DNG Format and Camera Raw 2.3

Web Update

On September 27, 2004, Adobe announced a new, public, archival format for digital raw files called Digital Negative (.DNG), while simultaneously shipping Adobe DNG Converter, a standalone application that converts all raw formats supported by Adobe Camera Raw to .DNG format, and an updated Adobe Camera Raw plug-in that reads raw files converted to .DNG.

The new .DNG format offers many potential benefits, though at this point in its evolution, I need to put the emphasis on the word "potential." Unlike the various proprietary raw formats from the camera vendors, .DNG is a fully documented, extensible, open file format. As such, it offers Camera Raw users two main benefits.

- Sufficiently skilled programmers can now obtain all the information they need to build a raw converter, which greatly increases the likelihood that your raw files will still be readable a decade or a century hence.
- Because the format is documented and extensible, it will be possible for applications (including third-party asset managers, not just Photoshop) to write user-generated metadata directly into the .DNG raw file *safely*, eliminating the need for .xmp sidecar files.

Note that these are potential future benefits, not things that you can do today. However, the availability of the DNG specification has important implications for the industry in general that will also benefit raw shooters.

- Camera vendors who choose to implement DNG will find that new cameras are automatically supported by any raw converter that can read DNG, including, of course, Adobe Camera Raw.
- The DNG format eliminates the need for camera vendors to develop new formats for new cameras, streamlining R&D and simplifying testing, so new cameras can be brought to market more quickly.
- The DNG format has the potential to extend the usability of raw files. For example, printer manufacturers could allow users to print raw files directly from camera storage media as they now do with JPEG.

You can read all about DNG, and download both the Adobe DNG Converter and the DNG specification at www.adobe.com/products/dng/main.html. My personal take on the DNG announcement is that DNG holds immense promise for the future, but doesn't necessarily offer compelling reasons to convert all your raw images today. Based on the initial reception by the public and the industry, the format's chances of success look good, but of course only time will tell.

The major vendors who currently use proprietary raw formats may be reluctant to give them up, because with proprietary formats, the vendor remains in control of the result. Note that one of the arguments we'll almost certainly hear against adopting DNG is that it will stifle innovation. This seems a bogus argument: the DNG specification explicitly allows camera vendors to continue to use private metadata to preserve differentiation. Ultimately, adoption of DNG has to be a win-win situation for everyone involved, otherwise it won't happen. In my humble opinion, the current chaotic state of raw formats serves everyone ill except the camera vendors who use proprietary raw formats, and it only serves them well in the short term. It certainly brings no benefits to the shooter.

Should I Use .DNG Now?

If you want your raw files to remain readable by your camera vendor's raw converters, you should not convert them to .DNG. Even if you don't care about the vendor's raw converter, it's probably still a good idea to keep a

copy of the raw files in the vendor's proprietary format, because almost all the vendors who use a proprietary format incorporate some metadata in private, undocumented tags. Adobe .DNG converter only preserves the metadata it can understand, so any undocumented private metadata is discarded in the conversion, although all the pixel data is preserved. If the undocumented metadata becomes documented at some point in the future, a future version of Adobe DNG Converter would be able to preserve it, and a future version of Camera Raw would presumably be able to use it.

That said, DNG does offer some immediate benefits besides storing your images in a format that has been documented and hence promises future readability.

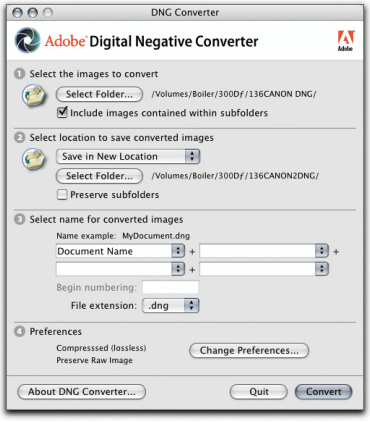
- DNG uses very efficient lossless compression. The amount of compression used in proprietary raw formats varies, and some raw compressed formats actually use lossy compression, but DNG's compression is the most efficient lossless compression I've yet seen in a raw format.
- Adobe DNG Converter offers the option to convert raw files to a demosaiced but otherwise raw file, allowing you to use third-party converters that don't support your camera's proprietary raw file. Note that the demosaiced files are much larger than the original raw since they've already been processed into three color channels.
- While the method of doing so is a little kludgy. you can embed metadata directly into a DNG file instead of a sidecar xmp file. The procedure isn't particularly intuitive. Add the metadata to an already-converted DNG file, to create a sidecar xmp. Then run the DNG file through the DNG converter once more—this time, the metadata contained in the sidecar xmp file gets embedded directly in the new DNG file.

