

sderaster

.....

This command manages ArcSDE raster layers. For general concepts regarding the storage and manipulation of ArcGIS raster data, refer to *Using ArcGIS Spatial Analyst*. For specific information regarding the storage of raster data in a geodatabase, refer to *ArcSDE Configuration and Tuning Guide for <DBMS>*.

Usage Syntax

New functionality within ArcIMS and modifications that may affect your version 3.0 applications are highlighted here. Items that may impact more than one area of ArcIMS are listed under each of the appropriate subheadings.

```
sderaster -h
```

```
sderaster -o add -l <table,column > [-M minimum_id]
                    [-G {<projection_ID> | file=<proj_file>}]
                    [-k <config_keyword>] [-S <description_str>]
                    [-i <service> | <port#>] [-s <server_name>]
                    [-D <database>] [-u <DB_user_name>]
                    [-p <password>]
```

```
sderaster -o drop {-l < table,column > | -t < table > }
                    [-i < service > | < port# > ] [-s < server_name > ]
                    [-D < database > ] [-u < DB_user_name > ]
                    [-p < password > ]
```

```
sderaster -o truncate -l < table,column > [-i < service > | < port# > ]
                    [-s < server_name > ] [-D < database>] [-u <DB_user_name>]
                    [-p <password>]
```

```
sderaster -o describe [-l <table,column>] [-V] [-i <service> | <port#>]
                    [-s <server_name>] [-D <database>] [-u <DB_user_name>]
                    [-p <password>]
```

```
sderaster -o list -l <table,column> [-v <raster_id>] [-V]
                    [-i <service> | <port#>] [-s <server_name>]
                    [-D <database>] [-u <DB_user_name>]
                    [-p <password>]
```

```
sderaster -o insert -l <table,column>
    -f {<image_file> | <ArcSDE raster>} [-c] [-N] [-R]
    [-C rgb] [-n <image_name>] [-L <pyramid_level>]
    [-I {nearest | bilinear | bicubic}]
    [-t <tile_width,tile_height>]
    [-G {<projection_ID> | file=<proj_file>}]
    [-i <service> | <port#>] [-s <server_name>]
    [-D <database>] [-u <DB_user_name>]
    [-p <password>]
```

```
sderaster -o delete -l <table,column> -v <raster_id>
    [-i <service> | <port#>] [-s <server_name>]
    [-D <database>] [-u <DB_user_name>]
    [-p <password>]
```

```
sderaster -o update -l <table,column> -v <raster_id>
    -f {<image_file> | <ArcSDE raster>} [-c] [-N] [-R]
    [-C rgb] [-n <image_name>] [-L <pyramid_level>]
    [-I {nearest | bilinear | bicubic}]
    [-t <tile_width,tile_height>]
    [-G {<projection_ID> | file=<proj_file>}]
    [-i <service> | <port#>] [-s <server_name>]
    [-D <database>] [-u <DB_user_name>]
    [-p <password>]
```

```
sderaster -o mosaic -l <table,column> -v <raster_id>
    -f {<image_file> | <ArcSDE raster>} [-N] [-R]
    [-C rgb] [-n <image_name>] [-L <pyramid_level>]
    [-I {nearest | bilinear | bicubic}]
    [-i <service> | <port#>] [-s <server_name>]
    [-D <database>] [-u <DB_user_name>]
    [-p <password>]
```

```
sderaster -o pyramid -l <table,column> -v <raster_id>
    [-L <pyramid_level>]
    [-I {nearest | bilinear | bicubic}]
    [-i <service> | <port#>] [-s <server_name>]
    [-D <database>] [-u <DB_user_name>]
    [-p <password>]
```

```
sderaster -o stats -l <table,column> -v <raster_id>
    [-i <service> | <port#>] [-s <server name>]
```

```
[-D <database>] [-u <DB_user_name>]  
[-p <password>]
```

```
sderaster -o colormap -l <table,column> -v <raster_id>  
{-d | -f <image_file>} [-i <service> | <port#>]  
[-s <server_name>] [-D <database>]  
[-u <DB_user_name>] [-p <password>]
```

```
sderaster -o import -l <table,column> [-c] [-g] [-N] [-R] [-C rgb]  
-f {<image_file> | <ArcSDE raster>}  
[-n <image_name>] [-M <minimum_id>  
[-G {<projection_ID> | file=<proj_file>}]  
[-k <config_keyword>] [-S <description_str>]  
[-L <pyramid_level>]  
[-I {nearest | bilinear | bicubic}]  
[-t <tile_width,tile_height>]  
[-i <service> | <port#>] [-s <server_name>]  
[-D <database>] [-u <DB_user_name>]  
[-p <password>]
```

```
sderaster -o export -l <table,column> -v <raster_id>  
-f <image_file> [-i <service> | <port#>]  
[-s <server_name>] [-D <database>]  
[-u <DB_user_name>] [-p <password>]
```

