Enhanced Profiles

Lightroom Classic 7.3 and Camera Raw 10.3 make profiles more prominent and powerful for photographers. Profiles are also a new feature for Lightroom CC 1.3. Choosing a profile affects the overall color, tonality, and details to shape an image's overall look and style. A profile sets the starting point for editing and color grading. Profiles may imbue either subtle or dramatic stylistic treatments.

The enhancements introduced in this version include:

- The new "enhanced" profile format using XMP with several imaging features not available using DNG Camera Profiles (DCPs) alone.
- New sets of profiles for customers to use as a starting point for editing to apply.
- New sets of profiles for creative and stylistic editing treatments.
- New tools for advanced profile creators.
- A new, prominent profile browser for selecting profiles and marking your favorites for easier access.

Background: How DNG Camera Profiles Work

DNG Camera Profiles (DCPs) have powered the traditional "camera profile" feature in Camera Raw and Lightroom, in the Camera Calibration panel. When editing a photo, the photographer must choose exactly one profile at a time, setting the starting point for further edits.

DCPs translate device-specific, scene-referred color data to a standard color space. DCPs also instruct the raw processor in the correct interpret of white balance. Every DCP is device specific because the DCP file format may contain color mapping information for only one camera model at a time. Creating multiple profiles for a camera model requires producing multiple DCP files for that model.

An additional "look table" included in DCPs (see LookTable tag in DNG 1.4 specification) applies additional stylistic color transformations to the white-balanced and standardized color data. The translations and look tables in DCPs allow Camera Raw/Lightroom to produce similar output from photos from dissimilar cameras. The Adobe Standard DCPs give photographers a common, baseline interpretation of color that is consistent from camera to camera. There are currently over 650 Adobe Standard DCPs in Camera Raw and Lightroom. "Camera Matching" DCP profiles emulate in-camera selected styles such as "Landscape," "Portrait" or "Vivid" by using look tables that specify different color interpretations.

Because DCPs tie device specific color instructions together with interpretive or stylistic color transformations in a single file, it's cumbersome to deliver a variety of different stylistic profiles that work consistently across all camera models using DCP files. It's also impossible to use a DCPs to apply a style to any output-referred photo files, such as JPEGs.

Introduction to Enhanced Profiles

Unlike DCPs, enhanced profiles only specify color, tonal and other imaging instructions to be applied after device specific data has already been translated to a standard color space. For raw files, enhanced profiles may specify a DCP by name and are designed to work forward from that baseline. For example, a single enhanced profile file could be used to provide a "Portrait" or other type of style to any photo from any camera for which there is already an Adobe Standard DCP.

Other capabilities and characteristics of enhanced profiles include:

·   Profiles that support non-raw files, like JPEGs, in addition to raw files.

·   Profiles for raw files that "piggyback" or extend an existing base DCP profile with additional imaging settings. All of the new Adobe Raw profiles are built on top of Adobe Standard.

·   An RGB to RGB color lookup table (LUT)—an image editing technique not exposed elsewhere in the develop controls that can make more precise and targeted color adjustments that are impossible to accomplish using other means, such as presets. These LUTs can be used to accomplish more interesting color transformations than DCP profiles can produce, including mapping neutral colors to non-neutral colors to create toned B&W profiles.

·   An optional Amount slider to scale (amplify and reduce) the effect of some of the profile's adjustments.

·   Enhanced profiles are stored on disk as XMP files, not as binary files like DCPs.

·   Enhanced profiles may include descriptive metadata, such as copyrights and grouping, sorting and filtering hints. They can also include localization strings for the descriptive metadata to help users browse for profiles.

Unveiling and Unlocking Profiles' Power

Profile previewing, browsing and selection moves from the Camera Calibration panel to Camera Raw and Lightroom's basic develop settings panel, and to the top of the Edit stack in Lightroom CC. It will be easier, and more common, for photographers to try out and select different profile as editing starting points.

DCP and Enhanced profiles are presented together as equals in the profile picker and browser. Profiles are segmented, organized and filtered functionally. For example, different categories of "Creative" profiles are grouped together, and there is a group of "Camera Matching" profiles available for raw files. Grouping and filtering separate B&W treatment profiles from color treatment profiles, for example, so photographers can find a profile they want faster.

The user interface does not display profiles' underlying type and format (DCP or XMP). The format is an implementation detail important only to advanced profile creators and is generally not useful for most end users. The only time profile file format details may be relevant to profile users is when they install third-party profiles into Lightroom or Camera Raw; the types must be installed in different locations.

Anatomy of an Enhanced Profile

LUTs

Enhanced profiles can have an RGB to RGB LUT, specified using the CUBE format. The maximum table dimensions are 32x32x32.
They can also use a "Look Table," which is dng_hue_sat_map, as defined in the DNG Spec. These are specified using comma-separated values (.CSV) files.

