



**Moving from a single user
database to multi-user
ArcSDE and the
Geodatabase
(Session 1)**



**Presenter: Lance Shipman
Product Specialist/Programmer
on the ArcSDE and Geodatabase
Team**

What will we cover in this session

- Why should you migrate to multi-User ArcSDE?
- The process of migrating a single user database to multi user ArcSDE and the geodatabase
- Migration Issues

What will we not cover in this session

- Migrating multi user databases to the ArcSDE and the geodatabase
 - ArcStorm
 - ArcSDE for Coverages
 - ArcInfo Librarian

Introduction

- **What's a single user database?**
 - ArcInfo Coverages
 - ESRI Shapefiles
 - Personal Geodatabase
- **What's a multi user database?**
 - ArcSDE
- **Single user vs. Multi-user**



New Terminology

The geodatabase

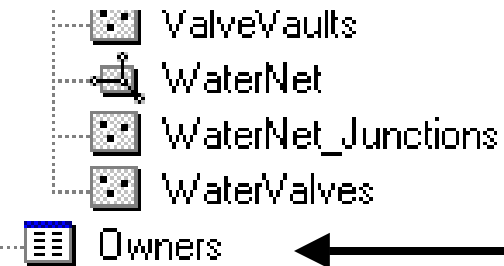
- A new geographic data model
- Stored in an RDBMS
- Features with behavior
- Topological relationships

What is an object class?

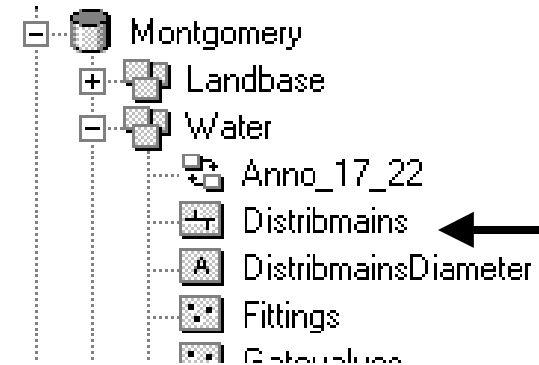
- Stores objects and their properties
- Spatial (parcels) and non-spatial (parcel owners)
- All objects in a class have the same:
 - Properties - stored in the table as attributes
 - Behavior - implemented as a COM class

Object classes

- Non-spatial objects are stored in tables



- Spatial objects are stored in feature classes

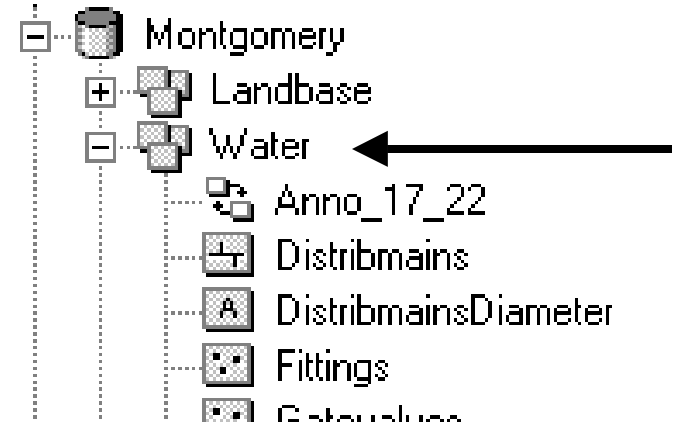


Feature classes

- Object classes which store spatial objects (features)
- Store spatial objects with the same:
 - Properties - stored in the table as attributes
 - Behavior - implemented as a COM class

What is a feature dataset?

- Container for feature classes with the same spatial reference.
- Analogous to a coverage
 - Less restrictive.
- Can also contain relationship classes and geometric networks.





Migrate?

Do I have to migrate?

- No
 - Shape files and coverages can be viewed and edited.
 - Read only access to ArcStorm, Arc Librarian and SDE 3.x.
- Yes
 - If you want to take full advantage of the geodatabase and the ArcInfo 8 desktop product

When to use multi-user ArcSDE

- Multiple Users
- Multiple Edit Sessions
 - Roll backs
 - “Personal” or hypothetical copies of the data
 - Rectification of edits from multiple sources

When to use multi-user ArcSDE (2)

- Your data must be managed and organized
- Large amounts of data
- System-wide access is required
 - From anywhere on the network
 - NFS is not required
- Access control is critical

When to use multi-user ArcSDE (3)

- Effective central server support
- Better Client Server efficiency
- Better performance
- Leverage existing Unix server

When to use multi-user ArcSDE (4)

- Where you already have data stored in a RDBMS
- Data Integrity

When not to use multi-user ArcSDE

- Small databases
- Access control is not critical
- Only one user
- Short term projects



The Process

Process outline

- Determine the desired results and behavior
- Select the appropriate tool to achieve the desired results
- Preprocess the data as needed
- Load

Decisions

- Before you load your data there are several decisions that you will need to make
 - Will the data be stand alone featureclass or in a featuredataset?
 - Spatial Index?
 - Offset and Scale?
 - Projection/Coordinate System?
 - What are the data storage requirements?

