



Automating Photoshop

By Martin Evening

Once you have mastered the basics of Photoshop you can save yourself a lot of time by learning the various ways you can automate Photoshop to avoid repetitive tasks and speed up your workflow. One way you can do this is to familiarize yourself with the various keyboard shortcuts. There are a lot of these in Photoshop, so it is best to learn a few at a time, rather than try to absorb everything at once. Throughout this book I have indicated the Mac and PC key combinations for the various shortcuts in Photoshop. While I have probably covered nearly all those one might use on a regular basis, there are even more shortcuts available. Most of these are listed in the Shortcuts PDF, which is available from the book website. Or, you can go to the Keyboard Shortcuts dialog in the Photoshop Edit menu to see which are available.

Working with Actions

You can record a great many operations in Photoshop using actions. Photoshop actions are application scripts that can record a sequence of events carried out in Photoshop and then be replayed on other images. Image processing routines that you carry out on a regular basis, when working in Photoshop, can be recorded as actions to save you the bother of having to laboriously repeat the same steps over and over again on subsequent images. Not only that, you can also use actions to batch process multiple images.

A new action must always be saved within an action set in the Actions panel. Such action sets can then be saved and shared with other Photoshop users so that they too can replay the same recorded sequence of Photoshop steps on their computers.

Playing an action

The Actions panel already contains a set of prerecorded actions called *Default Actions.atn*. If you go to the Actions panel fly-out menu you can load other sets from the menu list such as: 'Frames', or 'Image Effects' (Figure 1). To test these out, open an image, select an action from the menu and press the Play button. Photoshop then applies the recorded sequence of commands to the selected image. However, if the number of steps in a complex action exceeds the number of available histories there will be no way to completely undo all the commands once an action has completed. As a precaution, I suggest you either take a Snapshot via the History panel or save the document before executing an action. If you are not happy with the result of an action, you can always go back to the saved snapshot in History or revert to the last saved version.

The golden rule when replaying an action is to never do anything that might interrupt the progress of the action playback in Photoshop. If you launch an action in Photoshop you must leave the computer alone and let Photoshop do its thing. If you click on the finder while an action is in playback mode this may sometimes cause an action to fail.

Photoshop actions are always appended with the *.atn* file extension and, by default, saved to the Photoshop Actions folder inside the Photoshop Application Presets folder, but you can store them anywhere you like. If you want to install an action that you have downloaded or someone has sent to you, all you have to do is double-click it and Photoshop will automatically load the action into the Actions panel (and launch Photoshop in the process if the program is not already running at the time).

When you first install Photoshop you will find some actions are already loaded in the Default Actions Set and you can load more

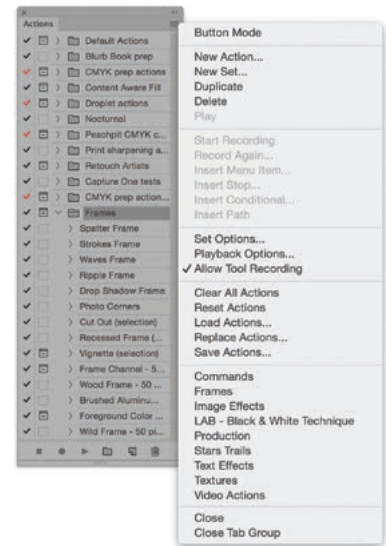


Figure 1 Here is the Actions panel showing the panel fly-out menu options. You can easily add more action sets to the Actions panel via this list.

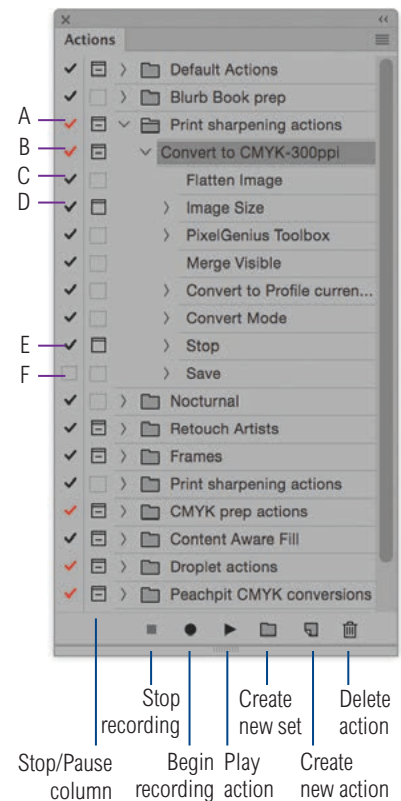
by going to the Actions panel fly-out menu and clicking on one of the action sets in the list (see Figure 1). There are also many more Photoshop actions available on the Internet. A useful starting point is the Adobe Add-ons site: creative.adobe.com/addons. This provides access to lots of extras for Photoshop, including Photoshop actions.

