

Developing an Efficient Digital Workflow



Why is having a consistent workflow so important?

At some point, most photographers develop a series of routines for capturing, copying, and processing their digital photographs. These routines can be sloppy and unorganized or they can develop into a consistent workflow that speeds up the entire editing process. Consistency in how you handle your images after they are shot is nearly as important as the techniques you employ to compose and shoot your images in the field. In this paper, I am going to describe my own digital workflow, from the time my shots leave the camera, to the basic editing adjustments I make to nearly all my final photographs in Photoshop, to finally saving and backing them up on my computer. My hope is to provide you with some ideas that might help improve your own digital workflow.

Shooting in RAW format

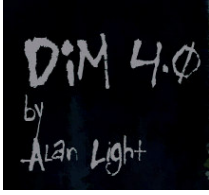
I shoot almost exclusively with a Canon DSLR camera in RAW format. Shooting RAW images allows me to easily make adjustments to the color temperature and exposure (often up to two stops in either direction) of my shots in Photoshop Camera RAW. I am usually very methodical in making sure that the color temperature settings in my camera match the lighting that I am using; however just like everyone else I occasionally make mistakes. The same is true for manually setting the aperture and shutter speed. Once in a while I find it necessary to make exposure adjustments to an otherwise decent image after a shoot. One example of when this occurs most often to me is with images I shot as the

sun was rising or setting. Dusk and dawn lighting changes so quickly and is so dynamic that it is easy to slightly underexpose or overexpose a series of shots. Because RAW images are lossless and contain all the information available in the photograph, this format offers a great deal more latitude than JPEGs. If I need a large number of JPEGs (e.g. a client request or to post on the web), I can always convert them using Photoshop's batch processing feature to automatically resize and save many RAW images into JPEGs in a very short period of time. Consider shooting in RAW format if you want the most leeway and highest quality possible.

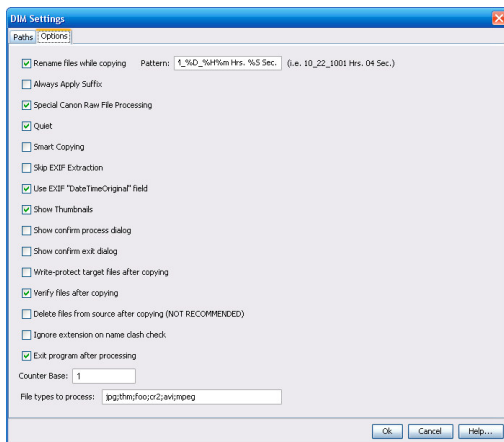
Copying the images to the computer

Immediately after shooting a series of images, I copy them to my computer using a compact flash (CF) card reader. Avoid connecting your camera directly to your computer. It is going to be much slower, more awkward, and needlessly wastes your camera battery. Transferring images this way also ties up your camera and forces you wait before you can shoot again. Most CF card readers connect directly to the computer with USB 2.0 or Firewire (IEEE 1393) cables and are relatively inexpensive. Just pop the CF card into the reader and off you go!

You can go a couple of different routes from here. I use a free program called Digital Image Mover 4.0 or DIM 4.0. You can download DIM for free here: <http://www.alanlight.com/dim/Dim.htm>.



DIM allows you to specify in advance the naming convention and location for all the images you move from your CF card to your computer. I specify my images to be downloaded into folder named for the date of the shoot (e.g. 10_30_06) and each image in the folder is assigned a name after the date and time it was taken. This information is taken from the EXIF data of each image and is all done automatically by DIM. I simply insert my CF card into the card reader, launch DIM, and click "Process." DIM takes care of the rest of the work for me. When the program is finished running, my images have all been renamed and are waiting for me in a master folder along with the rest of my previous work. DIM is a great tool for moving, sorting, and naming your photographs and supports most image formats.



