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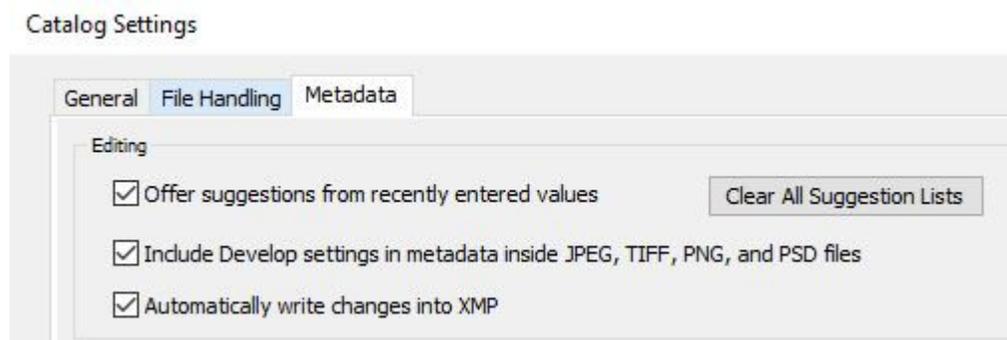
Lightroom Overview

This is an overview of Lightroom and is not a detailed look at every aspect of the program. The idea here is to introduce you to the program and note some things you might want to know to get started.

Lightroom is a database management tool and a file processor. This means it can manage your images for you allowing more efficient filing and retrieval of images. It can also define the parameters to use to process raw or jpg files for export either into an editor like Photoshop or a final file for printing or sharing. By defining parameters I mean that Lightroom writes data to a file that tells the processor what to do to that file on export. It does not directly modify the file - it creates instructions on how to modify the file. That is the database part, along with remembering where files are located. All of that information is stored in the catalog.

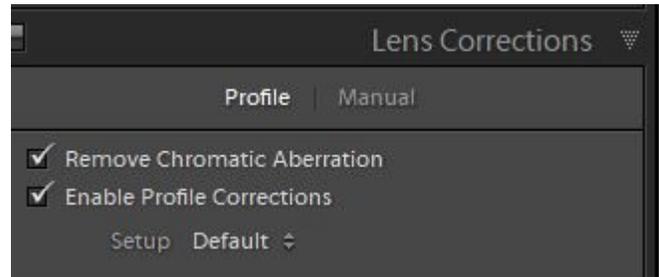
Think of Lightroom as a library card catalog. The card catalog does not contain the books; it contains references to where the books can be found. Lightroom references where your files can be found on a hard drive. The Lightroom catalog is metadata; information about your image files. Initially, the information is location of the file, resolution, color space, copyright, keywords, etc. As you process an image, more data is written to the catalog as instructions on how to process your image.

If you modify a file outside of Lightroom, such as in ACR, the XMP file for that file will contain the changes, but Lightroom will not automatically update the database to reflect those changes. An icon will appear in LR (up arrow with lines at top right) indicating that the XMP file has changed. Click on the icon and you will be asked whether to import the modifications from the XMP file or not. Modifications made within Lightroom can be saved out to the XMP file so that changes will be recognized by ACR or otherwise will travel with the original raw file. You can set this in the Catalog Settings to be automatic.



Most of the Preferences settings are just that, your preferences. Under Presets you can have Lightroom defaults be different for different camera bodies and different ISO values. If a particular camera processes images a little differently than another, you can essentially bake in modifications in the processing to make them more alike and have Lightroom automatically apply those differences. Similarly, Lightroom can automatically apply different defaults based on the ISO setting. Checking the two boxes at the top of the Presets tab makes that happen.

An important change you should make is to open an unprocessed raw file and navigate to the Develop Module. Under Profile check both the Remove Chromatic Aberration and Enable Profile Corrections boxes. In the main menu area navigate to Develop | Set Default Develop Settings and click in the box to Update to Current Settings. This automatically applies corrections to the file based on the metadata to correct distortions based on the camera and lens you shot the image with. Otherwise you will have to do this every time you open a file and this will keep you from forgetting to do that. Trust me, you want this done.



In Preferences | External Editing you should plug in your preferred editing options for export to Photoshop or Elements. These include using PSD for layered files rather than TIFF, picking a color space, but depth and resolution.

