

Readme

GeoExpress Version 9.5.0

July 2015

Copyright (c) 2015 LizardTech. All rights reserved.

Table of Contents

Product Overview	1
Installation Notes	2
New Features	3
Fixes	6
Known Limitations	8
Customer Support	8
Legal	8

Product Overview

GeoExpress is a software solution for compressing and manipulating geospatial imagery. GeoExpress supports a broad range of file formats, including the industry standard MrSID format and the ISO standard JPEG 2000 format.

Here are some of the tasks that you can perform with GeoExpress:

- Perform lossy and lossless compression.
- Create flat and composite mosaics.
- Specify separate compression ratios for individual bands.
- Reproject images to another coordinate reference system.
- Perform color balancing.
- Crop and demosaick images.

- Despeckle images.
- Edit image metadata.

Save the images that you create with GeoExpress to a local machine or a LizardTech Express Server. Then, view the images in the geographic information system (GIS) software of your choice, including Esri®, Bentley®, Autodesk®, and more.

Installation Notes

You can install GeoExpress on 32-bit and 64-bit versions of the following operating systems:

Windows

- Windows Server 2012
- Windows 8
- Windows 7
- Windows Server 2008 R2
- Windows Server 2008 Service Pack 2
- Windows Vista Service Pack 2

NOTE: Windows Server 2008 R2 is for 64-bit machines only.

Linux

- Red Hat Enterprise Linux 6
- Red Hat Enterprise Linux 5

NOTE: On Linux, GeoExpress runs as a command line-only program.

Installing on Windows

To install GeoExpress on Windows, run the `Autorun.exe` program located in the parent directory of the installation DVD. The installation process creates a shortcut in the `LizardTech` directory of the **Start Menu**.

Installing on Linux

To install GeoExpress on Linux, navigate to the directory that corresponds to your operating system and run the `install.sh` script. For example, if you run a 64-bit version of Linux, you might navigate to the `Linux64` directory. By default, GeoExpress is installed in the following directory:

```
/usr/local/LizardTech/
```

New Features

Version 9 of GeoExpress includes the following new features and enhancements:

Version 9.5

LiDAR Compression

GeoExpress supports compressing LiDAR point clouds stored in plain-text format or in the LAS and LAZ formats. The output image is stored in the MrSID Generation 4 format.

Multipolygon Shapefile Cropping

When you crop images, you can define the area that you want to crop with a Shapefile. The Shapefile that you select can contain multiple polygons. You can then create a single image that contains the area of all the polygons, or you can create separate images for each polygon. Previously, Shapefiles needed to contain exactly one polygon.

Batch Color Balancing

Perform color balancing operations on multiple images. When you adjust color balancing settings for one image, you can apply the settings to multiple other images. Previously, you could only color balance single images and mosaics.

Switching Between GeoExpress Editions

Each edition of GeoExpress, including the trial, now uses the same installer. For example, you can enter a license code to change from the trial to the standard edition or from the standard edition to the unlimited version. Previously, you needed to uninstall one edition of GeoExpress then download a separate installer for the other editions of GeoExpress.

Version 9.1

Floating Point Support for MrSID Generation 4

When you compress a floating point image, GeoExpress uses quantization to compress the image. You can create 32-bit floating point images in the MrSID Generation 4 format.

Quantization is a lossy compression method that reduces the number of pixel values in the image. Quantization is necessary for floating point images for two reasons:

Performing arithmetic on floating point values results in rounding discrepancies.

Compressing floating point values results in unnecessarily large images. This is because some of the digits in each pixel value contain data that is not significant and cannot be compressed.

As a result, GeoExpress uses a lossy compression method for floating point images, but guarantees the accuracy of the image data to an optimized precision value.

Dynamic Range Metadata Generation

To improve the appearance of MrSID images in other GIS programs, you can use GeoExpress to write dynamic range metadata for images. For an image where the dynamic range is less than the full range of possible values for the image, you can use your GIS program to stretch the pixel values across the full range. For example, if you have a 16-bit image and the dynamic range is 12 bits, then you may want to use dynamic range stretching to improve the appearance of the image.

Improved Metadata for Auxiliary Files

When you create an auxiliary file for an image, GeoExpress writes additional metadata into the auxiliary file. If the image contains regions without image data, the no-data values are stored in the auxiliary file.

Additionally, if you generate dynamic range metadata for the image, the dynamic range values are stored in the auxiliary file.

Improved Multi-Core Processing

The performance of multi-core processing has been improved. Each job that you run in GeoExpress uses less processing power and finishes faster.

Command Line Image Statistics

You can calculate image statistics for each band in an image from the command line. The image statistics include the minimum value, the maximum value, the mean value, and the standard deviation. Enter the following command to calculate statistics for an image:

```
mrsidgeoinfo -stats <Image Name>
```

Version 9.0

Simple Job List

Any images that you add to the GeoExpress graphical user interface appear in the same simple job list. You can view and run all jobs in the same job list regardless of the image compression and manipulation operations that you want to perform. Previously, jobs were scattered across multiple tabs.