Other alternatives include moving your images manually using Windows Explorer or using Photoshop CS2's Copy and Batch Rename feature. This can be found by going to Tools > Batch Rename in Adobe Bridge. Some experts suggest adding a short description along with the date and

time as part of your naming convention for each shot. This is a great idea; however I have found it creates overly long file names so I just stick with the date and time. You can add keywords to the metadata (discussed later in this paper) for quick searching. You can also create contact sheets with thumbnail images from each shoot to help quickly locate specific shots.

Once the images have been copied onto your computer, it is safe to remove the CF card from the reader. Before pulling the card out, right click the remove hardware icon located in the Windows system tray (found in the lower right corner of the screen) and select Safely Remove Hardware. Macs follow a similar process.

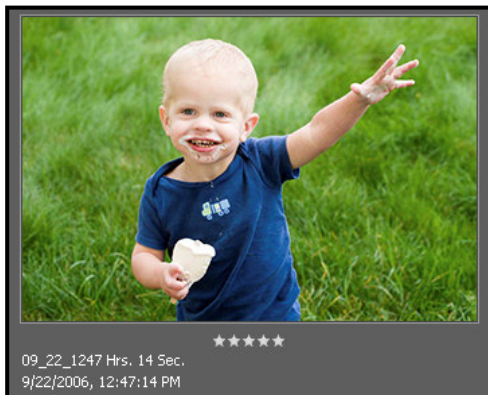
Back your images up!

The next step I take is to copy all my RAW images to DVD. As odd as this may sound, I copy all of my shots before sorting through them. I am one who likes to keep everything—even the botched shots. Whether you sort through your images before or after, I highly encourage you to back them up before you clear or erase your CF card. I burn all the RAW images from a shoot directly to DVD. It is recommended that you use archival quality DVDs for your backup media and to store them offsite or in a fireproof safe. I personally keep all my backed up RAW and final images in a fireproof safe.

Sort them out

With all of the RAW images safely backed up to DVD, I now open the originals in Adobe Bridge to sort through them. First

I delete the ones that are obviously no good. This includes images that are out of focus, poorly composed, or seriously defective in some way. After deleting the ones that are clearly not going to make the cut, I rate the top tier shots. Adobe Bridge allows you to rate your images either by color or by assigning a one through five star rating. I usually give the images that I am happy with and plan to move further along into the workflow process a five star rating. Oftentimes this is where I stop. I tend to be all or nothing with my shots; either they are good enough to move forward in the workflow or they are not. Occasionally I will assign images a four or three star rating if I like them for some reason but know that I will not likely use them right away. You can assign star ratings by clicking on one of the stars just below the thumbnail of the image. To select only the photographs you rated, click on the Unfiltered button located near the top right corner of the screen in Adobe Bridge. Rating your images will help you quickly identify the shots that you may want to take into Photoshop to fully process later on.



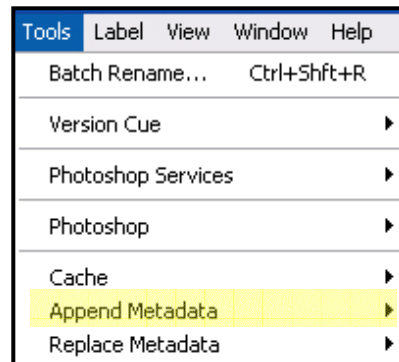
Apply metadata information

After sorting and rating my images I then

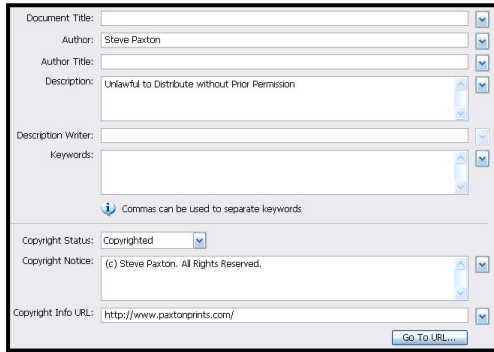
apply my copyright and keyword search information. To streamline the process I add copyright information to all the images I shoot using a metadata template that already contains the necessary information.

To create a metadata template open up Photoshop CS2 and create a blank document. Choose File > File Info to open up the metadata dialogue box. Add additional metadata information that you want to apply to any image you shoot; this should include copyright information and any other data specific to you as a photographer.

