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Automating Photoshop

Automating repetitive tasks in Photoshop can increase productivity as well as save time and money. Almost any command (or set of commands) in Photoshop can be recorded into an action to be applied repetitively to a single file or across multiple file. The most basic action will execute one command such as resizing an image or displaying a dialog box. More complex actions can execute multiple commands automating more elaborate tasks. When used with the Batch command and/or Droplets, these actions can be applied to multiple files at once, enabling Photoshop to do repetitive tasks more quickly than even the best-trained Photoshop user! When repetitive tasks in a more involved workflow need to be carried out between applications, then AppleScript, Visual Basic, or JavaScript can be used to create scripts which work with Photoshop. In the case of conditional logic (a fancy way of saying "Make a decision") when an action needs to be applied to some files but not others, JavaScript files can be written to fulfill this need. One word of caution when first trying to conquer actions - run them on duplicate files, leaving your precious originals unaltered. As you become more Action savvy, you can kick off those training wheels, and batch away!

The Actions Palette

If the Actions palette isn't showing, select Window > Actions. The Actions palette displays one set of actions called Default Actions.atn. Click the disclosure triangle next to the set of actions to reveal its contents. This default set of actions contains a variety of different actions used to create special effects and/or increase productivity and can be used to see what types of commands can be recorded. When you have some time, give them a try. Clicking the disclosure triangle again conceals the contents of the set. Photoshop has additional pre-made actions which ship with the program and can be loaded into the Actions palette. To use these actions, from the Actions palette menu, select the set from the bottom of the list (Commands, Frames, Image Effects, Production, Text Effects and/or Textures). We'll talk more about saving and loading actions later.

Creating single-command actions

Any Action you create needs to be in a "Set", which looks like a folder. We're going to start by creating our own Set of actions. This allows us to keep them separate from the default set and helps keep them organized. On the Actions palette, select "New Set" from the palette menu. In the New Set dialog box, name the set "Single Commands" (or something that will make sense to you), and click OK. On the Actions palette, the new set is automatically targeted and any new actions you create will be placed in that set. Note: Both actions and sets of actions can be rearranged at any time by simply targeting it (by clicking on it) and dragging it to a new position in the palette.

To begin, we'll create a simple action and assign a function key to trigger it. This will enable a single keystroke to automatically carry out a menu command. By assigning a function key, we can create keyboard shortcuts for commands that don't have them - for example, image size or flatten Image. You're probably saying, "Hey, Photoshop CS HAS customizable keyboard shortcuts." Well, there are still advantages to using Function keys. For example, they

increase the total number of keyboard shortcuts available! Before beginning to record the action, open a multi-layered document (or create a new one). Then, using the Actions palette menu, select “New Action” (or simply click the “New Action” icon at the bottom of the palette).

In the New Action dialog box, give the action a name. Use the Set option to define which set Photoshop puts the action in. Use the Function Key command to assign a Function key to trigger the action. Note: although it might look like there is a relatively small number of function keys to use, they can be used in conjunction with keyboard modifiers, (Shift and Control on Windows, Shift and Command on the Macintosh) effectively quadrupling the number of function keys available. Choose the color coding option to help identify and/or group your actions by color when viewing your actions in button mode (more about this later). Finally, click Record to begin recording the action.

While recording, Photoshop will keep track of nearly all of the commands that you choose. (For a list of items that can not be recorded, see the end of this tip). Select Layer > Flatten Image. The image is flattened, and the command Flatten Image is listed in the Actions palette. Note: when you record an action, Photoshop records what happened (as opposed to the exact menu command), so don’t let this confuse you. For example, when adding a new layer, Photoshop lists the command as “Make layer” in the Actions palette.

To stop recording, from the Actions Palette, use the fly out menu and select “Stop Recording” (or simply click the stop recording icon at the bottom of the palette). To play the action, open a layered file (or revert the one used to create the action) and, from the Actions palette, use the fly out menu to select Play (or simply click the play button at the bottom of the Actions palette). However, since we assigned a Function-key to the action, we can also use it to play the action. This enables us to have the actions palette closed, saving screen real estate and still run them. Note: if you forget which F-key you assigned to an action, use the Actions palette menu to select “Action Options”. Or, you can select “Button Mode” to view your actions as “pushable” buttons and view any assigned F-keys. You might find that working with the actions listed in button mode enables you to select them more quickly. You can also stretch the Actions palette in button mode to list multiple columns of buttons along the bottom of your screen. There are, however, a few disadvantages to working in Button Mode: you can’t target individual steps, nor can you create new actions, for example. Select “Button mode” again to return to normal mode.