Intelligent Encoding

GeoExpress automatically uses its optimization feature whenever possible. The optimization feature performs a subset of image compression and manipulation operations without re-encoding images. Previously, to use optimization you needed to remember which operations supported optimization, and you needed to add images to a separate **Optimize** tab.

Graphical User Interface Enhancements

The user interface includes updated window graphics and icons.

Concurrent Processing

If you run GeoExpress on a machine with a multi-core processor or on a machine with multiple processors, GeoExpress creates multiple threads to process jobs more quickly. The number of threads and jobs that you can run at one time depends on the number of cores in your machine's processor. You can use a maximum of eight cores for image encoding.

Image Rotation

For images that include rotation metadata, GeoExpress creates rotated output images. This feature is turned on by default so that your images are displayed with the correct orientation even in viewers that do not support metadata for image rotation. Previously, GeoExpress preserved rotation metadata without rotating the output image.

Custom Watermarks

You can add custom watermarks to your images. GeoExpress supports watermark images in BMP, PNG, and JPEG formats. You can use black and white images with maximum dimensions of 128 pixels by 128 pixels.

Mosaic Enhancements for the Command Line

You can create mosaics that use multiple coordinate reference systems from the command line.

PNG Support

GeoExpress now supports PNG files. You can perform any operation with PNG files that you can perform with other supported file formats.

NITF RPC Support

GeoExpress can now interpret NITF files with RPC metadata.

Fixes

Version 9 of GeoExpress includes the following fixes:

Version 9.5

Bug ID	Description
18449	You cannot create images from world files that contain rotation information.
18009	When you change the resolution of an image, the image may not be aligned properly. Now you can align images to an integer multiple of the output resolution.

Version 9.1

Bug ID	Description
16133	When you generate dynamic range values for an image in GeoExpress, the dynamic range values are stored in a metadata file with the .aux file extension. If you attempt to view the dynamic range values in ArcGIS 9.3.1 or earlier, the values are ignored.

Version 9.0

Bug ID	Description
14362	When you reproject a mosaic, the component tiles do not rotate.
14330	When you request a license using the license fulfillment option in GeoExpress, there is not enough space to enter the entire serial key that you received in your order confirmation email.
14038	If you change part of the image metadata, GeoExpress may discard the existing metadata value for the image origin.
13766	If you use the wcommute Commuter Licensing utility to check out a license, GeoExpress may not use the license that you check out.
13760	The documentation does not include the name of the service for the LizardTech License Server.
13730	GeoExpress may fail to open images in the IMG format.
13565	Reprojecting images in GeoExpress may take longer than expected.
13522	You cannot create images with custom watermarks.
13283	If you specify that an input image has transparency information in its metadata, GeoExpress may not create output images with the MrSID Generation 4 output format.
13273	If you run Windows 7, you cannot use remote desktop to access GeoExpress Remote Edition.
13272	When you install GeoExpress Remote Edition, you cannot use that instance of GeoExpress from the local machine.
13251	If you use the mrsidgeoencodercommand line tool to enter your locking code, the locking code may not save correctly.
13241	If you view the locking code in the user interface, you may only see part of the locking code.
13179	Create a mosaic with input tiles in multiple projections. If you use world files to specify the input projections, GeoExpress cannot calculate the correct amount of data to charge to the data cartridge.
13034	When you search for coordinate reference systems in the user interface, you have to use the exact word order.
12719	The GeoExpress trial period cannot be extended.
12250	When you use the band selector on the Preview tab, the band selector may stay open after you navigate to another tab.
9021	You cannot use the command line to create a mosaic from input tiles in multiple projections.

Known Limitations

Version 9 of GeoExpress includes the following known limitations:

Version 9.5

No known limitations were introduced in this release.

Version 9.1

Bug ID	Description
15750	After you update your web browser, the GeoExpress help appears blank.
15329	GeoExpress only supports color lookup tables with eight bits and three bands. If you attempt to view an image with a color lookup table that is not eight bits, the image may not display correctly.

Version 9.0

No known limitations were introduced in this release.

Customer Support

To contact LizardTech Customer Support, visit the following website:

<https://www.lizardtech.com/support/>

Alternatively, call one of the following phone numbers:

1-866-725-5211

206-652-5211

Legal

Copyright © 2009–2015 Celartem Inc. d.b.a. LizardTech®. All rights reserved. Information in this document is subject to change without notice. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance

with the terms of those agreements. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of LizardTech. LizardTech, MrSID, GeoExpress and Express Server are registered trademarks in the United States and the LizardTech, GeoExpress, Express Server, ExpressView and GeoViewer logos are trademarks, and all are the property of Celartem Inc. d.b.a. LizardTech. Unauthorized use is prohibited. LizardTech acknowledges and thanks the many individuals and organizations whose efforts have made our products possible. A full list of copyright, trademark and credit information is available in the document "Copyrights, Trademarks, and Credits" installed automatically with your product.