Recording actions

To record an action, you'll first need to open a test image to work with and you must then create a brand new action set to contain the action (or select an existing set, other than the Default Actions set). Next, click on the Create new action button at the bottom of the Actions panel (Figure 2), which adds a new action to the action set. Give the action a name before pressing the Record button. At this stage you can also assign a custom keystroke using the Function keys (**F1**–**F15**) combined with the **Shift** and/or **⌘** (Mac), **ctrl** (PC) keys. You will then be able to use the assigned key combination to initiate running a particular action. Now carry out the Photoshop steps you wish to record and when you have finished click the Stop recording button.

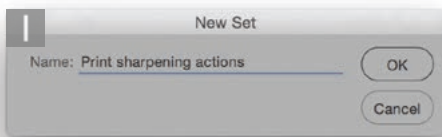
When recording a Photoshop action, I suggest you avoid recording commands that rely on the use of named layers or channels that may be present in your test file, as these will not be recognized when the action is applied to a new image. Also try to make sure that your actions are not always conditional on starting in a specific color mode, being of a certain size, or being a flattened image. If the action you intend recording is going to be quite complex, the best approach is to carefully plan in advance the sequence of Photoshop steps you intend to record. A Stop can always be inserted in an action, which will then open a message dialog at a certain point during playback (see page 7 and Figure 4). This can be used to include a memo to yourself (or another user replaying the action), reminding what needs to be done next at a certain stage in the action playback process. Or, if the action is to be used as a training aid, a Stop message could be used to include a teaching tip or comment.

As I mentioned already, if you want to save an action, it must be saved within an action set. So if you want to separate out an action and have it saved on its own, click on the Create new set button in the Actions panel to create a new set, drag the action to the set, name it and choose Save Actions... from the Actions panel fly-out menu (the action set must be highlighted, not the action). If you hold down the **⌘** **⇧** (Mac), **ctrl** **alt** (PC) keys as you choose Save Actions... this saves the text descriptions of the action steps for every Photoshop action currently in the Actions panel. The following steps show how to record a basic action.

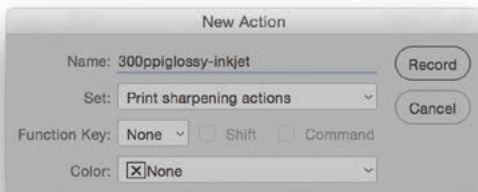
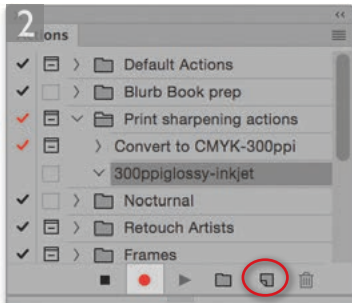


- A: This Action Set contains inactive actions.
- B: Indicates one or more action steps are inactive and contains a Pause.
- C: An active step.
- D: An active step with a Pause which will open a dialog box.
- E: An active step with a Stop which will open a message dialog.
- F: An inactive step.

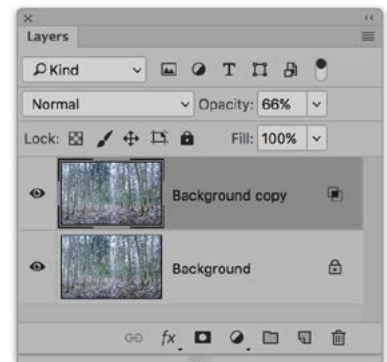
Figure 2 The Actions panel column showing the different action state icons.



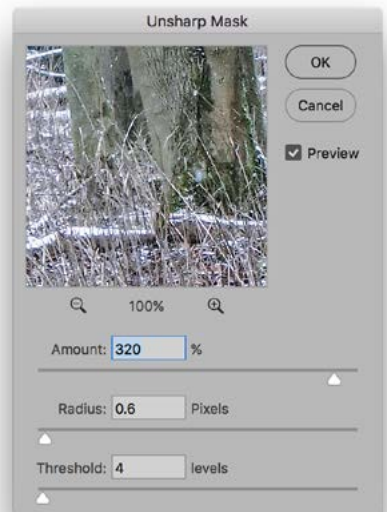
1 This shows a practical example of how to create an action, by showing how print sharpening steps could be recorded as an action. The first step was to create a new action set. To do this, I clicked on the Create new set button (see Figure 2), named this 'Print sharpening actions' and clicked OK.



2 I then clicked on the Create new action button (circled) in the Actions panel, named this action '300ppi-glossy-inkjet' and clicked the 'Record' button.

