Autodesk®
Lustre® 2009
A Discreet® Systems product

New Features Guide

Autodesk®

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1 Introduction

Welcome to Lustre

Autodesk® Lustre® is a scene-based digital colour grading solution that provides an intuitive environment for matching colour across shots and for creating colour-based effects on film and high-quality HD or SD video source material.

Lustre enables complete control of the final colour of your media. It ensures consistency between shots by providing a single means of grading footage originating from diverse sources, such as live-action shots, CG sources, stock footage, and photographic plates. It eliminates the need to use filters to adjust for different lighting conditions when shooting at different times on a location.

Complete with media acquisition capabilities that allow you to digitize from a VTR, you can auto-conform an EDL or manually build a timeline with a full range of editing and trimming tools.

You can use the primary colour tools in Lustre to create a particular look or mood for a scene. For example, desaturate a scene to create a monochromatic look, or apply a subtle orange cast to add a sense of warmth. You can also use the secondary colour grading and tracking tools to isolate and emphasize a part of the image. For example, selectively adjust the brightness to direct the attention of the audience to a particular part of the scene.

Further enhance the look of your media with image repositioning controls for adjusting the pan, scan, scale, rotation and aspect ratio. Use Sparks® to create assorted effects. Dust removal tools make it easy to automatically clean up unwanted scratches, hair, and dust.

Film and video footage can be graded in Lustre in either logarithmic or linear colour space. You can also output using a selected LUT or create one. The output from Lustre is a high-quality, graded digital data master that can be used to prepare the digital negative or digital projection masters. You can also master to HD and SD video, DVD, or the Internet.

Lustre Configurations

When you purchase Lustre, you can choose from several configurations, depending on the type of workstation you want and the options you require. The following table describes each Lustre configuration.

Station	Configuration
Master Station	**Default —** All features are available including the DI Pack, which consists of infrared channel dust removal, input resolutions greater than 2040x1556, output resolutions greater than 1920x1080, and bit depths greater than 10-bit. However, add-ons may be required to enable certain features. In addition, SD and HD I/O, as well as dual link and HSDL video formats, are default for the Master Station. **Add-Ons —** The following features can be added to the Default configuration: the Slave Renderer, and up to three panels for the Autodesk control surface. The Slave Renderer requires a separate license.
Lustre Station	**Default —** All features are available except for primary and secondary colour grading. The DI Pack, explained above, is also included, along with full dust removal functionality, and the ability to create geometries and masks. **With Primary Colour Correction —** Includes all features of the default option as well as primary colour grading. **Add-Ons —** The following features are available for either the Default configuration or the With Primary Colour Correction configuration, and require an additional license: SD and HD I/O, dual link and HSDL video formats, up to three panels for the Autodesk control surface, and the Slave Renderer.
Lustre HD Station	**Default —** Most features are available, although support is not available for the DI Pack (explained above). Certain features require add-on licensing in order to be enabled. **Add-Ons —** The following features can be added to the Default configuration: SD and HD I/O, dual link and HSDL video formats, the Slave Renderer, and up to three panels for the Autodesk control surface. The Slave Renderer requires a separate license.

Notational Conventions

A number of style conventions are used throughout this guide. These conventions and examples of their use are shown as follows.

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. You must press the Enter key after each command.	**`rpm -qa`**
Variable names appear in Courier, enclosed in angle brackets.	`<filename>`

Convention	Example
Feedback from the command line or shell appears in Courier.	`limit coredumpsize`
Directory names, filenames, URLs, and command line utilities appear in italics.	*/usr/autodesk*

NOTE: Throughout this guide, when referring to Windows-specific file locations, the term folder will be used. When referring to Linux-specific file locations, the term directory will be used. When referring to both, directory will be used.

Contacting Customer Support

A list of contact information for Autodesk Media and Entertainment Customer Support is available at *www.autodesk.com/support*.

Customer support is also available through your Autodesk reseller. To find a reseller near you, consult the reseller look-up database on the Autodesk web site at *www.autodesk.com/resellers*.

2 What's New

What's New in Lustre 2009

This chapter provides an overview of all the new features for Autodesk® Lustre® 2009 on both the Windows® and Linux® operating system.

Autodesk Control Surface (ACS) Panel Enhancements

The enhancements to the ACS are as follows:

- Each user has his / her own control surface settings.
- You can save your current grade file and cut by pressing ALT and DO on the Navigation panel.
- You can modify your ACS panel sensitivity.

See the *Autodesk Control Surface User Guide*.

Project and User Configurations

When you start the Lustre application, you can configure your own project and user settings so that whenever you re-enter Lustre, your personal configuration is loaded. On the Linux operating system, you can now use your own user login (i.e., you no longer need to log in as Root). See Chapter 3, "Project Management," on page 9.

Saving Intermediary Grades

Intermediary grades are used when you want to experiment with different looks. You can save intermediary grades from a single shot or a selection of shots to the grade bin. See Chapter 4, "Basics," on page 59.

Multi-Layer Timeline

Lustre 2008 introduced the Multi-Layer Timeline. In 2009, there are a number of additions to this feature:

- The shot priority option allows you to determine which shot should be played out when the timeline is using the Top Vertical Priority rule. See Chapter 5, "Editing," on page 65.
- You can copy the grading from one shot within the timeline to another or a group of shots. See Chapter 7, "Colour Grading: Basics," on page 91.
- The timeline and the Storyboard are synchronized where you select a shot in the timeline and the correlating shot in the Storyboard is selected as well. See Chapter 6, "Playing, Viewing and Sorting Shots," on page 79.

Timeline Sort Mode

Timeline sort mode allows you to sort all, or a selection of shots, according to the order of the shots in the sequence or by reel name. This makes it easier for you to grade the shots if common shots are grouped together. Once you have sorted and graded your shots, you can create a new cut list, render the sorted shots, play out the sorted shots to a VTR, or return them to their original order. See Chapter 6, "Playing, Viewing and Sorting Shots," on page 79.

GPU Acceleration

The following features are now available for use with GPU acceleration:

- Hue curves in secondary
- Matte in secondary
- Key manipulation (shrink and cleanup) in secondary
- Noise plugin 3.1

See Chapter 7, "Colour Grading: Basics," on page 91.

Copying and Pasting Keyframes

You can copy and paste keyframes for grading, geometries, point trackers, and plugin effects. See Chapter 8, "Animation," on page 101.

Stereoscopy

The Stereoscopy feature allows you to grade shots and see them in stereoscopic context. You are working with two layers, one to represent the left eye and the other to represent the right eye. See Chapter 10, “Stereoscopy,” on page 113.

Enhanced Video and Audio Input/Output

There are enhancements to the existing Capture and Playout menu. Besides the new layout of the user interface, there is a new track selector option, the ability to capture an audio signal, and a new process for capturing and playing out video and audio. See Chapter 11, “Video Capture and Video Playout,” on page 121.

Audio Menu

You can import, capture, or chase a timecode so audio can be played back with your timeline. Once you have your audio synced with the timeline, you can choose to play out both files to a VTR. See Chapter 12, “Audio,” on page 171.

Hot Keys

The hot keys in this chapter correspond to the new application features. See Chapter 13, “Hot Keys,” on page 177.

3 Project Management

About Project Management

Project Management is definition of project and user settings to customize the colour grading environment.

In Lustre, a project uses the following hierarchy:

- Project: Generally speaking, a Lustre project corresponds to a large work effort such as a film. A project contains all the information regarding the location of:
  - Project data files
  - Original footage
  - Rendered files
- Scene: a specific sequence of shots (or a scene) within the project.
- Cut: a group of shots that get rendered
- Grade: the operations performed on a cut.

⚠ **WARNING:** In Lustre, you must create a scene before starting to do any work (importing, capturing or creating data), or you may lose important data.

In addition, a project also contains information about the users accessing the project, and their preferences. Lustre saves the preferences of each user of a project at the end of every work session. The saved settings are restored when the user logs back on.

Configuring System Settings

After Lustre is installed but before launching it for the first time, you must configure system-level settings in the *init.config* file.

You only define these system settings once, unless your system workstation configuration changes. For more information about the *init.config* file, including default settings, see the x.

To configure the system settings:

1. Open the *init.config* file in a text editor. The location of the file depends on the workstation's operating system.

Operating System:	Location:
Windows	*C:\Program Files\Autodesk\Lustre2009*
Linux	*/usr/autodesk/lustre2009*

2. Edit the *init.config* file as required to define:
   - BrowseD. See the *Configuring BrowseD* section in the Lustre installation guide for your operating system.
   - Wiretap.
   - Calibration settings
   - Autodesk Control Panel
   - Slave Render
   - Backburner
   - Internal keywords
   - DPX keycode emulsion list
3. Save your changes and exit the text editor.

Project Configuration

Projects are a means of organizing work performed in Lustre, as well as the directories where the original footage and rendered files are stored. A project typically corresponds to an entire creative piece, such as a film or commercial.

All the work you do in Lustre is non-destructive. Operations performed on the footage are saved as metadata, separate from the original footage. A render permanently applies to operations to a copy of the original footage.

When creating a project, you specify a main project directory—known as *Project Home*—in which all metadata files for the project are stored. You can store footage and render files in sub-directories of the Project Home or in another location. If you store footage and renders outside the Project Home, you must specify the location when you define the project.

NOTE: Before creating a project, you must have a good idea of how you will structure your data directories. See "Recommended Directory Structure for Projects" on page 52.

You can configure the following default settings for your project:

- Project
- Calibration
- Rendering
- Engineering
- Network Rendering

About Project Defaults and Session Settings

When configuring your project settings in Lustre, you can configure some parameters as project defaults and others as user defaults. The parameters that are configurable as project defaults become the default settings each time the project is loaded, regardless of the logged in user.

While logged in, the user can override some of the project default settings, such as Render Mode in the Local menu. These overrides only last for the duration of the session. Restarting the application resets the settings to the values set at project creation.

Creating a Project

Creating a Lustre project is the first step to prepare Lustre for a new colour grading project. You can use templates to accelerate project setup. See "Working with Templates" on page 42.

NOTE: You can create multiple projects with the same Project Home. This allows you to work on a project with different settings while sharing the same scenes, cuts, and grades.

To create a new project:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the Project group.
   - From the Lustre splash screen, click New in the Project group.

2. Configure the project. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

3. To save the settings of the new project, click Save Project.

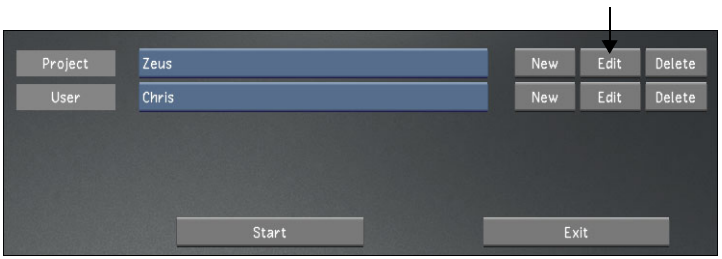
4. Click Exit Project.

To create a project based on an existing project:

1. Do one of the following:

   • From the Main menu, click Setup, and then Settings. Select the baseline project, and then click Edit in the Project group.

   • From the Lustre splash screen, select the baseline project, and then click Edit in the Project group.



2. In the Project Name field, enter a new name for the new project, or you will overwrite the original project's settings with the new settings.

3. Configure the project. Use Reset to reset all settings, from every menu, to their defaults.

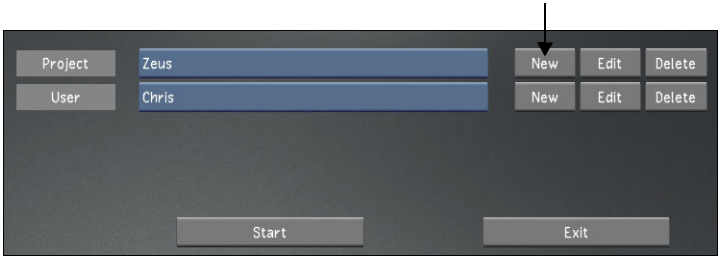
Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.

Select:	To configure:
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

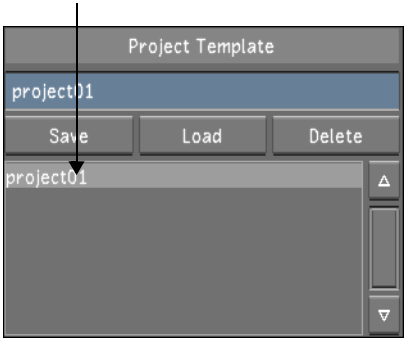
4. To save the settings for the project, click Save Project.
5. Click Exit Project.

To create a new project using a template:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the Project group.
   - From the Lustre splash screen, click New in the Project group.



2. From the Project Template list, select a template. See "Creating a Project Template" on page 42.



3. Click Load.

   The template's settings are now loaded.

4. Configure the project. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

5. To save the settings for the project, click Save Project.

6. Click Exit Project.

Editing an Existing Project

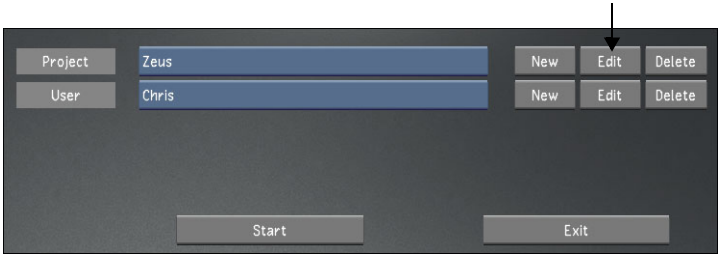
While working on a project, you can edit some of its default settings.

To edit the settings of a project:

1. Do one of the following:

   • From the Main menu, click Setup, and then Settings. Select the project to edit, and then click Edit in the Project group.

   • From the Lustre splash screen, select the project to edit, and then click Edit in the Project group.



2. Configure the project. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.

Select:	To configure:
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

3. To save the settings for the project, click Save Project.
4. Click Exit Project.

Project Configuration Settings

You have to configure default project settings. Project settings are distributed among 5 menus. Navigate through the Project Configuration by clicking the following buttons:

Project Configuration settings are distributed among five menus.

Project button — Select to configure project name and location, scan and render directories, architecture, scan format, and frame rate settings. See "Project menu" on page 15.

Calibration button — Select to configure monitor calibration settings and type, and define print LUTs. See "Calibration menu" on page 17.

Rendering button — Select to configure how render files are organized, set the render output format, configure render options, set the proxy generation size and configure proxy and reposition filters. See "Rendering menu" on page 19.

Engineering button — Select to configure video device SDI settings, GFX SDI settings, sync mode settings, and video capture and playout settings. See "Engineering menu" on page 22.

Network Rendering button — Select to configure Backburner/Burn, Slave Render, and Wiretap settings. See "Network Rendering menu" on page 26.

Project menu

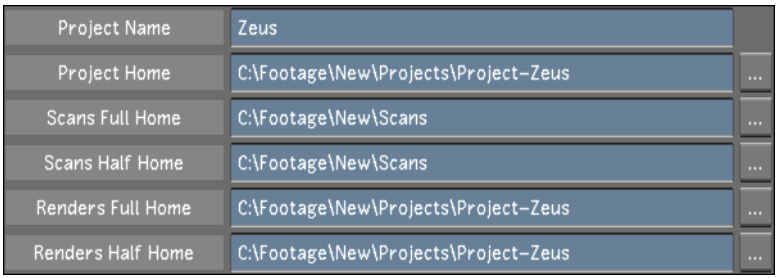
Use the Project menu to configure:

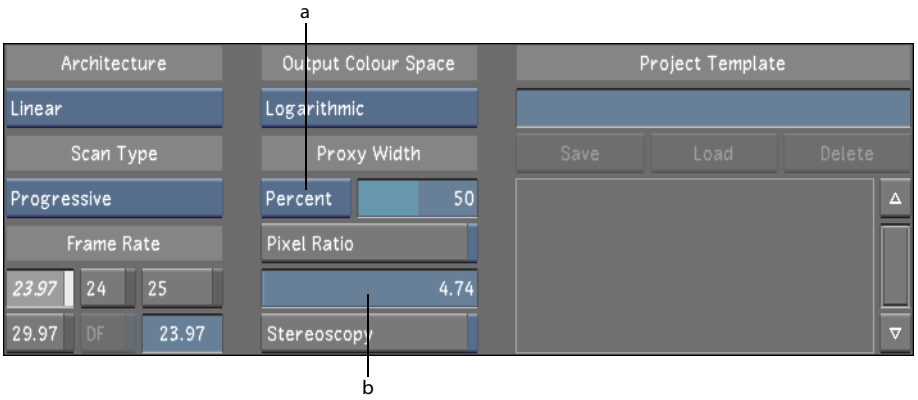
- The project name
- The location directory
- The scan directory
- The render directory
- The architecture

• The scan format

• The frame rate

For the project's directory structure, follow the guidelines described in "Recommended Directory Structure for Projects" on page 52. When entering a directory path, you can use the path browser. See "Browsing for Paths" on page 56.





a) Percent / Pixel option box b) Pixel Ratio slider

Project Name field — Enter the name of the project.

Project Home field — Enter, or browse to, the location of the main project directory.

Scans Full Home field — Enter, or browse to, the location of the scanned footage directory.

Scans Half Home field — Enter, or browse to, the location of the proxy footage directory.

Renders Full Home field — Enter, or browse to, the location of the render directory for renders of (full resolution) footage.

Renders Half Home field — Enter, or browse to, the location of the render directory for renders of proxy footage.

Architecture option box — Toggle to set the default grading architecture and colour space while working in Lustre to logarithmic or linear.

Scan Type option box — Toggle to set the default scan type.

Frame Rate buttons — Enable the default frame rate for the project's timeline and editing tools.

Output Colour Space option box — Toggle to set the default colour space architecture when rendering to logarithmic or linear.

Percent / Pixel option box — Toggle to set whether Lustre will determine the proxy width as a percentage of the original footage, or as a fixed number of pixels.

Proxy Width slider — Use to define the default proxy width. Whether it is a percentage or a number of pixels is defined by the Percent / Pixel option box.

Pixel Ratio button — Enable to configure the default aspect ratio.

Pixel Ratio slider — Sets the default aspect ratio. Available if Pixel Ratio is enabled.

Stereoscopy button — Enable to work on a stereoscopic project without selecting a stereoscopic raster.

NOTE: This button becomes unavailable when a stereo raster has been selected.

Project Template field — Enter the name of a project template you wish to create in this field before clicking Save.

Save button — Click to save the project settings of the current project to the template named in the Project Template field. Use to create a new template or to update an existing template.

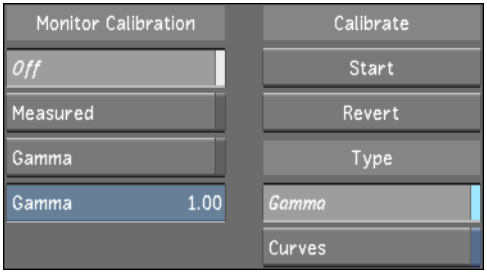
Load button — Click to load a project template after you select a template in the Template name list.

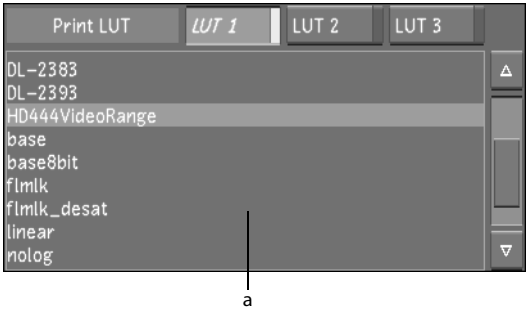
Delete button — Click to delete a project template after you select a template in the Template name list.

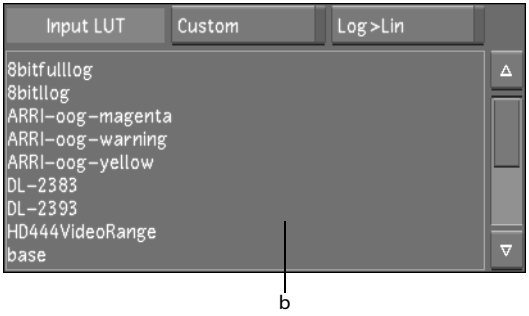
Template Name list — Select an existing project template from this list before loading or deleting the selected template. See Chapter 3, "Working with Templates," on page 42.

Calibration menu

Use the Calibration menu to configure default system calibration settings and to define the default print LUTs for a project.







a) Print LUT list b) Input LUT list

Off button — Enable to disable all monitor calibration settings.

Measured button — Enable to apply configured monitor calibration settings.

Gamma button — Enable to adjust the monitor's gamma level manually (without the use of an external colourimeter).

Gamma slider — Use to increase or decrease the default gamma.

Start button — Click to begin the calibration. Refer to the "Monitor Calibration" chapter in the *Autodesk Lustre 2009 User Guide*.

Revert button — Click to revert back to the previous automatic calibration.

Gamma button (Calibration Type) — Enable to set the calibration type to 'Gamma'.

Curves button (Calibration Type) — Enable to set the calibration type to 'Curves'.

Print LUT buttons — Enable one of LUT 1, 2, or 3 buttons, then select a displayed print LUTs to perform a quick comparison among three LUTs. For example, to designate a LUT as Print LUT 2, enable Print LUT 2 and select one of the displayed print LUTs. This should be done for Print LUT 1, 2 and 3.

Print LUT lists — Select a print LUT from each list after you enable one of the Print LUT buttons.

Custom button — Enable to select a custom input LUT (an input LUT other than the Log-to-Lin LUT). Refer to the "Input LUTs" chapter in the *Autodesk Lustre 2009 User Guide*.

NOTE: If you enable Custom, make sure you also select a custom LUT in the Input LUT list.

Log>Lin button — Enable to configure Lustre to perform a logarithmic-to-linear conversion on shots as they are dragged into the timeline or when assembling an EDL. Refer to the "Input LUTs" chapter in the *Autodesk Lustre 2009 User Guide*.

Input LUT list — Select a custom input LUT from this list to configure Lustre to use this LUT when:

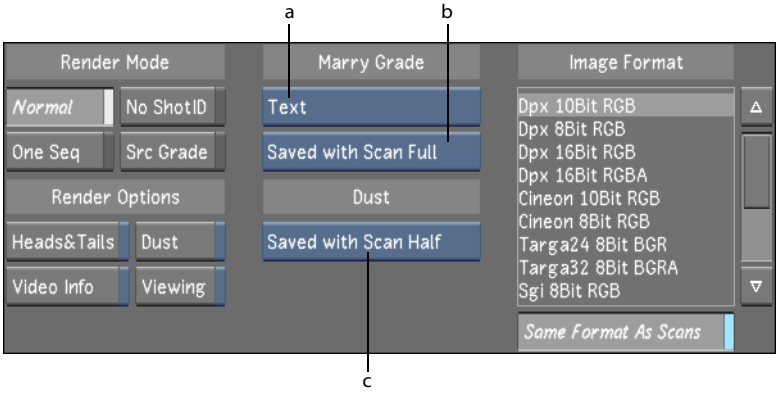
- dragging a shot from the Shot bin or Browser to the timeline, or
- assembling an EDL

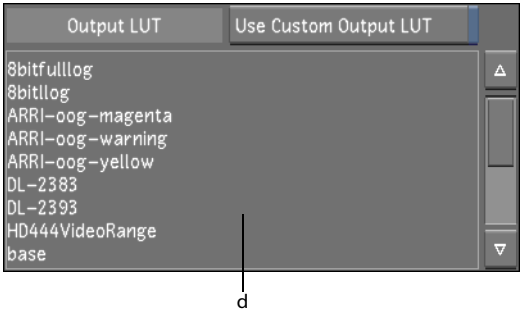
NOTE: To select a custom input LUT, enable the Custom button.

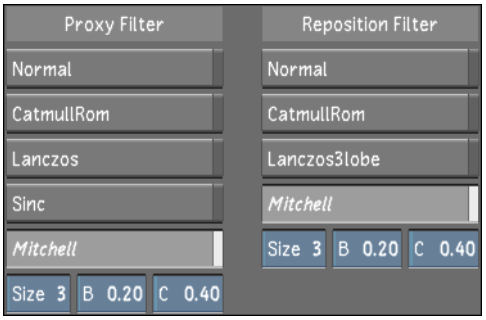
Rendering menu

Use the Rendering menu to:

- Organize the render files.
- Set the render output format.
- Configure render options.
- Set the proxy generation size.
- Configure proxy and reposition filters.







a) Marry Grade Format option box
b) Marry Grade File Location option box
c) Dust File Location option box
d) Output LUT list

Render Mode — Set the default render option.

Select:	To have:
Normal	Each shot of a cut rendered to a separate directory, under the render path specified in the project.
No Shot ID	Each shot in the cut rendered to a separate directory under the render path specified in the project.
One Sequence	Shots rendered into one directory as a single sequence of renamed images.
Src Grade	Individually-graded shots rendered to their own UID (unique ID) folder in the Renders Home location.

Heads & Tails button — Enable to set the project's default to render shots with head and tail frames.

Dust button — Enable to set the project's default to render shots with dust metadata.

Video Info button — Enable to set the project's default to burn in the timecode into the render.

Viewing button — Select to render viewing LUT; however, it renders 8-bit BMP files. Use this option when you want to render the image displayed in the monitor.

Marry Grade Format option box — Toggle to specify the default marry grade format. For more information about the marry grade formats, refer to "Saving and Loading Grades for Single Shots" in the "Project Management" chapter of the *Autodesk Lustre 2009 User Guide*.

Select:	To:
Binary	Save marry grade files in a binary format
Text	Save marry grade files in a text format (primary colour correction only)
UID Aware	Save marry grade files in a binary format and make the file 'Unique ID-aware'

Marry Grade File Location option box — Toggle to specify the location where marry grade files are saved. Marry grades are saved in resolution-specific directories.

Select:	To save marry grade files to a resolution-specific directory:
Saved with Scan Full	Under the Scans Full Home directory.
Saved with Scan Half	Under the Scans Half Home directory.

Dust File Location option box — Toggle to specify the location where Lustre saves dust files. Dust files are saved in resolution-specific directories.

Select:	To save dust files to a resolution-specific directory:
Saved with Scan Full	Under the Scans Full Home directory.
Saved with Scan Half	Under the Scans Half Home directory.

Image Format list — Select the default format of the media to be rendered from this list.

Same Format As Scans button — Enable to render media in the same format as the source media.

Output LUT list — Select a default output LUT from this list to use when rendering.

NOTE: Lustre only uses a selected output LUT if the Use Custom Output LUT button is enabled.

Use Custom Output LUT button — Enable to configure Lustre to use the selected output LUT in the Output LUT list when rendering.

Proxy Filter — Select the default filter to use when creating a proxy.

Select:	To use as default:
Normal	An Average filter if the resolution of the proxy is half and to use a Sync filter if the resolution of the proxy is full.
CatmullRom	The CatmullRom proxy generation filter when creating proxies.
Lanczos	The Lanczos proxy generation filter when creating proxies.
Sinc	The Sinc proxy generation filter when creating proxies.
Mitchell	The Mitchell proxy generation filter when creating proxies. Use the sliders below to define the filter settings.

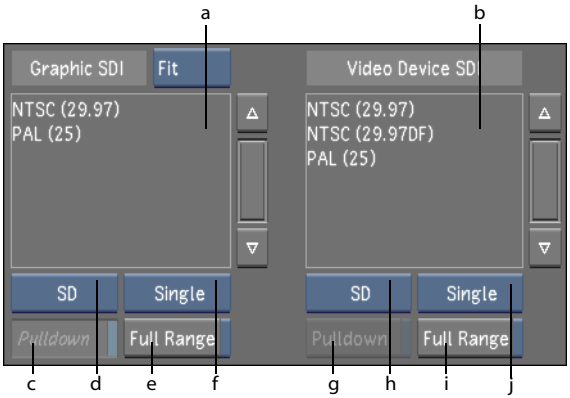
Reposition Filter — Select the reposition filter to use by default when creating proxies.

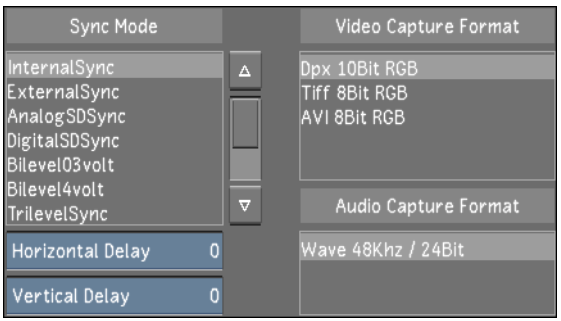
Select:	To use as default:
Normal	An Average filter if the resolution of the proxy is half and to use a Sync filter if the resolution of the proxy is full.
CatmullRom	The CatmullRom reposition filter.
Lanczos3lobe	The Lanczos3lobe reposition filter.
Mitchell	The Mitchell reposition filter. Use the sliders below to define the filter settings.

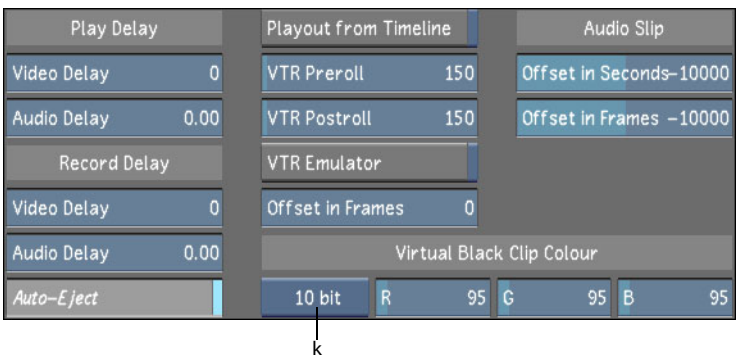
Engineering menu

Use the Engineering menu to configure:

- Video device SDI settings
- GFX SDI settings
- Sync mode settings
- Video capture and playout settings







a) GFX SDI Raster list
b) Video SDI Raster list
c) GFX SDI Pulldown button
d) GFX SDI Format option box
e) GFX SDI Full Range button
f) GFX SDI Link Type option box
g) Video SDI Pulldown button
h) Video SDI Format option box
i) Video SDI Full Range button
j) Video SDI Link Type option box
k) Bit Depth option box

Fit button — Enable to enlarge the image as much as possible while preserving the aspect ratio at the SDI out (graphics card).

Centre button — Enable to centre the image without zooming at the SDI out (graphics card).

Stretch button — Enable to fit the image to the dimensions of the monitor by adjusting the aspect ratio at the SDI out (graphics card).

GFX SDI Raster list — Select one of the graphics rasters to set the default format for the graphic card's SDI output.

GFX SDI Link Type option box — Toggle to display, in the Rasters list, rasters using the selected link.

GFX SDI Full Range button — Enable to configure Lustre to use the full range of YUV and RGB when outputting to the Video SDI. When this button is disabled, Lustre uses the Normal mapping matrix for the configured video raster.

GFX SDI Pulldown button — Enable to configure Lustre to add a pulldown frame when outputting through the GFX SDI. See "About 3:2 Pulldown" on page 162.

GFX SDI Format option box — Toggle to display, in the Rasters list, rasters using the selected resolution format.

Video SDI Raster list — Select one of the video rasters to set the default video resolution for the video device's SDI.

NOTE: You must choose a video device SDI raster with the same frame rate as the graphic SDI output raster. Otherwise, the video raster will not be enabled in the application.

Video SDI Link Type option box — Toggle to display, in the Rasters list, rasters using the selected link.

Video SDI Full Range button — Enable to configure Lustre to use the full range of YUV and RGB when outputting to the Video SDI. When this button is disabled, Lustre uses the Normal mapping matrix for the configured video raster.

Video SDI Pulldown button — Enable to configure Lustre to add a pulldown frame when outputting through the video device SDI. See "About 3:2 Pulldown" on page 162.

Video SDI Format option box — Toggle to display, in the Rasters list, rasters using the selected footage format.

Sync Mode list — Select one of the sync mode options from this list.

Select:	To:
InternalSync	Set the sync mode to a free running internal sync (SD and HD)
ExternalSync	Genlock to analog sync connected to the sync input (SD only)
TrilevelSync	Genlock to trilevel sync connected to the sync input (HD only)

Horizontal Delay slider — Use to define the number of pixels by which the horizontal sync output is delayed in relation to the incoming sync. The step interval is half a pixel for SDTV devices and two pixels for HDTV devices. The maximum delay is one line length.

Vertical Delay slider — Use to define the number of pixels by which the vertical sync output is delayed in relation to the incoming sync. The step interval is +/- 1 field for SDTV devices and +/- 8 line pixels for HDTV devices. The maximum delay is one line length.

Video Capture Format list — Select a video capture format to define Lustre's video capture format to a specific file type, colour space, and bit depth.

Select:	To configure Lustre to capture only:
Dpx 10Bit RGB	DPX files with an RGB colour space at a bit depth of 10 bits
Tiff 8Bit RGB	TIFF files with an RGB colour space at a bit depth of 8 bits
AVI 8Bit RGB	AVI files with an RGB colour space at a bit depth of 8 bits

Audio Capture Format list — Currently, the only supported capture format is Wave file (.WAV) with a sampling rate of 48,000 samples per second and a bit depth of 24 bits.

Video Delay slider — Define the default number of video frames to add before the start of the shot when capturing from the VTR.

Audio Delay slider — Define the default number of audio frames to add before the start of the shot when capturing from the VTR.

Video Delay slider — Define the default number of video frames to add before the start of the shot when recording to the VTR.

Audio Delay slider — Define the default number of audio frames to add before the start of the shot when recording to the VTR.

Auto-Eject — Enable to set the project's default to automatically eject the tape during EDL capture.