Decisions - Stand alone featureclass or featuredataset

- In general you are better off loading you data into a featuredataset as you gain the full power of the geodatabase.
- If you have existing SDE data you cannot “move” it to a featuredataset, but can register it as a featureclass and gain all of the ArcInfo 8 object behavior except for participation in geometric networks.

Decisions - Spatial Index

- The efficiency of your spatial index is determined by setting a grid size.
- The grid size is calculated automatically by the ArcCatalog and ArcToolbox by applying a simple algorithm to the source data.
- The algorithm uses
 - Average min extent
 - Average max extent
 - “squareness”

Decisions - Spatial Index (2)

- This value is not likely to be optimal.
- It is intended to be a reasonable guess and ensure that the data will load.
- You can optimize the grid size later

Decisions - Offset and Scale

- Offset and scale is calculated automatically by the ArcCatalog and ArcToolbox tools based on the envelope of the source data.
- If you will be adding to the data you may wish to set the values yourself to account for changes in the extent of the data.

Decisions - Offset and Scale (2)

- Remember that the offset cannot be changed once it is set.
- In a featurdataset, the offset and scale must be the same for all featureclasses, so plan accordingly.

Decisions - Projection/Coordinate System

- What projection or coordinate system do you plan on using?
- **MUST** be the same for featuredataset.

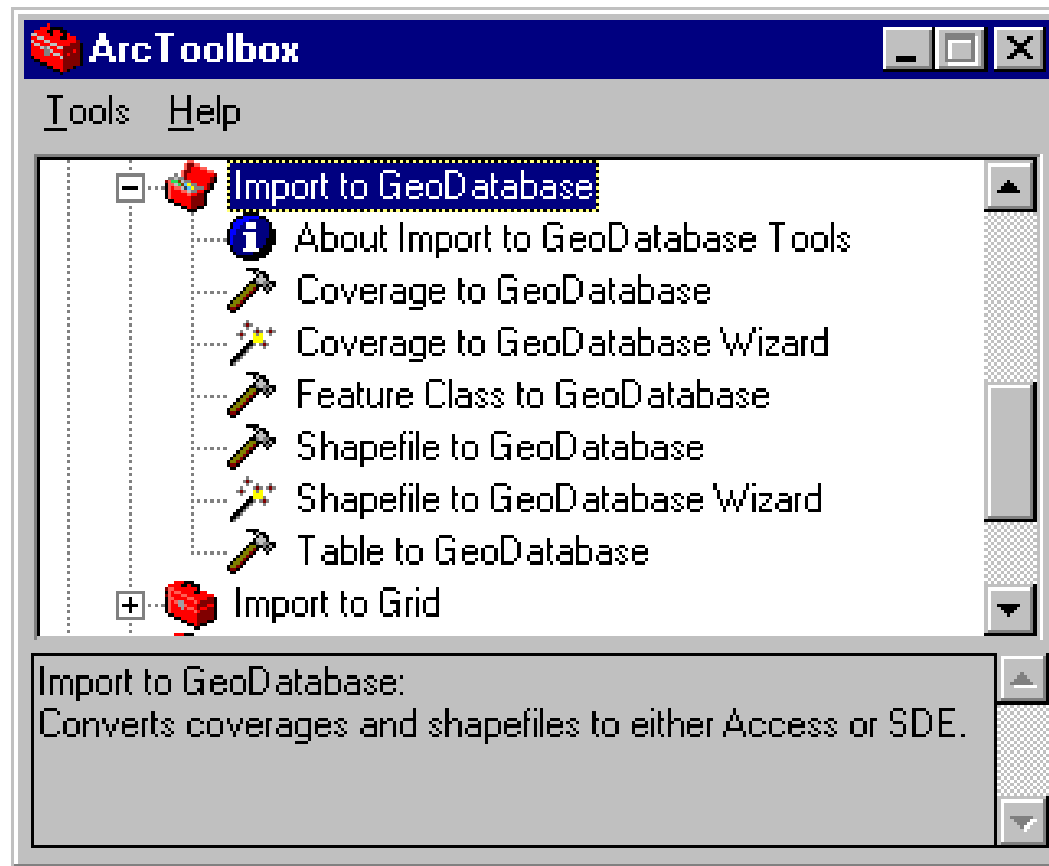
Decisions - Physical Space for Data

- To optimally load and access data in the RDBMS you will need to create Keywords in the DBTUNE.SDE.
- The keywords control the size and the characteristics of the datafiles in the RDBMS.



