HEXAGON
GEOSPATIAL

HOW CAN LARGE AMOUNTS OF DATA BE COMPRESSED AND EASILY SHARED?

GEOCOMPRESSOR IS THE SOLUTION

MEETING THE CHALLENGE

At Hexagon Geospatial, we strive to provide various industries the technology necessary to collect, analyze and share data, making our world safer and lives easier. Therefore, we always keep our eyes open for new challenges and determine how to meet them. In doing so, we noticed a cross-industry struggle to compress large, high-resolution imagery and point clouds, creating a need for technology that:

- Can compress terapixel-sized imagery and point cloud files with billions of points.

- Can compress thousands of image files into a single mosaic or update a region within an existing mosaic.

- Can resize or resample pixels to shrink images where full resolution data is not required.

- Can clip to a polygon boundary to add the flexibility to create output products in accordance with arbitrary polygon definitions.

- Can be plugged into existing data processing workflows as a decoupled component.

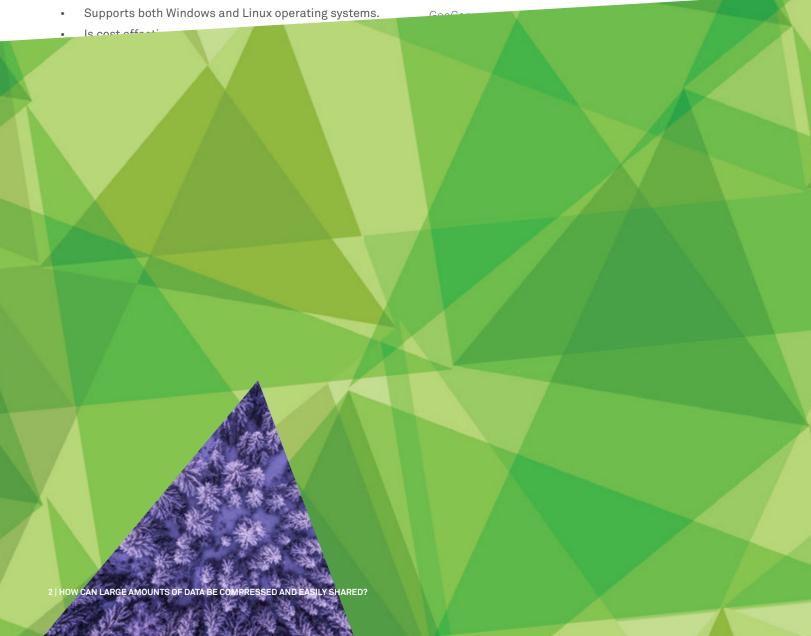- Supports both Windows and Linux operating systems.

- Is cost effecti

in an independent fashion. Throughput in excess of 180 MB/sec can be seen on commodity hardware and terapixel output images, making GeoCompressor the most high performance mosaicking and compression tool on the market regardless of imagery size or amount.

GeoCompressor also delivers on its objective of being a service that "just compresses," as it is compatible with Hexagon Geospatial technology, but also works with other data provider processing workflows as well to allow for flexibility in choosing the best option for you and your budget.

We designed this 64-bit system for compatibility with Windows and Linux operating systems, providing a simple wizard interface with both. GeoCompressor's default settings also include a streamlined compression process, but command-line mode allows for even more specificity and control over resulting files.

WHAT YOU CAN DO WITH IMAGE COMPRESSION

"GeoCompressor allowed GeoSpace to create a single mosaic from 49,000 separate image tiles, resulting in huge disk space savings and, most of all, an unparalleled performance and speed in displaying and using the resultant image."

– GeoSpace International

GeoCompressor's file output options offer varying capabilities:

Capability	ECW v2	ECW v3	JP2
Line Compression	✓	✓	✓
Tile Compression	✓	✓	
8-bit unsigned	✓	✓	✓
16-bit unsigned		✓	✓
16-bit signed			✓
Visually lossless	✓	✓	✓
Numerically lossless			✓
Null block support		✓	
Opacity band support	✓	✓	✓
Data statistics, histogram		✓	
RPC storage		✓	
Custom metadata		✓	✓ *
Region Update		✓	
Geo-referencing	GDT	GeoTiff Tags	GML in JP2, GeoJP2
Color-space Support	Greyscale, RGB, Multiband	Greyscale, RGB, Multiband	Greyscale, RGB, Multiband
Largest-known image**	14 terapixels	14 terapixels	756 gigapixels

*Partial. Custom metadata can be written to JP2 UUID boxes, however clients will have to detect the presence and parse the contents.
**As of January 2014.

