USING SDE FOR COVERAGES

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Welcome to the Using SDE for Coverages tutorial. The instructions will provide an introduction to using SDE for Coverages to access your ArcInfo data. This tutorial will teach you how to register SDE layers using the `layerutil` program. You will also learn how to display and query SDE for Coverages data using Defined Layers in ARCPLOT.

Keep in mind that Defined Layers is also used to access other data types including coverages, ArcView Shapefiles, ArcStorm libraries, and map libraries. This tutorial will only introduce commands used when working with SDE for Coverages data and does not attempt to teach you all of the functionality available with Defined Layers. For additional information please refer to ArcDoc, the online help provided with ArcInfo and the free tutorial available from the Virtual Campus at ESRI's Web site. SDE for Coverages data is read-only. For information on editing SDE data, please see the Editing SDE Data with Defined Layers tutorial.

Summary of Data

The data for the tutorial consists of a coverages and ArcView Shapefiles from a base map of Canada. Download the data for the tutorial, from the same Web page that you downloaded this tutorial. The data is available for both Windows NT and UNIX data

IMPORTANT

You will need to extract the data from the zip or compressed tar file before running this tutorial. Create a workspace for the tutorial data and import the .e00 files to coverages, using the same names. There is a relate file, roads.rel, that will import with the roads coverage. In tables or INFO edit the location item to reflect the coverage's location. If you are using NT, specify an absolute pathname, including the drive letter.

Tutorial Steps

1. **Register layers with SDE for Coverages.**
2. **Connect to SDE for Coverages from ARCPLOT.**
3. **Look at server status and number of connection.**
4. **Register SDE layers with Defined Layers.**
5. **Draw Layers and Identify Features.**
6. **Spatial & Attribute Queries.**
7. **Disconnect from SDE for Coverages.**

IMPORTANT

Steps 1 and 3 of this tutorial must be completed on the machine where the SDE for Coverages server is installed. You must be the owner of, or have write access to the ARCHOME directory on the server machine to complete these steps. If you do not, have administrator access to the SDE for Coverages server, ask your SDE administrator to complete step 1 for you and skip step 3. Steps 2 and 4 through 8 can be completed on a client machine.

Step 1: Register Layers with SDE for Coverages

The layerutil program is used to register, modify, and delete SDE for Coverages layer. You will register five layers from the Canada study area.

IMPORTANT

Layerutil has many arguments and the command can continue onto more than one command line. The line continuation character in NT is ^ and / for UNIX.

Open a command window and look at the command syntax by typing

`layerutil -?.`

The country layer has a region subclass for individual provinces. Register the provinces layer:

```
C:\>layerutil -o register -l provinces -L c:\tutorial\canada
^ More? -f REGION.province -c all -S “Canada -provinces”
```

You will be prompted for the Database User Password – this is the same password used to start the SDE for Coverages server.

NOTE
Enclose textstrings (like layer descriptions) in double quotes.

Register the capital layer – you are only interested in seeing capital cities from the cities coverage so you will use an attribute constraint.

```
C:>layerutil –o register –l capital –L c:\tutorial\cities\ -f
POINT –c all ^
More? –a “capital = ‘Y’” –S “Canada – capital cities”
```

NOTE
Enclose the entire attribute constraint in double quotes

Describe the capital layer to see if the attribute constraint has been properly entered.

```
C:\>layerutil –o describe –l capital
```

Register the roads layer. The roads coverage uses a relate (roads.rel) to access additional information stored in the roads.dat INFO file. Use the –R argument to specify the columns from the related file you wish to include in your layer definition.

```
C:\>layerutil –o register –l roads –L c:\tutorial\roads –f
ARC –c all ^
More? –r INFOfile=c:\tutorial\roads.rel –R admn_class,type ^
More? –S “Canada – roads”
```

NOTE

Make sure that the relate stores the full paths to all related files.

Register the lakes and rivers layers from ArcView GIS shapefiles.

```
C:\>layerutil –o register –l lakes –L c:\tutorial\lakes –c
all ^
More? –S “Canada – lakes”
```

```
C:\layerutil –o register –l rivers –L c:\tutorial\rivers –c
all ^
More? –S “Canada – rivers”
```

NOTE

The –f <feature_type> argument is optional if you are registering a shapefile – layerutil can automatically determine a shapefile’s feature type.

List all your registered layers using:

```
C:>layerutil –o list
```

Step 2: Connect to SDE for Coverages from ARCPLOT.

Start ArcInfo and start ARCPLOT. Connect to SDE using the dataset command. Check the syntax by typing usage data set. Choose a name for your dataset. Ask your SDE administrator for the name of the SDE instance, the name of the server that SDE is running on and the SDE password.

```
Arcplot: dataset connect Canada capilano esri_cov redriver
inuvik
```

In this example the user, **redriver** has connected to SDE on a server called **capilano** using the password given when the server was started (**inuvik**.) The SDE for Coverage instance name is **esri_cov** and the name of the dataset being connected to is **Canada**. Canada is a user-defined name and is used as a reference to this SDE connection. All the following examples will use these names for command arguments.

List the layers available in the Canada data set.

