatalog:

- The first is via the Database Connections branch in the Catalog tree, which is primarily used by the end user that is *not* responsible for any administrative tasks, such as database backup or permissions, for example.
- The second way to connect is via the Database Server branch in the Catalog tree. This method should be used by an administrative user, because all the administrative operations such as geodatabase creation, managing permissions, and backups are *only* available through this connection type.

This podcast will concentrate on the Database Server connection and some of the administration tasks you may perform via this connection.

To connect via the Database Server branch, double-click on Add Database Server. Note the database server is a SQL Server Express instance.

- In the Add Database Server dialog box, type in the full name of your SQL Server Express instance. You may recall from the first podcast in this series, the SQL Server Express instance

name is composed of two parts: the name of the machine it is running on and a user-defined name. If you used the default instance name for your SQL Server Express installation, then you'll type in the name of the machine\SQLEXPRESS.

- If you have problems connecting to the database server, please refer to the *Troubleshooting connections to the database server* article in the ArcGIS Desktop 9.3 Help. To get there, expand the *Geodatabases and ArcSDE* book, then the *Administering ArcSDE Geodatabase* chapter, and the article is under *Connecting to an ArcSDE Geodatabase*.

Now you can administer your database server from ArcCatalog, provided you have the proper user permissions.

If you performed the SQL Server Express installation, then you're already an admin user for that instance of SQL Server. Additionally, any other user who has Windows administrator rights on the server machine is automatically an admin user with SQL Server 2005 Express.

These users are referred to as database server administrators and can perform *all* administrative operations at the database server level. This is the highest permission level of administration. Tasks include creating geodatabases and managing server-level permissions.

While connected as a database server administrator, right-clicking on the database server connection provides you with the following admin context menu choices: New Geodatabase, Attach, Restore, and Permissions.

- The Permissions dialog box allows the database server administrator to add existing Windows logins (domain or local, single users, or Windows group) to the database server. Once added, a user will be able to connect to the database server from his or her machine. A user will require additional permissions to create datasets within the geodatabases or to work with already-existing ones, unless the user has been granted database server administrator access. Optionally, a user can be granted database server administrator access by an existing administrator via the Permissions dialog box.

- To create a geodatabase, select the New Geodatabase option from the right-click context menu of the database server and complete the input requirements in the New Geodatabase dialog box.

Some considerations to think about:

- The geodatabase name has to be unique on that database server. It could be some meaningful name, like a name of your department or a project name. It cannot be longer than 32 characters and cannot contain spaces and special characters such as @ or *.
 - The location of the data file defaults to the SQL Server Express install location; you might want to change the location to somewhere that will be easier for you to find. The data file has an extension of .mdf and that's where all your data for the geodatabase will physically live.
 - Initial size has to be a minimum of 2 MG and can be a maximum of 4 GB. You can create a geodatabase with the initial size of 1 GB; if you load more than 1 GB of data – it will auto-grow until it reaches 4 GB. 4 GB is a maximum size capacity of a SQL Server Express database. However, please note that the ESRI license agreement states that 4 GB is the maximum amount of data you can store on one desktop or workgroup server machine. For example, you may have 4 GB of data in one geodatabase; or two geodatabases, each with 2 GB; or two geodatabases, one with 1 GB and the other containing 3 GB. In all cases, the total data capacity is 4 GB for the entire server machine.
 - Once you have completed all parameters in the New Geodatabase dialog box, click OK, and you will have a new empty geodatabase.
- Besides creating a new geodatabase, you may also restore one from a backup or attach a geodatabase that has been detached from another instance. Backup and Restore, Detach and Attach operations, will be discussed in the next podcast of this series.

Now, apply your geodatabase skills to populate the new geodatabase with the datasets and behavior using either right-click functionality or geoprocessing tools. If you are migrating data from another geodatabase, take advantage of copy-and-paste or drag-and-drop methods. Both methods transfer not only data but also associated behavior, such as domains, for example. As mentioned previously, database server administrators automatically have permissions to create and work with the data. However, normal

GIS users must be explicitly granted permissions to create or work with data. This topic is further explored in the next podcast of this series.

In conclusion, all administration for desktop and workgroup geodatabases is done through the Database Server connection in ArcCatalog. First, you need to connect to the SQL Server Express instance, which is identified in the Catalog tree by the title Database Server. Then, using right-click functionality, you can create a geodatabase, as well as manage server-level permissions. Only the user with database server administrator access is able to create new geodatabases and manage server-level permissions. Multiple geodatabases can exist on one database server; each geodatabase must have a unique name and their total amount of data cannot exceed 4 GB on one server machine.

This concludes our second podcast in a group of podcasts on desktop and workgroup geodatabase implementation and management. The next podcast in the series is on user privileges and administrative tasks. For more information, you may consult with ArcGIS Desktop Help, the main ESRI Web site, and other instructional podcasts on geodatabases. Additional information is also available at the ESRI support site <http://support.esri.com>, at the Geodatabase blog <http://blogs.esri.com/>, and at the ESRI Resource Center <http://resources.esri.com>.

Thank you for listening, and stay tuned for future podcasts.