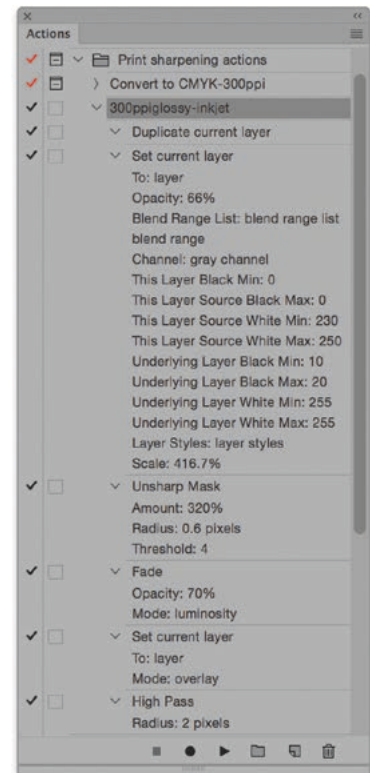


3 I used a sample image to apply all the steps required to sharpen an image for press.





4 When I had finished recording all the steps, I clicked the Stop button to end the recording. In the Actions panel view shown on the right you can see a fully expanded list of all the steps, including the settings used. This action could then be applied to other images by clicking on the Play button, or could be applied as a batch action process.



Troubleshooting actions

If an action doesn't seem to be working, first check that the image to be processed is in the correct color mode. Many actions are written to operate in RGB color mode only, so if the starting image is in CMYK, the color adjustment commands won't work properly. Quite often, assumptions may be made about the image data being flattened to a single layer. One way to prevent this from happening is to start each action by using the **alt** shortcut (to select the top-most visible layer), followed by the Merge Visible to new layer shortcut (**⌘** **⇧** **Shift E** [Mac], **ctrl alt Shift E** [PC]). These two steps will add a new, flattened merged copy layer at the top of the visible layer stack. Some pre-written actions require that the start image fits certain criteria. For example, the Photoshop-supplied 'Text Effects' actions require that you begin with an image that contains layered text and with a text layer selected.

If you have just recorded an action and are having trouble getting it to work, you can inspect it command by command. Open a test image, expand the action to display all the items, select the first step in the action, hold down the **⌘** (Mac), **ctrl** (PC) key and click on the Play button. This allows you to play the action one step at a time. You need to have the **⌘** (Mac), **ctrl** (PC) key held down and keep clicking the Play button to run through the remaining steps. If there is a problem with one of the action steps then double-click the relevant action step

in the list to rerecord it. You will then need to make sure that action step is selected, keep the **⌘** (Mac), **ctrl** (PC) key held down again and click on the Play button to continue.

Actions panel in Button mode

Figure 3 shows the Actions panel in Button mode, where all you have to do is click on a button to initiate a recorded action. This makes replaying actions even simpler.

Limitations when recording actions

Most Photoshop operations can be recorded as an action, such as image adjustments, History panel steps, filters, and most Photoshop tool operations, although you should be aware that tools such as the Marquee and Gradient tool are recorded based on the current set ruler unit coordinates (see sidebar on recording ruler units). If you go to the Actions panel menu and check the 'Allow Tool Recording' item, this does allow things like brush strokes to be recorded as part of an action. However, it is important that the images you record the action on and play back the action on have the same pixel dimensions.

Actions only record changed settings

One of the problems you commonly face when preparing and recording an action is what to do if certain settings are already as you want them to be. Actions only record a setting if it actually changes something. For example, let's say you record an image size adjustment where you want the image resolution to end up at 300 pixels per inch, but the image is already defined as being 300 pixels per inch. In these situations, Photoshop won't record anything. To get around this you must deliberately make the image resolution something different before you record a 'set image resolution' step. Then, when you change the pixel resolution, this will get recorded. For example, while recording, you could go to the Image Size dialog and temporarily make the image, say, 200 pixels per inch (without resampling the image), then record setting the resolution to 300 pixels per inch. When you are finished recording, delete the 200 pixels per inch step from the completed action.

Recording ruler units

For actions that involve recording the placement of objects or drawing of marquee selections, it is a good idea to record setting the ruler units as part of the action. If you go to the Photoshop preferences and choose 'Units & Rulers', you can set the rulers to 'Percentage'. By recording this as part of an action, any subsequent placement of Photoshop guides,

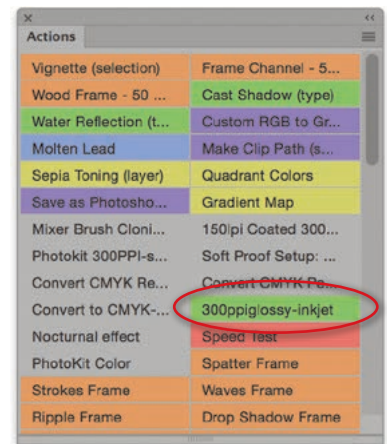


Figure 3 The Actions panel in Button mode.

placement of the type tool or use of the marquee tools can be recorded relative to the proportions of the document. When you then replay an action, the action should work effectively no matter what the size or proportions of the image.

Stops and Pauses

When editing an action, you can insert what is known as a Stop. This allows you to halt the action process to display an alert message. This could be a useful warning like the one shown in Figure 4, which could be displayed at a key point during the action playback. If you click in the Stop/Pause column space to the left of the action step, next to a step where a dialog can be shown, you can instruct Photoshop to open the dialog at this point (see the red icons in the Stop/Pause column in Figure 2). This allows you to custom edit the dialog box settings when playing back an action.



Figure 4 The Record Stop dialog.

