



HIERO

USER GUIDE
VERSION 1.0v1

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Rev: January 6, 2012

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1 PREFACE

Hiero is designed to provide shot management, conform, and playback capabilities for people creating visual effects, especially those using The Foundry's Nuke Compositor. Hiero interoperates well with Nuke to deliver visual effects sequences without resorting to other third party applications.

For post-production houses creating visual effects in a collaborative manner, Hiero's easy round tripping of clips to Nuke frees expensive "hero" seats that are currently being used as conform, review, and project management stations, allowing for more efficient use of staff and resources in those facilities.

Key Features

- Hiero can "soft import" any image sequence type supported by Nuke, meaning the media is not copied multiple times saving disk space. In addition, Hiero can also ingest audio and multi-channel images.
- Multi-track Timelines capable of conforming Final Cut Pro XML and CMX 3600 Edit Decision Lists (EDLs), including cuts, transitions and retimes.
- Realtime playback of sequences and clips (dependent on hardware).
- Round-tripping through Nuke and general purpose shot export for other uses using "soft exports" in most cases—no bakes are required.
- Versions and Snapshots of clips and sequences allow you to record progress and manage your creative options.
- Everything you can do with Hiero's user interface you can also do using Python scripting.

Project Workflow and Hiero

For short-form post projects, Hiero sits after edit and grading, but before finishing and delivery, acting as the conform Timeline for visual effects. It is used to locate, preview, and then farm footage out to shot based effects applications (such as Nuke), and take their results and re-integrate them onto the sequences for review and comment.

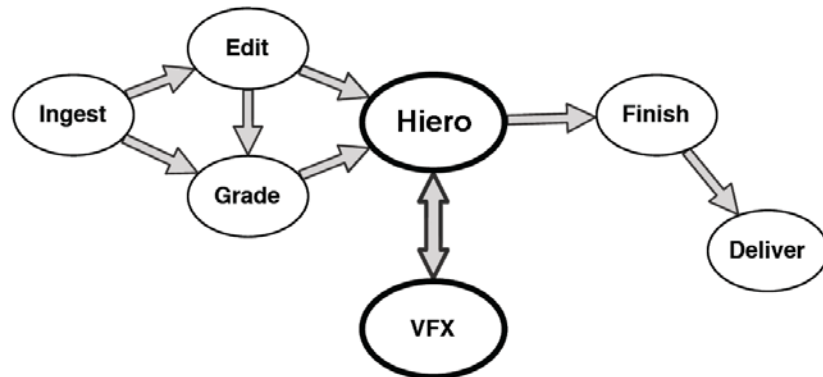


Figure 1.1: Where Hiero fits in short-form post workflows.

About this Guide

Throughout this User Guide, we assume you have a basic knowledge of video and audio theory, as well as proficiency with the operating system on which Hiero is installed.

There are a few style conventions that you should be aware of throughout this Guide:

Note *This text provides important or useful information for the smooth operation of Hiero.*

Tip *These are extra bits of information, not necessarily critical to the procedure you're performing, but worth knowing.*

Bold text denotes onscreen points of interest such as tabs, buttons, and menu items.

Underlined text highlights links to our website with automatic redirection to the relevant page.

For the most up-to-date information, please see the Hiero product page and the latest Hiero User Guide on our web site at www.thefoundry.co.uk.

Getting Help

If you can't find what you need in this document, there are other sources of help available to you for all aspects of Hiero and its operation.

Online Help

Most controls offer concise instructions in the form of tooltips. To display the tooltips, hover your mouse pointer over an interface control or parameter.

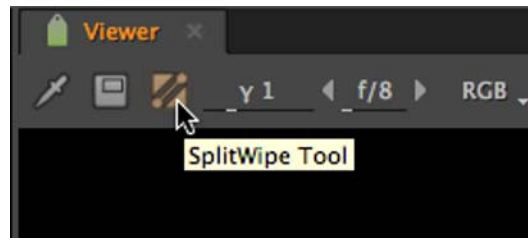


Figure 1.2: Tooltips

Customer Support

Should questions arise that this manual or the online help system fails to address, you can contact Customer Support directly by email at support@thefoundry.co.uk or telephone to our London office on +44 (0)20 7968 6828 or to our Los Angeles office on (310) 399 4555 during office hours.

2 INSTALLATION AND LICENSING

Installing and licensing new applications can be a boring task that you just want to be done with as soon as possible. To help you with that, this chapter guides you to the point where you have a default Hiero workspace in front of you and are ready to start viewing and editing your media with the minimum of effort.

System Requirements

Before you do anything else, ensure that whichever platform you intend to run Hiero on meets the following minimum requirements.

Operating System

Mac OS X

- Mac OS X Snow Leopard 10.6.8 or newer

Linux

- Linux RHEL 5.4 64-bit
- Graphics driver support for OpenGL 2.0

Hardware

- 4 GB of disk space available for caching and temporary files
- 4 GB of RAM (minimum requirement)
- Intel i3 CPU (or equivalent)
- Workstation-class graphics card with OpenGL 2.0 driver support, such as NVIDIA Quadro series or ATI FireGL series

Installing Hiero

Download Hiero from www.thefoundry.co.uk/products/hiero/get/ by clicking **Buy Hiero** and choosing the required platform from the list. For example, if you intend to install Hiero on Mac OS X, download the **.dmg** file.

Follow the on screen instructions to download the correct installer.

Mac OS X

1. Double-click on the **.dmg** archive to extract the installation package.
2. Double-click on the **.pkg** file.

3. Follow the on-screen instructions to install Hiero. By default, Hiero is installed to **/Applications/Hiero 1.0v1**.

Linux

1. Extract the installer from the archive using the following terminal command:

```
tar xvzf Hiero1.0v1-linux-x86-release-64.tgz
```
2. Run the installer.

```
sudo ./Hiero1.0v1-linux-x86-release-64.run
```
3. Follow the on-screen instructions. By default, Hiero is installed to **/usr/local/Hiero 1.0v1**.

Launching Hiero

Launch Hiero using one of the following methods, depending on which platform you're using.

Mac OS X

- Click the Hiero dock icon.
- Using the Finder, open the Hiero application directory (by default, **/Applications/Hiero 1.0v1/**), and double-click the **Hiero 1.0v1.app** icon (or list item).
- Open a terminal and enter the following command:

```
open /Applications/Hiero1.0v1/Hiero1.0v1.app
```

Linux

- Double-click the Hiero icon on the Desktop.
- Open the Hiero application directory (by default, **/usr/local/Hiero 1.0v1/**) and double-click the Hiero icon (or list item).
- Open a terminal, navigate to the Hiero application directory (by default, **/usr/local/Hiero 1.0v1**), and enter **./Hiero 1.0v1**.

Licensing Hiero

About licences

- **Activation Keys**—these can be used to easily install and activate node locked (also known as uncounted) licences. Node locked licences allow you to use Hiero on a single machine. This licence does not work on different machines and if you need it to, you'll have to transfer your licence. Node locked licences do not require additional licensing software to be installed. See [Licensing Hiero on a Single Machine](#) for more information.

- **Floating Licences**—also known as counted licences, enable one of our products to work on any networked client machine. The floating licence is put on the server and is locked to a unique number on that server. Floating licences on a server require additional software to be installed. This software manages those licences on the server, giving licences out to client stations that want them. The software you need to manage these licences is called the Foundry Licensing Tools (FLT) which can be freely downloaded from our website. Floating licences often declare a port number on the server line and a port number on the vendor line. See [Licensing Hiero Over a Network](#) for more information.

The instructions below run through both licensing methods and you can find a more detailed description in the Foundry Licensing Tools User Guide available on our website www.thefoundry.co.uk/support/licensing/tools/

Licensing Hiero on a Single Machine

You can purchase activation keys over the Internet by clicking **Purchase Licence** in the Hiero licensing dialog that displays when you launch Hiero without a licence, or by contacting The Foundry Sales Department at sales@thefoundry.co.uk.

Installing the licence

You are prompted to enter your activation key when you start Hiero without a licence. Hiero skips this step if you've already activated the application.

Select an activation option from the Hiero **Licensing** dialog:

- **Purchase Licence**—click to open a web browser directly to The Foundry website to purchase an activation key.
- **Activate Licence or Use Server**—click to enter a previously obtained activation key. When you enter the activation key, Hiero automatically obtains a licence from the web and installs it on your machine. You're good to go.

Tip *If you later want to change your licence (for example, from a node locked licence to a floating licence), you can select **Help > Licence** in Hiero to display the Hiero **Licensing** dialog.*

Note *If you access the Internet through a proxy server and Hiero cannot connect to the activation server, you may get an error dialog prompting you to either:*

- *Click **Use Proxy** to enter the proxy server name, port number, username, and password. This enables Hiero to connect to the activation server and obtain a licence. Hiero then installs the licence automatically.*

- *Click on the web link in the dialog and use the System ID (also known as hostid) provided to manually activate and install a licence. For more information on how to install a licence manually, see the Foundry Licensing Tools (FLT) User Guide available on our website at www.thefoundry.co.uk/support/licensing/*

Licensing Hiero Over a Network

Alternatively, you can purchase a floating licence key from our website. To generate you a licence key, we need to know your System ID. The System ID (sometimes called Host ID or rlmhostid) returns a unique number for your computer. We lock our licence keys to the System ID. See [Installing floating licences](#).

To display your System ID, do any of the following:

- Download the Foundry Licence Installer for Hiero (FLI) utility from www.thefoundry.co.uk/licensing and run it. Your System ID is displayed.
- Download the Foundry Licensing Tools (FLT) free of charge from our web site and then:
 - On Mac, run `/Applications/TheFoundry/LicensingTools6.0/Foundry Licence Installer.app`
 - On Linux, run the following command in a terminal shell:
`/usr/local/foundry/LicensingTools6.0/bin/systemid`

Just so you know what a System ID number looks like, here's an example: 000ea641d7a1.

Once you have provided us with your System ID number and a licence key has been generated for you, you will receive the licence key in an email or Internet download. The licence key is contained in a text file called **foundry.lic**. For information on what to do with the foundry.lic file, see [Installing floating licences](#) below.

Installing floating licences

If you requested a floating licence from The Foundry, you will receive your licence key (foundry.lic) in an email or Internet download. You should also receive the Foundry Licence Installer (FLI) application to help you install the licence key. The instructions below tell you what to do with these.

Note *The FLI is also available to download from www.thefoundry.co.uk/licensing.*

1. Make sure you have saved both the licence key (foundry.lic) and the Foundry Licence Installer application in the same directory.
2. Run the Foundry Licence Installer application.

The licence key automatically appears in the FLI window if the FLI and foundry.lic are in the same directory. If they are not, you can either copy and paste the contents of the licence key or drag-and-drop the file into the FLI window.

3. Click **Install**.

This checks the licence file and, provided that the licence is valid, installs it into the correct directory.

In order for the floating licence to work, you will need to install the Foundry Licensing Tools (FLT) on the licence server machine. For more information on how to install floating licences, refer to the FLT User Guide, which you can download from our website:

www.thefoundry.co.uk/support/licensing/tools/

4. Once your licence server is up and running, launch Hiero (if it isn't already running).
5. Click **Activate Licence or Use Server** and enter the server address in the field provided. The format for the server name is:
<port>@<servername>, for example, 30001@red.

Note *You must perform steps 4 and 5 on each client machine that requires a Hiero licence from the server.*

Tip *If you later need to display the Hiero **Licensing** dialog again, you can select **Help > Licence** in Hiero.*

Further Reading

For more information on licensing Hiero, displaying the System ID number, setting up a floating licence server, adding new licence keys, and managing licence usage across a network, you should read the Foundry Licensing Tools User Guide available on our website:

www.thefoundry.co.uk/support/licensing/tools/

3 CUSTOMISING YOUR WORKSPACE

Workspace Overview

Hiero's interface is customisable using floating panes and show/hide functionality, but three default workspaces are supplied for your convenience; **Conforming**, **Editing**, and **Reviewing**.

- The **Conforming** workspace is where the bulk of the work you undertake with Hiero is done. The linked Spreadsheet and Timeline panes are where you'll really see the power of Hiero.
- The **Editing** workspace provides the tools you'll need to fine-tune your media.
- The default **Reviewing** workspace is used primarily to confirm your media intent is fully realised. You can add tags and notes, mark In and Out points on clips, and organise your ingested media into bins as required.

When you launch Hiero for the first time, you're presented with a **Settings** dialog.

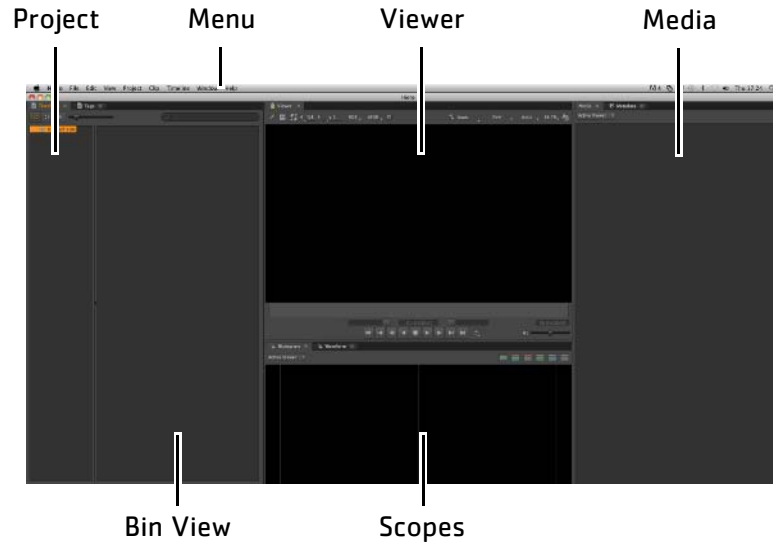
Note You can disable this popup by checking *Don't show this dialog again* or by toggling it off in the Hiero [Workspace Preferences](#) dialog.



The **Settings** dialog allows you to create a new project, open an existing project, or view the User Guide and website dedicated to Hiero.

Select the required option or click **Close** to launch Hiero.

Take a moment to familiarise yourself with the default **Reviewing** workspace.



1. **Project tab**—manage all aspects of your projects and Bins.
2. **Menu bar**—access Hiero’s drop down menus.
3. **Viewer tab**—display and review your media.
4. **Media tab**—displays any clip options and metadata relating to the clip in the Viewer.
5. **Scopes tab**—displays Luma and RGB information for the currently selected Viewer.
6. **Bin View**—displays the contents of the Bin selected in the Project browser.

Menu Bar Components

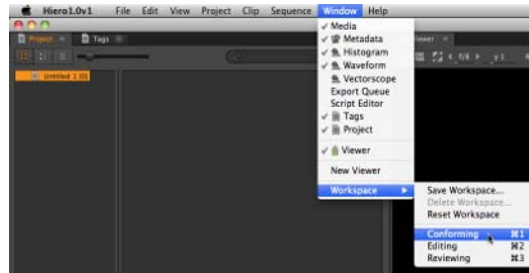
The Menu Bar contains various Hiero controls, many of which are available through context sensitive right-click menus, keyboard shortcuts, and toolbars.

For a full list of hotkeys, buttons, and menu functions refer to [Appendix A: Hiero Hotkeys](#).

You can switch between workspaces by navigating to **Window > Workspace** and selecting **Conform**, **Editing**, or **Reviewing** as shown. Alternatively, you can toggle between the default workspaces using **cmd/ctrl + 1**, **cmd/ctrl + 2**, and **cmd/ctrl + 3**.

Any custom workspaces you create are added to the end of the list. You can

access the first custom workspace using **cmd/ctrl + 4**, and so on.



Creating Your Own Workspace

Hiero's workspace consists of panes, which act like containers, and tabs which describe the individual areas you work with in Hiero. During the customisation process, you can:

- Resize your entire workspace or panes independently.
- Split panes to create new work areas, for example two Viewers side-by-side.
- Add and remove panes and tabs as required.
- Float and nest tabs to group similar functions together, for example Histogram, Vectorscope, and Waveform in the same pane.
- Maximise the pane under the mouse cursor by pressing ~ (tilde). Press ~ again to return to the regular interface.

