

Various Types Defined

Web tilesets are structures specifically designed to allow geospatial data layers of any size and detail to be used efficiently over the internet or your local network. The tileset representation of your geodata layer can be stored, viewed, and used without the need for any special added software on your server. Tilesets can also be used from the cloud.

Web tilesets can provide access to imagery, scanned maps, vector map data, and elevation data (DEMs). TNTmips Pro can convert your geodata layers of any size and detail into a tileset in which the data is subdivided into many small, uniformly-sized image, terrain, KML, or SVG tiles created over a range of discrete map scales (zoom levels). The large collection of tiles required for a geodata layer is stored in a hierarchical directory structure. These tileset structures conform to standards that permit them to be used in familiar browser-based geoviewers such as Google Maps, Bing Maps, and Open Layers. You can view web tilesets in stand-alone 3D geoviewers such as Google Earth and NASA World Wind. They can also be used in geomashups and HTML 5 applications in current versions of Firefox, Safari, Chrome, Internet Explorer, and Opera. Google Earth and Google Maps can even be used to view tilesets in anaglyph stereo or with stereo monitors or TVs. The TNT products can also use image and terrain tilesets from the Internet or local network for general 2D and 3D stereo viewing and as reference images for interpretation, editing, georeferencing, and other visual tasks.

Zoom Level	Number of Folders	Number of Tiles
0*	1	1
1	2	4
2	3	12
3	6	44
4	11	153
5	21	495
6	42	1,724
7	83	6,319
8	166	23,878
9	331	92,457
10	660	364,177
11	1,319	1,445,437

* level covering the entire globe
 This diagram illustrates the general structure of web tilesets. The geodata layer is partitioned into tiles of uniform size at different map scales (zoom levels). Each zoom level is a directory containing one or more subdirectories that contain the tiles. The number of tiles and subdirectories increases progressively at higher zoom levels.

The types of tilesets that TNTmips Pro can create from your geodata and assemble into geomashups are defined below. More detailed discussions can be found in numerous Technical Guides at <http://www.microimages.com/documentation/html/Categories/Tilesets.htm> and examples viewed at <http://www.microimages.com/gallery/local/maps.htm>.

Standard Web Tilesets (create in *Export Raster Tilesets, Auto Mosaic, or Render to Tileset*)

Standard web tilesets are raster tilesets that contain satellite or aerial imagery, or map data that has been rendered to raster form. TNTmips can create specific types of standard web tilesets that conform to the structure and specifications required for viewing in Google Maps and Bing Maps, Google Earth, or NASA Worldwind. You can also display standard web tilesets in TNTmips in 2D and in stereo, and use them as reference layers for editing, georeferencing, and other visual tasks. MicroImages hosts a number of standard web tilesets created from satellite or aerial imagery with global, national, statewide, or local coverage that can be used over the web in TNTmips or in your geobrowser.

Geometric Web Tilesets (create in *Export Geometric Tileset*)

Geometric web tilesets contain tiled map data in vector graphic form rendered from styled TNT vector objects (including objects converted to vector objects from CAD or shape objects). TNTmips can create geometric web tilesets that contain either KML or SVG tiles. Both forms can be used to present map data with styled polygon, line, and point features with attributes for viewing on the web in Google Maps with other custom overlays and geobrowser base maps. Attributes associated with each map element are viewable via the Google info window.

Web Terrain Tileset (create in *Export Web Terrain Tileset*) **New Feature in 2013 DV**

Web terrain tilesets contain tiled elevation data. They provide internet or local access to actual elevation values, and can be used in TNTmips as terrain surfaces for converting any 2D view to stereo. Web terrain tilesets can also form the basis of web applications that process the elevation data in the web browser and create dynamic, adjustable shaded relief presentations, stereo rendering, and other elevation-based renderings. MicroImages has created and publishes a number of sample web terrain tilesets with global, national, and statewide coverage that can be used over the web for these purposes.

Google Earth 3D Tileset (create in *Export Google Earth 3D Tileset*)

A Google Earth 3D tileset combines elevation data and one or more custom images (orthoimage, shaded-relief image of the DEM, ...) in a structure that allows you to view your custom terrain in 3D from any viewpoint in Google Earth. This type of tileset is a tiled and pyramided set of 3D models created over a selected range of Google Earth zoom levels. Because these models contain their own terrain data, you can construct Google Earth 3D tilesets using higher-resolution DEMs (e.g. from LIDAR) and view them independent of Google Earth's more generalized terrain surface.

Geomashups (create in *Assemble Geomashup*)

A *geomashup* is a web page that presents multiple predefined layers of geospatial data in an interactive map display using one of the browser-based geoviewers (Google Maps, Bing Maps, Open Layers, and the Google Earth browser plug-in). The custom data layers in the geomashup are typically overlaid on a global base map (map, terrain, or satellite/aerial imagery) native to the geobrowser. The geobrowser provides familiar zooming and panning controls, while the geomashup provides layer controls and other custom tools and controls.