Background layers and bit depth

The lack of a Background layer can also stop some actions from playing. There is not always much you can do about this, other than to convert the current base layer to a Background layer by choosing Layer ⇒ New ⇒ Background from Layer before playing the action. This isn't always advisable since you wouldn't want to accidentally flatten all the layers in an important image. Alternatively, you could make a flattened duplicate of the current image and then run the action. You may also want to check the bit depth of the image you are applying the action to. If the bit depth is 16-bit, not all Photoshop filters will work and you will need to convert the photo to 8-bits per channel mode first.

Layer naming

Action recordings should be as unambiguous as possible. For example, if you record a step in which a named layer is brought forward in the layer stack, in playback mode the action will look for a layer with exactly the same name. Therefore, when adding a layer include the naming of the layer as part of the action (but don't use Layer 1, Layer 2, etc., as this may only cause confusion with Photoshop's default layer naming). Also, use the main Layer menu or Layer key command shortcuts to reorder the layer positioning. Doing this will make your action more universally recognizable.

Volatile actions

One thing you have to be aware of is that although actions will remain stored in the Actions panel after you quit Photoshop, a newly installed

or created action can easily become lost should you suffer a computer or program crash before you quit. Photoshop Actions can also become lost if you trash the Photoshop preferences or uninstall Photoshop. It is therefore always a good idea to take the precaution of saving any newly created or newly edited action sets so you don't lose them. These can be saved anywhere you like, but they ideally need to be stored in the Username/ Library/Application Support/Adobe/Adobe Photoshop CC/Presets/Actions folder (Mac), or Username\AppData\Roaming\Adobe\Adobe Photoshop CC\Presets\Actions folder (PC), if they are to be seen listed at the bottom of the Actions panel fly-out menu (see Figure 1).

Inserting menu items

There are some things which can be added as part of a Photoshop action that can only be included by forcing the insertion of a menu item. For example, Photoshop doesn't record zoom tool or View menu zoom instructions. However, if you select 'Insert Menu Item' from the Actions panel fly-out menu, as you record an action, you will see the dialog shown in Figure 5. The Menu Item dialog will initially say None Selected, but you can now choose, say, a zoom command from the View menu and the zoom instruction will be recorded as part of the action, although frustratingly the image won't actually zoom in or out until you replay the action! I often use the Insert Menu Item as a way to record actions that open certain Photoshop dialogs that I regularly need to access, such as the various Automated plug-ins. This saves me having to navigate the Photoshop menus to access them.

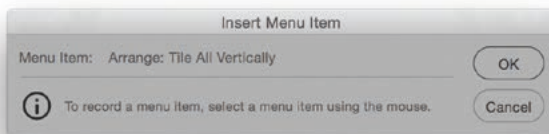


Figure 5 The Insert Menu Item dialog will initially say None Selected. You can then select a menu item such as Window ⇨ Arrange ⇨ Tile All Vertically, and click OK. When the Action is replayed the inserted menu item will be included in the playback list.

Tutorial Builder

Over on the labs.adobe website is an interesting tool called Tutorial Builder: labs.adobe.com/downloads/tutorialbuilder.html. Currently at version 3, this allows you to record steps carried out in Photoshop and compile these as ready made, step-by-step Photoshop tutorials. Also included is the code required to replay each step using the Touch SDK to replay the steps in Photoshop via a mobile device.

Batch processing actions

One of the great benefits of working with actions is the ability to batch process images. The Batch dialog can be accessed via the File ⇨ Automate menu and can also be accessed via the Tools ⇨ Photoshop menu in Bridge. You first need to select an action set and action from the Play section and then set the Source and Destination. Figure 6 shows an example of the Batch Action dialog set to apply a prerecorded action. The Source can be all currently open images, the selected images in the Bridge window, an Import source, or a specific folder, in which case, you'll need to click on the Choose... button below and select a folder of images. The following items in the Source section will only show if the Folder or Bridge options are selected. These allow you to decide how to handle files that have to be opened first in Photoshop before applying an action. Most of the time you will want to leave the 'Override Action "Open" Commands' unchecked. If there is a recorded 'Open' item, such as an ACR processing step in an action, checking 'Override Action "Open" Commands' overrides popping the ACR dialog for each image and simply applies the ACR processing. However, if you check this and there is no open step recorded in the action, this will prevent the action from running. Only check the 'Include All Subfolders' option if you want to process all the subfolders within the selected folder. If you are processing a bunch of raw files and wish to override seeing the ACR dialog then do check the 'Suppress File Open Options Dialogs' option.

