Table of Contents

Batch-convert files to JXL 2

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JPG and PNG are old. JPEG-XL is the hype new image format. It has many cool features which I won't exhaustively list here. https://jpeg.org/jpegxl/

If you decide to convert your files, you will find cjxl can be slow on the slow presets. Also, compressing an image with multiple threads reduces compression ratio.

So, it is typically better to compress each image with 1 thread, which gets better compression as no data needs to be shared, and just compress more images at the same time. Ie: instead of compressing 1 image with 8 threads, compress 8 images with 1 thread each.

Note, this means you are going to use massive amounts of RAM with slow presets. You have been warned.

First, get the list of images you want to compress. A simple way is

```
find -name "*.JPG" | tee /tmp/files
```

cjxl can work with either jpg or png as input (use imagemagick if you need more).

Next, I use GNU Parallel to batch process these:

```
parallel --ungroup -j16 -v -q -a /tmp/files cjxl -e 9 --num_threads=0 --
lossless_jpeg=1 -d 0 "{}" "{.}.jxl"
```

- -j16 indicates this will run 16 files at once.
- -e 9 indicates maximum compression effort (see man cjxl for more)
- -d 0 indicates lossless mode. By default, cjxl is lossless for JPG inputs, and lossy for PNG. (-d 1 is imperceptible typically)
- –lossless_jpeg=1 enables the super cool JPEG recompression mode, where JPEG files can be losslessly converted to the new encoding while saving 30% space. (no effect on PNG inputs)
- “{}” will match the input file name
- “{.}” is the file with the extension removed (which we add .jxl to)

While CJXL preserves some metedata, it is not the complete bundle if you use something like `digikam` to manage photos.

You can use exiftool (or probably exiv2) to re-write the metadata either from the image or XMP files.

```
parallel --ungroup -j24 -v -q -a /tmp/files exiftool -overwrite_original -
TagsFromFile "{}.xmp" "{.}.jxl.xmp"
```

CAUTION! At the time of writing, exiftool can NOT write to JXL files - it will, but it can only be read by exiftool. Use XMP files or another mechanism for the time being!

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