Collaborating Between Autodesk Visual Effects and Finishing Applications & Autodesk Lustre®

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Introduction

Projects may require moving media between an Autodesk® Visual Effects and Finishing application and Autodesk® Lustre® software to help leverage the capabilities of the applications. But moving projects across applications is not always easy.

This article is not a cookbook. Rather, it offers solutions to solve finishing and color grading workflow issues. You can also find additional information in the Working with Wiretap chapter of the Autodesk Lustre user guide. The Lustre user guide is available at *http://www.autodesk.com/lustre-documentation*. User guides for Autodesk Visual Effects and Finishing applications are available at *http://www.autodesk.com/me-documentation*.

This article describes the following three workflows:

- Timeline grading
- Commercial grading
- RED® import

The timeline grading workflow is useful when you want to keep the color grading decisions towards the end of the project. This is the workflow to use when editorial decisions are locked. As you will see, it is a simple workflow to create and manage. It is also appropriate when both the Autodesk Visual Effects and Finishing application and Autodesk Lustre are on the same workstation.

Another approach to color grading is the commercial grading workflow, where one can color grade the sources. Designed for an iterative workflow, commercial grading has the colorist work on the sources, not the finished timeline. Use this workflow when editorial decisions are not final.

The RED workflow shows you how to import RED files into an Autodesk Lustre—Autodesk Visual Effects and Finishing application integration. When working with an Autodesk Visual Effects and Finishing

application, Autodesk Lustre, and RED files, consider leveraging the RED decoding capabilities of Autodesk Lustre. Because Autodesk Lustre can stream R3D files, they do not have to be transcoded to DPX before grading. Streaming requires less computing resources than transcoding, making it possible to start the grading earlier. It is also possible to stream proxies to view the media in real time.

This article concludes with some information covering the more technical aspects of data exchange between an Autodesk Visual Effects and Finishing application and Autodesk Lustre.

Timeline Grading Workflow

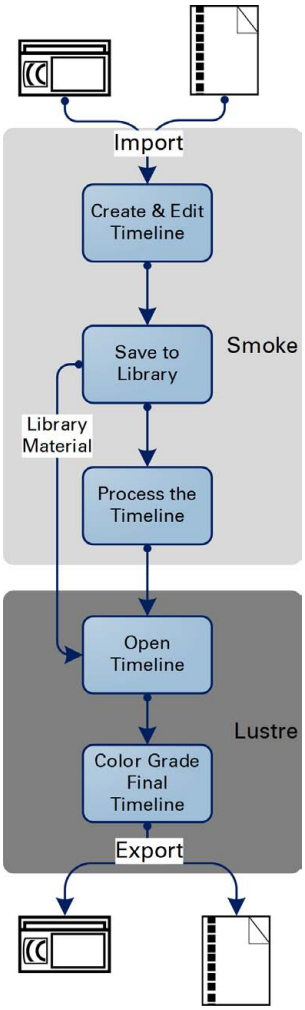
A timeline grading workflow is one where you want to keep the color grading decisions for last. It is the workflow to use when editorial decisions are locked.

Of the two workflows, timeline grading is simpler because the timeline and materials flow from one application to another. Once the project is completed in the Autodesk Visual Effects and Finishing application, the colorist can move it to Autodesk Lustre for color grading and output.

But the simplicity of the workflow is also a limitation. The workflow is linear; while it is possible to rebuild the timeline to accommodate the modified shot, it also means reapplying a color grade to the updated timeline. A great way to accommodate late editorial changes coming from an Autodesk Visual Effects and Finishing application is to use the Change Cut option.

This workflow offers the added benefit of providing full timeline context when grading. This means the colorist has access to the shots making up the timeline to help contextualise the color grading.

Timeline Grading Workflow



1. In the Autodesk® Smoke® software, capture or import the material to edit.
2. Create and edit a timeline, saving it to a library.
3. Process the timeline.
4. Import the timeline in Autodesk Lustre.
5. From Autodesk Lustre, color grade the final timeline.
6. From Autodesk Lustre, output the timeline to tape or file.

Commercial Grading Workflow

Commercial grading is another approach to color grading where you can color grade the source media. This is the type of workflow to use when you expect editorial decisions to change at the last minute, or in order to edit the media graded in Autodesk Lustre in an Autodesk Visual Effects and Finishing application.

A commercial grading workflow is an iterative workflow. It has the colorist work on the timeline sources, not the finished timeline or processed media. So the colorist can grade the media just before the editing and finishing, and even reapply grades to updated sources.

