MicroImages MEMO

Information Update for the **TNT products**

58th Release
March 2007

Introduction to Version 2007:73 of TNTmips, TNTedit, and TNTview

March 21, 2007 is the date of the official, online release of version 2007:73 of the TNT analysis products (TNTmips, TNTedit, or TNTview).

Try version 2007:73 FREE for 30 days!

Highlights of Features in TNTmips 2007:73.

If you have a USB software authorization key operating a fixed license at any earlier version of your TNT analysis product(s), you can download and experiment with version 2007:73 of that product FREE-OF-CHARGE for 30 days. For example, you can use a USB key for this trial that is authorized only for version 2006:72, 2005:71, 2003:69, 2003:68, or earlier. The 30-day trial period will automatically start when you install your TNT product(s) with your USB key attached. Only one 30-day trial period is permitted for each TNT product key.

Enclosed is the MEMO entitled *Provisional Summary of New Features for TNT 2007:73* outlining the new features already in, or scheduled for, version 2007:73 of TNTmips and in TNTedit and TNTview where applicable. Make careful note that a few new features are listed as *proposed* (i.e., in italics). These features are provisional and will be added to this release by way of the weekly patches. It is also possible that a very few of these provisional features may not be included in version 2007:73.

The following are some of the highlights of this new version.

Integration of the use of location-based digital photos. Position your photos using GPS logs, manual plotting, or GPS enabled cameras. Directly use photos from your albums or incorporate them into database records. Pinmap photos and photo locations. Use photos in DataTips.

Use image and map layers published by any Web Map Service as if they are local TNT geodata objects. Find and select these WMS objects on the Internet or your intranet. View them in combination with any TNT objects or linked geodata files. This new WMS layer can be used as if it is a local geodata object. For example:

- view in a Coordinate Reference System dynamically warped to match other layers,
- use a WMS image as a reference layer in TNTedit,
- sketch on it to create a CAD object in TNTatlas,
- use as a transparent overlay, and so on.

KML files can now be exported from geometric objects or rendered from the objects you are currently viewing. Geometric objects are rendered/exported into KML as graphical

features. KML data files can be imported, and, thus exported to any supported format, such as shapefiles. Use Google Earth drawing tools to create features, save as KML file, import to CAD or vector object, modify in TNTedit, and then export to any supported geometric format.

JPEG2000 compression is widely used in the TNT products. Now JPEG2000 compression and decompression is multithreaded to take advantage of your 2, 4, or more cores.

Version 2006:72 introduced into TNTserver and the TNT analysis products the concept of using a multifile raster object to provide for very fast viewing of large gigabyte to terabyte raster objects. A multifile raster object is viewed as a single seamless raster object but is actually a tileset in one or more directories related together by what appears to be a raster object in a TNT Project File. This raster object link in the Project File consists primarily of the pyramid layers not contained in the original geodata files used directly as tiles and their geographic and storage locations.

Tilesets now can be a collection of similar tiles but no longer need to be of identical size and shape. For example, a collection of 1000s of DOQQs that have overlap can be built (i.e., related in the Project File link) into a single multifile raster object in minutes. Another application is to build a single state or national level multifile raster object from county or province MrSID rasters. In these examples the multifile raster object representing a huge image can be viewed at any scale in less than a second.

A new TNT process is available to automatically build a compressed tileset and its Project File link from a large raster (10s of GB to a terabyte), such as those produced using the Mosaic process. A tileset and the multifile raster object it automatically produces can now also have a directory structure to avoid ending up with 100,000s of tiles in a single directory. The process also optionally creates the tileset format first introduced by the OSGeo Tile Map Service Specification in November 2006 (see http://wiki.osgeo.org/index.php/Tile_Map_Service_Specification). This is a tileset that is similar to and parallel in structure to the tilesets used in Google Maps and Google Earth.

Technical Guides.

The MicroImages product reference sheets, formerly called color plates, are now referred to as Technical Guides or TechGuides. New TechGuides introducing the features in this release will now appear frequently as front page News at microimages.com and in a comprehensive list at www.microimages.com/documentation/platecatalog.htm. You can review the features introduced in this release by following the outline in each new TechGuide as it is completed and published via microimages.com.

Windows Vista.

Use version 2007:73 of the TNT products with Vista. Version 2006:72 of the TNT products will not operate under the Vista operating system.

Mac OS X 10.5.

Version 2006:72 of the TNT products will not operate under the Mac OS X 10.5. The 2007:73 development version of the TNT products is already running including USB key support under the beta/developer release of this operating system. The official release of version 2007:73 for Mac OS X 10.5 will be provided for you to download when Apple officially ships10.5 for public use.

TNTserver and TNTmap 2006:72.

A comprehensive document on these MicroImages products is enclosed. It provides extensive review information on the WMS products available from commercial and open sources and on the many free WMS client software products. Remember that any TNT product key authorized to version 2006:72 or version 2007:73 of any TNT product can be used to install TNTserver in the test mode outlined in this document or a separate TNTserver test key can be obtained for US$100.