Hiero allows you to create as many workspaces as you require, one for each project you undertake if necessary. In practice though, you may find that two or three custom workspaces will cover your needs.

Tip *You can return to the saved version of a workspace by navigating to **Window > Workspace > Reset Workspace**.*

Resizing your workspace

Resizing the interface, panes, and tabs works in much the same way as other software applications:

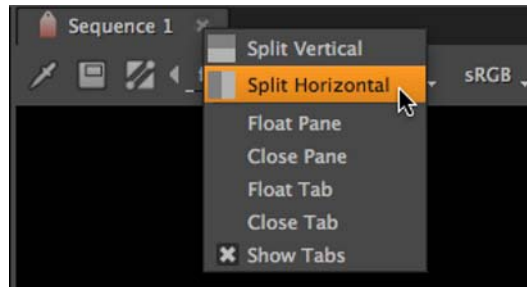
- To resize the entire interface, drag the resize handle at the bottom right of the application to the required width and height.
- To resize individual panes, hover the mouse over the edges of the required area until the cursor changes to the resize icon. Click and drag the cursor to resize the pane or tab.



Splitting panes

Splitting panes allows you to organise your workspace into distinct areas delineated by well defined borders.

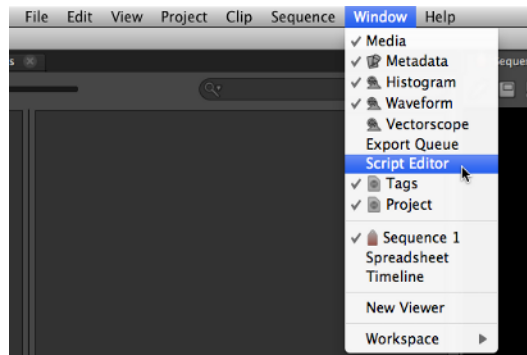
- To split panes, right-click the required pane and select **Split Vertical** or **Split Horizontal**.



Adding and removing panes and tabs

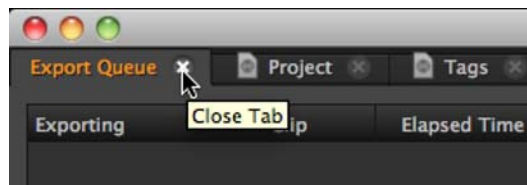
Adding and removing tabs gives you the freedom to personalise your workspace depending on your current project.

- Add new tabs by navigating to **Window** and selecting the required tab.



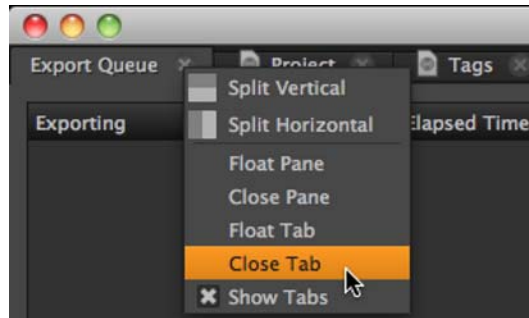
The tab is embedded in its default position or added to the interface as a floating window.

- Close any tab that is not required by:
 - Clicking the **x** on the tab's right-hand side,



OR

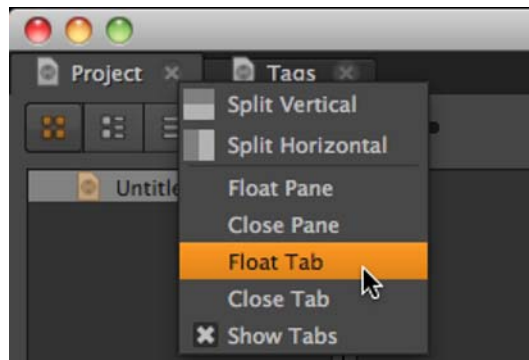
- Right-clicking the tab name and selecting **Close Pane** or **Close Tab**.



Floating and nesting

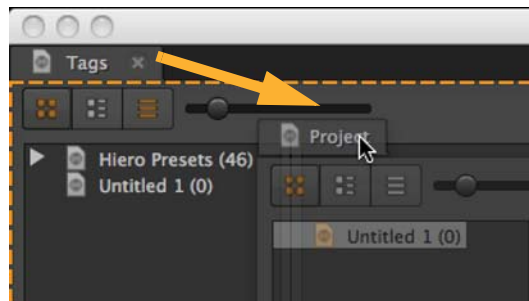
You can move existing panes and tabs to new locations in the interface (to help you organise your project).

- Float a pane or tab by:
 - Right-clicking the tab name and selecting **Float Pane** or **Float Tab**.

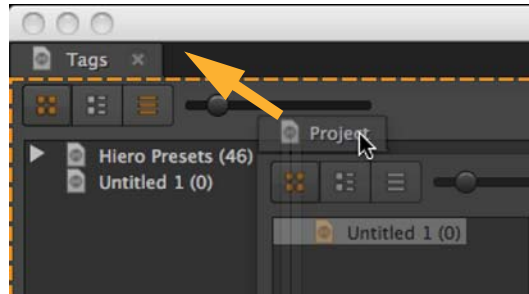


OR

- Dragging the required tab from its current location.



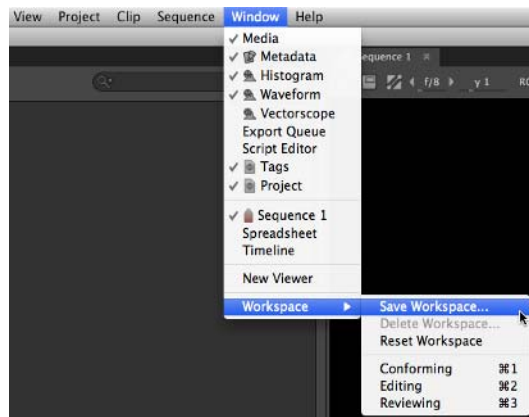
- Nest any floating pane or tab by dragging it to any existing pane.



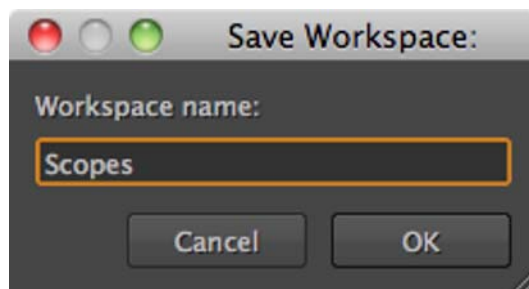
Tip Use the orange highlight  around the destination pane to help you determine where the tab nests.

Saving Workspaces

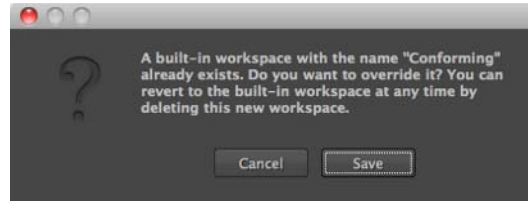
Once you're happy with the changes you've made to the workspace, navigate to **Window > Workspace > Save Workspace**.



Enter a name for the workspace, then click **OK** to preserve your workspace as a Hiero workspace file (extension **.hws**).



Tip *If you save a workspace called **Conforming**, **Editing**, or **Reviewing**, you can override the defaults supplied with Hiero by clicking **Save** in the dialog box.*

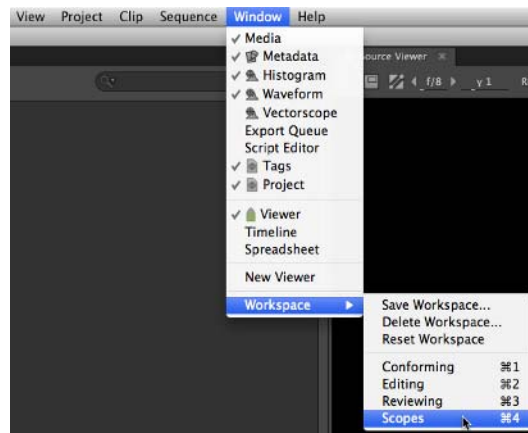


Delete the workspace you created to restore the default layout.

Loading Workspaces

To use a previously saved workspace, navigate to **Window > Workspace** and select the custom workspace name you require.

Tip *Alternatively, you can use the workspace hotkey **cmd/ctrl + n** (where *n* = the number of the custom workspace).*



Your presaved workspace is loaded.

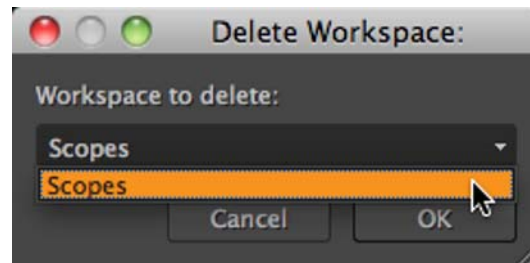
Deleting Workspaces

You may find that after using Hiero on a number of projects, some of the workspaces you created earlier have been superseded by more useful entries. **Delete Workspace** allows you clear up your saved files from within Hiero, although you can remove the files manually from the save location.

Tip *You can return to the saved version of a workspace by navigating to **Window > Workspace > Reset Workspace**.*

To delete custom workspaces:

1. Navigate to **Window > Workspace > Delete Workspace**.
2. Select the required workspace from the drop down menu.



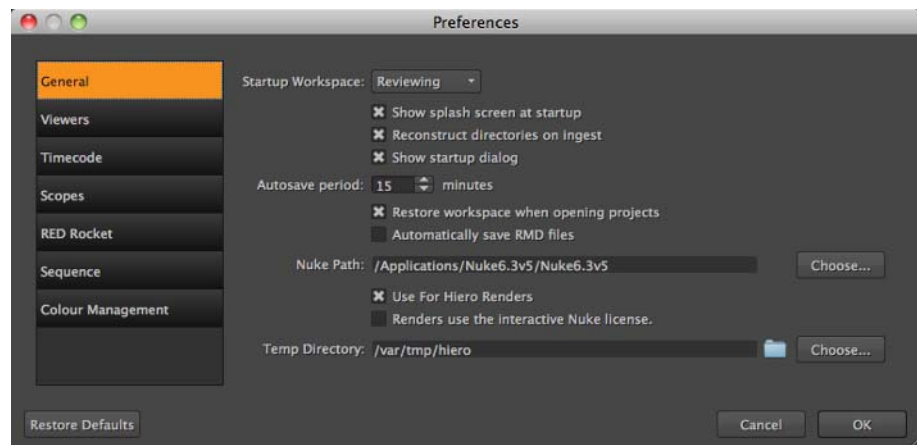
3. Click **OK** to delete the selected entry.

Workspace Preferences

The **Preferences** dialog allows you to make global changes to the way the interface behaves every time you start Hiero. Changes you make in the **Preferences** override any local changes when you restart Hiero.

To access the **Preferences** dialog, either:

- Navigate to **Hiero > Preferences**, or
- Use the Preferences hotkey **cmd/ctrl + ,** (comma).



- **General** preferences take care of how Hiero starts up and how often your work is automatically saved.
 - **Startup Workspace**—select the default workspace Hiero loads at startup.
 - **Show splash screen**—enable or disable Hiero’s product page during startup.

- **Reconstruct directories**—set whether or not Hiero preserves the original folder/file hierarchy during ingest.
- **Show startup dialog**—enable or disable Hiero’s **Settings** dialog during startup.
- **Autosave period**—set how often you want Hiero to save your work in the background. Use the up and down arrows or type a new value in the field.
- **Restore workspace**—whether Hiero restores the saved workspace layout or uses the default **Conforming**, **Reviewing**, or **Editing** workspaces when you open an existing project.
- **Automatically save RMD files**—enable this option to automatically save changes you make to clip RED Look effects as RMD files.
- **Nuke Path**—sets the filepath to the Nuke application you intend to use during round-tripping and Send to Nuke exports.
- **Use For Hiero Renders**—when enabled, the Nuke application specified in **Nuke Path** is used to render your output. When disabled, the internal command line only Nuke is used for rendering.
- **Use interactive Nuke licence**—when enabled, renders on external Nukes use an interactive licence (if available).
- **Temp Directory**—defines the directory used to cache data, including thumbnail information.

Note *You can disable caching using an environment variable as described in [Hiero Environment Variables](#).*

- **Viewers** preferences determine the default settings for the Viewer at startup as well as all new Viewers that you add to the workspace—you can still adjust the settings of individual Viewers.
 - **Playback Mode**—sets the default playback mode for new Viewers.
 - **OpenColorIO config file**—sets the OpenColorIO configuration to use if you don’t intend to use the default settings.
Enter the file path of the config file or click **Choose** to use the browser.
 - **Guides**—select the default **Guides** to apply to Viewers. Choose from **No Guides** (the default), **Title Safe**, **Action Safe**, and **Both**.
 - **Playback cache size**—sets the percentage of total memory available for use as Hiero’s cache.
 - **Fullscreen Display**—controls where the Viewer expands to when in **Fullscreen** mode.
- **Timecode** preferences determine where selected file types derive their timecode.
 - **Image Sequence**—sets where the start timecode for sequences is derived.

- **RED Files**—sets the start timecode to use for conformed or ingested R3D files.
- **Scopes** preferences set the Black and White points for Histogram and Waveform Out of Range warnings individually, in the range 0-1.
- **RED Rocket** preferences enable and disable your RED Rocket.
- **Sequence** preferences set the default frame and sample rate for new Timeline panes.
- **Colour Management** preferences set the default LUT applied for various display and file types. For example, setting **Viewer** to **None** displays all media in new Viewers with no LUT applied to them.

Once you've made your selections in the **Preference** dialog, click **OK** to save your changes. Bear in mind that changing some preferences, for example **Use RED Rocket card** and **Scopes**, require you to restart Hiero before they're applied.

You can also click **Restore Defaults** to return to the default **Preference** settings.

4 CONFORMING

Hiero accepts sequences either from edit decision lists (EDLs) or Final Cut Pro XML files from a specified directory structure containing the source media files. Hiero attempts to conform the media, warning you if there are missing media or multiple “Versions” created from the same source.

See [Versions and Snapshots](#) for more information on multiple Versions and Snapshot saves.

Hiero conforms EDLs into single tracks, and XMLs into a multi-track Timelines. You can either conform into a brand new Timeline, or into an existing Timeline by adding new tracks. For example, when conforming multiple EDLs into the same Timeline, you would add new tracks for each EDL sequence conformed.

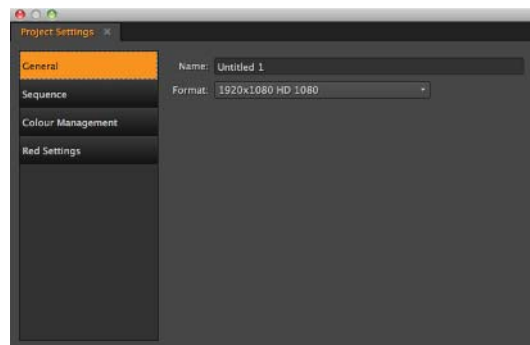
Project Settings

A good place to start a conform is by defining default **Project Settings** before importing sequences, particularly in the case of EDLs as they may not contain framerate information.

Note *You can override **Project Settings** later on when conforming or ingesting media.*

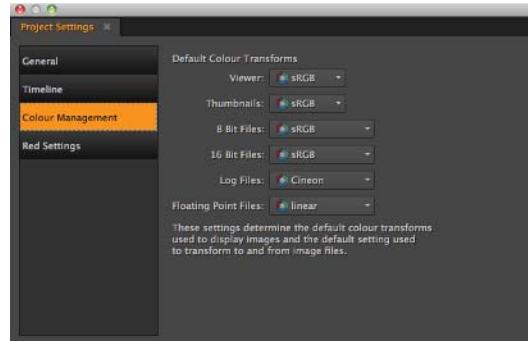
To define Project Settings:

1. Navigate to **Project > Edit Settings**.
The **Project Settings** dialog displays.



2. Click the **General** submenu to set the **Project Name** and default **Format**.
3. Click the **Sequence** submenu to set the default Timeline **Framerate** and audio **Samplerate**.