Now create a second action - this time for resizing an image. Open any file in Photoshop (or create a new one). In the Actions palette, select the set in which you’d like the action to be placed, and from the palette menu, select New Action. Name the action, assign an F-Key and a color (if desired), and click “Record.”

Select Image > Image Size, and enter the desired size. Click OK. On the Actions palette, note that the Image Size command is recorded. If you click on the disclosure triangle next to the Image Size command, you can see that the specific parameters that you recorded are listed.

To stop recording, from the Actions Palette, use the palette menu to select Stop Recording (or simply click the stop recording icon at the bottom of the palette). To play the action, open another file (or revert the one that is open) and, use the Actions palette menu to select Play (or simply click the play button at the bottom of the Actions palette). Or, use the assigned Function key. The image is resized to the same size as the first document.

If you want Photoshop to display the command’s dialog box instead of automatically applying the same recorded values to every image, you can click in the empty well to the left of the command (on the Actions palette) to display the dialog box. Now, playing the action results in the Image size box being displayed so that the values can be customized as needed on a document-by-document basis.

Creating multi-command actions

To create a more complex action that contains multiple steps is as easy as recording multiple commands. For example, to create an action that, colorizes the image, applies a filter, and saves the image as a different format, select New Action, click record and select the following commands:

- Image > Image Size
- Image > Adjust > Hue/Saturation (check Colorize and use the hue slider to choose the desired color)
- Filter > Sharpen > Unsharp Mask
- File > Save As and select a different file format
- Select Stop Recording.

Play the action on a different file. If you toggle on the dialog option next to the Hue/Saturation command, you can specify a different hue for each color.

Making changes to actions

Individual commands, their attributes, or entire actions and sets can be modified, expanded, deleted, duplicated, and reordered so if you make a mistake while recording, don't worry, you can always go back and edit the action later.

If you want to remove a step from a command, you can select Delete from the Action palette menu, drag the command to the trash icon on the bottom of the palette, or temporarily exclude a step by clicking the check mark to the left of the command. If you want to add a step, select start recording from the Action palette menu, or if you already have that command recorded in another action you can option (Mac)/alt (Win) drag the command from one action to another. (Not using option (Mac)/alt (Win) will simply move the command from one action to another). If you want to record the same command to be performed multiple times, you can select it repeatedly while recording, or select Duplicate or Record Again from the Actions palette menu.

Other commands

Some items in Photoshop don't appear to be recordable. For example, if you're recording an action and select View > Actual Pixels the image changes on screen (provided you're not already viewing the image at 100%) but no command is added to the Action. To add this command, you must select Insert Menu Item from the Action palette menu. With the Insert Menu Item dialog box showing, select View > Actual Pixels. You'll see the path for the command listed at the top of the dialog box. Click OK to add the command to the Action. A key difference between recording a step and using the Insert Menu Item is that the Insert menu doesn't allow toggling on and off the dialog box for that command. The dialog box option is shown in the Actions palette, but it's greyed out (In Photoshop CS) and cannot be toggled. Therefore if you want to change the values on an image-by-image basis by showing the commands dialog box, it's better to record the command than insert it.

Use the Insert Stop command to insert a message, explanation, or reminder. This is especially useful if you're creating and sharing actions with others. Use the Actions palette menu to select "Insert Stop." In the Record Stop dialog box, add a message and choose whether or not to allow the action to continue. If the action requires that something be done, (make a selection for example) then do not allow it to continue. If the action is a reminder (such as "Make sure the image is RGB before playing the action."), then check "Allow Continue." If the action is stopped, click the play button at the bottom of the Actions palette to resume playback.