Playout from Timeline — Enable to set the project's default to play out from the Output view. If this button is disabled, the playout to tape function plays out rendered material only.

VTR Preroll slider — Define the time (in seconds) allowed for the VTR to run up to speed and stabilize to perform an edit.

VTR Postroll slider — Define the time (in seconds) allowed for the VTR to roll after an edit.

VTR Emulator button — Enable to set the project to emulate a VTR.

VTR Emulator Offset in Frames slider — Define the default number of frames you wish to offset the Start Timecode from the timeline.

Offset in Seconds slider — Define the default number of seconds you wish to offset the audio.

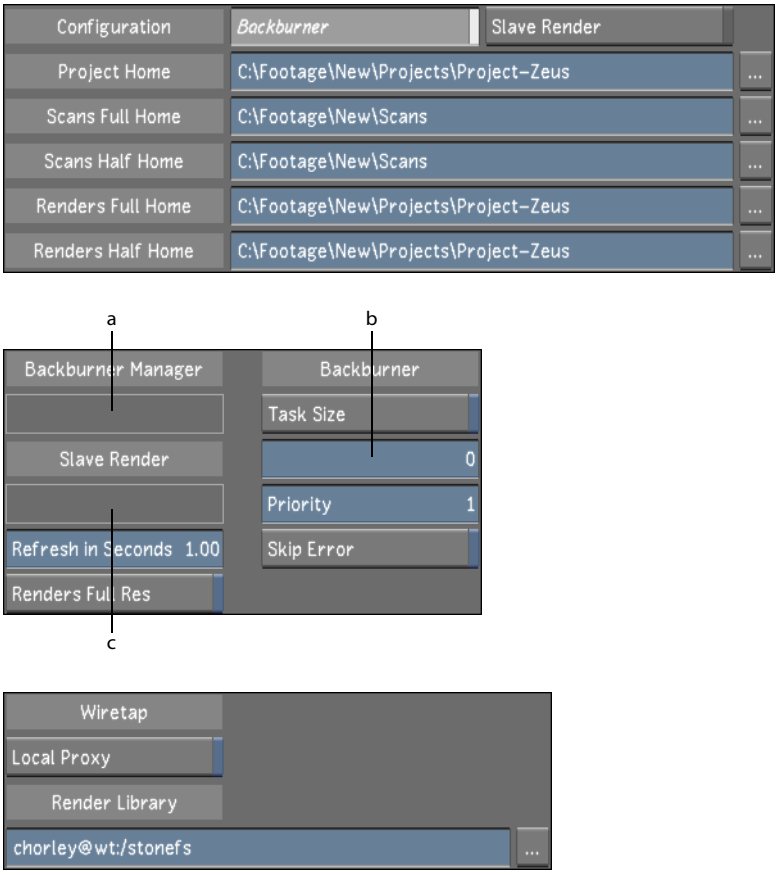
Offset in Frames slider — Define the default number of frames you wish to offset the audio.

Bit Depth option box — Toggle to select the default bit depth of virtual colour clips in your project. Possible values are 8, 10 (default), and 16 bit.

RGB sliders — Define the default colour of virtual colour clips in this project.

Network Rendering menu

Use the Network Rendering menu to configure default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project.



a) Backburner Manager host field b) Task Size slider c) Slave Render host field

Backburner button — Toggle to display one of the two menus where you can configure the project paths for Backburner and Slave render.

Slave Render button — Enable to set the Slave Render on by default. You must configure the Slave Render paths to use this function. See "Network Rendering menu" on page 26.

Project Home field — The location of the main project directory.

Scans Full Home field — The location of the high-resolution (full) scans directory.

Scans Half Home field — The location of the proxy (half) scans directory.

Renders Full Home field — The location of the high-resolution renders directory.

Renders Half Home field — The location of the half-resolution renders directory.

Backburner Manager Host field — The IP address of the Backburner Manager node. This address is read from the *init.config* file.

Slave Render Host field — The IP address of the Slave Render host. This address is read from the *init.config* file.

Refresh in Seconds slider — Use to define the default number of seconds allowed to elapse before the Slave Renderer progress indicator is updated.

Renders Full Res button — Enable to set the default to render high resolution media when working in Proxy mode and using the Slave Render.

Task Size button — Enable to configure the size of the task (in number of frames) sent to individual Backburner render nodes.

Task Size slider — Use to define the number of frames in each task sent to the render nodes.

NOTE: You must first enable the Task Size button before configuring the size of the task with the slider.

Priority slider — Use to define the default priority of a Backburner task.

Skip Error button — Enable to configure Lustre to skip errors when performing remote renders with Backburner.

Local Proxy button — Enable to generate and view, in the Half Resolution Player, the proxies Lustre creates for Wiretap media. Disable to see the proxies located on the Wiretap server.

Render Library field — Set the Wiretap location on a Visual Effects and Finishing system where Lustre creates soft-import links for the rendered shots. See "Browsing for Paths" on page 56.

⚠ **WARNING:** For publish metadata to be sent to the Render Library path, the Wiretap Render button must be enabled in the Render > Local menu before you render your project.

User Configuration

In Lustre, using user configuration, you can:

- Create a new user profile.
- Create a new user from an existing user profile.
- Create a new user from an existing user template.
- Edit the settings of an existing user profile.

About User Defaults and Session Settings

When configuring your project settings in Lustre, you can configure some parameters as project defaults and others as user defaults. The parameters that are configurable as user defaults become the default settings each time that user logs in.

While logged in, the user can override some of the user default settings. These overrides only last for the duration of the session. Restarting the application resets the settings to the values set at user creation.

Setting Context Parameters

When a user logs into a particular project in Lustre for the first time, Lustre creates the *<user>context.config* file, where *<user>* represents the user name associated with a user profile. The context file is found in the *...\project\<project name>* folder in Windows and the *.../project/<project name>/* directory in Linux. The context parameters include some attributes not defined in the Project or the User Management pages. They are saved and reloaded each time the context (same user and same project) applies. Contextual settings include:

- Last scene
- Last shot
- Resolution
- Crop value
- Assemble frame rate / drop frame mode
- State of the surface control
- Audio file

Context parameters are stored in the *<user>Context.config* file. For information, see the *Autodesk Lustre Software Installation Guide*.

NOTE: It is recommended that you verify your user-level and project-level parameters in the User and Project configuration menus, prior to starting a project. See "User Configuration" on page 28 and "Project Configuration" on page 10.

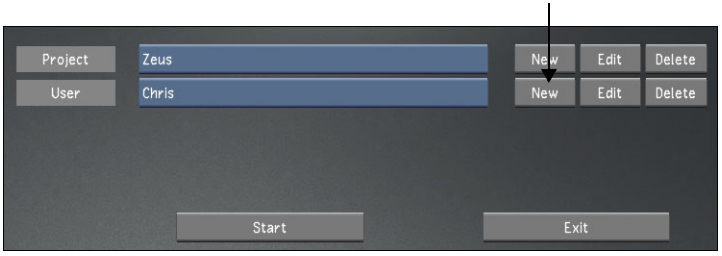
Creating a User Profile

The new user settings menu allows you to customize your settings so they are used whenever you enter the Lustre application. The settings are broken down into three groups: Display & Interface, System & Menu, and Tools. When you create a new user you can set the settings within the three groups to your preference, or you can choose to keep the default settings.

Use templates to accelerate user creation. See "Working with Templates" on page 42.

To create a new user:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the User group.
   - From the Lustre splash screen, click New in the User group.



2. Configure the new user. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

3. To save the settings for the user, click Save User.
4. Click Exit User.

To create a new user from an existing user:

1. Do one of the following:
   - From the Main menu, click Setup, and then Settings. Select the baseline user, and then click Edit in the User group.
   - From the Lustre splash screen, select the baseline user, and then click Edit in the User group.

2. In the Project Name field, enter a name for the new project, or you will overwrite the original project's settings with the new settings.
3. Configure the new user. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

4. To save the settings for the user, click Save User.
5. Click Exit User.

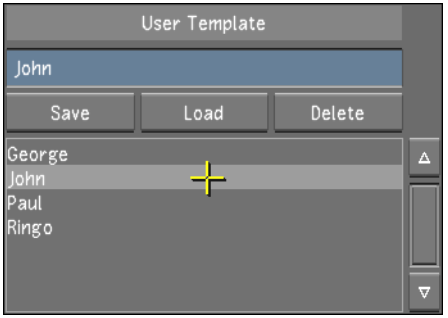
To create a new user using a template:

1. Do one of the following:

   • From the Main menu, click Setup, then Settings, and then click New in the User group.

   • From the Lustre splash screen, click New in the User group.

2. From the User Template list, select the template to use. See "Creating a User Template" on page 47.



3. Click Load.

   The template settings are now loaded.

4. Configure the new user. Use Reset to reset all settings, from every menu, to their defaults.

⚠ **WARNING:** Rename the new user, or you will overwrite the template.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

5. To save the settings for the user, click Save User.

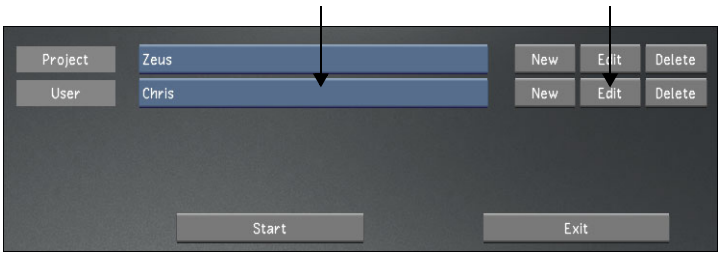
6. Click Exit User.

Editing an Existing User

As you are working from project to project, one project may require different settings than the other. The editing feature allows you to change the settings of an existing user profile.

To edit user settings:

1. Do one of the following:
   - From the Main menu, click Setup, and then Settings. Select the user, and then click Edit in the User group.
   - From the Lustre splash screen, select the user, and then click Edit in the User group.



2. Edit the user settings. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

3. To save the edits, click Save User.
4. Click Exit User.

User Configuration Settings

For any user, you can configure default settings. User settings are distributed among three Settings menus. Navigate through the User Configuration by clicking the following buttons.

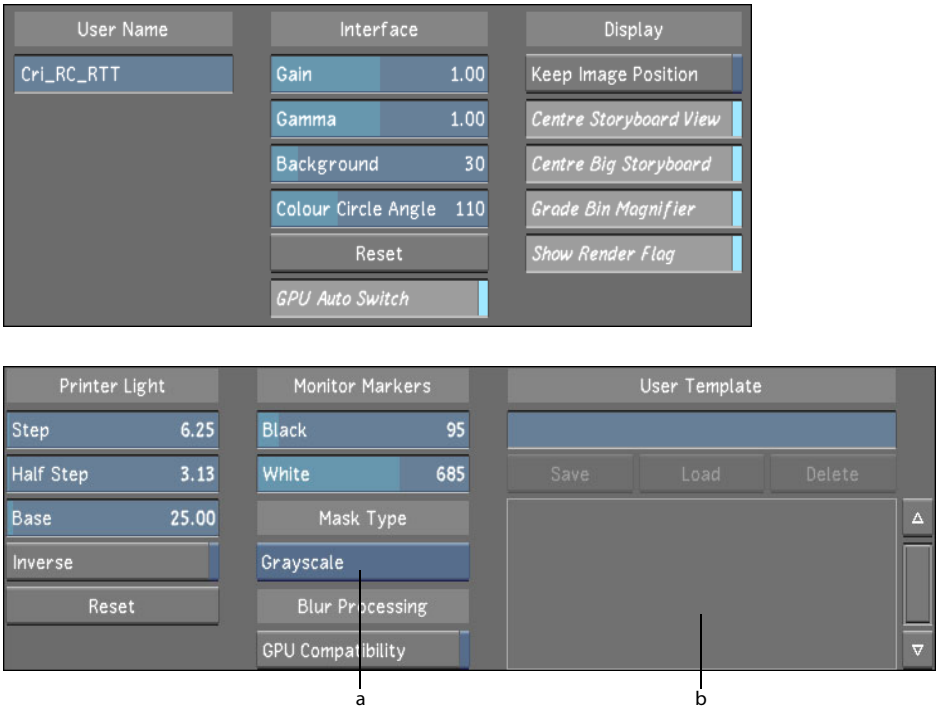
Display & Interface button — Select to configure the interface and display settings associated with this user. See "Display & Interface Settings" on page 33.

System & Menu button — Select to configure the system, match options, assemble menu, and playout menu setting. See "System & Menu Settings" on page 35.

Tools button — Select to display the settings for the keyframe, animation, and dust tools. See "Tools Settings" on page 38.

Display & Interface Settings

Use the Display & Interface Settings page to configure the default display and interface settings for this user.



a) Mask Type option box b) User Template list

User Name field — Enter your user name in this field. This name appears in the list of users after the user profile is saved.

Gain slider — Use to adjust the white point value in the user interface.

Gamma slider — Use to increase or decrease the gamma setting in the user interface.

Background slider — Use to increase or decrease the background grey settings in the user interface.

Colour Circle Angle slider — Use to increase or decrease the colour circle angle of the grading colour wheels.

Reset button (Interface group) — Use to revert the gain, gamma, background, and colour circle angle back to their default settings.

GPU Auto Switch button — Enable to allow Lustre to automatically switch to CPU processing for all features that are not GPU compatible.

Keep Image Position button — Enable to maintain the image position in the display when you access the Player. When disabled, the image centres itself in the Player when you hide the user interface.

Centre Storyboard View button — Enable to centre the selected shot in the Storyboard.

Centre Big Storyboard button — Enable to centre the selected shot when you are viewing the Storyboard in the large Storyboard view.

Grade Bin Magnifier button — Enable to magnify the thumbnail in the Grade bin when the mouse cursor is over a storage container.

Show Render Flag button — Enable to display the render flag in the upper-left corner of the screen.

Step slider — Use to set the value for one lab light.

HalfStep slider — Use to Change the value for half a lab light.

Base slider — Sets the default value for your printer light settings (i.e., red, green, blue (RGB) values).

Inverse button — Enable this button in the Printer Light group to invert the printer light density mode.

Reset button (Printer Light group) — Click to revert the step, half step, base, and inverse settings to their default value.

Black slider — Defines the values of the lines set in the histogram and waveform monitor for black.

White slider — Defines the values of the lines set in the histrogram and waveform monitor for white.

Mask Type option box — Toggle to select how you wish to display your masks.

Select:	To display masks:
Grayscale	In grayscale by default.
Saturated	In saturated by default.

GPU Compatibility button — Key blurs and geometry blurs are processed differently depending on whether CPU processing or GPU acceleration is enabled. To ensure that they are always displayed identically, enable the GPU Compatibility button before you start work on keys, key blurs, and geometry blurs.

User Template field — Enter the name for the template you are creating. See Chapter 3, "Working with Templates," on page 42.

Save button — Click this button to save the user settings to the template named in the User Template field.

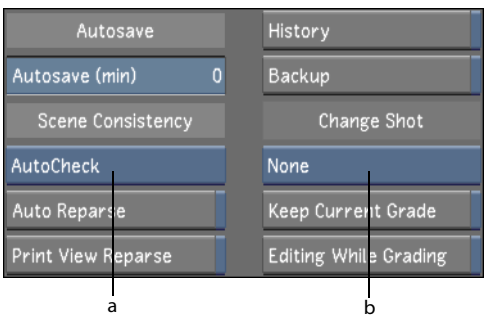
Load button — Loads the user template selected in the User Template list.

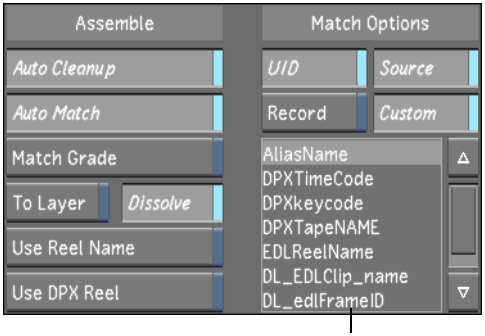
Delete button — Deletes the user template you have selected in the User Template list after you select a template in the Template name list.

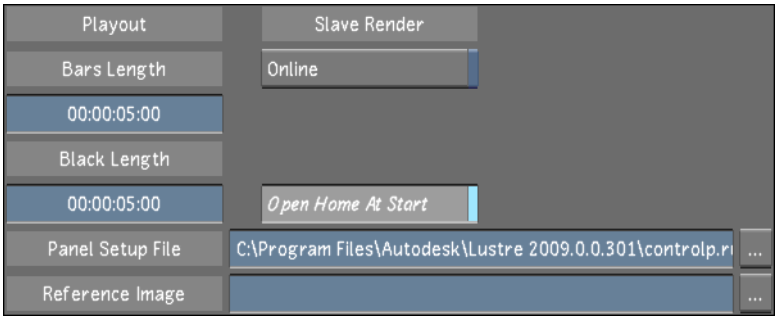
User Template list — Displays a list of all the user templates which have been created for Lustre. Select user template from this list before loading or deleting the selected template.

System & Menu Settings

Use the System & Menu Settings page to configure system, match grade, assemble, and playout settings for this user.







a) Scene Consistency option box b) Change Shot option box c) XML Tag Options list

Autosave slider — Use to define, in minutes, the frequency with which Lustre automatically saves a backup of the grade and cut you are working on.

Scene Consistency option box — Toggle to verify inconsistencies in the file metadata when loading.

Select:	To:
AutoCheck	Check the cut files when loading to look for inconsistencies in the metadata. Results are printed out to the console window.
AutoRepair	Perform the same task as above but additionally, to repair all inconsistencies.
None	Disable the Scene Consistency function in Lustre.

Auto Reparse button — Enable to force Lustre to reparse the project structure and source material at start-up.

Print View Reparse button — Enable to have Lustre reparse the project structure and source material in Print View.

History button — Enable to save a history file for each grade whenever you save the grade.

Backup button — Enable to save a copy of all metadata on the system disk into the Lustre home install directory.

Change Shot option box — Toggle to define the change operation settings.

Select:	To:
Do	Force a Do operation after changing the shot.
DoAndClearUndo	Force a Do operation and flush the undo buffer after changing the shot.
None	Not force a Do operation nor flush the undo buffer after changing the shot.
ClearUndo	Flush the undo buffer after changing the shot.

Keep Current Grade button — Enable to configure Lustre not to remove a current grade from memory when loading a scene.

Editing While Grading button — Enable to make editing hot keys available when you are in the colour grading menus.

Auto Cleanup button — Enable to automatically perform cleanup during an EDL assembly. When Lustre performs an EDL cleanup, it arranges EDL events according to record timecode and deletes problematic events. For example, if an EDL has two events with conflicting timecodes, the event with the lower number is deleted during cleanup.

Auto Match button — Enable to automatically match EDL event timecodes to available shot timecodes in the Shot bin during assembly.

Match Grade button — Enable to apply the current grade settings to a new assembled timeline without having to create a new cut file and use the Change Cut option.

To Layer button — Enable to assemble a cut to a new layer above the existing layer(s) in the currently loaded cut. This features is disabled by default.

Dissolve button — Enable to include all dissolves in the EDL. If this button is disabled, dissolves are not part of a timeline after the EDL assembly.

Use DPX Reel button — Enable to match the EDL reel name to the reel name in the DPX header during an EDL assembly.

UID button — Enable to configure matching to be based on the shot's unique ID during EDL assembly.

Source button — Enable to configure the matching to be based on the source data, such as a shot's source timecode, during an EDL assembly.

Record button — Enable to configure the matching to be based on the record data, such as an EDL's record timecode, during an EDL assembly.

Custom button — Enable to use one of the cut file's metadata as matching criteria during EDL assembly.

XML Tag Options list — Select one of the cut file's metadata from this list to use as a matching criteria during an EDL assembly. You must enable the Custom button before performing this operation.

Bars Length slider — Use the slider to define the default minimum colour bars length when recording in Record mode.

Black Length slider — Use the slider to define the default black length time when recording in Record mode.

Slave Render Online button — Enable to connect to the Slave Render server as it is defined in the *init.config* file. Once this feature is enabled, you can enable or disable Slave Renderer from the Render > Slave Render menu.

Open Home At Start button — Enable to set the file browser to display the contents of your project's Scans Full directory at start-up.

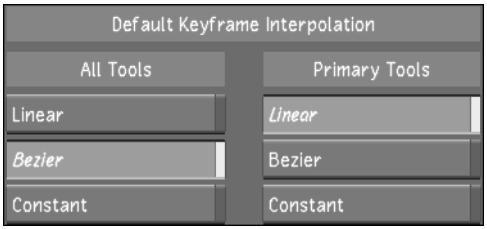
Panel Setup File field — Enter the file path of the control panel rules file or browse and enter a new path for this file. The default path for this file is the User folder of the application. For information about defining paths, see "Browsing for Paths" on page 56.

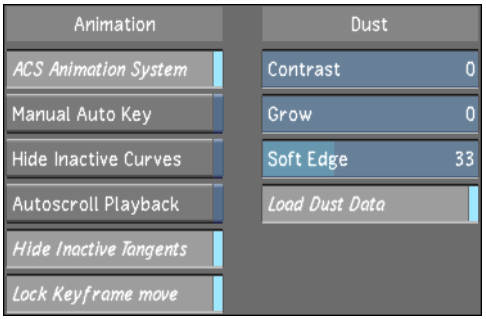
Reference Image field — Enter the path of the reference image or browse and enter a new path for this file. Then, after loading the project and launching the application, you can press **SHIFT+K** to load the image into the single file system for reference and then view the image by pressing **L**. For information about defining paths, see "Browsing for Paths" on page 56.

Tools Settings

Use the Tools Settings page to configure keyframe interpolation, animation, and dust settings for this user.

NOTE: The settings in the All Tools sub-group do not affect tools in the Colour > Grading menu.





All Tools Linear button — Enable to use a linear default interpolation for all tools. The linear interpolation joins keyframes with a straight line. This affects all parameters (other than the input and output primary grading) in the Colour menu.

All Tools Bezier button — Enable to make the default interpolation for all tools to be Bezier. The bezier interpolation produces a smooth curve with a smooth transition between keyframes and each keyframe on the curve has tangent handles. This affects all parameters (other than the input and output primary grading) that are in the Colour menu.

All Tools Constant button — Enable to use a constant default interpolation for all tools. Constant interpolation produces a square curve. This affects all parameters (other than the input and output primary grading) in the Colour menu.

Primary Tools Linear button — Enable to use a linear default interpolation for all primary grading tools. The linear interpolation joins keyframes with a straight line. This affects all parameters within the Colour menu for input and output primary grading.

Primary Tools Bezier button — Enable to make the default interpolation for primary grading tools to be Bezier. The bezier interpolation produces a smooth curve with a smooth transition between keyframes and each keyframe on the curve has tangent handles. This affects all parameters within the Colour menu for input and output primary grading.

Primary Tools Constant button — Enable to use a constant default interpolation for all tools. Constant interpolation produces a square curve. This affects all parameters within the Colour menu for input and output primary grading.

ACS Animation System button — Enable to configure Lustre to automatically move the first or last key whenever a keyed parameter is moved. This option is enabled by default.

Manual Auto Key button — Enable to set the Auto Key state to On when moving from shot to shot while grading. Disable this feature so the Auto Key state is disabled. This option is disabled by default.

Hide Inactive Curves button — Enable to hide curves that are not in use. Hiding inactive curves can make it easier for you to manage your keyframes and modify your animations. This option is disabled by default.

Autoscroll Playback button — Enable to configure Lustre's default behaviour to scroll automatically when the positioner plays off the far right edge of the Channel Editor (or the far left edge when playing backward). This option is disabled by default.

Hide Inactive Tangents button — Enable to hide tangent handles for keyframes that are not selected. This option is enabled by default.

Lock Keyframe Move button — Enable to allow only vertical movement when dragging a keyframe. This option is enabled by default.

Contrast slider — Use to set the amount of contrast used to find dust during automatic analysis. Low contrast values cause the algorithm to accept low colour value differences between corresponding pixels on the current, previous, and next frames. Therefore, low values result in more complete removal of the artefact. However, if the contrast is set lower than actually needed, adjacent pixels are modified more than actually required to remove the dust.

Grow slider — Use to control the number of pixels around the pixels detected by Lustre.

Soft Edge slider — Use to soften the stroke of the pixels specified by the Grow slider in order to replicate a natural paint stroke. This option is set to 66 by default.

Load Dust Data button — Enable to load the dust removal metadata after you have already loaded the grade. This option is enabled by default.

Loading Users and Projects

After creating a project and defining users, you can start using it. You do so by loading a project and selecting a user profile. This can be done from the Lustre splash screen, or from an already started session.

When you are already in a Lustre session, you can:

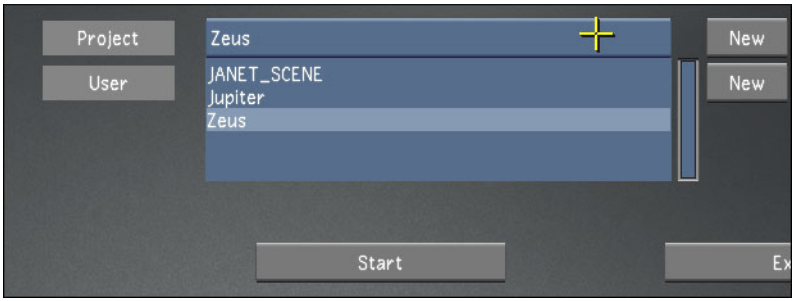
• Keep the current project and load a different user.

• Change the current project and keep the current user.

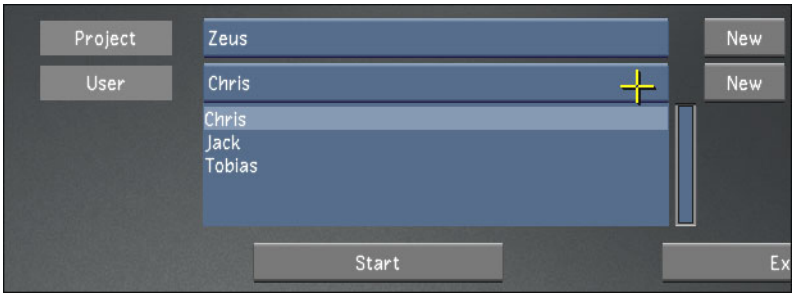
• Change both the current project and the current user.

To load a project from the Lustre splash screen:

1. Select a project in the Project list.



2. Select a user in the User list.



3. Click Start.

To load a project or a user during a Lustre session:

1. From the Main menu, click Setup, and then Settings.
2. (Optional) To load a project, select a project in the Project list and click Load in the Project group.

3. (Optional) To load a user, select a user in the User list and click Load in the User group.

4. Leave the Settings menu to start working on the loaded project using the loaded user profile.

Working with Templates

Use templates to define re-usable presets for future projects or users.

Creating a Project Template

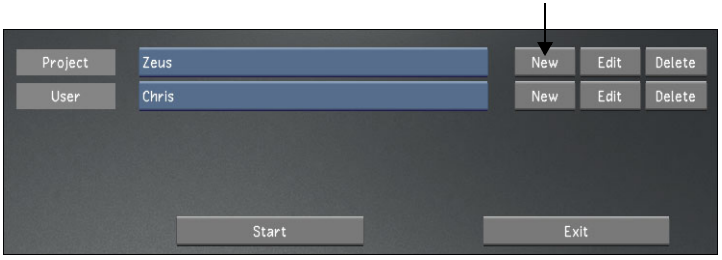
When you are choosing your project settings, you can create a template for your future projects.

From the Project Template group, within the Project settings page, you can complete the following:

- Create a new project template.
- Create a new project template from an existing project.
- Create a new project template from an existing project template.

To create a new project template:

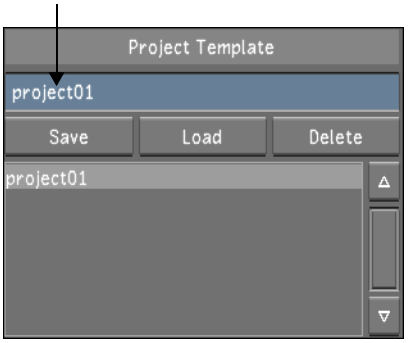
1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the Project group.
   - From the Lustre splash screen, click New in the Project group.



2. Configure the settings for the template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

3. When you are done editing the settings, click Project, and enter a project name in the Project Template field.



4. In the Project Template group, click Save.

5. To exit, click Exit Project.

To create a new project template from an existing project:

1. Do one of the following:

   • From the Main menu, click Setup, and then Settings. In the Project group, select the baseline project, and then click Edit.

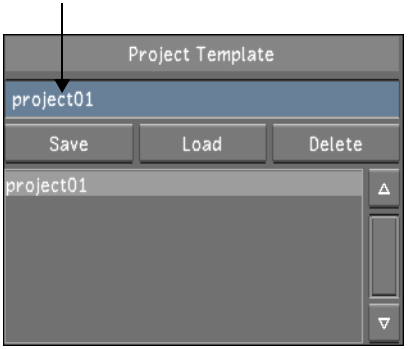
   • From the Lustre splash screen, select the baseline project, and then click Edit in the Project group.

2. Configure the project. Use Reset to reset all settings, from every menu, to their defaults.

WARNING: Rename the new project, or you will overwrite the original project's settings with the new settings.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

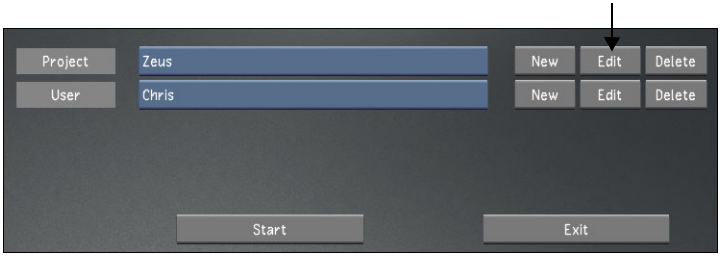
3. Click Project and enter a name in the Project Template field.



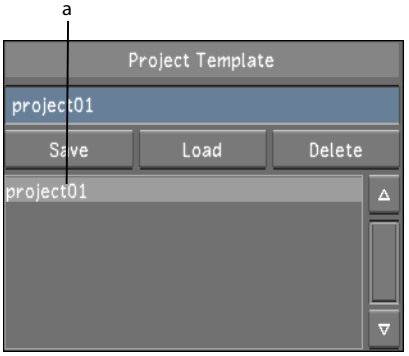
4. To save the template, click Save in the Project Template group.
5. Click Exit Project.

To create a new project template from an existing project template:

1. Do one of the following:
   - From the Main menu, click Setup, and then Settings. Select the project to edit, and then click Edit in the Project group.
   - From the Lustre splash screen, select the project to edit, and then click Edit in the Project group.



2. From the Project Template list, select a template.



a) Project Template list

3. Click Load.
4. In the Project Template field, enter a new template name, and then click Save.

WARNING: Rename the new template, or you will overwrite the original template with the new settings.

5. Configure the template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.

Select:	To configure:
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

6. To save the template, click Save in the Project Template group.
7. Click Exit Project.

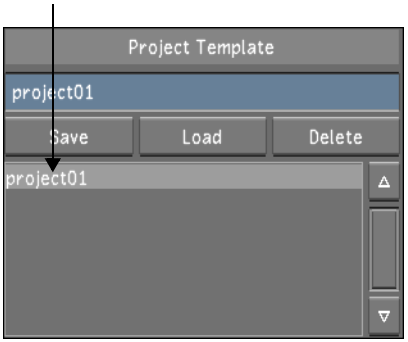
Editing a Project Template

As you create project after project, there may come a time when you need to change a few of the settings and you do not want to create an entire new template. You can accomplish this by using the edit feature.

To edit a project template:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the Project group.
   - From the Lustre splash screen, click New in the Project group.

2. From the Project Template list, select the template to edit.



3. Click Load.

4. Configure the template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

5. To save the template, click Save in the Project Template group.

6. Click Exit Project.

Creating a User Template

When creating a user, you can save the setup as a template for other users.

From the User Template section in the Display & Interface settings, you can do the folllowing:

• Create a new user template.

• Create a new user template from an existing user profile.

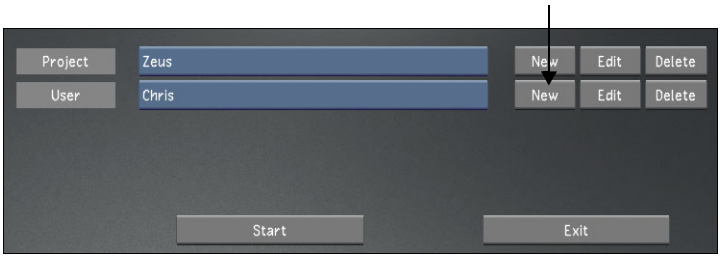
• Create a new user template from an existing user template.

To create a new user template:

1. Do one of the following:

   • From the Main menu, click Setup, then Settings, and then click New in the User group.

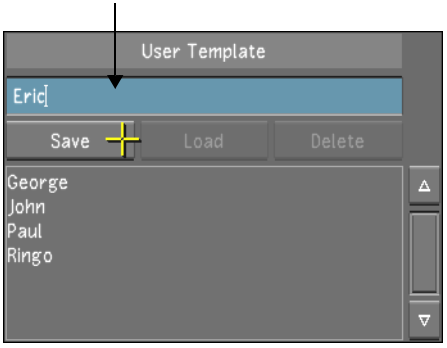
   • From the Lustre splash screen, click New in the User group.