4. Click the **Colour Management** submenu to manage the **Display** and **File** lookup tables.



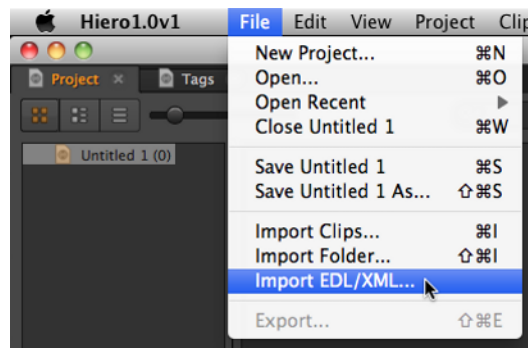
5. Use the dropdown menus to define how clips in the Viewer, thumbnails, and so on are displayed.
6. Click the **RED Settings** submenu to define the **Default Video Decode Mode** for R3D files.

Importing Sequences

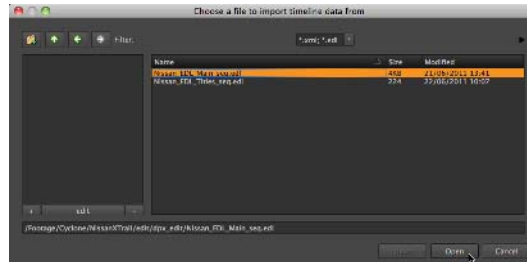
Hiero allows you to import your EDL or XML sequences in one of two ways, depending on your preferences.

If you're a menu orientated user:

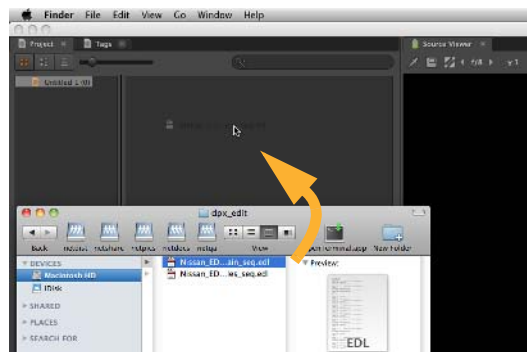
1. Navigate to **File > Import EDL/XML** and use the browser to locate the EDL or XML.



2. Select the file and click **Open** to import the sequence.

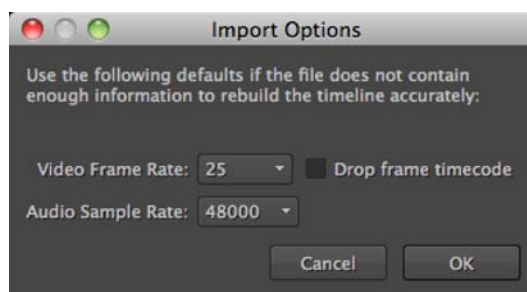


Or, if you prefer, you can drag-and-drop the EDL or XML directly from a file browser into Hiero:



Note *If you're importing an EDL, bear in mind that there is no guaranteed framerate information included in the file.*

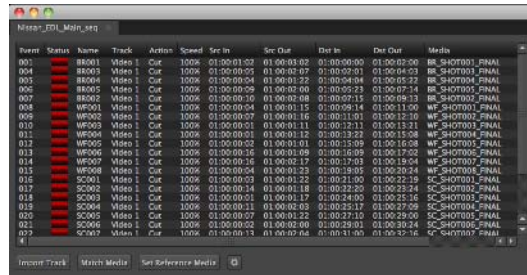
*When you import EDLs, an **Import Options** dialog displays.*



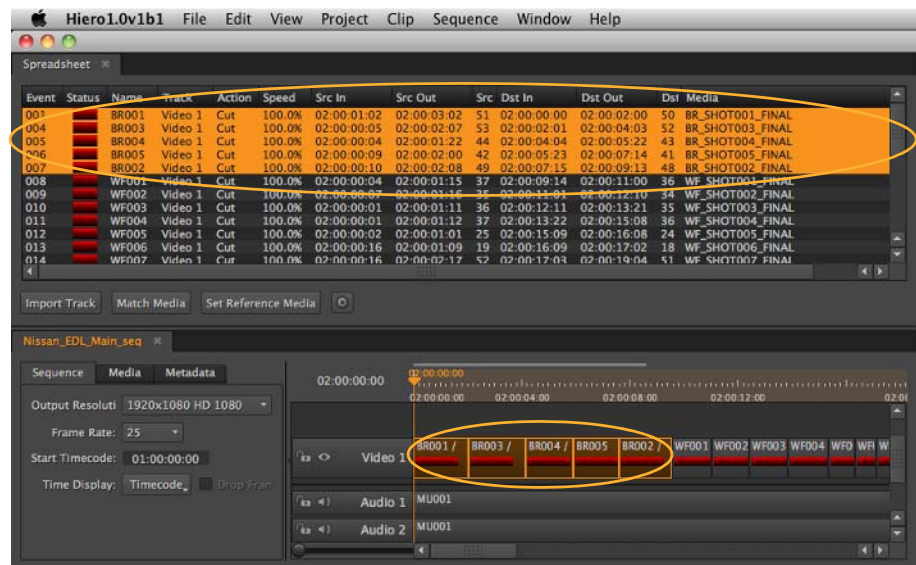
*Select the correct **frame rate** and **audio sample** rate using the dropdown menus, then click **OK** to import.*

After importing the EDL or XML, the **Conforming** workspace displays and the

Media Spreadsheet and Timeline are populated.



Notice that clicking clips in the spreadsheet highlights the same clips on the Timeline?



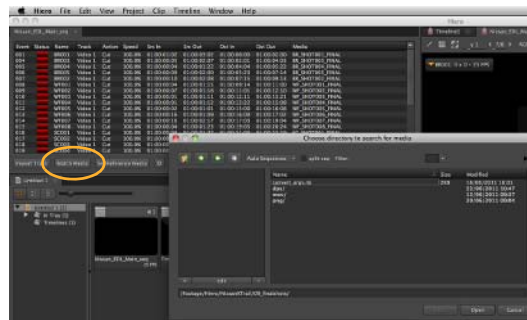
Synchronised video and audio clips are also ganged in the same way.

Conforming Sequences

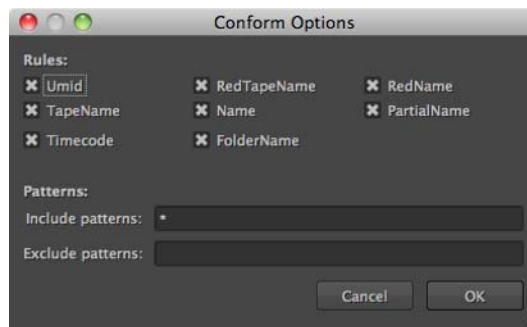
Once your sequence is imported, it's time to begin the conform process.

You can conform sequences using one of three methods, depending on your project:

- With no relevant media in the media view, click **Match Media** in the spreadsheet tab and use the browser to locate the folder containing the correct media.



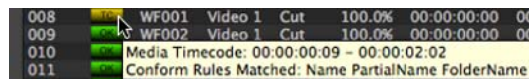
Click **Open** to display the **Conform Options** dialog box.



Hiero uses a set of conform **Rules** and **Patterns** to determine the correct media to apply to the sequence:

- **Rules**—sets the media properties to match during conform. The more Rules you have enabled, the greater the accuracy of the conform.

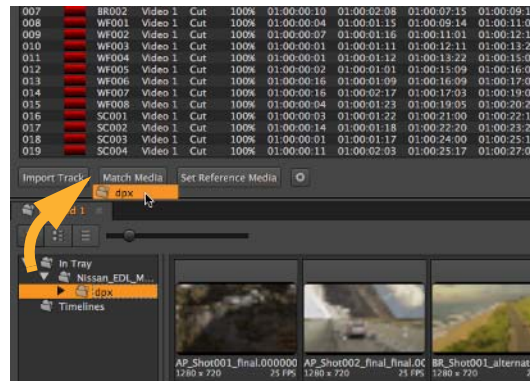
Note *You can display the conform Rules matched for each spreadsheet object by hovering the cursor over the required entry.*



- **Patterns**—sets the inclusion and exclusion parameters during the conform, separated by spaces. For example, ***mov *dpx** would only include or exclude MOV and DPX files.

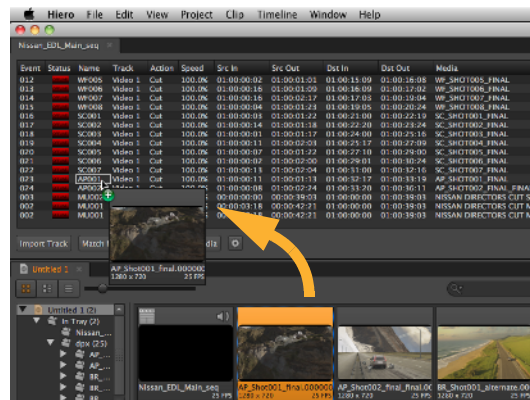
It's always a good idea to be as specific as possible when searching for conform media, but if the need arises conform Rules and Patterns can save time.

- When your source media is already known to Hiero, you can drag-and-drop the root folder from the Bin view onto the **Match Media** button. See [Ingesting Media](#) for information on getting media into Hiero.



Follow the **Conform Options** instructions on page 28 to complete the conform process.

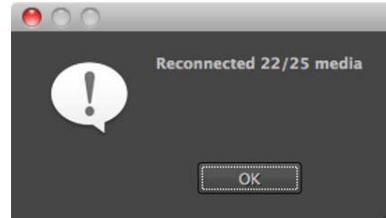
3. If you want to conform a single entry in the Media Spreadsheet, drag-and-drop the media from the Bin view onto the required entry in the spreadsheet.



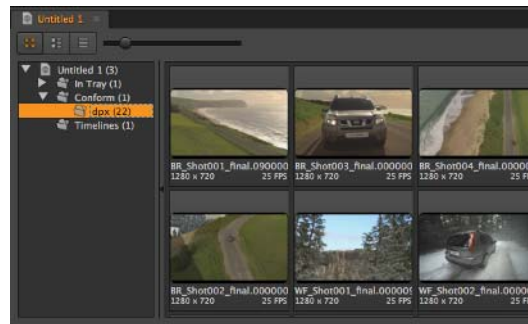
Conforming individual pre-ingested media doesn't require Conform Options because Hiero already knows the exact location of the media.

Whichever conform method you choose, Hiero attempts to conform the EDL or XML with the selected media.

A dialog box informs you of the success rate once the conform is complete.



Successfully conformed media is also displayed in a new Bin under the **Conform Bin**.



About the Media Spreadsheet

All clips in a sequence are displayed in an easy to read format in the Media Spreadsheet including clip status, the track it resides on, length, and the source file location.

After the initial conform, you can use the spreadsheet to locate or replace media in the Timeline pane, as well as massage a clip's timecode if it is invalid.

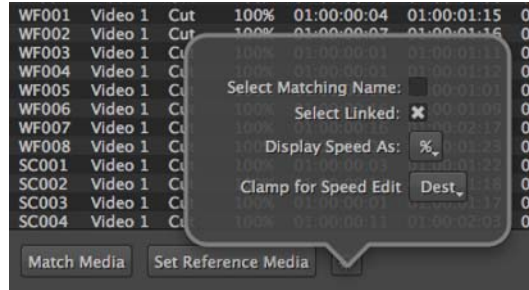
The Media Spreadsheet displays each entry's current media state:

- —the media was successfully conformed and its timecode is correct.
- —the media was successfully conformed, but the timecode is currently incorrect.
- —the media could not be conformed.

See [Managing Timelines](#) for more information on importing tracks and reference media.

There are also a number of controls, accessed by clicking the cog icon, that

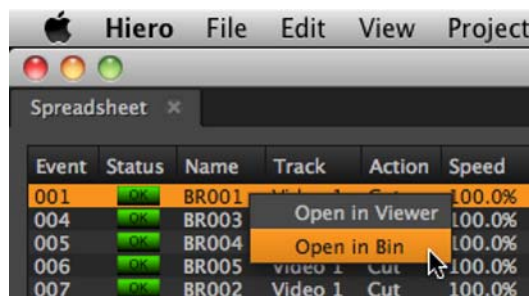
determine the spreadsheet's appearance and behaviour:



- **Select Matching Name**—when enabled, selecting an item in the spreadsheet highlights all items with the same name.
- **Select Linked**—when enabled, selecting an item in the spreadsheet highlights other items linked to it, such as audio tracks ingested with video tracks.
- **Display Speed As**—sets the unit used in the Speed column of the spreadsheet. Select either **fps** (frames per second) or **%** (the percentage of the media frame rate).
- **Clamp for Speed Edit**—sets whether the **Source** or **Destination** duration is preserved when a retime is applied to an item.

You can also locate or display clips in the Viewer directly from the spreadsheet.

Right-click a spreadsheet entry and select the required option:




- **Open in Viewer**—the selected clip opens in a new Viewer.
- **Open in Bin**—the selected clip is highlighted in the Bin view.

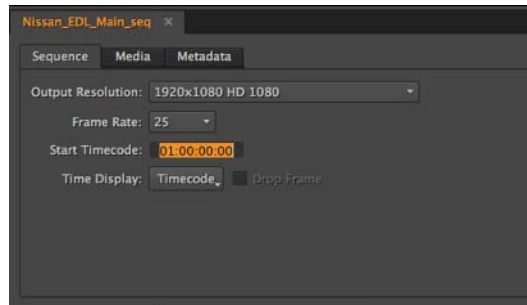
Adjusting Timecodes

You can easily adjust single or multiple clip timecodes:

1. Select all the invalid media in the spreadsheet.
2. Double-click in the **Src In** column.

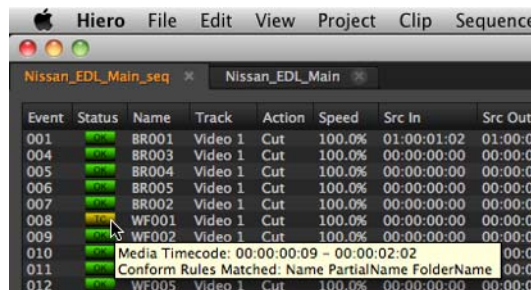
3. Adjust the timecode as required. The media changes state to .

Note *Timelines start at 01:00:00:00 by default, but you can change this to any value using the **Sequence** tab.*



If you're not sure what the timecode should be, you can:

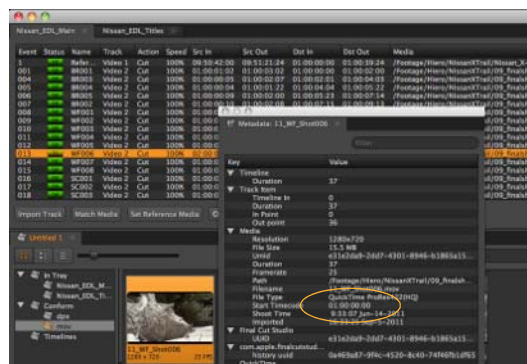
- Hover the mouse over the target clip in the Spreadsheet to view a timecode tooltip.



OR

- Examine the clip's metadata and calculate the correct **Src In**:
 1. Select the clip or clips in the **Conform Bin**.
 2. Right click and select **Show Metadata**.

The selected clip metadata is displayed in a floating pane.

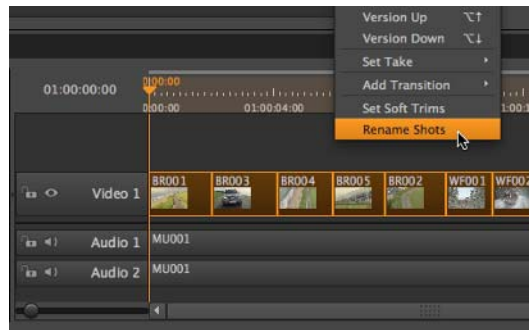


Renaming Shots on the Timeline

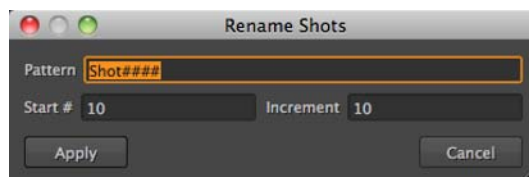
Once you've conformed your EDL or XML, you may want to rename clips on the Timeline sequentially for clarity.