Action and Playback options

In order to change the name of an action, you can either double click the action in the Actions palette, or select Action

Options from the Action Palette menu. You can also change the F-key assigned to the action and color coding in this dialog box. If you want to place the action in to another set, drag the name of the action to the new Set. To make a copy of the action into another set, hold down the option (Mac)/alt (Win) while dragging the action.

To control the playback of actions, select Playback options from the Actions palette menu. Typically I leave mine to Accelerated to play the action as fast as possible. However, if you're trying to troubleshoot your action you might want to select some of the other options. Step by step will slow down the action so that the screen redraws the result of each step, but that's typically not slow enough for me. When I'm troubleshooting, I typically enter a number of seconds to pause for. This helps me to see what is happening at each step and what I've done incorrectly! The option to Pause for Audio Annotation pauses the action long enough to play any audio annotations recorded in the action.

Saving and sharing actions

When you're finished creating actions, I would suggest that you save them. Photoshop only saves the contents of the actions palette when you quit the application. It only took me one experience to learn this. I had spent all evening creating a very intricate action with dozens of steps. I finally went to bed without saving the action or quitting Photoshop. Unfortunately, the power decided to go out that night crashing Photoshop without saving the action. Poof, all that hard work was gone. Before trying to save an action, you have to know that individual actions can't be saved, you must save a Set (although a Set can include only a single action). In fact, only when you have a set targeted in the Actions palette will you be able to select Save Actions from the palette menu. If you're saving actions that are going to be used cross-platform, be sure to include the .atn extension.

If you're sharing actions with friends and colleagues, you can use the Actions palette menu to select Load Actions. Navigate to the Actions file (.atn) and select Load. The set will now appear in the Actions palette. If you store sets of action in the Photoshop folder > Presets > Photoshop Actions folder, then they will automatically appear at the bottom of the Actions palette menu so that you can simply select them from the list to load them. You can also choose to Clear All Actions, Reset Actions (to their default) or Replace actions from the Actions palette menu.

Batch Processing

With the introduction of Photoshop CS, you now have additional choices as to how you decide to batch process actions. You can either select the images that you want to batch from the File Browser and choose Automate > Batch, or you can select File > Automate > Batch. The advantage of using the File Browser is the additional control you have over selecting your images. For example, you can use the search command to find specific images and have the File Browser display them in a search results folder. Then you can reorder them into your own custom sort order if desired. You can then select all (or even further refine your selection) and batch process those images. This has saved me a great deal of time just by allowing me to batch process files that are in many different folders without having to make copies or rearrange my folder structure.

Whichever way that you select to proceed, the batch dialog box will be the same. In the Play area, select the Set and the Action desired. In the Source area, select the source files that you want to run the action on:

- Select Folder to select the correct folder of images to process. If you select this option, use the Choose button to navigate to the desired folder.
- Select Import to import PDF Images
- Select Opened Files to use currently opened files
- Select File Browser to use the currently selected images in the File Browser or, if no files are selected in the File Browser, then the action is run on all of the files.

- Select “Override Action ‘Open’ Commands” if you want any Open commands (recorded in the action) to be ignored. Note that if you include the open command as part of an action, Photoshop will open the SAME file each time the action is performed. Unless you want the same file modified over and over, deselect this option. Activating this option is handy if you need to open a specific file, such as a backdrop, which does need to be used for more than one file.

- Select “Include All Subfolders” to process files in folders within the master folder you’re selecting.
- Select “Suppress File Open Options Dialogs” if you want Photoshop to bypass The Camera Raw dialog box, opening Raw files with their default settings or with any setting applied to them.
- Select “Suppress Color Profile Warnings” to turn off display of color policy messages.

Choose a destination for the processed files from the Destination menu.

- “None” leaves files open without saving changes (unless the action includes a Save command). This gives you an opportunity to see the results of the action before saving the file.
- “Save and Close” saves the files in their current location, OVERWRITING the original files.
- “Folder” saves the processed files to a folder in another location. If you select Folder, click Choose to specify the destination folder.

Select “Override Action Save In Commands” to ignore any save commands recorded in the action. Deselect the option if the action contains Save As commands for specific files that are required by the action. For example, if you have an image that is the front cover of your newsletter, you could choose to resize, color balance, and sharpen the image, and then save it as “frontcover.psd” for importing into InDesign. This allows you to have an intermediary file as the result and leave the original image intact.

