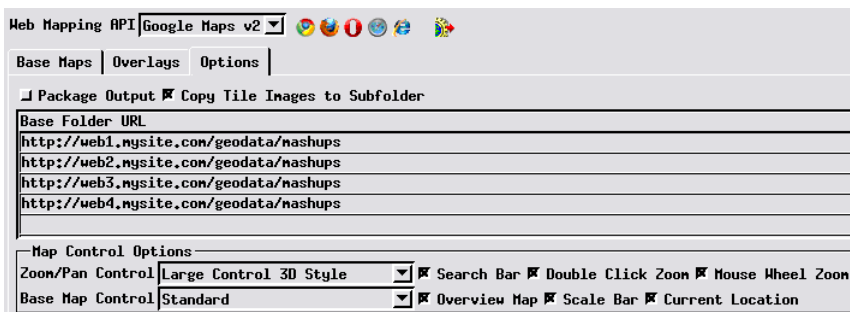


Geomashup Data Management Options

You can use the Geomashup process in TNTmips to combine your own tilesets and KML files with geodata layers from remote sources for viewing in a web geobrowser (Google Maps, Bing Maps, or Google Earth). The Options tabbed panel in the Assemble Geomashups window allows you to choose among several data management options that are important for geomashups that are to be posted on the Internet.

Base Folder URL in Geomashup Files

An HTML/JavaScript file created by the Assemble Geomashup process specifies the location of the tiles folder for each tileset you have selected as a custom base map or overlay. The JavaScript code in the file uses this base folder URL setting to construct a template enabling the web mapping API you have selected (e.g., Google Maps) to access and display each tile in your custom tileset when needed. The type of base folder URL link that is embedded in the HTML/JavaScript file created by the TNT Geomashup process affects the scope of use and portability this file. The three possible types of base folder URL link are web address (URL), relative directory path, and absolute directory path. These link types and their characteristics are shown in the table below.



Upper part of the Options tabbed panel in the Assemble Geomashup window for a Google Maps geomashup. When you are creating a geomashup using local tilesets that you plan to post on the Internet, you can choose to copy the tile file folder and its contents to the directory where you save the geomashup file, enabling you to post a complete, working geomashup to any web server. You can also enter one or more web addresses (URLs) for the base folder where you plan to place the geomashup folder.

Other aspects of the Assemble Geomashups process are covered in the Technical Guides on *Geomedia Publishing* entitled *Introduction to Geomashups*, *Managing Custom Base Maps for Geomashups*, *Managing Custom Overlays for Geomashups*, and *Geomashup Control Options*.

Base URL Type	BaseURL Example	Conditions and Characteristics
web address (URL)	http://web1.mysite.com/mashups/Landsat432/Landsat432_Tiles	Tileset tiles folder is on the Internet. HTML/JavaScript geomashup file need not be stored with the tileset, and can be local or on the Internet. This tileset can be viewed in any web geobrowser including 3D versions (Google Earth browser plugin and Bing Maps 3D).
relative path	Landsat432_Tiles	Tileset tiles folder and HTML/JavaScript geomashup file are in the same folder. Geomashup folder can be used locally or posted on the Internet for use in 2D geobrowsers (Google Maps and Bing Maps 2D).
absolute path	file:///G:/CacheCnty/Landsat432_Tiles	Local tileset tiles folder and the HTML/JavaScript geomashup file are in separate folders. The geomashup can only be used locally and the HTML/JavaScript file is only portable within the local computer or network.

Internet Tilesets

When you select only tilesets that are already on the Internet as custom base maps or overlays for a geomashup, the resulting HTML/JavaScript geomashup file includes the web address of the tiles folder for each tileset. This geomashup file is completely portable; it can be used on any local computer that has an Internet connection, or it can be posted on the Internet for proprietary or public use.

Local Tilesets to be Posted on the Internet

You can create geomashups that use local tilesets as custom base maps and overlays and later post the tilesets and HTML/JavaScript geomashup file on the Internet for public use. To do so successfully, there are several important data management options you should choose in the Assemble Geomashup process.

Turn on the *Copy Tile Images to Subfolder* toggle at the top of the Options panel to have the process automatically copy each of the local tilesets to a subfolder of the folder where you save the HTML/

JavaScript file geomashup. The resulting geomashup file is created with relative path links to these relocated tileset folders. The geomashup folder and all its contents can then be moved to a web location, and these relative links will continue to work when you view the geomashup in a 2D web geobrowser (Google Maps or Bing Maps 2D).

Turning on the Package Output toggle not only copies the tilesets to the geomashup folder, it packages them for easier transfer to the web destination. Each tile subdirectory and its included tile files are stored in an individual Zip file. For a large tileset, this option greatly reduces the number of separate files that the operating system has to handle when the tileset is copied to an Internet location. (Copying an unpackaged tileset containing tens of millions of tile files can put a strain on current computer operating systems and lead to very long transfer times). These Zip files need to be unzipped at the web destination before the geomashup can be viewed in a geobrowser. The Tileset Manager (Tileset / Manager) in (over)

TNTmips provides automated unzipping of all the tile subdirectories in a packaged tileset.