Color LUTs work by mapping a particular RGB value to a different RGB value. They are applied near the end of the image processing pipeline, which allows them to preserve the expected appearance. For example, if you have a LUT that you're familiar with using in Photoshop, you would expect it to look roughly the same when applied as an XMP profile. In order to preserve that look, it needs to be applied after most of the other adjustments have already been done; if it were applied before, say white balance, changing the temperature would apply to the already mapped colors, which would result in a very different rendering than you would see in Photoshop.

Look Tables get applied in the imaging pipeline right after the DCP profile, which makes them behave more like traditional profiles.

Enhanced profiles can contain either an Color LUT or a Look Table, or one of each. You can specify any of the new Adobe Raw profiles as your Look Table to use it as your base.

Adjustment Parameters

An XMP profile can also set many of the same adjustment parameters that presets can.

However, unlike with presets, these parameters are applied as a delta to the image's existing values, but do not show in the UI. For example, if you specify Clarity 10 and the image already has Clarity 5, it will end up rendering with Clarity 15, but still display Clarity 5 in the UI. More on this later.

Profile Creation Tutorial

The primary tool for creating enhanced profiles is the Adobe Camera Raw plugin. Option/alt click on the "New Preset" icon to open the "New Profile" dialog box.

This tutorial will help you get started by walking through the steps to make three different profiles:

- A profile with no tables
- A profile using an RGB -> RGB table
- A profile using a Look table

A Simple First Profile

The first example will create a profile without any LUT, and only sets some image adjustment parameters. When the profile is applied, the sliders for those parameters will retain whatever settings the user had specified; the profile applies its values on top of those without showing them.
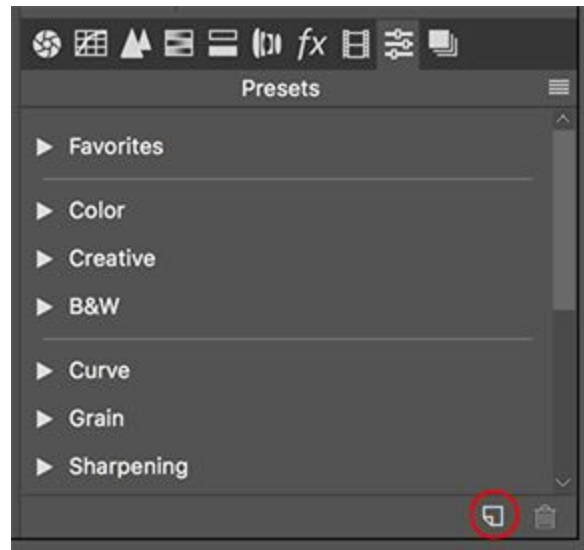
Start by opening any raw image. Before opening the New Profile dialog, reset the image settings using the "Camera Raw Defaults" item in the Basic Panel's flyout menu.
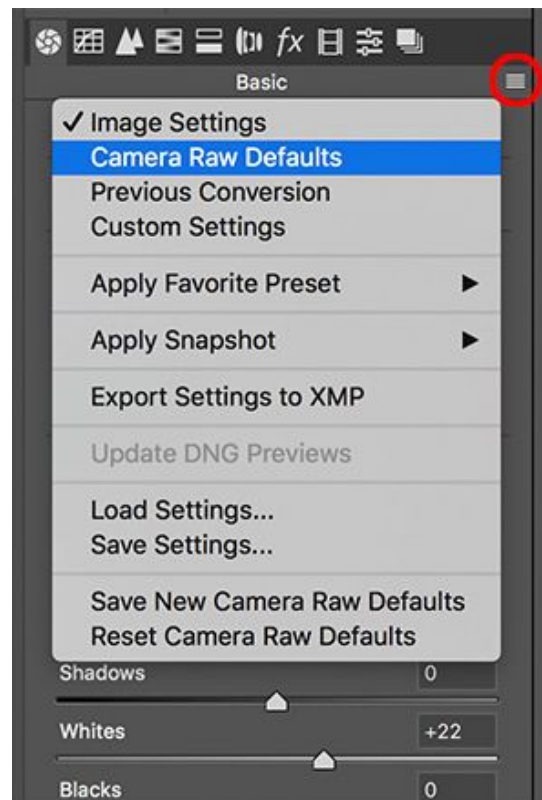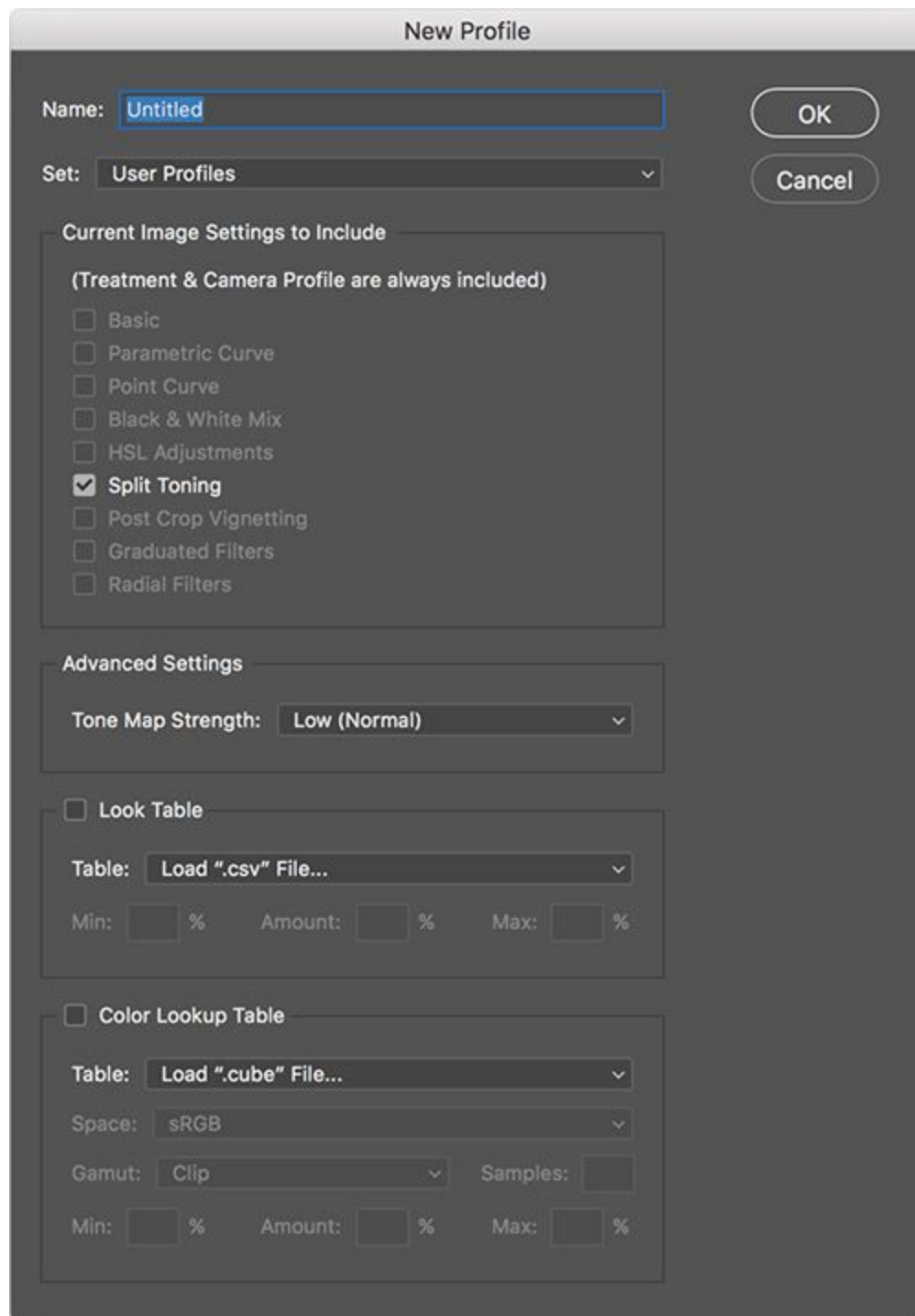
With that done, your image will have the Adobe Color profile applied; it is our new default. For now, reset that to Adobe Standard: you'll see why in a few steps.