2. Configure the new user. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

3. Click Display & Interface, and enter a name in the User Template field.



4. To save the template, click Save in the User Template group.

5. Click Exit User.

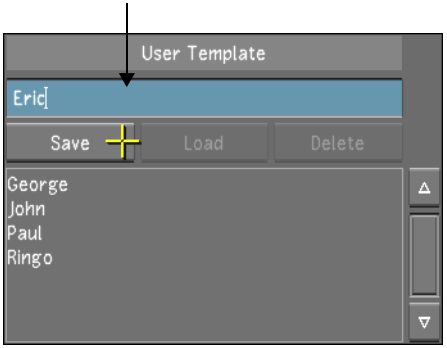
To create a user template from an existing user profile:

1. Do one of the following:
   - From the Main menu, click Setup, and then Settings. Select the baseline user, and then click Edit in the User group.
   - From the Lustre splash screen, select the baseline user, and then click Edit in the User group.

2. Configure the new template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Display & Interface	The default display and interface settings for this user. See "Display & Interface Settings" on page 33.
System & Menu	The system, match grade, assemble, and playout settings for this user. See "System & Menu Settings" on page 35.
Tools	Keyframe interpolation, animation, and dust settings for this user. See "Tools Settings" on page 38.

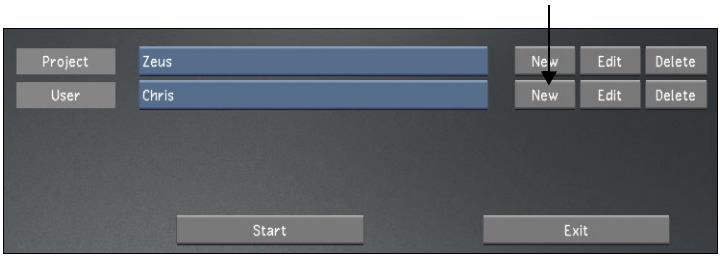
3. Click Display & Interface and enter a new name in the User Template field.



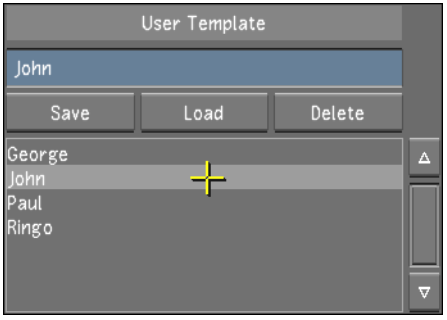
4. To save the template, click Save in the User Template group.
5. Click Exit User.

To create a new user template from an existing user template:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the User group.
   - From the Lustre splash screen, click New in the User group.



2. From the User Template list, select the template to use as baseline.



3. Click Load.
4. In the User Template field, enter a new template name, and then click Save.

WARNING: Rename the new template, or you will overwrite the original template with the new settings.

5. Configure the template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.

Select:	To configure:
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

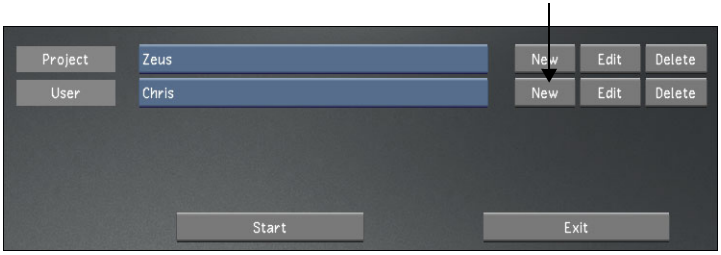
6. From the User Template list, select the new template.
7. To save the template, click Save in the User Template group.
8. Click Exit User.

Editing a User Template

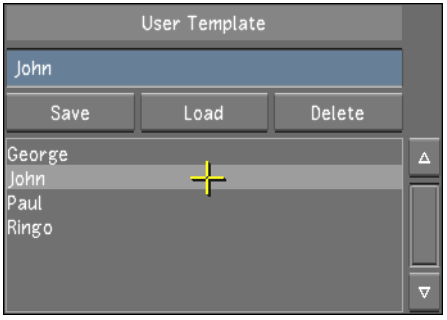
The template editing feature is available for you to make minor changes to existing templates as they are needed.

To edit a user template:

1. Do one of the following:
   - From the Main menu, click Setup, then Settings, and then click New in the User group.
   - From the Lustre splash screen, click New in the User group.



2. In the User Template group, select the user template to edit.



3. Click Load.
4. Configure the template. Use Reset to reset all settings, from every menu, to their defaults.

Select:	To configure:
Project	The name and location of the project. See "Project menu" on page 15.
Calibration	Default system calibration settings and define the default Print LUTs for a project. See "Calibration menu" on page 17.
Rendering	Default rendering settings for a project. See "Rendering menu" on page 19.
Engineering	Default video and graphics settings for a project. See "Engineering menu" on page 22.
Network Rendering	Default Backburner/Burn, Slave Render, and Wiretap directory paths and settings for a project. See "Network Rendering menu" on page 26.

5. To save the template, click Save in the User Template group.
6. Click Exit User.

Recommended Directory Structure for Projects

Lustre stores all project metadata in sub-directories of the main project directory, Project Home. The metadata is saved per scene, each scene having its sub-directory. The sub-directory is created automatically and is named *sacc_data*.

Original footage and render files, both full and half resolution, can be stored per scene in the Project Home directory, or they can be stored in separate directories, as decided at project configuration. When directories are not located in Project Home, they can be located on another drive, mount point, or even on a remote SAN or file server. Select the location that best suits your hardware configuration. For example, if you work on one project at a time, you may have enough space to store all footage on the Master Station. If you are working on multiple projects, you may not have the required space on the Master Station; in this case, you could store your full scans and render files on a large remote server, and store the half-resolution scans locally.

The following tables provide examples of each of these possible scenarios.

NOTE: If configuring Lustre on an Autodesk Incinerator™ high-speed network, refer to "Incinerator-Specific Project Management Configuration" in the "Project Management" chapter in the *Autodesk Lustre 2009 User Guide*.

Scanned Footage and Renders Stored in Project Home

In this example, the Project Home is defined in Windows as the *H:*\ drive, whereas in the Linux version it is defined as the */mnt/md0/* mount point.

When using this structure, you can first create scenes in Lustre, which then generates directories for these scenes in the Project Home. You create the directories for your scans manually. The render directories related to the scenes are created automatically by Lustre. Alternatively, you can manually create the scene's directory under the Project Home in Lustre. Later you can define scenes in Lustre with the exact names you gave to the directories. Lustre will recognize them as existing scene directories and create the required metadata directories and files inside them. Refer to "Working With Scenes" in the "Project Management" chapter in the *Autodesk Lustre 2009 User Guide*.

Windows Folder:	Linux Directory:	Description:
H:\<project name>	*/mnt/md0/<project_name>*	Project Home directory. You do not necessarily have to create this off the root.
H:\<project name>\ <scene name>	*/mnt/md0/ <project_name>/ <scene_name>*	Scene directory.
H:\<project name>\ <scene name>\sacc_data	*/mnt/md0/ <project_name>/ <scene_name>/sacc_data*	Directory where most metadata associated with the scene is stored.
H:\<project name>\ <scene name>\<scans folder>	*/mnt/md0/ <project_name>/ <scene_name>/ <scans_directory>*	Directory in which you create sub-directories to store original footage.
H:\<project name>\ <scene name>\grd	*/mnt/md0/ <project_name>/ <scene_name>/grd*	Directory in which Lustre creates sub-directories for render files.

The following table shows the recommended sub-directory structure for scans. In this table, *H:*\...\ in the Windows column, and */mnt/md0/.../* in the Linux column, respectively, represent *H:*\<*project name*>\<scene name> and */mnt/md0/*<*project_name*>/<scene_name>, as shown in the previous table.

Windows Folder:	Linux Directory:	Description:
H:\...\<scans folder>\<shot name>	*/mnt/md0/.../<scans_directory>/<shot_name>*	Directory in which sub-directories for different resolutions of the scans are located.
H:\...\<scans folder>\<shot name>\<resolution>	*/mnt/md0/.../<scans_directory>/<shot_name>/<resolution>*	Directory in which the actual scans are stored. Half- and full-resolution footage should both be at this level, in different directories. The directory name must consist of the resolution expressed in numbers with a lowercase x in between. Example: 2048x1556. If you generate proxies in Lustre, the proxies directory is created automatically.

The following table shows the sub-directory structure that Lustre creates for renders. The structure differs depending on the Render Place option specified when rendering. Refer to "Specifying the Destination for Local Render Files" in the "Rendering" chapter of the *Autodesk Lustre 2009 User Guide*. In this table, *H:\...* in the Windows column and */mnt/md0/.../* in the Linux column, respectively, represent *H:\<project name>*\<scene name> and */mnt/md0/<project_name>*/<scene_name>, as shown in the first table.

Windows Folder:	Linux Directory:	Description:
H:\...\grd\<shot name_grdxx>	*/mnt/md0/.../grd/<shot_name_grdxx>*	Directory in which sub-directories for different resolutions of the renders are located when using the Normal or No Wedge Render Place option. In the example, xx is the grade number.
H:\...\grd\<shot name_grdxx>\<resolution>	*/mnt/md0/.../grd/<shot_name_grdxx>/<resolution>*	Directory in which the actual renders are stored when using the Normal or No Wedge Render Place option. The directory name corresponds to the resolution of the render files, for example, 1280x1024.
H:\...\grd\<grdxx>	*/mnt/md0/.../grd/<grdxx>*	Directory in which the actual renders are stored when using the One Sequence Render Place option. In the example, xx is the grade number.

Scanned Footage and Renders Stored Separately from Project Home

In this example, the Project Home is defined in Windows as the *H:* drive, whereas in the Linux version it is defined as the */mnt/md0/* mount point.

To have the scanned footage and renders stored on a separate storage location, the Scans Full Home and the Renders Full Home must be explicitly defined as a separate location. On Windows, an example of this separate location could be a shared folder coming from a remote file server, and mapped to the local drive *G:* under the *films\myfilm* folder. On Linux, a corresponding example would be a directory exported from a remote file server, and mounted on the */mnt/fileserver/* NFS mount point under the *films/myfilm* directory.

Windows Folder:	Linux Directory:	Description:
H:\<project name>	*/mnt/md0/<project_name>*	Project Home directory.
H:\<project name>\ <scene name>	*/mnt/md0/ <project_name>/ <scene_name>*	Scene directory.
H:\<project name>\ <scene name>\sacc_data	*/mnt/md0/ <project_name>/ <scene_name>/sacc_data*	Directory where most metadata associated with the scene is stored.
G:\films\myfilm\ <scans folder>	*/mnt/fileserver/films/ myfilm/<scans_directory>*	Directory in which you create sub-directories to store original footage.
G:\films\myfilm\grd	*/mnt/fileserver/films/ myfilm/grd*	Directory in which Lustre creates sub-directories for render files.

The following table shows the recommended sub-directories structure for scans. For the sake of simplicity, in this table, *G:\...* represents *G:\films\myfilm*, and */mnt/fileserver/.../* represents */mnt/filesever/films/myfilm* as shown in the previous table.

NOTE: If you decide to store half-resolution scans in a different location from the originals, the project directory structure must be identical in both locations and must include the root directory of the project. For example, if the Project Home is defined as *V:\Data\Lustre_project\My_movie*, the Scans Full Home could be defined as *W:\mnt\San\Lustre_project\My_movie* and the Scans Half Home could be *X:\Lustre_project\My_movie*.

Windows Folder:	Linux Directory:	Description:
G:\...\<scans folder>\<shot name>	*/mnt/fileserver/.../<scans_directory>/<shot_name>*	Directory in which sub-directories for different resolutions of the scans are located.
H:\...\<scans folder>\<shot name>\<resolution>	*/mnt/fileserver/.../<scans_directory>/<shot_name>/<resolution>*	Directory in which the actual scans are stored. Half- and full-resolution scans should both be at this level, in different directories. The directory name must consist of the resolution expressed in numbers with a lowercase x in between. Example: *2048x1556*. If you generate proxies in Lustre, the proxies directory is created automatically.

The following table shows the sub-directory structure that Lustre creates for renders. The structure differs depending on the Render Place option specified when rendering. Refer to "Specifying the Destination for Local Render Files" in the "Rendering" chapter in the *Autodesk Lustre 2009 User Guide*. For the sake of simplicity, in this table, *G:\...* represents *G:\films\myfilm*, and */mnt/fileserver/.../* represents */mnt/filesever/films/myfilm* as shown in the first table in this section.

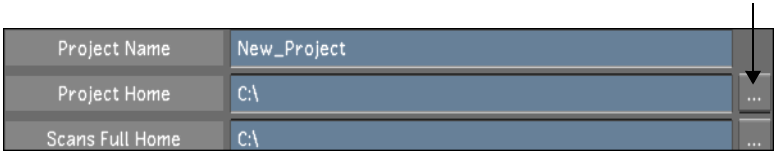
Windows Folder:	Linux Directory:	Description:
G:\...\grd\<shot name_grdxx>	*/mnt/fileserver/.../grd/<shot_name_grdxx>*	Directory in which sub-directories for different resolutions of the renders are located when using the Normal or No Wedge Render Place option. In the example, xx is the grade number.
G:\...\grd\<shot name_grdxx>\<resolution>	*/mnt/fileserver/.../grd/<shot_name_grdxx>/<resolution>*	Directory in which the actual renders are stored when using the Normal or No Wedge Render Place option. The directory name corresponds to the resolution of the render files, for example, 1280x1024.
H:\...\grd\<grdxx>	*/mnt/fileserver/.../grd/<grdxx>*	Directory in which the actual renders are stored when using the One Sequence Render Place option. In the example, xx is the grade number.

Browsing for Paths

Instead of typing the path, you can browse for paths using the path browser.

To browse for paths:

1. Display the path browser by clicking '...'.



2. Using the path browser, navigate the directory structure to reach the desired directory. The selected path is automatically displayed in the path field.
3. To exit the browser, click Enter.

Using Environment Variables

You can use your operating system's environment variables to define all or a portion of a path. In Lustre, if you choose to use environment variables, enclose the variable name inside diamond brackets. For example, the Project Home field might be:

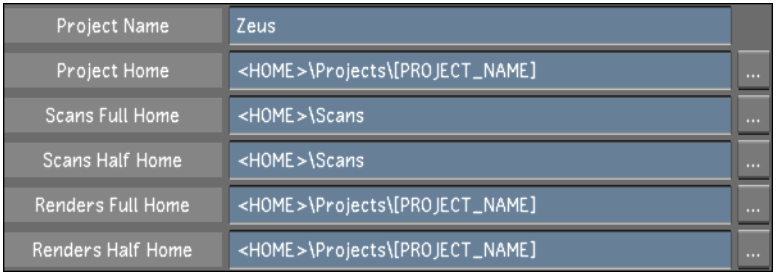
<HOME>\Projects\Zeus

Using the [PROJECT_NAME] and [USER_NAME] Variables

You can also use [PROJECT_NAME] and [USER_NAME] in your paths. You do not need to define these variables as they are predefined. The value of [PROJECT_NAME] is always the value you assign to Project Name in the Project settings page of Project Management. Likewise, the value of [USER_NAME] is always the value you assign to User Name in the Display & Interface settings page of User Management.

NOTE: Both the [PROJECT_NAME] and [USER_NAME] variables require opening and closing square brackets.

The following graphic shows the use of both types of variables.



4 Basics

Flagging Shots

The flag system is accessible from almost any menu and allows you to enable and disable flags, create and delete flags, and copy flag states to one or more shots.

NOTE: When in the timeline or the colourist's timeline, the flag system is always displayed to the right of the timeline canvas.

System flags are available by default for all shots. There are four types:

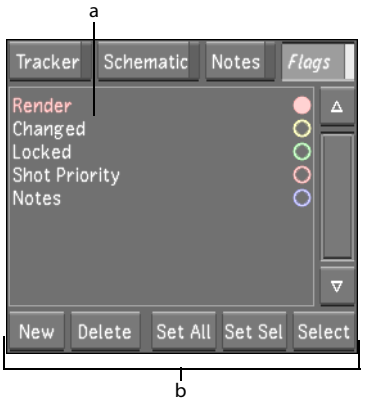
Render — Flags the shots to be rendered.

Changed — Indicates whether or not the current shot has been modified since the last save.

Locked — Locks the current shot to prevent modifications. The shot's locked status is also indicated by the word Locked that spans the three printer light fields.

Shot Priority — Assigns priority to the current shot. See "Shot Priority" on page 73.

Notes — Denotes whether notes exist against the current shot. Unlike the other system flags, the Notes flag cannot be turned on or off. Instead, its state is automatically updated depending on the contents of the Notes window. The Notes flag is set only when content is added to the Notes window. Refer to "Assigning Notes to Shots" in the "Basics" chapter of the *Autodesk Lustre 2009 User Guide*.



a) Flags list b) Flag controls

To access the Flags window:

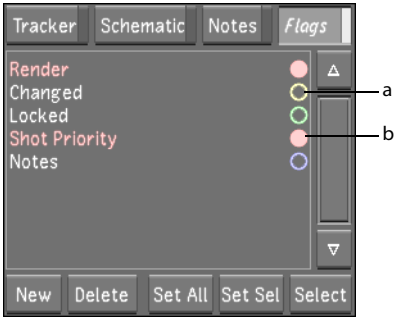
➤ Enable the Flags button.

This displays the flags for the current shot.

To enable or disable a flag:

➤ Right-click the flag row.

When the flag is enabled, the flag name is in colour and its circle is filled.



a) Disabled flag b) Enabled flag

HINT: To select a flag without enabling or disabling it, left-click the flag row.

Grade Bins: Saving, Applying, and Deleting Intermediary Grades

Store shot settings to a Grade bin when you need intermediary grades or scratch pad memories. Intermediary grades are useful when you want to experiment with different looks. Intermediary grades are saved on a shot-by-shot basis and contain all shot settings.

You can also use Grade bin thumbnails as reference images. Refer to "Viewing Reference Images" in the "Playing, Viewing, and Sorting Shots" chapter of the *Autodesk Lustre 2009 User Guide*.

Saving Intermediary Grades

You can save intermediary grades to the Grade bin. When you save intermediary grades, all the settings are saved with a thumbnail for identification. Save your shot settings for use within a scene or throughout the entire project—by saving them to the Scene Grade bin or the Global Grade bin, respectively.

To save intermediary grades to a Grade bin:

1. Using the various options on the menus, modify a shot to your satisfaction.
2. Select the Grade bin you want to use.

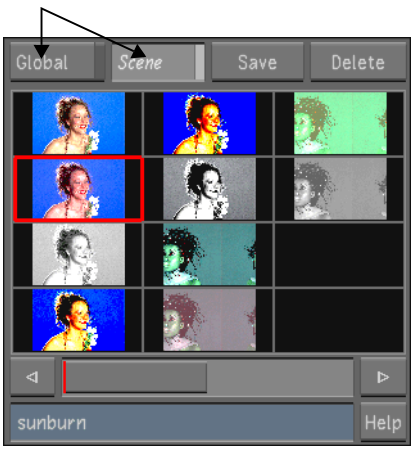


Image courtesy of The House

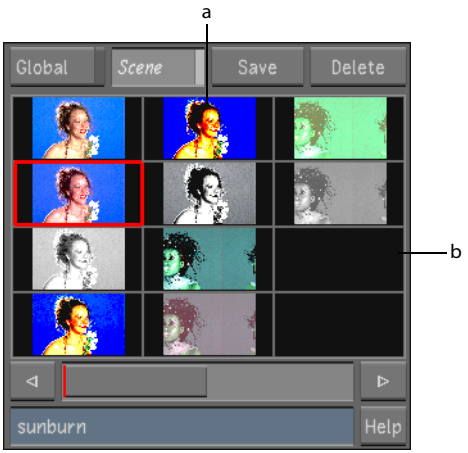
Click:	To save:
Scene	Shots for use within the current scene.
Global	Shots for use throughout the entire project.

3. Scroll to the area of the Grade bin you want to use. To scroll through a Grade bin, middle-click and drag right or left, or use the horizontal slider located immediately below the Grade bin.

4. Do one of the following:

   • To create an intermediary grade, select an unused storage container.

   • To save a new version of an intermediary grade, select the last saved version.



a) Used storage container b) Unused storage container

Image courtesy of The House

The red line in the slider indicates the current position.

NOTE: When you add a grade to a position in the last column of the Grade bin, three new columns are automatically added to the right. You can add an unlimited number of grades.

5. Enter a name in the Name field.

   NOTE: Spaces are not permitted in naming conventions. It is recommended that underscores be used instead of spaces when working on either Linux or Windows.

6. Click Save.

   The settings from the current shot in the timeline are saved to the intermediary grade and a thumbnail of the current frame appears in the Grade bin.

   HINT: You can use the thumbnail as a reference image while you work on another shot. Refer to "Viewing Reference Images" in the "Playing, Viewing, and Sorting Shots" chapter of the *Autodesk Lustre 2009 User Guide*.

To save intermediary grading information from several shots to the Grade bin:

1. From the Storyboard or the Multi-Layer Timeline, select shots whose grading information you wish to save to the Grade bin. For more information about selecting elements in the Multi-Layer Timeline, refer to "Selecting Elements" in the "Editing" chapter of the *Autodesk Lustre 2009 User Guide*.

   NOTE: If you do not select any shots, the entire timeline's grading information is saved.

2. In the Grade bin, select the storage container where you wish to save your grade.
3. Make sure the positioner is over a shot. If you are in the Storyboard view, refer to "Navigating Using the Timebar and Storyboard" in the "Playing, Viewing, and Sorting Shots" chapter of the *Autodesk Lustre 2009 User Guide*. If you are in the Multi-Layer Timeline view, refer to "Timeline Navigation Controls" in the "Editing" chapter of the *Autodesk Lustre 2009 User Guide*.
4. Hold down the **SHIFT** key while pressing the Save button.

WARNING: If you are saving more than one grade to the Grade bin, each grade is saved into one storage container starting from the selected container and proceeding column by column from left to right. Therefore, be aware of the storage containers whose existing grading information will be overwritten.

If you are saving to storage containers that already have grading information, Lustre prompts you to confirm you want to overwrite this grade.

5. If prompted, confirm or cancel the action, as required. Refer to "Confirming and Cancelling Actions" in the "Basics" chapter of the *Autodesk Lustre 2009 User Guide*.

   The selected grades (or all grades if no shots are selected) are saved to the Grade bin.

5 Editing

About Editing

Use the Editing tools in Lustre to make modifications to your cuts, for example, to move, trim, cut, delete or replace shots. You can also add dissolves between shots, perform a confidence check, or use scene detection. Typically, you perform editing operations before colour grading. In this way, the colourist works on only the frames that are destined for the final master.

Perform a confidence check to detect changes in scenes. A confidence check is a process in which you manually compare the frames in an assembled EDL to frames captured from an offline digital cut. With a confidence check, you ensure that the scanned film frames match the frames that were edited together during the offline edit. This is an important step in guaranteeing that the final colour-graded timeline is in sync with the audio that appears in the final edited master.

With scene detection, you can take a long captured shot that spans multiple scenes and automatically introduce splices each time the scene changes. You can then grade the new shots separately. Do this, for example, when you are capturing a final edited HD master into Lustre for colour grading.

Representing the Timeline

The sequence of shots in a cut file is referred to as the timeline. Lustre has two visual ways of representing the timeline: the Storyboard and the Multi-Layer Timeline.

When there is only one layer in the timeline, the Storyboard is simply the thumbnail view of the sequence of shots in the cut. When there are multiple layers in the timeline, the Storyboard is the thumbnail view of the flattened timeline, taking into consideration shots in a cut that represents a single-layer view of the timeline (see "Top Vertical Priority" on page 71). This single layer corresponds with one of the following, depending on the soloing and muting status:

- the active layer of the Multi-Layer Timeline, where either the active layer is soloed or the remaining layers are muted
- the default (flattened) view of the Multi-Layer Timeline, where soloing is disabled

The Multi-Layer Timeline organizes the cut into a multiple layer format. The elements appear as a series of rectangles on a time-proportional grid, with a positioner at the location of the current frame. Multiple layers are useful for grade versioning, roughing out edit sequences, and for multi-layer editing. This allows you to try various edits and colour grading versions on your shots before choosing the one which is used in the final master.

For more information about:

- the Storyboard, refer to "Editing with the Storyboard" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.
- the Multi-Layer Timeline, see "Multi-Layer Timeline" on page 66.
- Solo mode, see "Solo Mode" on page 77.
- Mute mode, see "Muted Layers" on page 72.

Multi-Layer Timeline

The Multi-Layer Timeline view organizes footage or elements into a multi-layer format. You can scroll, pan, and zoom the Multi-Layer Timeline, as well as rearrange elements on the timeline by dragging and dropping.

Multi-Layer Timeline editing is useful for roughing out edit sequences and grade versioning. In addition, shot selections are now linked between the timeline and the Storyboard.

You can also copy the grading information in the Multi-Layer Timeline or Colourist Multi-Layer Timeline. See "Copying Grading Information in the Colourist Timeline" on page 97.

The Multi-Layer Timeline allows you to display footage, play out to tape, and render in accordance with rules that prioritize some shots or layers over others. See "Displaying the Multi-Layer Timeline" on page 71.

Timeline Menu

There are various areas to work with when you access the Timeline menu:

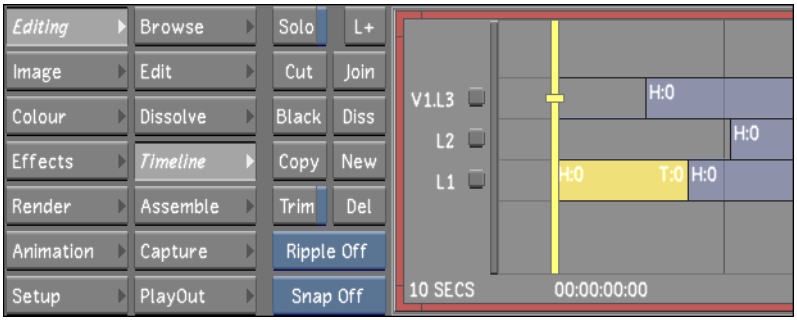
- Storyboard. See "Storyboard Viewing Options" on page 79.
- File browser. Refer to "Accessing the File Browser" in the "Browsing for Footage" chapter in the *Autodesk Lustre 2009 User Guide*.
- Shot bin. Refer to "Accessing the File Browser" in the "Browsing for Footage" chapter in the *Autodesk Lustre 2009 User Guide*.
- Player and full-screen Player. Refer to "The Player" in the "Basics" chapter in the *Autodesk Lustre 2009 User Guide*.

NOTE: From the Timeline menu, you can press **ENTER** to toggle through these different views.

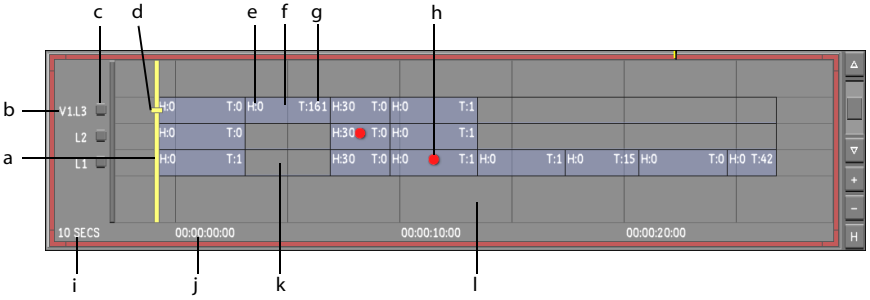
To access the Timeline menu and Multi-Layer Timeline:

1. In the Main menu, click Editing.
2. Click Timeline.

   The Timeline menu and the Multi-Layer Timeline canvas appear.



The Multi-Layer Timeline is made up of the following components.



a) Positioner
b) Layer name
c) Layer selector
d) Focus point
e) Element Head
f) Element
g) Element Tail
h) Shot Priority indicator
i) Timeline scale
j) Starting timecode
k) Gap
l) Canvas

Positioner — The play head for the Player. The frame directly beneath the positioner is displayed in the Player and is the current location for an edit. The positioner's location is reflected in the Source Timecode or Timeline Information field. Refer to "Monitoring the Location of the Current Frame" in the "Playing, Viewing, and Sorting Shots" chapter in the *Autodesk Lustre 2009 User Guide*.

Layer name — The name of the layer, where V stands for Video and L for Layer. Adding a layer generates V1L2, V1L3, etc.

Layer selector — Selects the entire layer in preparation for an operation.

Focus point — When Solo mode is enabled, the focus point indicates the current layer and which layer is displayed in the Storyboard. When Solo mode is disabled, the top layer acts as the primary layer and is displayed in the Player and Storyboard. The focus point also determines to which layer a cut or dissolve is added. Together, the position of the focus point and the positioner is reflected in the Source Timecode or Timeline Information field. Refer to "Monitoring the Location of the Current Frame" in the "Playing, Viewing, and Sorting Shots" chapter in the *Autodesk Lustre 2009 User Guide*.

Element Head — Number of available frames for trimming, succeeding a transition.

Element — The media in the timeline.

Element Tail — Number of available frames for trimming, preceding a transition.

Shot Priority indicator — Graphical representation of a shot with priority. See "Shot Priority" on page 73.

Timeline scale — The scale of the timeline. Zooming in or out of the timeline allows you to view more or less detail.

Gap — The absence of media. In a multi-layer context and when Solo mode is disabled, gaps are also transparent.

Canvas — Click the canvas to zoom in/out and move the timeline.

For the hot keys to these functions, see Chapter 13, "Hot Keys," on page 177.

The Timeline menu is made up of the following buttons.

Solo — When Solo mode is enabled, Lustre displays, plays out to tape, or renders only the layer on which the focus point is positioned.

NOTE: The Solo state is not saved in the grade file.

Cut — Adds a splice at the positioner location on the focused layer.

Black — Generates one second of black media that can be added to the timeline.

Copy — Copies the current selected elements to the clip board. Copied elements are displayed in red. Drag and drop the copied elements to the destination timecode or layer.

Trim — Trims the head and/or tail of an element.

Ripple mode — Determines whether the length of the edit sequence is affected when new material is inserted into or removed from the timeline.

Snap mode — Affects how elements are placed when gesturally moved or copied to the Timeline.

L+ — Adds a new layer above the current layer(s).

Join — Removes the splice on selected elements coming from the same source clip with consecutive source timecode.

Diss — Adds a dissolve at the positioner location on the focused layer.

New — Copies the current element to the next available top layer with grade data.

Del — Deletes the current selection.

Trimming Elements

Trimming adds head or tail frames to the element or subtracts head or tail frames from the element. You can trim using the trim cursors in the timeline canvas. For a specific trim cursor to appear, you must place the cursor over the required position within the element (i.e., head, tail, or middle section of the element). For example, when you place the cursor over the start of the element (the head), the trim head cursor appears.

The following editing changes are automatically updated in the Player:

- trimming
- slipping
- sliding

NOTE: You can also access some of the Multi-Layer Timeline features through the Colourist's Timeline. See Chapter 7, "Colour Grading: Basics," on page 91.

Trimming Cursors

The following cursors are used when trimming or slipping and sliding an element.

Cursor	Cursor name
	Trim head cursor
	Trim tail cursor
	Slip cursor
	Slide cursor
	Slip & slide cursor

Trimming With Ripple Mode

Whether Ripple mode is enabled or disabled it determines how the elements are trimmed. When Ripple mode is disabled, the overall duration of the sequence does not change when trimming. When you remove frames from the head or tail, it creates a gap (refer to "Gaps in the Timeline" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*). If there is an element located before of after the trimmed element, only a head or tail trim is possible. To slip & slide an element with Ripple mode disabled can only be done if there are handles at the head and/or tail of the shot. Refer to "Slip & Slide" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.

When Ripple mode is enabled, the overall duration of the sequence changes when trimming. Removing frames from the head or tail does not create a gap and the elements located before or after the trimmed element move in time (based upon the Ripple Start or Ripple End mode). You can slip & slide an element with Ripple mode enabled on any element when there are available handles.

NOTE: If a layer is soloed, the Edit tools (Trash, Delete, Trim In/Trim Out, and Mark In/Out) default to 'Ripple End' behaviour, regardless of the Ripple Mode setting. If no layer is soloed, however, the Edit tools behave according to the individual Ripple Mode selected (Ripple Off, Ripple Start, or Ripple End) and apply to the active or visible layer that contains the focus point. For more information about Ripple Modes, see "Trimming Ripple Mode" on page 71.

To trim an element:

1. Enable Trim.
2. Select a Ripple mode (i.e., Ripple Off, Ripple Start, or Ripple End). See "Trimming Ripple Mode" on page 71.
3. Set the cursor on either the head or the tail of the element and the corresponding head or tail cursor appears.

4. Click and drag the element.
   - Dragging the element in the same direction of the head or tail cursor adds frames to the element.
   - Dragging the element in the opposite direction of the head or tail cursor removes frames from the element.

Trimming Ripple Mode

There are three types of Ripple mode when trimming:

Ripple Off — Trimming does not affect the duration of the timeline.

Ripple Start — Trimming moves in time the element located before the trimmed element.

Ripple End — Trimming moves in time the element located after the trimmed element.

Displaying the Multi-Layer Timeline

When there are multiple layers and you display footage in the Player, or play out to tape, or render, Lustre's default behaviour (called Top Vertical Priority) is to display the visible shots from a top-down view of the flattened timeline. This behaviour is further customized by muting layers and prioritizing individual shots. It is also possible to override Top Vertical Priority by soloing a single layer, which forces Lustre to display, play out to tape, and render only that layer.

When selecting segments in the Multi-Layer Timeline, the Storyboard view shows the same selection. See "Selecting Shots in the Storyboard" on page 79.

