

Introduction to Enterprise Geodatabase and Multiple User Editing

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What you
know so far?

What is a geodatabase?

What are the types of geodatabase?

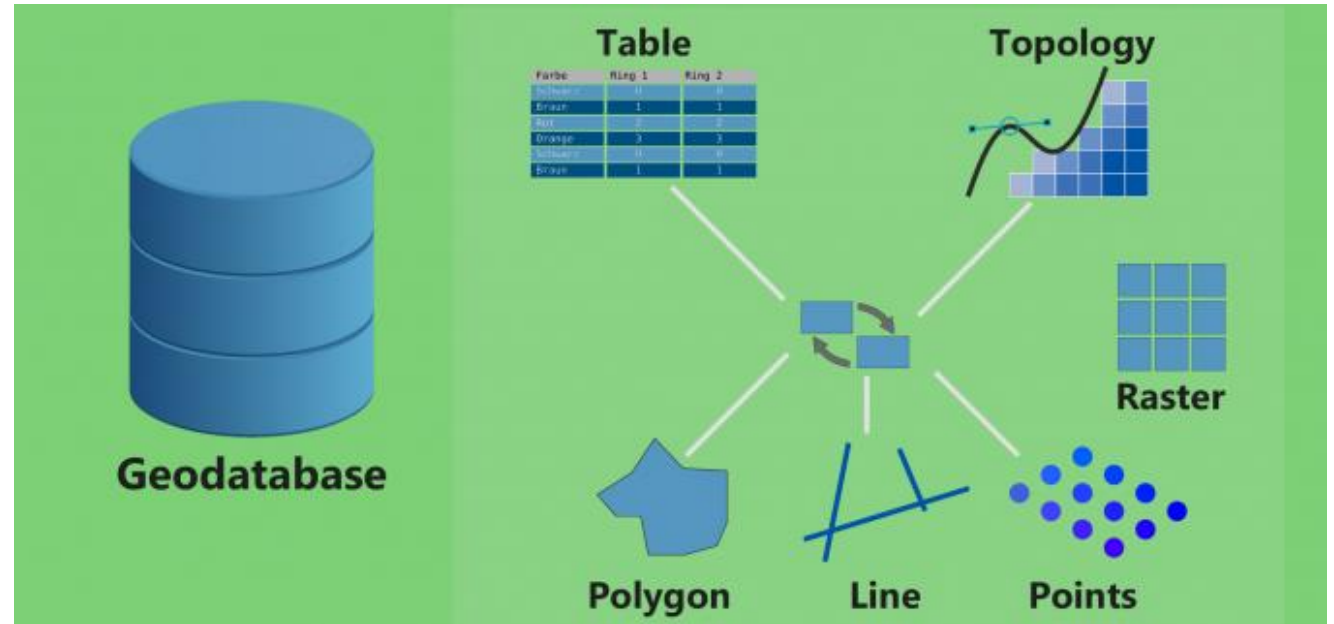
- Personal geodatabase
- File geodatabase
- **Enterprise geodatabase**

What are database management systems (DBMS)




- A **database management system (DBMS)** is a software package designed to define, manipulate, retrieve and manage data in a database.

Basic Overview

- Geodatabases are an organized way to keep similar data together. Anything that is relevant stays in a single database (Best practice)



Comparison of different types of geodatabase

	Personal GDB	File GDB	ArcSDE GDB (3 Types)
Cool Graphic			
Storage Format	Microsoft Access	Folder of binary files	DBMS
Storage capacity	2 GB	1 TB per table*	Depends on edition
Supported OS platform	Windows	Any platform	Depends on edition
Number of users	Single editor Multiple readers	Single editor Multiple readers	Multiple editors & readers

Enterprise Geodatabase

Although an enterprise geodatabase requires you to invest in the management and administration, the benefits can be highly rewarding. Enterprise geodatabases are built on top of relational database management systems such as Microsoft SQL Server, Oracle, and DB2. These systems are powerful and are wired to sustain constant editing and multiple accesses.