Now go to the Split Tone tab. Adjust the sliders enough to produce an obvious difference in the image, say: Highlights Hue – 50, Highlights Saturation – 50, Balance – 0, Shadows Hue – 250, Shadows Saturation – 50.

Once that's done, head to the Preset tab and option/alt-click the New Preset icon.

This will bring up the New Profile dialog box.

Give your new profile a name such as "My First Profile."

The "Current Image Settings to Include" automatically selects the subsets of settings that vary from Camera Raw's default settings, so in this example, you'll see that only the "Split Toning" option is checked.
Adobe Standard is the default base profile. The "Look Table" checkbox should be unchecked because we set the profile to Adobe Standard at the beginning of the tutorial. If it is checked at this point, uncheck it before continuing to create this sample profile.

Click OK to save your profile and close the dialog.

Your profile will now appear in the Profile Browser in the "User Profiles" group. Click the icon next to the Profile popup on the Basic panel to view the browser. "User Profiles" group at the bottom of the list.

Reset the image settings back to Camera Raw defaults to remove the split one settings. Selecting your profile will apply the profile's split toning to the imager, but the split tone sliders will stay remain at the zero position and are still enabled.

Explore making a few other profiles on your own just using the image settings to get a feel for how they interact with images. To do this, edit an image using the interface just as if you were making a preset, and then come back to the "New Profile" dialog to make a profile that uses them.

You can do quite a bit with only image settings, although the real power of the new profiles is in the tables. These parameters are mainly meant to add a little bit of "seasoning" to your profile, and to provide imaging features that cannot be accomplished through tables, such as a dash of Clarity, or a Post Crop Vignette, etc.

Advanced Settings

Tone Map Strength is the only advanced setting at this time. Your choices are Low, Medium, or High.