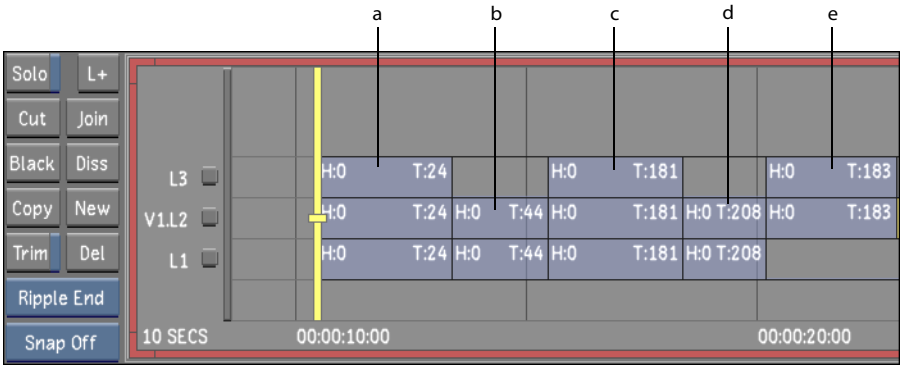
Top Vertical Priority

With exceptions, at any given point in a timeline with multiple layers, the top shot in a vertical stack of layers is the shot that is displayed, rendered, or played out to tape. This is the Top Vertical Priority rule and it is the default behaviour of the Multi-Layer Timeline when Solo mode is disabled (See "Solo Mode" on page 77).

When there is a gap in the top layer, this gap is transparent when looking down on the timeline; Lustre looks in progressively deeper layers (going from top to bottom in a vertical stack) until it finds the top vertical shot to display. To visualize this, it may help to imagine looking down on the Multi-Layer Timeline so that you would have to see through the top layers in order to see the bottom layers. Your view from the top is a 'flattened' view of the timeline.

The only exception to the Top Vertical Priority rule is layer soloing (see "Solo Mode" on page 77). There are a couple of features which alter the way the Top Vertical Priority rule works; layer muting (see "Muted Layers" on page 72), and shot priority (see "Shot Priority" on page 73).

The following example illustrates how top vertical priority determines which shots are displayed, played out to tape, and rendered. It also illustrates how the displayed shots come from various layers throughout the course of the timeline. For simplicity's sake, in this example, there are no muted layers and no shots assigned with shot priority.



a) Shot 1 (L3)
b) Shot 2 (L2)
c) Shot 3 (L3)
d) Shot 4 (L2)
e) Shot 5 (L3)

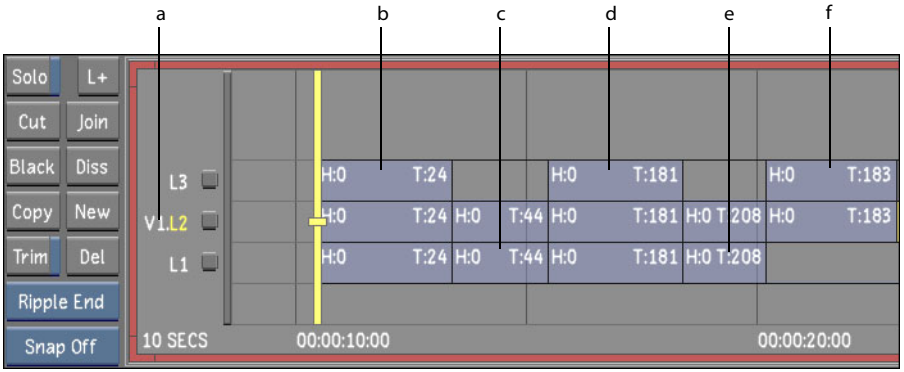
You can use the timeline information field to verify the layer and shot being displayed at any given point in the timeline. See "Monitoring the Location of the Current Frame" on page 220. For example, in the following screen capture, the shot being displayed is shot 3 on Layer 2, and the current frame is frame 183.

Muted Layers

When a layer is muted, Lustre ignores this layer when applying Top Vertical Priority. That is, at a given point in the timeline, if a muted layer has Top Vertical Priority, Lustre looks at progressively lower layers in the vertical stack until it finds a shot in an unmuted layer, and then displays that shot.

WARNING: If you are using the mute function as a method to create editorial or grade versioning, please keep in mind that the status is not part of the grade file data structure. Therefore, this state is not saved upon exiting Lustre.

The following example illustrates how a muted layer is used within a Multi-Layer Timeline to determine what shots are displayed in the Storyboard and Player when the Top Vertical Priority rule is applied.



a) Muted layer
b) Shot 1 (L3)
c) Shot 2 (L1)
d) Shot 3 (L3)
e) Shot 4 (L1)
f) Shot 5 (L3)

In this example, Layer 2 is muted. Therefore, only the shots in Layer 1 and Layer 3 are active.

To mute a layer:

➤ Do one of the following:

- **CTRL**-click the name of the layer you want to mute (e.g., V1.L1).
- **SHIFT+M** to mute the layer with focus.

The layer name indicator turns yellow.

To unmute a layer:

➤ Do one of the following:

- **CTRL**-click the name of the layer you want to unmute (e.g., V1.L1).
- **SHIFT+M** to unmute the layer with focus.

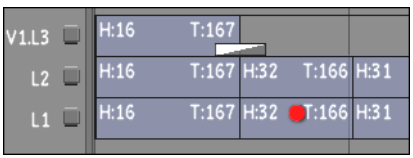
Shot Priority

When you work in the Top Vertical Priority mode (Solo is disabled), you can assign priority on a shot-by-shot basis. A 'priority shot' in a given layer is displayed even if there are shots in the layers above it in the timeline. In the case where there are multiple priority shots in a vertical stack, the priority shot with Top Vertical Priority is displayed or updated accordingly in the Player. Furthermore, the Storyboard thumbnails are updated according to priority after an initial refresh. Lustre represents a priority shot in the Multi-Layer Timeline as a shot with a red dot.

The following behaviours are expected when using the shot priority function:

- Shot priority information is saved to the cut file.
- A priority shot survives trimming, slipping, and sliding operations.
- When using the New button to create a new layer, the reproduced shot in the new layer preserves shot priority.
- When using the Copy button to copy a shot, the reproduced shot does not preserve shot priority.
- You can assign shot priority to a virtual black clip.
- You cannot assign shot priority to a gap.
- When performing a change cut operation with a cut that contains multiple versions of the same shot but with different grades, the shot priority feature allows you to designate the version of grading you would like to be transferred to the same shot in the new cut. However, if a muted layer has a priority shot, the grading metadata for this shot is not transferred to the new cut.
- In the case where a shot dissolves into another priority shot on a different layer within the vertical stack of shots, then the first shot does not dissolve seamlessly into the priority shot. For a seamless dissolve into a priority shot, you must create a dissolve on the layer of the priority shot.

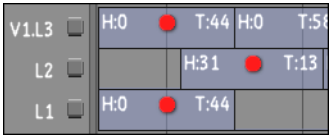
  In the following example, there is a dissolve on Layer 3 between shot 1 and shot 2. The dissolve begins near the end of shot 1, but once shot 2 on Layer 1 begins, the dissolve does not continue. Instead, shot 2 begins without showing the second half of the dissolve effect.



  In the following example, the dissolve works as expected because the dissolve is on the same layer as the priority shot.

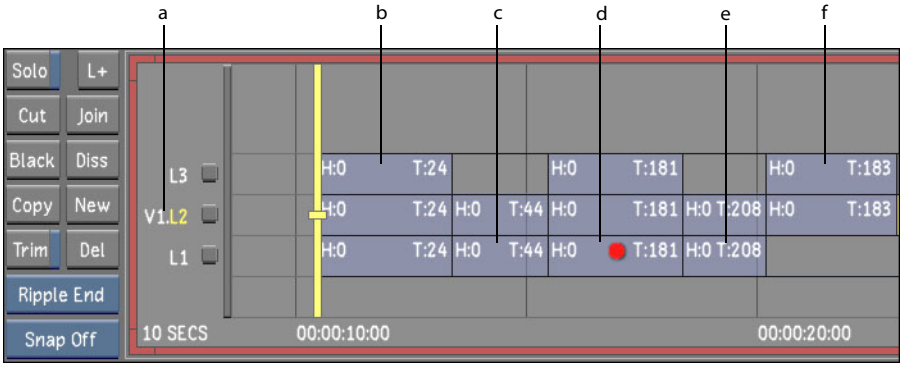
- When one priority shot overlaps another in a different layer, the priority shot with Top Vertical Priority is displayed. In overlap situations, this means that one or more shots are displayed that begin part way through or end part way through the shot.

In the following example, the first Layer 3 shot is displayed completely and then the Layer 2 shot is displayed starting somewhere in the middle of the shot.



WARNING: If you mute a layer that has a priority shot, that shot is not displayed, played out to tape, nor rendered.

The following example illustrates shot priority in the Multi-Layer Timeline.



a) Muted layer
b) Shot 1 (L3)
c) Shot 2 (L1)
d) Shot 3 (L1)
e) Shot 4 (L1)
f) Shot 5 (L3)

In this example, Layer 2 is muted and Shot 3 in Layer 1 is a priority shot.

To assign shot priority to a shot:

➤ In the Multi-Layer Timeline, **SHIFT**+right-click the shot (in the desired layer) to which you would like to assign priority.

A red dot appears on the shot.

To assign shot priority to the shot in focus:

1. In the Multi-Layer Timeline, make sure the positioner and its focus point are focused on the shot to which you apply priority.
2. Press **SHIFT+**.

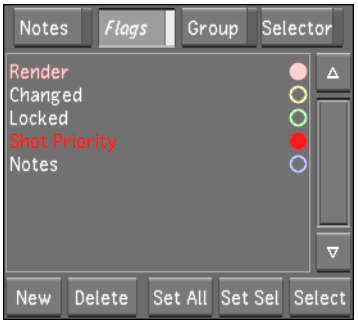
   A red dot appears on the shot in focus.

To assign shot priority to several selected shots with the Shot Priority flag:

1. In the Multi-Layer Timeline, select all the shots to which you wish to assign shot priority. Refer to "Selecting Elements" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.

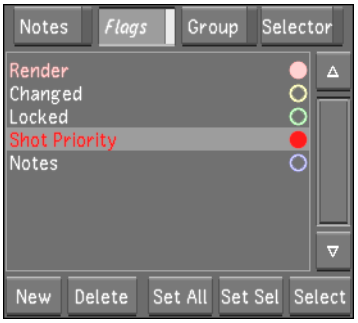
2. **SHIFT**+right-click one of the selected shots to assign shot priority to that shot.

   The Shot Priority flag is enabled.



3. In the Flags menu, left-click the Shot Priority flag.

   The Shot Priority flag is highlighted.



   NOTE: The indicator is enabled only if the positioner and focus point is over a priority shot.

4. Click Set Sel.

   All the selected shots are assigned shot priority.

To assign shot priority to the current shot of the currently active layer:

1. In the Timeline menu, enable the Flags button.

2. Right-click the Shot Priority flag.

   A red dot appears on the current shot of the currently active layer.

To remove shot priority from a shot:

➤ In the Multi-Layer Timeline, **SHIFT**+right-click the shot with priority.

The red dot is removed from the shot.

To select all shots that are assigned shot priority:

1. In the Timeline menu, enable the Flags button.
2. In the Flags menu, left-click the Shot Priority flag.

   The Shot Priority flag is highlighted.
3. Click Select.

   All priority shots are selected.

Solo Mode

When you enable Solo mode in the Multi-Layer Timeline and place the focus point over a layer, Lustre displays only this layer (including its gaps) in the Storyboard and Player. In addition, this is the only layer that is played out to tape and rendered locally.

A soloed layer in Lustre overrides the effects of layer muting and shot priority (see "Muted Layers" on page 72 and "Shot Priority" on page 73). That is, even when a layer is muted, if you subsequently solo this layer, this layer alone is displayed. Likewise, when there are shots with shot priority in several layers, a soloed layer is still the only layer displayed.

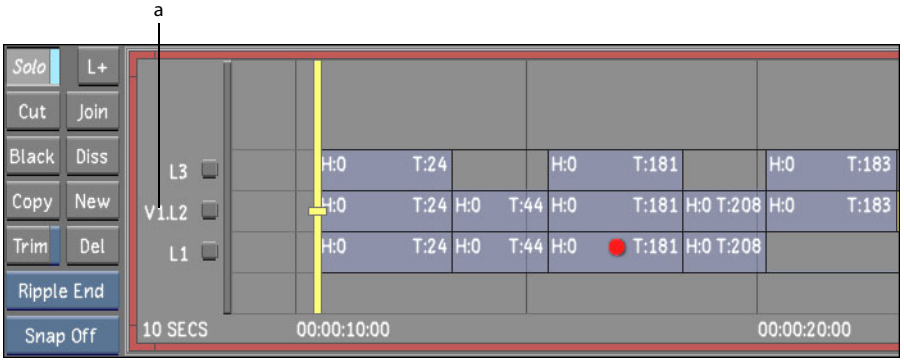
NOTE: If you are using the solo function as a method to create editorial or grade versioning, please keep in mind that the status is not part of the grade file data structure. Therefore, this state is not saved upon exiting Lustre.

The following example illustrates how a soloed layer overrides other layer and shot prioritizing factors.

When Solo mode is enabled, the Storyboard is updated to display shots from only the soloed layer. When Solo mode is disabled, what Lustre displays is governed by what layers are muted, the presence of shots assigned with priority, and typical Top Vertical Priority behaviour.

In the following example, Layer 2 is soloed. In this case, only Layer 2 is displayed in the Player and Storyboard, played out to tape, and rendered. It should be noted that although there is a shot assigned with shot priority in Layer 1, only Layer 2 shots are displayed because Solo mode takes priority.

WARNING: If a layer is soloed, the Edit tools (Trash, Delete, Trim In/Trim Out, and Mark In/Out) default to 'Ripple End' behaviour, regardless of the Ripple Mode setting. If no layer is soloed, however, the Edit tools behave according to the individual Ripple Mode selected (Ripple Off, Ripple Start, or Ripple End) and apply to the active or visible layer that contains the focus point. For more information about Ripple Modes, see "Trimming With Ripple Mode" on page 70.



a) Soloed layer

To solo a layer:

1. Move the focus point of the positioner to the layer you wish to solo.
2. Enable the Solo button.

To un-solo a layer:

➤ Disable the Solo button.

NOTE: This operation un-solos the layer regardless of where the focus point is.

6 Playing, Viewing and Sorting Shots

Storyboard Viewing Options

The Storyboard is a thumbnail representation of your timeline. Each individual thumbnail represents a single shot. The Storyboard has multiple viewing options. You can:

- Show or hide the Storyboard.
- Display the Storyboard in regular or large view.
- Select one or more shots.
- Identify selected shots by means of their selection colours.
- Refresh Storyboard thumbnails.
- Collapse the Storyboard thumbnails.

Selecting Shots in the Storyboard

You can select a single shot or multiple shots in the Storyboard. Multi-select shots to copy parameters, delete multiple shots, and create groups.

When selecting Storyboard thumbnails, the Multi-Layer Timeline shows the same selection. Likewise, when selecting Multi-Layer Timeline segments, the Storyboard shows the same selection. It should be noted that:

- The Storyboard view shows segments as being selected provided these segments are the topmost shot or have shot priority.
- The Storyboard view shows all segments in the Multi-Layer Timeline if Solo mode is enabled.

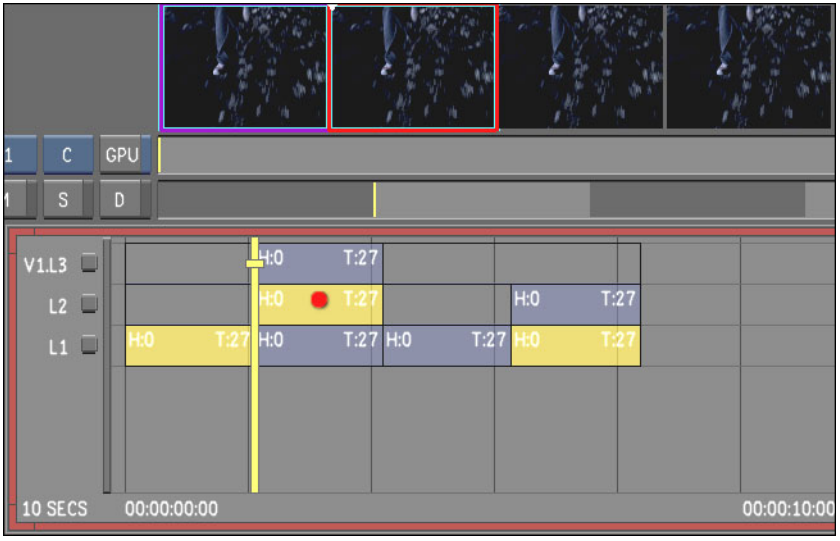


Image courtesy of Moviworld / UK File & TV Company / Videolab

In the above example, all the selected shots in the Multi-Layer Timeline are displayed and selected in the Storyboard view except for the far-right Layer 1 shot. The Layer 1 shot on the far right is neither displayed nor selected in the Storyboard. For more information about top vertical priority and shot priority, see "Top Vertical Priority" on page 71.

To select a single shot:

➤ Click the thumbnail.

The border changes to red, indicating it is the current shot.

To select multiple shots:

1. Click the first shot you want to select.

   The border changes to red, indicating it is the current shot.

2. Right-click the subsequent shots you want to select.

   The border of each subsequent selected shot changes to aqua.

To select a range of shots:

➤ Right-click the first shot you want to select and drag across the range of shots while holding down the mouse button.

To deselect multiple selected shots:

➤ Right-click the selected shots.

Displaying Only Selected Shots in the Storyboard

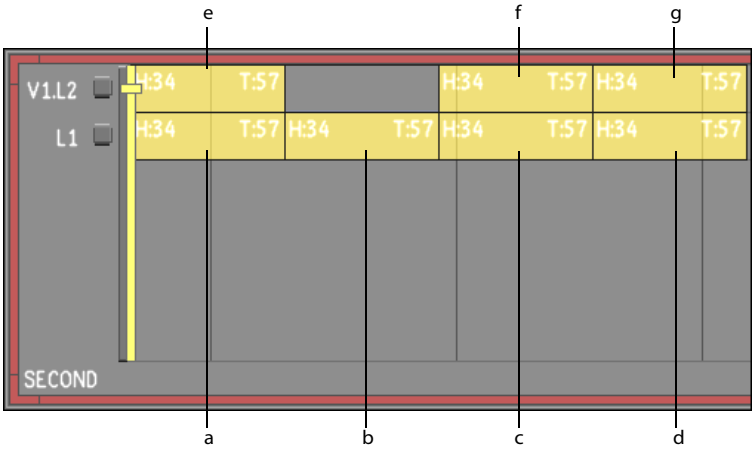
In the Multi-Layer Timeline you can select shots on multiple layers and collapse the Storyboard so that only selected shots are visible. This is useful to isolate certain types of shots for grading, such as outdoor scenes. In addition, in the Multi-Layer Timeline, you can select all the shots on all layers and use the collapse function to align all layers sequentially in the Storyboard.

NOTE: Another way to present a Multi-Layer Timeline selection in the Storyboard for grading purposes is to select either A-Mode or C-Mode for sorting the timeline. For more information about the Timeline Sort feature, see "Timeline Sort Mode" on page 82.

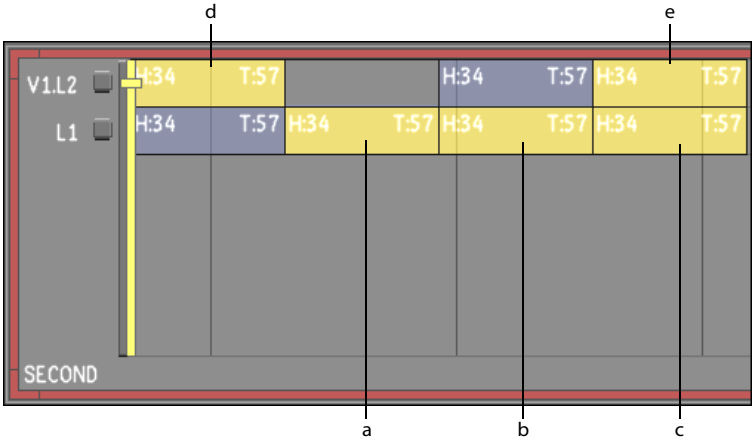
When you enable the collapse function, Lustre disables the Edit, Dissolve, Editing > Timeline, and Colour > Timeline menus. If you are in one of these menus when you enable the collapse function, Lustre takes you to the Colour > Grading menu. This behaviour guards against accidentally modifying the editorial structure on footage not being displayed while in the collapsed view.

The viewing order of shots in the collapsed view of the Storyboard starts from shot 1 in Layer 1 and goes to the last shot in Layer 1 before starting on the first shot of Layer 2.

In the following example, all shots on all layers are selected. The order in which shots are displayed in the Storyboard when collapse is enabled is from a to g.



In the following example, several shots are selected and some are not. The order in which shots are displayed in the Storyboard when collapse is enabled is from a to e.



Timeline Sort Mode

Sometimes it may be easier for you to grade a timeline if the shots are in a different order than the final sequence. You can rearrange the order of the shots so common shots are grouped together, graded, and then returned to their original order. The timeline sort mode allows you to do this. You can modify the order of the shots in your assembled EDL and then apply grading to those shots. Once you have finished grading the sorted shots, you can output the shots to a VTR (via the write telecine tape feature), save the shots as a new cut, or return the shots to their

original order. You can sort the shots either by the record timecode or by the reel name and source timecode.

By default, all the shots are sorted into a single layer when you use the timeline sort mode (whether you are sorting a single-layered timeline or a multi-layered timeline). You can also choose to sort only the selected shots within the timeline. If you are working with a multi-layered timeline, be aware of layers that are muted or if a layer is soloed. If a layer is soloed, then only the shots in that layer can be sorted. If any layers are muted, the shots within those layers cannot be sorted. As well, the same shot can appear in numerous layers. These shots are sorted from the bottom to top layer.

When the timeline is sorted, only the source media is shown, therefore, you cannot modify or collapse the timeline and dissolves and retimes are not visible. The Edit and Dissolve menus are greyed out and all the options within the Timeline menu and the Colourist Timeline menu are also greyed out. You also cannot add or delete shots while the shots are sorted.

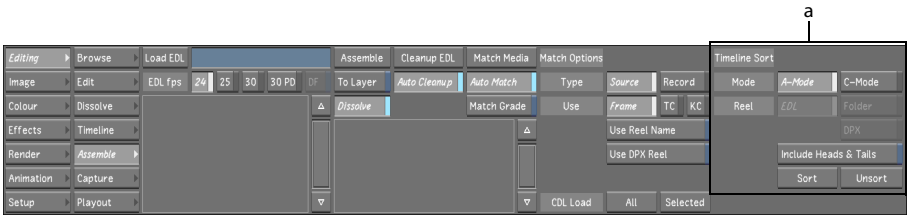
Accessing the Timeline Sort Feature

To sort the shots within your timeline, you can access the Timeline Sort section in the Assemble menu.

To access the Timeline Sort feature:

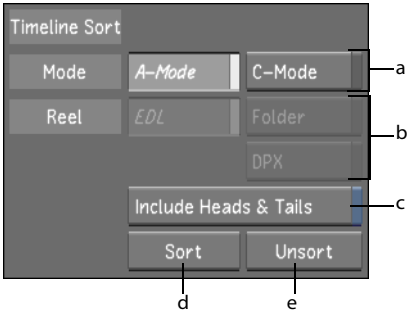
1. In the Main menu, click Editing.
2. Click Assemble.

   The Timeline Sort section appears.



a) Timeline Sort mode buttons

The Timeline Sort section is made up of the following buttons.



a) Sort mode options
b) Reel options
c) Heads & Tails button
d) Sort button
e) Unsort button

A-Mode button — When enabled, this sorts either the entire timeline or selected shots by the order of the shots in the sequence. If you have a multi-layer timeline, the shots are organized by their time location in the sequence. See "Sorting with A-Mode" on page 85.

C-Mode button — This mode sorts either the entire timeline or the selected shots by the reel name and the source timecode. The Reel options (e.g., EDL, Folder, and digital picture exchange (DPX)) are only available for a C-mode sort. See "Sorting with C-Mode" on page 87.

EDL button — The EDL option sorts the shots by the EDL reel name (in ascending alphanumerical order) and by source timecode.

Folder button — This option sorts the shots according to the folder name (or directory if you are using Linux) your scans or footage are saved into and by source timecode.

DPX button — Shots are sorted by DPX reel name and source timecode.

Include Heads & Tails button — When enabled, the sorted shots' heads and tails portions are expanded to let you see and work on the entire shot. It also allows you to work on other parameters (e.g., animation, tracking feature, etc.) without disturbing the initial edits (such as dissolves). This option is available for both A-mode and C-mode and is disabled by default.

Sort button — Once a sort mode, a reel option (if applicable), and the heads and tails option have been selected, click Sort to organize your shots according to those criteria. The editing tools are disabled and a green border appears around the timeline canvas.

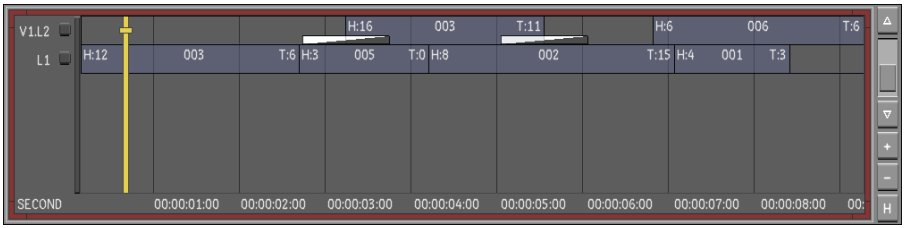
Unsort button — Click Unsort to return the timeline back to its original sequence. The editing tools are enabled.

Sorting with A-Mode

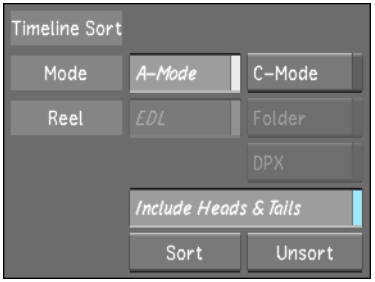
When you use A-mode to sort your timeline, your shots are organized according to their time location within the sequence (i.e., the record timecode). The shots are displayed one after another on a single layer and any dissolves and retimes are not displayed.

To sort the shots using A-mode sort:

1. Click Editing and then click Assemble to display the Timeline Sort section.
2. Select the shots you want to sort. If you want to sort the entire timeline, you do not need to select any shots.



3. Enable the A-Mode button and choose whether you want the head and tail frames to be exposed.



NOTE: If any of your shots have a retime value with heads and tails, the Retrim button (in the Edit menu) must be enabled so the sort function can calculate the handles properly.

4. Click Sort.

   The shots are now sorted by the record timecode. A green border appears around the timeline canvas to indicate that you are working in a sorted timeline.

   NOTE: You cannot do any editorial work or delete and add shots while you are in the sorting mode. As well, undo actions are disabled.

Once you have completed grading the shots, you can do one of the following:

- Create a new cut list with the sorted shots. Refer to "Creating a New Cut" in the "Project Management" chapter in the *Autodesk Lustre 2009 User Guide*.
- Render the sorted shots. See "Rendering Shots" on page 111.
- Play out the sorted shots to a VTR. See "Playing Out to a VTR" on page 143 and "Writig Telecine-Style Tape" in the "Video Capture and Video Playout" chapter in the *Autodesk Lustre 2009 User Guide*.
- Return the sorted shots to their original order.

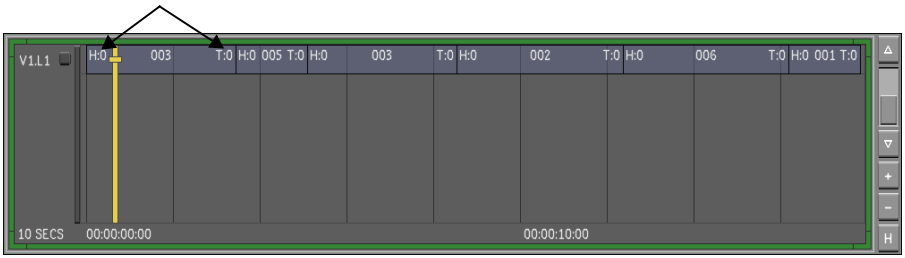
To return the sorted shots to their original order:

➤ Do one of the following:

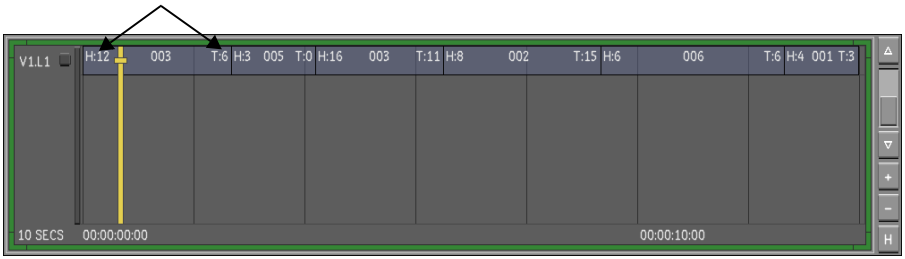
- Click Unsort.
- Press **ALT+F8**.

A-Mode Sort Using Hot Keys

You can also sort the shots, without accessing the Assemble menu, by using hot keys. Press **ALT+F9** to sort the shots in A-mode and enable the heads and tails. The heads and tails are showing 0 (zero) so you can work on every single frame within the shot.



Press **ALT+F10** to sort the shots in A-mode and for head and tail frames to remain unexposed (disabled).



Sorting with C-Mode

When you sort the timeline with C-mode, you are organizing the shots based on the reel name and the source timecode. If the shot does not have a reel/folder name, then the source timecode is used for sorting. The shots are displayed one after another on a single layer and dissolves and retimes are not displayed. You can choose to have your timeline sorted by EDL reel name, folder name, or DPX reel name.

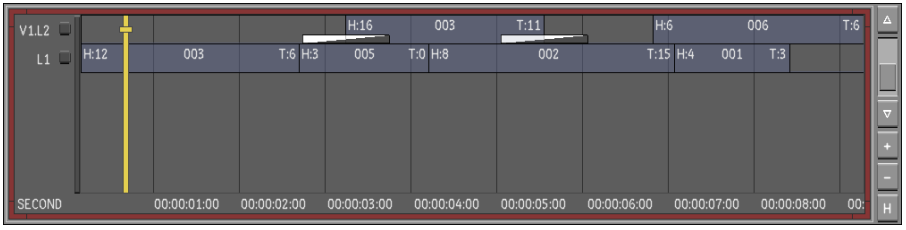
You want to sort the shots by EDL if you are working with a cut that has been assembled from an EDL, or a cut that is based on a Wiretap EDL. When you sort the timeline using the EDL option, the shots are arranged by the EDL reel name in alphanumerical order (numerical before alphabetical), and then by source timecode in ascending order (e.g., from 00:00:00:00 to 23:59:59:29). This data is read from the cut file EDLReelName XML tag.

If you are sorting the timeline with the Folder option, the shots are arranged in alphanumerical order (numerical before alphabetical) by the folder or directory name where you are storing your scans or captured footage (see "Recommended Directory Structure for Projects" on page 52). You can view the folder name in the file browser. This data is retrieved from the cut file AliasName XML tag. This tag is based on the name of the reel folder or directory when you are working with imported scans or captured footage.

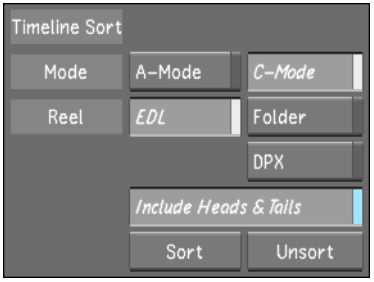
Lastly, you can sort the timeline of DPX files by their reel name. This data is read from the XML tag DPXReelName within the cut file. This XML tag is based on the data in the DPX header of the imported film scans. For more information on XML tags, refer to the "XML in Lustre" appendix in the *Autodesk Lustre 2009 User Guide*.

To sort the shots using C-mode sort:

1. Click Editing and then click Assemble to display the Timeline Sort section.
2. Select the shots you want to sort. If you want to sort the entire timeline, you do not need to select any shots.



3. Enable the C-Mode button, choose a Reel option, and choose whether you want the head and tail frames to be exposed.



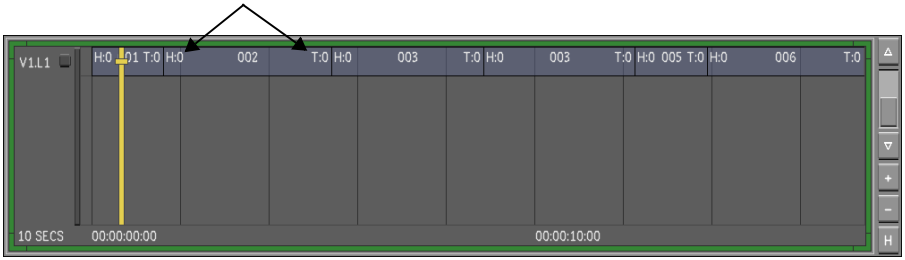
NOTE: If any of your shots have a retime value with heads and tails, the Retrim button (in the Edit menu) must be enabled so the sort function can calculate the handles properly.

