

Color Correction in Final Cut Studio

Introduction to Color

- Part 1: Getting Started with Color
- ▶ Part 2: Managing and Applying Grades ◀
- Part 3: Using the Scopes and Auto Balance
- Part 4: Copying from One Clip to Another
- Part 5: Secondary Corrections and Color FX

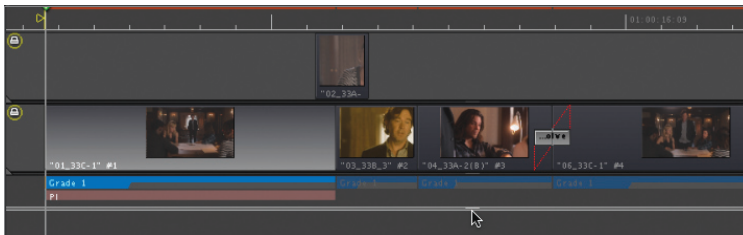
Part 2

Managing and Applying Grades

NOTE ► This is the second part in a series of tutorials that build upon each other. Before beginning this part, make sure you've completed the exercises in Part 1.

Below the tracks containing the video clips, the Timeline includes an additional area to display what grade is currently applied to the active clip. This is called the Grades track.

- 1 Drag the line below the grade area to expand it and reveal the additional details present on the first clip.



The pink bar indicates that there are primary color correction settings applied to that clip. This is referring to the corrections made in Final Cut Pro and automatically imported into Color.

For more information on organizing and managing grades, see Lesson 8.

NOTE ► The image above includes grades and correction settings that will not appear in your project file.

Exploring the Setup Room

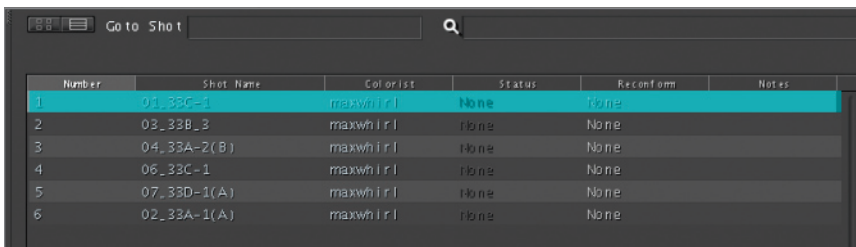
In the Setup room, you'll set all of your project preferences. It's critical to choose project preferences early in the process to ensure that you'll see and render your shots properly.

The Shots Tab

- 1 At the top of the Composer window, click the Setup tab.

The Setup room has its own set of tabs at the bottom, with which you can make additional modifications. The tabs are arranged left to right in the order in which you typically will use them.

- 2 At the bottom of the Setup room, click the Shots tab.



Number	Shot Name	Colorist	Status	Reconfirm	Notes
1	01_33C-1	maxwlrfl	None	None	
2	03_33B_3	maxwlrfl	None	None	
3	04_33A-2(B)	maxwlrfl	None	None	
4	06_33C-1	maxwlrfl	None	None	
5	07_33D-1(A)	maxwlrfl	None	None	
6	02_33A-1(A)	maxwlrfl	None	None	

The window displays a sequential list of all shots in the Timeline. Clicking a shot in the list selects also the clip in the Timeline.