Tone Map Strength controls the ranges of the Basic Highlights and Shadows sliders. Low is "normal," meaning that the sliders behave as they normally do. Medium and High extend the range of the sliders so that 100 gives a stronger results. High and Medium are useful in profiles designed for HDR images, and may benefit profiles specialized for high-contrast photos.. "Low" is the default setting and does not change the effect of the Highlight and Shadow sliders.

A Profile with an RGB -> RGB Lookup Table

To start, once again open any raw file, reset to Camera Raw Defaults, and choose the Adobe Standard profile (we'll deal with Look Tables in the next section). Open the New Profile dialog again—opt/alt click the New Preset icon in the Preset tab.

Give this profile a name such as "My First LUT Profile."

Down in the "Color Lookup Table" section, click the "Table" popup and choose "Load '.cube' File..." You'll get a system file open dialog, which you can use to navigate to [location of tutorial materials]. Choose the "tutorial.CUBE" file and click "Load."

tutorial.CUBE is a simple color grading LUT. A LUT maps one color to another color. In this case, we're not specifying a look table so the source colors are going to come from Adobe Standard. For more information, see How enhanced profiles interact with DCP profiles.

For now, leave the rest of the "Color Lookup Table" section at the default values, but notice the values Min: 10, Amount: 100, and Max; 200. Leave them at those values, and click OK.

Go back to the Profile Browser's "User Profiles" section, and apply your new "My First LUT Profile."

You'll notice that an Amount slider appears. Lightroom CC also shows the Amount slider at all times; Lightroom Classic shows it all the time and disables it for profiles that don't support it. The default value is 100. You can use the amount slider to adjust the strength of the LUT and some of the other parameters. For example, things like Exposure and Post Crop Vignette Amount will scale, but the Post Crop Vignette Feather will not.

Because "My First LUT Profile" only has a LUT, let's see what happens when you set the Amount to 0. If you're on a raw file, you will see the image appear as if you've applied Adobe Standard. With the "Min" value in the "New Profile" dialog set to 0, setting the Amount slider to zero completely removes the effect of the LUT.

Now set the Amount to 200. Because the "Max" value in the "New Profile" dialog was set to 200, you see the LUT's effect doubled. This may be too much.

Go back to the "New Profile" dialog and make a new profile using the same LUT; call it "My First LUT Profile – Amounts." This time, set the "Min" to 50 and the "Max" to 150 (make sure "Amount" is 100).

Now apply this profile and experiment with the Amount slider. The first thing you may notice is that the range of the Amount slider is still 0-200. What's changed is what those values mean. At

Amount 0, your LUT is now scaled to 50%, and at Amount 200, your LUT is now scaled to 150%. The user always sees the same range, but you can control exactly how your LUT will act within that range. You can even change what Amount 100 means by setting that value to something different in the "New Profile" dialog.

If you do not want your profile to allow scaling, you can disable it. See **Support Amount Slider** in the **Organizational Features** section.

You can create your own LUTs in the .cube format using any of the widely available tools, including Photoshop. There is a dimension size limit of 323 for .cube files. If you try to use one larger than that, it will get downsampled to 323. You can usually get the effect you need with 203 or even 163.

Note that some LUT creation tools with write .cube files without a line end on the last line. This will result in an unexpected end of file error when trying to use it to create a profile. If you run into this, simply open the .cube file in any text editor, add a return at the end of the last line, save it, and try it again.

A Profile with a Look Table

Instead of (or even in addition to) the RGB LUTs we've just been working with, you can include a "Look Table." You can create your own Look Tables, which we'll cover in the next section. As a first step, let's look at including the Look Table from one of the Adobe Raw profiles.

You can have both a Look Table and a Color Lookup Table in your profile. Why would you include both? The most common case will be to set different source colors. If you want your Color Lookup Table to start with the colors from Adobe Color instead of Adobe Standard, you can use those Look Tables as part of your profiles.

All of the Creative Profiles that we're including in the initial launch of this feature (x.3, April 2018) use the Adobe Color Look Table.

You're welcome to use it as well, or the Look Table from any of the other Adobe Raw profiles. To include it, simply set the profile on the image before opening the "New Profile" dialog.

Let's try it now: reset the image to Camera Raw defaults, and this time, leave Adobe Color as the profile. Go to the "New Profile" dialog, confirm that Adobe Color is chosen for the "Look Table," and load the same "tutorial.CUBE" Color Lookup Table. Name this profile "LUT with Adobe Color" and click OK. This should result in a profile that is the same as "My First LUT Profile" with the addition of the Adobe Color Look Table.

Now open the image "Adobe_Color_example.DNG" from the [tutorial materials location] and apply "My First LUT Profile" from the previous step. Next apply your new "LUT with Adobe

Color" profile to demonstrate how including the Adobe Color Look Table changes the rendering of the image.

Making Your Own Look Table

Making your own Look Table is a more specialized workflow. You can do quite a bit with RGB LUTs, which provide a lot of power and flexibility. Feel free to skip this section.