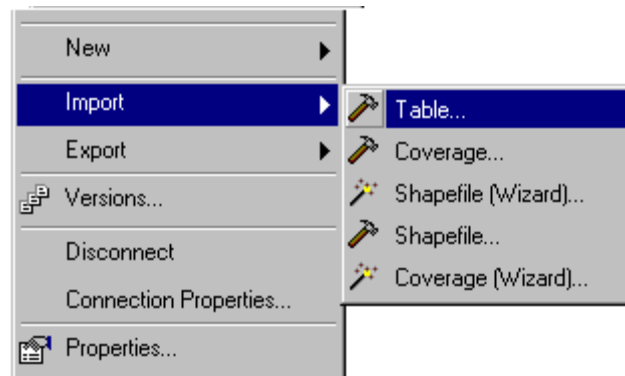
Tools

ArcToolbox



ArcCatalog

- For loading data



Other

- ArcInfo Workstation
- ArcSDE Command line: shp2sde, cov2sde, tbl2sde, sde2tbl, sdeimport, sdeexport

What about appending to featureclasses?

- **Tools**

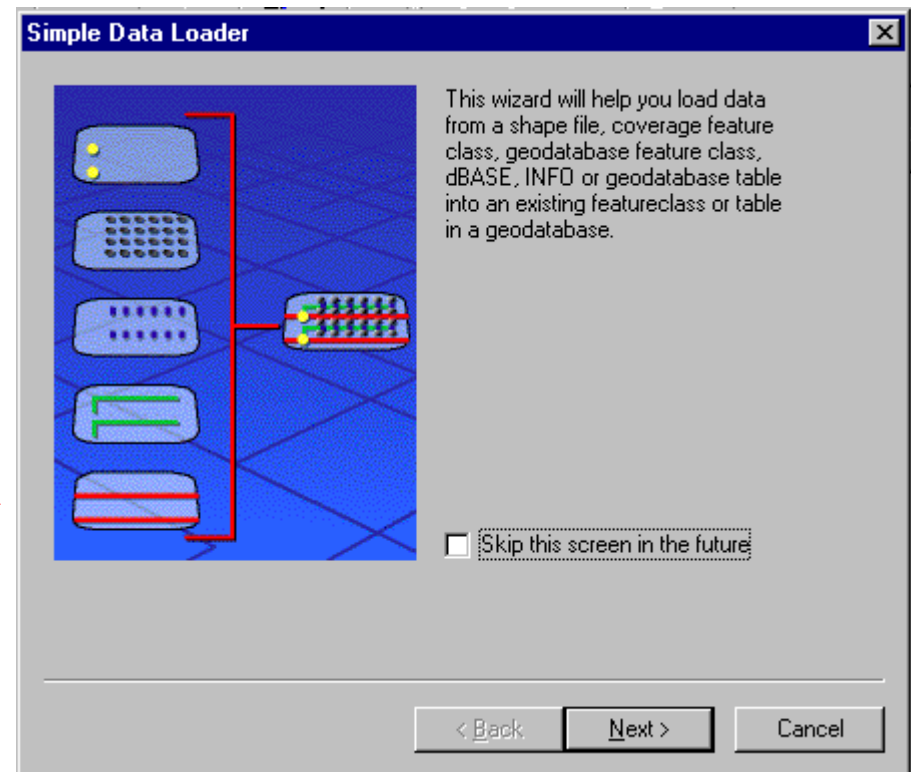
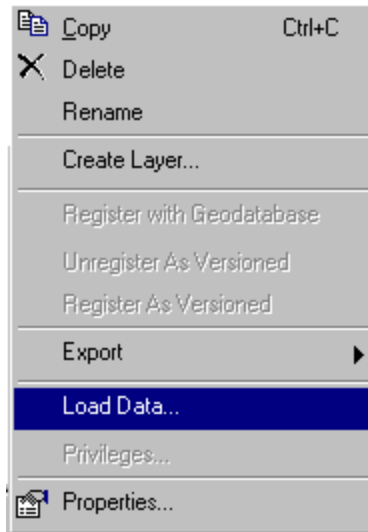
- Simple Data Loader (ArcCatalog)
- Object Loader (ArcMap)
- Which one to use?