If you chose “Folder” as the destination, specify a file-naming convention or add your own in the text entry fields. In Photoshop CS, you can begin a sequentially numbered list at any number desired by entering that number in the “Starting Serial#” box. Check the options for file compatibility (for Windows, Mac OS and Unix) when moving files cross-platform or utilizing on the web.

Finally, select an option for error processing from the Errors pop-up menu: “Stop for Errors” will suspend the process until you confirm the error message. “Log Errors to File” will record each error in a file without stopping the process. If errors are logged to a file, a message will appear after processing to notify you that errors had occurred.

Creating Droplets

You can think of Droplets as self running applications that perform actions that are associated with it on files dragged onto the droplet. To create a Droplet select File > Automate > Create Droplet. Click the Choose button to select where to save the droplet. For an explanation of the other option in the Create Droplet dialog box, refer to the section on Actions above. To use a Droplet, simply drag one or more files (or a folder of files) onto the Droplet. Droplets continue to reference the needed Actions inside Photoshop so don’t discard your Actions after creating droplets for them! However, you can make changes to the Action and the Droplet will still work and will incorporate any changes made to the Action. Note: Droplets automatically launch Photoshop if it’s not running.

10 useful tips when creating actions and droplets:

1. To play a single step double click on it in the Actions Palette
2. You can save the steps in an Actions as a text file by pressing Ctrl+Alt (Windows) or Command+Option (Mac) while selecting Save Actions from the Actions palette menu. This is handy for reviewing or printing the contents of an Action. However, you can’t reload the text file back into Photoshop. Note that ALL of the Actions

in all sets are printed out, so you may want to limit the number of actions you have loaded to eliminate a lot of deleting of unnecessary information.

3. If you constantly change the default setting for certain dialog boxes (like the default setting for the drop shadow in the layer styles dialog box), use actions to modify dialog boxes to open with the defaults that you like.

4. The Batch command itself can be recorded as part of an action to perform multiple batches in sequence. To batch process multiple folders without reorganizing them on the hard drive, create aliases within a folder to the other folders you want to process, and select the Include All Subfolders option (or use a droplet).

5. When moving a droplet created in Windows to Mac OS, drag the droplet onto the Photoshop icon. Photoshop will launch and update the droplet for use in Mac OS. On the Macintosh, add the extension .atn for actions and .exe for droplets for cross platform compatibility

6. Record an action within another by playing the action while recording

7. Save out important actions to a secondary folder in case you reinstall Photoshop

8. You can speed up actions by changing the History Palette Options to NOT make an initial snapshot. Also, in Preferences > Memory and Image Cache, set the number to "1" for added speed.

9. To create an action that will work on all files regardless of size, it is necessary to record some commands with the rulers set to percentage.

10. There are two "conditional" commands in Photoshop: Use File > Automate > Fit Image to resize images to fit within a specific height OR width (using pixel dimensions) or, to selectively change the color modes of images (depending on the mode of the image), select File > Automate > Conditional Mode Change .

Managing Layers when Creating Actions

When selecting a layer in an action, the action records the name of the layer. If the name of the layers change from one file to another, it becomes necessary to use the keyboard shortcuts to navigate the Layers palette. Here is a list of keyboard shortcuts that you might find handy when recording changes made to specific layers. In the Layers palette to:

Choose the layer above	Option (Mac)/Alt (Win) + [
Choose the layer below	Option (Mac)/Alt (Win) +]
Choose the top layer	Option (Mac)/Alt (Win) + Shift +]
Choose the bottom layer	Option (Mac)/Alt (Win) + Shift + [

You can also arrange layers by targeting the layer and using the following shortcuts

To move up one layer	Cmd(Mac)/Ctrl (Win) +[
To move down one layer	Cmd(Mac)/Ctrl (Win) +]
To move to the top	Cmd(Mac)/Ctrl (Win) +Shift +]
To move to the bottom	Cmd(Mac)/Ctrl (Win) +Shift +[

Three pitfalls to beware of:

1. Size-specific features such as type size, feather, and unsharp mask generally won't give the effect intended if you're working with files of a different size than that used to record the action. For example, a 3-pixel Gaussian blur won't create the same effect on a 72-ppi file as on a 144-ppi file.