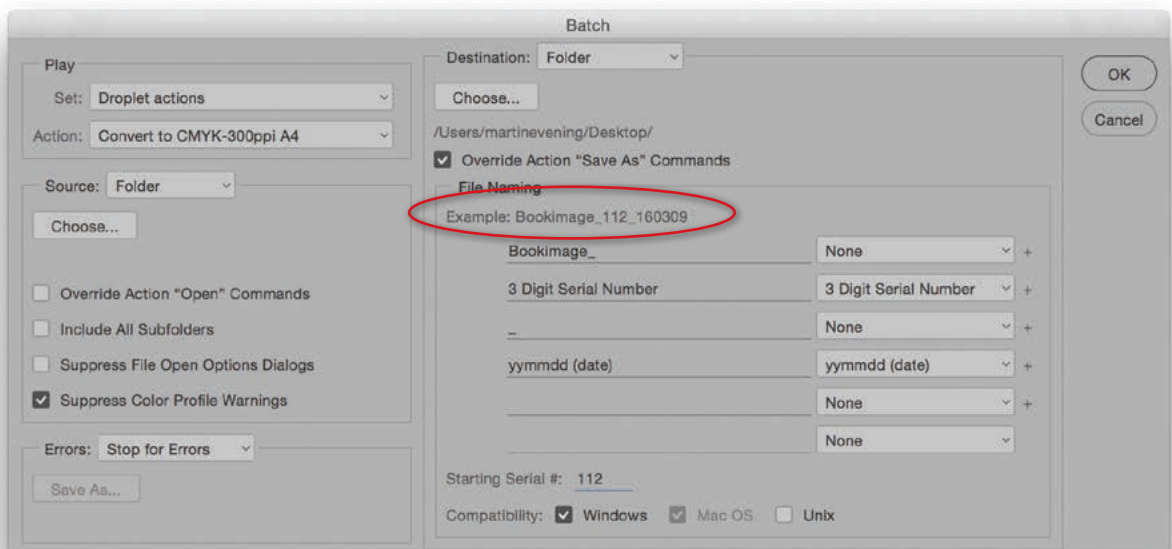


Figure 6 An example of the Batch Action dialog set to apply a prerecorded action.

Lastly, if you want to prevent the Missing Profile and Profile Mismatch dialogs appearing when you batch process images, check the ‘Suppress Color Profile Warnings’ option. As a consequence of doing this, if there is a profile mismatch, Photoshop checks what you did previously. If you previously chose to keep the image in its own profile space, then this is how the images will be batch processed. If there is no profile present, Photoshop checks to see if your previous preference was set to: Ignore, Assign a profile, or Assign and convert to the working space, and acts accordingly. If ‘Stop For Errors’ is selected, this halts the batch processing in Photoshop any time an action trips up over a file for some reason. You can prevent this by selecting the ‘Log Errors to File’ option instead. This allows the batch processing to complete, but creates a log report of any files that failed to process.

In the Destination section you have three options. If you choose ‘None’, Photoshop processes the selected files and leaves them open. If you choose ‘Save and Close’, Photoshop does just that and overwrites the originals, and if you choose ‘Folder’, you’ll need to click on the Choose... button to select a destination folder.

Now it might so happen that the action you have selected to run the batch process with may contain a Save or Save As command that uses a specific file format and format settings, and this action step will contain a recorded Save destination. It might be the case that the Save destination is an important part of the action, but if the destination folder no longer exists, the action will fail to work (besides, you can specify a destination folder within the Batch dialog itself). So in the majority of instances, where the action contains a Save instruction, I recommend you check the ‘Override Action: “Save As” Commands’ checkbox. If the action does not contain a Save or Save As command, then leave this option unchecked.

If a folder is selected as the destination, you can use the file renaming fields below to apply a renaming scheme to the processed files. You can use any combination you like here, but if you select a custom file extension option this must always go at the end. A complete list of the file naming and numbering options are shown in Figure 7. These also let you define the precise numbering or renaming of the batch processed files. As you edit the fields, you will see an example of how the naming will be applied in the ‘Example:’ section (circled in Figure 6).

It is easy to customize the File Naming with your own fields. In Figure 6, I created a batch process where the images were renamed ‘Bookimage_’ followed by a three digit serial number, followed by an underscore ‘_’ and with the date expressed as: year; month; and day. Note that the numbering was set to start at ‘112’. So in this example the file name structure would be as follows: Bookimage_112_140618.

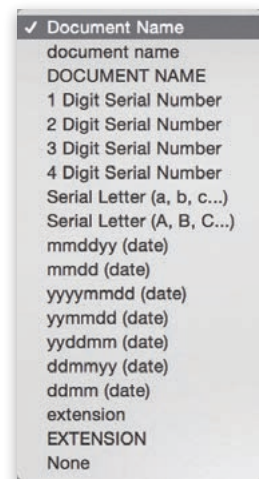


Figure 7 The Batch interface naming and numbering options.

Creating a droplet

Photoshop actions can also be converted into self-contained, batch processing applications, known as droplets, which can play a useful role in any production workflow. When you drag a document or a folder on top of a droplet icon this launches Photoshop (if the program is not already running) and initiates the action sequence contained within the droplet. The beauty of droplets is you only need to configure the batch processing settings once and they'll then be locked into the droplet. Droplets can be stored anywhere you like, although it makes sense to have them readily accessible such as in an easy-to-locate system folder (see Figure 8). Droplets can perform Save and Close operations (overwriting the original), or can be configured to save the processed images to an accompanying folder as a new version of the master image.