So if any or all of these capabilities appeal to you, by all means go ahead and start using DNG—just make sure that if you want to keep all the metadata generated by your camera that you keep copies in the original proprietary raw format.

Using Adobe DNG Converter

Adobe DNG Converter is very simple to use—it's a lot like the Batch dialog box but without the hidden gotchas! The main Adobe DNG Converter window is divided into four sections, conveniently numbered 1 through 4 (see figure U-1).

Figure U-1
The DNG Converter window



Section 1 lets you choose a folder of images to convert. A checkbox offers the option to also convert images in any subfolders contained by the selected folder.

Section 2 lets you choose a destination for the converted images. Save in Same Location does exactly what it says, while Save in New Location lets you specify a destination folder. The Preserve subfolders checkbox lets you keep the subfolder structure of the source folder—when it's unchecked all converted images are saved directly in the destination folder.

Section 3 lets you specify names for the converted images in very much the same way as Batch and Batch Rename.

Section 4 lets you set Adobe DNG Converter's Preferences. The Change Preferences button opens the Preferences dialog box which lets you choose Compression and Image Conversion Method (see Figure U-2).

- Compression lets you choose whether or not to use lossless compression on the converted images. (Offhand, I can't think of a reason not to use compression.)
- Image Conversion method lets you choose whether to convert to a mosaic format (Preserve Raw Image), or to a demosaiced format that other raw converters can read (Convert to Linear Image). Note that Convert to Linear Image is a one-way trip—you can always get linear

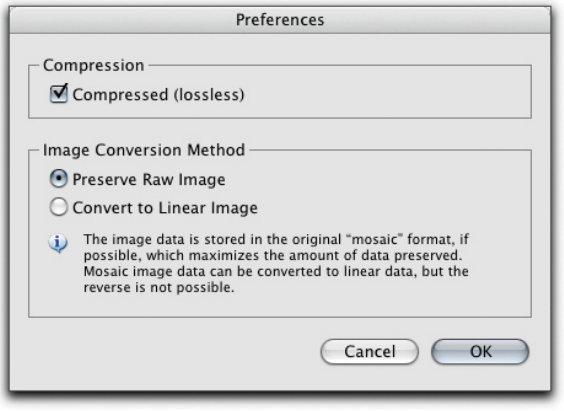


Figure U-2
Adobe DNG Converter Preferences

demosaiced files from mosaiced raw files, but the reverse isn't possible—so the Convert to Linear Image option is fine for experimenting, but it's not a good choice for archiving. (It also creates a much bigger file.)

That's really all there is to using Adobe DNG Converter. It's a very simple, clean application.

Adobe Camera Raw 2.3

Adobe Camera Raw 2.3 is a recommended update for all Camera Raw users. In addition to support for the new DNG format, and for several new cameras (listed in the readme file that accompanies the plug-in), Adobe Camera Raw 2.3 features the following changes.

- The range of the Brightness slider has been extended from 0-100 to 0-150. The extra range helps in extreme highlight recovery situations.
- The planned enhancement to the Shadow slider I referred to on page 53 has been implemented, so its effect is much gentler.
- The white balance tool now beeps, and makes no adjustments, when you attempt to click-balance on a pixel that's too bright.

In addition, some camera-specific fixes are detailed in the readme file. The enhancements are all useful ones, and I endorse Adobe's recommendation to update the Adobe Camera Raw plug-in to version 2.3.