Large Sample Data Sets Published.

TNTmips, TNTedit, and TNTview can prepare and use a multifile raster object for maximum access speed to very large collections of images or maps. TNTserver can publish the same unaltered multifile raster object to maximize its access speed. You can now see how this works by using the large, sample, multifile raster objects outlined below and published by MicroImages sample TNTserver 2006:72 at http://publicatlas.microimages.com/states_cgi/states.cgi?.

You can use version 2007:73 of your TNT analysis products to select these sample WMS layers and combine them with your local layers. You can use TNTmap Builder to select these layers and view them in Google Maps, TNTview, or TNTmap Open or in your local copy of Google Earth. Or, you can use these layers in any of the WMS clients reviewed in the enclosed document entitled TNTserver 2006:72 and TNTmap 2006:72 Technical Reference Manual.

2006 State Coverage.

The Natural Resource Conservation Service in collaboration with the Farm Service Administration has collected 1- or 2-meter color orthoimages of each county of U.S. states since 2003. These images are provided for public downloading in county units as MrSID files (*.sid). There is almost complete coverage of the entire United States already available for 2006. These county images were downloaded for a sample selection of Midwestern states (~12 states). The image coverage of these states published by a TNTserver represents several terabytes of 24-bit image data. The seamless multifile raster object of each of these states can also be viewed using TNTmap or some other WMS compliant web application.

2004 Florida Coverage.

The 2004 1-meter, 24-bit color and color infrared mosaics of Florida were acquired by the Florida Department of Environmental Protection and downloaded from a public site as 3,929 JPEG2000 compressed files (*.jp2) each representing a Digital Ortho Quarter Quad (DOQQ) in the Albers projection. These 3,929 DOQQs vary slightly in size, overlap, and are about 6000 columns by 7000 rows of cells. However, as required for a raster tileset, all these DOQQs have the same 1-meter cell size and all are in the same Coordinate Reference System (NAD83 / Albers Conical Equal-Area for Florida). The TNT import process built the multifile raster from these DOQQs (i.e., built the link in a Project File) in less than 10 minutes.

This 1-meter imagery of the state of Florida would define a rectangular, uncompressed raster object of approximately 1.7 terabytes (~750,000 by 750,000 cells x 3 bytes). Using TNTmap or some other WMS client, you can view and use this state-wide coverage as a single, seamless image at 1-meter resolution at any scale. It is published on TNTserver

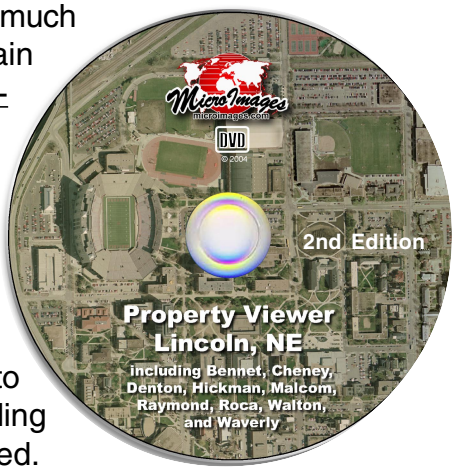
using a single multifile raster object linked to the ~4000 JPEG2000 DOQQ images with their original (as downloaded) 19.8 to 1 lossy compression ratio.

You could also view and use (e.g., extract) any portion of this ~1.7 gigabyte image at any scale from your local hard drive in any TNT product in less than one second. This multifile raster object totals 25.88 GB (3,929 original DOQQs in 52 directories totaling 25.72 GB and a link raster in the Project File of 29 MB).

Lincoln Atlas DVD (2nd Edition).

This 2nd edition of the *Property Viewer Atlas for Lincoln, NE* is enclosed to demonstrate the significant improvements in its DVD performance using the new multifile raster object. This new structure for huge raster objects (gigabytes to terabytes in size) was introduced in version 2006:72 of the TNT products. It is exactly the same structure used by TNTserver to publish the seamless image coverage of states as outlined in the section above (i.e., a single multifile raster for each state). The procedures available to create a multifile raster have many improvements in version 2007:73 as summarized in the enclosed MicroImages MEMO entitled *Provisional Summary of New Features for TNT 2007:73*.

The Lincoln Orthophoto in this 2nd edition has been converted from the single JPEG2000 12 to 1 compressed raster object used in the 1st edition to a multifile raster object. This single, 24-bit color raster object uses 3876 tile files of 2048 by 2048 image cells each compressed 20 to 1. After the TNTatlas program has been started from the DVD or from a hard drive, the use of this Orthophoto image from the DVD is much faster, especially as you zoom in. It is worth repeating again that the time to display a multifile raster object is independent of its size and the size of the geographic area it represents.



Since the production of the 1st edition of this atlas DVD, tax assessments for Lincoln properties have been substantially raised. Concurrent with these changes the Tax Assessor substantially altered the structure of their web site. The 2nd edition links to the more attractive summary and photo they now present for each property. The SML script providing the interface to locate each property has also been improved.

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