2. Some of the painting tools, tool options, View options, preferences and window commands cannot be recorded. However, many commands that cannot be recorded can be inserted into an action using the Insert Menu Item command.

3. There is no way to access the file name while running an action, but you can if you perform a script.

Scripting in Photoshop:

Photoshop CS automatically installs support for scripting so you can write and run scripts. Scripts can be written in AppleScript or JavaScript on the Macintosh. On windows you can use JavaScript, Visual Basic or any other OLE Automation. Scripts can range from simple manipulation of a single selected object to complex control of multiple documents. They can run commands and even execute actions.

Photoshop CS installs scripts (found under File > Scripts) that enable you to export layers to individual documents. One script allows for exporting multiple layers into individual files making integration with non-Adobe applications much easier. In addition, you can export Layer Comps to Files, Layer Comps to PDF, and Layer Comps to Web Photo Gallery. These three scripts are great when you want to try out several versions of a design using Layer Comps, and then share them with clients. It's particularly cool that you can do several designs in one document, and then make a Web Photo Gallery that features client review tool so that you can conduct a Web-based review very quickly.

In the Photoshop application folder is a guide to scripting with information on JavaScript, AppleScript, VisualBasic as well as sample scripts if you're interested in making your own. In order to load the additional scripts, simply copy them into the Photoshop CS > Presets > Scripts folder.

Data-driven graphics in ImageReady CS

Data-driven graphics make it possible to produce multiple versions of an image quickly and accurately. Let's say, for example, that you need to produce 500 different Web banners or 200 different business cards based on the same template. In the past, you had to manually populate the template with data (images, text, and so on). With data-driven graphics, you can use a script referencing a database to generate the Web banners for you. In ImageReady CS you can automate this process with the Variables feature. Basically, you design a template in Photoshop or ImageReady, putting all of the elements that will change (the variable elements) on separate layers, and then select layers in the template and assign them as variables (in ImageReady). You can then quickly generate an unlimited number of unique variations based on the original template by using scripts to replace the variable elements. ImageReady allows you to assign three different types of variables:

- Visibility variables let you show or hide the content of a layer.
- Pixel Replacement variables let you replace the pixels in the layer with pixels from another image file.
- Text Replacement variables let you replace a string of text in a type layer.

To define a variable in ImageReady, target the layer and select Image > Variables Define. In the Variables dialog box, choose the desired Variable type and enter names for the variables. Note: Variable names must begin with a letter, underscore, or colon and cannot contain spaces or special characters (except for periods, hyphens, underscores, and colons). For Pixel Replacement variables, click Pixel Replacement Options, and choose a method for scaling the replacement image. To define variables for an additional layer, choose a layer from the Layer pop-up menu and repeat the steps above.

Using data sets

A data set is a collection of variables and associated data. You can switch between data sets to upload different data into your template. You can create a new set or edit the default data set. To create a new set, select Image Variables > Data Set. Then, import the data that you need from an Excel spreadsheet, Filemaker Database or any other source data that's been exported as a comma- or tab-delimited data set. Or you can simply enter the variable data and click the Save Data Set button (to the right of the Data set name) to save the new information. Note: You must define at least one variable before you can edit the default data set. To change a data set, simply select the data set you want

to modify (from the drop down menu in the Variables dialog box), edit the data and click the Save Data Set button. To delete a data set, select the data set you want to delete, and click the Trash button.

Previewing and Exporting data-driven graphics

The Preview Document mode lets you preview how a template will look when it is rendered using different sets of data. To enable (or disable) Preview Document mode either select Image > Preview Document or click the Preview Document button in the tool box. Then, in the options bar, choose a data set from the Data Set pop-up menu, click the Previous or Next Data Set button. The data being displayed will change in the document window.

To export Data Driven Graphics, select File > Export > Data Sets as Files. You can output individual images as PSD files, optimized images or SWF (Flash) files allowing you to create an unlimited series of graphics for any use, dynamically generated, with no programming knowledge required.