Step 3: Look at Server Status and Number of Connection

Return to you command window. Use the sdemon command to check the status of the SDE for Coverages server and the number of client that are currently connected.

```
C:>sdemon –o status


SDE Instance esri_cov Status on capilano at Thu Mar 18
10:31:37 1999
-------------------------------------------------------------
-
Server Connection Mode:      Accepting Connections
Active Server Processes:     1
```

The sdemon command with the –o status option tells you that the SDE for Coverages server is active with one client connected. Use the sdemon command with the –o info –I users options to see which users are currently connected.

```
C:\>sdemon –o info –I users


SDE Instance esri_cov Registered Server Tasks on capilano at Thu Mar 18
10:40:27 1999
-------------------------------------------------------------------------
PID   User     Host:OS                         Started
----- -------- ------------------------------- ----------------------
279   redriver capilano:Win32                    Thu Mar 18 10:20:49 1999
```

Step 4: Register SDE layers with Defined Layers.

To access SDE features you must register each layer with Defined Layers' layer command. Check the syntax by typing usage layer. Choose a name for your defined layer, and use the dataset layerlist command to find the name of the SDE layer's spatial_column and feature type. To keep things simple you will give your defined layers the same name as the SDE for Coverages layer.

```
Arcplot: usage layer
Usage: LAYER DEFINE <defined_layer> SDE <SDE_dataset> <SDE_layer>
                    <SDE_spatial_column> <POINT | LINE | POLYGON | NODE |
                    REGION.<subclass> | ROUTE.<subclass> | ANNO{.subclass}>
```

Create a Defined Layer for each SDE for Coverages layer:

```
Arcplot:layer define provinces SDE canada provinces province#
REGION.province
```

```
Arcplot:layer define capital SDE canada capital cities# POINT
```

```
Arcplot:layer define roads SDE canada roads roads# LINE
```

```
Arcplot:layer define lakes SDE canada lakes shape POLYGON
```

```
Arcplot:layer define rivers SDE canada rivers shape LINE
```

List the layers you have just created.

```
AP: layer list
```

Step 5: Draw Layers and Identify Features

Explore the data in the canada dataset. Begin by displaying each layer:

```
Arcplot: mapextent layer provinces
```

Look at the usage for the layerdraw command

```
Arcplot: usage layerdraw
```

Draw each layer

```
Arcplot:symbolset contrast
Arcplot:layerdraw provinces 19
Arcplot:linecolor grey
Arcplot:layerdraw provinces outline
Arcplot:layerdraw lakes 17
Arcplot:layerdraw rivers 30
Arcplot:layerdraw roads 22
Arcplot:layerdraw capital 2
```

Look at the usage for the layeridentify command

```
Arcplot: usage layeridentify
```

Identify features in the capital layer

```
Arcplot: layeridentify capital *
```

Identify features in the provinces layer

```
Arcplot: layeridentify provinces *
```

Step 6: Spatial and Attribute Queries

You can create a subset of data from each layer by applying spatial and attribute constraints.

Select the province of British Columbia from the provinces layer:

```
Arcplot: layerquery provinces name = 'British Columbia'
```

Look at the layer definition to see the attribute constraint you have just applied.

```
Arcplot: layer describe provinces
```

Display the provinces layer:

```
Arcplot: clear
Arcplot: mapextent layer provinces
Arcplot: layerdraw provinces 19
Arcplot: layerdraw provinces outline
```

As you can see, only the features meeting the query are displayed. Use the layersearch command to select the rivers, lakes, and roads within the province of British Columbia:

```
Arcplot: layersearch lakes area.intersect LAYER provinces
Arcplot: layersearch roads contained.by LAYER provinces
Arcplot: layersearch rivers area.intersect LAYER provinces
Arcplot: layerdraw lakes 17
Arcplot: layerdraw rivers 30
Arcplot: lineset plotter
Arcplot: layerdraw roads code
```

Apply a second spatial constraint to the rivers layer to select only the rivers in the southern half of the province.

```
Arcplot: layerfilter rivers area.intersect.no.edge.touch
polygon *
```

Draw a polygon enclosing only those rivers from the southern half of the province.

```
Arcplot: layerdraw rivers 2
```

Describe the rivers layer to see how the search and filter constraints have been applied.

```
Arcplot: layer describe rivers.
```

To remove spatial and attribute constraints from a layer, use the layerquery, layersearch, or layerfilter commands with the NONE argument.

```
Arcplot: layerquery capital none
Arcplot: layersearch roads none
Arcplot: layerfilter rivers none
```

Step 7: Disconnect from SDE for Coverages.

When you have finished working, disconnect from the SDE for Coverages server:

```
Arcplot: dataset disconnect canada
```

SUMMARY

In this tutorial you registered SDE layers with the layerutil program. You also learned how to connect to an SDE server and used Defined Layers to display and query SDE data.

Defined Layers is able to display and query other ArcInfo data such as coverages, ArcStorm libraries and map libraries, as well as ArcView Shapefiles. Defined Layers also has other functionality for working with SDE for DBMS layers that is not covered in this tutorial. Refer to ArcDoc, the on-line help provided with ArcInfo, for more information.