

Link to a Structure

Anyone’s map, image, plan, or other spatial data published on the Internet as a Google Maps, Google Earth, Bing Maps, or World Wind standard web tileset can be used in the TNT Professional Products. In order to view such a tileset in a view in TNT, its content and structure must be defined by a small TileSet Definition (TSD) link file. This is an XML file that identifies the tileset structure type, location, number of levels, etc. The tileset referenced by this TSD file can be local or on the Internet, and the TSD file can be located anywhere it can be accessed by your TNT product, such as on your local hard drive or on the remote web server that is hosting the internet tilesets it references (see the Technical Guide entitled *Tilesets: Using a TSD Link File*). Once your custom TSD file has been created and tested on a local drive, it can be moved to any accessible location by adjusting the tileset links it contains.

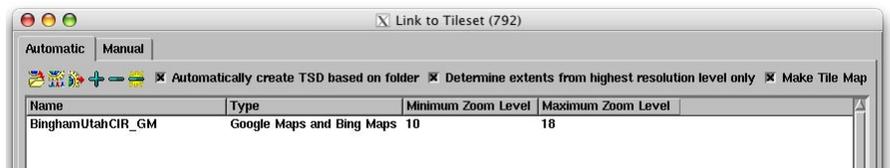
The Link to Tileset process in TNTmips can also create a TSD file for any standard web tileset conforming to one of the structures noted above and whose directory structure can be read (i.e., it resides on a local or network drive), even if some other software built the tileset. Every tileset created by TNTmips is automatically provided with a TSD file that is updated by any TNT process that alters the tileset’s content.

For a single tileset you can use the Automatic tabbed panel on the Link to Tileset window to select the folder containing the tileset (which may be organized in subfolders). The process immediately analyzes the directory structure and tile file names to determine and list the structure of the tileset and the range of zoom levels. Pressing the Run icon button further parses the tileset structure to determine its spatial extents and create the TSD file. For Google and Bing Maps tilesets the process also creates standard HTML / Javascript files that enable you to immediately view the tileset in Google Maps, Bing Maps, and Open Layers. A Manual tabbed panel is provided to enable you to link to tilesets with a more complex directory structure, as described

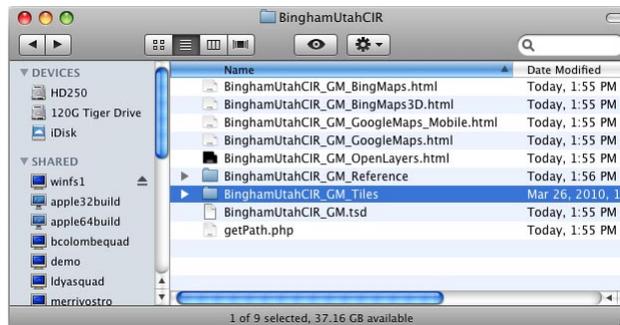


A sample hierarchical Google Maps tileset has zoom levels 10 through 18, as shown by the subdirectory for each numbered zoom level.

Below, the Tiles directory illustrated above is selected in the Automatic panel of the Link to Tileset process. Link to Tileset automatically determines the structure of the tileset (hierarchical for Google Maps and Bing Maps in this example) and lists the minimum and maximum zoom levels in the window.



Directory listing after Link to Tileset process has been run, showing that a TSD link file has been created for the tileset, enabling it to be used in the TNT products. The process has also created sample HTML/ JavaScript files that enable the tileset to be viewed immediately in your browser in Google Maps, Microsoft Bing Maps, and



OpenLayers. A “getPath.php” file also enables the hierarchical tileset to be viewed in Bing Maps 3D. The subdirectory whose name ends in “_Reference” contains the tile map files for the tileset.