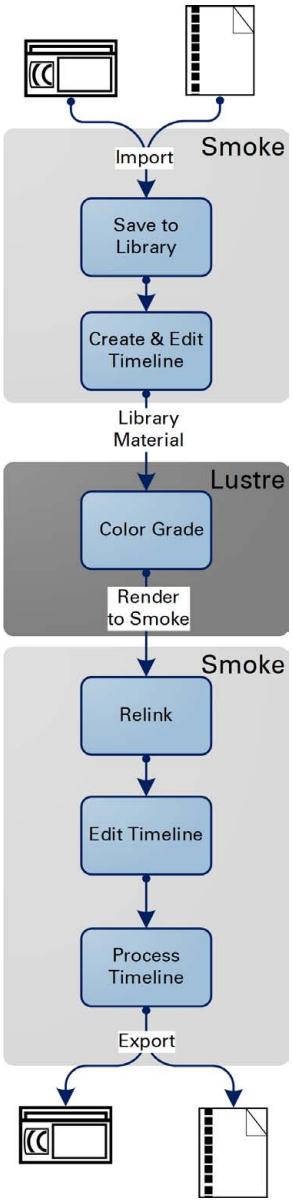
In this workflow, the color grading process happens earlier in the production pipeline; as soon as the sources are accessible.

But, there is a downside to this flexibility: the absence of context. Indeed, the colorist never has the full timeline in which to compare the current grading. Each shot is graded by itself. While this might not be a problem in short projects such as in television advertisements, it can render some long-form projects difficult to grade.

At the same time as color graded material is relinked in the Autodesk Visual Effects and Finishing application timeline, the editor can work with the colorist to review the grading. And because the sources are being graded, not the end product, it is not as time consuming to replace a source by a newer, updated one. The colorist reapplies the color grading from the old source to the new one, without forcing the finishing to be redone.

The commercial grading workflow is also appropriate when Autodesk Lustre is installed on a dedicated workstation: editor and colorist can work in parallel, editing and grading at the same time.

Commercial Grading Workflow



1. In the Autodesk Visual Effects and Finishing application, capture or import the material to edit.
2. Save the sources to a Library.
3. Create and edit a timeline.
4. In Autodesk Lustre, load the sources from the Autodesk Visual Effects and Finishing application clip library.
5. Color grade the sources.
6. Render to the Autodesk Visual Effects and Finishing application.
7. In the Autodesk Visual Effects and Finishing application, relink the timeline to the newly rendered material.
8. Edit the timeline.
9. Process the timeline.
10. Output the final timeline.

    Instead of releasing the final timeline, you could consider importing it into Autodesk Lustre to perform a completed timeline grade, just like in the timeline grading workflow.

Working with R3D Media

Autodesk Lustre can help leverage the RED decoding capabilities of the Wiretap Gateway software (included with Autodesk Lustre). Because the Wiretap Gateway can be installed on a remote workstation, the transcoding of R3D files to DPX files has a minimal impact on the performance of the Autodesk Lustre workstation. But this transcoding operation remains a time-consuming one.

But since Autodesk Lustre can also help stream both high resolution and proxy RED media, you do not have to wait for R3D transcoding. You can start grading using the proxy media, and only transcode when you are ready to export to the Visual Effects and Finishing application. In fact, the following workflow does not depend on transcoding prior to grading.

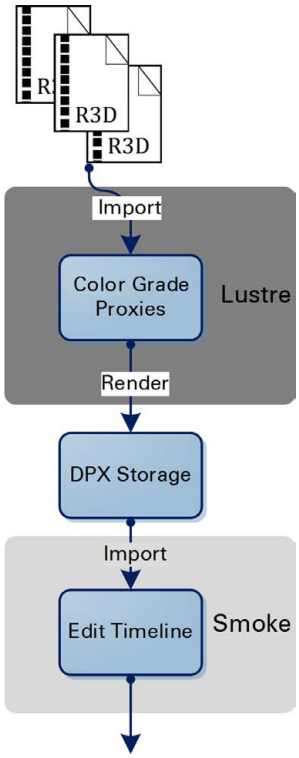
Incidentally, in Autodesk Lustre, you should use RED media proxies with a low debayering setting. This allows for the playback of RED media as close to real time as possible, based on resolution, network

speed, and CPU of the decoding workstation. These low-resolution proxies let you perform color grading, even creating a rough timeline if you wish.

Later, when the work is ready to be moved over to the Visual Effects and Finishing application, use the Wiretap Gateway to transcode the RED media to DPX.

This workflow is similar to the commercial grading workflow, but with the difference that Autodesk Lustre is the application used to import the RED media.

R3D Import Workflow



1. In Autodesk Lustre, open the R3D files.
2. Color correct the material using a low debayering setting.
3. Render the material to Wiretap as DPX files or to Autodesk® Stone® FS /Standard FS. No need to manually import files in the Visual Effects and Finishing application, unless you are not on the same network.
4. In the Autodesk Visual Effects and Finishing application, import or soft-import the now-DPX material.
5. Edit away.