To rename clips:

1. Select the clips to rename using the Timeline or spreadsheet view.
2. Right-click on the Timeline to display the context sensitive menu and select **Rename Shot**.

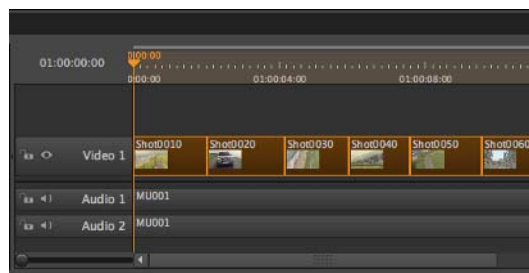


The **Rename Shots** dialog displays.



3. Enter a name and suitable numeric padding, for example **Shot####**.
4. Enter the **Start#** number of the sequence.
5. Enter the required increment, bearing in mind the numeric padding used in the **Pattern** field.
6. Click **Apply**.

The selected clips are renamed as specified. If you use the defaults, your Timeline might appear as follows:

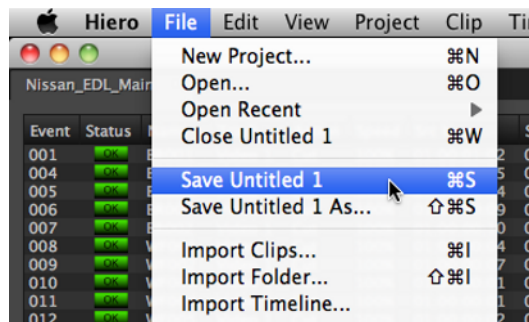


Saving and Loading Projects

Once you have a fully conformed Timeline, you can save your work as Hiero project using the **.hrox** file extension.

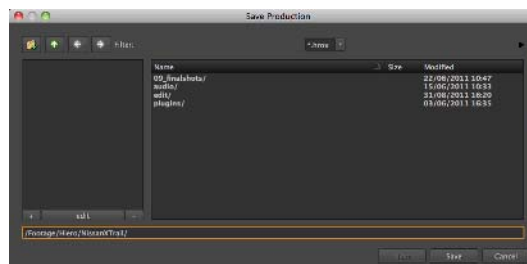
To save a project:

1. Navigate to **File > Save Untitled 1** or **Save Untitled 1 As...**



OR

Use the **cmd/ctrl + S** or **Shift + cmd/ctrl + S** hotkeys respectively. The **Save Project** dialog box displays.



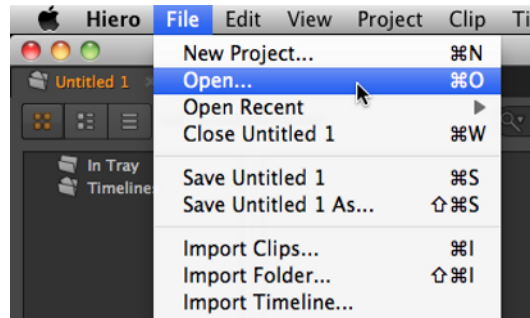
2. Browse to the save location and enter a name for the project.
3. Click **Save**.

Hiero saves your project to the location specified and appends the **.hrox** file extension automatically.

To load a project:

1. Navigate to **File > Open**.

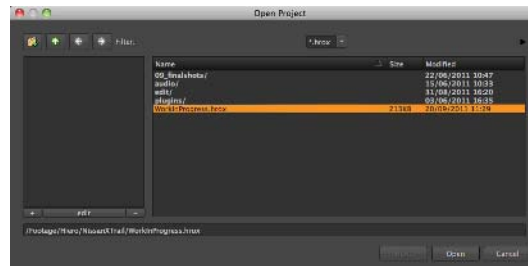
Note *If you need to open a project that you worked on recently, you can select **Open Recent** to quickly locate your work.*



OR

Use the **cmd/ctrl + O** hotkey.

The **Open Project** dialog box displays.



2. Browse to the file location and click **Open**.

Hiero opens your project and populates the necessary panes automatically.

5 INGESTING MEDIA

Hiero is able to handle the same file formats as Nuke (on the same operating system), including the associated embedded audio and WAV files.

For a full list of supported file formats and playback optimisation, see [Appendix B: Supported File Formats](#).

About Clips

Hiero’s interface sorts your clips into three broad categories: Audio and Video, Audio Only, and Video Only. Clips are displayed differently depending on their content, location, and in the case of the Viewer, the current mode (see [Viewer Tools](#)):

Clips in Bins

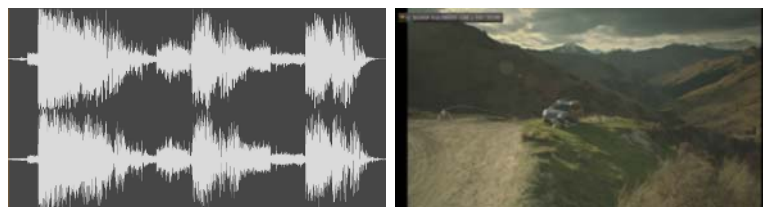


Audio and Video

Audio Only

Video Only

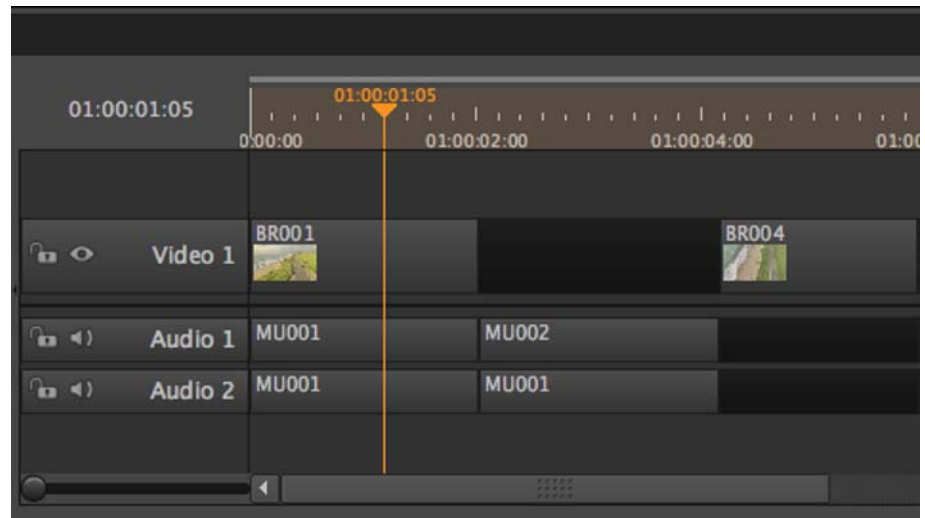
Clips in the Viewer



Audio Only

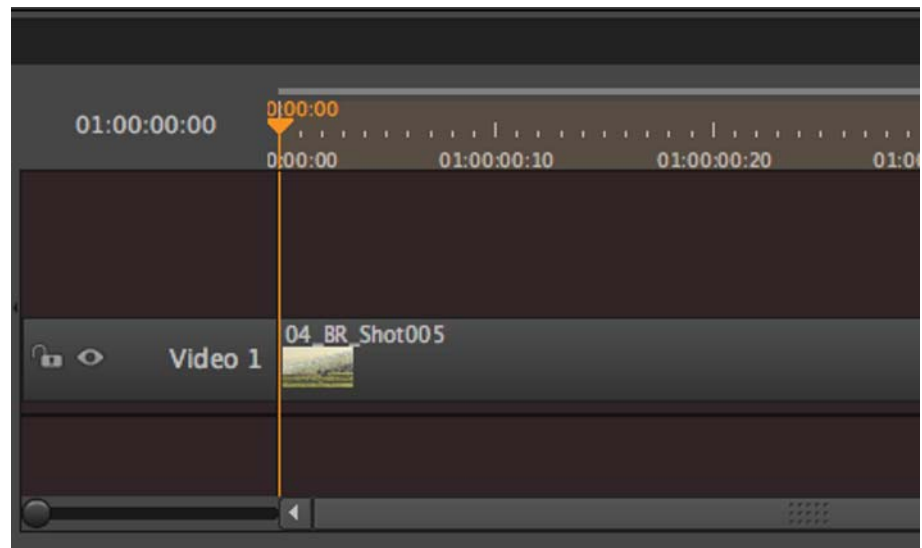
Video Only

Clips on a Timeline



Audio and Video Audio Only Video Only
(grey background)

Clip Opened as Timeline



(purple background)

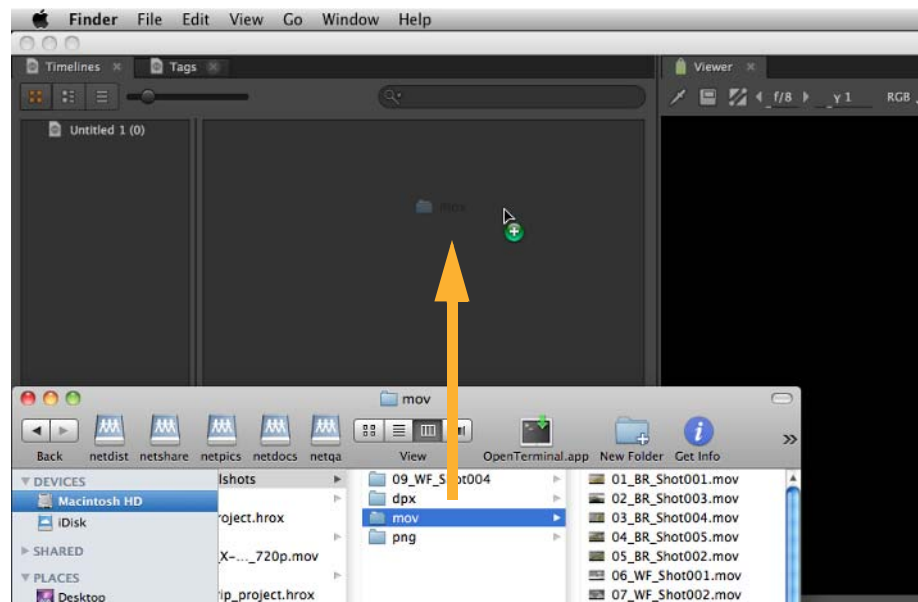
For more information on Timelines, see [Managing Timelines](#).

Ingesting Media

Adding media to Hiero is as simple as drag-and-drop from a file browser or selecting **File > Import Clips** or **Import Folder**. Hiero imports your media into the Bin view providing you with a thumbnail of all of your clips and preserving the original folder and file hierarchy.

Using Drag-and-Drop

Simply locate your media in a file browser and drag the clip, folder, or folders into Hiero's **Project** tab.



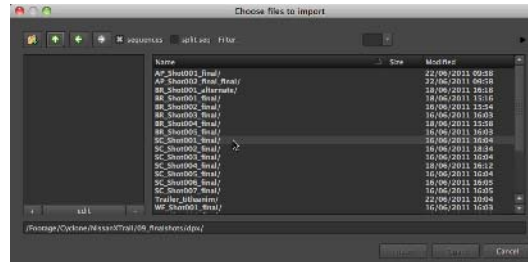
Using the File Menu

If you're used to working with menus, you can also import clips using the file browser. You can import individual clip files or entire folders, depending on the amount of media you intend to use.

1. Navigate to **File > Import Clips** or **Import Folders**.

Tip You can also use the *cmd/ctrl + I* and *shift + cmd/ctrl + I* hotkeys.

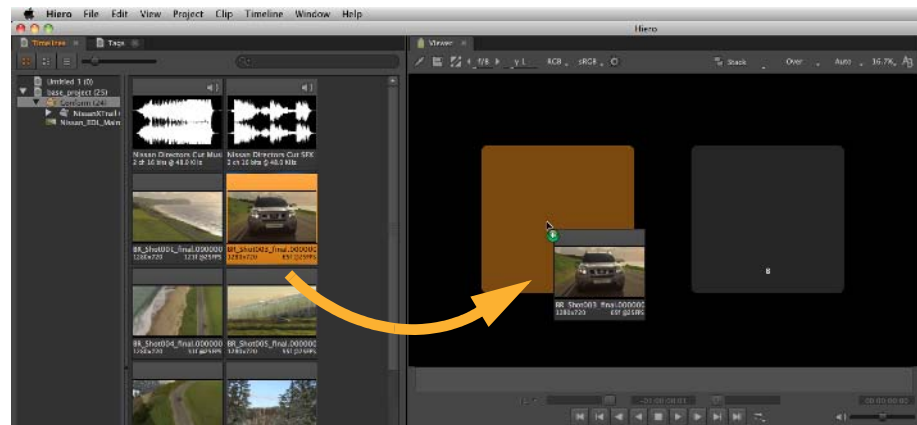
A browser dialog box displays.



2. Select the file(s) or folder(s) that you require and click **Open**.
Hiero automatically sorts through the folders you select and only imports supported file types.



Viewing Media









To view your media in the Viewer, simply drag-and-drop the clip or sequence from the **Project** tab on to a Viewer input.



Viewer Tools

The Viewer has two sets of tools for manipulating your media: the Viewer tools and the playback tools. The Viewer tools, located at the top of the Viewer, are used to affect the mouse pointer as you move over the Viewer, and to select Viewer preferences.

Icon	Function	Description
	Colour Sample	Enable or disable the RGB colour information sampler in the Viewer.
	ROI	Click and drag to define a Region of Interest (ROI) in the Viewer. The scopes only display information within the ROI, when active.

Icon	Function	Description
	SplitWipe	When both Viewer inputs contain an image, enable SplitWipe to compare the two images.
	Gain	Adjusts the gain applied to the linear input image before viewing, but doesn't affect your exported image.
	Gamma	Adjusts the gamma applied to the image after the viewing transform, but doesn't affect your exported image.
	Channels	Select the channel(s) to output to the Viewer, for example RGB , single channel, or Luma .
	Viewer LUT	Set the LUT used to display images in the Viewer, for example sRGB , rec709 , and REDLog .
	Guides	Enable or disable overlay bounding boxes, for example Action Safe .
	Blanking	Enable or disable a range of Viewer masks, for example 16:9 .
	Non RT Play-back	Sets the Viewer playback mode if realtime cannot be achieved, for example Skip Frames . The default is Play All Frames .
	Clipping	Enable or disable Hiero's clipping warning tool to alert you when the image is under or over exposed.
	View	Select the Viewer display mode, for example Audio and Video or Video Only .
	Viewer Layout	Select the Viewer configuration, Stack , Horizontal , or Vertical .
Blending Mode		Set the type of interaction between images in the Viewer, for example Onion Skin or Difference .
Image Quality		Set the Viewer image quality for working with low powered machines, for example Full Quality , Quarter , or Sixteenth .
Scale		Set the scale applied to the clip in the Viewer, for example 25% , 75% , or Fit .
	Viewer Output	Sets the output for the current input and enables or disables Tags.

Linux Playback

Running Hiero on Linux machines with NVIDIA graphics cards can suffer from tearing in the Viewer due to issues with OpenGL.

To avoid tearing:

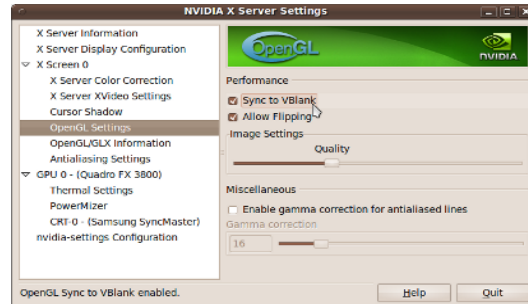
1. From the console, enter:

```
nvidia-settings
```

The **NVIDIA X Server Settings** dialog box displays.

