Using SDTS format Digital Elevation Models with ArcView

Digital Elevation Models (DEM) are available for many parts of the country. The 7.5 minute series DEMs in SDTS format can be downloaded from the U.S. Geological Survey (http://mapping.usgs.gov). A conversion program is available to translate the SDTS format into USGS DEM format (ftp://ftp.blm.gov/pub/gis/sdts/dem/sdts2dem.zip). The ArcView Spatial Analyst and/or the ArcView 3D Analyst Extensions can be used for visualizing, analyzing and modeling these data.

Translating SDTS format to USGS DEM format

The following example illustrates the conversion process using the file `d461_tar.gz` (Duluth, MN). When converting your own data, you will need to modify the file names and locations to reflect the actual file and folder names on your computer. (Note: the name of the file used for this example has been changed from its original name of 30.1.2.924461.tar.gz to d461_tar.gz. Files that you download from the USGS will follow the naming convention 30.1.2.nnnnnn.tar.gz.)

1. Download and extract the SDTS files

Use a utility such as WinZip to uncompress and extract the SDTS files to your computer. (Tip: create a temporary folder for the SDTS files.) The file `d461_tar.gz` is an archive of 19 files that have been written to a `tar` file and then compressed using `gzip` compression. Uncompressing the file will create an archive named `d461.tar,` from which the SDTS files will be extracted.

- Create a new folder named **duluth** for the SDTS files.

- Launch WinZip and open the file `d461_tar.gz.` You will be prompted for the full name of the file within the archive; enter **d461.tar**.

- You will be notified that the archive contains one file and asked if WinZip should decompress it to a temporary folder and open it. Select Yes.

- Extract the files and place them in the folder `duluth`.

2. **Run sdts2dem to translate the SDTS files to USGS DEM format**

    Begin a DOS session (select MSDOS Command Prompt from the Start menu). At the prompt, type **sdts2dem**. You will be prompted for the input file, output filename, and characteristics of the CELL file. The prompts are as follows:

    ```
    Enter first 4 characters of the base SDTS file name:

    Enter base output file name (exclude any extension):

    Enter the 2 character in position 7 and 8 of the CELL
    file name (usually L0):
    ```

    For this example, use the following responses:
1032	(base SDTS file name)
duluth	(output file name)
L0	(characters in position in 7 and 8 of file 1032cel0).

    Note: if the SDTS files are not in the same directory as the `sdts2dem` program, you will need to specify the full path name.

    Information about the DEM will display as the conversion occurs; record the quad name and the map projection (including UTM zone). You will need this information later.

    When the `sdts2dem` program is finished, exit the DOS session.

3. **Launch ArcView and load the ArcView Spatial Analyst Extension**

4. **Import the DEM files into ArcView**

    - Create a new View. From the File menu, select Import Data Source… You will be prompted for the file type; select USGS DEM. You will be prompted for the DEM file to be imported. Navigate to the appropriate directory and select the file.

    - You will be prompted for an output file name. Navigate to the appropriate directory and enter a name.

    - You will be asked if the grid should be added to the View; select Yes. A new theme containing the DEM data is added to the View.

5. **If desired, repeat the process with the files d457_tar.gz, d502_tar.gz, and d505_tar.gz.**