The Interface



The Lightroom interface is basically three panels across the screen. As you move from module to module the three panels persist but the content of the panels changes to reflect the processes being managed in that module.

The left and right panels can be resized to allow more or less room for the center panel which is always the image or visual representation of the process. The left and right panels can also be minimized by clicking on the arrows on the outside edges. This can be done to allow for more room for the image if a particular panel is not needed at the moment. When minimized they can be brought up temporarily simply by mousing over the edge above or below the arrow.

Lightroom Modules

Lightroom consists of several modules, each allowing for different intentions for your files:

The Library Module allows you to import, sort, find, and view your files in several ways. There is a grid view for viewing multiple images, and a single image view. A Survey view allows comparison of two or more images, and a Compare view helps choose between two images for the better option. The People view detects faces in the images. If you tag faces with names LR will search for other photographs including those people and automatically tags those faces for you.

The Library module includes a very basic adjustment tool, but image control is better done in the Develop module. Keywords can be added during import to add personal information or identification to the images for sorting purposes.

The Develop module is a powerful tool for application of adjustments to your files, including raw image captures. Modifications to your file are not applied to the original image file but are stored as instructions on how to modify the file when it is exported to another program or to a final form. It shows you on the screen how these modification will affect your file, but your original file is kept in its original form. This is what Adobe refers to as non-destructive editing. In the case of raw files it is functionally identical to Adobe Camera Raw.

The Slideshow Module allows you to make an on screen presentation from selected files, or a collection of files.

The Map Module will read GPS data if it is included in your file and displays the point on a map where the image was made.

The Book module allows you to design a layout of your images for printing from various book publishers.

The Print module provides instructions for your printer so you can print your images. While this sounds rather simplistic, the Print module is one of Lightroom's most complex and valuable tools. Printing from Lightroom is the best means of getting high quality results from your images, provided you have access to a profiled printer capable of creating a high quality print.

The Web module lets you compile your images into "galleries" which you can display on your website and share with others. It is a good way for professional photographers to send proofs to clients, or for anyone to share the equivalent of a slideshow with others through the web.

Lightroom is therefore a "first step" in preparing files. Many consider it a substitute or replacement for the Adobe Bridge, which is a file viewer without the database management capabilities of Lightroom, and Adobe Camera Raw, which is a separate raw file processor. It is not, however, a total replacement for Photoshop or Elements which allow more precise, in-depth, local control over images. It is not a pixel editor. Lightroom has a specific tool for exporting images to Photoshop or other image processors you may choose for refinement of your images.

Importing Images

Importing images is done with the Import dialog accessible from the Library module. The source, such as a card reader or a hard drive folder will be listed at the left, and destination options on the right. In most cases the Add option is the best choice. Remember that you are adding images to the database, not changing the location of the source images on the drive. Adding images simply references the images so that Lightroom can manage the files. Again, think of a card catalog.

Other options include Copy as DNG, Copy, and Move. Copy as DNG adds the images to the database and converts the raw file to the Adobe DNG format. Copy allows you to copy images to a new location at the same time as you are adding them to the database. Move deletes the images from the source location after moving them and adding to the catalog.

The DNG format introduces slight non-destructive compression to the raw file. Changes to a DNG image are recorded as modifications to the metadata rather than to an external XMP file. The primary intention of DNG is to preserve the viability of a raw image in the event that the original proprietary file cannot be accessed. There is no harm in using the DNG format, but I fail to see the advantages. As metadata is rewritten the possibility exists that the original file will be corrupted in the process. This is a minor point.

Images can be imported from your hard drive or directly from a memory card. I do not recommend importing images by plugging the camera into the computer. You should use a card reader. Importing does not copy your images. There are no images in Lightroom, only references to images that are somewhere else in your system. That can be your primary hard drive or an external hard drive. Deleting a Lightroom catalog will not remove your images, but will remove the metadata stored about processing your images. Exporting Lightroom edits to XMP files will allow you to retain any edits if you delete a catalog.

When importing images it is possible to add the images to a collection and to add keywords to the images. These are organizational aids and what you do depends on your intentions. Keywords can be added to all imported photos at once. More specific keywording can be done to subsets and individual images from the library.