To make a droplet, go to the File ⇨ Automate menu and choose Create Droplet... Figure 9 shows the Create Droplet interface and you will notice that the Create Droplet options are identical to those found in the aforementioned Batch Actions dialog. Choose a location to save the droplet to and, if required, you can also choose a destination folder for the droplet processed files to be saved to. When you are done, click OK. You can name a droplet anything you like, but if a droplet is created on a Mac you'll need to add a .exe extension for it to be PC compatible. If you are a Mac user and someone sends you a droplet that was created using a PC, it can be made Mac compatible by dragging it on top of the Photoshop application icon first to convert it.



Figure 8 Photoshop Droplets (shown here with output folders).

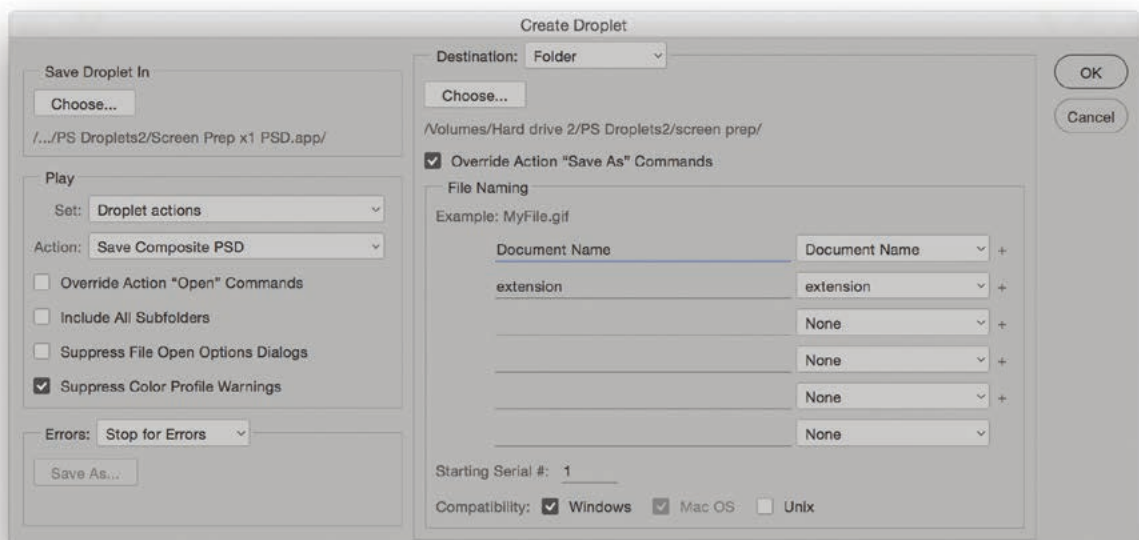


Figure 9 The Create Droplet dialog.

Image Processor

The Image Processor (Figure 10) is located in the File ⇨ Scripts menu in Photoshop and can also be accessed via the Tools ⇨ Photoshop menu in Bridge. The Image Processor is a fine example of what Scripts can do when they are presented via an easy-to-use interface. The Image Processor basically allows you to select a folder of images (or select all open images) to process and select a location to save the processed files to. The Image Processor can then be configured to run a Photoshop action (if required) and save the processed files using either the JPEG, PSD or TIFF file formats. However, it also allows you to simultaneously process and save files in multiple file formats. This can be very handy if you wish to produce, say, both a TIFF version at high resolution and a JPEG version ready to place in a web page layout. For example, when you are preparing images that are destined to be shared by email or published via the Web, the Image Processor is a handy tool to use because you can not only resize the images as part of the image processing, but you can instruct the Image Processor to convert the image from its current profile space to sRGB, which is the ideal RGB space for general purpose Web viewing.