2. Navigate to **X Screen 0 > OpenGL Settings**.

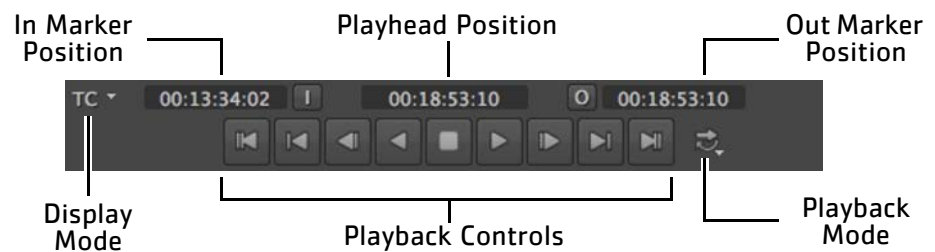
3. Check Sync to VBlank.



4. Launch Hiero as normal and check playback.

Playback Tools

The playback tools manipulate the media itself, in much the same way as other editing or playback software.



The playback tools can be summarised as follows:

- **In and Out markers**—numerical representations of the clip In and Out markers, if they're set.
- **Playhead position**—numerical representation of the current position of the playhead.
- **Display Mode**—select the timing method to display during playback:
 - **Timecode (TC)**—displays the playhead position within the current clip irrespective of the number of clips in the Viewer.
 - **Clip Frames (CF)**—displays the frame number read from the clip's metadata.
 - **Drop Frame**—is a timecode display option that leaves out two frames from the 30 fps timecode sequence every minute (except every 10th minute) so that long running NTSC sequences are accurate to a real-time clock (NTSC framerate is 3000/1001, or approximately 0.01% slower than 30fps).

Note *Enabling Drop Frame is a Timecode display feature only—the source media remains a continuous stream of frames.*

- **Playback Controls**—standard media playback controls including continuous or by frame forward and backward, skip to next or previous edit, and skip to start or end of all clips.

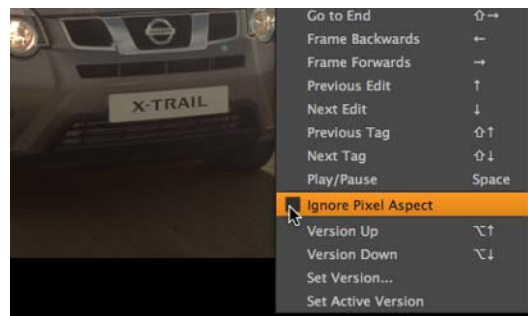
The following table describes playback behaviour depending on the **Playback Mode** selected.

Mode	Description	In/Out Effect
Repeat	Play through from start to finish in an infinite loop.	Repeats within the In-Out Points.
Bounce	Play through from start to finish then reverse to the start and repeat.	Bounces within the In-Out Points.
Stop	Play through from start to finish then stop.	Play through to the Out Point.

About Anamorphic Media

Hiero automatically recognises anamorphic clips and displays them with the correct aspect ratio.

If for any reason you want to display an anamorphic clip with a 1:1 aspect ratio, right-click in the Viewer displaying the clip and enable the **Ignore Pixel Aspect** checkbox.



About RED Media

When working with RED footage, using a RED Rocket card with Hiero can increase the rendering speed significantly.

Note *The RED Rocket icon is only visible if you have a RED Rocket installed.*

The RED Rocket icon has four states:



Inactive—the RED Rocket card is inactive.



Firmware error—there is a problem with the card firmware. Hover the mouse over the icon for more information.



Active—the RED Rocket card is present and active.

To modify the RED Rocket options:

1. Click the  icon in the **Viewer**.

Note You must have *Use RED Rocket* enabled in the *Preferences* dialog to access these options. See [Workspace Preferences](#) for more information.

The **RED Rocket Settings** dialog displays.



2. Temporarily disable the RED Rocket card by deselecting **Use RED Rocket card**. Unlike the option in the **Preferences** dialog, changing this setting does not affect Hiero at startup.
3. Click **OK** to save your settings.

Using Scopes

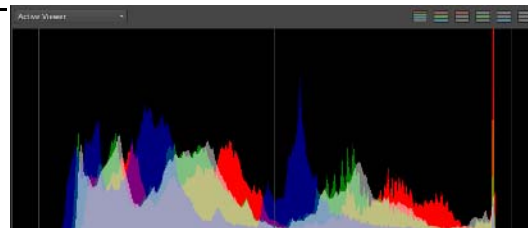
Hiero provides three realtime scopes to help you evaluate your media. Realtime scopes provide data as the Viewer plays your clip, but you can also view the scopes frame by frame if you prefer.

Histogram

The **Histogram** provides three colour channel and luma channel information that describes the distribution of red, green, blue, and luma pixels throughout the current frame.

The Histogram graphs the number of pixels at each brightness level, and from left to right, the areas of the Histogram represent shadow, mid tones, and highlights.

Viewer
Selection



Channel
Selection

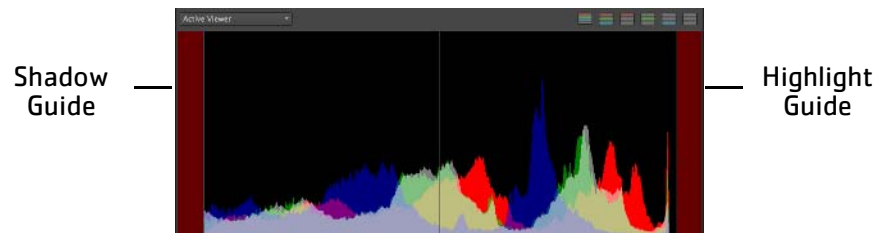
There are also **Viewer** and **Channel** selection controls on the **Histogram** tab:

- **Viewer selection**—if you have multiple Viewers open, use the drop down menu to associate Histogram output to the required clip. The default value, **Active Viewer**, automatically displays details on the last Viewer you selected.
- **Channel selection**—select the channel information to output. The default setting displays RGB and Luma, but you can break the view down to just RGB or single channels.

The scopes feature global customisable guides to help you grade your clips. Navigate to **Hiero > Preferences > Scopes** and enter values between **0** and **1** for the **Black** and **White** points.

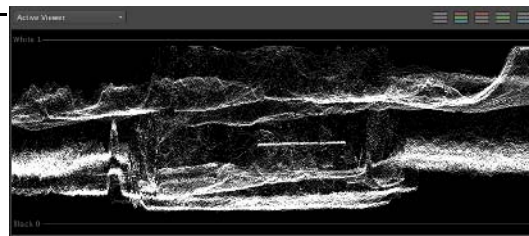


The guides at the edges of the Histogram turn red to warn you when the distribution is out of range:



Waveform

The **Waveform** scope provides information on clip luminance, or brightness, which you can use to decide whether the clip is over or under exposed. The white traces represent luminance values from 0 - 100% (black through the spectrum to white). The higher the waveform, the brighter the image in the Viewer.

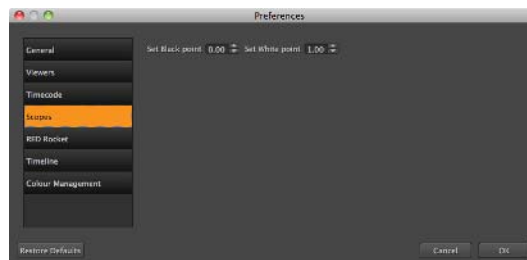
Viewer
SelectionMode
Selection

The upper white marker is used to measure when over exposure could be a problem. If your waveform has a lot of traces over the white marker, you should consider reducing the brightness of the clip. The opposite is true of the lower black marker.

There are also **Viewer** and **Mode** selection controls on the **Waveform** tab:

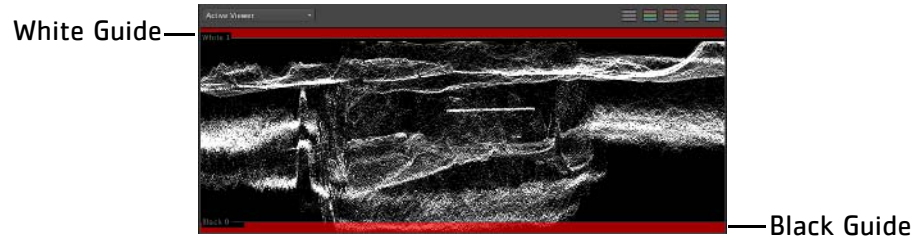
- **Viewer selection**—if you have multiple Viewers open, use the drop down menu to associate Waveform output to the required clip. The default value, **Active Viewer**, automatically displays details on the last Viewer you selected.
- **Mode selection**—select the mode to output. The default setting displays Luma only, but you can also view the RGB channels ganged together or separately.

The scopes feature global customisable guides to help you grade you clips. Navigate to **Hiero > Preferences > Scopes** and enter values between **0** and **1** for the **Black** and **White** points.



The guides at the top and bottom of the Waveform turn red to warn you

when the distribution is out of range:



Vectorscopes

Vectorscopes display colour, saturation, and hue information for the current frame. Similar to colour wheels, Vectorscopes display information radially, from the centre outward. The farther from the centre the data spans, the more saturation is represented.

In Figure 5.1, you can see that the frame represented contains mostly yellows and reds, but the values are not oversaturated. Figure 5.2 represents a badly saturated frame. Notice the spill of yellow traces distributed toward the edge of the scope pass the target (the highlighted square).

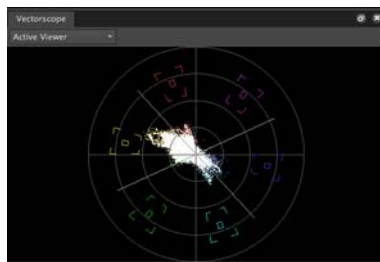


Figure 5.1: Normal saturation.

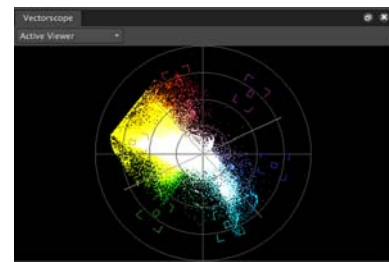


Figure 5.2: High Saturation.

There is also a **Viewer** selection control on the **Vectorscope** tab:

- **Viewer selection**—if you have multiple Viewers open, use the drop down menu to associate Vectorscope output to the required clip. The default value, **Active Viewer**, automatically displays details on the last Viewer you selected.

Using Tags

Tags are used to mark shots of a particular type or content as you organise your project. The default Tags supplied with Hiero include **Approved** and **Reference** Tags. You can also create custom Tags by right-clicking in the

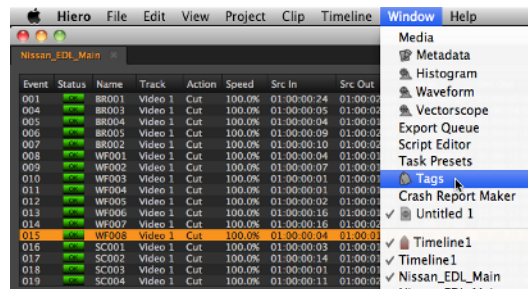
Tags tab or by pressing **cmd/ctrl + Y**. You can apply Tags to clips, individual frames, sequences, and tracks.

Tags can also be used to define what Hiero exports. For example, exporting selected tracks from a multi-track Timeline. See [Round-Tripping and Export Management](#) for more information.

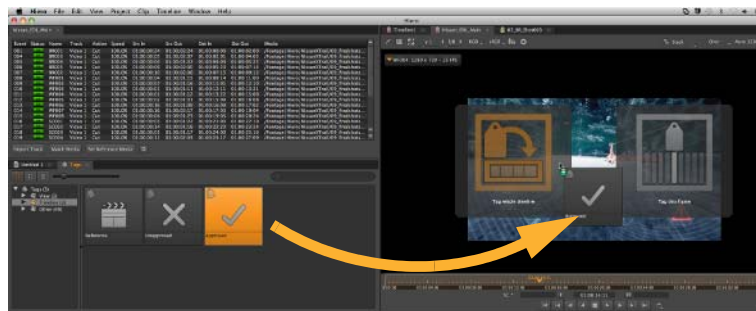
Tagging Using the Viewer

To apply a Tag using the Viewer:

1. Navigate to **Window > Tags**.
The **Tags** tab displays.



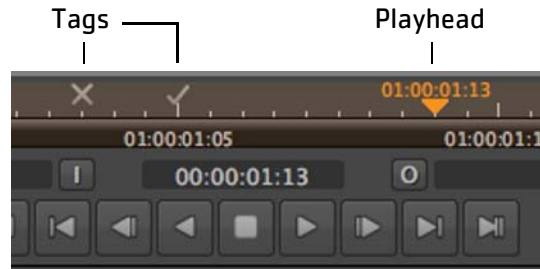
2. Drag-and-drop the required Tag from the **Tags** tab to the Viewer.



Depending on whether you're looking at a clip or Timeline, drop the Tag on **Tag this frame**, **Tag whole clip**, or **Tag whole timeline** as required.

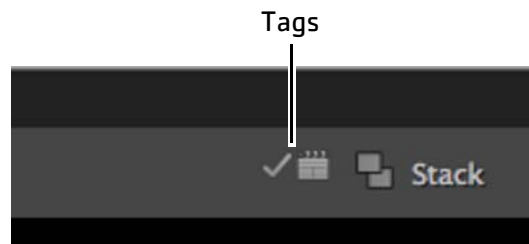
Tags applied to frames appear above the playback tools in the Viewer

Timeline.



Tip Use *Shift + ↓* or *↑* to skip to the next or previous Tag on the current clip or reposition Tags by dragging them along the Viewer Timeline.

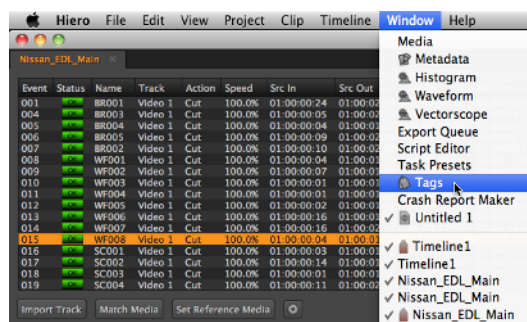
Tags applied to entire clips or Timelines appear above the Viewer, next to the **A/B layout** dropdown menu.



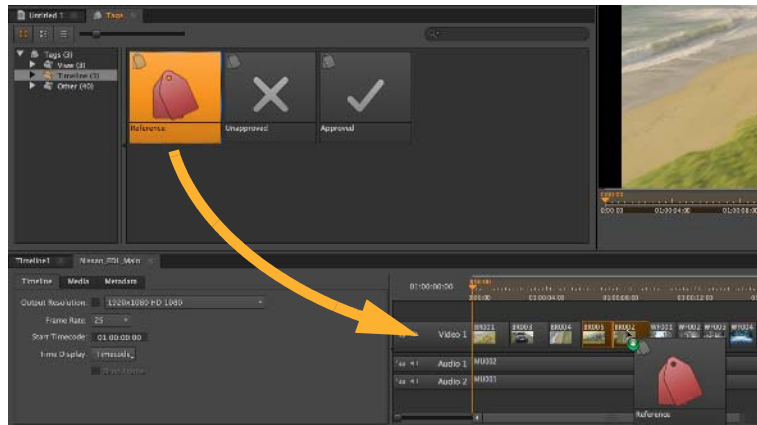
Tagging Using the Timeline Pane

To apply a Tag using the Timeline pane:

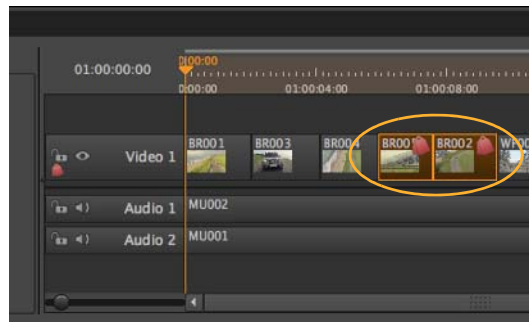
1. Navigate to **Window > Tags**.
The **Tags** tab displays.