With
enterprise
geodatabases,
you can do
the following
tasks:

- Set up access control
- Build a centralized geodatabase which can be accessed from multiple terminals
- Restrict certain users for viewing a feature class or table
- Restrict certain users from editing a feature class or table
- Restrict users from changing the geodatabase schema
- Edit tracking to know who added a new feature or edited an existing one

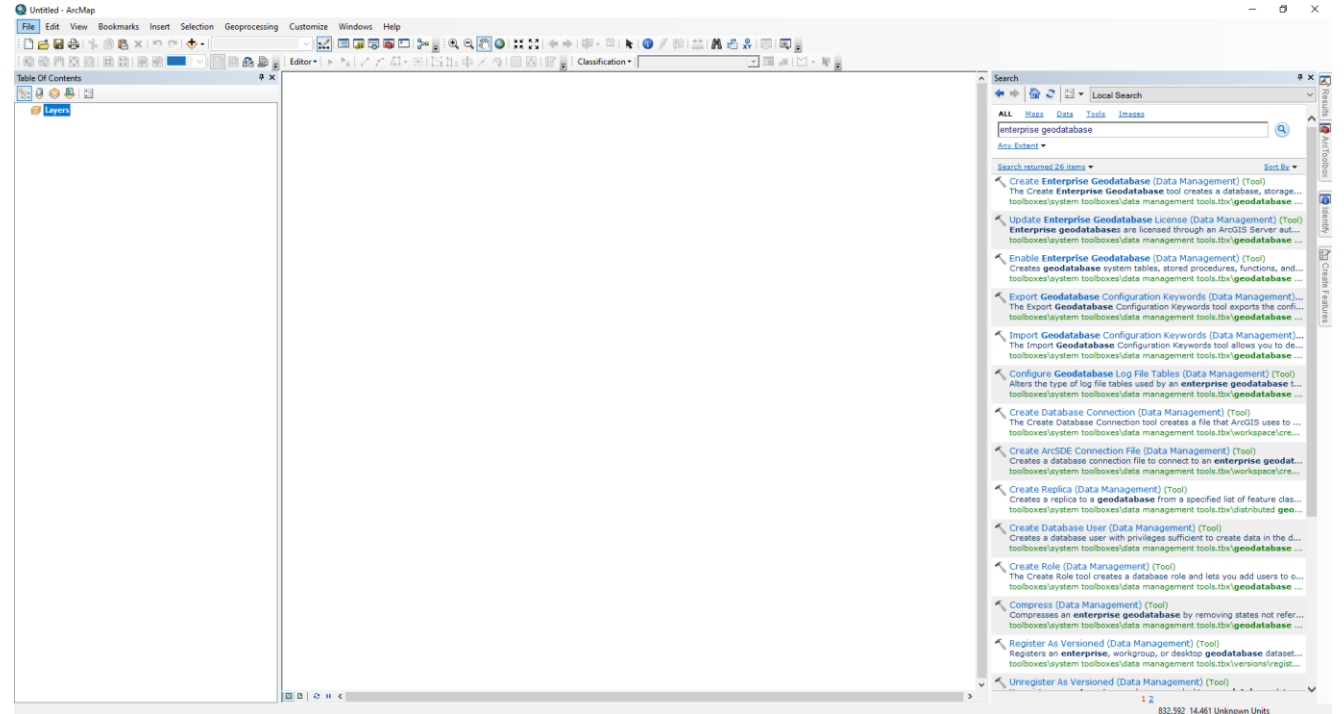


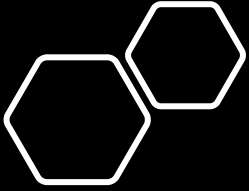
What you need for the creation of an Enterprise Geodatabase

- An ArcGIS Enterprise (or ArcGIS Server basic) license
- Standard or Advanced license for the desktop product
- Keycode file

Creation of an Enterprise Geodatabase

Step 1: Use the Create Enterprise Geodatabase tool in ArcMap





- Step 2: Fill the necessary database login credentials

Create Enterprise Geodatabase

Database Platform
SQL_Server

Instance
203.159.29.6

Database (optional)
SAMIS_training

Operating System Authentication (optional)