Look Tables get applied earlier in the processing pipeline than LUTs do, so they act more like traditional DCPs.

A Look Table is a dng_hue_sat_map, which is defined in the DNG Spec. In a nutshell, they are HSV tables, meaning that they affect the Hue, Saturation, and Value (brightness). The bulk of the table is a series of lines with three entries: a hue delta in degrees, a saturation scale factor, and a value scale factor. These are specified using comma-separated values (.CSV) files. For more information, see the DNG Spec.

There is also a "header" consisting of four values that specifies the dimensions of the Look Table: number of hue divisions, number of saturation divisions, number of value divisions, and the encoding of the table: '0' for Linear, and '1' for sRGB.
These are roughly analogous to the DNG Specification's ProfileHueSatMapDims and ProfileLookTableEncoding. For more information, please refer to the DNG Specification.

The easiest way to make a Look Table is to write some code to generate it for you. It doesn't matter what language you use, it just needs to support loops and writing text files. To generate the entries, you'll want three nested loops.

In pseudocode, it will look like this:

```
kNumHues = 8
kNumSats = 3
kNumVals = 4
kEncoding = 1


// Write the header.
print "kNumHues, kNumSats, kNumVals, kEncoding" print newline

// Generate the entries
for (h = 0; h < kNumHues; h++)
       {

       for (s = 0; s < kNumSats; s++)
             {

             for (v = 1; v < kNumVals; v++) // NOTE: this loop starts with 1!
                   {

                   // NOTE Zero input saturation entries must have a value
                   // scale factor of 1.0

                   if (s == 0)
                          {
                          print "0.0, 1.0, 1.0"

                          if (v == 0)
                                print "0.0, 1.0, 1.0"

                          continue
                          }

                   // Do your processing here to set these values.
                   hueDelta = [delta]
                   satScale = [satScale]
                   valScale = [valScale]

                   // Write the entry.
                   print "hueDelta, satScale, valScale" print newline

                   }

             }

       }
```

Included in the tutorial materials is a sample "looktable.csv." This is a very simple look table that just slams all cool hues to black. It is not really a practical or usable example for imaging; it is simply meant to show the expected format.
(although it is a little fun to crush blue skies with it.)

You can use higher values for the number of hues, saturations, and values. This is a departure from the description in the DNG Specification, which states that "[t]he most common case has ValueDivisions equal to 1..." Feel free to expand that.
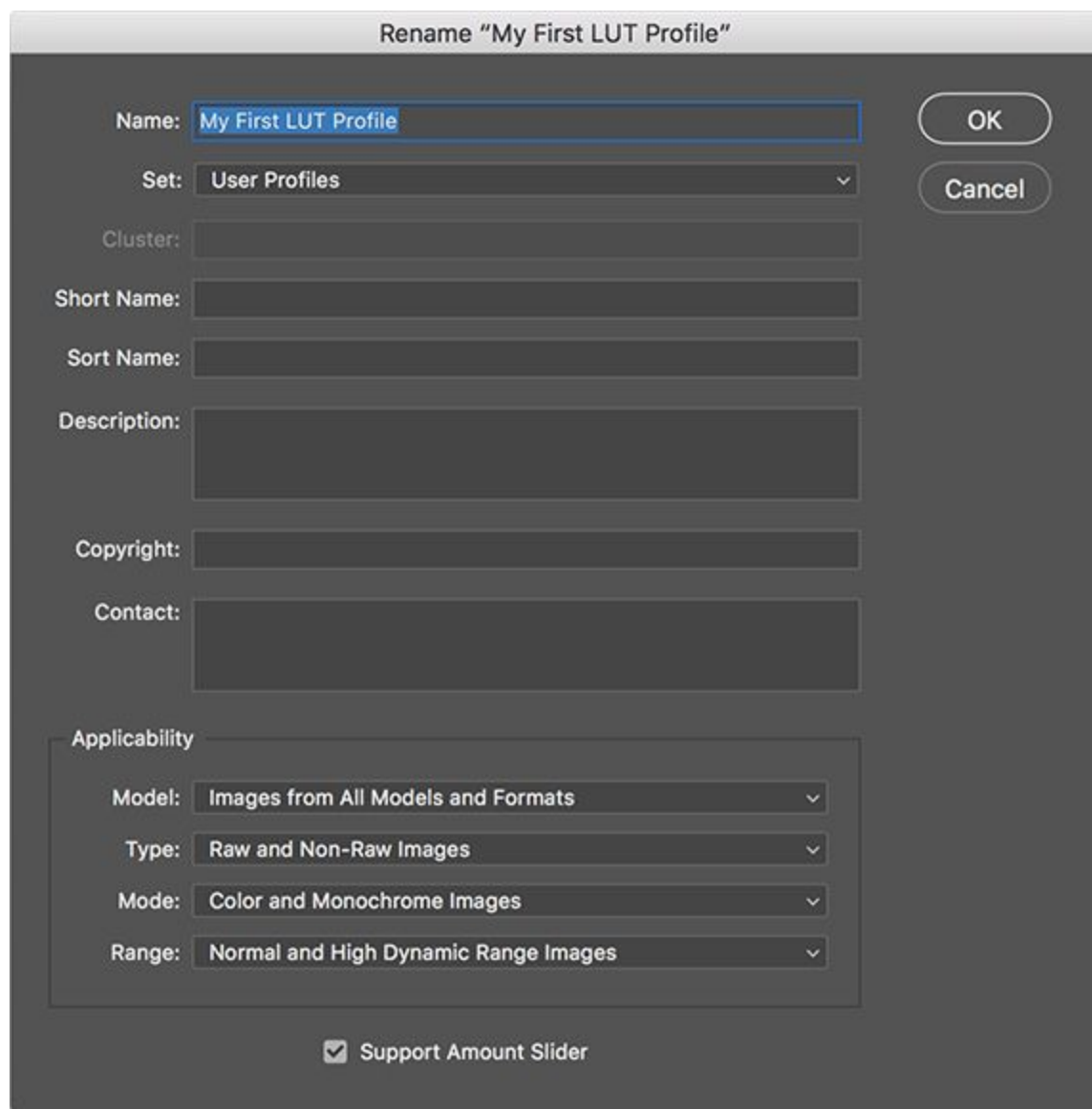
You do still need to have at least two saturations, and the zero input saturation needs to have a value scale factor of 1.0.

