



ArcSDE for Coverages

**Serving Coverages, Shapefiles,
Map LIBRARIAN and ArcStorm
layers**



ESRI

ArcSDE Product Line

- **ArcSDE for Oracle**
- **ArcSDE for SQL Server**
- **ArcSDE for Informix**
- **ArcSDE for Sybase**
- **ArcSDE for DB2**
- **ArcSDE for Coverages**



ESRI

What Is ArcSDE?

- **ArcSDE as an ArcInfo extension**
 - **Client/server technology**
 - **Several APIs**
 - **Tightly integrated with other ESRI products**



What Is ArcSDE Technology?

- **Store/retrieve spatial data in a DBMS**
- **Long transactions/versioning**
- **Buffering/cooperative processing**



Why ArcSDE for a DBMS?

- **Leverage advances in DBMS technology**
- **Improved indexing**
- **Hot backups**
- **True multi-user editing**



What Does ArcSDE for Coverages Do?

- Serves existing ESRI data
- Uses ArcSDE technology
- Read-only



ESRI

What Kind of Data Does It Serve?

- **Shapefiles**
- **Coverages**
- **Map LIBRARIAN layers**
- **ArcStorm database layers**



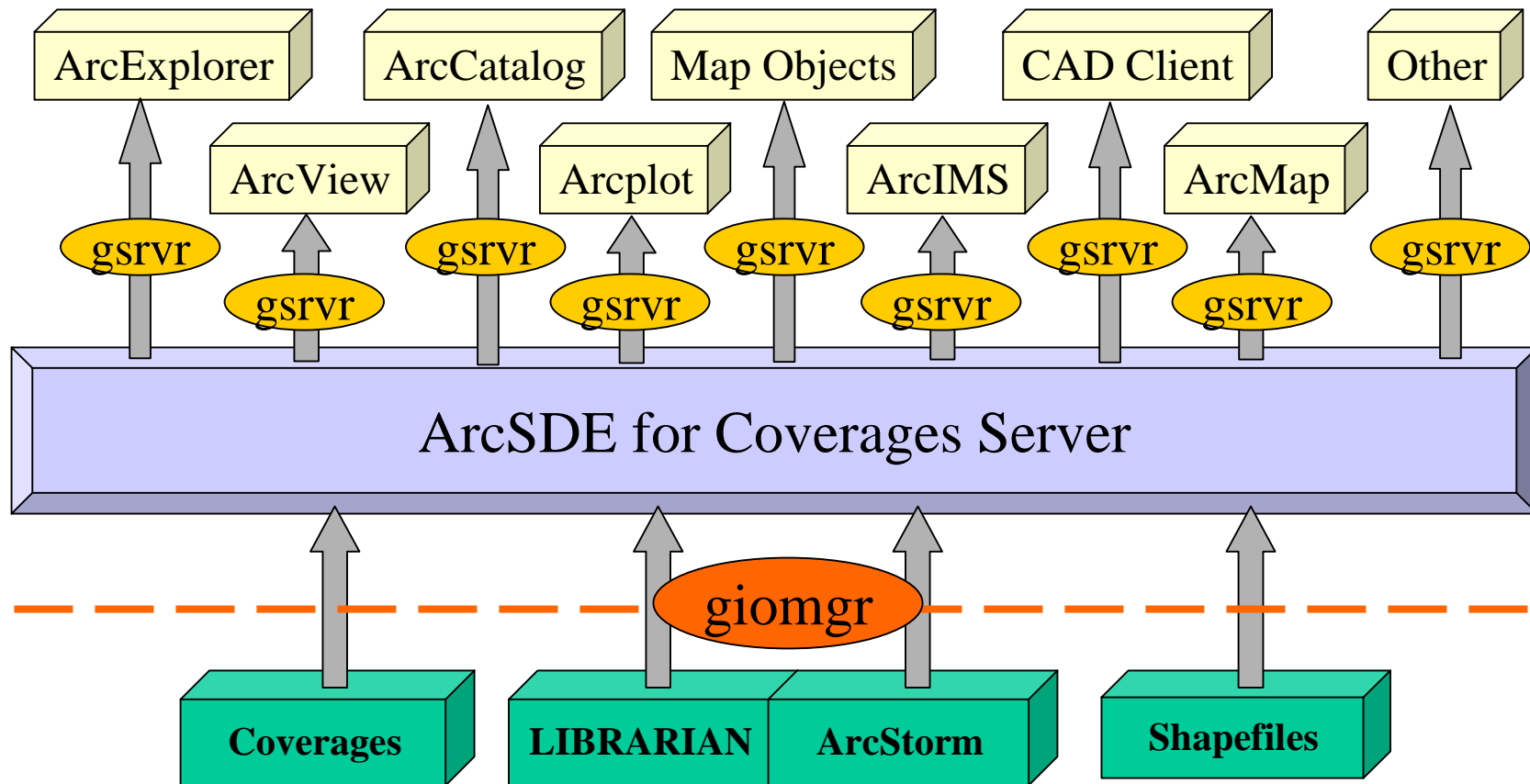
ESRI

ArcSDE Client Applications

- ArcInfo (Arcplot, ArcCatalog and ArcMap)
- ArcView 3.X
- ArcIMS, ArcView IMS, MO IMS
- ArcExplorer
- CAD client applications
- Custom applications



ArcSDE for Coverages Architecture



ArcSDE Application Programming Interfaces

- **Open C-API**
 - Documentation available at www.esri.com/arconline
- **Avenue API**
 - ArcView dbaccess 2.1a



Why Use ArcSDE for Coverages?

- **Serve existing data to other applications**
- **Transition to ArcSDE for a DBMS**
- **Continue to use current editing applications**
 - **Arcedit**
 - **ArcView 3.X**
 - **Other**



What ArcSDE for Coverages Provides

- **Get started with ArcSDE with a DBMS**
- **Seamless access to tiled data**
- **Coverage and shapefile access for any ArcSDE application**
- **Open API (OGIS compliant)**



What ArcSDE for Coverages Provides (Continued)

- **True client/server technology**
 - Fast network access to data without using NFS
 - Multi-user access in a distributed data environment
- **Works on LAN or WAN**
- **Works with internet connections**



ESRI

Scenario One

- You have existing ArcStorm or Map LIBRARIAN data
- You want to serve this data over the internet/intranet
- Use ArcIMS and ArcSDE for Coverages



ESRI

Scenario Two

- **You have a mixed UNIX/Windows environment**
- **Accessing your data via NFS is slow**