Operations

add	Create a raster layer by adding a raster column to a business table.
drop	Drop a raster column or business table.
truncate	Truncate a raster layer.
describe	Describe one or all raster layers owned by a user.
list	List one or all rasters in a raster layer.
insert	Insert a raster into a raster layer.
delete	Delete a raster from a raster layer.
update	Update a raster.
mosaic	Perform piece-wise update on a raster.
pyramid	Update a raster's image pyramid.

- stats** Calculate a raster's image statistics and histogram.
- colormap** Update a raster's colormap.
- import** Import raster layer.
- export** Export raster from a layer.
-

Options

- c Compress a raster upon entry.
- N Ignore the colormap and enter a grayscale image.
- R Remove areas surrounding the raster that contain no data.
- C rbg Expand the colormap into a true color image.
- D Database or data source name. Not supported by all DBMSs.
- f The name of the image file.
- g Directs the import operation to register the raster layer with the geodatabase.
- G Coordinate system specifier.
<projection_id>: coordinate system ID (see the pedef.h file for the integer codes).
file=<proj_file_name>: file containing coordinate system description string.
- h Prints usage and options.
- i ArcSDE service name or port number.
- l The resampling technique used during the construction of the pyramid.
nearest: The nearest neighbor method selects the closest pixel.
bilinear: The bilinear method interpolates four adjacent pixels.
bicubic: The bicubic method interpolates 16 adjacent pixels.
- For more information on pixel resampling, refer to *Using ArcGIS Spatial Analyst*.
- k Configuration keyword present in DBTUNE table. The storage parameters specific to the raster column will be found under the specified keyword.
- l The raster layer's business table and raster column. If you are not the owner of the table, you must qualify the table name as "owner.table."
- L The pyramid level.
Set to a number greater than 0, ArcSDE creates the levels specified unless the apex is reached first.
Set to -1. ArcSDE calculates the pyramid level.

- Set to 0, the pyramid is deleted.
- M Minimum feature ID. New raster IDs are assigned the larger of the minimum ID or the maximum assigned ID + one.
 - n Image name.
 - p ArcSDE user DBMS password.
 - s ArcSDE server hostname (default: localhost).
 - S The raster description (quoted string).
 - t The raster tile width and height measured in pixels. Each tile is stored as a separate raster block.
 - u ArcSDE user DBMS username.
 - v The raster ID.
 - V Enable verbose mode to describe all properties.
-

Discussion

The sderaster is a command line utility for managing raster layers.

The supported external raster formats are ESRI Band Sequential (BSQ) and TIFF.

However, to use TIFF format you will need to install the open source libtiff library.

For information on obtaining the open source libtiff library for your platform, refer to <http://www.libtiff.org>. For the Solaris platform the libtiff.so file is included under /usr/openwin/lib. For the Solaris platform you just need to include /usr/openwin/lib in your LD_LIBRARY_PATH.

The typical scenario for using the sderaster command is to create a raster layer (a business table and associated raster tables) with the import operation followed by subsequent executions of the mosaic operation to input additional image files.

Finally, the pyramid operation is applied with the level set to -1, instructing sderaster to create a full pyramid.

Be sure to include the -g option during the import operation if you want the raster to appear in table of contents of either ArcCatalog or ArcMap. Specifying -g creates a raster with an image name of ESRI_SDERASTERDATASET, which is detectable by ArcCatalog and ArcMap.

The other operations of the sderaster command are used to make adjustments to the raster layer.

Use the add operation to add a raster column to an empty business table.

In this example the raster column is added to the empty table topo. The dbtune configuration keyword contains the storage configuration for the tables and indexes ArcSDE will create to support the raster column. For more information about dbtune configuration keywords, consult the ArcSDE Configuration and Tuning Guide for your DBMS.

```
$ sderaster -o add -l topo,image -k topo -S "topographic series 11" -u gis1
```

```
Connecting to server ultra, port 7000, as user gis1
```

```
Creating raster layer: topo.image
```

```
Complete...
```

Use the drop operation to drop a raster layer. Dropping a raster layer drops the supporting raster tables that store the raster data and deletes the raster layer's reference from the sde.raster_columns table.

```
$ sderaster -o drop -l topo,image -u gis1
```

```
Connecting to server ultra, port 7000, as user gis1
```

```
Deleting raster layer topo.image...
```

```
Complete...
```