Collections

Collections in Lightroom are an organizational tool. Lightroom can automatically find files based on the metadata such as the date shot, aperture, camera model, etc. Keywording allows you to apply specific information to a file or files, but a collection is simply like a subfolder. Smart collections automatically add or remove images based on a filter you apply to an image. A filter might be a star setting or a keyword. Regular collections are populated by images you choose to include.

Smart collections include subcategories that can be helpful. They will contain files you tagged with a color or star setting. They will also contain collections based on recently modified files, files without keywords and other useful information.

Keywording images can make finding them later an easier task. Keywords can be added during import or later in the Library module. Adding keywords to groups of files rather than individually is a more productive approach. Remember that basic image metadata is already in the file so Keywords are more like reminders of things like location names or descriptions of key elements of the images.

Histogram

A graphical representation of the values in the image file. There are 256 levels from 0 (black) on the left to 255 (white) on the right. How high the bar goes is an indication of the amount of

information for a particular value. Under the histogram are metadata readouts indicating the ISO, lens focal length, aperture and shutter speed for the image.

In the Develop Module when the mouse is over the image these change to indicate specific RGB values in the image at the position of the cursor. The readout can be in RGB values in percentages or in L*a*b values. The L channel values can be useful for determining best values for the highlights and shadows. RGB values are in percentages rather than the typical 0-255 as no output color space is imposed in Lightroom. This is one of the few differences between Lightroom and ACR. ACR respects the proposed output color space in its readouts. Lightroom images only apply color space information when you export the file.

An indication is also there for the image as an original photo or original + a smart preview of that image.

Develop Module

Tool Bar

Under the histogram is the tool bar with the Crop tool, Spot removal tool, Red eye removal tool, Graduated Filter, Radial filter, and the Adjustment brush.



The **Crop tool** lets you establish the image crop and by default is locked into the aspect ratio of the original capture. Clicking on the drop down lets you choose different aspect ratios including a custom ratio. Clicking on the lock icon unlocks the adherence to an aspect ratio allowing for free form cropping without regard to an established aspect ratio. The Crop tool includes the Straighten tool which can be used to set a horizontal or vertical alignment. There is also a free form rotation bar. Setting an alignment will crop the image within the bounds of the image. The Constrain to Image checkbox forces any crop to live within the bounds of the original.

The **Spot Removal tool** operates in either Clone or Heal mode. Clone mode will copy an area of the image into the area you select. This is an automatic selection which you can modify by dragging the source to another area of the image. Similarly the Heal mode automatically chooses an area to use to heal and you can modify the selection. The Brush size, Feather (blurring), and Opacity sliders allow you to control the results.

The **Red eye tool** has two selections, Red eye for the effect of a flash on people's eyes, and Pet eye which does the same thing except that pet's eyes are often a color other than red.

The **Graduated Filter** is a much more complex tool which allows you to introduce a variety of modifications to the image which are applied in diminishing intensities from a starting point to an end point. Modifications can be made after the area is chosen and can be used to introduce vignettes, and other modifications to exposure, density, contrast, color and other values in the image. The default New changes to Edit to allow you to make changes and the Brush option allows you to modify the Graduation to modify a specific area.

The **Radial Filter** is similar to the Graduated Filter but creates a circular or ellipsoidal

correction area on the fly. Modifications are also similar to the Graduated Filter but there is no Brush option.

The **Adjustment Brush** is the third tool of its kind and allows the same modifications as the Graduated Filter and the Radial Filter, but in a more free form manner. The O key allows you see a mask overlay of the affected area and <Shift> O cycles through red, green, and white mask overlays. A and B brushes are simply two options for brush sizes, feathering and flow. Auto Mask attempts to restrain changes to areas similar to where you start, using edges as benchmarks.

Basic Panel

The Basics panel includes the White Balance tool and presets and a Black and White treatment option. This is the primary image adjustment area affecting everything from exposure and contrast to white and black points, and Presence, which includes Texture, Clarity (mid tone contrast), Dehaze, Vibrance and Saturation.