Although you can post to the Internet a geomashup with relative paths along with its custom tilesets for effective use in 2D geobrowsers, these custom tilesets cannot be viewed in 3D geobrowsers (Bing Maps 3D and the Google Earth browser plug-in), which require web addresses for all linked components. If at the time you make the geomashup you know the web address (URL) of the directory where you will be copying the geomashup and the referenced local tileset(s), you can enter this URL in one of the Base Folder URL fields on the Options panel of the Assemble Geomashup window. The geomashup process concatenates this URL with the relative path to each tileset to create a full web URL for each tileset in the resulting HTML/JavaScript geomashup file. If the web site where the geomashup will be posted has more than one web server, you can enter multiple base URLs (as illustrated at the top of the previous page) to spread the load of serving these tilesets across several servers.

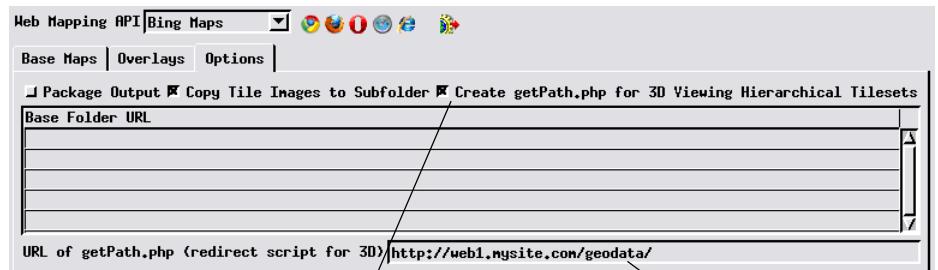
Tilesets That Remain Local

If you are not planning to relocate a local tileset and its geomashup file to the Internet, you can choose not to copy or package the tileset when you create the geomashup. The resulting HTML/JavaScript geomashup file can be saved in a local folder or drive that is separate from the source tileset(s), and it includes a full directory path to the existing Tiles folder for each included tileset. The geomashup file remains useable if relocated anywhere within the file system where it was created, as long as the tileset remains in its original location. Moving the tileset, either locally or to the Internet, however, invalidates the base folder URL relative links in the geomashup file. The HTML/JavaScript geomashup file will need to be remade with proper links if the tileset is relocated.

Options Specific to Bing Maps

Bing Maps can display, in its 2D mode, custom tilesets with either the native, flat Bing Maps structure with quadkey filenames, or hierarchical tilesets (in the Google Maps structure) with tile addresses indicated by zoom level, tile row, and tile column (see the TechGuides on Tilesets entitled *Bing Maps Structures* and *Google Maps Structure*). The Assemble Geomashup process (and the TNT processes that create Bing Maps tilesets) create HTML/JavaScript files with code to produce the tile address that is appropriate for the tileset structure. In order for Bing Maps to display a custom tileset in 3D, however, the tile addresses must be specified to the Bing Maps API using its native quadkey filenames.

MicroImages has developed a small PHP script that translates, on the fly, individual tile addresses from the hierarchical Google Maps/Bing Maps zoom-row-column format to the corresponding Bing Maps 3D quadkey identifiers. If you are creating a Bing Maps geomashup with custom hierarchical tilesets for the Internet, you can turn on the *Create getPath.php* toggle button on the Options tabbed panel to create this PHP file (getPath.php) to enable the hierarchical tileset to be viewed in Bing Maps 3D as well as 2D. This PHP file is created in the same folder as, and is referenced by,



To enable viewing of a hierarchical tileset in Bing Maps 3D, you can:

...create a tile address translation PHP script for each tileset.

...or even provide the web address of a single translation script on your website.

the geomashup HTML/JavaScript file. Path translation by this PHP script works automatically on web servers as long as they have PHP script execution enabled.

If you will have a number of Bing Maps geomashups of hierarchical tilesets on your web site, you can post a single copy of the *getPath.php* file in an accessible location in your web domain and have each Bing Maps 2D/3D geomashup reference that file. The Options panel for Bing Maps geomashups provides a field below the Base Folder URL list where you can specify the web address (URL) of the directory where the *getPath.php* file is or will be posted on your website.

KML Parsing/Rendering Options for Google Maps

When your Google Maps geomashup includes KML overlays, you can choose to have the KML files parsed either directly by the Google Maps API, or using an open-source GeoXML parser hosted by MicroImages. This GeoXML parser provides several capabilities not found in the Google Maps API:

- the KML file and the files it references can be local and do not have to have web URLs;
- larger KML files can be parsed and displayed;
- KML elements are automatically highlighted on mouse-over.



API Keys

An HTML/JavaScript geomashup file for Google Maps should include a Google Maps API Key, obtained from Google, to allow use of your data in Google Maps. Likewise, a Bing Maps geomashup should include a Bing Maps Application ID. The Options tabbed panel in the Assemble Geomashup window includes a field for entering the API key or Application ID value for the selected web mapping API, as shown for Google Maps in the illustration above.

Once you have applied a Google or Bing Maps key while creating a tileset in any TNTmips process, that key value is stored with your TNTmips process settings and is automatically read into the appropriate key field by the Assemble Geomashup process and used when your geomashup file is created. If you have not yet obtained the needed value, you can press the pushbutton next to the Google Maps Key or Bing Maps Application ID field on the Options panel. This action opens your default web browser at the Google or Microsoft web page where you can apply for and obtain an API Key or Application ID.