- **Use ArcSDE for Coverages to serve the data to read-only clients via TCP/IP**



ESRI

Exporting to the Geodatabase

- **It's as easy as 1-2-3**
 - 1. Create a geodatabase**
 - 2. Register data to an ArcSDE for Coverages service**
 - 3. In ArcCatalog select and export the layer to your geodatabase**



ESRI

Converting to the Geodatabase?

- Does this work with ArcStorm and Map LIBRARIAN layers?



YES!!



ESRI

What About Tile Boundaries?

- **ArcStorm layers**
 - Features are stitched together using the **OBJECT_ID**
- **Map LIBRARIAN layers**
 - Features are stitched together using a unique integer item
 - If there is no item to stitch features together you can still convert



Setting up ArcSDE for Coverages

- All supported platforms are on one CD
- There is no license manager
- The software may be installed:
 - Into an existing ARCHOME
 - As a standalone service



Administration Commands

- **layerutil** - administrates layers
- **sdemon** - administrates the service
- **sdelog** - administrates the sde logs
- **sdeservice(NT only)** - create, delete and modify the NT service



sdemon Operations

- **start**
- **shutdown**
- **status**
- **pause**
- **resume**
- **info**
- **kill**



ESRI

Passwords

- There are two passwords used with ArcSDE for Coverages
- UNIX - they are set when the service is started with sdemon

`sdemon -o start -p "password;;layer_admin_password"`

- NT - they are set when the software is installed or with sdeservice



The First Password Is Used:

- By the client to connect to the service
- Wherever the `layer_admin_password` isn't used with:
 - `layerutil`
 - `sdemon`

```
sdemon -o start -p "password;;layer_admin_password"
```



ESRI

The layer_admin_password Is Used to

- To register the layer
- To unregister the layer
- To modify the registration of the layer

```
sdemon -o start -p "password;;layer_admin_password"
```



layerutil Registration Operations

- **register** - add new layers to the server
- **unregister** - delete layers from the server
- **modify** - change an existing layer
- **remove** - deletes a relate and any connection information



ESRI

layerutil Informational Operations

- **describe** - describes a layer
- **list** - lists layers, ArcStorm database, map libraries or relates
- **verify** - checks the validity of a layer



Where Are the Files Stored?