Database Administrator (optional)
sa

Database Administrator Password (optional)
•••••••

Sde Owned Schema (optional)

Geodatabase Administrator (optional)
sde

Geodatabase Administrator Password (optional)
•••••••

Tablespace Name (optional)

Authorization File
C:\Users\Rajitha\Desktop\keycodes

Instance

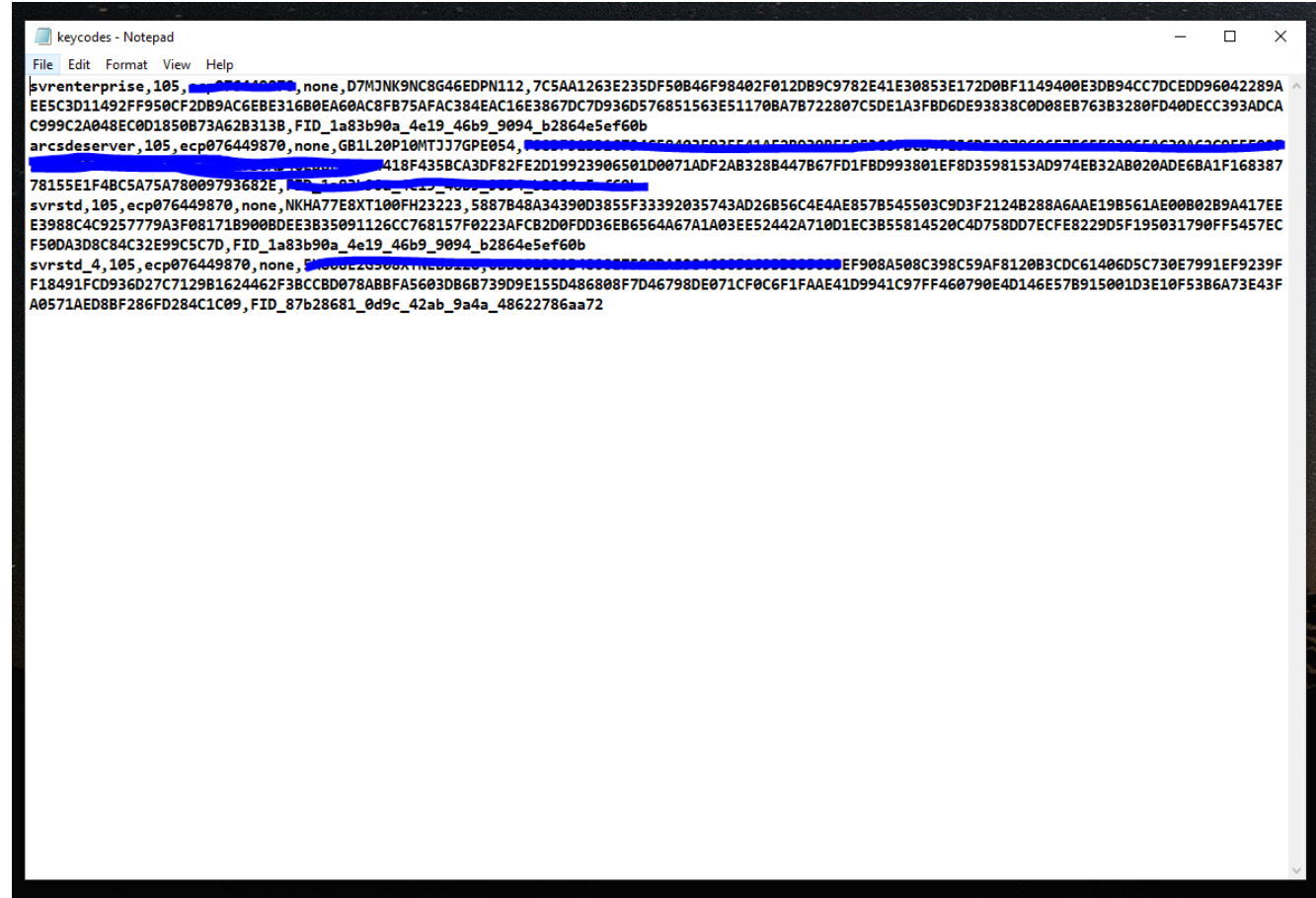
For SQL Server, provide the SQL Server instance name. Note that case-sensitive or binary collation SQL Server instances are not supported.