4. Click Sort.

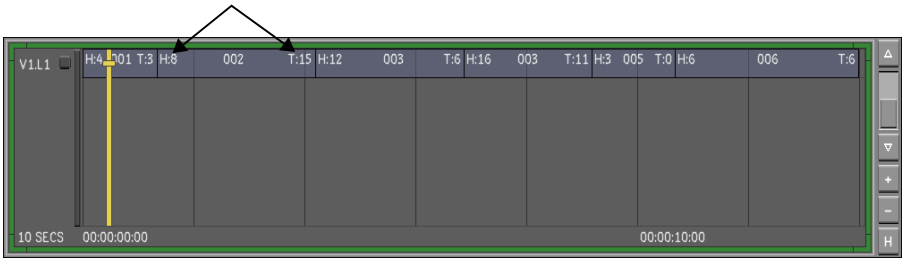
   The shots are now sorted according to your criteria. A green border appears around the timeline canvas to indicate that you are working in a sorted timeline.

   NOTE: You cannot do any editorial work or delete and add shots while you are in the sorting mode. As well, undo actions are disabled.

The following image is a C-mode sort using the EDL option with heads and tails enabled. The heads and tails are showing 0 (zero), so you can work on every single frame within the shot.



This image shows the timeline being sorted by the C-mode EDL option and the heads and tails are disabled.



Once you have completed grading the shots, you can do one of the following:

- Create a new cut list with the sorted shots. Refer to "Creating a New Cut" in the "Project Management" chapter in the *Autodesk Lustre 2009 User Guide*.
- Render the sorted shots. See "Rendering Shots" on page 111.
- Play out the sorted shots to a VTR. See "Playing Out to a VTR" on page 143 and "Writing Telecine-Style Tape" in the "Video Capture and Video Playout" chapter in the *Autodesk Lustre 2009 User Guide*.
- Return the sorted shots to their original order.

To return the sorted shots to the original EDL:

➤ Do one of the following:

- Click Unsort.
- Press **ALT+F8**.

C-Mode Sort Using Hot Keys

You can also sort the shots without accessing the Assemble menu. You can sort the shots by using the hot keys.

Press:	To:
ALT+F11	Sort the timeline in C-mode by EDL reel name and heads and tails are enabled.
ALT+F12	Sort the timeline in C-mode by EDL reel name and heads and tails are disabled.
CTRL+ALT+F11	Sort the timeline in C-mode by folder name and heads and tails are enabled.
CTRL+ALT+F12	Sort the timeline in C-mode by folder name and heads and tails are disabled.
CTRL+ALT+SHIFT+F11	Sort the timeline in C-mode by DPX reel name and heads and tails are enabled.
CTRL+ALT+SHIFT+F12	Sort the timeline in C-mode by DPX reel name and heads and tails are disabled.

7 Colour Grading: Basics

GPU Acceleration

Processing with the Graphics Processing Unit (GPU) is available for certain features and is faster than processing with the Central Processing Unit (CPU).

Support for GPU acceleration depends on the version of the NVIDIA graphic card that is installed on your system. The following configurations are supported for GPU acceleration.

Configuration	Feature available?
FX5600	Yes
FX5500	Yes (except Noise plugin 3.1)

GPU acceleration is available for the following features:

- 1D or 3D on calibration LUTs
- Animated or still repositions (including rotations)
- Animated or still input primary grading
- Input and output primary grading with RGB, hue and light saturation (LS) curves
- Secondary grading with RGB curves
- Secondary grading with hue curves
- Secondary black clip/reference and white clip/reference in Linear mode
- Secondary key cleanup and shrink
- Imported mattes for secondaries
- Gamma and contrast adjustments to secondaries in Linear mode
- Low, mid, and high adjustments to secondaries
- Input and render/output LUT

- Lustre Sparks plugins
  - Blur mix
  - Glow
  - Noise plugin 3.1
  - Printbleach

NOTE: A performance hit can occur when using the Lustre Sparks plugins.

For more information about these features, see:

- Refer to the "Primary Colour Grading" chapter in the *Autodesk Lustre 2009 User Guide*.
- Refer to the "Colour Grading: RGB and Hue Curves" chapter in the *Autodesk Lustre 2009 User Guide*.
- Refer to the "Creating Lustre Sparks Effects" chapter in the *Autodesk Lustre 2009 User Guide*.

GPU acceleration is also available for certain secondary grading features with up to 12 layers enabled. You can apply, and optionally animate, each of the following secondary grading features and continue to use GPU acceleration:

- Primary grading inside and outside geometries, including adjustments to overall brightness, contrast, hue, and saturation
- Softness, Color, and Opacity slider values for geometries, with Softer and Variable optionally enabled
- Key-in shapes based on hue, value (luminance), and saturation, and refined by tolerance and softness range definition
- Key and geometry blurs

NOTE: A performance hit can occur when using the geometry blur.

- Multiple point changes for geometries

For more information about these features, refer to the "Secondary Colour Grading" chapter in the *Autodesk Lustre 2009 User Guide*.

When GPU acceleration is enabled, the histogram, vectorscope, and waveform monitors do not dynamically update. They retain the colour distribution of the image before GPU was enabled.

The following parameters cannot be accelerated by the GPU. These parameters are processed by the CPU instead:

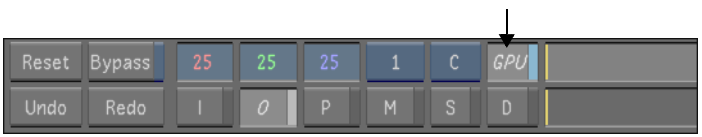
- Lustre Sparks plugins
  - Add noise
  - Blur
  - Defocus
  - Directional blur
  - Field zoom
  - Gold
  - Noise plugin 2
  - Noise plugin 3
  - Silver

NOTE: If GPU acceleration is enabled and Lustre encounters a shot with features that cannot be processed by the GPU, the CPU is used for the shot. The GPU button remains enabled, but is greyed out until you navigate to the next shot in the timeline that contains features available for GPU acceleration.

To enable GPU acceleration:

➤ Complete one of the following:

- Click GPU
- Press **Y**



A GPU flag appears in the upper-right section of the Player.

NOTE: GPU acceleration only works in progressive scan mode. Before you render a project, you need to switch the scan type to interlaced (located in the Setup > Grade menu).

To disable GPU acceleration:

➤ Complete one of the following:

- Click GPU
- Press **SHIFT+Y**

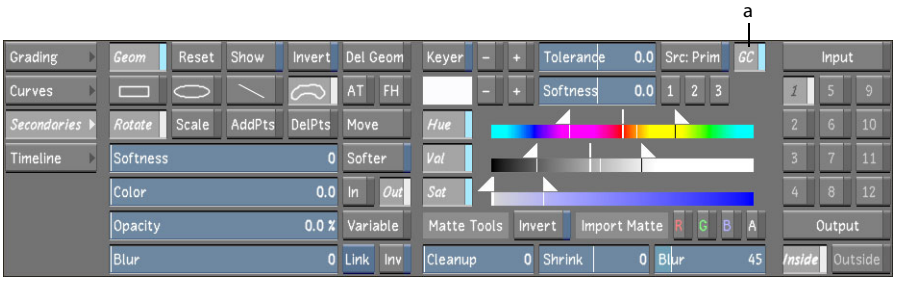
GPU acceleration is disabled.

GPU Auto Switch

By default, when you use a feature that is not supported by GPU (while in GPU acceleration mode) it automatically switches to CPU processing mode. The GPU button is greyed out in the user interface to show you that this feature is not GPU compatible. You can prevent the switch to CPU mode by disabling the GPU Auto Switch feature, see "Display & Interface Settings" on page 33. When you disable the GPU Auto Switch button, you can only see features which are supported by GPU (when GPU acceleration is enabled). To see all of the features, you have to disable the GPU button.

GPU Compatibility

Key blurs and geometry blurs are processed differently depending on whether CPU processing or GPU acceleration is enabled. To ensure that they are always displayed identically, enable the GPU Compatibility (GC) button before you start work on keys, key blurs, and geometry blurs. The GPU compatibility feature is automatically enabled when GPU acceleration is enabled.



a) GC button

You can also enable the GPU compatibility feature when you set your user settings. See, "Display & Interface Settings" on page 33.

NOTE: Enabling the GPU compatibility feature does not impact final renders, nor does it jeopardize preview performance. It ensures that GPU acceleration is performed in such a way as to closely match how keys, key blurs, and geometry blurs are displayed in CPU grading mode.

Control Surfaces

The control surfaces facilitate colour grading work by accelerating interactivity with the shots. You can use control surfaces to perform many colour grading tasks. The dials and trackballs give you precise control over the colour effects you create.

For control surface mappings, see the *Autodesk Control Surface User Guide*.

Viewing Multiple Shots

You can view multiple shots in the Player while you work. These views are useful when you want to compare shots in a cut to ensure continuity, match colours, or view a group of shots in which the colour grading parameters you are modifying are ganged. Refer to "Viewing Multiple Shots in the Player" in the "Playing, Viewing, and Sorting Shots" chapter in the *Autodesk Lustre 2009 User Guide*.

Reference Images

You can view a reference image while you work. For example, use a reference image to visually compare the current shot to another when you develop a continuity grade. Reference images are stored in the frame buffer and are loaded from your cut or from the Grade bin. You can only have one reference image stored in the frame buffer at a time. You can switch between different reference images to ensure continuity and consistency throughout the project. Refer to "Viewing Reference Images" in the "Playing, Viewing, and Sorting Shots" chapter in the *Autodesk Lustre 2009 User Guide*.

Viewing Proxies

After you generate proxies, you can view proxies while you colour grade your shots. It is useful to view proxies if interaction slows down. This can occur when you perform secondary colour grading on high-resolution images because a large amount of processing is required to display the result at full resolution.

Proxy view is set on a shot-by-shot basis. To view proxies, you must first generate them. Refer to "Generating and Viewing Proxies" in the "Rendering" chapter in the *Autodesk Lustre 2009 User Guide*.

Analysing the Image

While you colour grade, you can use different tools to view and analyse colours. Use the Analyse tools to view the colour distribution in the current frame. Use the Pixel Analyser to sample the image to compare colour values used in the input (original) and output (result) images.

Saving and Loading Presets Using the Presets Lists

To increase the efficiency and speed of the colour grading process, you can save a limited set of the colour grading parameters that you plan to reuse on a regular basis. These predefined settings, or presets, are saved on a menu-by-menu basis and are stored in the Presets lists.

HINT: You can also save up to three Key presets to the Secondaries menu. Refer to "Saving and Loading Key Presets" in the "Secondary Colour Grading" chapter in the *Autodesk Lustre 2009 User Guide*.

Colour Grade Animation

Use the Animation controls to animate colour grades. You can animate any parameter from the Colour menus except those in the Curves menu. For example, animate a colour grade to convey a change in the ambient light. To access the Animation controls, click the Anim button. See Chapter 8, "Animation," on page 101.

Grade Bin Storage

During the colour grading process, use the Global Grade bin or Scene Grade bin as a framestore for reference images and as a scratch pad for grades. Grade settings are stored in the Grade bins on a shot-by-shot basis. See "Grade Bins: Saving, Applying, and Deleting Intermediary Grades" on page 61.

Colourist Multi-Layer Timeline

The Colourist Multi-Layer Timeline allows you to perform limited editing functions within the Colour menu. Grading information (a selection of a shot's grading information or all of the grading information) can be copied from one shot to another or to several others.

NOTE: The functions in the Colourist Multi-Layer Timeline are not accessible if your timeline is in sort mode. See "Timeline Sort Mode" on page 82.

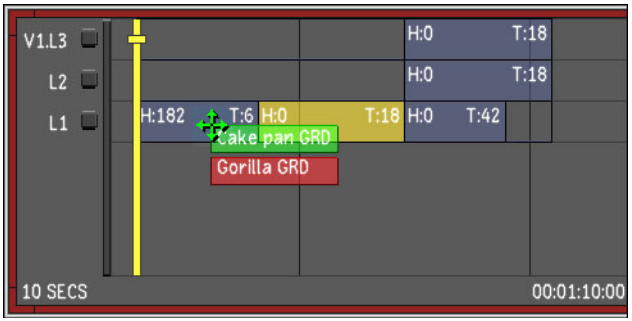
Copying Grading Information in the Colourist Timeline

There are several procedures for copying grading information using the Colourist Timeline. You can easily drag and drop all or a selection of grading information from shot to shot (or to multiple shots).

To copy all grading information from one shot to another:

1. Using the various grading tools, grade a shot to your satisfaction.
2. In the Colourist Multi-Layer Timeline, hold down the **CTRL** key and left-click+drag from the graded shot to the destination shot.

   When you move your mouse over a shot, a green indicator displays the graded shot's name. A red indicator displays the destination shot name.



3. Release the **CTRL** key and mouse button when the cursor is over the desired destination shot.

   The entire shot's grading information is copied to the destination shot.

To copy all grading information from one shot to multiple shots:

1. Using the various grading tools, grade a shot to your satisfaction.
2. In the Colourist Multi-Layer Timeline, create a timeline selection of shots to which you wish to copy grading information. Refer to "Selecting Elements" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.
3. Hold down **CTRL** and **SHIFT** and left-click+drag from the graded shot to any of the selected shots.

A green indicator displays the graded shot's name. When you move your mouse over a shot, a red indicator displays the destination shot name.

4. Release the **CTRL** and **SHIFT** keys and mouse button when the cursor is over any destination shot that is in your selection.

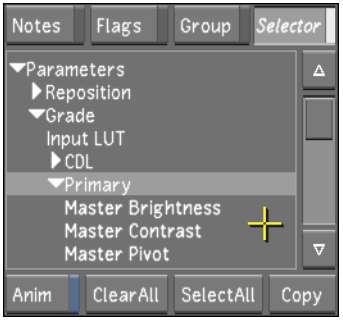
   The entire shot's grading information is copied to the selected shots.

To copy a defined selection of grading information from one shot to another:

1. Using the various grading tools, grade a shot to your satisfaction.
2. In the Timeline menu, enable the Selector button.

3. Specify what parameters to copy:
   - To select all the channels in a directory, select the directory.
   - To select specific channels in a directory, expand the directory and select any of its channels.

   The channels within selected directories become bold white.



4. Hold down the **CTRL** and **ALT** keys and left-click+drag from the graded shot to the desired destination shot.

   A green indicator displays the graded shot's name. A red indicator displays the destination shot's name when you move your mouse over a shot.

5. Release the **CTRL** and **ALT** keys and mouse button when the cursor is over the destination shot.

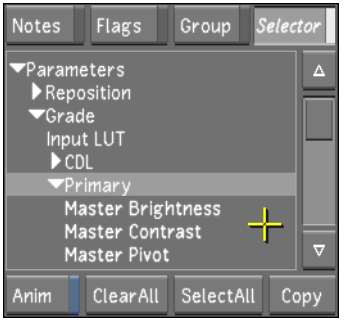
   The grade is copied to the destination shot.

To copy a defined selection of grading information from one shot to multiple shots:

1. Using the various grading tools, grade a shot to your satisfaction.
2. In the Colourist Multi-Layer Timeline, create a timeline selection of shots to which you wish to copy grading information. Refer to "Selecting Elements" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.
3. In the Timeline menu, enable the Selector button.

4. Specify what parameters to copy:
   - To select all the channels in a directory, select the directory.
   - To select specific channels in a directory, expand the directory and select any of its channels.

   The channels within selected directories become bold white.



5. Hold down **CTRL**, **SHIFT**, and **ALT** and left-click+drag from the graded shot to any of the selected shots.

   A green indicator displays the graded shot's name. A red indicator displays the destination shot's name when you move your mouse over a shot.

6. Release the **CTRL**, **SHIFT**, and **ALT** keys and mouse button when the cursor is over any destination shot in your selection.

   The grade is copied to the destination shot selection.

8 Animation

Editing Keyframes

As you create animations, you may need to edit keyframe values, modify animation curves, and manipulate keyframes. Make sure that you are in Edit mode when selecting and editing keyframes.

NOTE: You cannot edit keyframes in Add mode or Remove mode.

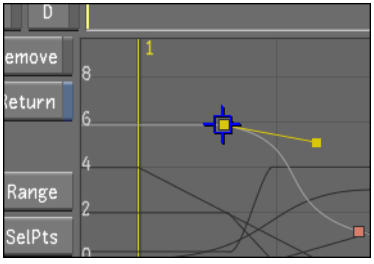
Selecting Keyframes

You need to select keyframes in order to edit them. You can select one keyframe at a time, marquee select a group of keyframes, or select all keyframes in a given channel.

Selected keyframes are yellow. Unselected keyframes are red.

To select a keyframe:

➤ In the Animation > Curves menu, position the cursor over the keyframe and click.

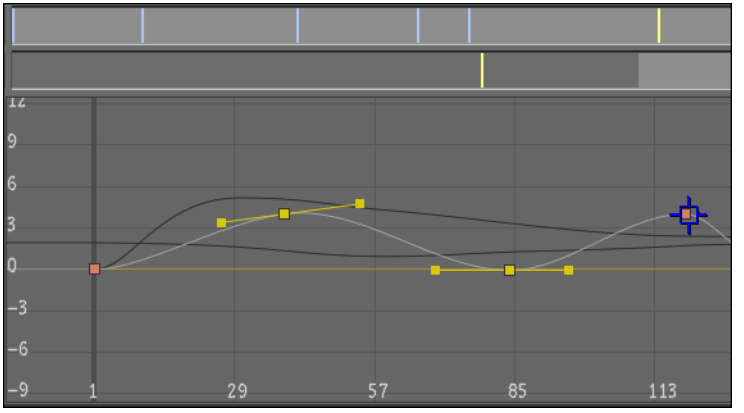


The keyframe is selected.

To select multiple keyframes:

➤ In the Animation > Curves menu, click a keyframe to select it and then hold down **CTRL** and click additional keyframes to add them to the selection.

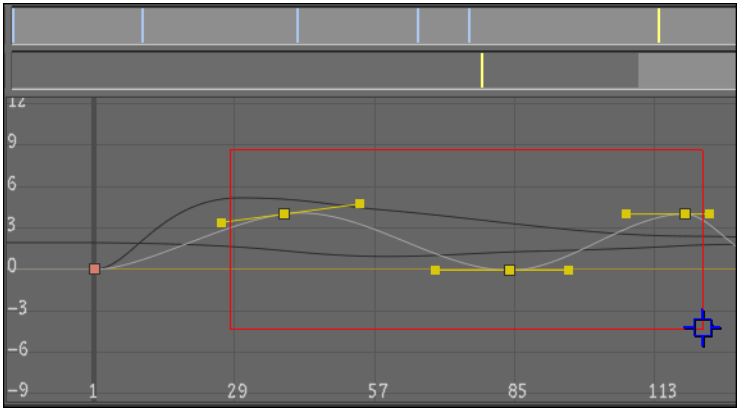
NOTE: To deselect a selected keyframe, hold down **CTRL** and click the keyframe. This is useful when you make a marquee selection but you would like not to include one or more keyframes in the selection.



If you release the **CTRL** key and then click a keyframe, this keyframe is selected and the previous selection is cleared.

To marquee select multiple keyframes:

1. In the Animation > Curves menu, drag to draw a marquee selection rectangle around the keyframes you want to select.



Keyframes inside the marquee selection are selected.

2. To zoom in on the selected area, hold down the **ALT** key when drawing the marquee selection.

To select all keyframes in the selected curve:

➤ In the Animation > Curves menu, click AllPts in the Animation Controls.

Copying and Pasting Keyframes

From any menu in Lustre, you can copy and paste keyframes for accessible channels in the Animation Channel Hierarchy. This includes, but is not restricted to, keyframes for grading, geometries, plugin effects, and point trackers. There are different ways to perform a copy and paste:

• Using the user interface. See "About the Copy Keyframe Controls" on page 103.

• Using hot keys. See "Copy / Paste Keyframe Hot Keys" on page 109.

• Using the Autodesk Control Surface (ACS). See *Autodesk Control Surface User Guide*.

About the Copy Keyframe Controls

The Copy Keyframe controls are located in the Channel Hierarchy, which is visible in the user interface in all menus except the following menus:

• Editing > Timeline

• Colour > Timeline

If you are in one of these menus and need to make channel selections or access the Copy Keyframe controls, navigate back to another menu that displays them. Select the channels to copy, then return to the Timeline menu; the selected channels remain active. Use the copy / paste hot keys to copy the keyframes. See "Copy / Paste Keyframe Hot Keys" on page 109.

The Channel Hierarchy and Copy Keyframe controls are not displayed, but are still active, when you are in the following menus:

• Editing > Timeline

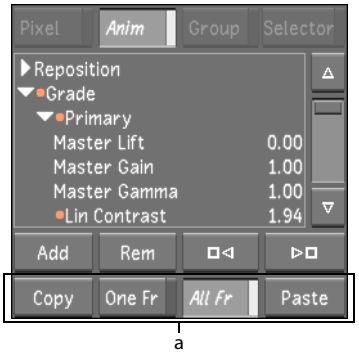
• Colour > Timeline

• Editing > Capture

• Editing > Playout

If you are in one of these menus and need to make channel selections or access the Copy Keyframe controls, navigate back to another menu that displays them. Any channel / folder selections or Copy Keyframe actions you perform will remain active even after you leave the Channel Hierarchy.

NOTE: Hot keys and the ACS controls are available regardless of which menu is displayed in Lustre.



a) Copy keyframe controls

Copy — Click to copy one or more keyframes to memory. The Copy function is dependent on which channels are selected in the Channel Hierarchy or Animation Curve. See "Copying Keyframes" on page 104.

One Fr — When enabled, Lustre copies only the keyframes present at the current location of the Positioner for a selected channel or group of channels.

All Fr — When enabled, Lustre copies all the keyframes within a shot for a selected channel or group of channels.

Paste — Click to paste the copied keyframes. See "Pasting Keyframes" on page 106.

NOTE: If you are in the Animation > Curves menu and you select keyframes in the Animation Curves window, you do not need to use the *One Fr* and *All Fr* buttons. Lustre automatically copies and pastes the selected keyframes.

Copying Keyframes

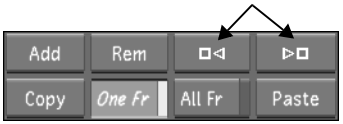
When copying keyframes, use the Channel Hierarchy to select channels you wish to copy keyframes from. You can choose either a single channel or all channels in a parent folder. Once the channels are selected, you can choose to copy:

- Only those keyframes at the frame where the Positioner is located.
- All keyframes in the shot.
- A selection of keyframes.

To copy only keyframes at the location of the Positioner:

1. Make sure the Positioner is located directly over the keyframe.

   To do this, navigate to the keyframe by clicking on the Forward and Backward buttons in the user interface or with the ACS.



2. Change the copy mode to One Fr by doing one of the following:
   - Click One Fr.
   - Press **ALT+C**.
   - Change the copy mode to One Fr using the ACS.
3. Copy the keyframes by doing one of the following:
   - Click Copy.
   - Press the left **CTRL+C**.
   - Use the ACS.

To copy all keyframes in the shot:

1. Change the copy mode to All Fr by doing one of the following:
   - Click All Fr.
   - Press **ALT+C**.
   - Change the copy mode to All Fr using the ACS.
2. Copy the keyframes by doing one of the following:
   - Click Copy.
   - Press the left **CTRL+C**.
   - Use the ACS.

To copy a selection of keyframes:

1. Navigate to the Animation > Curves menu.
2. To display the full range of the selection of curves, click Range.
3. In the Animation Curves window, select the keyframes you wish to copy. See "Selecting Keyframes" on page 101.

4. Copy the keyframes by doing one of the following:
   - Click Copy.
   - Press the left **CTRL+C**.
   - Use the ACS.

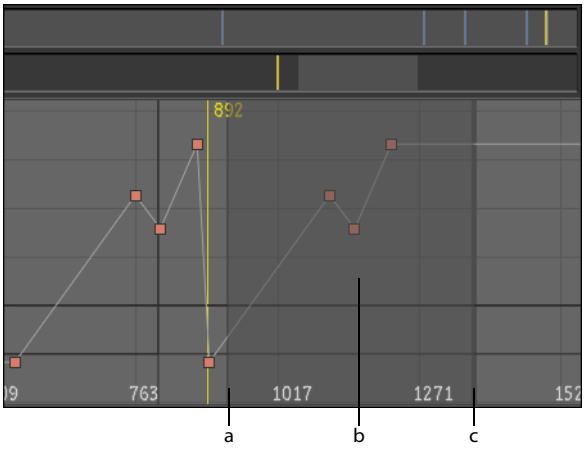
Pasting Keyframes

When pasting keyframes, use the Channel Hierarchy to select the target channels. You can select either a single channel or all channels in a parent folder.

When you copy all the channels in a sub-folder and paste into a parent folder, the keyframes are pasted into the first available sub-folder of the parent folder. For example, if you copy all the channels in the Tracker4 sub-folder and paste into the parent Trackers folder, the keyframe data are pasted into the Tracker1 sub-folder.

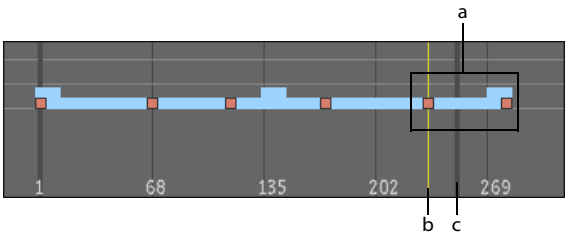
When you copy a keyframe sequence which spans more than one frame in a shot, you can paste the sequence at a location where it goes beyond the shot boundary. The part of the sequence that is cut off is still pasted after the shot boundary.

In the Animation Curves window, the cut off keyframes appear greyed out as in the following example.



a) Shot boundary b) Cut off keyframe data c) Beginning of next shot

It is also possible to see the cut off keyframes in Animation > Timeline view.



a) Pasted keyframe sequence
b) Positioner (where first of copied keyframes is pasted)
c) Shot boundary

Once you have selected the target channels or parent folder, you can paste the copied keyframes:

- Over a target selection of keyframes.
- Starting at the current location of the Positioner.

If you paste keyframes and you have not selected target keyframes to paste over, the pasting operation will destroy any and all keyframe data that was originally present in a target span that starts at the location of the Positioner. This target span of the timeline is exactly the size of the span in the copy buffer.

To paste copied keyframes to the Positioner location:

1. In the Channel Hierarchy, select the target channel or parent folder.

   The selected channel(s) are highlighted.

2. In the Animation Curves window, make sure no keyframes are selected.

   NOTE: If keyframes remain selected the contents of the copy buffer will be pasted to this selection.

3. Do one of the following:

   - To paste the keyframes to a different shot in the same timeline, use the Scene Timebar to move the Positioner to the desired shot.
   - To paste the keyframes to a different timeline, load the required cut, then return to the Animation > Curves menu and move the Positioner to the target location. Refer to "Loading a Cut" in the "Project Management" chapter of the *Autodesk Lustre 2009 User Guide*.

     NOTE: Before loading a different cut, save the grade of the cut you are in. Failure to do so will result in a loss of any new grading information (including animations) for this cut.

4. Do one of the following:

   • Click Paste.

   • Press **CTRL+V**.

   • Use the ACS to paste the keyframes.

   The keyframe data in the copy buffer is pasted to the timeline starting at the location of the Positioner.

For rules regarding the paste behaviour of point trackers, plugins, and geometries, see "Guidelines for Point Trackers, Plugins, and Geometries" on page 109.

Pasting to a Keyframe Selection

The following are behaviours specific to pasting to a keyframe selection:

- When you paste keyframe data to a target keyframe selection, all keyframe data originally present in the span of the timeline occupied by the target keyframe selection is destroyed. This is true even if the copied keyframes occupy a timeline span that is smaller than the target span.
- If the target span is discontinuous (that is, there are one or more unselected keyframes separating the selected keyframes of the span), the unselected keyframes are not destroyed when the copy buffer is pasted there. For more information about selecting a span of keyframes, see "Selecting Keyframes" on page 101.
- If the span of the copied keyframes is larger than the span of the target selection of keyframes, the copied keyframes are pasted over the target selection as expected, but the portion of the copied keyframes that overshoots the target selection is discarded.

To paste over a selection of keyframes:

1. In the Channel Hierarchy, select the target channel or parent folder.
2. Navigate to the Animation > Curves menu.
3. Select the desired keyframes in the Animation Curves window. See "Selecting Keyframes" on page 101.
4. Do one of the following:

   • Click Paste.

   • Press **CTRL+V** .

   • Use the ACS to paste the keyframes.

   The keyframe data in the copy buffer is pasted to the target keyframe selection.

Guidelines for Point Trackers, Plugins, and Geometries

When copying and pasting keyframes for point trackers, plugins, and geometries, you need to be aware of the following:

- You can only copy and paste the same channels (e.g., point tracker channel can be only be copied to another point tracker channel).
- When pasting keyframe data to a channel folder, if there are more keyframes in the copy buffer than there are appropriate channels to paste them to, Lustre will match keyframes in the copied folder (in top-to-bottom order) to channels in the target folder and ignore the remaining keyframes.
- You can only copy the keyframes for common parameters from one geometry to another.
- Geometries are not saved with absolute values. Therefore it is not possible to copy one axis to another while keeping its original position. You may have to manually modify the channel(s) value of your geometry.

Copy / Paste Keyframe Hot Keys

When in either the Editing > Timeline or Colour > Timeline menus, the only way to perform the copy and paste actions is by using hot keys or the ACS (see the *Autodesk Control Surface User Guide*). You can use the hot keys when you are in any of Lustre's menus.

Hot key	Action
Left-**CTRL+C**	Copy keyframe(s).
Left-**CTRL+V**	Paste keyframe(s).
CTRL+Z	Undo
CTRL+ALT+Z	Redo
ALT+C	Toggle between One Fr and All Fr copy modes.

9 Rendering

Rendering Shots

You can use the Render menus to render your work. You can render selected shots, all shots in a cut, a specific layer in the Multi-Layer Timeline, or the flattened result of a Multi-Layer Timeline. To prepare for rendering, do the following:

- Specify the shots to render.
- Specify the layer to render.
- Set the resolution of the render files.
- Set resize options as needed.
- Specify the destination for the render files.
- Specify the output file format.
- Specify the file density (logarithmic or linear).
- (Optional) Change the output colour space or specify an output LUT.
- Set other options such as timecode burn-in and rendering with a viewing LUT.

Rendering the Multi-Layer Timeline

Lustre renders out what is displayed in the Multi-Layer Timeline and Player, according to:

- top vertical priority
- the presence or absence of priority shots and muted layers
- the Solo status

If Solo mode is disabled, Lustre renders the topmost layer by default. If there are gaps, Lustre takes into account top vertical priority behaviour and render out all the shots from the lower layers that are visible through the transparent gaps that are above.

If you do not want a shot in a lower layer to be rendered that is located beneath a gap, you can replace the gap with a virtual black clip. Refer to "Adding a Virtual Black Clip using the

Storyboard" and "Adding Black Media to the Multi-Layer Timeline" in the "Editing" chapter in the *Autodesk Lustre 2009 User Guide*.

If you wish to render out the shots on a specific layer, you either must Solo the active layer, or Mute the unwanted layers. If there are gaps in this layer, the gaps are no longer seen as transparent, and automatically render out as black frames.

If you wish to render out a shot that normally would not be rendered because top vertical priority renders out a shot on a different layer, you can use the shot priority function to prioritize this shot.

For more information, refer to the following links:

• "Top Vertical Priority" on page 71

• "Muted Layers" on page 72

• "Shot Priority" on page 73

• "Solo Mode" on page 77

10 Stereoscopy

About Stereoscopy

Stereoscopy (Stereo) is a new feature in Lustre 2009 which allows you to grade shots and see them in stereoscopic context. Stereoscopy allows you to take your shots and create the illusion of depth, within the image. In order to create this illusion of depth, you need to present each eye with a slightly different image. This is done by having two sets of footage or conformed timelines; one designated for the left point of view (Left Eye) and the other designated for the right point of view (Right Eye). Once you have one set of footage for the Left and Right Eye, you would use the encoding/decoding scheme to display the image. Encoding is done at the stereoscopic display level by the graphic SDI board and decoding is done by the glasses. This chapter shows you how to enable and use the Stereoscopy features.

Creating a Stereoscopic Project

When you are creating a stereoscopic project, you need to do the following:

- Enable the Stereoscopy feature. See "Enabling Stereoscopy" on page 113.
- Load your left and right eye footage into your timeline. See "Setting Up the Stereoscopic Footage" on page 115.

Enabling Stereoscopy

You can enable the Stereoscopy feature in one of the following ways:

- When you select your project settings before entering the Lustre application. See "Project Configuration Settings" on page 15.
- When you select a Stereoscopy-specific raster. See "Selecting a Raster for Stereoscopy" on page 114.
- By enabling the Stereoscopy button. See "Enabling the Stereoscopy Button" on page 114.

Selecting a Raster for Stereoscopy

The Stereoscopy feature can be enabled when you select a stereoscopic raster from the raster list. You want to only select a stereoscopic raster if you are connected to a proper stereoscopic device (e.g., Stereoscopy projectors (two projectors or one), or a 3D monitor). Refer to the *Autodesk Lustre Hardware Setup Guide*.

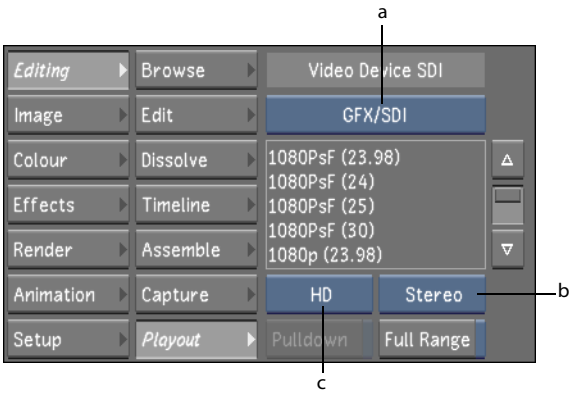
To select a stereoscopic raster:

1. Click Editing in the main menu and then click Playout.

   The Playout menu is displayed.