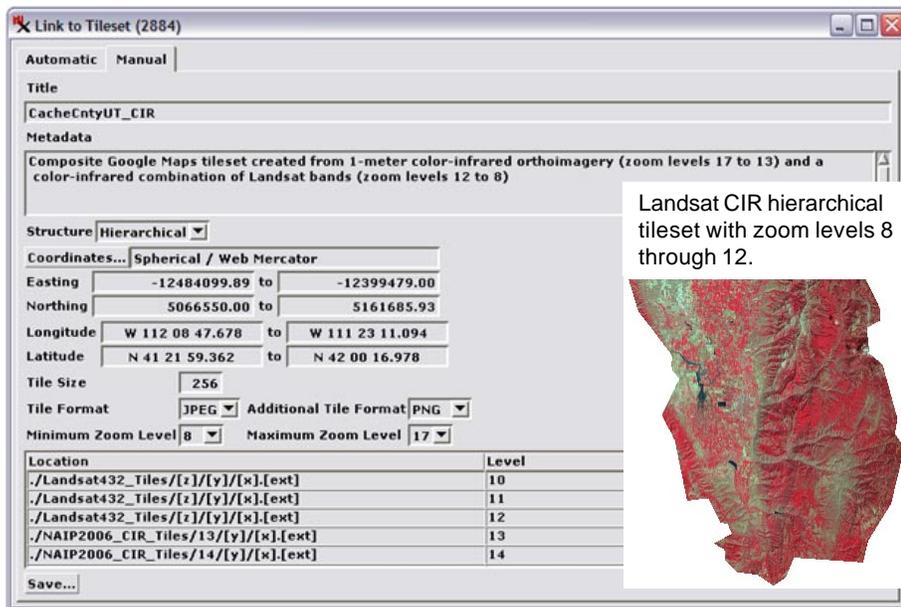
on the reverse. By default the process also creates a *tile map* that records the spatial distribution of tiles and their tile formats for each zoom level. You can use the tile map to identify missing tiles that might have been lost while moving the tileset to a different location, or tile format problems that could result in increased download times for tileset tiles over the internet (see the TechGuide entitled *Tilesets: Using Tilemaps*).

This Link to Tileset process can be useful in several situations. For example, some other software product has created a standard tileset on a network location that you have access to read and use. The Link to Tileset process

(over)

can scan this structure and write the TSD file needed to use the tileset as a layer in a view in TNT. You can also use Link to Tileset to update the TSD and ancillary files for an existing linked tileset to incorporate new features, web tools, and other improvements provided in subsequent updates to TNTmips (a procedure you could also perform using the Tileset Manager). You can also use Link to Tileset to recreate the TSD file if the structure of a linked tileset has been altered outside of TNTmips, such as deleting or adding a zoom level or other operations. However, when you are working with a third-party tileset or one you have manually altered, after using Link to Tileset you should also use the Validate Tileset process to confirm that the tileset fully conforms to its standard tileset structure and contains the optimal set of tile file formats (see the TechGuide entitled *Tilesets: Validating a Structure*).

The Manual tabbed panel in the Link to Tileset process can be used to link to local or network tilesets spread across multiple tile directories and locations, such as tilesets covering the same area but with different zoom level ranges



created from different source images and residing on different network drives. You can specify the tileset structure, coordinate reference system, extents, tile size and format(s), and minimum and maximum zoom levels. In the illustrations below, two hierarchical tilesets for a single county are being linked to be used as a single local tileset by specifying the relative directory paths (Location field in the table at the bottom of the panel) to the tiles for each individual zoom level.

TSD files can also be created manually in a text or XML editor for local or internet tilesets created by any other software product as long as these tilesets conform to the standard tileset structures noted above. To create a TSD file to access such a tileset, start with an existing TSD file and edit it to provide the appropriate information, following the guidelines outlined in the TechGuide entitled *Tilesets: Components of the Tileset Definition File*. The primary information you need is the directory path (local tileset) or URL (internet tileset) required to request each individual tile from the local or internet source. The form of these requests is more or less standard for each of the tileset structures supported by TNTmips*.

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Detail of 1-meter resolution color-infrared orthoimage hierarchical tileset with zoom levels 13 through 17 covering the same county.



The Manual tabbed panel on the Link to Tileset window is being used in these illustrations to link simultaneously to two hierarchical tilesets (illustrated and described above right) created with different but contiguous zoom level ranges from source images with different spatial resolution covering a single county. You might use this procedure if the component tilesets are stored on separate local or networked drives and you wished them to remain in those locations. The Location field in the table at the bottom of the window is being used to specify the relative directory paths to the tiles at each individual zoom level. A relative path (with tile directory name preceded by ".") can be used if you save the TSD file in the directory containing the Tiles directory or directories. (You could also use the Merge Tilesets process to copy and integrate component tilesets into a new tileset in a single physical directory structure.)

* The structure and access to each standard tileset structure supported by the TNT Professional Products is documented in the following Technical Guides:

- Tilesets: Bing Maps Structure*
- Tilesets: Google Maps Structure*
- Tilesets: Google Earth Structure*
- Tilesets: World Wind Structure*