For reference, the Adobe Raw profiles use 36 hues, 16 saturations, and 16 values. This is a good compromise between size and precision. Depending on the look you're going for, you can likely use fewer divisions and still get good results.

Organizational Features

So far, we've only looked at the imaging aspects of profiles. There are also new organizational aspects as well. These also apply to presets.

To access these features, there is a hidden interface similar to the "New Profile" dialog. To access it, option/alt context-click on the profile or preset you'd like to edit and choose "Rename Profile..." or "Rename Preset..."

Here's a rundown of all the features here:

Name

The name of your profile.

Set

This allows you to make a group for related profiles. This will be similar to the "Adobe Raw" or "Modern" groups in the Adobe-provided sets.
It is recommended that you include your company name in the Set, rather than each individual profile. For example, if you had a set of color grading profiles, make the Set name something like "MaxProfiles Color Grading Pack #1" and just give the individual profiles descriptive names.

Batch processing: you can easily rename all profiles/presets in a set by right-clicking on the set name itself and choosing "Rename Profile Set…" or "Rename Preset Set…"

Cluster

This will become enabled when you provide a Set name. Use this to make a new section in the Profile/Preset Browser. The Cluster string will not be visible.
It is recommended that you make the Cluster name be your company name. To continue the example above, I would make my Cluster name be "MaxProfiles." This would result with a cluster and group like this:
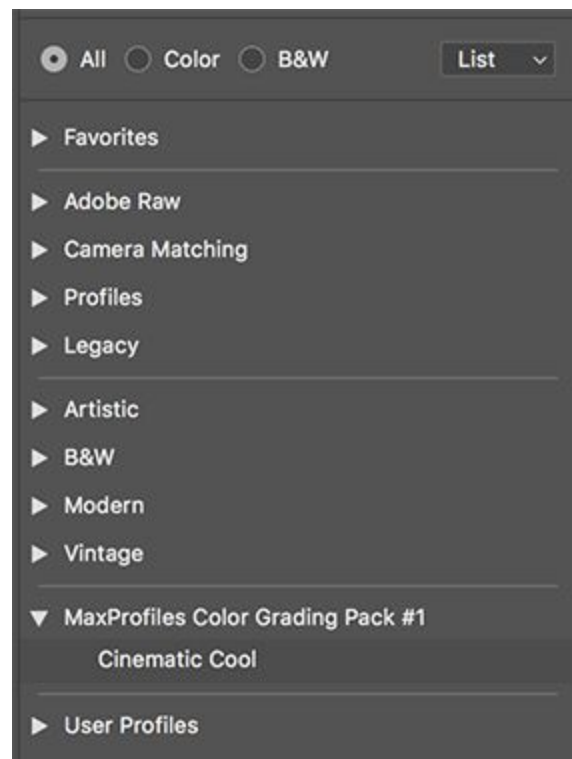
Using the same cluster name for all of your new sets/packs will put them all in the same section in the UI. As you release new packs, they will appear in your cluster in the browser, making it easy for your customers to find them.

Batch processing: you can easily rename all profiles/presets in a set by opt/alt-right-clicking on the set name itself and choosing "Rename Profile Set…" or "Rename Preset Set…" When you add the opt/alt key, you will get the "advanced" version of the rename UI, which includes a field to set the cluster string.

Short Name

You can optionally set a Short Name for your profiles/presets. This will be used in views (such as on mobile devices) where the full name won't fit.