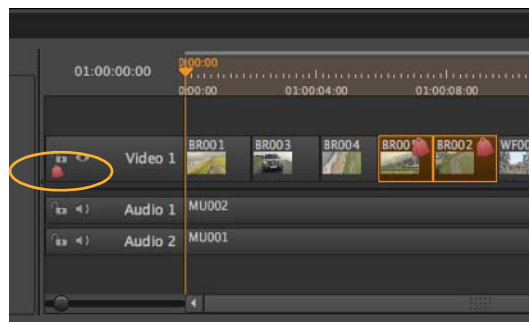
2. Drag-and-drop the required Tag from the **Tags** tab to the Timeline pane. Depending on where the Tag is dropped, you mark a clip (or clips if you make multiple selections) or a track.



Tags applied to clips appear on the right of the selected clip(s) on the Timeline.



Tags applied to tracks appear in the track label on the left of the Timeline pane.

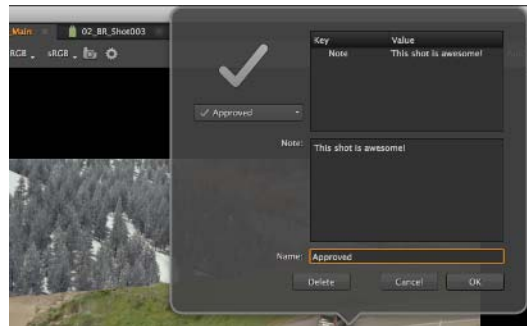


Adding Notes to Tags

In some cases, a simple Tag on a frame or clip may not contain all the information that you wish to pass on to the next stage of production. Adding a note to a Tag can provide that extra detail.

Note *To delete a note, don't click **Delete**, because this refers to the Tag. Instead, delete the notes in the window and click **OK**.*

1. Add notes to Tags by clicking on the required Tag and entering text. The example shows a note added to a clip Tag, but you can also add notes to frame and Timeline Tags in the same way.



2. Click **OK** to save the note.

Filtering and Flagging Media Using Tags

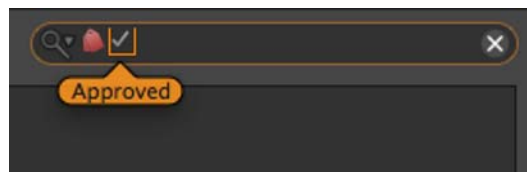
You can use Hiero to search for clips containing certain Tags, for example, if you wanted to find all clips that you tagged as **Approved**.


There are two types of Tag search you can perform: **Filter** and **Flag**. Select the desired search type by clicking the magnifier icon in the **Project** tab.

- **Filter**—displays all objects that contain the specified Tag. This is the default search method.
- **Flag**—displays all objects and marks the items that don't match the search Tag.

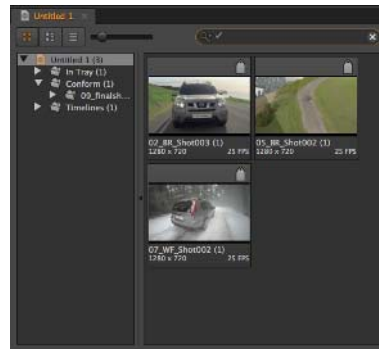
Drag the required Tag from the **Tags** tab into the search box and select the Bin or Bins you want to Filter or Flag.

Tip *If you have more than one search criteria, click the icons in the search box to display a brief description of the icons.*

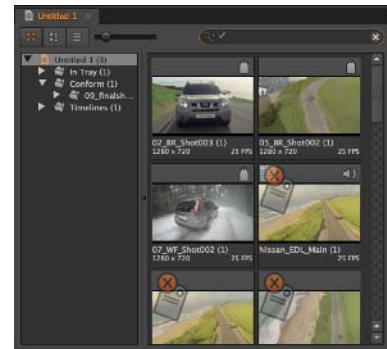


Filters and flags persist until you change the search criteria or click the  icon in the search box.

The examples below show Hiero **Filtering** a Bin to display only media with the **Approved** Tag applied and **Flagging** all media that doesn't have the **Approved** Tag applied to it.



Filtering...



...and Flagging

Creating Custom Tags

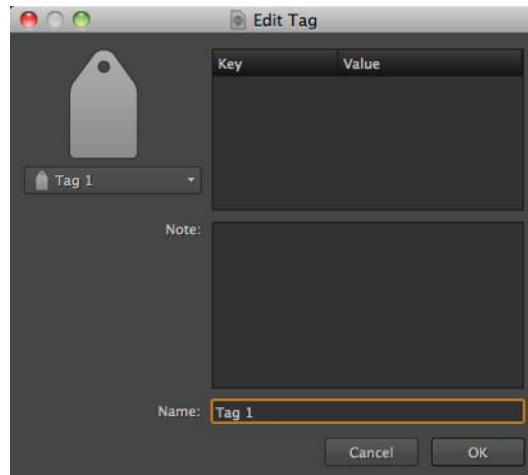
While using Hiero you may find that you require a specific Tag or suite of Tags that are not provided by default. Creating Custom Tags allows you to really control the organisation of your media, and you can even create your own Tag icons.

To create a Custom Tag, do the following:

1. Select the Bin to contain the Tag in the **Project** tab.
2. Navigate to **Project > New Tag**, or press **cmd/ctrl + Y**.

The new Tag is placed in the selected Bin.

3. Double-click the Tag to open the **Edit Tag** dialog box.



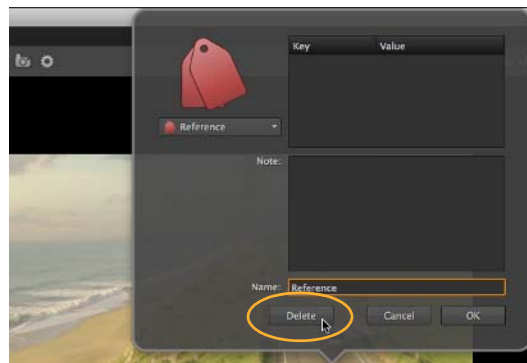
4. Enter a description for the Tag in the **Name** field.
5. Click the **Tag** dropdown menu to select an icon for the Custom Tag.

Tip *You can import your own image for the Tag by selecting **Assign** to open the **Finder**.*

6. Click **OK** to save your changes.

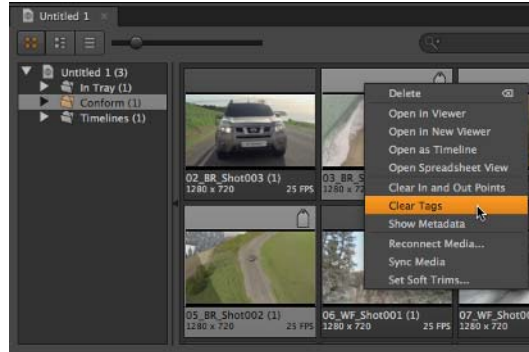
Removing Tags

To remove a Tag from a frame or clip, click the Tag and click **Delete**.

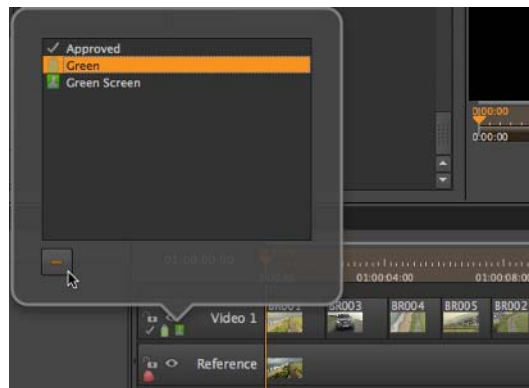



You can remove all Tags from a clip or selection of clips by right-clicking

your selections in the Bin and choosing **Clear Tags**.



To remove a Tag from a track, click on a Tag icon and select the required Tag.

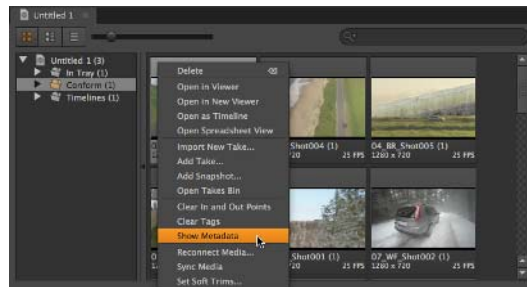


Press  to remove your selection.

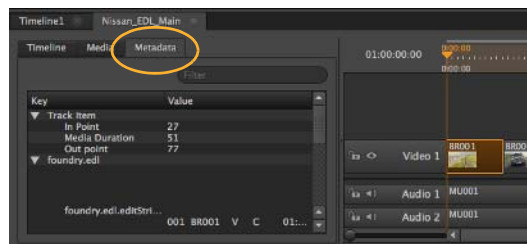
Viewing Metadata

Metadata is information that describes media content, separate from the clip itself, in the form of a table on the Metadata tab. Types of metadata include Duration, File Size, and the Path to the location of the source media.

To view Metadata for a Bin clip, right-click the clip and select **Show Metadata**.



To view Metadata for a clip in a sequence, select the **Metadata** tab and click on the clip to examine.



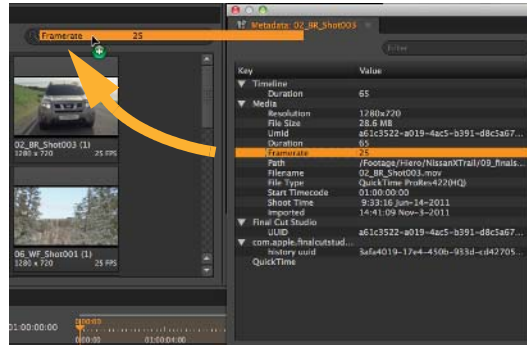
Filtering and Flagging Media Using Metadata

If searching your Project using Tags has not filtered your media effectively, you can use Hiero to search for clips containing certain Metadata. For example, if you wanted to find all clips that had a particular Resolution or Framerate.

To filter or flag using Metadata:

1. Right-click the clip that contains the required metadata key and select **Show Metadata**.

2. Drag-and-drop the required key from the Metadata pane to the Bin view search box.

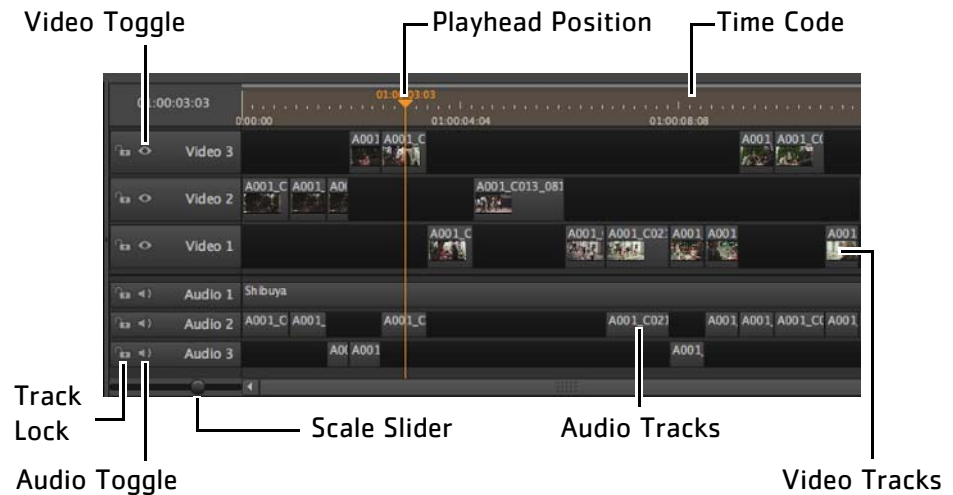


3. Use the metadata key as a filter or flag as described in [Filtering and Flagging Media Using Tags](#).

6 MANAGING TIMELINES

Timelines in Hiero can contain any number of video sequences and audio tracks with each track containing clips that reference the source clips in your project—making changes to clips in the Timeline does not affect the original source clip.

Note *Conformed EDLs only support one video sequence. If you've created multiple EDLs from the same edit, you can add each one into the Timeline pane using the **Import Track** button in the Spreadsheet pane. See [Adding Tracks to the Timeline](#).*



- **Video Toggle**—quickly turn off and on video tracks during playback.
- **Playhead Position**—displays the playhead location synchronised with the contents of the Viewer.
- **Time Code**—displays the Timeline scale. You can adjust the scale using the Scale Slider or by using the mouse wheel.
- **Video Tracks**—contain all video sequences for the current Timeline.
- **Audio Tracks**—contain all the audio clips for the current Timeline.
- **Scale Slider**—adjusts the scale of the Timeline. You can fit the contents of the Timeline to the screen space available by pressing the F hotkey.
- **Audio Toggle**—quickly turn off and on audio tracks during playback.
- **Track Lock**—secure the selected track to disable all editing tools.

Video tracks in multi-track Timelines are read from the highest number track downward, for example Video 3, Video 2, Video 1. As a result, if video is present on track 3, video on track 2 in the same time slice is obscured.

In Figure 6.1, although the playhead crosses clips on three video tracks, only the clip in Video 3 appears in the Viewer.



Figure 6.1: A typical multi-track Timeline

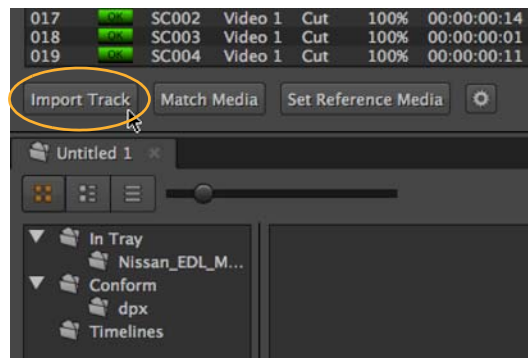
Audio tracks, on the other hand, are layered and can be played back simultaneously—all three audio tracks crossed by the playhead in Figure 6.1 play back together, creating a complete audio backing for the video.

Adding Tracks to the Timeline

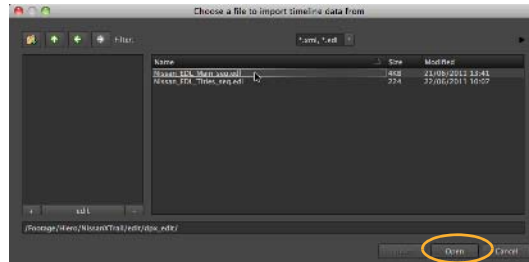
Hiero allows you to add empty tracks to existing Timelines or import another EDL or XML edit—effectively a sequence within the Timeline.

To import another EDL or XML edit:

1. Click **Import Track** and use the browser to locate the EDL or XML.

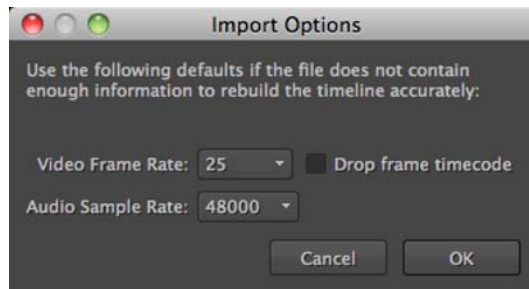


2. Select the file and click **Open** to import the sequence.




Note *If you're importing an EDL, bear in mind that there is no guaranteed framerate information included in the file.*

*When you import EDLs, an **Import Options** dialog displays.*



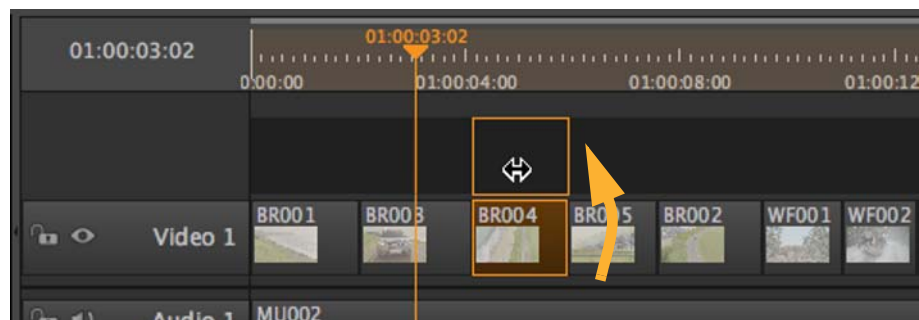
*Select the correct **frame rate** and **audio sample** rate using the dropdown menus, then click **OK** to import.*

3. Before conforming the new track, be sure to lock down any existing tracks to stop them re-conforming at the same time.