Use the truncate operation to delete the rasters of a raster layer, but leave the raster layer schema intact. This operation is useful if you want to reload the rasters.

```
$ sderaster -o truncate -l topo,image -u gis1
```

```
Connecting to server ultra, port 7000, as user test
```

```
Truncating raster layer topo.image...
```

```
Complete...
```

To obtain the properties of the raster layer, use the describe operation. With the describe operation, if you do not specify a raster layer, the properties of all raster columns are returned.

```
$ sderaster -o describe -u gis1
```

```
Connecting to server ultra, port 7000, as user gis1
```

```
Raster Layer Description ....: <None>
Table Name .....: GIS1.TOPO
Raster Column .....: IMAGE
Raster Layer ID .....: 2
Minimum Raster ID .....: 1
Creation Date .....: Wed Jun 13 12:43:35 2001
User Privileges .....: SELECT, INSERT, DELETE, UPDATE
Raster Layer Configuration ..: DEFAULTS
Coordinate System .....: <None>
```

```
Raster Layer Description ....: <None>
Table Name .....: GIS1.LANDMARKS
Raster Column .....: IMAGE
```

```
Raster Layer ID .....: 3
Minimum Raster ID .....: 1
Creation Date .....: Wed Jun 13 14:01:22 2001
User Privileges .....: SELECT, INSERT, DELETE, UPDATE
Raster Layer Configuration ..: DEFAULTS
Coordinate System .....: <None>
```

2 raster layer(s).

Complete...

```
$ sderaster -o describe -l topo,image -u gis1
Connecting to datasource sde:oracle, as user gis1
```

```
Raster Layer Description ....: <None>
Table Name .....: GIS1.TOPO
Raster Column .....: IMAGE
Raster Layer ID .....: 2
Minimum Raster ID .....: 1
Creation Date .....: Tue Jun 12 16:05:47 2001
User Privileges .....: SELECT, INSERT, DELETE, UPDATE
Raster Layer Configuration ..: DEFAULTS
Coordinate System .....: <None>
```

The list operation returns the rows of a raster column. You can specify that the values of a single row should be returned by including the -v option.

```
$ sderaster -o list -l topo,image -u gis1
Connecting to datasource sde:oracle, as user gis1
```

```
Raster ID .....: 204
Raster Dimension .....: 500, 1108, 1
Raster Tile Dimension .....: 128, 128
Pixel Type .....: uchar
Compression .....: none
Image Pyramid .....: 0, false, none
```

```
Raster ID .....: 205
Raster Dimension .....: 500, 1108, 1
Raster Tile Dimension .....: 128, 128
Pixel Type .....: uchar
Compression .....: none
Image Pyramid .....: 0, false, none
```

2 raster(s).

Complete...

```
$ sderaster -o list -l topo,image -v 205 -u gis1
Connecting to datasource sde:oracle, as user gis1
```

```
Raster ID .....: 205
Raster Dimension .....: 500, 1108, 1
Raster Tile Dimension .....: 128, 128
Pixel Type .....: uchar
Compression .....: none
Image Pyramid .....: 0, false, none
```

1 raster(s).

Complete...

The insert operation allows you to insert an image into a raster layer. Include the `-c` option to compress the data upon entry.

```
$ sderaster -o insert -l topo,image -f topo_0192.tif -c -u gis1
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1
Pixel Type.....: uchar
Raster ID : 104
```

Total Time: 00:00:02

Complete...

Rasters from other raster layers can be used as the source of the insert by specifying the raster in a quoted string after the `-f` option. For instance, rather than specifying the image file `topo_0192.tif` in the above example, a raster from another geodatabase is used.

```
$ sderaster -o insert -l topo,image -f "-l carto,rasters -v 102 -u gis2
-p gis -i esri_sde -s taciturn" -c -u gis1
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1
Pixel Type.....: uchar
Raster ID : 104
```

Total Time: 00:00:02

Complete...

The delete operation lets you remove a raster from a raster layer.

```
$ sderaster -o delete -l topo,image -v 295 -u gis1
Connecting to server ultra, port 7000, as user gis1
```

```
Raster ID : 295
Deleted.
```

Complete...

With the update operation you can replace a raster of a raster layer with another raster. This operation is useful for reentering an edited image file into a raster layer.

```
$ sderaster -o update -l topo,image -v 495 -f topo_982.tif -c -u gis1
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1
Pixel Type.....: uchar
Raster ID : 495
```

Total Time: 00:00:03

Complete...