Profile defaults to Adobe Color. However, exploring camera defaults which were reverse engineered by Adobe can create other alternatives to the appearance of the image. Also, a custom camera Calibration can appear in the options if made which will likely be the most accurate rendering of colors and contrast.

Texture can increase or decrease subtle image details in a manner slightly less aggressive than Clarity. It can soften skin, for example while avoiding loss of fine detail such as pores. It can increase apparent sharpness in image details without as much contrast enhancement as Clarity

Clarity increases midtone contrast rather than overall contrast and uses edge detection in a manner similar to unsharp masking. It can enhance detail and add punch to an image without increasing the overall contrast by moving the black and white endpoints.

Dehaze is an algorithm derived from deconvolution software that helps to minimize haze by analyzing areas of low contrast against possible edges. It increases contrast by lowering darker values with less effect on raising higher values which distinguishes it from the Contrast slider and the Clarity slider.

Vibrance and Saturation both add color contrast for additional impact. The difference is that Vibrance analyzes the image and applies more saturation to values with less color contrast. The Saturation slider is more generic and overall in its application of color contrast. The HSL panel is valuable in applying more specific modifications to individual color channels.

Tone Curve

Tone Curve adjustments modify RGB or individual channels values. This is a good place to begin to learn how curves work.

Default is Linear which basically allows the default image modifications already made to exist without other modifications to contrast or density. A Medium contrast and Strong contrast option applies additional contrast adjustments to the file and shows where those were made.

Point curve or parametric adjustments can be made by choosing the icon at the lower right corner. Parametric changes can be made using the sliders to modify specific areas of the curve. The areas are quarter tones by default but can be altered by dragging the percentage point slider arrows at the bottom. A Targeted adjustment tool can also be activated at the top left so that adjustments can be made by simply putting the cursor at the location in the image where you want to make a change.

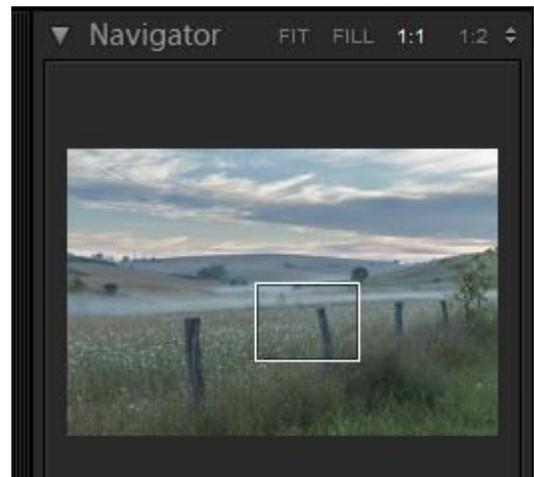
HSL / Color / B&W

Hue (color), Saturation, and Lightness values of each of 8 color ranges can be individually adjusted in the HSL section. The Color tab essentially duplicates the controls in a different dialog. The All options opens all three controls at the same time. The Black and White option in the Basic panel changes the HSL panel to B&W. Each of the 8 color ranges can be lightened or darkened to change the default interpretation of the image. A Targeted adjustment tool is also available to allow you to place the cursor on the image and LR will choose the range to interpret, which may include more than one value. This can be valuable to separate the brightness of two values which may have been rendered similar by the default interpretation.

Detail

The Detail panel includes a small 100% preview box as adjustments to capture sharpening should be done at 100%. If you have the Navigator option (upper left in Library and Develop modules) set to 1:1 clicking on the image will render the primary image to 100%.

Sharpening is similar to Unsharp Masking in Photoshop using an Amount, and a Radius (how far from an edge). Holding down the Alt or Option key turns the display to grayscale to more accurately show the effects as the Sharpening is done to the Luminance channel of the file only, not to color values.



Sharpening is designed to recover and enhance the image softness inherent in demosaicing the capture into a recognizable image which tends to not readily define sharp edges. Anti-aliasing of digital images to avoid stair stepping from square pixels means edge transitions are not as clearly defined as we might want them to be. It is not intended to critically or creatively sharpen the image, which should be done either in Photoshop and/or in the Printing or output stage.