2. In the Video Device SDI group, toggle the Video/Graphics Raster button to display GFX/SDI, toggle the format option button to HD, toggle the link type button to Stereo, and select a Stereo raster from the list.

   NOTE: The GFX/SDI raster outputs in 8-bit range when you are working in Stereo mode.



a) Video/Graphics Raster button b) Link Type button c) Format button

   Stereoscopy is now enabled.

Enabling the Stereoscopy Button

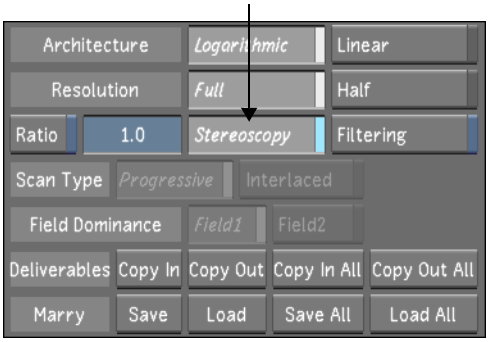
Another way to enable the Stereoscopy feature is by enabling the Stereoscopy button. You would enable the Stereoscopy button when you are grading a Stereo project and you are not outputting to a Stereo device. By enabling the Stereoscopy button, it allows you to grade the Stereo footage without having an output device to see your end results (i.e., you have a standard output).

To enable the Stereoscopy feature:

1. Click Setup in the main menu and then click Grade.

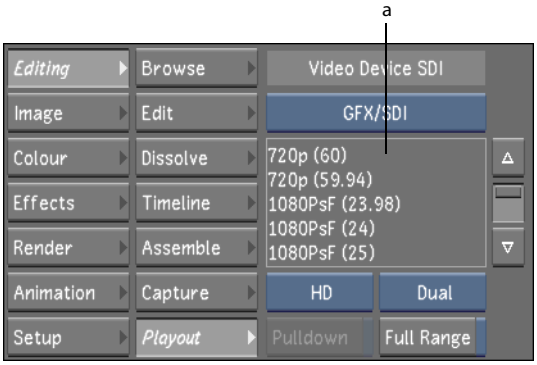
   The Grade menu is now displayed.

2. Enable the Stereoscopy button.



The Stereoscopy feature is now enabled.

3. (Optional) Click Editing and then click Playout. Within the Playout menu, select a raster from the Video Device SDI group



a) Raster list

Setting Up the Stereoscopic Footage

After you have enabled the Stereoscopy feature, you need to load the stereoscopic footage and make sure that each layer is assigned to the correct eye.

To load the stereoscopic footage to the timeline:

1. Drag your stereoscopic footage from the folder location to the Shot bin. Refer to "Loading Shots into the Shot Bin" in the "Browsing for Footage" chapter in the *Autodesk Lustre 2009 User Guide*.

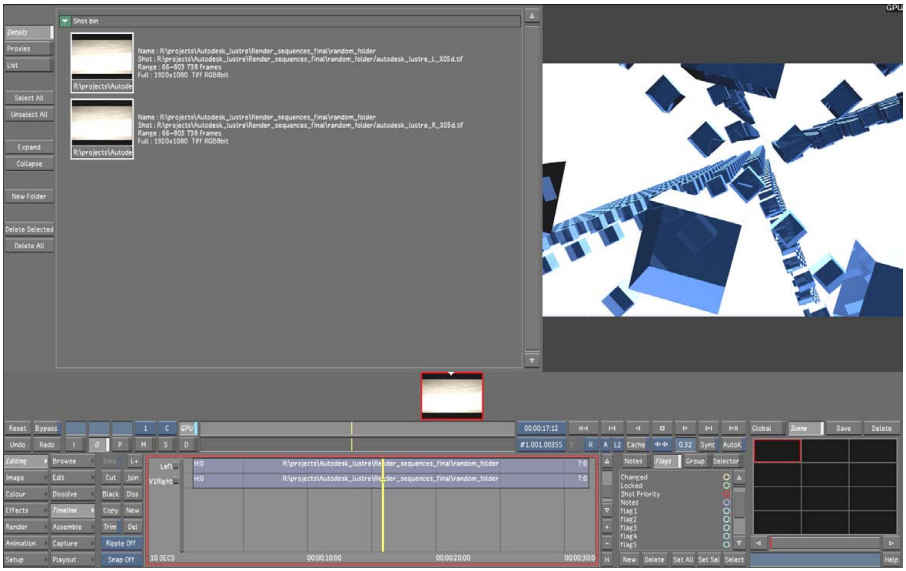
2. Click Editing in the main menu and then click Timeline.

   The Timeline menu is now displayed.

3. Click L+ to add a second layer to the timeline.

4. Drag and drop your shots from the Shot bin to the timeline. Make sure to drag the Left Eye shots to one layer and the Right Eye shots to the other.

   NOTE: In Stereoscopy, there is a limit of one layer for each eye.



5. Save the new cut. Refer to "Saving a Cut" in the "Project Management" chapter in the *Autodesk Lustre 2009 User Guide*.

Assigning the Left and Right Eye Layer

Once a stereoscopic timeline is created, you need to make sure each layer is assigned to the correct eye. You must assign the layer to the correct eye for the following reasons:

- To make sure your stereoscopic footage is viewed properly when the Left and Right Eye are shown together.
- When you are playing out your footage to a dual link device, each eye is assigned to one link. The Left Eye always runs through the A Link and the Right Eye through the B Link.

To assign the Left and Right Eye Layer:

1. Place the timeline focus point on the layer that has the Left Eye footage.

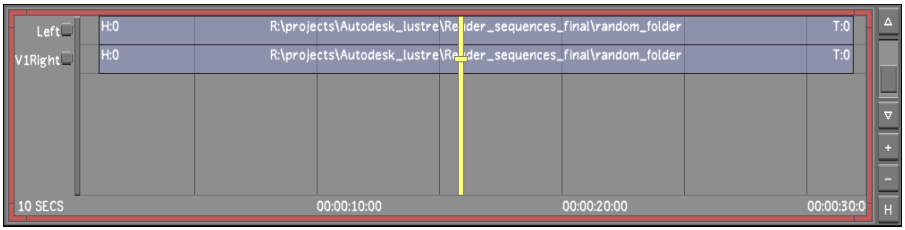
2. Press **ALT+L**.

   The layer is now assigned to the Left Eye.

3. Move the focus point to the other layer.

4. Press **ALT+R**.

   The layers for the Left and Right Eye are now assigned and the layer names are now V1Left and V1Right.



Viewing From One Eye to the Other

As you are grading your Left and Right Eye footage, there is an easy way for you to switch the footage that is being displayed in the Player. The Left and Right Eye button allows you to switch between the footage with ease.

To switch the footage displayed in the Player from one eye to the other:

➤ Do one of the following:

- In the Player display controls, click on the Left/Right Eye (L/R) button.

NOTE: This is the field 1 (F1)/field 2 (F2) button when you are not in Stereo mode (since interlaced is not supported).

- Press **;** (semicolon).

If you are currently displaying the Right Eye timeline in the Player, the layer output selector is labelled R. When you click the R button, the layer output selector is now labelled L, the Left Eye is displayed in the Player, and the focus point is now on the Left Eye layer (and vice versa).

Switching the Player to display the Left or Right Eye footage does not affect what is playing out on the NVIDIA HDSDI output if you have selected a stereoscopic raster. If you have selected a mono (non-Stereo) raster, the layer (eye) you see on your monitor is what is displayed on your video output.

NOTE: The position of the focus point is linked to the layer output selector.

Colour Grading the Left and Right Eye

Since the Player only displays either the Left Eye or Right Eye layer, it is difficult and tedious to grade one layer and create the same grades for the other layer. An easy way for you to make sure any grading is automatically duplicated from one eye to the other is by using the Sync option. When this feature is enabled, any grading you do on one layer is duplicated on the other.

To duplicate the grading from one layer to the other:

➤ From the Player display controls, click Sync.

Now all grading done on one layer will be duplicated on the other.

NOTE: The Sync option is for colour grading features only and not editing features.

The Sync option only works if you do not break the sync. For example, if you enable Sync and draw a geometry, whatever you do to that geometry on one eye will be duplicated on the other. The moment you disable the Sync option and change the geometry on one layer (e.g., colour, position, vertex, etc.), that geometry will never be synced again when you re-enable Sync.

NOTE: If you only break sync with the colour grading, the rest of the geometry (i.e., position, vertex, etc.) will still be in sync once you re-enable the Sync option.

Rendering Stereoscopic Footage

The procedure for rendering your stereoscopic footage is the same as for rendering normal shots (i.e., mono mode). See "Rendering Shots" on page 111.

The differences in rendering stereoscopic shots are as follows:

- The shots are rendered out to the folder you specified when creating your project (see "Project menu" on page 15), but the Left and Right Eye footage is separated into two folders labelled 'Left' and 'Right'.
- You have to render both Left and Right Eye shots together. You cannot render each eye individually.

Once the shots have been rendered, Stereoscopy must be enabled in order for you to view your rendered footage in print (P) mode.

NOTE: Since you are rendering double the amount of shots (both the Left and Right Eye), you may experience some performance issues.

11 Video Capture and Video Playout

Summary

About Capture and Playout

During the colour grading process, you may need to capture or playout video and audio from, or record to, an external device, such as VTR.

For example, you may receive an edited HD or SD video tape to grade with Lustre. Or, you may be given raw footage on video tapes and an EDL to auto-conform in Lustre, and then colour grade.

During capture, the files are created on-the-fly and are available after capturing is completed.

NOTE: When capturing video from an HD or SD tape and converting to a DPX file, Lustre writes the SMPTE timecode to the DPX header. Once captured, the timecode appears as part of the DPX file information and is available for use in EDL assembly.

After grading a scene, you play it out to a VTR for client approval or for final delivery on HD or SD tapes.

NOTE: The availability of SDI video rasters, which are required to control a VTR, depends on the type of license you have purchased. Contact Customer Support for details.

But before you can capture from, or play out to, an external device, you set up options such as the capture path, file type, and video resolution, as well as options for transferring shots between Lustre and a VTR.

About Audio Tracks

When capturing and recording, you can transfer one video track and up to eight audio tracks. In Lustre, audio tracks are identified as A1 through A8. You can select non-consecutive tracks (for example, you can select tracks A1, A5, and A8).

You can capture and play out audio in two different ways:

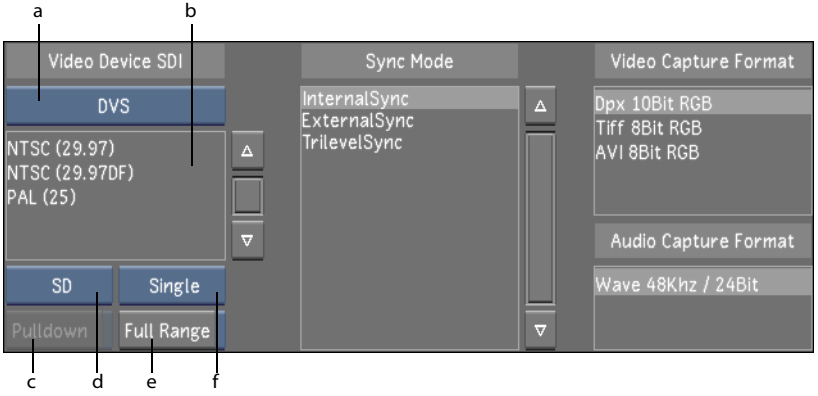
- Audio embedded with video, coming from or going to the SDI connectors ('Embedded' option)
- Audio going through XLR cables from or to the DVS or AJA break out box ('AES' option)

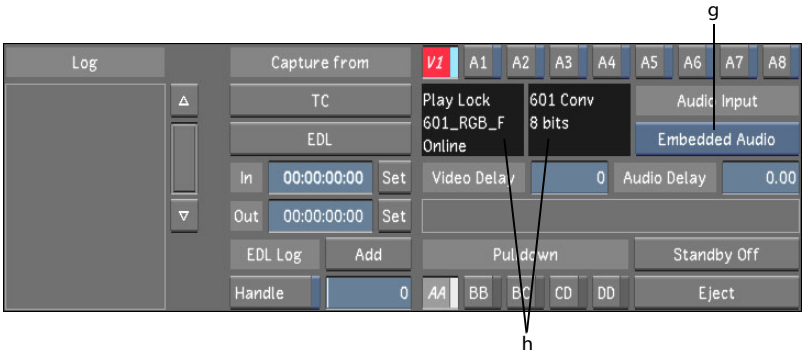
Capture Menu Options

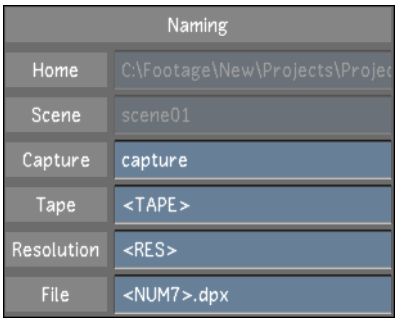
Use the Capture menu to perform your VTR capture operations.

NOTE: Capture can only be done using the DVS or AJA video cards. The GFX/SDI options listed below are provided as reference only and should not be used during the capture.

The following three graphics represent the Capture menu.







a) Video/Graphics option box
b) Raster list
c) Pulldown button
d) Format option box
e) Full Range button
f) Link Type option box
g) Audio Input button
h) VTR Status panel

Video/Graphics option box — Toggle between the video card (AJA or DVS) and the graphics card (GFX/SDI). The Raster list is then populated with rasters for the selected card.

WARNING: When capturing, do not select a raster for the GFX/SDI card. Doing so is not supported and can result in failed capture.

Raster list — With a video card selected in the Video option box (AVIO), select one of the listed rasters to set the resolution and timing for capture. For more information about rasters, see "Supported Video SDI and GFX SDI Rasters" on page 164.

Format option box — Toggle to display only rasters belonging to a particular footage format in the Raster list.

Select:	To display:
SD	Standard definition rasters.
HD	High definition rasters.

Select:	To display:
Film	Film rasters.
Audio	Audio rasters (only applicable to GFX/SDI).

NOTE: Enable an Audio Only raster when monitoring the GFX/SDI output and working with audio signal coming out of the AJA/DVS break out box. This is similar to working with audio media or to using the LTC chase feature with a DVS.

Link Type option box — Toggle to display only rasters belonging to a particular link type in the Raster list.

Select:	To display:
Single	The single link rasters.
Dual	The dual link rasters.
Stereo	The stereoscopy rasters (only applicable to GFX/SDI).

Full Range button — Enable to configure Lustre to capture the full video signal from the video board. If disabled, Lustre captures only the legal portion of the video signal.

Pulldown button — Enable to remove 3:2 pulldown from Film-to-video transferred material. See "Removing Pulldown when Capturing" on page 129.

Sync Mode list — Select one of the sync modes.

Select:	To:
InternalSync	Set the sync mode to a free running internal sync (SD and HD).
ExternalSync	Genlock to an analog sync connected to the sync input (SD only).
TrilevelSync	Genlock to a trilevel sync connected to the sync input (HD only).

Video Capture Format list — Select a video capture format to set file type, colour space, and bit depth of the captured material.

Select:	To capture only:
Dpx 10Bit RGB	DPX files with an RGB colour space at a bit depth of 10-bit.
Tiff 8Bit RGB	TIFF files with an RGB colour space at a bit depth of 8-bit.
AVI 8Bit RGB	AVI files with an RGB colour space at a bit depth of 8-bit (available only on Windows workstations.)

Audio Capture Format list — The supported capture format is a Wave file (.WAV) with a sampling frequency of 48,000 hertz and a bit depth of 24-bit.

Log panel — Displays status messages during capture.

TC button — Initiates a capture from VTR using timecode in and out points. See "Capturing from Timecode" on page 131.

EDL button — Initiates a capture from VTR using an EDL. See "Auto-conforming an EDL" on page 136.

NOTE: EDL Capture is video only; audio events are ignored.

Timecode In Point field — Enter the start timecode. Press Set next to the field to set the current timecode (read from the VTR) as the in point.

Timecode Out Point field — Enter the end timecode. Press Set next to the field to set the current timecode (read from the VTR) as the out point.

EDL Log Add button — Logs the In and Out timecode points as an EDL for capture. See "Logging and Batch Digitizing" on page 134.

NOTE: Only video events are supported for EDL logging.

Handle button — Enable to capture heads and tails. This feature is used when capturing from an EDL.

NOTE: You must enable the Handle button to use the Handle slider.

Handle slider — Set the number of head and tail frames to capture.

V button — Enable to capture the video track when capturing from a video source. Disable to capture audio only.

A1 - A8 buttons — Enable the audio tracks (A1-A8) to capture from an audio source.

VTR Status panel — Displays the VTR status messages when Lustre is connected to a VTR.

Audio Input option box — Toggle to specify the source of the captured audio.

Select:	To specify the connection to the audio source:
Embedded Audio	The SDI connection.
AES	The XLR connections on the DVS/AJA break-out box.

Video Delay field — Enter a frame number to delay the video capture for that number of fields. For example, if you set the field to 10, the capture begins 10 frames after the In point. If you set the field to -10, capture begins 10 frames before the In point.

Audio Delay field — Enter a frame number to delay the audio capture for that number of fields. For example, if you set the field to 10, the audio capture begins 10 frames after the In point.

NOTE: The Video and Audio Delay fields compensate for frame delays that may exist while transferring shots from the capture to Lustre.

Pulldown Field buttons — Enable a Pulldown Field button to select the frame used for the 3:2 pulldown. Only available when Pulldown is enabled. See "About 3:2 Pulldown" on page 162.

Standby Off button — Removes the VTR heads from the tape.

Eject button — Ejects the tape in the VTR.

Home field — Displays the project home directory. This is the destination path for captured footage. You cannot change this value without modifying your project settings.

Scene field — Displays the current scene you are working in during capture. You cannot change this value without modifying your project settings.

Capture field — Enter the name of the folder where video media is saved.

Tape field — Displays the tape name. When capturing in TC mode, enter a tape name. When capturing from an EDL, the default tape name is determined by that EDL. If you capture an EDL with multiple tapes, a folder structure (`<tape>/<resolution>/`) is created for each tape (e.g., *0001/1920x1080*).

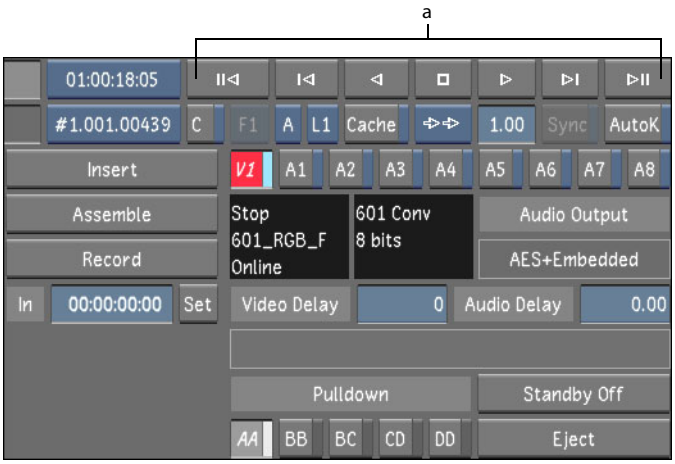
Resolution field — Defaults to the resolution of the captured files, and is used in the folder structure. Do not change this field.

File field — Displays the filename, which is the frame offset value based on the source timecode (e.g., *84600.dpx* is 1:00:00:00 at 24 fps). `<NUM7>` defines the amount of padding for the file name (for example, *084600.dpx* reflects six digits of padding before the extension). You can add a prefix before the `<NUM7>` number, but to ensure consistent frame counting, do not erase the `<NUM7>` number (e.g., *Mymovietitle.084600.dpx*).

Controlling the VTR

When working with a VTR, you can use the VTR transport controls to play through the video tape and locate your footage. As you find your footage, you can capture it immediately, or add shots to a list that you can batch digitize all at once.

You can also use the transport controls to cue up a VTR to the record in point when playing out to the VTR.



a) VTR transport controls

NOTE: To control the VTR remotely, you must connect a 9-pin RS-422 cable between the VTR and Lustre. For information, refer to the *Autodesk Lustre Software Installation Guide* for your platform.

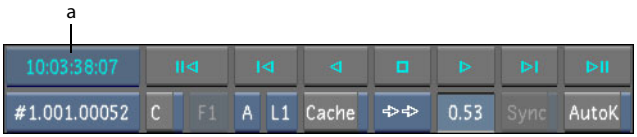
To control the VTR:

1. Do one of the following:

   • If performing capture operations in the Capture menu, click the Source Timecode field. The capture controls turn blue to indicate that you can use them as VTR transport controls.

   • If performing playout operations in the Playout menu, click the Source Timecode field. The playback controls turn blue to indicate that you can use them as VTR transport controls.

   NOTE: In the Playout menu, you can toggle between the timeline and VTR by clicking on the Source Timecode field. If the Source Timecode field is blue, the controls can be used as VTR transport controls. If the controls are white, they are timeline controls.



a) Source Timecode field

The transport controls are as follows.

Click:	To:
	Fast rewind.
	Cue to TC In. Right-click to jog back one frame.
	Play in reverse.
	Stop the VTR.
	Play forward.
	Cue to TC Out. Right-click to jog ahead one frame.
	Fast forward.

2. To eject the tape in the VTR, click Eject in the Capture menu.

NOTE: You can also control the VTR from the Playout menu. See "Playing Out to a VTR" on page 143.

Capturing Material

Use the Capture menu to digitize material from an external source. You can digitize in any one of the following ways:

- Digitize one event at a time by capturing from timecode values. See "Capturing from Timecode" on page 131.
- Batch digitize from a Log file. See "Logging and Batch Digitizing" on page 134.
- Batch digitize from an imported EDL. See "Auto-conforming an EDL" on page 136.
- Perform a live capture from non-controlled sources. See "Performing a Live Capture from a Non-Controlled Source" on page 138.

For certain video formats, you can remove pulldown when capturing. See "Removing Pulldown when Capturing" on page 129.

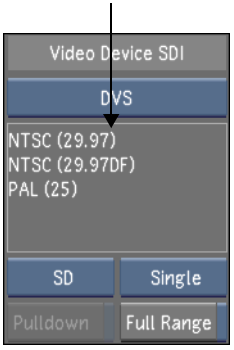
Selecting a Raster for Capture

Whenever capturing material, you must select a raster. For a list of the supported rasters, see "Supported Video SDI and GFX SDI Rasters" on page 164.

NOTE: When you select a drop frame (DF) video format, the timecodes are calculated in Drop Frame mode.

To select a raster for capture:

1. In the Video Device SDI group, toggle the Video/Graphics option box to display your video card (AVIO). See "Capture Menu Options" on page 122.
2. Select an option from the Link Type box. Select Single for a 4:2:2 video signal, and Dual for a 4:4:4 video signal.
3. Toggle the Format option box to the required raster format (SD, HD, Film, or Audio).
4. In the Raster list, select the raster that matches the material to capture.



NOTE: If clicking on a raster in the Raster list does not select the item, that format is not available for capture on that system.

5. (Optional) Remove 3:2 pulldown frames on capture. See "Removing Pulldown when Capturing" on page 129,

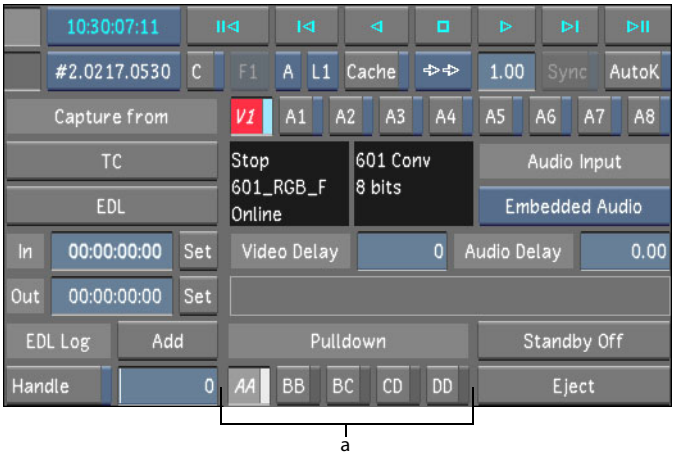
Removing Pulldown when Capturing

Depending on the type of source material you are working from, you may need to remove 3:2 pulldown frames at capture time. For more information about 3:2 pulldown, see "About 3:2 Pulldown" on page 162.

NOTE: Inconstant cadence material (i.e. re-edited material) may produce jittery results.

To remove 3:2 pulldown during capture:

1. Click Pulldown.
2. Use the VTR to shuttle to the first frame you want to capture.



a) Pulldown Field buttons

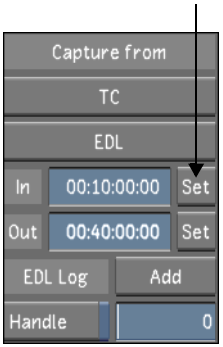
3. Enable the Pulldown Field button that matches the field composition of that frame.

Setting In and Out Points

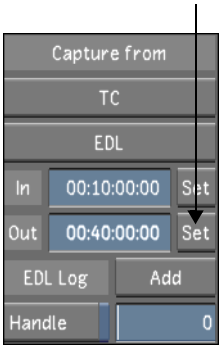
You can set in and out points to select the material to capture from an external video source.

To set in and out points:

1. Set the in point. Use one of the following techniques:
   - Enter the in point timecode by typing the value directly in the In field.
   - Navigate to the in point using the VTR transport controls, and then, in the Capture from group, click Set next to the In field.



2. Set the out point. Use one of the following techniques:
   - Enter the out point timecode by typing the value directly in the Out field.
   - Use the VTR transport controls to navigate to the out point, and then, in the Capture from group, click Set next to the Out field.



Capturing from Timecode

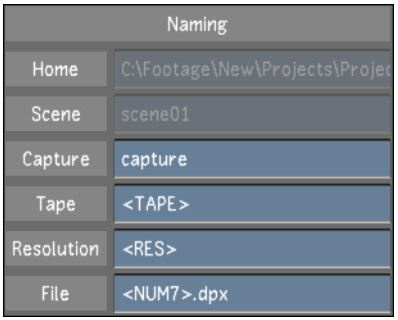
In capturing from timecode mode, you capture one shot by marking the length of the shot with in and out timecode values. You can either enter the timecode values manually or scrub the VTR to the in and out points.

To capture from timecode:

1. Click Editing, and then click Capture.

   The Capture menu appears.

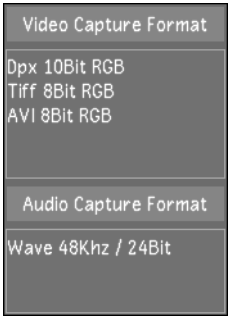
2. In the Naming group, enter values in Capture and Tape. See "Capture Menu Options" on page 122.



3. Select a raster for capture. See "Selecting a Raster for Capture" on page 128.

4. In the Sync Mode list, select a synchronization option. See "Capture Menu Options" on page 122.

5. In the Video Capture Format list, select a file format. See "Capture Menu Options" on page 122.



   NOTE: The AVI format is only available on Windows workstations.

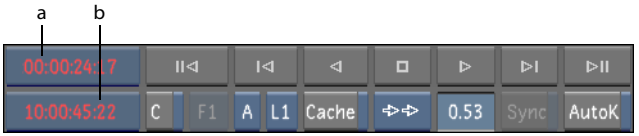
6. (Optional) Set video and audio capture delays. See "Capture Menu Options" on page 122.

7. Select the video and audio tracks to capture. See "Capture Menu Options" on page 122.

8. Set the in and out points. See "Setting In and Out Points" on page 130.

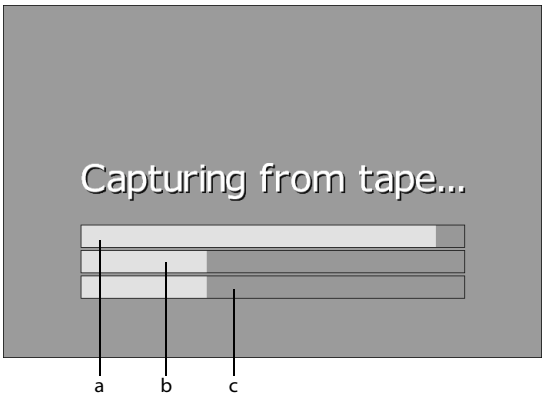
9. In the Capture from group, click TC. When the button turns red, click it again to confirm the action.

The capture starts. The VTR shuttles back to the in point and begins capturing. The VTR's current timecode and remaining timecode are displayed in a field located to the left of the playback controls. While capturing, both timecodes update and appear in red.



a) VTR timecode remaining b) Current VTR timecode

During capture, the message "Capturing from tape..." appears in the Player, and progress bars display shot, tape, and overall progress. There is no video displayed in the Player during capture.



a) Shot progress b) Tape progress c) Overall progress

10. (Optional) To pause the capture process to access additional capture options, press **Esc**, and then do one of the following:

    • Press **Esc** to abort the capture.

    • Press **E** to restart the capture.

    • Press **S** to skip the current tape.

Logging and Batch Digitizing

You can log shots and batch digitize them. To do this, you shuttle through the tape, mark in and out points that correspond to the sections you want to digitize, and then add those sections to a list of shots to digitize all at once.

NOTE: This operation only logs and captures video.

To batch digitize shots from a video tape:

1. Click Editing, and then click Capture.

   The Capture menu appears.

2. Select a raster for capture. See "Selecting a Raster for Capture" on page 128.

3. In the Video Capture Format list, select the file format that you want to create during the capture operation.

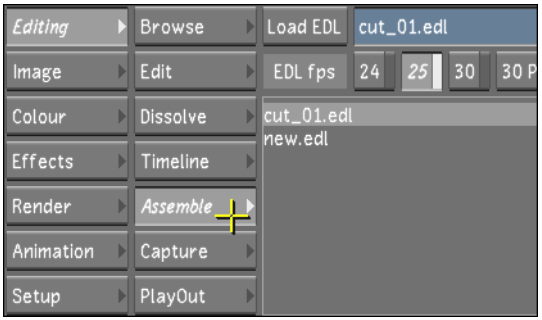
4. In the Naming group, enter values in the Capture and Tape fields. See "Capture Menu Options" on page 122.

⚠ **WARNING:** It is important that you enter a tape name to avoid overwriting previously captured files.

5. Set the in and out points. See "Setting In and Out Points" on page 130.

6. In the EDL Log group, click Add to add the selected material to the events list.

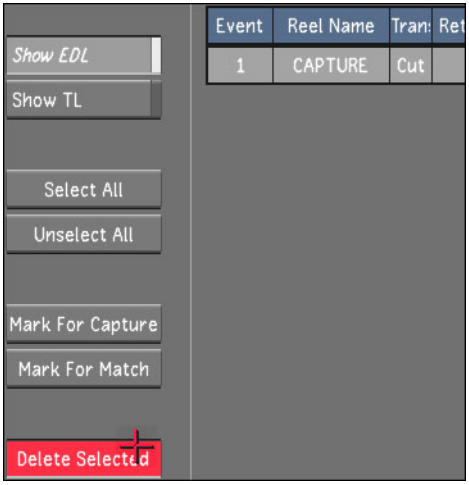
7. To view the events list, click Editing, and then Assemble.



You need to mark the captures before returning to the Capture menu: click in the Event column to select an entry, or click Select All, and then click Mark for Capture.The entries marked for batch digitization appear in the Assemble menu.

8. Continue adding entries to the events list as needed.

9. (Optional) To delete an entry from the events list, select it from the Assemble window and click Delete Selected. Click it a second time to confirm the action. To clear the list, click Delete All.



10. When you are ready to digitize, return to the Capture menu.

11. In the Capture from group, click EDL once and then confirm the action by clicking EDL a second time.

Auto-conforming an EDL

You can automatically digitize material using instructions contained in an EDL, and then assemble the digitized events into a cut which appears in the Storyboard and the Timeline.

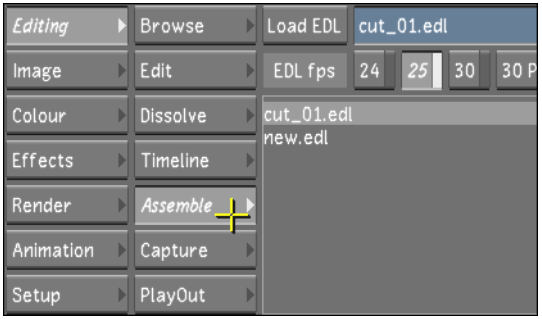
You can batch digitize from an EDL that has been placed in the current scene's *sacc_data* directory. This directory is located under <*HOME*>\<*scenename*>\.

To capture from an EDL:

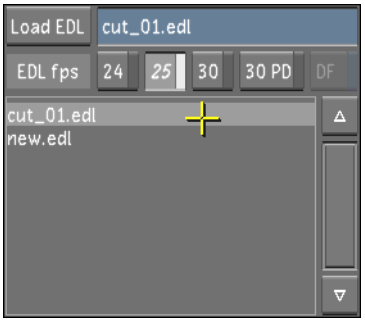
1. Make sure your EDL file is in the scene's *sacc_data* directory.

   NOTE: If the file is in the wrong location, it will not show up in the EDL list.

2. Click Editing, and then click Capture.
3. Select a raster for capture. See "Selecting a Raster for Capture" on page 128.
4. Click Assemble to access the Assemble window.