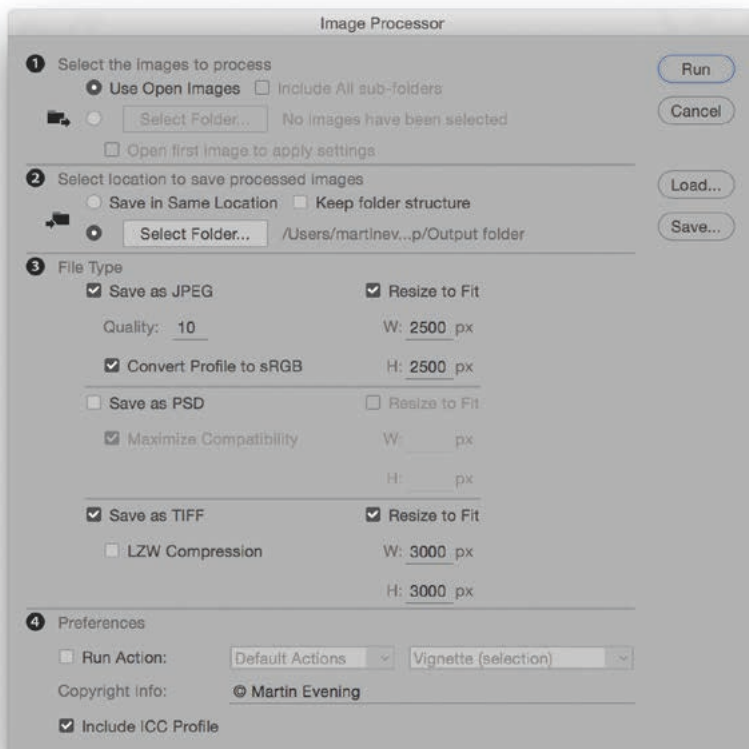


Image Processor Pro

An advanced version of Image Processor can be downloaded via the following link: tinyurl.com/j6kdauy. This includes extra features and functionality.

Figure 10 This shows the Image Processor (formerly known as Dr. Russell Brown's Image Processor). This Scripting dialog can be configured to process single or multiple images, apply Photoshop actions, add copyright info and save the files to a designated folder location in one or more of the following file formats: JPEG, PSD or TIFF. The destination folder will contain the processed images and these will be separated into folders named according to the file formats selected. Once configured, you can click on the Save... button to save these settings and load them again at a future date.

Exporting and importing presets

When you initially installed Photoshop, you may have noticed a dialog asking ‘Would you like to migrate presets from the following versions?’ In that dialog the most recent previous version of Photoshop appeared listed. This allowed you to automatically import the preset settings that were contained in your old version of Photoshop. If you ignored this dialog and clicked ‘No’, you can go to the Edit menu in Photoshop and choose Presets ⇨ Export/Import Presets... This opens the dialog shown below in Figure 11. In Import Presets mode, select the Presets folder from your old version of Photoshop and click on an arrow to add selected presets to the list on the right (or click ‘Add All’), then click ‘Import Presets’. In Export Presets mode, select presets from the list on the left and click on an arrow to add these to the list on the right (or click ‘Add All’), then click ‘Export Presets’. This will allow you to create an ‘Exported Presets’ folder that contains a subset of presets folders, mirroring what was in the original Presets folder.

Migrating presets

If you install Photoshop CC as a new program the preset migration migrates settings from both the user library Presets folder as well as the Photoshop application Presets folder. It also migrates all active presets as well as any non-loaded presets that are around.

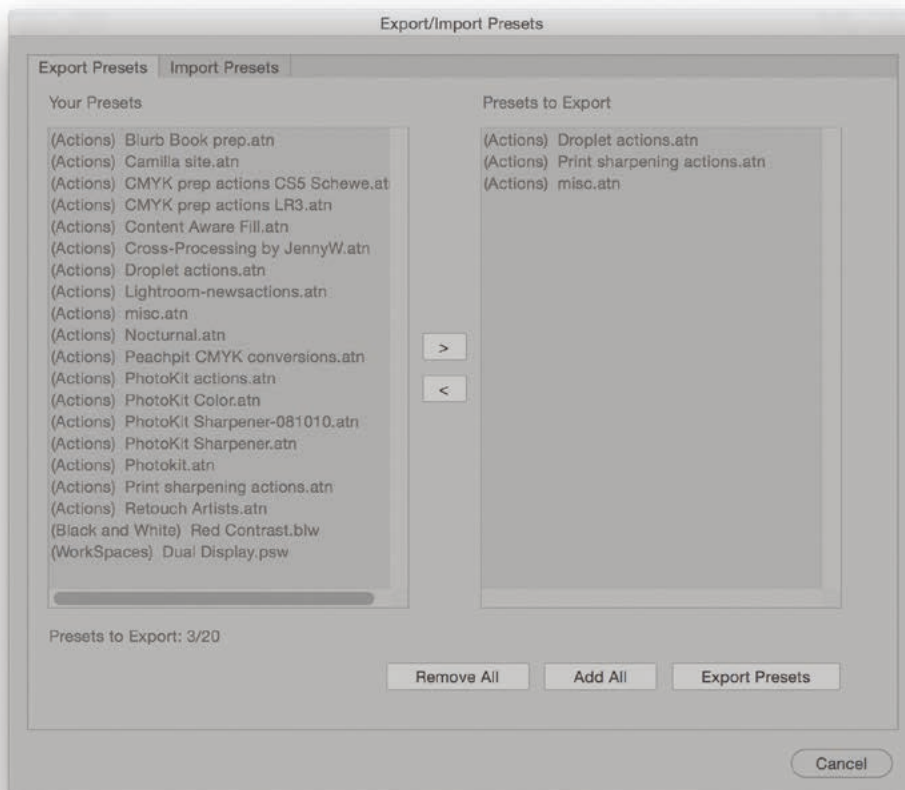


Figure 11 This shows the Export/Import Presets dialog.

Scripting

For most of us, the prospect of writing scripts is quite scary and I freely confess I am one of those who has looked at the scripting manuals and simply shuddered at the prospect of having to learn computer code. Steps have been taken though to make scripting more accessible to the general user. You can start by referring to the Photoshop Scripting Guide and other PDF documents about scripting that can all be found at: adobe.com/devnet/photoshop/scripting.html. You can also download pre-made scripts from the Adobe Add-ons website: creative.adobe.com/addons.