MORE ABOUT ECW

ECW is a Hexagon Geospatial-patented high-performance imagery format that can be used by nearly any product in the geospatial industry while providing the fastest compression and decompression rates.

When selected as the output, this format achieves 94% compression at a 15:1 ratio from the original file size, allowing you to free up space on your servers and GIS systems. These smaller files become easier to store, send and display, even on mobile devices.

ECW files are also optimized for display performance, unlike other formats, so there's no need for generating, storing, managing or maintaining image tiles, pyramids, overviews and tile caches.

Zoomed-in photo of the compressed image (near Upington, Northern Cape province, South Africa). Images courtesy of GeoSpace International and the Chief Directorate: National Geospatial Information

ECW IN ACTION

A single ECW aerial image covering South Africa @50cm GSD

RAW IMAGERY
3,659,118 x 2,836,274 px
4 Band, RGB
45,816 image files
28,996.53 GB uncompressed

COMPRESSED TO ECW
3 Band, RGB
Single image file
439.67 GB ECW compressed

WHAT YOU CAN DO WITH POINT CLOUD COMPRESSION

Point cloud compression accepts LAS/LAZ file input, which are the standard formats for airborne lidar data, and the content is compressed to Hexagon Point Cloud (HPC) files. HPC format is significantly faster than existing storage formats, contains internal levels of detail and, due to its patented storage and rendering engine, can be streamed in a server-to-client environment like ERDAS APOLLO.

These files can be viewed and utilized across other Hexagon Geospatial applications and compressed up to ten times smaller than the original data.

DIFFERENT OPTIONS FOR YOUR NEEDS

To further offer versatility, GeoCompressor is accessible with three licensing agreements:

Capability	Essentials	Advantage	Professional
Image Compression <250 gigapixels per job	✓	✓	✓
Image Compression <500 gigapixels per job		✓	✓
Image Compression Unlimited per job			✓
Image Mosaicking (up to Gigapixel Limit)	✓	✓	✓
Batch Image Compression (Up to Gigapixel Limit)	✓	✓	✓
Point Compression Unlimited			✓
ECW v3 Region Update			✓
Node-locked License	✓		
Concurrent License		✓	✓
Subscription-only	✓	✓	✓

NEED A LARGER FUNCTIONAL SCOPE?

GeoCompressor is designed to complement existing workflows rather than address your end-to-end image or point cloud needs. To perform image/point cloud processing tasks prior to compression, the following Hexagon Geospatial products can also compress to ECW files:

- ERDAS® APOLLO – A comprehensive data management and delivery system that organizes geospatial and business data into a centralized library and distributes it from the cloud or on-premises.
- ERDAS IMAGINE® – A geospatial data authoring system to employ remote sensing, photogrammetry and GIS data.
- ERDAS® ER Mapper – An advanced image processing and compression service geared toward the oil, gas and mineral exploration industries.
- M.App Chest™ – A content management system for easily uploading, storing and disseminating data.

Visit our website to learn more:

hexagongeospatial.com

HOW TO GET STARTED

If you'd like to learn more about using GeoCompressor to revolutionize your data compression, let us know. We would be happy to hear from you.

Contact us at:

hexagongeospatial.com/about-us/contact-us

About Power Portfolio

The Power Portfolio from Hexagon Geospatial combines the best photogrammetry, remote sensing, GIS and cartography technologies available. Flowing seamlessly from the desktop to server-based solutions, these technologies specialize in data organization, automated geoprocessing, spatial data infrastructure, workflow optimization, web editing, and web mapping.

The Provider Suite enables you to comprehensively manage and deliver volumes of geospatial and business data.

About Hexagon Geospatial

Hexagon Geospatial is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technologies that drive quality and productivity improvements across geospatial and industrial enterprise applications. Learn more at hexagon.com.