Rasters from other raster layers can be used as the source of the update by specifying the raster in a quoted string after the -f option. For instance, rather than specifying the image file topo_982.tif in the above example, a raster from another geodatabase is used.

```
$ sderaster -o update -l topo,image -v 495 -f "-l carto,raster -v 102 -  
i lands -s taciturn -u gis2 -p gis" -c -u gis1  
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1  
Pixel Type.....: uchar  
Raster ID : 495
```

Total Time: 00:00:03

Complete...

The mosaic operation allows you to integrate data of an image with the data of an existing raster. The mosaic operation requires that the raster column have a coordinate system and that the images have the same cell size and alignment.

```
$ sderaster -o mosaic -l topo,image -v 382 -f topo_137.tif -u gis1  
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1  
Pixel Type.....: uchar  
Image Extent.....:  
minx : 234917.94185799997649  
miny : 4198842.21638599969447  
maxx : 239987.78185799997300  
maxy : 4210089.33638599980623  
Raster ID : 382
```

Total Time: 00:00:04

Complete...

Rasters from other raster layers can be used as the source of the mosaic by specifying the raster in a quoted string after the -f option. For instance, rather than specifying the image file topo_137.tif in the above example, a raster from another geodatabase is used.

```
$ sderaster -o mosaic -l topo,image -v 382 -f "-l carto,raster -v 102 -  
i lands -s taciturn -u gis2 -p gis" -u gis1  
Connecting to server ultra, port 7000, as user gis1
```

```
Image Dimension.....: 500, 1108, 1  
Pixel Type.....: uchar  
Image Extent.....:  
minx : 234917.94185799997649  
miny : 4198842.21638599969447  
maxx : 239987.78185799997300  
maxy : 4210089.33638599980623
```

Raster ID : 382

Total Time: 00:00:04

Complete...

Use the pyramid operation to create or re-create the raster pyramid. If you do not specify a pyramid level, the 0 level is assumed and the pyramid is deleted.

Specifying a pyramid level of -1 lets the sderaster create all of the levels required to reach the apex.

```
$ sderaster -o pyramid -l topo,image -L -1 -v 701 -u gis1
```

Connecting to server ultra, port 7000, as user gis1

Updating pyramid...

Raster ID : 701

Total Time: 00:00:00

Complete...

The raster statistics and histogram are created with the stats operation.

```
$ sderaster -o stats -l topo,image -v 847 -f topo_291.tif -u gis1
```

Connecting to server ultra, port 7000, as user gis1

Calculating statistics...

min : 27.0000000000

max : 248.0000000000

mean : 99.4931516245

std dev : 55.8325332694

Raster ID : 847

Total Time: 00:00:01

Complete...

Update the colormap of a raster with the colormap operation. Specifying the -d option deletes the raster's colormap, while the -f option updates the color map with the contents of an image file or another raster.

```
$ sderaster -o colormap -l topo,image -v 763 -f topo_049.tif -u gis1
```

A raster can be exported to a file with the export operation.

```
$ sderaster -o export -l topo,image -v 821 -f topo_938.tif -u gis1
```

Connecting to server ultra, port 7000, as user gis1

Exporting...

Raster ID : 821

Total Time: 00:00:00

Complete...

Use the import operation to convert an image file into a raster layer. Be sure to include the -c option to compress the data and the -g option if you want to access the data from ArcCatalog or ArcMap.

```
$ sderaster -o import -l topo,image -c -g -v 232 -f topo_562.tif -u gis1
```

```
Connecting to server ultra, port 7000, as user gis1
```

```
Creating user table: topo  
Creating raster layer: topo.image
```

```
Image Dimension.....: 500, 1108, 1  
Pixel Type.....: uchar  
Raster ID : 1
```

```
Total Time: 00:00:02
```

```
Complete...
```

Rasters from other raster layers can be used as the source of the import by specifying the raster in a quoted string after the -f option. For instance, rather than specifying the image file topo_137.tif in the above example, a raster from another geodatabase is used.

```
$ sderaster -o import -l topo,image -c -g -v 562 -f "-l carto,raster -v 102 -i lands -s taciturn -u gis2 -p gis" -u gis1
```

```
Connecting to server ultra, port 7000, as user gis1
```

```
Creating user table: topo  
Creating raster layer: topo.image
```

```
Image Dimension.....: 500, 1108, 1  
Pixel Type.....: uchar  
Raster ID : 1
```

```
Total Time: 00:00:02
```

```
Complete...
```