After adding your copyright information, click on the little triangle located at the top right corner of the dialogue box and choose Save Metadata Template.



Now that you have your metadata template in place, select all the RAW images from your shoot in Adobe Bridge. Next go to Tools > Append Metadata. This will add your copyright information to the existing metadata for the image. The Replace Metadata option will replace all the metadata with the information on the template.



Exporting the cache

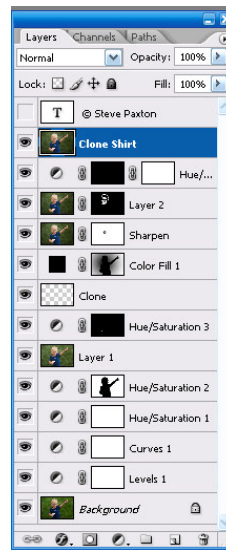
Adobe Bridge can be painfully slow at redrawing thumbnails and metadata information when you click into a folder containing lots of high-resolution RAW files. Go to Tools > Cache > Export Cache to save this information within the folder. Adobe Bridge should be much quicker at redrawing this information the next time you return to the folder.

Taking the images into Camera Raw

After sorting through and rating my images, I open up the ones that I gave a five star rating to in Camera Raw. I make any necessary adjustments to the color temperature, tint, exposure, shadows, and brightness settings for each photograph. I do not apply contrast, saturation, sharpening, or any other adjustments at this point. I leave these adjustments for Photoshop where I can use layers and non-destructive processing. Oftentimes I can synchronize these adjustments in Camera RAW if the images I am working on were shot under the same lighting conditions (e.g. studio lighting).

Moving into Photoshop

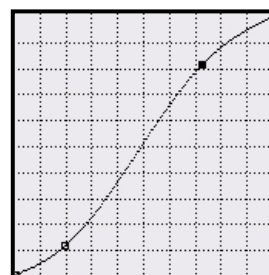
After making the necessary changes in Camera Raw, I open the selected images in Photoshop. I press CONTROL (COMMAND on the Mac) and 0 (zero) to enlarge the image to fit my screen. Next



I create an adjustment layer for levels. I establish the black and white points respectively by pressing and holding ALT (OPTION on the Mac) while individually moving the two end sliders inward until I just start to see color show through the black. Using this clipping preview option is a great way of ensuring that you are not losing

highlight and shadow detail. My last levels adjustment is to the middle brightness slider. I move this left or right to suit my taste.

After making a levels adjustment, I create an adjustment layer for curves. This is where I boost or soften the contrast depending on the direction I wish to take the image. Each image is unique and requires its own precise adjustment. More often than not, I create a soft "S" curve



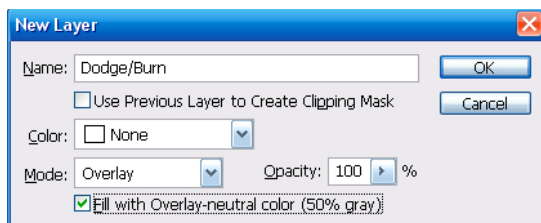
which brightens the highlights while darkening the black tones. This type of serpentine curve can boost contrast just enough to make the photograph pop.

Other adjustments

In almost every instance I make levels and curves adjustments to all of my shots. Beyond that, any other adjustment depends on what the image needs and what I wish to achieve with the photograph. This could include saturation adjustments, dodging and burning, cloning and healing, sharpening, and blurring. I always work on adjustment layers so that I can go back and make changes later if necessary.

If I choose to enhance saturation in a specific shot, I usually work with each color individually and rarely exceed 30 on the saturation slider.

For dodging and burning I press and hold ALT (OPTION on the Mac) while clicking on the new layer icon at the bottom of the layers pallet. In the new layer dialogue box that pops up I select Overlay for the Mode and tick the box to Fill with 50% Gray. I rename this new layer "Dodge and Burn" to help me quickly find it later.