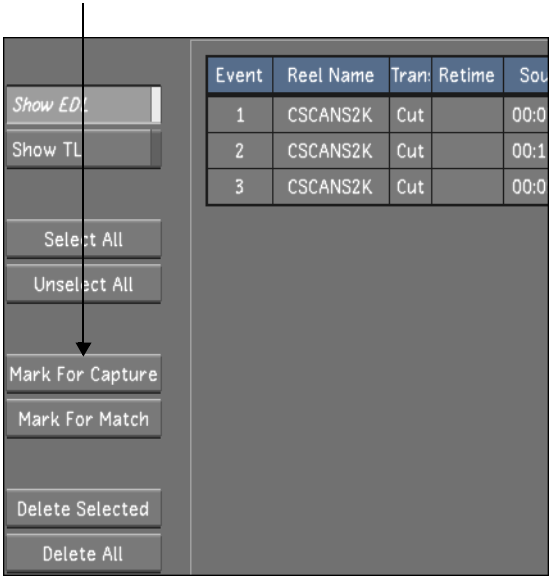
5. Select an EDL file from the EDL list. **CTRL**-click the EDL list to refresh it.



6. Click Load EDL to display the EDL contents in the Assemble menu.

7. Select individual events to capture (**CTRL**+click), a group of events (**SHIFT**+click), or click Select All.

8. Click Mark for Capture.



The selected events are marked as Need Capture under the Media column of the EDL events.

9. Click Capture.

10. In the Video Capture Format list, select the file format that you want to create during the capture operation. See "Capture Menu Options" on page 122.

11. In the Naming group, enter values in the Capture and Tape fields. See "Capture Menu Options" on page 122.

12. Click EDL once, and then confirm the action by clicking EDL a second time.

The Capture starts.

13. When capture is completed, add the new shots to the Shot bin. Refer to "Loading Shots into the Shot Bin" in the "Browsing for Footage" chapter of the *Autodesk Lustre 2009 User Guide*.

14. Go back to the Assemble menu and assemble the EDL. Refer to "Assembling an EDL" in the "Browsing for Footage" chapter of the *Autodesk Lustre 2009 User Guide*.

15. Click Browse to display the Browse menu.

16. Enter the name for the new cut in the Cut name field.

17. Click New.

The new cut is saved and named after the captured EDL.

Performing a Live Capture from a Non-Controlled Source

You can capture live from any non-controlled source. A non-controlled source is any source with an SDI Out, such as another Lustre workstation, or a Smoke or Flame workstation. For example, you have footage residing on a Flame workstation that you need. You can connect to that workstation and input the footage directly, without going through tape output and input.

To perform a live capture from a non-controlled source:

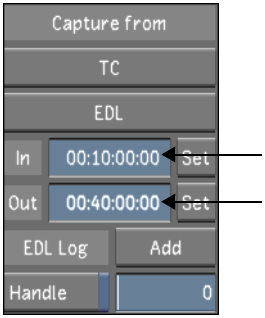
1. Connect the SDI Out of the non-controlled source to the SDI In on the video card of the Lustre workstation.

2. Click Editing, and then click Capture.

3. Select a raster for capture. See "Selecting a Raster for Capture" on page 128.

4. In the Capture from group, enter in and out points in the In and Out fields.

This is done in order to set the duration of the capture. The values can be anything, as long as they reflect the desired duration.

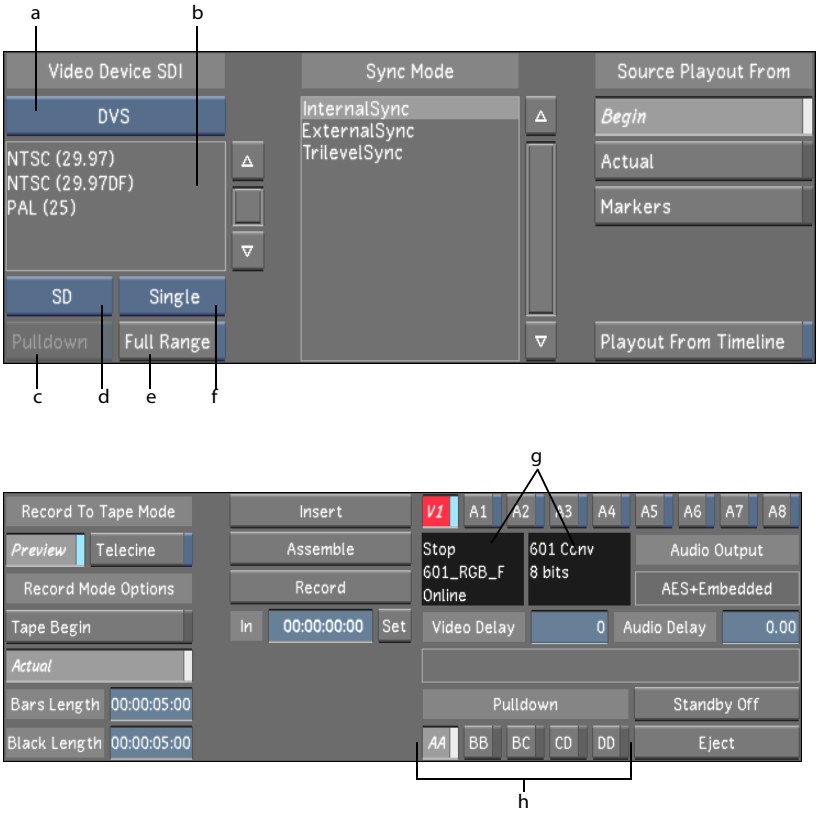


5. To start the capture, **CTRL**+double-click TC.

Playout Menu Options

Use the Playout menu to play out media to a VTR.

The following two graphics represent the Playout menu.



a) Video/Graphics Raster option box
b) Raster list
c) Pulldown button
d) Format option box
e) Full Range button
f) Link Type option box
g) VTR Status panel
h) Pulldown Phase buttons

Video/Graphics option box — Toggle between the video card (AVIO) and the graphics card (GFX/SDI). The Raster list is then populated with rasters for the selected card.

Raster list — With a video card selected in the Video option box (AVIO), select one of the listed rasters to set the resolution and timing for capture. See "Supported Video SDI and GFX SDI Rasters" on page 164.

Format option box — Toggle to display only rasters belonging to a particular footage format in the Raster list.

Select:	To display:
SD	Standard definition rasters.
HD	High-definition rasters.

Select:	To display:
Film	Film rasters.
Audio	Audio rasters (only applicable to GFX/SDI).

Link Type option box — Toggle to display only rasters belonging to a particular link type in the Raster list.

Select:	To display:
Single	The single-link (4:2:2 signal) rasters.
Dual	The dual-link (4:4:4 signal) rasters.
Stereo	The stereoscopy rasters (only applicable to GFX/SDI).

Full Range button — Enable to configure Lustre to play out the full video signal from the video board. If disabled, Lustre plays out only the legal portion of the video signal.

Pulldown button — Enable to configure Lustre to add a pulldown frame when playing out. See "About 3:2 Pulldown" on page 162.

Sync Mode list — Select one of the sync modes.

Select:	To:
InternalSync	Set the sync mode to a free-running internal sync (SD and HD).
ExternalSync	Genlock to an analog sync connected to the sync input (SD only).
TrilevelSync	Genlock to a trilevel sync connected to the sync input (HD only).

Source Playout From buttons — Select a starting point for the playout.

Enable:	To select:
Begin	The start of the timeline as the starting point for playing out to tape.
Actual	The current position of the positioner as the starting point for playing out to tape.
Markers	The marker position as the starting point for playing out to tape.

NOTE: Markers are In/Out marks that you can set to define the playout operation. See "Defining In and Out Markers when Playing Out to Tape" on page 145.

Record To Tape Mode buttons — Allow you to configure Lustre to display what the edited footage would look like without recording to VTR or to play out the current timeline and send the source timecode to the VTR.

Enable:	To:
Preview	Preview the footage that will be recorded without recording to tape.
Telecine	Record the footage to tape along with its original source timecode and black media between shots. See "Writing Telecine-Style Tape" on page 155.

Record Mode Options buttons — Define where on the tape Lustre begins recording when using the Record playout mode. For more information about Record Mode options, see "Playing Out to a VTR" on page 143.

Enable:	To begin recording:
Tape Begin	At the beginning of the tape.
Actual	At the position of the current frame on the tape.

Bars Length field — Defines the duration (in seconds) of the colour bars recorded to the video tape before the recorded footage begins.

Black Length field — Defines the duration (in seconds) of the leader black recorded to the video tape before the recorded footage begins.

Insert button — Initiates recording when inserting video and/or audio onto a tape that already contains material.

Assemble button — Initiates recording of both video and audio signals on all tracks to a tape when you need to record beyond the point where the valid control track ends.

Record button — Initiates recording of both video and audio signals on all tracks when recording an entire cut to tape.

NOTE: Use the Record button to write to a new tape with no content. When you record in Record mode, Lustre writes bars and black media before the playout.

In Point field — Enter the timecode of the tape where the recording will begin.

NOTE: When you configure the in point, the out point is automatically set to the timecode that equals to sum of the clip duration added to the in point.

In Point Set button — Sets the current timecode of the tape as the in point.

V button — Enable to play out the video track when playing out to a video source. Disable to play out audio only.

A1 - A8 buttons — Enable the audio tracks (A1-A8) to play out.

NOTE: You can only specify specific video and audio tracks to play out if you are in Insert mode.

VTR Status panel — Displays VTR status messages when Lustre is connected to a VTR.

Audio Output status — Audio is always outputted to both AES and Embedded Audio.

Video Delay field — Enter a frame number to delay the video playout for that number of fields. For example, if you set the field to 10, playout begins 10 frames after the in point. If you set the field to -10, playout begins 10 frames before the in point.

Audio Delay field — Enter a frame number to delay the audio playout for that number of fields. For example, if you set the field to 10, audio playout begins 10 frames after the in point. If you set the field to -10, audio playout begins 10 frames before the in point.

NOTE: The Video and Audio Delay fields compensate for frame delays that may exist while transferring shots from Lustre to the output device.

Standby Off button — Removes the VTR heads from the tape.

Eject button — Ejects the tape in the VTR.

Playing Out to a VTR

Use the Playout tool to play out frames from Lustre so that they can be recorded to an external device.

NOTE: If you play out Telecine-style to tape, you can only play out in Assemble mode.

In the majority of cases, you will play out rendered frames to a VTR. See "Rendering Shots" on page 111. There are exceptions:

- The creation of real-time deliverables using source material. See "Creating Real-Time Deliverables from the Timeline or Rendered Material" on page 155.
- GPU playout from the timeline. See "Play Out from Timeline with GPU Acceleration" on page 160.

There are three modes for playing out to a VTR:

- In Insert mode, you record video only, audio only, or a combination of both, to a tape that already contains material (either pre-striped with black or actual video material with a valid control track).
- In Assemble mode, you can add video to the end of previously-recorded material.
- In Record mode, you can play out video to a blank tape or a tape that contains existing material. Everything on the tape is overwritten when recording.

For some video formats, you can add 3:2 pulldown during the playout operation. See "About 3:2 Pulldown" on page 162.

Playout Workflow

The recommended steps for playing out video to a VTR are as follows.

Step:	Refer to:
1. Render the timeline in the appropriate resolution for the VTR to which you want to play out.	"Rendering Shots" on page 111.
2. Use the transport controls to cue up the VTR to the in point.	"Controlling the VTR" on page 126.
3. (Optional) Cue up the timeline.	Refer to "Navigating through Shots" in the "Playing, Viewing, and Sorting Shots" chapter in the *Autodesk Lustre 2009 User Guide*.
4. Select a playout mode.	"Playing Out to a VTR" on page 143.

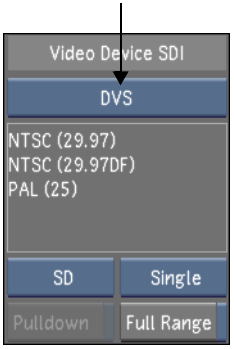
Selecting a Raster for Playout

When playing out to an external device, you must select a raster. See "Supported Video SDI and GFX SDI Rasters" on page 164.

NOTE: When you select a drop frame (DF) video format, the timecodes are calculated in Drop Frame mode.

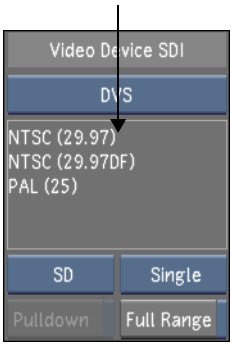
To select a raster for playout:

1. In the Video Device SDI group, toggle the Video/Graphics raster option box to display your video card (AVIO). See "Playout Menu Options" on page 139.



2. Select an option from the Link Type box. Select Single for a 4:2:2 video signal, and Dual for a 4:4:4 video signal.
3. Toggle the Format option box to the required raster format (SD, HD, Film, or Audio).

4. In the Raster list, select the raster for playout.



NOTE: If clicking on a raster in the Raster list does not select the item, that format is not available for capture on that system.

5. (Optional) If you need to add 3:2 pulldown frames when playing out, enable Pulldown.

   The pulldown is added to the played out video. The first frame played out becomes the AA frame in the pulldown sequence. See "About 3:2 Pulldown" on page 162.

Defining In and Out Markers when Playing Out to Tape

Users can create a video tape from a specific segment of the timeline by setting in and out points for playing out to tape. This is done using the same hot keys as for setting in and out points for playing shots in the Player. A new option has been added to the Editing > Playout menu that lets you select the marked section for playout to tape.

To define in and out markers when playing out to tape:

1. Go to the start and end frame and mark the in and out points.

Press:	To:
SHIFT+I	Mark an in point.
SHIFT+O	Mark an out point.
SHIFT+L	Clear in and out points.

2. Click Editing, and then click Playout to display the Playout menu.

3. Click Markers.

NOTE: If you enable an in point only, playout begins at that point and goes to the end of the timeline. If you enable an out point only, playout begins at the start of the timeline and ends at the out point.

Recording in Insert Mode

Use Insert mode when you want to insert video only, audio only, or both video and audio onto a tape that already contains material. The entire area to which you are recording must have a valid, continuous control track, as this mode only plays out the video (existing timecode and audio are not affected).

NOTE: When recording to tape, you can only configure specific video and audio tracks to play out if you are in Insert mode.

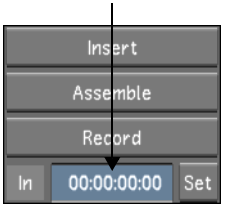
To record in Insert mode:

1. Set the VTR to Regen timecode.
2. Before you can play out to a VTR, you must render the timeline at the appropriate video resolution. See "Rendering Shots" on page 111 and "Playout Workflow" on page 144.
3. Click Editing, and then click Playout to display the Playout menu.
4. Select a raster for playout. See "Selecting a Raster for Playout" on page 144.
5. In the Sync Mode list, select the synchronization mode. See "Playout Menu Options" on page 139.
6. (Optional) To record only a portion of the timeline, use markers to define where, in the timeline, you wish to start and stop recording to tape. See "Defining In and Out Markers when Playing Out to Tape" on page 145.

7. In the Source Playout From group, determine where the playout operation starts.

Click:	To start the playout:
Begin	From the start of the current timeline.
Actual	At the current frame.
Markers	At the in marker in the timeline, and stop at the out marker.

8. In the In field, enter the tape timecode where the video is to be inserted.



HINT: To find the desired timecode more quickly, click the Source Timecode field next to the playback controls while still in the Playout menu. The playback controls and Source Timecode field turns blue to indicate that they can be used to control the VTR. Scrub to the desired timecode, then enter it in the In field.

9. (Optional) In the Record To Tape Mode group, enable Preview.

With Preview enabled, your footage is played out in the Player, but nothing is written to tape. The Insert button turns green after the first click to show that the action is non-destructive.

10. (Optional) Configure video and audio record delay. See "Playout Menu Options" on page 139.

11. Configure Lustre to record specific video and audio tracks to tape. See "Playout Menu Options" on page 139.

12. Click Insert, and then click it again to confirm the action.

HINT: To record a single shot as opposed to the entire timeline, select the shot you want to play out and hold down **SHIFT** while clicking Insert.

The playout operation begins.

Recording in Assemble Mode

Use Assemble mode when recording on a tape that contains a valid control track up until a certain point, but you need to record beyond that point. In Assemble mode, you are attaching video and audio to existing material. For example, yesterday you played out your work onto a blank tape using Record mode. Today, you have completed additional work and would like to add it to the end of the tape. In this case, you cue the tape to the in point (at a point where there is a valid control track) and begin playing out in Assemble mode. The timecode is continued from the previously recorded material.

NOTE: When recording to tape, you can only configure specific video and audio tracks to play out if you are in Insert mode.

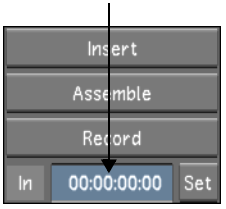
To record in Assemble mode:

1. Set the VTR to Regen timecode.
2. Before you can play out to a VTR, you must render the timeline at the appropriate video resolution. See "Rendering Shots" on page 111 and "Playout Workflow" on page 144.
3. Click Editing, and then click Playout to display the Playout menu.
4. Select a raster for playout. See "Selecting a Raster for Playout" on page 144.
5. In the Sync Mode list, select the synchronization mode. See "Playout Menu Options" on page 139.
6. (Optional) To record only a portion of the timeline, use markers to define where, in the timeline, you wish to start and stop recording to tape. See "Defining In and Out Markers when Playing Out to Tape" on page 145.

7. In the Source Playout From group, determine where the playout operation starts.

Click:	To start the playout:
Begin	From the start of the current timeline.
Actual	At the current frame.
Markers	At the in marker in the timeline, and stop at the out marker.

8. In the In field, enter the tape timecode where the video is to be edited.



HINT: To find the desired timecode more quickly, click the Source Timecode field next to the playback controls while still in the Playout menu. The playback controls and Source Timecode field turns blue to indicate that they can be used to control the VTR. Scrub to the desired timecode, then enter it in the Tape Rec IN field.

9. (Optional) In the Record To Tape Mode group, enable Preview.

With Preview enabled, your footage is played out in the Player, but nothing is written to tape. The Insert button turns green after the first click to show that the action is non-destructive.

10. (Optional) Enable Telecine. See "Writing Telecine-Style Tape" on page 155.

11. (Optional) Configure video and audio record delay. See "Playout Menu Options" on page 139.

12. Click Assemble, then confirm the action.

HINT: To record a single shot as opposed to the entire timeline, select the shot you want to play out and hold down **SHIFT** while clicking Assemble.

The playout operation begins.

Recording in Record Mode

Use Record mode to record an entire cut to a VTR. Record mode overwrites the entire contents of the tape (including timecode). To use Record mode, you must set the VTR timecode to Preset or Auto timecode.

You do not have to pre-stripe the tape with timecode when using Record mode.

You have the option of specifying a start timecode value, and including leader black and colour bars. Leader black and colour bars are added to the start of the program (on tape).

NOTE: In Record mode, it is not possible to record a subset of the total available tracks to tape; all tracks are recorded to tape in this mode.

At least 10 seconds of black are always recorded to the video tape before the footage. Also, footage always starts on the minute. Lustre pads the leader with additional black and colour bars to ensure that the video always begins on the minute. The following examples illustrate how this is calculated.

Example 1

- Start Timecode: 00:59:00:00
- Min Colourbar Length: 15 seconds
- Black Length: 15 seconds

To begin, Lustre always records 10 seconds of black from 00:59:00:00 to 00:59:10:00 (this length is locked and is always recorded).

After the initial black, colour bars are recorded from 00:59:10:00 to 00:59:45:00 (the Minimum Colourbar Length of 15 seconds is surpassed).

Finally, black is recorded from 00:59:45:00 to 01:00:00:00 (the Black Length value of 15 seconds must be respected) and the video material begins exactly at 01:00:00:00.

Example 2

- Start Timecode: 00:59:30:00
- Min Colourbar Length: 20 seconds
- Black Length: 10 seconds

To begin, Lustre always records 10 seconds of black from 00:59:30:00 to 00:59:40:00 (this length is locked and is always recorded).

After the initial black, colour bars are recorded from 00:59:40:00 to 01:00:50:00 (the Minimum Colourbar Length of 20 seconds is surpassed).

Finally, black is recorded from 01:00:50:00 to 01:01:00:00 (the Black Length value of 10 seconds must be respected) and the video material begins exactly at 01:01:00:00.

In this case, the Minimum Colourbar Length and the Black Length (which combine to add up to 30 seconds) does not fit into the gap between 00:59:40:00 and 01:00:00:00 (20 seconds). Because video must always start on the minute, additional colour bars are added so that the material starts at the next minute.

To record to a VTR in Record mode:

1. Before you can play out to a VTR, you must render the timeline at the appropriate video resolution. See "Rendering Shots" on page 111 and "Playout Workflow" on page 144.
2. Click Editing, and then click Playout to display the Playout menu.
3. Select a raster for playout. See "Selecting a Raster for Playout" on page 144.
4. In the Sync Mode list, select the synchronization mode. See "Playout Menu Options" on page 139.
5. (Optional) To record only a portion of the timeline, use markers to define where, in the timeline, you wish to start and stop recording to tape. See "Defining In and Out Markers when Playing Out to Tape" on page 145.

6. In the Source Playout From group, determine where the playout operation starts.

Click:	To start the playout:
Begin	From the start of the current timeline.
Actual	At the current frame.
Markers	At the in marker in the timeline, and stop at the out marker.

7. (Optional) In the Record To Tape Mode group, enable Preview.

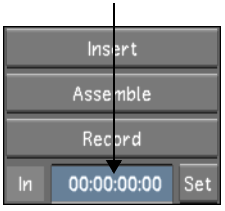
With Preview enabled, your footage is played out in the Player, but nothing is written to tape.

8. In the Record Mode Options group, determine where on the video tape you want to record to:

   • Enable Tape Begin to rewind to the start of the tape, and then begin the playout.

   • Enable Actual to start the playout operation at the current frame of the tape.

9. Enter the start timecode in the In field.



10. Enter the minimum colour bar length and the minimum Black length in the Bars Length and Black Length fields, respectively.

11. (Optional) Configure the video and audio record delay. See "Playout Menu Options" on page 139.

12. Click Record, and then click it again to confirm the action.

The playout operation begins.

VTR Emulation

Lustre to emulate a VTR for playback in real time, but not capture. When configured to emulate a VTR, Lustre can be controlled, using an RS-422 interface, by a third-party application or device. You control Lustre VTR emulation from the application or device that treats Lustre as a VTR device. Lustre supports SD and HD emulators.

The RS-422 commands that you can use for VTR emulation are summarized as follows:

- Play
- Stop
- REW
- FF
- PREROLL
- PREROLL TIME PRESET
- SHUTTLE
- JOG
- VARPLAY
- Reset TC IN
- Reset TC OUT
- Mark TC IN
- Mark TC OUT
- Set TC IN
- Set TC OUT
- AUTO mode ON
- AUTO mode OFF
- TC IN+
- TC IN-
- TC OUT+
- TC OUT-
- CUE to (given) TC
- CUE to TC OUT
- EDIT channels preset
- Eject

NOTE: Unless otherwise configured by the controller device, the pre-roll time on the Lustre VTR emulator defaults to seven seconds with each video initialization.

To operate Lustre as a VTR:

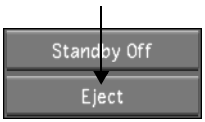
1. Connect Lustre to the breakout box by doing one of the following:
   - If Lustre is running on the IBM™ IntelliStation® Z Pro 6223 or the HP xw8400, connect to the B port on the DVS Centaurus breakout box.
   - If Lustre is running on the HP xw8600, connect to the B port on the AJA breakout box.
2. Connect the master application or device to Lustre on the patch panel using a straight pin-to-pin serial cable. A cross-cable will not work.

WARNING: Save your grade before editing your project, or you will lose any unsaved work.

3. Launch Lustre and navigate to the Engineering page of the Project Management settings (See "Engineering menu" on page 22).
4. Enable VTR Emulator.
5. Use the Offset in Frames slider to set the number of frames you wish to shift ahead as footage is transferred from the controlling device to Lustre. Enter a negative number of frames to shift the clip backwards.
6. Click Save Project.
7. Click Editing, and then click Playout to display the Playout menu.
8. Select a raster for playout. See "Selecting a Raster for Playout" on page 144.
9. Prior to playout from the VTR emulator, perform the following tasks:
   - Add a header of at least five seconds to the start of the Storyboard.
   - Verify that the start Timecode begins at the end of the header, and not at 00:00:00:00. This is necessary because the Lustre VTR emulation does not provide a pre-roll outside of the boundaries of the existing Storyboard.

To disable VTR emulation:

1. Click Eject.



2. To re-initialize, either switch between the Editing Capture and Playout menus, or re-select the DVS raster.

Writing Telecine-Style Tape

The Telecine feature allows you to emulate grading with telecine tape. The original source timecodes are written to tape, and each shot is separated by a black sequence of duration equal to Black Length value field.

Before you can use the Telecine feature, you must configure the VTR and the breakout box.

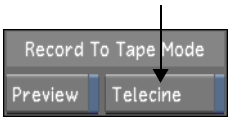
To configure the VTR:

➤ Set the VTR's timecode configuration to:

- Record run
- Preset Timecode Generation

To output telecine-style tape:

1. Enable Telecine.



2. Sort the timeline in C mode (with or without Head/Tail) using the C mode option found in the Editing > Assemble > Sort Modes menu.
3. Click Assemble once, and then a second time to confirm the action.

Playout and GPU Acceleration

It is possible to play out real-time content to tape without having to first process by using the power of the graphical processing unit, or GPU.

- Use Real-time deliverables. See "Creating Real-Time Deliverables from the Timeline or Rendered Material" on page 155
- Play out from the timeline. See "Play Out from Timeline with GPU Acceleration" on page 160

Creating Real-Time Deliverables from the Timeline or Rendered Material

You can record 10-bit, multi-format video deliverables to tape from existing source or rendered footage without having to perform additional render passes. These deliverables are processed in real time and are subject to high-quality resizing.

NOTE: Support for real-time deliverables depends on the version of the graphics card installed on your system. See the Lustre 2009 Release Notes for details.

Real-time deliverables can include specific primary grading (excluding curves), most reposition types, and hardware LUTs. Animation on primary grading, and on panning and scanning is also available and is performed in real time during output to tape. Modifications for real-time deliverables are displayed in Deliverable (D) view and do not affect the master version's Output view or rendered version's Print view. When playing out, you can use either source or rendered material.

NOTE: Real-time deliverables playout cannot include output primary grading, secondary grading, or rotations. These types of modifications must be rendered or copied to the real-time deliverables module prior to playout. See "Sharing Modifications Between Setups and Grades" on page 160.

For example, you could use 2K rendered footage to create an HD tape and a DVD version without having to render again. Alternately, you could use source material and apply primary grading and repositioning that only affects the real-time deliverable, and does not require a render pass prior to playing out.

Creating Setups for Real-Time Deliverables

After you switch to Real-Time Deliverables mode, the work you perform on your shot is no longer saved to the grade. Instead, it is saved to a real-time deliverables setup file. This file contains grading and reposition information that is separate from the grade file. The setup file is an XML-based grade file, which allows you to use it with other systems.

NOTE: You can share grading between real-time deliverables setups and grade files. See "Sharing Modifications Between Setups and Grades" on page 160.

Although real-time deliverables setups are linked to the grade file, you can apply a setup to a grade linked with a different cut.

After the setup has been created and loaded to a grade, you can switch back to the Playout menu and play out to tape in either Insert or Assemble mode.

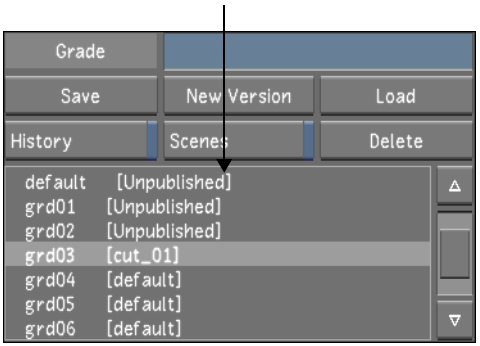
HINT: Enabling the D button also allows you to send a 10-bit buffer to the SDI output.

To create a real-time deliverables setup:

1. In the Main menu, click Setup, and then click Grade.

   The Grade menu appears.

2. From the Grade list, load the grade from which you want to create a real-time deliverables setup.



3. Click D.

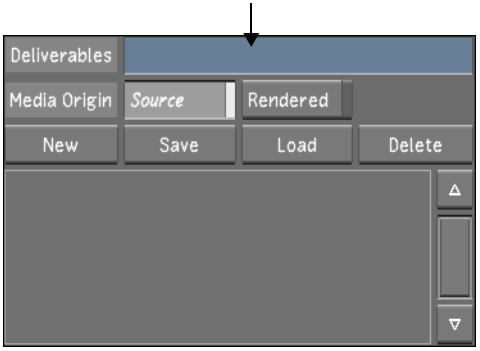
The button automatically switches you to Real-Time Deliverables view mode, and enables GPU processing. See "GPU Acceleration" on page 91.

NOTE: If the screen shows a red X instead of an image, the enabled Media Origin contains no media. The following step tells you what to do.

4. Select the media origin to be used during playout. Enable Source for original, unrendered material. Enable Rendered for rendered material.

NOTE: Unrendered changes made to source material will not be applied to setups. Also, when you select Source (O scans) as the media origin, Grade file settings are bypassed.

5. In the Deliverables field, enter a name for the setup.



6. Click New. The setup name is added to the list of setups for the grade.
7. (Optional) Perform reposition modifications such as panning and scanning, resizing, and repositioning. Refer to the "Repositioning Images" chapter of the *Autodesk Lustre 2009 User Guide*.

   NOTE: Rotations cannot be included in real-time deliverables setups.
8. (Optional) Perform input primary colour grading. Refer to the "Primary Colour Grading" chapter in the *Autodesk Lustre 2009 User Guide*.

   NOTE: Only input primary grading is permitted for real-time deliverables setups.
9. (Optional) Apply a HW LUT, using a grade file to store it. Real-time deliverables do not save Print Lut reference. Refer to "Applying Print LUTs for Viewing" in the "Monitor Calibration" chapter of the *Autodesk Lustre 2009 User Guide*.

   NOTE: When creating real-time deliverables setups, you can only apply a HW LUT to the main monitor. In other words, you can only enable the button labelled 1.
10. Return to the Setup Grade menu.
11. Click Save to save the setup.

    The setup is saved to the scene's *sacc_data* folder as an XML file. The file uses the real-time deliverables setup name, preceded by the name of the grade on which it is based. For example, if the grade name is *grd01*, and the setup name is *My_HD*, the XML grade file is *[grd01]My_HD.deliv.xml*.

    HINT: You can save different versions of the same setup according to your mastering requirements.

Once a setup exists, it can either be loaded to the grade for which it was created, or loaded to a different grade.

To load a setup to the grade for which it was created:

➤ In the Deliverables section of the Grade menu, select a setup from the list and click Load.

This loads both the grade and the setup.

To load a setup to a different grade:

1. In the Grade menu, load the grade on which you want to apply the existing deliverables.
2. Select a setup from the list, and press **CTRL** while clicking Load.

   This loads the setup to the grade.

To rename a setup:

1. Middle-click the setup name.
2. Enter the new name, and then press **ENTER**.

To delete a setup:

➤ Select a setup from the list, and click Delete.

Resizing Shots Prior to Playing Out

Before you play out real-time deliverables, resize your shots to ensure that they properly conform to the destination output format. Refer to "Resizing Shots" in the "Rendering" chapter of the *Autodesk Lustre 2009 User Guide*.

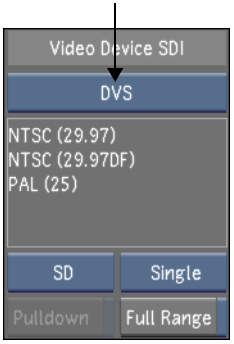
Playing Out Real-Time Deliverables to Tape

After a setup has been created and loaded to the desired grade, and resizing has been performed, you are ready to play out to tape.

To play out real-time deliverables to tape:

1. In the Main menu, click Editing, and then click Playout.

   The Playout menu appears.
2. Toggle the Video/Graphics raster option box to display the graphics card (GFX/SDI).



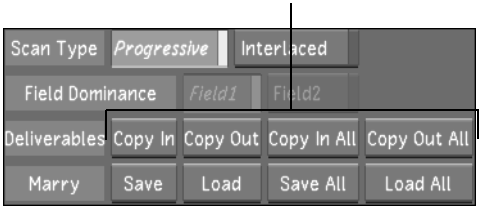
3. Toggle the Link Type option box to the required link type (Single or Dual).
4. Toggle the Format option box to the required raster format (SD, HD, Film, or Audio).
5. In the Raster list, select a raster.
6. Play out to tape in either Insert or Assemble mode. See "Recording in Insert Mode" on page 146 and "Recording in Assemble Mode" on page 148.

Sharing Modifications Between Setups and Grades

By default, unrendered changes to a grade file are not applied to real-time deliverables setups, and modifications made to a setup are not copied back to the grade. However, you can force changes to be copied back and forth either on a shot-by-shot basis or for the entire scene.

To share modifications between setups and grades:

➤ In the Grade menu, click one of the Deliverables buttons.



Click:	To transfer:
Copy In	Modifications made to the current shot from the grade to the setup.
Copy In All	Modifications made to the scene from the grade to the setup.
Copy Out	Modifications made to the current shot from the setup to the grade.
Copy Out All	Modifications made to the scene from the setup to the grade.

Play Out from Timeline with GPU Acceleration

NOTE: When playing out from source, playback performance may be impacted depending on the grading applied to the current shot. If frames are dropped during play out, Lustre recues the VTR to the last known frame laid down to tape.