Click the  icon on any tracks that you don't want to conform.

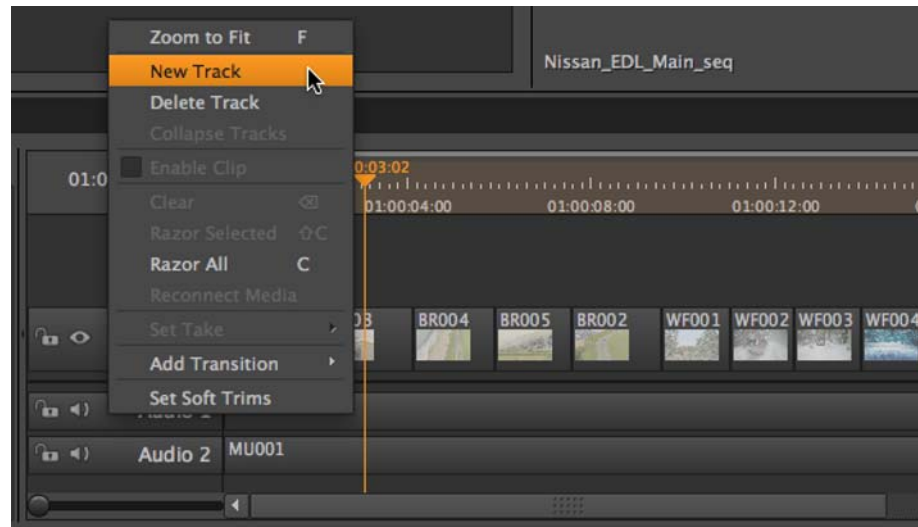
To add new tracks:

- Drag-and-drop a clip above or below existing tracks as shown,



OR

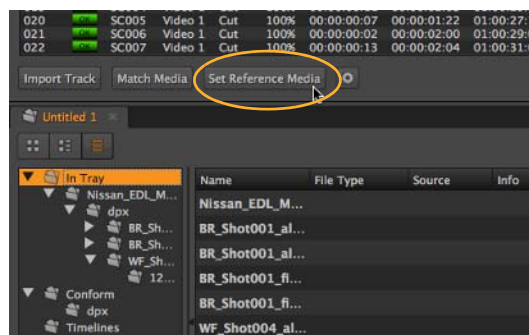
- Right-click an existing audio or video track and select **New Track**.



Using Reference Media

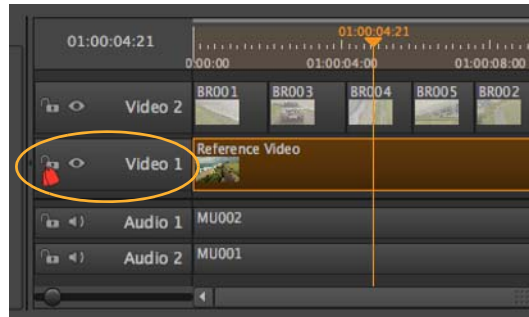
Importing a lower resolution version of your Timeline enables you to compare your current Timeline against the reference media to avoid issues with continuity, missed frames, and so on.


To import reference media, click **Set Reference Media** and use the browser to locate the required file.



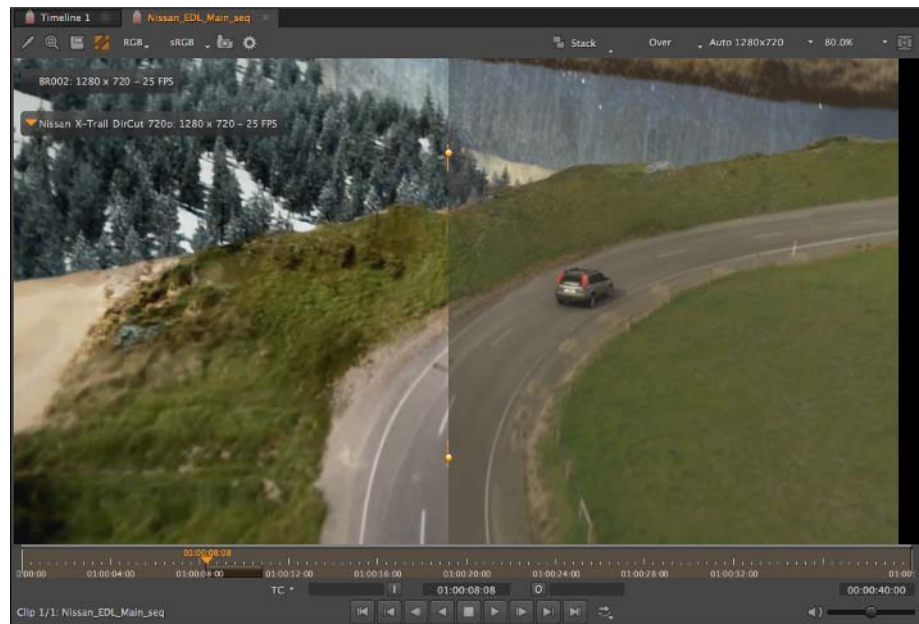
The reference media is automatically imported into the **Video 1** track, pushing all other tracks upward, and is marked with the **Reference Media**

tag.




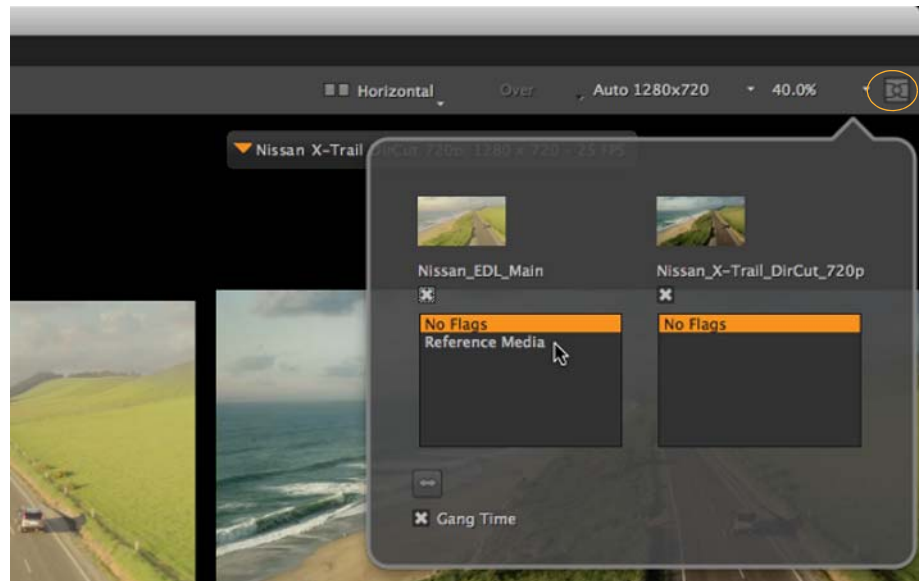
After importing the reference media, use the show/hide icon  to compare the current Timeline against the reference clip.

Alternatively, you can drag the reference media from the **Conform** Bin to the second Viewer input, and use the SplitWipe tool to compare media,



OR

Switch the Viewer to **Horizontal** mode and click the  button to determine the Viewer output using track flags.

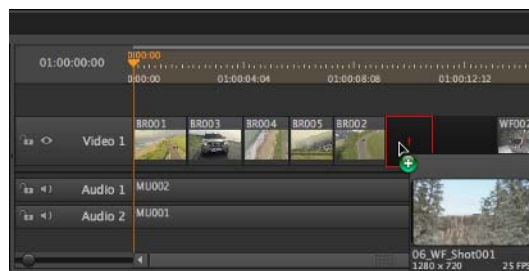


Adding Clips to the Timeline

Hiero's Timeline allows you to add clips by simple drag-and-drop from either the Viewer or Bins. Using the Viewer restricts you to a single clip, the current clip, but you can drag as many clips as you like from Bins.

If the Timeline already contains clips, take care not to overwrite existing clips—the most recent clip overlays any existing clip. To avoid this, do one of the following:

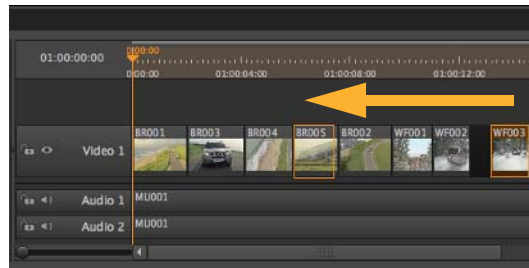
- Use the **Move Clip Tool** to make space for the new clip and then drag-and-drop it in to the space (see [Move Tool](#) for more information),



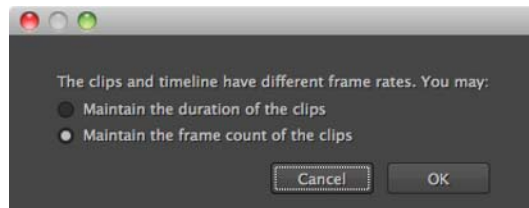
OR

- Drag-and-drop the new clip at the end of the sequence. Next, drag the new clip to an existing transition, hold down the **alt** hotkey, and drop the clip to **Ripple** all other clips down the Timeline.

Tip The cursor changes to  when you're using **Ripple** mode.



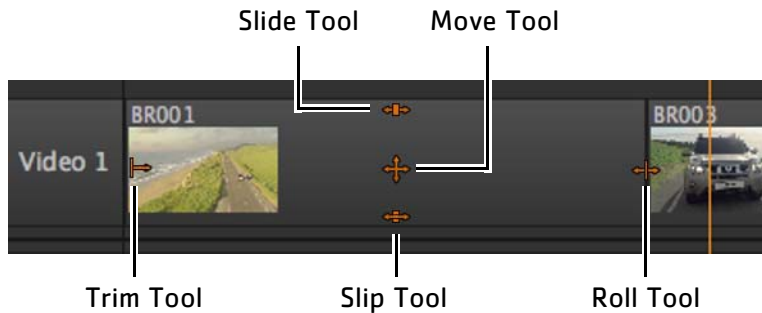
Note If the clip you're adding doesn't have the same framerate as the Timeline, you're prompted to choose whether the clip's duration or framerate is retained.



Timeline Editing Tools

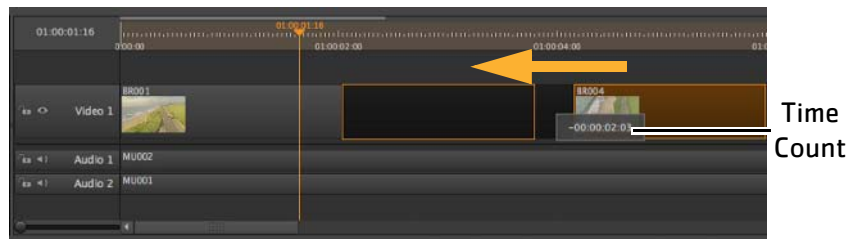
Hiero's Timeline Editing Tools allow you to manipulate your clips directly in the Timeline instead of the Viewer. Bear in mind that edits you make in the Timeline are not carried over to the associated source clips.

Unlike some applications, the Timeline tools are automatically enabled depending on the position of your mouse in relation to the clip.

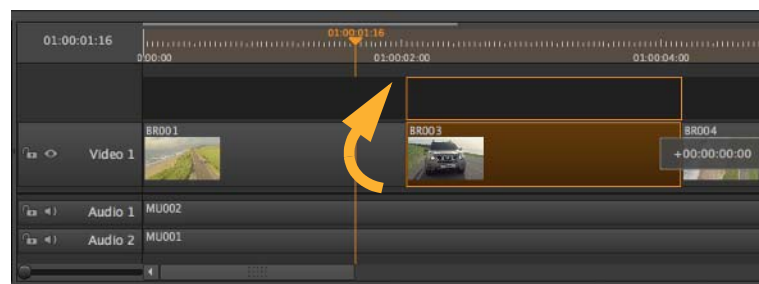


Move Tool







Placing the mouse in the centre of a clip activates the **Move** tool. Click and drag the selected clip to required position on the Timeline. A time count popup, in conjunction with the snap to clip function, helps you to reposition the clip accurately.



You can also move clips up and down the track hierarchy using drag-and-drop.



Move tool modifiers

Mode	Method	Indicator	Description
Overwrite	drag and drop		The default move mode. The dragged clip overwrites any clips that are present in the move location.
Ripple	drag then hold Alt and drop		Drag and drop clips on top of other clips without overwriting content—clips are pushed down the Timeline to accommodate the dragged clip.
Duplicate	hold Alt and drag then release Alt and drop	 	Copy the clip, then drag and drop on top of other clips overwriting existing content—clips are not pushed down the Timeline to accommodate the dragged clip.
Ripple and Duplicate	hold Alt then drag and drop while holding Alt	 	Copy the clip, then drag and drop clips on top of other clips without overwriting content—clips are pushed down the Timeline to accommodate the dragged clip.

Delete modifiers

Action	Hotkeys	Description
Delete	Backspace	Delete the selected Timeline clip(s) or gap(s)
Ripple Delete	Shift + Backspace	Remove the selected clip(s) and ripple clips down stream to close gaps in the Timeline Note: The ripple effect may not close gaps entirely, because Hiero does not allow linked tracks to become desynchronised during rippling.

If you need to nudge a clip or clips by just a frame or two, you can select the clips on the Timeline and press **<** or **>** to nudge by one frame in the chosen direction.

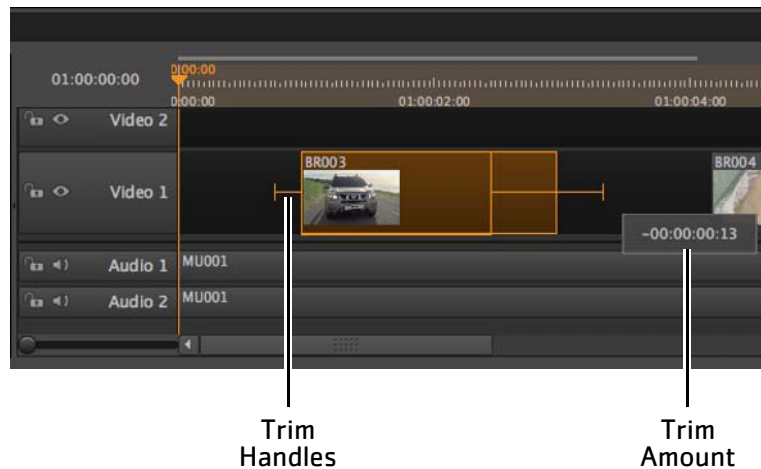
Note *You cannot overwrite other clips on the Timeline using the nudge keys.*

Trim Tool

The **Trim** tool allows you to alter the output of a clip, within its total length, by adding or removing handles.

Note *You can only increase clip output if the clip already has handles.*

1. Place the mouse at the left or right of the clip to activate the **Trim** tool.
2. Drag the edit point to the new position and release the mouse to complete the Trim.

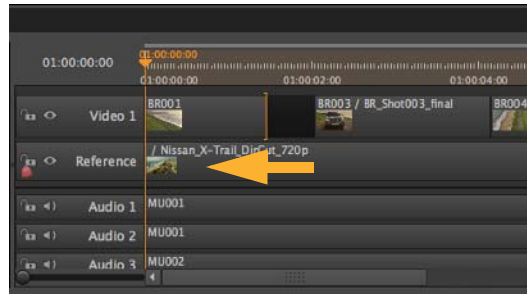


The Viewer displays the new In or Out point (depending on whether you're adjusting the beginning or end of the clip), allowing you to accurately gauge the new output of the clip.



Alternatively, select the cut point by clicking at the beginning or end of the

clip and nudge the cut using the < and > keys.



Slip Tool

The **Slip** tool allows you to shift a clip's In and Out Points by the same amount and in the same direction, retaining the original clip length but altering the Timeline output.