What You Should Know

Information exchanged between the Autodesk Visual Effects and Finishing application and Autodesk Lustre goes through the Wiretap system.

- **Focus Point and Saving** In the Autodesk Visual Effects and Finishing application timeline, the focus point of the positioner indicates the layer of interest for edits and certain other operations. It also determines what appears when you import the timeline into Autodesk Lustre, since Autodesk Lustre represents a multilayer timeline from the Autodesk Visual Effects and Finishing application as a single layer for grading.
  When saving the timeline for use in Autodesk Lustre, ensure that the focus point is on the top-most layer you want included in the Autodesk Lustre timeline. For example, if the Autodesk Visual Effects and Finishing application timeline contains four layers and the focus point is on the third layer when it is saved, only three layers are included in the Autodesk Lustre timeline.
- **Dust Busting** Does not work for media located on standard or Stone FS. Publish from the Autodesk Visual Effects and Finishing application before importing into Autodesk Lustre.
- **Marry Grade** You cannot use marry grades on timelines imported through Wiretap.
- **Soft effects** All soft effects, transitions, and audio dissolves must be processed before importing the timeline into Autodesk Lustre.

- **Supported Timeline Elements** Color sources, timeline gaps, dissolve transitions, and fade-ins and fade-outs are supported in Autodesk Lustre.
- **Dissolves** Dissolves are regenerated in Autodesk Lustre, but only with linear animation and with a centered orientation. If a dissolve from the Autodesk Visual Effects and Finishing application has a different type of curve, or has keyframes, this data is not read in Autodesk Lustre. But the visuals remain the same.
- **Unsupported Transition Types** Wipe and Axis transitions are not supported. They are presented as single shots in Autodesk Lustre, similar to opticals. They must be processed to show in Autodesk Lustre.

Best Practices

When planning to exchange timelines and clips between Lustre and Smoke, keep the following in mind:

- **Fade-Ins** Avoid having a timeline starting with a fade-in at record timecode 00:00:00:00.
- **Tape Names** Avoid using different shots that have the same timecode and tape name. Having unique timecodes and tape names makes relinking timeline to media easier.
- **Hard-Committing** Hard-committing a selection of shots creates a clip with a tape name of *COMMIT*, and a source timecode obtained from the record timecode. There is no need to add this information to the shot manually. Hard-committing a single shot preserves the original tape name and timecode.
- **Start Timecode** The Start timecode of the timeline is positive.
- **Framerates** The timeline framerate has to be the same as the Autodesk Lustre project framerate.
- **Saving to a clip library** Once you have added a clip to a clip library, make sure to switch to a different clip library. This saves the clip library and allows Wiretap to be used to broadcast the updated information about the timeline and clips.
- **Dual Library View** In the Autodesk Visual Effects and Finishing application, the Dual Library View mode displays the contents of two clip libraries simultaneously, each in its own panel. When you switch from Dual Library View back to Single View, the newly hidden library remains selected by the application, and is read-only to Wiretap. Autodesk Lustre is unable to render media to the clip library until it is deselected.
- **Proxies Generation** When you load an Autodesk Lustre timeline in a project with proxies enabled, proxy generation starts when loaded in the Autodesk Visual Effects and Finishing application.

Metadata

The following metadata is exchanged between an Autodesk Visual Effects and Finishing application and Autodesk Lustre. It is used to match cuts.

- Tape, or reel, name. The name has a maximum length of 52 characters.
- Source and Start timecodes
- Clip name
- Image import path and file name of the timeline
- Source ID, which is the unique ID from the timeline
- Segment ID, which is the unique usage ID of a shot in a timeline. This helps you use Autodesk Lustre to apply the correct grading when a shot is used multiple times in a timeline.
- Clip comments

The more relevant metadata there is, the easier it is for you to use Autodesk Lustre to automatically match modified cuts. This automation in turn helps minimize user intervention and time spent reconciling new cuts of previous shots with the associated color grading.

Additional Information

For additional information about Autodesk Lustre, visit the Autodesk website: *www.autodesk.com/lustre*. In the Lustre user guide, the Working with Wiretap section contains additional information on integrating Autodesk Lustre with Autodesk Visual Effects and Finishing applications.

For additional information about Visual Effects and Finishing applications, visit the following Autodesk websites:

- Autodesk® Inferno®: *http://www.autodesk.com/inferno*
- Autodesk® Flame®: *http://www.autodesk.com/flame*
- Autodesk® Flint®: *http://www.autodesk.com/flint*
- Autodesk® Smoke®: *http://www.autodesk.com/smoke*
- Autodesk® Backdraft® Conform: *http://www.autodesk.com/backdraftconform*