The Grades Tab

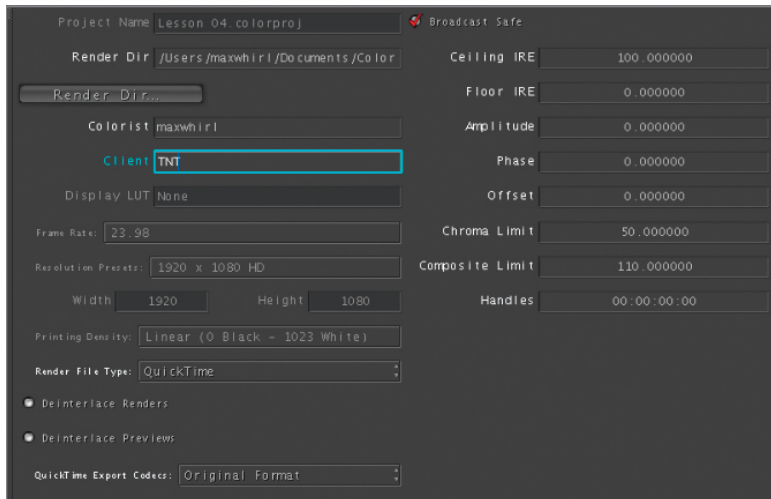
- 1 At the bottom of the Setup room, click the Grades tab.

Here is where you save favorite *grades* and quickly apply them to other shots in the Timeline. A grade contains settings from all of the other Color rooms. Room-specific settings also can be saved (within each room) and are called *corrections* rather than *grades*.

The Project Settings Tab

- 1 Click the Project Settings tab.

NOTE ▶ On smaller screens, this tab's name may be abbreviated as Prjct Settings.)



Here, you customize settings specific to the current project. Many of the settings deal with the technical specifications of video clips, but other fields are available to enter the names of the colorist and the client.

- 2 In the Colorist field, type your name; then press the Tab key to move to the Client field. Type *TNT* and press the Enter key.

The Broadcast Safe checkbox (in the top right of the Project Settings tab) is selected by default. This checkbox instructs Color to automatically ensure that your corrections don't exceed the signal specification standards of broadcast television.

Although this is helpful, it simply clips values that exceed the legal limit, which is not the most desirable way to limit the signal. For more specific control over your broadcast-safe settings, you typically use the Primary Out room, described later in this lesson.

The Messages Tab

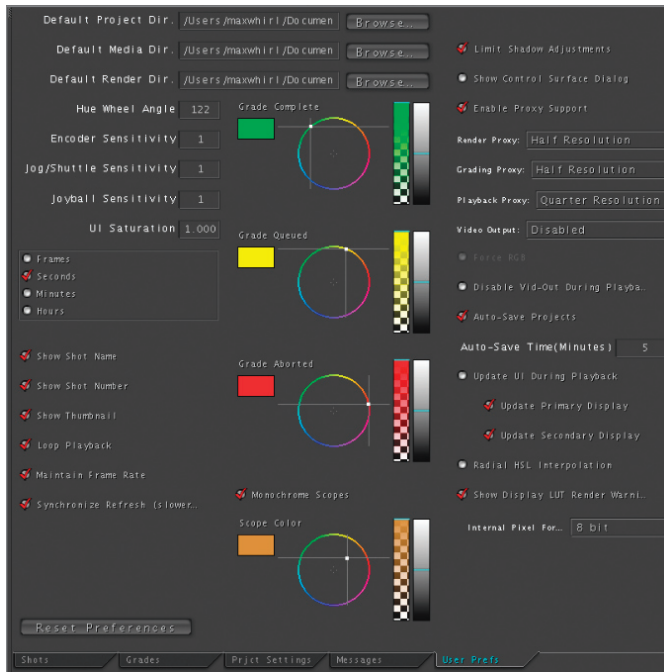
- 1 Click the Messages tab.

The Messages tab displays warnings and errors to help you troubleshoot technical problems you may encounter while working with Color. Yellow messages are warnings and red messages are errors.

NOTE ▶ You should not see any warnings in your Messages tab.

The User Preferences Tab

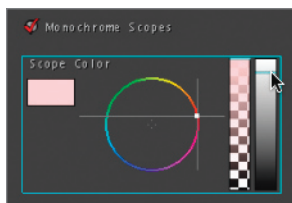
- 1 Click the User Prefs tab.



