

Create Tileset

Automatically Create and Link to a Tileset

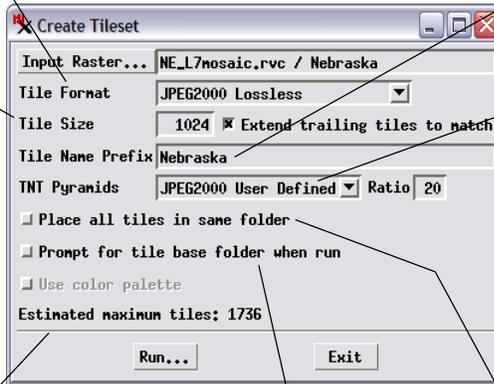
A tileset is a set of uniformly-sized image files called tiles that are stored in a predefined structure designed for efficient viewing of very large images. Google Maps, Google Earth, Open Layers, and the TNT products use tilesets for this purpose. In a TNT tileset, the tile files can be GeoJP2, GeoTIFF, or PNG files, and a single TNT tileset raster object links simultaneously to the entire set of external tile files. A TNT tileset is the most efficient means for storing and displaying a large raster dataset up to terabytes in size, especially when you are publishing them on the web using TNTserver. For zoomed views the tiled structure allows fast retrieval of only those tile files needed for the current view, while the tileset raster object's reduced-resolution pyramid tiers enable fast display of the entire image. In addition, the small individual tile files are directly useable in other software programs.

The Create Tileset process in TNTmips creates a tileset from a single large raster object. (To create a tileset from multiple adjoining or overlapping images, use the Mosaic process, as described in the Technical Guide entitled *Mosaic Directly to TNT Tileset*.) You can create a tileset from either a color-composite or grayscale raster object. The source raster object can be in the internal TNT Project File format or any linked raster file format, such as JP2, GeoTIFF, JPEG, MrSID, and others. You can even use an existing tileset raster object as a source (for example, to create a new tileset with different tile size). For a grayscale raster, the last-used contrast table is applied automatically to produce the tileset, and you have the option to apply a color palette if present.

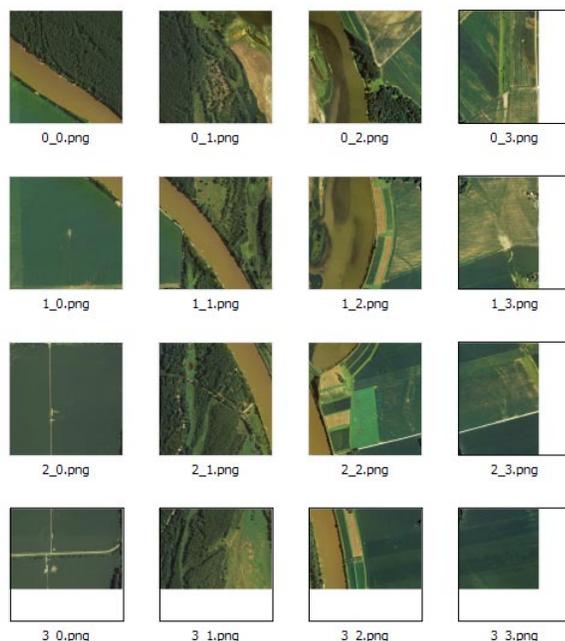
You can set the Tile Format to GeoTIFF, PNG, or JPEG2000 (GeoJP2). GeoTIFF and JPEG2000 formats each provide several compression options. Individual GeoTIFF and GeoJP2 tile files created for the tileset contain internal georeference information and so are directly useable in other geospatial software. There is no accepted georeference format for PNG files, so PNG tiles are named to indicate their relative positions in the tileset, and the linked TNT tileset raster object maintains the correct georeferencing.

For the best display efficiency, set a tile size that is a power of 2, such as 512, 1024, 2048, or 4096. When you create the tileset using any of the JPEG2000 format options, wavelet compression automatically stores multiple image resolutions in each tile file. Larger tile sizes (2048 or 4096) allow more such resolution levels to be stored, providing more efficient display. If you create the tileset using the GeoTIFF or PNG formats, which are less efficient when only part of a tile is needed, smaller tile sizes should provide better performance.

The maximum number of tiles to be created is estimated from the specified tile size and the maximum line/column dimensions of the source raster object. Any output tile wholly contained within a null area in the source raster is omitted from the tileset, so the final tileset may contain fewer than the estimated number of tiles if the source image contains large null areas.



The tileset is automatically placed in a new directory at the same level as the Project File where you create the TNT tileset raster object, or you can choose to be prompted to select an existing empty folder to host the tileset files.



Full-resolution tiles for a very small sample tileset in PNG format. Each square tile is 1024 by 1024 cells in size. Although a tileset may depict a very large image, these individual small files can be used readily by other software. The dimensions of the parent image were not evenly divisible by the tile size, so this tileset was created using the option to extend incomplete trailing tiles (those along the right and bottom edges of the set) to the full tile size by adding blank (0-value) cells. These cells are transparent (white) in the PNG thumbnails shown here, and are set as null in the tileset raster object.

The Tile Name Prefix is used as the beginning of each tile file name. It defaults to the name of the input raster object.

You can set compression options for the TNT pyramid tiers independently of the tile format and compression, so this choice does not affect use of the tiles in other software. Because the pyramids are used for zoomed-out viewing, you can usually use lossy JPEG2000 compression with a high compression ratio without adversely affecting display of the tileset.

All full-resolution tiles are automatically placed in the same directory unless the estimated number of tiles is large, in which case a subfolder is created for each row of tiles. This hierarchical storage structure addresses performance issues with some operating systems when there are a large number of files in a single directory. You can override creation of the nested folder structure by turning on the *Place all tiles in same folder* toggle.