For Oracle, provide either the TNS name or Oracle Easy Connection string.

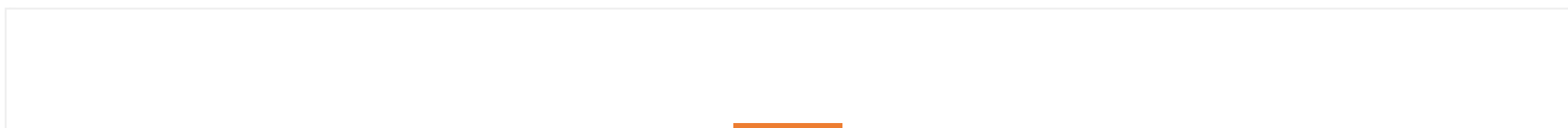
For PostgreSQL, provide the name of the server where PostgreSQL is installed.

OK Cancel Environments... << Hide Help Tool Help

Keycode file



```
keycodes - Notepad
File Edit Format View Help
svrenterprise,105, [REDACTED],none,D7MJNK9NC8G46EDPN112,7C5AA1263E235DF50B46F98402F012DB9C9782E41E30853E172D0BF1149400E3DB94CC7DCEDD96042289A
EE5C3D11492FF950CF2DB9AC6EBE316B0EA60AC8FB75AFAC384EAC16E3867DC7D936D576851563E51170BA7B722807C5DE1A3FBD6DE93838C0D08EB763B3280FD40DECC393ADCA
C999C2A048EC0D1850B73A62B313B,FID_1a83b90a_4e19_46b9_9094_b2864e5ef60b
arcsdeserver,105,ecp076449870,none,GB1L20P10MTJJ7GPE054,[REDACTED]
[REDACTED]418F435BCA3DF82FE2D19923906501D0071ADF2AB328B447B67FD1FBD993801EF8D3598153AD974EB32AB020ADE6BA1F168387
78155E1F4BC5A75A78009793682E,[REDACTED]
svrstd,105,ecp076449870,none,NKHA77E8XT100FH23223,5887B48A34390D3855F33392035743AD26B56C4E4AE857B545503C9D3F2124B288A6AAE19B561AE00B02B9A417EE
E3988C4C925779A3F08171B900BDEE3B35091126CC768157F0223AFCB2D0FDD36EB6564A67A1A03EE52442A710D1EC3B55814520C4D758DD7ECFE8229D5F195031790FF5457EC
F50DA3D8C84C32E99C5C7D,FID_1a83b90a_4e19_46b9_9094_b2864e5ef60b
svrstd_4,105,ecp076449870,none,[REDACTED]EF908A508C398C59AF8120B3CDC61406D5C730E7991EF9239F
F18491FCD936D27C7129B1624462F3BCC8D078ABBF5603DB6B739D9E155D486808F7D46798DE071CF0C6F1FAAE41D9941C97FF460790E4D146E57B915001D3E10F53B6A73E43F
A0571AED8BF286FD284C1C09,FID_87b28681_0d9c_42ab_9a4a_48622786aa72
```



Create Enterprise Geodatabase ✕

Executing Create Enterprise Geodatabase...