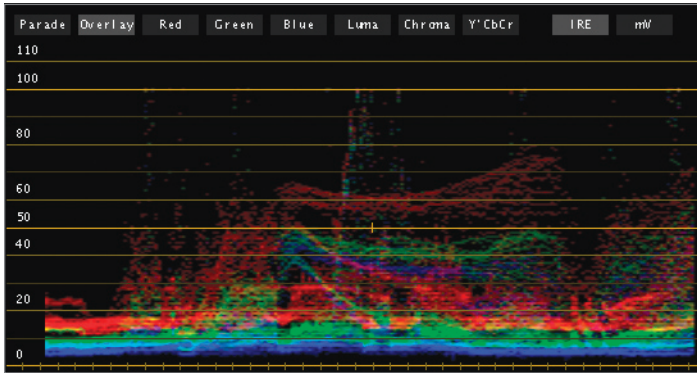
Here you customize application settings, such as interface preferences, and choose your media and project directories. The default Scope Color is orange. The grayscale gradient strip on the right controls the Scope Color's brightness. You may find that increasing the brightness improves the scopes' readability.

- 2 Drag the contrast slider up toward white.

The scopes in the Viewer window change from orange to white.



- 3 Click the Monochrome Scopes checkbox to turn it off.

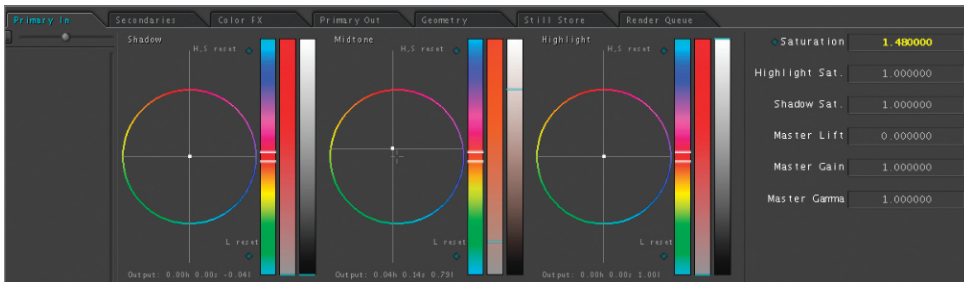


The scopes change to display colored traces in the Overlay, Parade, and Vectorscope. All other scopes turn white.

Applying Basic Grades

The Primary In room is where color correction begins. Here, you make adjustments that change the appearance of the entire image, such as fixing poor contrast and neutralizing unwanted color casts.

- 1 Click the Timeline ruler directly above the first clip.
Changes made in any room affect the clip currently under the playhead in the Timeline.
- 2 At the top of the Composer window, click the Primary In tab (or press Command-2).



At the top half of the room are three controls that affect the hue and saturation of the shadows, midtones, and highlights of your current clip. These are called color balance controls.

These controls are effectively the same as the controls in Final Cut Pro's Color Corrector 3-way tab. The three gradient strips to the right of each wheel are sliders: The first two sliders are alternative controls for hue and saturation, and the third slider, called the contrast slider, adjusts contrast.

The contrast slider is equivalent to the slider beneath the wheels in Final Cut Pro. Because in Final Cut Pro, this clip had a Color Corrector 3-way filter enabled, the settings in this room are automatically adjusted to match those filter settings as closely as possible.

- 3 To familiarize yourself with this interface, move your pointer over the Shadow color balance control, and drag the white dot (handle) in the center of the color balance control toward the edges of the wheel.

TIP You can actually drag anywhere in the color balance control to move the white center point.

Notice how the darker areas of the image change color in the Viewer window.



- 4 Move your pointer over the rainbow gradient to the right of the Shadow color balance control.

This is the Shadow Hue slider. Notice the two cyan horizontal lines in this slider. These indicate the current shadow color. To the right of the Hue slider is the Saturation slider.

5 Drag the Saturation slider up and down.

Notice how the color you added to the shadows becomes more or less intense. As you drag, also notice how the color balance control's handle moves farther from and closer to the center of the balance control. This slider controls the amount of color that the balance control is adding to the image.