- Your data is not copied
- All information about a layer is maintained in INFO files in **ARCHOME/tables/<service>**
 - LAYERS.TAB
 - COLUMNS.TAB
 - RELATES.TAB
 - CONNECTS.TAB



Spatial Column

- **layerutil automatically determines the spatial column**
 - **Coverages - cover# or subclass#**
 - **Shapefiles - “shape”**
 - **ArcStorm - OBJECT__ID**
 - **Since OBJECT__ID is always indexed and unique it is used to stitch features together**



ESRI

Spatial Column LIBRARIAN

- Map LIBRARIAN layers do not automatically have a unique indexed integer column
- If NONE is used the features are not stitched together



Performance Considerations

- **Server hardware**
 - Multi-processors
- **Network bandwidth**
- **Data location**
 - Use partitions local to the server
- **Tiled data being assembled on the server (ArcStorm and LIBRARIAN)**



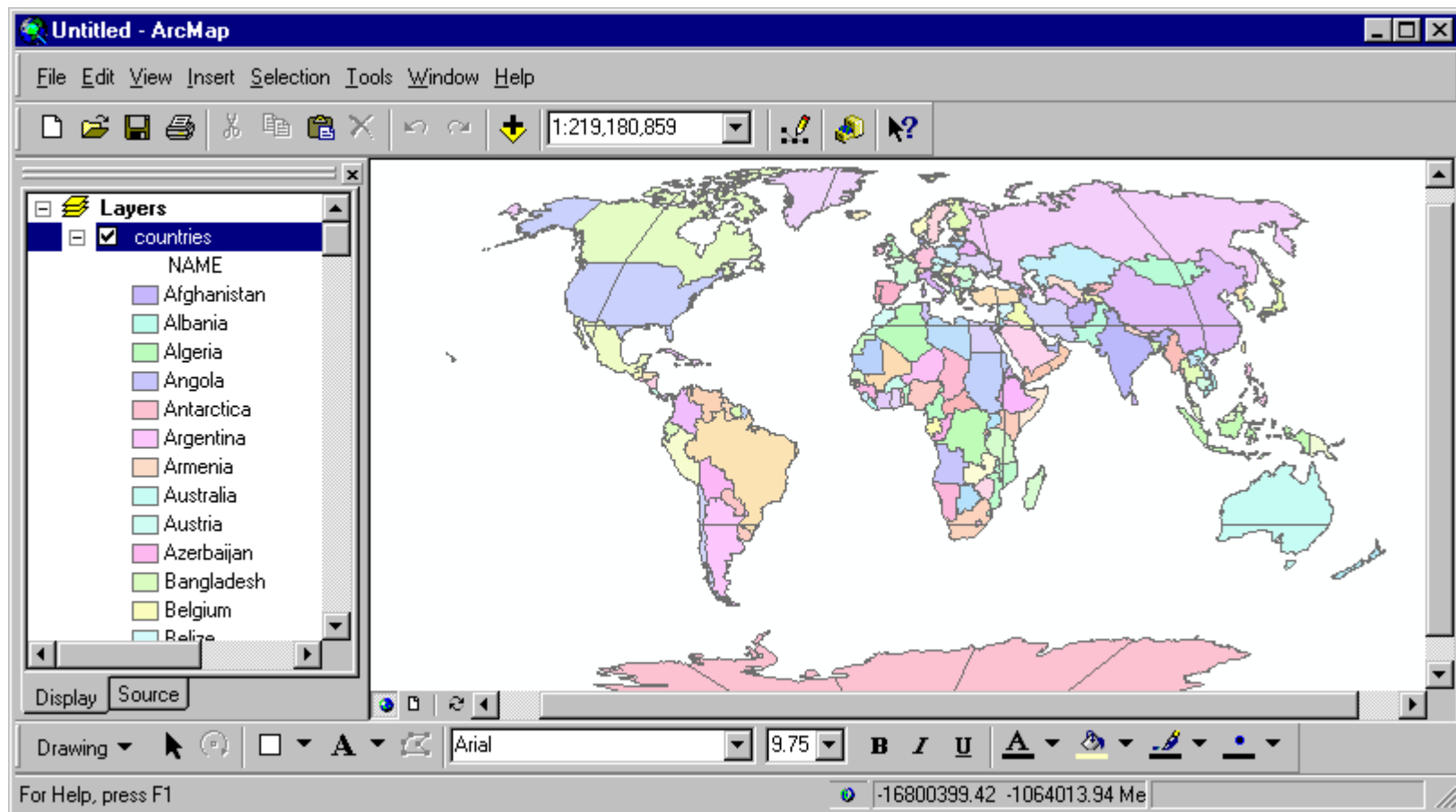
ESRI

LIBRARIAN Performance Considerations

- **If there isn't a cross-tile index the server will create one on the fly each time the layer is accessed**
- **Spatial column**
 - **Use NONE for drawing performance**
 - **Use a unique integer item for selections**

