*ArcGIS Extensions*

# Optimize ArcGIS 3D Analyst Performance

In addition to meeting the minimum requirements for running ArcGIS, a PC running ArcGIS 3D Analyst will perform better with 256 MB of RAM and an OpenGL video card that has 32 MB (or more) of texture memory. Texture memory controls the total amount of imagery that can be used at one time. To avoid display problems, make sure that the most current video drivers for the video card are installed. The following suggestions will speed loading, drawing, and saving scenes.

### Use the same projection for all data
Use ArcCatalog to make sure all data in a scene is in the same projection prior to displaying it. Using on-the-fly projection increases the initial load time for a scene. Use the Data Management Tools in ArcToolbox to define, project, or transform the coordinate system for coverages, grids, shapefiles, or geodatabase layers.

### Draw data based on its size
Improve performance when displaying a scene containing complex data by changing the rendering properties for the layer. Right-click on the layer and click on the Rendering tab. Under Visibility, change the default setting of Render At All Times to Render Layer Only While Navigation Has Stopped and adjust the rate next to Draw Simpler Level of Detail if Navigation Refresh Rate Exceeds.

### Set fixed extents for layers
When appropriate, limit the extent of a scene. The extent is a bounding rectangle that represents the outer boundary of a layer or scene. By default, the extent of a scene is the combined extent of all the layers in that scene. To limit the amount of data ArcScene has to load, the extent can be changed to the extent of one of the layers or can be specified in $x$ and $y$ coordinates. Data that falls outside of the extent specified is not displayed. The following steps describe how to change an extent.
1. In the ArcScene table of contents, right-click on Scene Layers and choose Scene Properties.
2. In the Scene Properties dialog box, click on the Extent tab.
3. To set the extent using a layer, click the radio button next to Layers and click on the adjacent drop-down box. All the layers in the scene are listed. Select the layer that will be used to define the extent of the scene.
*or*
To specify the extent with coordinates, click on the radio button next to Custom and define the extent of the scene by typing in the minimum and maximum $x$ and $y$ values.
4. Click OK.

### Consider surface resolutions in ArcScene
When draping layers onto a surface, reduce drawing time by down sampling the underlying surface resolution. If the rendering resolution of a layer is not vital to the surface, lower the default values for the surface resolution. Right-click on the layer and click on the Base Heights tab in the Properties dialog box. Click on the Raster Resolution button and set the $x$ and $y$ cell sizes to a lower value to increase navigation speed.

### Don't automatically make new layers visible
By default, ArcMap makes all new layers visible. Speed up map composition by disabling this feature. In the ArcMap menu, choose Tools > Options. In the Options dialog box, click on the Applications tab. Uncheck the box Make Newly Added Layers Visible.

### Don't save thumbnails
Thumbnails illustrate the contents of items containing geographic data. Thumbnails record exactly what is shown in ArcCatalog in the Geography view and are stored within the metadata for a data layer. Creating thumbnails slows down the save process. Turn off automatic thumbnail creation by choosing File > Document Properties. In the Properties dialog box, uncheck the box Save Thumbnail Image with Scene.

### Modify OpenGL graphics card settings
When working with complex datasets, turn off anti-aliasing and vertical synchronization. Changing these features will sacrifice visual quality for improved performance. **AU**

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*ArcGIS*

# Explore Data in ArcMap with Map Tips

A feature in ArcMap, Map Tips, provides a quick way to browse map features. With Map Tips enabled, passing the cursor over a feature will reveal whatever information is stored in the field or specified as the primary display field for that feature. Map Tips eliminates the need for numerous individual feature queries when all that is needed is information on one attribute of a feature such as a name. The following steps enable Map Tips.
1. In the table of contents, right-click the layer for which you want to display Map Tips and choose Properties from the context menu.
2. In the Layer Properties dialog box, click on the Display tab and check the box next to Show Map Tips.
3. Still in the Layer Properties dialog box, click on the Fields tab.
4. Click on the drop-down box next to primary display field. Select the attribute field to be displayed as the Map Tip.
5. Click OK.

To use Map Tips, a shapefile or other data source must be indexed. If the Show Map Tips check box is grayed out, use ArcCatalog to create a spatial index for the data source.
1. Remove data layer to be indexed from ArcMap.
2. Open ArcCatalog and navigate to the location of the data source to be indexed.
3. Right-click on the data source and choose Properties.
4. In the Properties dialog box, click on the Index tab. Click on the Add button near the bottom of the dialog box.
5. Click OK to complete the process.
6. Add the layer again to ArcMap and enable Map Tips as described above.

Use ArcCatalog to update and delete spatial indexes. In ArcMap, the spatial index is updated automatically when features are added or removed. **AU**