You can now use GPU acceleration to play out source material in real time with Print LUT, primary and secondary grading, and GPU-accelerated plugins applied. While Real-Time Deliverables mode allows you to play out directly to tape, it only permits primary grading, resizing, pan and scan, and LUT processing. The Playout From Timeline lets you play out source material containing secondary grading without having to first perform a rendering pass.

By enabling the Playout From Timeline function in project settings or in the Playout menu, and by enabling GPU acceleration, you can play out from Output view mode and use all features currently supported by enhanced GPU acceleration.

NOTE: If you enable the Playout From Timeline function in project settings, playing out from the Output view is the default for this project. If you enable the Playout From Timeline function from within the Playout menu, this setting applies only for the current session.

- For more information about GPU acceleration, see "GPU Acceleration" on page 91.
- For more information about Output view mode, refer to "Setting Image View Options" in the "Playing, Viewing, and Sorting Shots" chapter of the *Autodesk Lustre 2009 User Guide*.

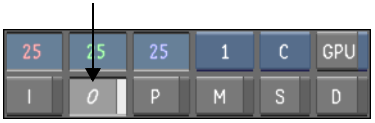
If you want to play out at a different resolution than your timeline, use the real-time deliverable solution. But if you want to play out content with complex grading, use Play out from Timeline, in which case you are limited to using the same resolution as the source.

To play out source material to tape with all features supported by GPU acceleration mode:

1. Enable the Playout From Timeline setting by doing one of the following:
   - In your project settings, enable Playout from Timeline in the Engineering menu. See "Engineering menu" on page 22.
   - In the Playout menu, enable Playout from Timeline. See "Playout Menu Options" on page 139.

   NOTE: When you define settings in Project Management, these settings become the default settings whenever this project is loaded. When you define settings in the application (that is, not in the project settings), Lustre reverts to the project setting defaults upon reboot.

2. Set the Player to the O view by clicking O.



   NOTE: You must set the Player to the O view to be able to record unrendered media to tape and to use GPU acceleration.

3. Enable GPU acceleration by clicking GPU or by pressing **Y** on your keyboard.
4. Play out to the VTR. See "Playing Out to a VTR" on page 143.

Expected Performance

Real-time playback is not guaranteed when you play out directly to tape with GPU acceleration. The playback speed indicator in the GUI is a good indicator of what to expect when you lay down the timeline to tape. If frames are dropped when you play back your timeline on the SDI monitor, the same is likely to occur when you play out to tape.

You can expect good playback with no dropped frames when you ensure the following:

• HD or SD format is used for both capture and output (no resize applied).

• Up to four secondaries with keys are used, with a maximum of one geometry per secondary.

• A 3D Mesh LUT is enabled.

• GFX/SDI is enabled in the Playout menu.

Regardless of whether or not you conform to all conditions stated above, some animations may not play back in real time.

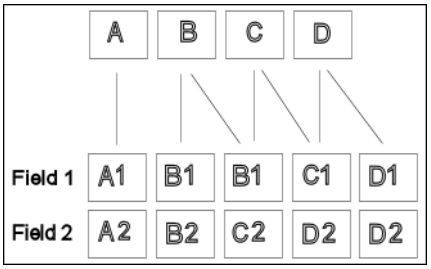
NOTE: Support for direct playout to tape from GPU acceleration depends on the version of the graphics card installed on your system.

About 3:2 Pulldown

When capturing from or playing out to a VTR, you may want to convert footage using a 3:2 pulldown raster if the incoming video is NTSC or 1080i HD.

When film, which plays at 24 fps, is telecined to either NTSC or 1080i HD video, which plays at 29.97 fps, an extra 'pulldown frame' is added for every four film frames. This is because a straight 1:1 playback of film frames at NTSC or interlaced HD speeds results in a faster than appropriate playback. The telecine machine used to transfer film to video adds the pulldown frame by taking four consecutive film frames (A, B, C, and D) and performing a telecine to five interlaced video frames (A1A2, B1B2, B1C2, C1D2, and D1D2). Consequently, the pulldown insertion process creates two hybrid frames (B1C2 and C1D2), as shown in the following diagram.

NOTE: The '1' and '2' suffixes after the frame letters denote the field number in each interlaced frame of NTSC or 1080i HD video. They do not represent a sequence over time.



When you capture NTSC or 1080i HD video previously telecined from film, you may want to conform with 24 fps progressive footage. In this case, you should capture the NTSC footage and simultaneously remove the 3:2 pulldown frame. When a 3:2 video SDI raster is selected, you can

select the first pulldown field in the footage by clicking on the appropriate Pulldown Field button in the Capture menu. Then, the five interlaced NTSC frames are reconfigured into four progressive frames.

When you are ready to record to a VTR, you might need to record to NTSC or 1080i HD video. If your cut runs at 24 fps, you need to configure Lustre to add a 3:2 pulldown frame to bring the framerate up to 29.97 fps. In this case, use the Pulldown Field button in the Playout menu to specify which of the five pulldown fields will be the first in the sequence to be recorded to tape. Lustre will add the additional 3:2 pulldown frame for every four frames starting at the specified field.

Converting Logarithmic to Linear

You can output your film scans to video once you have completed the film grading. There are two general workflows you can use to convert logarithmic images to linear ones:

- Using the Render Viewing option
- Creating manually a Log-to-Lin conversion LUT

To convert logarithmic images to linear ones using the Render Viewing option:

1. Use the same project and the same source footage.
2. Switch to Lin mode. Refer to "Setting Logarithmic or Linear Mode" of the "Project Management" chapter of the *Autodesk Lustre 2009 User Guide*.
3. Colour grade the footage for video.
4. In the Render > Local menu, enable Viewing in the Rendering group, and then adjust the black, white, and gamma as needed.
5. Render the files in the correct video resolution. See "Rendering Shots" on page 111.

   NOTE: When Render Viewing is ON, the output render format is set automatically to 8-bit BMP files.

6. Play out the rendered frames to record them on an appropriate VTR.

To convert logarithmic images to linear ones by manually creating a Log-to-Lin conversion LUT:

1. Use the same project and the same source footage.
2. Switch to Lin mode. Refer to "Setting Logarithmic or Linear Mode" in the "Project Management" chapter of the *Autodesk Lustre 2009 User Guide*.

When you switch to Lin mode, a Log-to-Lin conversion LUT is applied to the images automatically.

3. If needed, access the Input LUT menu and adjust the parameters of the default Log-to-Lin conversion.
4. Switch off monitor calibration (since the final render will also be seen on a monitor) and turn off any Print LUTs.
5. Use the Render Output menu to adjust the white, black, and gamma as needed.
6. Colour grade the footage for video.
7. Render the files in the correct video resolution. See "Rendering Shots" on page 111.
8. Play out the rendered frames to record them on an appropriate VTR.

Supported Video SDI and GFX SDI Rasters

When capturing from or recording to a VTR, you must select the appropriate raster. The raster defines the video capture/playout SDI timing and the graphic SDI timing. Lustre supports many DVS and AJA video SDI rasters and GFX SDI graphics rasters. See "Video SDI Rasters" on page 164 and "GFX SDI Rasters" on page 167.

In past releases of Lustre, you had to define a colour conversion matrix in a configuration file. Starting with Lustre 2009, you no longer need to do this. The correct conversion matrix is automatically configured when you select a video SDI raster. The matrix name will be displayed in the VTR status box located in the Editing > Capture and Editing > Playout menus.

NOTE: You cannot enable both a GFX and a Video raster, except when working with audio, when you can use a DVS/AJA raster for audio, and a GFX for graphics.

Video SDI Rasters

The following table lists the video SDI rasters that are available for capture and playout in Lustre.

NOTE: The Lustre HD Station does not support bit depths greater than 10-bit, input resolutions greater than 2K, or output resolutions greater than 1920x1080.

Video Type:	Pulldown:	Link Type:	Video Signal:
NTSC (29.97)	No	Single	29.97 fps, 59.94 Hz, interlaced, 720x486, NDF timecode, YUV 4:2:2 data.
NTSC (29.97)	Yes	Single	29.97 fps, 59.94 Hz, interlaced, 720x486, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.

Video Type:	Pulldown:	Link Type:	Video Signal:
NTSC (29.97DF)	Yes	Single	29.97 fps, 59.94 Hz, interlaced, 720x486, DF timecode, YUV 4:2:2 data.
NTSC (29.97DF)	No	Single	29.97 fps, 59.94 Hz, interlaced, 720x486, pulldown insert on playout and removal on capture, DF timecode, YUV 4:2:2 data.
PAL (25)	No	Single	25 fps, 50 Hz, interlaced, 720x576, YUV 4:2:2 data.
720p (50)	No	Single	50 fps, progressive, 1280x720, YUV 4:2:2 data.
720p (50)	No	Dual	50 fps, progressive, 1280x720, RGB 4:4:4 data.
720p (59.94)	No	Single	59.94 fps, progressive, 1280x720, NDF timecode, YUV 4:2:2 data.
720p (59.94DF)	No	Single	59.94 fps, progressive, 1280x720, DF timecode, YUV 4:2:2 data.
720p (59.94)	No	Dual	59.94 fps, progressive, 1280x720, NDF timecode, RGB 4:4:4 data.
720p (59.94DF)	No	Dual	59.94 fps, progressive, 1280x720, DF timecode, RGB 4:4:4 data.
720p (60)	No	Single	60 fps, progressive, 1280x720, YUV 4:2:2 data.
720p (60)	No	Dual	60 fps, progressive, 1280x720, RGB 4:4:4 data.
1080PsF (23.98)	No	Single	23.98 fps, 72 Hz, segmented frames, 1920x1080, YUV 4:2:2 data.
1080PsF (23.98)	No	Dual	23.98 fps, 72 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080p (23.98)	No	Single	23.98 fps, progressive, 1920x1080, YUV 4:2:2 data
1080p (23.98)	No	Dual	23.98 fps, progressive, 1920x1080, RGB 4:4:4 data
1080PsF (24)	No	Single	24 fps, 48 Hz, segmented frames, 1920x1080, YUV 4:2:2 data.
1080PsF (24)	No	Dual	24 fps, 48 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080p (25)	No	Single	25 fps, progressive, 1920x1080, YUV 4:2:2 data
1080p (25)	No	Dual	25 fps, progressive, 1920x1080, RGB 4:4:4 data
1080p (29.97)	No	Single	29.97 fps, progressive, 1920x1080, NDF timecode, YUV 4:2:2 data
1080p (29.97)	No	Dual	29.97 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data
1080p (29.97DF)	No	Single	29.97 fps, progressive, 1920x1080, DF timecode, YUV 4:2:2 data
1080p (29.97DF)	No	Dual	29.97 fps, progressive, 1920x1080, DF timecode, RGB 4:4:4 data
1080p (30)	No	Single	30 fps, progressive, 1920x1080, NDF timecode, YUV 4:2:2 data

Video Type:	Pulldown:	Link Type:	Video Signal:
1080p (30)	No	Dual	30 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data
1080i (25)	No	Single	25 fps, 50 Hz, interlaced, 1920x1080, YUV 4:2:2 data.
1080i (25)	No	Dual	25 fps, 50 Hz, interlaced, 1920x1080, RGB 4:4:4 data, RGB 4:4:4 data.
1080i (29.97)	No	Single	29.97 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080i (29.97)	No	Dual	29.97 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080i (29.97DF)	No	Single	29.97 fps, 59.94 Hz, interlaced, 1920x1080, DF timecode, YUV 4:2:2 data.
1080i (29.97DF)	No	Dual	29.97 fps, 59.94 Hz, interlaced, 1920x1080, DF timecode, RGB 4:4:4 data.
1080i (29.97)	Yes	Single	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.
1080i (29.97)	Yes	Dual	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, RGB 4:4:4 data.
1080i (29.97DF)	Yes	Single	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, DF timecode, YUV 4:2:2 data.
1080i (29.97DF)	Yes	Dual	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, DF timecode, RGB 4:4:4 data.
1080i (30)	No	Single	30 fps, 60 Hz, interlaced, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080i (30)	No	Dual	30 fps, 60 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080i (30)	Yes	Single	30 fps, 60 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.
1080i (30)	Yes	Dual	30 fps, 60 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, RGB 4:4:4 data.
1556PsF (14/ HSDL)	No	Single	14 fps, segmented frame, 2048x1556, allows HSDL transfer, YUV 4:2:2 data.
1556PsF (15/ HSDL)	No	Single	15 fps, segmented frame, 2048x1556, allows HSDL transfer, YUV 4:2:2 data.

Video Type:	Pulldown:	Link Type:	Video Signal:
1556PsF (14/ HSDL)	No	Dual	14 fps, segmented frame, 2048x1556, allows HSDL transfer, RGB 4:4:4 data.
1556PsF (15/ HSDL)	No	Dual	15 fps, segmented frame, 2048x1556, allows HSDL transfer, RGB 4:4:4 data.

GFX SDI Rasters

The following table lists the GFX SDI rasters that are available for capture and playout in Lustre.

NOTE: The Lustre HD Station does not support bit depths greater than 10-bit, input resolutions greater than 2K, or output resolutions greater than 1920x1080.

Video Type:	Pulldown:	Link Type:	Stereo:	Video Signal:
NTSC (29.97)	No	Single	No	29.97 fps, 59.94 Hz, interlaced, 720x486, NDF timecode, YUV 4:2:2 data.
NTSC (29.97)	Yes	Single	No	29.97 fps, 59.94 Hz, interlaced, 720x486, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.
PAL (25)	No	Single	No	25 fps, 50 Hz, interlaced, 720x576, YUV 4:2:2 data.
720p (60)	No	Single	No	60 fps, progressive, 1280x720, YUV 4:2:2 data.
720p (60)	No	Dual	No	60 fps, progressive, 1280x720, RGB 4:4:4 data.
720p (59.94)	No	Single	No	59.94 fps, progressive, 1280x720, NDF timecode, YUV 4:2:2 data.
720p (59.94)	No	Dual	No	59.94 fps, progressive, 1280x720, NDF timecode, RGB 4:4:4 data.
1080PsF (23.98)	No	Single	No	23.98 fps, 72 Hz, segmented frames, 1920x1080, YUV 4:2:2 data.
1080PsF (23.98)	No	Dual	No	23.98 fps, 72 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080PsF (23.98)	No	Dual	Yes	23.98 fps, 72 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080PsF (24)	No	Single	No	24 fps, 48 Hz, segmented frames, 1920x1080, YUV 4:2:2 data.
1080PsF (24)	No	Dual	No	24 fps, 48 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080PsF (24)	No	Dual	Yes	24 fps, 48 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080PsF (25)	No	Dual	Yes	25 fps, 48 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.

Video Type:	Pulldown:	Link Type:	Stereo:	Video Signal:
1080PsF (30)	No	Dual	Yes	30 fps, 48 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080p (23.98)	No	Dual	Yes	23.98 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080p (24)	No	Single	No	24 fps, progressive, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080p (24)	No	Dual	No	24 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080p (24)	No	Dual	Yes	24 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080p (25)	No	Dual	Yes	25 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080p (29.97)	No	Dual	Yes	29.97 fps, progressive, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080PsF (25)	No	Single	No	25 fps, 50 Hz, segmented frames, 1920x1080, YUV 4:2:2 data.
1080PsF (25)	No	Dual	No	25 fps, 50 Hz, segmented frames, 1920x1080, RGB 4:4:4 data.
1080i (25)	No	Single	No	25 fps, 50 Hz, interlaced, 1920x1080, YUV 4:2:2 data.
1080i (25)	No	Dual	No	25 fps, 50 Hz, interlaced, 1920x1080, RGB 4:4:4 data, RGB 4:4:4 data.
1080i (25)	No	Dual	Yes	25 fps, 50 Hz, interlaced, 1920x1080, RGB 4:4:4 data, RGB 4:4:4 data.
1080p (29.97)	No	Single	No	29.97 fps, progressive, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080p (29.97)	No	Dual	No	29.97 fps, progressive, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080i (29.97)	No	Single	No	29.97 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080i (29.97)	No	Dual	No	29.97 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080i (29.97)	No	Dual	Yes	29.97 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080i (29.97)	Yes	Single	No	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.
1080i (29.97)	Yes	Dual	No	29.97 fps, 59.94 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, RGB 4:4:4 data.

Video Type:	Pulldown:	Link Type:	Stereo:	Video Signal:
1080i (30)	No	Dual	Yes	30 fps, 59.94 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080PsF (30)	No	Single	No	29.97 fps, segmented frame, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080PsF (30)	No	Dual	No	29.97 fps, segmented frame, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080PsF (30)	Yes	Single	No	29.97 fps, 59.94 Hz, segmented frame, 1920x1080, pulldown insert on playout and removal on capture, YUV 4:2:2 data.
1080PsF (30)	Yes	Dual	No	29.97 fps, 59.94 Hz, segmented frame, 1920x1080, pulldown insert on playout and removal on capture, RGB 4:4:4 data.
1080i (30)	No	Single	No	30 fps, 60 Hz, interlaced, 1920x1080, NDF timecode, YUV 4:2:2 data.
1080i (30)	No	Dual	No	30 fps, 60 Hz, interlaced, 1920x1080, NDF timecode, RGB 4:4:4 data.
1080i (30)	Yes	Single	No	30 fps, 60 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, YUV 4:2:2 data.
1080i (30)	Yes	Dual	No	30 fps, 60 Hz, interlaced, 1920x1080, pulldown insert on playout and removal on capture, NDF timecode, RGB 4:4:4 data.
2Kp (23.98)	No	Single	No	23.98 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, YUV 4:2:2 data
2Kp (23.98)	No	Dual	No	23.98 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, RGB 4:4:4 data
2Kp (24)	No	Single	No	24 fps, 60 Hz, progressive, 2048x1080, NDF timecode, YUV 4:2:2 data
2Kp (24)	No	Dual	No	24 fps, 60 Hz, progressive, 2048x1080, NDF timecode, RGB 4:4:4 data
2Ki (25)	No	Single	No	25 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, YUV 4:2:2 data
2Ki (25)	No	Dual	No	25 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, RGB 4:4:4 data
2Kp (25)	No	Single	No	25 fps, 60 Hz, progressive, 2048x1080, NDF timecode, YUV 4:2:2 data
2Kp (25)	No	Dual	No	25 fps, 60 Hz, progressive, 2048x1080, NDF timecode, RGB 4:4:4 data
2Ki (29.97)	No	Single	No	29.97 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, YUV 4:2:2 data
2Ki (29.97)	No	Dual	No	29.97 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, RGB 4:4:4 data

Video Type:	Pulldown:	Link Type:	Stereo:	Video Signal:
2Kp (29.97)	No	Single	No	29.97 fps, 60 Hz, progressive, 2048x1080, NDF timecode, YUV 4:2:2 data
2Kp (29.97)	No	Dual	No	29.97 fps, 60 Hz, progressive, 2048x1080, NDF timecode, RGB 4:4:4 data
2Ki (30)	No	Single	No	30 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, YUV 4:2:2 data
2Ki (30)	No	Dual	No	30 fps, 60 Hz, interlaced, 2048x1080, NDF timecode, RGB 4:4:4 data
2Kp (30)	No	Single	No	30 fps, 60 Hz, progressive, 2048x1080, NDF timecode, YUV 4:2:2 data
2Kp (30)	No	Dual	No	30 fps, 60 Hz, progressive, 2048x1080, NDF timecode, RGB 4:4:4 data

12 Audio

About Audio

During playback, you can have an audio track accompany the playback. There are a few ways you can hear audio during a timeline playback:

- You can import a WAV file to the system.
- You can capture audio from a video tape recorder (VTR) or audio tape recorder (ATR).
- You can have the timeline chase the audio timecode by using the longitudinal timecode (LTC) chase option.

The audio signal is captured and played back from the DVS or AJA break-out-box (BOB). For information on connecting the external audio devices, refer to your hardware guide. When you are capturing, playing back, or playing out audio tracks, you can select up to eight tracks from the track selector. See "Capture Menu Options" on page 122 or "Playout Menu Options" on page 139.

NOTE: To monitor the audio from the DVS / AJA BOB, the AES audio needs to be converted to an analog audio signal. To do this, use a digital audio mixer or a digital to analog converter (e.g., the Lucid converter). Refer to your hardware guide for information about the Lucid converter.

Audio Workflow

Use the following typical workflow to add audio to your video playback.

Step:	Refer to:
1. Import or capture the audio file.	"Importing an Audio File" on page 172 or "Capturing an Audio File" on page 172.
2. Playback the selected audio file/tracks with the video.	"Playing Back Audio with the Timeline" on page 173 or "Playback Using the LTC Chase Option" on page 175.
3. Playing out the audio file/tracks with the video.	"Playout of Audio and Video" on page 176.

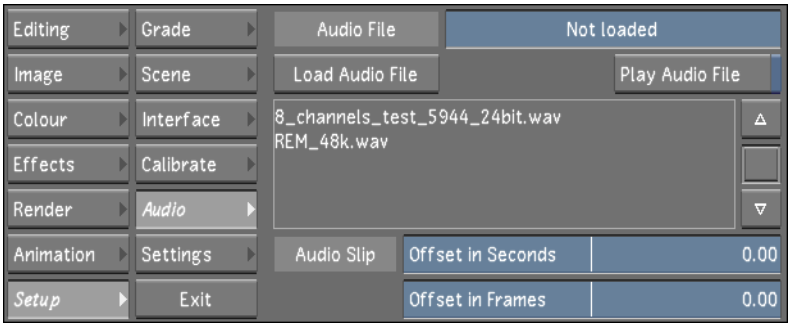
Importing an Audio File

Lustre can use the audio files that you import into the scene's *sacc_data\audio* directory. The imported WAV file can comprise of a single track or up to eight interleaved tracks. The sampling rate of the WAV file is 48 kHz.

NOTE: The audio folder is automatically created when you create a scene.

To import an audio WAV file:

➤ Copy the audio WAV file into the scene's *sacc_data\audio* folder. If using the Linux version of Lustre, the filename uses forward slashes.



NOTE: If you imported the audio file after launching Lustre, press **CTRL+R** to refresh the audio file list.

Capturing an Audio File

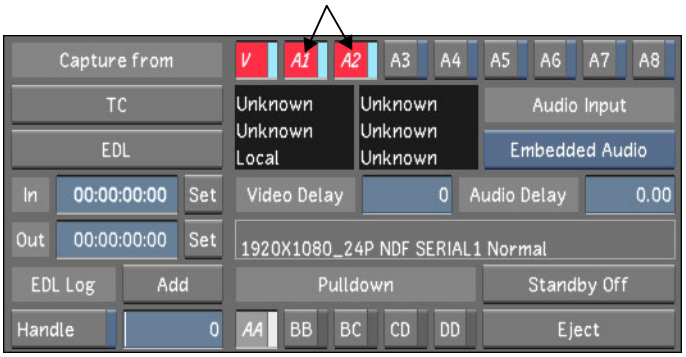
You can capture an audio signal of up to eight tracks as a single 48 kHz (24-bit), interleaved WAV file. The audio is saved in the scene's *sacc_data\audio* folder. If using the Linux version of Lustre, the filename uses forward slashes.

NOTE: The audio folder is automatically created when you create a scene.

To capture an audio WAV file:

1. Click Editing in the main menu, and then click Capture.
2. Select the appropriate raster. Refer to "Selecting a Raster for Capture" in the "Video Capture and Video Playout" chapter in the *Autodesk Lustre 2009 User Guide*.

3. Enable the audio track(s) you want to capture.



4. Click the TC button to start the capture.

NOTE: When you capture a broken selection (e.g., tracks A1, A3, and A5), the resulting WAV file contains three tracks, renumbered A1, A2, and A3. Therefore in the Playout menu tracks A1, A2, and A3 will be enabled.

Playing Back Audio with the Timeline

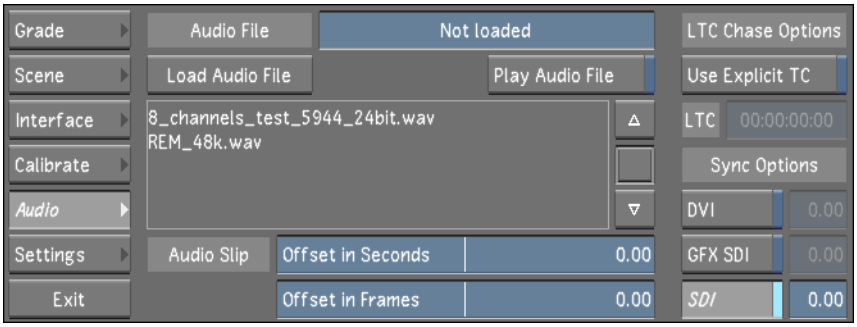
Once the audio file is in the audio folder, you can play it back at the same time as your timeline.

NOTE: The Audio menu settings are saved in the *context.config* file.

To playback an imported audio file with the timeline:

1. Click Setup in the main menu, and then click Audio.

   The Audio menu is displayed.



2. Select a file from the list.

   NOTE: Only one WAV file can be associated with the timeline.

3. Click Load Audio File.

   The selected audio file is displayed in the Audio File field.

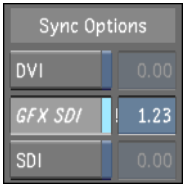
4. Enable Play Audio File.

   Now when you play the timeline, the audio file is played as well.

   NOTE: When you capture an audio file, it is automatically loaded and the Play Audio File button is enabled by default.

Sync Options

When you playback the audio with the timeline, both the audio and video begin at the same timecode. Depending upon the output device you are using to view the timeline, the audio and video might not be in sync. Use the Sync Options feature to sync the audio and video.



DVI — Syncs the audio and video when viewing the output on the monitor (DVI).

GFX SDI — Syncs the audio and video when viewing the output on an external device (e.g., projector, broadcast monitor, etc.)

SDI — Syncs the audio and video when viewing the output on an external device connected to the DVS / AJA BOB.

To sync the audio and video:

1. In the Audio menu enable the button corresponding to your output viewing device.
2. Click within the field and drag the mouse left or right to set the frame value for the sync. Enter a negative number if the audio plays after the video has begun and enter a positive number if the audio plays before the video has begun.

Offsetting the Audio File

Once you have loaded the audio file and synced the audio and video, you may need to enter an offset for the audio file. Use the Audio Slip option to offset the audio file. For example, if the audio file starts two seconds after the start of the timeline, create a two second offset.

To offset the audio:

➤ Do one of the following:

- Click and drag the Audio Slip sliders to offset the audio. If the audio starts before the video, drag right to set a positive offset. If the audio starts after the video, drag left to set a negative offset. You can use one or both sliders to set the duration of the offset.
- Right-click within the slider to display the calculator and enter the frames and / or seconds offset to align your audio and video.

Playback Using the LTC Chase Option

The LTC Chase Option allows you send the timeline's timecode through the DVS BOB to an audio device that can chase the LTC timecode. By default, the LTC timecode is the same as the record time (REC TC). For example, if the start timecode for the timeline is 10:00:00:00, the LTC will be 10:00:00:00. When you move the shot positioner to a further position in the timeline and press play, the LTC value is also updated so it is in sync with the record timecode.

NOTE: Your LTC Chase Option settings are saved in the *context.config* file.

To play back the audio track using the LTC Chase Option:

1. Click Editing in the main menu, and then click Capture.
2. Select the appropriate raster to observe the audio and video files together. Refer to "Selecting a Raster for Playout" in the "Video Capture and Video Playout" chapter in the *Autodesk Lustre 2009 User Guide*.
3. Make sure the audio device is set to chase.

   Now when you play back the timeline, the audio track is played at the same time.

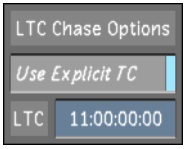
Use Explicit Timecode

If the audio device has a different timecode than the timeline, you can set a different timecode by enabling the Use Explicit TC button. For example, if your source timecode starts at

10:00:00:00 and your audio timecode begins at 11:00:00:00, you can enable the Use Explicit TC option and create an offset of 1:00:00:00.

To play back an audio track with a different timecode:

1. Click Editing in the main menu, and then click Capture.
2. Select the appropriate raster. Refer to "Selecting a Raster for Playout" in the "Video Capture and Video Playout" chapter in the *Autodesk Lustre 2009 User Guide*.
3. Click Setup in the main menu, and then Audio to display the Audio menu.
4. Enable Use Explicit TC.
5. In the timecode field, enter the timecode of when you want the audio track to begin.



Now when you move the shot positioner, the audio and video are in sync.

Playout of Audio and Video

Once you have verified the playback of your audio file / track(s) and timeline, you can play out the timeline to tape. See "Playing Out to a VTR" on page 143.

NOTE: When you capture a broken selection (e.g., tracks A1, A3, and A5), the resulting WAV file contains three tracks, renumbered A1, A2, and A3. Therefore in the Playout menu, tracks A1, A2, and A3 will be enabled.

13 Hot Keys

Timeline Sort Modes

Use the following hot keys to sort the shots in your timeline.

Press:	To:
ALT+F9	Sort the shots using A-mode sort and enable heads and tails.
ALT+F10	Sort the shots using A-mode sort and disable heads and tails.
ALT+F11	C-mode sort by EDL reel name and enable heads and tails.
ALT+F12	C-mode sort by EDL reel name and disable heads and tails.
CTRL+ALT+F11	C-mode sort by folder name and enable heads and tails.
CTRL+ALT+F12	C-mode sort by folder name and disable heads and tails.
CTRL+ALT+SHIFT+F11	C-mode sort by DPX reel name and enable heads and tails.
CTRL+ALT+SHIFT+F12	C-mode sort by DPX reel name and disable heads and tails.
ALT+F8	Disable sort mode.

Editing

Certain editing hot keys are available from any menu, whereas the rest are available exclusively from the Edit menu.

Timeline Menu Hot Keys

Use these hot keys in the Timeline menu when your cursor is on the Timeline canvas.

Press:	To:
UP ARROW	Move focus up.
DOWN ARROW	Move focus down.
LEFT ARROW	Go to the first frame of the previous shot.
RIGHT ARROW	Go to the first frame of the next shot.
SPACEBAR	Toggles play and stop.
RIGHT CTRL	Step one frame forward.
RIGHT ALT	Step one frame backward.

Press:	To:
SHIFT+Q	Locate and select the shot in the Shot bin that the positioner is placed on.
SHIFT+I	Mark an in point on the Scene timebar for loop play.
SHIFT+O	Mark an out point on the Scene timebar for loop play.
SHIFT+L	Clear all in and out points.
.(period) on numeric keypad	Toggles through the play modes (loop timeline, loop shot, and loop in and out points).
F1	Go to Playhead A.
F2	Go to Playhead B.
SHIFT+M	To mute or unmute the track on the focus layer.
T	To enable or disable Trim mode.
ENTER	Toggles between the Player, file browser, and full-screen player.
ALT+S	Enable or disable Solo mode.
ALT+C	To turn on or turn off copy element(s) and grade.
SHIFT-drag	Copy the selected shot and constrain.
SHIFT+C	To make a cut in the element.
SHIFT+J	To join/remove splice on selected element.
SHIFT+D	Delete element(s) from the Timeline.
,(comma)	Enable or disable the Slip mode.
CTRL-right-click	Timeline home view.
ALT+ H	Zooms into the selected shot(s).
Middle-click-drag	Pans the Timeline left or right.
Right-click-drag	Zooms in and out of the Timeline.
SHIFT-click	To select multiple elements in a continuous order.
CTRL-click	To select multiple elements that are not in a continuous order.
SHIFT+N	Copies the focus element to a new layer.
S	Save a cut file and the associated grade files. If a grade file has not been created, a default grade file is saved.
SHIFT+R	Toggles the Ripple mode (Off/Start/End).
[	Zooms out of the Timeline. Zoom is centred on the playhead.
]	Zooms in on the Timeline. Zoom is centered on the playhead.
D	Adds a dissolve according to the focus and the positioner.
SHIFT+	Applies/removes priority to/from the shot with focus.
SHIFT+right-click	Applies/removes priority to/from the selected shot.

Colour Grading

Use colour grading hot keys to perform colour grading operations carried out in the Grading, Curves, and Secondaries menus.

For numeric keypad hot keys that pertain to colour grading, refer to "Colour Menus - Grading and Secondaries" in the "Hot Keys" chapter in the *Autodesk Lustre 2009 User Guide*.

Timeline Menu Hot Keys

Use these hot keys in the Timeline menu.

Press:	To:
SHIFT+C	To make a cut in an element.
SHIFT+J	To join/remove splice on selected element.
SHIFT+D	Delete element(s) from the Timeline.
ALT+S	Enable or disable Solo mode.
UP ARROW	Move the focus up.
DOWN ARROW	Move the focus down.
F7	Displays the Timeline, Player, and grading tools and activates the SDI out if the GFX SDI is enabled.
CTRL+drag+drop	Drag and drop the grade from one shot to another.
CTRL+SHIFT+drag+drop	Drag and drop the grade from one shot to a selection of shots.
CTRL+ALT+drag+drop	Drag and drop the Selector parameters to one shot.
CTRL+ALT+SHIFT+drag+drop	Drag and drop the Selector parameters to a selection of shots.

Stereoscopy

Use these hot keys when the Stereoscopy feature is enabled.

Do this:	To:
ALT+L	Assigns the layer the focus point is positioned on as the Left Eye
ALT+R	Assigns the layer the focus point is positioned on as the Right Eye.
; (semicolon)	Toggles the Player to display the Left Eye or Right Eye footage.

Animation

Use these hot keys in the Animation menu.

Do this:	To:
Press **DELETE**	Delete the selected keyframe.
Drag	Draw a selection box.
Right-drag	Zoom in or out.
Middle-drag	Pan the view.
Backspace	Delete last tracked position.
CTRL(left)+**C**	Copy keyframe(s)
CTRL(left)+**V**	Paste keyframe(s)
ALT+**C**	Toggle between 'One Fr' and All Fr' copy modes