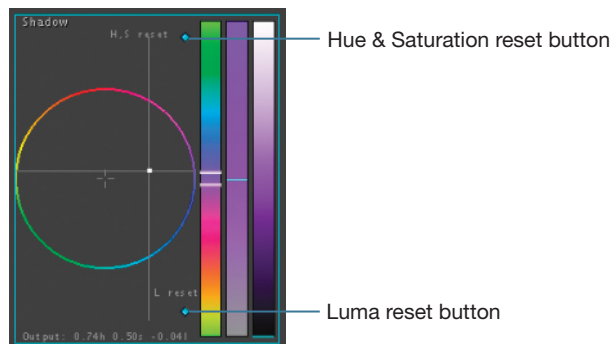
6 Drag the Hue slider up and down.

Notice how the color of the image changes. As you drag, also notice how the color balance control's handle moves in a circular way. Using the Hue slider is an alternative way to adjust one aspect of the color balance control handle position.

The rightmost slider, which looks like a grayscale gradient strip, is the Shadow contrast slider, which controls the black level of the image.

NOTE ► The cyan line at the bottom of the Shadow contrast slider moves up and down as you drag but it will remain pinned at the bottom even as you lower the slider's value below its starting value. Watch the image changing in the Viewer and the Waveform Monitor to see the effect of changing this slider.

There is one more important part of a color balance control: the reset buttons.



The Hue and Saturation values (which form the coordinates for the handle in the wheel) are reset by clicking the cyan dot at the top right of the wheel. The contrast (or *luma*) value is reset by clicking the cyan dot to the bottom right of the wheel.

- 7 Click the Hue & Saturation reset button to reset the color balance control to its default settings.

NOTE ▶ The Shadow contrast slider was adjusted in Final Cut Pro, so unless you made changes, you may not want to reset it now.

The Primary In room contains many other controls that you'll explore in more detail in the next few lessons. These controls allow you to manipulate your image in diverse ways, from the curves beneath the color balance controls, to the list of parameters in the upper right of the window, starting with Saturation.

▶ **RGB vs. YUV**

As an application, Color operates in a different color space from Final Cut Pro. If you're used to Final Cut Pro, you're used to a YUV (actually $Y'CbCr$) color space in which contrast values are stored in a channel that is separate from color values. In a $Y'CbCr$ space, adjusting the contrast has absolutely no effect on the color. In RGB, changing the contrast will change the color values, and vice versa. Similarly, in Color, the red, green, and blue channels are truly discrete, so (with rare exceptions) changing red values will have no actual influence on the other channels. (There may be a perceived change, but that's a different issue.)

In Final Cut Pro, stretching contrast (spreading out the white and black levels) tends to result in a perceived decrease in saturation (although saturation is mathematically unaffected). In Color, stretching contrast tends to increase saturation. This is sometimes a good thing, because it adds color richness at the same time that it increases the contrast, but you want to be aware of this in case the added saturation is not intended.

On this first clip, the Saturation value is displayed in yellow, indicating that it's set to a non-default value. In this case, that setting came from an adjustment to the Saturation slider in the Final Cut Pro filter.

- 8 Click the cyan dot to the left of the Saturation control.



The parameter is reset to its default value and the excess saturation is removed from the shot.

As you grade, you'll frequently want to compare your work with the original image.

- 9 Choose Grade > Disable Grading (or press Control-G).

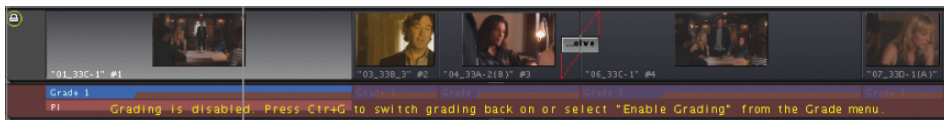
All color correction adjustments are disabled. A message appears in the Timeline to warn you that grading is turned off.