Close this dialog when completed successfully

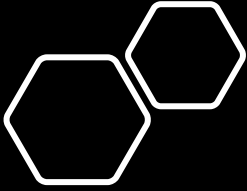
```
SQL_Server AGSSERVER SAMIS_training
DATABASE_AUTH sa ***** SDE_SCHEMA sde
***** # C:\Users\Rajitha\Desktop
\keycodes
Start Time: Wed Jan  8 10:27:19 2020
```

Create Enterprise Geodatabase ✕

Completed

Close this dialog when completed successfully

```
Created geodatabase tables and stored
procedures.
Finished creating geodatabase schema.
Succeeded at Wed Jan  8 10:29:02 2020
(Elapsed Time: 18.73 seconds)
```



- Step 3: Connect to the newly created Geodatabase

The screenshot displays the ArcMap interface with the 'Database Connection' dialog box open. The dialog box is configured with the following settings:

- Database Platform: SQL Server
- Instance: 203.159.29.6
- Authentication Type: Database authentication
- User name: gic
- Password: [masked]
- Save user name and password: [checked]
- Database: Crowdsourc-test

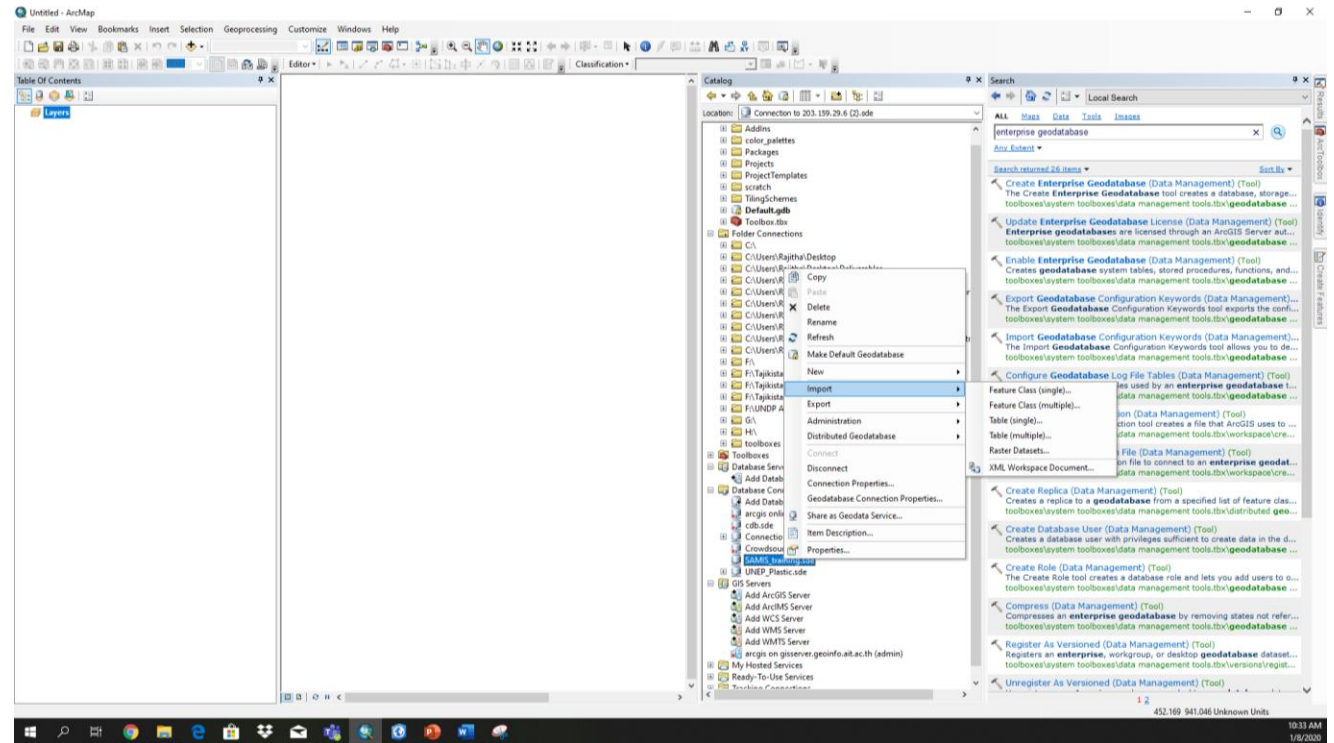
The 'Catalog' window on the right shows a tree view of the workspace contents, including folders like 'Addins', 'Projects', and 'Database Connections'. The 'Database Connections' folder is expanded, showing a list of connections, with 'Crowdsourc-test' selected.