- **Offsets**

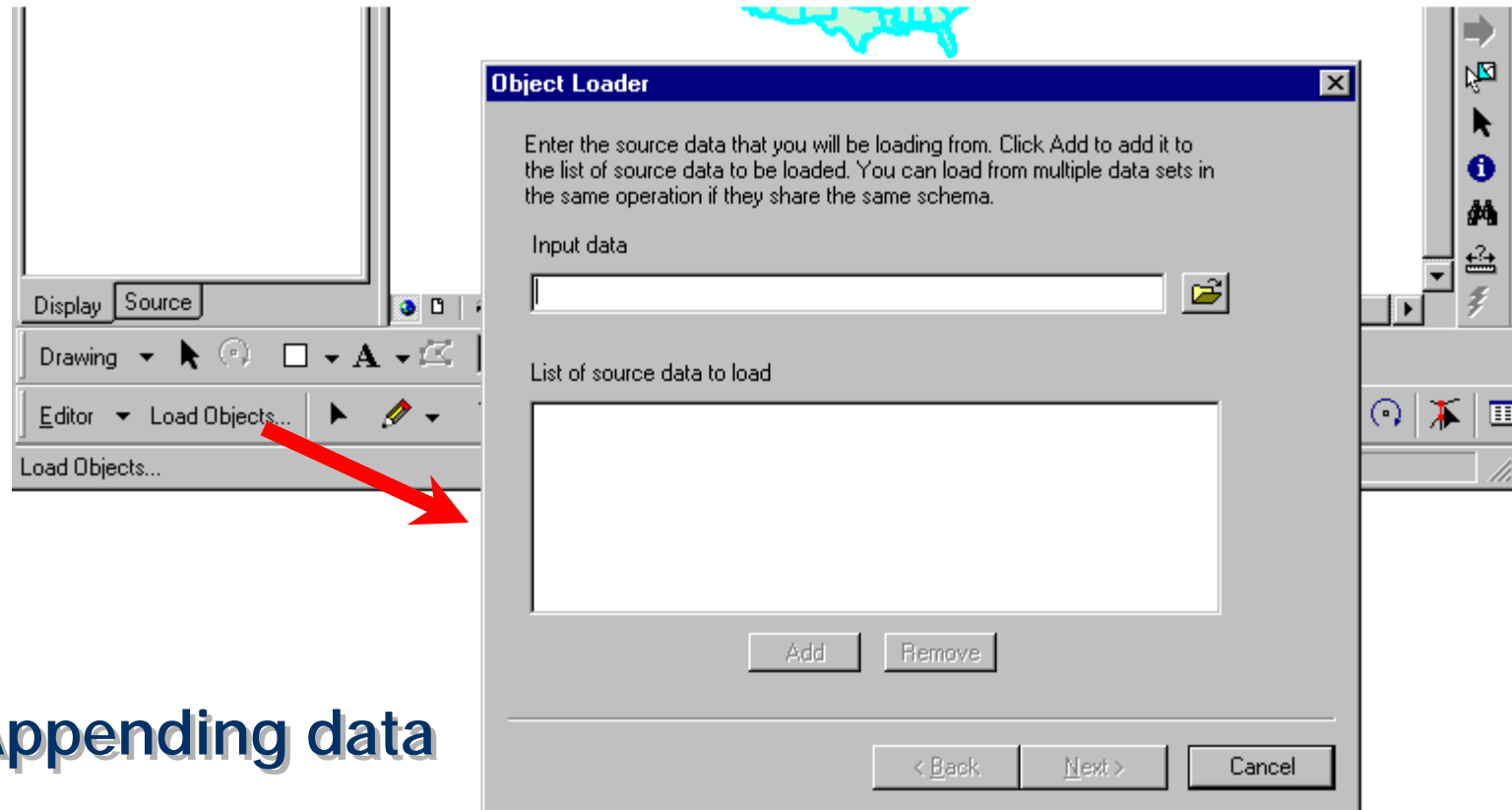
- Must be set for all of the data to be loaded in one dataset.
CANNOT be changed once the data is loaded.

ArcCatalog

- For appending data



ArcMap



- Appending data



Issues

Attributes

- Reserved words
- Duplicate column names
- Changing columns
 - Names
 - Length
 - Deleting
- Type Mapping

ArcInfo Relates and Relationships

- INFO Relates
- Relationships
- To migrate ArcInfo Workstation relates into to geodatabase will require that you add a key column to the related table(s) before you load the tables.
- Joins



Wrapup

Sessions

- This session is repeated on Wednesday at 1:30 p.m. in this room.
- See pg. 74 of the Agenda for related sessions.

Questions