Original



Graded



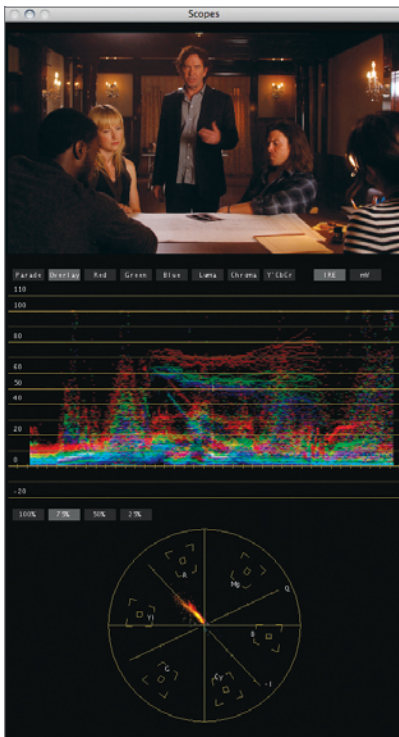
- 10 Press Control-G again to enable the grade and see the improvement that simple white and black level adjustments can make.

Viewing Your Images

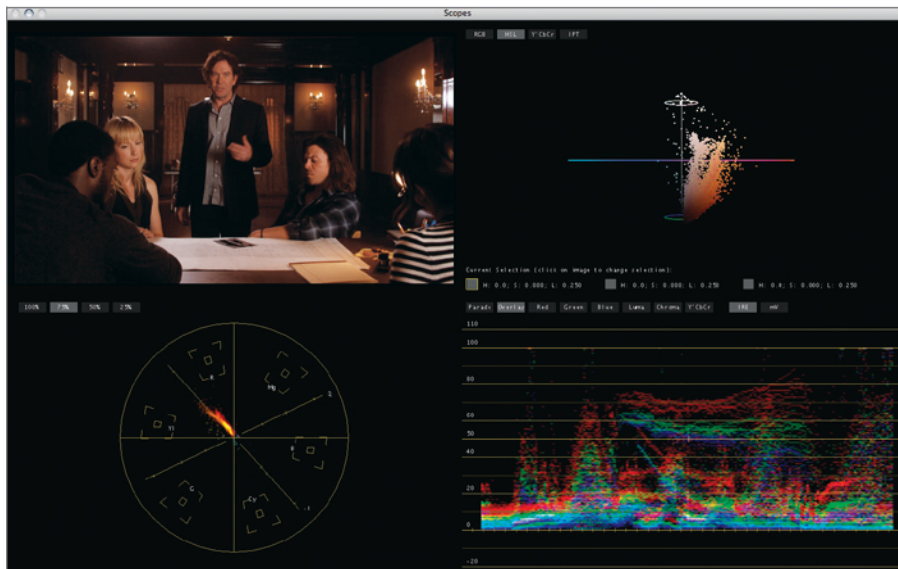
Before we continue, it's important to learn a little more about the Scopes window. The Scopes window displays your current clip, as well as Color's video scopes. The video scopes measure various components of your video signal. A video signal consists of two parts: *luma* and *chroma*. You can monitor those parts discretely or in useful limited combinations using different scopes.

You can configure your window layout to view multiple scopes simultaneously. There are four scopes to choose from: the Waveform Monitor, the Vectorscope, the Histogram, and the 3D Color Space Scope. Each of these scopes provides vital information that might not be entirely apparent by looking at only the video image. Additionally, each scope contains options to limit or expand what information is displayed (such as displaying red, green, and blue channels separately, or viewing the scopes in different color spaces).

In single-display mode, the Viewer window shows the video on top and has two scope areas below.



In dual-display mode, the Scopes window occupies an entire display and is divided into quadrants.



- 1 In the Scopes window, double-click the video image.

The video expands to fill the entire window.

- 2 Double-click again to return the video image to the small size.

You can also right-click the video to switch between full screen and quarter screen from the shortcut menu that appears.