The 'Table Of Contents' window on the left is empty. The 'Search' window on the right shows search results for 'enterprise geodatabase'.

At the bottom right of the ArcMap window, the status bar displays '582.314 935.484 Unknown Units' and the system clock shows '10:31 AM 1/8/2020'.



- Step 4: Import any data to the geodatabase as you require.

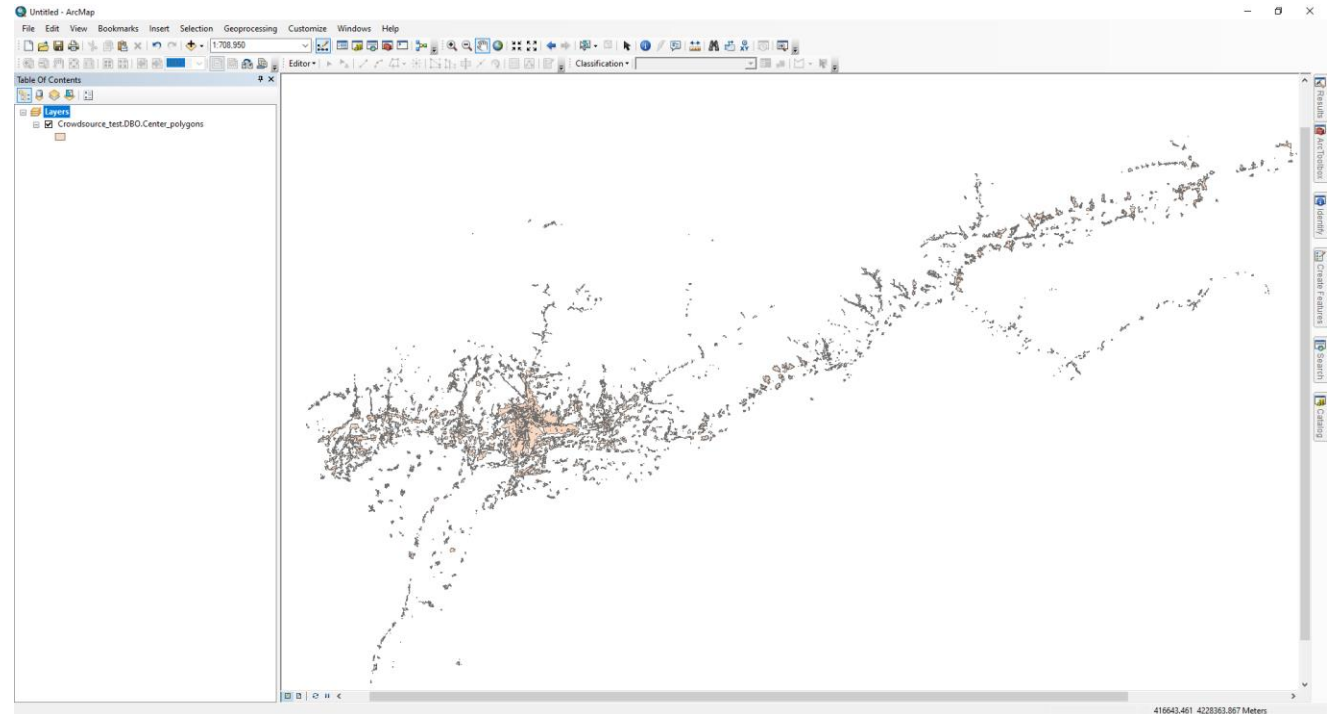


Multiple Editing

- Multiple users can edit the same data layer as long as there is no conflicting edits.
- The edits by individuals can be set to automatically overwrite in the server during a given time interval (for example: every 10 minutes).
- Different user levels can be defined so that only limited privileges are given to certain users.

Applications

- There may be different requirements and applications of a multi user or editor capability.
- GIC was able to successfully implement a multi user editing environment for mapping building clusters in Tajikistan



Applications

- GIC uses separate Enterprise geodatabase for projects so that team members involved will have access to the same data and share their outputs easily among the team