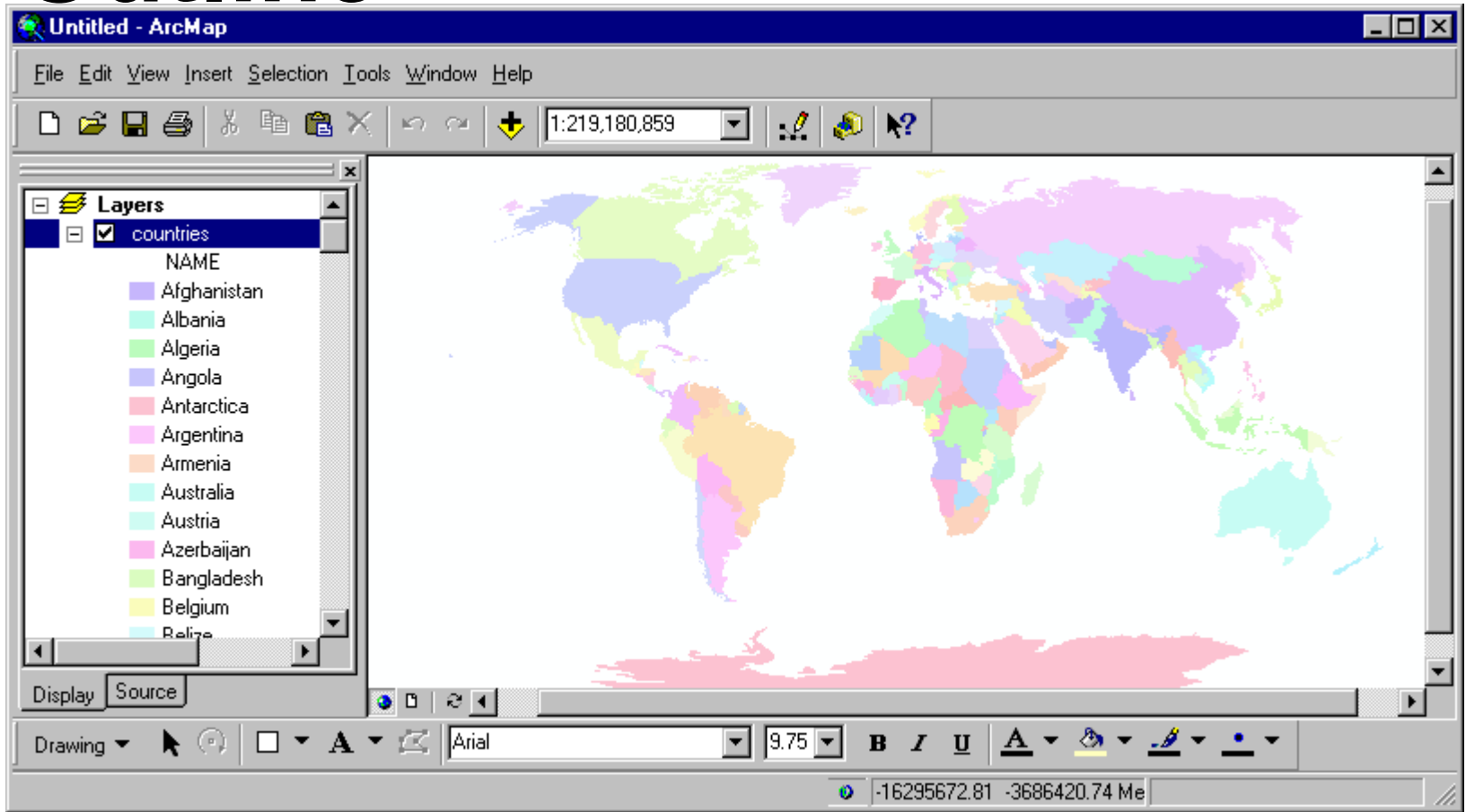


Non-stitched With Outline



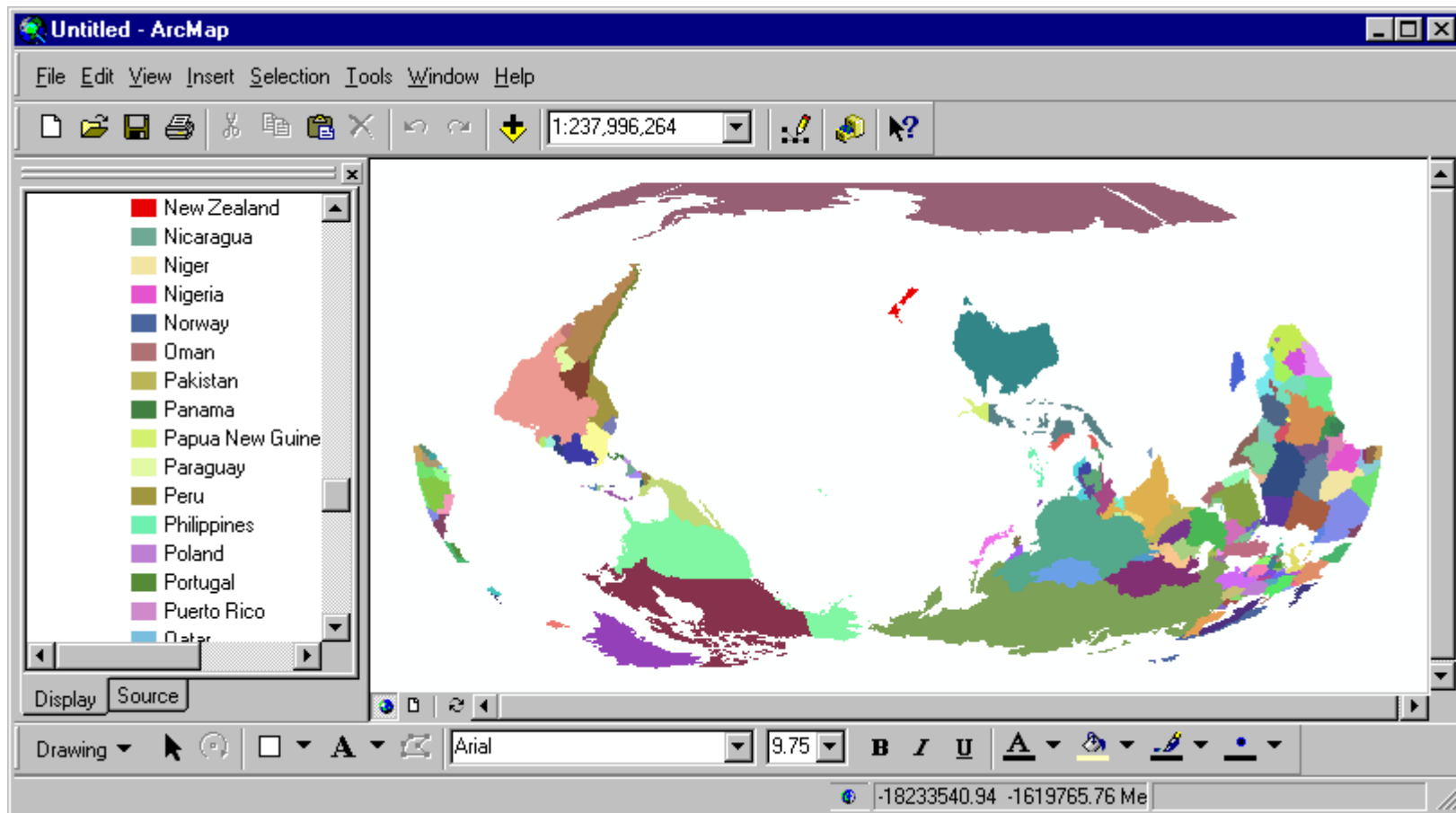
ESRI

Non-stitched Without Outline



ESRI

New Zealand Point of View



ESRI

Queries from client applications

- The query language of ArcSDE for Coverages is INFO

- Valid operators:

EQ or =	NE or <>	CN
GE or >=	LE or <=	NC
GT or >	LT or <	LK

- Valid connectors:

AND OR XOR



ESRI

Constraints

- **The -a option allows you to provide an INFO expression to preselect features of a data source**
- **This allows you to subset a data source for different layers**



ESRI

Relates

- **A single relate may be set for each layer**
- **The relate may be to any supported DBMS or INFO**
- **A relate cannot be established if the data source is a shapefile**



Data Security

- **All data is accessed with the account that starts the service**
- **The connection password, service name and port is all that is needed to access any registered data**
- **There is no check made on the client user account**



ESRI

ArcSDE for Coverages Is Great for These Situations

- **Transitioning to ArcSDE for a DBMS**
- **Converting ArcStorm or LIBRARIAN layers to the geodatabase**
- **Serving ArcInfo data to client applications - read-only**
- **Internet/intranet access - IMS**



How Do I Get ArcSDE for Coverages?

- The CD comes in the box with
 - ArcInfo 8
 - ArcSDE 8
 - ArcIMS 3
- In other words its **FREE** with purchase of the above software



ESRI



ESRI