Sort Name

If you have a set of profiles or presets that make sense in a certain order, you can use the Sort Name to specify that. The Grain Presets use this to make them display in the logical order "None, Light, Medium, Heavy" instead of alphabetical order. Their sort names are simply "Grain 1," "Grain 2," etc. You can use whatever naming scheme you like to achieve your desired sort order.

Description

You can set some descriptive text here. This will be displayed when the user chooses "Profile Info" or "Preset Info."

Copyright

You can set your copyright information here. This will be displayed when the user chooses "Profile Info" or "Preset Info."

Contact

You can set your contact information here. This will be displayed when the user chooses "Profile Info" or "Preset Info."

Applicability section

The XMP format contains metadata to let you customize which for which images your profile or preset is available. If the image doesn't meet the requirements of your metadata, your profile or preset will not appear in the UI when that image is selected. This makes the interface much cleaner than it would be if you had several profiles or presets visible that could not be used.

Model

This will restrict the profile to images taken with a specific camera model. The main reason to use this is if you have a preset or a profile that is relying on a specific DCP profile for that camera model. If you're renaming a profile, you can also set it to use Adobe Standard as its base DCP, and restrict this profile to only images that have an Adobe Standard profile available.

Type

You can allow your profile or preset to work on only raw images, only non-raw images, or both. NOTE: If you specify a DCP base in the Model section above and then choose non-raw images for the Type, the profile will not appear for any images, as there are no non-raw images that will match any DCP!

Mode

You can allow your profile or preset to work on only Color images, only Monochrome images, or both.
Color images have multiple channels, monochrome images have a single channel. Color images that have been "converted" to appear grayscale by making all of the channels the same still contain multiple channels, and are still considered color images.

Range

This allows your profile to specify if it will work on normal dynamic range images, high dynamic range images, or both.

Support Amount Slider

This option is only enabled for profiles. This determines if the Amount slider is enabled/visible for your profile.

Localization

You can provide translated strings for your profiles and presets. If you open the .XML files in a text editor, you'll see the strings are all specified using xml:lang:

```
<crs:Name>
    <rdf:Alt>
            <rdf:li xml:lang="x-default">Nice Colors</rdf:li>
    </rdf:Alt>
  </crs:Name>
```

You can add other languages in here to get the proper translations in localized builds:

```
<crs:Name>
    <rdf:Alt>
            <rdf:li xml:lang="x-default">Nice Colors</rdf:li>
            <rdf:li xml:lang="de">schöne Farben</rdf:li>
            <rdf:li xml:lang="es">belles couleurs</rdf:li>
            <rdf:li xml:lang="fr">bonitos colores</rdf:li>
    </rdf:Alt>
  </crs:Name>
```

Presets vs Profiles

As the previous section mentioned, most of the organization features also apply to presets. If you're unsure whether you want to make a profile or a preset, here are some general guidelines.

The most important distinction between the two is that you can only have one profile applied at a time. While it's true that the new approach to the imaging parameters does allow you to apply profiles without destroying user's settings, remember the concept of "one at a time" versus "stacking up" effects.

Profiles primarily set the overall color and tonality of the image, somewhat like a film stock. Presets can just be mix-ins, with several applied without overlapping each other.

For example:
- a vignette effect which is meant as a building block for a wide variety of images is best done as a preset.
- color grading effect is best done as a profile, especially because a LUT will allow much more precise control than the HSL interface does.
- a series of local corrections that simulate light leaks could be done as either one. If they are meant to be mixed in with the user's imaging choices, they should be done as presets. If they include a specific vision for the image colors, it could be done as a profile.

One thing to note: you can make presets that set specific profiles.
The light leak example with specific image colors may be best accomplished as a preset that sets the local effects and a specific profile that only specifies the colors.

How enhanced profiles interact with DCP profiles

As mentioned in the "**Introduction to Enhanced Profiles**" section, a DCP is required to render a raw image. All enhanced profiles applied to raw images will be applied on top of a base DCP—whether they specify one or not.

An XMP profile can specify a which DCP to use as its base. Unless there is a specific reason to use something else, using Adobe Standard is strongly recommended.

- There are Adobe Standard profiles available for an overwhelming majority of cameras, which means your profile will be available for most images.
- Adobe Standard provides a common starting point for your LUTs to work from; your profile will perform consistently for users of most cameras.
- Adobe Standard is available on all devices that run Lightroom.

When might you want to use another DCP as a base?

- If you are making a special-purpose profile that builds on top of a special-purpose DCP.
- If you are making a profile for your own personal use, using a personal DCP.

What happens if there is no specified DCP base?

If you don't specify a DCP base, your profile can be available for both raw and non-raw images. If applied to a raw image, it will still need a DCP in order to render. In those cases, it will use the default DCP for that image. For many images, that will be Adobe Standard; even if the user has specified a custom default profile for that camera model, enhanced profiles will still use Adobe Standard rather than that custom default.

For cameras that do not have Adobe Standard profiles, the base DCP will likely be an embedded profile.

If Adobe Standard is the likely base in most cases, why specify one?

