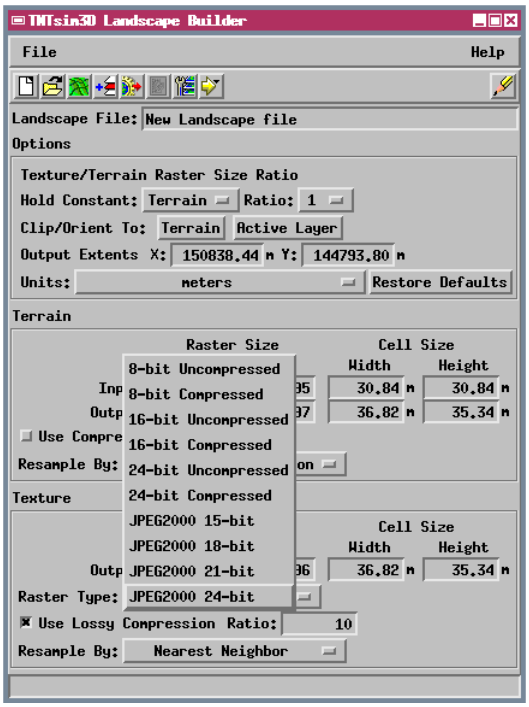
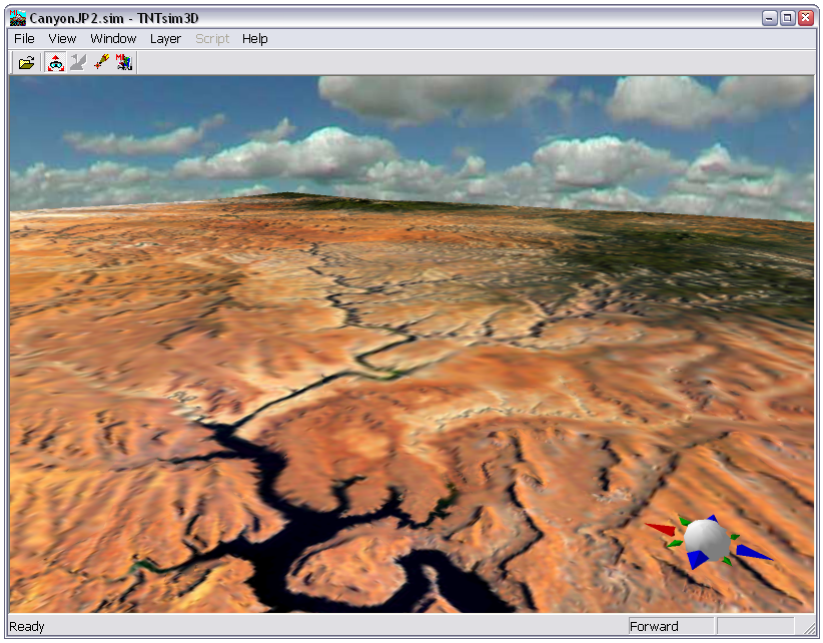
JPEG2000 Compression in TNTsim3D

TNTsim3D can use and smoothly render detailed, areally large textures to enhance the viewer's experience of your simulation. To reduce the stored size of these large textures in your Landscape Files, you can apply JPEG2000 compression to the textures when you create them in the Landscape Builder in TNTmips.



The Landscape Builder lets you save textures with lossless JPEG2000 compression or to set a target ratio for lossy JPEG2000 compression, in addition to uncompressed and standard lossless-compressed options. You can also choose from several color-depths for textures with the various compression options.



This Landscape File covers an area of 20,000 square kilometers with a pan-sharpened Landsat ETM texture having a spatial resolution of 15 meters. To efficiently incorporate this 24-bit texture (256 MB uncompressed) in the Landscape File, its stored size was reduced to 27 MB using 10:1 lossy JPEG2000 compression.

Textures created using JPEG2000 compression are stored along with the terrain and other data within the Landscape File, so your simulation is self-contained. For highest fidelity to the original, choose lossless JPEG2000 compression. You can also choose to apply lossy JPEG2000 compression and specify a target compression ratio for the stored texture. Most texture images can be compressed at ratios of 10:1 to 15:1 with little visible degradation. Lossy compression allows you to create and distribute CD-sized or DVD-sized Landscape Files with very large, detailed, high-quality textures.

How large an area can a DVD-sized (4.7 GB) Landscape File cover in 24-bit color?
(Example: single texture with lossy JPEG2000 compression to 4.2 GB at 15:1 compression ratio)

Cell Size	Imagery	Image Source	Area On DVD (km²)	Area Covered
1 ft	Color orthophoto	various	1,500	city
0.6 m	pan-sharpened QuickBird	DigitalGlobe	6,000	county
1 m	Color orthophoto pan-sharpened IKONOS pan-sharpened SPOT	various Space Imaging SPOT Image	17,000	region / state / province
2.4 m	QuickBird MS	Digital Globe	97,000	
4 m	IKONOS MS SPOT MS	Space Imaging SPOT Image	270,000	country
15 m	pan-sharpened LANDSAT7	various	3,800,000	

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