To start with, go to the Scripts menu in the Photoshop File menu (Figure 12). There you will see a few sample Scripts that are readily available to experiment with. Among these is a script called 'Export Layers to Files' (Figure 13). This can be used to generate separate file documents from a multi-layered image. Other scripts I like to use include the Load Files into Stack..., which I find useful when preparing images for stacks image processing or before choosing Edit ⇨ Auto-Align layers.

Automated plug-ins

A number of automated plug-ins are available via the File ⇨ Automate menu. These enable Photoshop to perform a complex set of procedures based on simple user input. Adobe has also made Automated plug-ins 'open source', which means it is possible for third-party developers to build their own Automated plug-ins for Photoshop.

Fit Image

Fit Image... (Figure 14) is a very simple Automated plug-in, which allows you to automate image resizing. To launch, choose File ⇨ Automate ⇨ Fit Image... It is well suited for the preparation of images for screen-based design work. You can enter the pixel dimensions you want the image to fit to, by specifying the maximum pixel width or height. Note that if you enter the same pixel dimensions for the width and height, Fit Image can be used to simultaneously batch process landscape and portrait format images. Scripts can be made to call other scripts, so it is often useful to include Fit Image within a more complex script, or as part of a recorded action sequence.

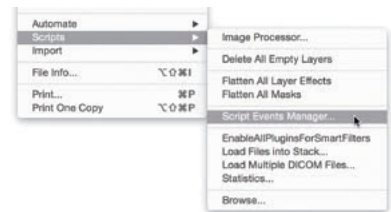


Figure 12 The Photoshop Scripts menu.

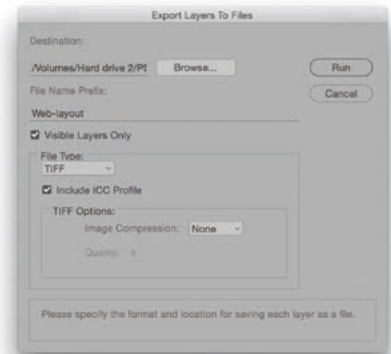


Figure 13 An example of the Export Layers to Files... script dialog.

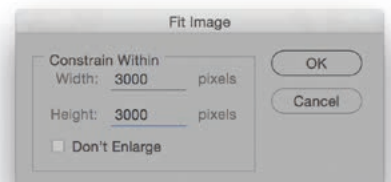
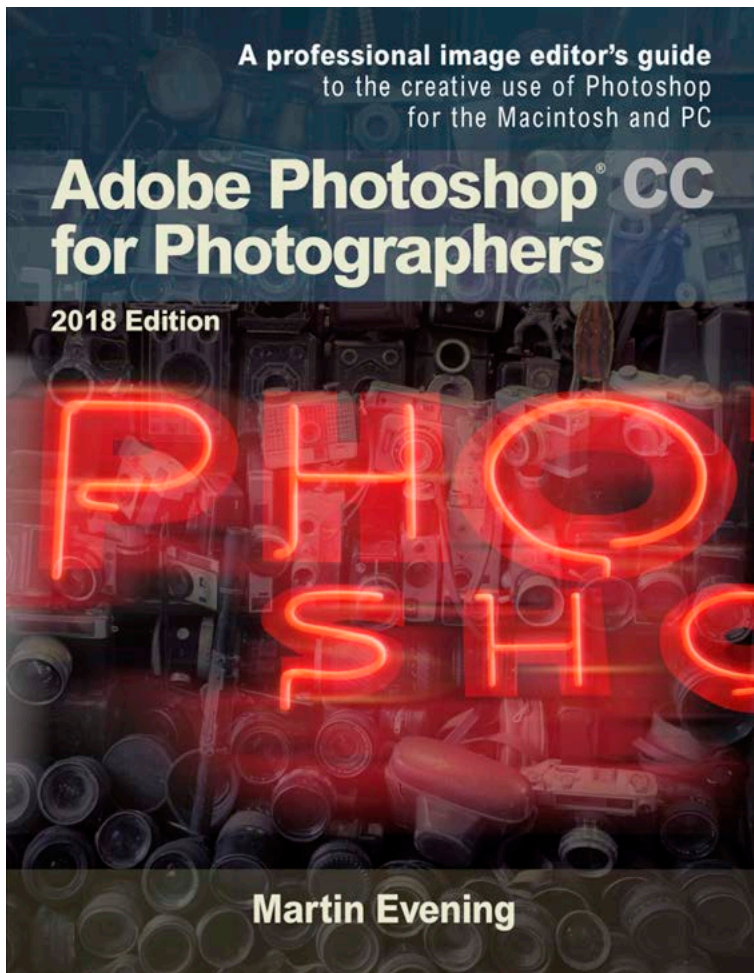


Figure 14 The Fit Image dialog.

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