If you want your profile to work on non-raw images, not specifying a base is the way to go. But if you do want it to work on only raw files, the decision to specify a base will come down to predictability:

- if you specify Adobe Standard, you know what effect your profile will have on the images, but at the cost of it not being available for images that don't have Adobe Standard profiles.
- If you don't specify a base, your profile will be available for those images without an Adobe Standard DCP, but because you can't predict what DCP is going to be used, you won't really know how your profile will perform on them. Non-raw images will be similarly

unpredictable, but depending on the type of profile you're making, this may be an acceptable risk.

Why is Adobe Standard the likely base DCP when you don't specify one? Isn't Adobe Color the new default profile?

Adobe Color is the new default profile, but it's not a DCP: it is an XMP profile. Enhanced profiles need a DCP base to serve as the starting point, so Adobe Standard is still the default DCP.

But I like Adobe Color and want to build on that instead of Adobe Standard; can I?

Yes – as long as you're not using your own look table. When creating your profile, specify that you want to use the Adobe Color HSV table. This will add it to your profile, and your CUBE file will be applied to Adobe Color.
You're not just limited to Adobe Color – you can use any of the Adobe Raw profiles as a base: Adobe Color, Adobe Landscape, Adobe Neutral, Adobe Monochrome, Adobe Portrait, and Adobe Vivid are all available for you to use. The color Adobe Raw profiles (that is, all of them except Adobe Monochrome) provide some gamut mapping that can help smooth the transitions when highlights approach the boundaries of smaller RGB color spaces, such as laptop screens and sRGB output. It's still possible to clip them in those spaces—you're not locked into a smaller color space—but the transitions will look better. The included Adobe_Color_example.DNG image shows how Adobe Standard can have a hard transition as you increase the exposure. Adobe Color can be pushed to show the banding, but in general, it is much smoother.
Be aware that adding the table will make your profile XMP about 100kb larger that it would without the extra table, and there is a small performance cost of applying two tables.
If you are making an HSV table-based profile, you will not be able to use Adobe Color because your own HSV table will be used instead.

Can I not specify a base DCP and still make a raw-only profile?

Yes, see section **Image Compatibility > SupportsOutputReferred**.

Guidelines

Here are a few things to keep in mind as you develop your profiles and presets.

- For profiles, use the image parameters responsibly
  - Extreme settings can make it difficult to edit the image
- Using some image parameters can come with a performance cost
  - Using Clarity, Highlights, Shadows, Dehaze, etc. can increase the time it takes to render the image. You don't need to avoid them; they are very useful and can really make your profile shine. Just be aware that there is a performance impact.
- Using RGB LUTs
  - RBG lookup tables are applied near the end of the imaging pipeline. This allow them to behave predictably, but it also means that you can prevent the user from doing certain things.
    - For example, if your LUT raises all the blacks to a dark gray, there is no slider setting that can ever make a pixel darker than your LUT allows. That's not necessarily a bad thing—some of the profiles we're shipping do this—but be aware of it as you develop your profiles.
    - If your LUT desaturates the image, it can leave the grayscale mixers without any color to work on, leaving them useless. If you want to allow the grayscale mixers to remain active, use a Look Table instead: see the next point for more info.
- Black and white conversion profiles:
  - There are huge opportunities for great B&W profiles. Some things to consider:
    - Use a Look Table instead of an RGB LUT for B&W conversions. They can leave the mixer active.
    - Don't do the desaturation in the table; have the Look Table tweak the colors so they will make a good conversion.
      - This will allow the mixer sliders to have color to work with.
      - Add the line crs:ConvertToGrayscale="True" to your profile with a text editor.
      - Feel free to open Adobe Monochrome in a text editor to see how this is set up.
- Using a text editor:
  - Sometimes it's easier to edit your profiles by hand.
    - If you do use a text editor to change your profile, update the crs:UUID to reflect your changed profile.
    - You can use https://www.guidgenerator.com/online-guid-generator.aspx to generate a new UUID.
      - Check the Uppercase option, and uncheck the Hyphens. You can copy and paste these into your profiles.

- Image quality concerns:
  - Make sure to test your tables for smoothness issues. Rough transitions between colors can result in banding, especially in areas of smooth gradations in an image, such as very out of focus areas. Included in the tutorial materials is an image that has an out of focus blue basket next to some orange tomatoes - smoothness_test.DNG.
  - It's a good idea to collect a library of various images to use for testing your profiles.

Best Practices

To provide a unified experience across third party profiles, please follow these best practices:

Set

Please name your sets using your company name as a prefix, and omit it from each individual profile. For example, if you have a set of color grading profiles, give each one a descriptive name, and then make them each share the same set name such as "MaxProfiles Color Grading Pack #1" This applies to both profiles and presets.

Clusters

Use the Rename Profile dialog and fill in the "Cluster" field with your company name. This will make all of your profile groups get sorted together in their own clusters. Even if you only have one set right now, please make a cluster so that your future sets will sort together. This applies to both profiles and presets.