With amount set at the default 25 and a radius of 1 pixel the detail panel effectively overcomes basic capture softness in most images. However, some images can use stronger settings and there are two other controls. The detail setting uses two different methods of determining sharpening. At the left edge the setting says zero, but is really a measure of how fine the resolution is set. At zero the setting is broad which tends to be useful for portraits by reducing the tendency to sharpen fine detail like pores in skin. As you raise the detail slider the resolution is refined until the 100 setting is working with much finer edge detection. The result is visually greater fine detail you might want in a textured subject, a building, or other

high frequency subject matter. With the <alt>[option] key down the image turns gray and you can see the change in refinement, but it is very subtle, similar to the effect of a high pass filter.

Masking is also more easily seen with the <alt>[option] key down and appears like a mask. On-the-fly-masking is done by edge detection and can help you keep sharpening off of smoother areas and more confined to edges. White areas will be sharpened, and black areas protected. Settings are best determined by subject matter.

Noise reduction needs to be applied only as needed when noise appears as a result of the camera capture. The amount should be minimal as noise reduction by default softens an image. Detail will help overcome any excessive smoothing from the noise reduction. Color noise reduction can be used if the image shows obvious noise in colors, usually in dark tones and as a result of increased exposure to underexposed images.

Lens Corrections

Under the Profile tab both Remove Chromatic Aberration and Enable Profile Corrections should be turned on. These eliminate lens induced issues including barrel and pincushion distortion problems. They minimize the need for manual corrections. Open an image with all other settings at their default; check the boxes, and in the Develop | Set Default Settings click on the box to update to the current settings. This will now apply the corrections with each image you open. Under the Manual tab adjustments are commonly made to reduce vignette reduction is the image is used without any cropping. Otherwise this is done elsewhere.

Transform

The Transform panel allows perspective corrections to be applied either automatically or manually to reduce or eliminate the keystone effect. This can be an issue if the camera is not aligned with the subject planes. It is especially useful in architectural photography, but often to reduce minimal alignment issues in other images. There are some boxes which will apply automatic corrections, but carefully examine the results to be sure they are what you want. Changes depend on subject detail and can be interesting if not disappointing in some circumstances. Manual controls and the Guided Upright tool in the upper left corner can help you with difficult or critical corrections.

Effects

The Effects panel has two areas. The top is Post-Crop vignetting which applies a darkening or lightening around the image area formed by the crop. This is useful in holding the eye in the frame and giving some visual weight to the image which is desirable. Setting the vignette is best done by reducing the amount to -100 in order to be able to visually set the midpoint, roundness and feathering. Then you can reduce the amount to a comfortable level. Highlights controls the ability to allow highlight values to punch through the vignette rather than being grayed down.

The Grain section applied grain to the image to either simulate film grain or as an effect.

Camera Calibration

The Process Version should be listed as current for new images, but imported images from earlier processes will respect the process under which they were created. Updating to the current process version is recommended, but not necessary.

Shadows and Color Primaries are intended to be used for custom modifications of color rendering by the camera. However, some creative color grading can be done here. Experimentation will reveal whether or not they are useful to you. This is an area that can be confusing to the beginner as things will not always respond intuitively.

I recommend a custom camera calibration using the X-Rite system. The Color Checker Passport Photo is a plastic case which opens to reveal a classic 24 patch color checker, a series of balancing patches they call the creative enhancement target, and a white balance target. The included software allows you to build custom DNG calibration profiles for daylight and tungsten lighting for regular use, and can create custom profiles for unusual lighting circumstances. More than simply setting a white balance, the system corrects for tonal shifts in key colors that may be an issue with your sensor. This not only reigns in good color from your camera but allows you to make multiple cameras match each other which can be useful for wedding and event photographers. It is very easy to use and well worth the small investment.

Catalogs

Most people only need one catalog. This is not an issue of the number of images, it is simply one of organization. If you want more than one catalog for separating images such as business vs personal images that is fine. There are no advantages or disadvantages to multiple catalogs. The catalog itself resides in the Pictures | Lightroom folder in the Backups folder. The actual location can be seen in the Catalog Settings dialog.

Backup catalogs are created each time you close Lightroom (optional). You should visit the Backup folder on occasion and delete older backups. I suggest keeping one or two copies for safety. Older backups are not deleted except by you manually. This should be done regularly.

Bryson Leidich - 2020