GTiff2Tiles.Benchmarks

GTiff2Tiles.Tests is a benchmarking project for **GTiff2Tiles.Core**.

The following benchmarks were made at **06.07.2019**.

MapTiler Pro was running as process *maptiler.exe*, **GTiff2Tiles** tiling was called from library and **gdal2tiles.py** was converted by **PyInstaller** into *Gdal2Tiles.exe* and was running as process.

Unfortunately, I couldn't create *Gdal2Tiles.exe* with **multiprocessing**, so it's only in **single-threaded** tests for it at the moment. I'll try to fix that moment in the future and update benchmarks as well.

Time format in tables: `{minutes}:{seconds}:{milliseconds}`.

Benchmarks were made on PC with **Windows 10 x64 (18362.239)** equipped with **Intel Core i7 6700K 4.0 GHz**.

Versions

Used **MapTiler Pro** version is **0.5.3**. Used **gdal2tiles.py** version from **GDAL repo** (GDAL's version **3.0.0**, **06.07.2019**). Used **GTiff2Tiles.Core** version is **1.2.0.139**.

Requirements

- MapTiler Pro 0.5.3 or newer;
- gdal2tiles.py, converted to `.exe` and placed in directory `Gdal2Tiles` near benchmarks binaries;

If you're using Windows 7 SP1, you can experience weird error with **GDAL** package. It's recommended to install KB2533623 to fix it. You can read about this Windows update on MSDN.

Build dependencies

- GTiff2Tiles.Core;
- CommandLineParser – 2.8.0;

Usage

TODO: needs update for 2.0.0 release. Current version is written for old dev pre-releases.

Short	Long	Description	Required?
-i	--input	Full path to input file	Yes
-o	--output	Full path to output directory	Yes
-t	--temp	Full path to temp directory	No
	--minz	Minimum cropped zoom	Yes
	--maxz	Maximum cropped zoom	Yes
	--threads	Threads count	No
	--version	Current version	
	--help	Message about console options	

Simple example looks like this: `./GTiff2Tiles.Benchmarks -i "D:/Examples/Input.tif" -o "D:/Examples/Output" -t "D:/Examples/Temp" --minz 8 –maxz 11 --threads 3`

Also take a look at Start.ps1 **PowerShell** script for automating and simplifying the work. Note, that running this script requires installed **PowerShell** or **PowerShell Core** (also available on **Linux**/**OSX** systems!).

Detailed options description

-i/--input is `string`, representing full path to input **GeoTIFF** file. Please, specify the path in double quotes (`“like this”`) if it contains spaces.

-o/--output is `string`, representing full path to directory, where tiles in will be created. Please, specify the path in double quotes (`“like this”`) if it contains spaces. **Directory should be empty.**

-t/--temp is `string`, representing full path to temporary directory. Please, specify the path in double quotes (`“like this”`) if it contains spaces. Inside will be created directory, which name is a **timestamp** in format `yyyyMMddHHmmssfff`. By default – the same directory, where application is located.

--minz is `int` parameter, representing minimum zoom, which you want to crop.

--maxz is `int` parameter, representing maximum zoom, which you want to crop.

--threads is `int` parameter, representing threads count. By default (if not set) uses **5 threads**.

Offline docs

Offline docs are also available as pdf and distributed alongside the application.

Input data

As input data was used **4326** GeoTIFF, located in repo’s directory: `Examples/Input/Benchmark.tif`.

Benchmarks metadata

The differences between benchmarks are only in **maximum zoom** and **threads count** values.

GTiff2Tiles was running with the following arguments: `-i {inputFilePath} -o {outputDirectoryPath} -t {tempDirectoryPath} --tms true --minz 0 --maxz {maxZ} --threads {threadsCount}`.

MapTiler Pro was running with the following arguments: `-geodetic -tms -resampling cubic -f png32 -P {threadsCount} -o {outputDirectoryPath} -work_dir {tempDirectoryPath} -srs EPSG:4326 -zoom 0 {maxZ} {inputFilePath}`.

gdal2tiles was running with the following arguments: `-s EPSG:4326 -p geodetic -r cubic --tmscompatible -z 0-{maxZ} {inputFilePath} {outputDirectoryPath}`.

Results

Avarage from 10 runs:

- Threads count = 1;
- Maximum zoom = 16;

GTiff2Tiles	MapTiler Pro	Gdal2Tiles
00:27:061	00:33:901	01:45:901

- Threads count = 5;
- Maximum zoom = 16;

GTiff2Tiles	MapTiler Pro
00:07:723	00:15:057

- Threads count = 1;
- Maximum zoom = 17;

GTiff2Tiles	MapTiler Pro	Gdal2Tiles
01:41:500	02:13:183	06:43:683

- Threads count = 5;
- Maximum zoom = 17;

GTiff2Tiles	MapTiler Pro
00:30:915	00:53:502