I usually selectively dodge and burn using an exposure setting of between 2% and 15% and adjust the range as necessary (these settings can be found at the top of the screen once you select the dodge or burn tool). I have found an exposure setting over 15% tends to be too excessive and harsh. Having the exposure set lower also allows me to build

up the affect I am trying to achieve. I may use the dodge tool to lighten up flowers and plants and the burn tool to darken clouds or distracting elements in the image.

RAW images tend to need some slight sharpening and the Smart Sharpen tool in Photoshop CS2 gives you a great deal of control. I save sharpening my image until the very end. Once I have fully processed a shot, I press and hold ALT+CONTROL+SHIFT+E (OPTION+COMMAND+SHIFT+E on the MAC) to merge all the visible layers into a new single layer. This gives me the option to go back in time to redo the sharpening if necessary (since all the original layers are still present). I run the Smart Sharpen filter on this layer. You can use the same process to create a merged layer for using any of the blur filters too. Be sure to rename each of these layers so that you can quickly find them later on if you choose to come back and make changes.

Saving

While processing images in Photoshop I periodically save them as a TIFF files. Many photographers save their processed, layered shots as Photoshop files (PSD); however I have found that TIFF files are slightly smaller than comparable PSD files. For this reason, I save everything I process as TIFFs using LZW compression. LZW provides for lossless compression and is fairly compatible with most current image viewing programs. Whatever you decide, I recommend that you save your original processed images in a lossless format such as TIFF or PSD. Even if you shoot all your images as JPEGs, consider

saving any of the ones you process in Photoshop as TIFFs or PSD so that you can make changes to your adjustment layers later if you wish. You can always convert a backup copy of a final image to a JPEG if necessary.

One final note about file formats. Chances are that you will be working in 16-bit mode if you shot your images in RAW format. You must change them to 8-bit mode if you want to save them as JPEGs. To do this, open up a backup copy of your image and then select Edit > Mode > 8-bit.

Backing up processed images

Each week I backup my processed images (i.e. my saved TIFF files) to a second hard drive. I highly recommend that you save these images to an external hard drive that you can take with you if necessary or lock in a secure, fireproof safe. I also backup my final images to DVDs. This may seem a little overkill; however it has saved me more than once after having hard drives fail.

Backing up my images to a second hard drive means that I have at least two copies of my processed photographs available on my computer. Admittedly this takes up a lot of space and will require several high capacity hard drives. I currently have over a terabyte of space spread out over four hard drives. Fortunately, the price of hard drives has come down dramatically in recent years making it affordable to have lots of extra storage space.

Many of today's external hard drives come with backup software helping automate

the backup process. Windows XP Professional and Home Edition have a very handy backup utility that can be found under Start > Programs > Accessories > System Tools > Backup. If you are using Windows XP Home Edition, you may need to install the Backup utility from your Windows XP CD. You can do this by inserting the Windows XP CD into your CD/DVD tray and navigating to CD-ROM Drive:\VALUEADD\MSFT\NTBACKUP. Click NTBACKUP and then Finish when the wizard is done running. The Windows XP backup utility helps speed up the process of backing up large amounts of data and can be scheduled to run while you are away from your computer.

Establish a workflow and stick with it!

Establishing a consistent workflow is an essential part of digital photography. Having a workflow will help ensure that you handle your images the same way each time and that you do not miss any important processing steps. A proper workflow will also help you move, rename, and archive your photographs and should substantially reduce the risk of losing that one-in-a-million-shot. Each and every step of my workflow may not be right for you; however hopefully I was able to present something new that you can use in your own routine. Every photographer is different so put together a workflow that is convenient for you!

Have fun!

About the author

Currently Steve Paxton lives with his wife and two children in the Seattle area. Steve has been a photographer for over ten years and has spent most of that time shooting with a variety of Canon 35mm cameras. His experience ranges from wedding and portrait work to crime scene photography, although he particularly enjoys the solitude of shooting landscapes.

Steve always welcomes comments and feedback on his work. You can leave a comment on his website at <http://www.paxtonprints.com/> or send him an email at coffeelover@gmail.com.