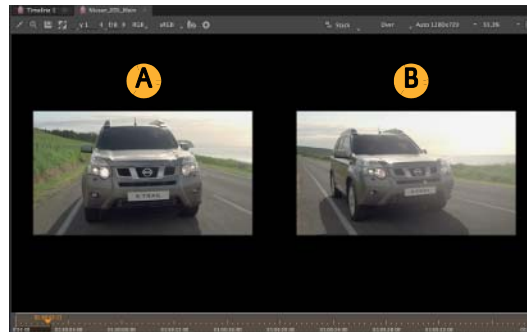
Note *The target clip must have handles to use the **Slip** tool.*

1. Place the mouse at the bottom of the clip to activate the **Slip** tool and display the slip handles.
2. Drag the clip to the new position and release the mouse to complete the slip.



Note *Using the **Slip** tool does not move the clip on the Timeline, only the clip output is changed.*

The Viewer displays the slipped start frame (A) and end frame (B), allowing you to accurately gauge the new output of the clip.



Slide Tool

The **Slide** tool allows you to move a clip in relation to the clip before and after the target clip, without changing its length or Timeline output.

The clips either side of the target are shortened or lengthened within the limits of their handles to accommodate the slide.

Note *The surrounding clips must have handles to use the **Slide** tool.*

1. Place the mouse at the top of the clip to activate the **Slide** tool and display the slide handles.
2. Drag the clip to the new position and release the mouse to complete the slide.

For example, if you slide the target clip (B) five frames to the right, the preceding clip (A) ends five frames later and the next clip (C) starts five frames later.

Figure 6.4 shows a Timeline containing three clips, and Figure 6.5 shows the same clips with the clip (B) sliding to the right.

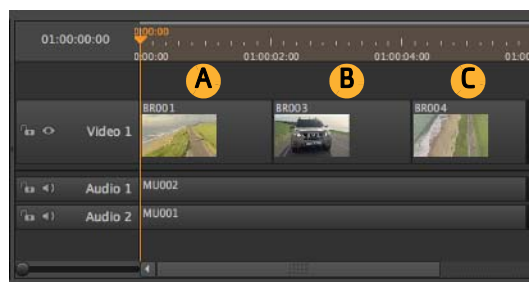


Figure 6.2: Original clips.

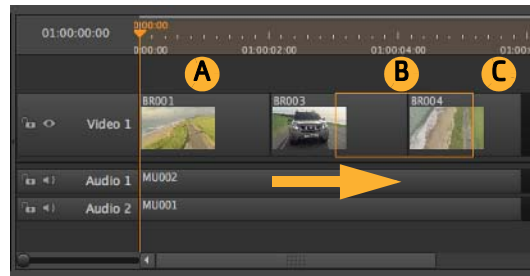
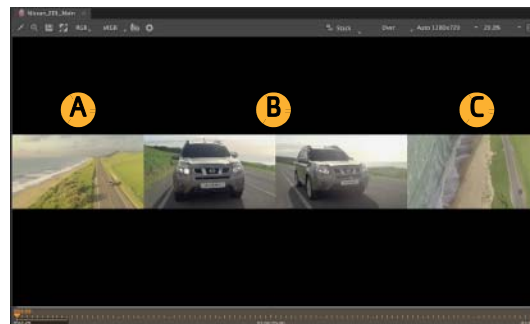


Figure 6.3: Rolled clips.

The Viewer displays the new end point of the previous clip on the left and the new start point of the next clip on the right, allowing you to accurately gauge the slide.

The two centre images (B) represent the start and end frames of the target clip, which don't change.



Roll Tool

The **Roll** tool enables you to roll a single edit within the available handles, shortening one clip while lengthening the other, but keeping the overall duration the same.

Note *At least one of the target clips must have handles to use the **Roll** tool.*

1. Place the mouse on the cut between clips to activate the **Roll** tool and display the handles.
2. Drag the clip to the new position and release the mouse to complete the roll.

For example, if you roll five frames at the end of one clip (A), the next clip (B) would start five frames later. Figure 6.4 shows a Timeline containing two clips, and Figure 6.5 shows the same clips with the cut point “rolled” to the right.

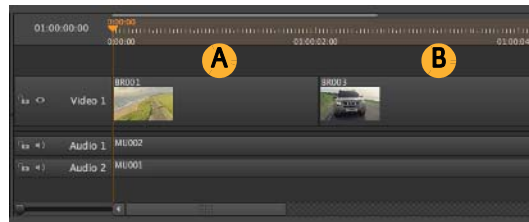


Figure 6.4: Original clips.

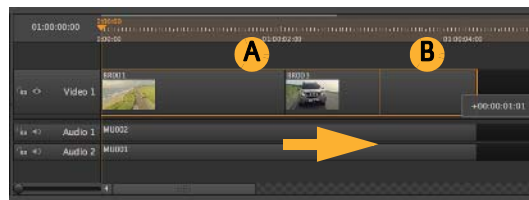
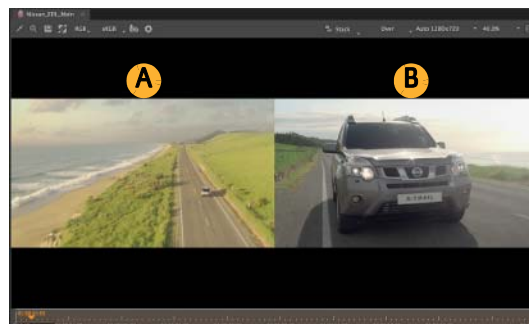
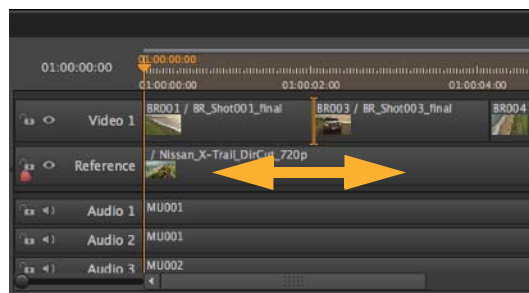


Figure 6.5: Rolled clips.

The Viewer displays the pre-edit clip on the left and the post-edit clip on the right, allowing you to accurately gauge the new position of the edit.



Alternatively, select the cut point by clicking between the clips and nudge the cut using the < and > keys.

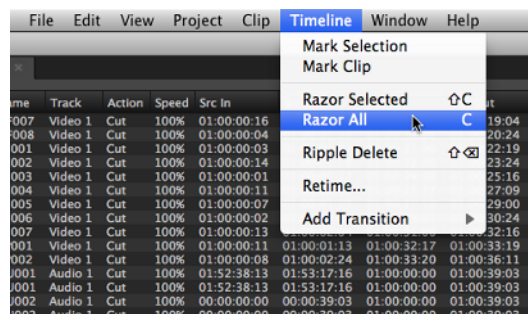


Razor Tool

The **Razor** tool allows you to cut a clip or clips in to separate parts so you can remove sections or rearrange clips on the Timeline. Unlike the other Timeline tools described in this section, Razor is menu driven not mouse position sensitive.

The Razor is applied at the playhead position and can cut through selected tracks using **Window > Razor Selected**, or all tracks using **Window > Razor All**.

Note *You can also use the **shift + C** and **C** hotkeys, or the right-click context menu to perform the respective cuts.*



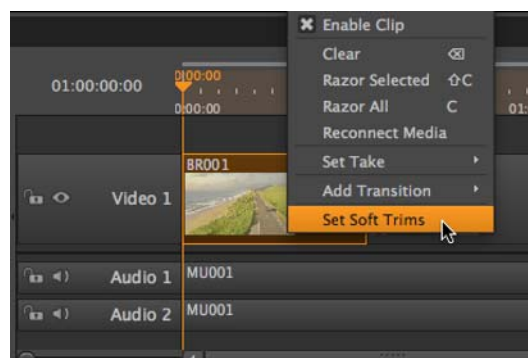
Adding Soft Trims

Soft Trims limit the handles on clips to a pre-defined amount, simulating In and Out points on the source media, allowing you to use other Timeline tools on the clip such as Slip and Slide.

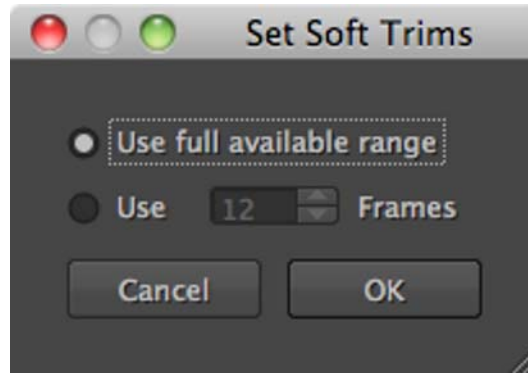
Note *Soft Trims are limited to the source clip's frame range—a clip's output plus trims cannot exceed the total frames available.*

To add Soft Trims to a clip:

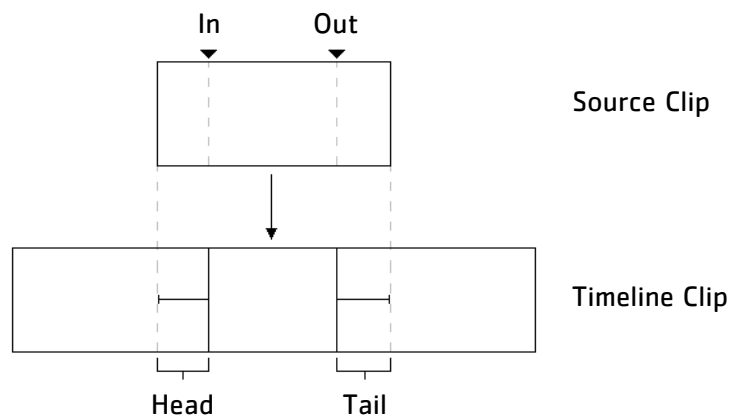
1. Locate the clip on the Timeline.
2. Right-click and select **Set Soft Trims**.



The Set Soft Trims dialog displays.

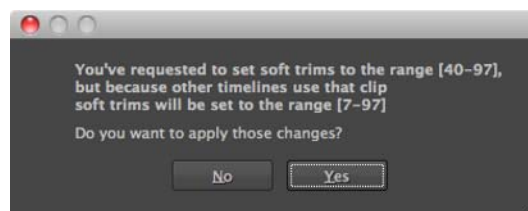


3. Set the number of frames to add to the head and tail of the clip:



- **Use full available range**—sets the handles to the full extent of the clips frame range.
 - **Use Frames**—adds the specified number of frames to the head and tail of the clip.
4. Click **OK** to add the specified number of handles.

If the handles requested are not within the available frame range, Hiero displays a warning dialog with a suitable correction.



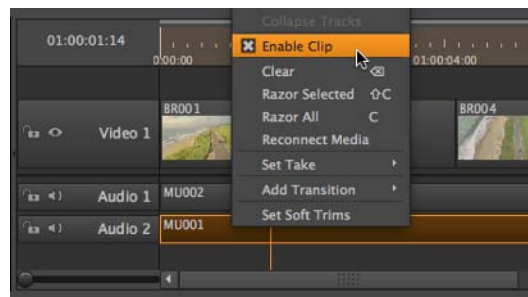
Click **Yes** to accept, or **No** to abort the Soft Trim operation.

Enabling and Disabling Clips

You can temporarily enable or disable a clip or clips on the Timeline to selectively view your footage without removing the clip(s), for example if you wanted to listen to certain audio layers within a Timeline.

To enable or disable a clip or clips:

1. Select the clip or clips you want to enable or disable using the mouse and selection hotkeys.
2. Right-click on the highlighted clip and deselect **Enable Clip** to disable the clip.



Disabled clips appear black and are effectively removed from the Timeline.



3. Right-click the clip and select **Enable Clip** to re-enable the clip.

Adding Transitions

Hiero supports basic fade in and fade out transitions as well as dissolves between clips. Transitions come in three flavours:

- **Fade in**—fades in from black on a single clip.
- **Fade out**—fades out to black on a single clip.
- **Dissolve**—fades out from one clip and into the next, by merging frames.

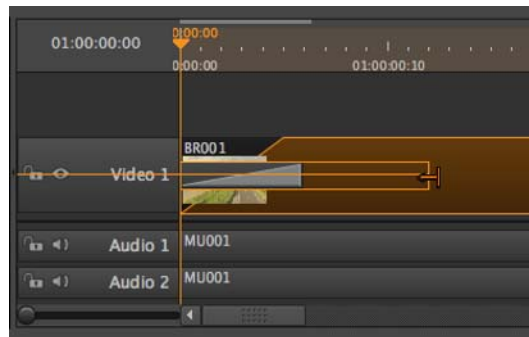
Note *Dissolves must be between clips on the same track.*

To add a fade transition:


1. Right-click the target clip and select **Fade In** or **Fade Out** to add the fade icon to the clip.

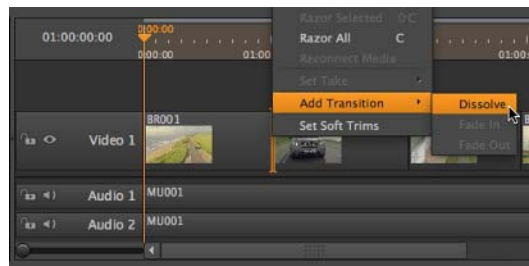


2. Adjust the fade by dragging the fade icon, in a similar way to using the **Roll** tool.

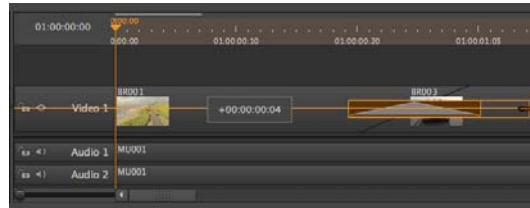


To add a dissolve transition:

1. Hover the mouse pointer over a cut point between two clips.
The cursor changes to .
2. Right-click and select **Dissolve** to add the dissolve icon to the clip.



- Adjust either side of the dissolve by dragging the icon, in a similar way to using the **Roll** tool.



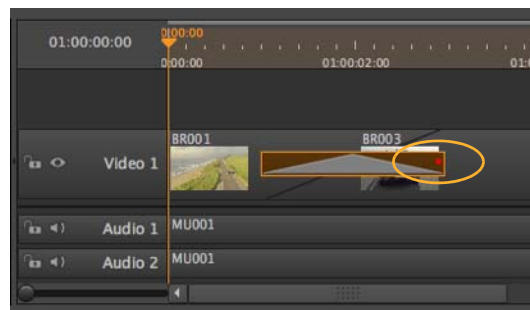
Invalid Transitions

Transitions are controlled in a similar way to clips, in that you can drag-and-drop them, but with the following restrictions:

- A fade can not be dragged past the ends of the clip it's attached to and if the clip is deleted, the fade is deleted with it.
- Dissolve ends can not be dragged past the ends of the clips they are attached to and if both clips are deleted, then the dissolve is also deleted.

If only one of the clips linked by the dissolve is deleted, the transition remains so that another clip can be placed on the other side.

Invalid transitions are marked with red squares. In most cases, adjusting the length of the transition should be enough to correct the error.



Retiming or Reversing Clips

In addition to transitions, Hiero supports constant retimes on ingested clips. Decreasing the speed of a clip causes frames to play more than once, whereas increasing the speed of a clip skips frames.

To retime a clip using the spreadsheet:

- Select the clip in the spreadsheet view.

2. Click the cog icon and select the required retime clamp:

- **Source**—the clip length is altered on the Timeline depending on the retime applied.

For example, retiming a clip to 50% renders frames 1, 1, 2, 2, 3, 3, 4, 4, etc. in the Viewer, and as a result, the clip’s length is doubled on the Timeline.

Retiming a clip to 200% renders frames 1, 3, 5, 7, etc. in the Viewer, but the clip’s length is halved on the Timeline.

- **Destination**—the clip length on the Timeline is maintained regardless of the retime applied.

For example, retiming a clip to 50% renders frames 1, 1, 2, 2, 3, 3, 4, 4, etc. in the Viewer, but the clip’s length on the Timeline remains the same, effectively removing the second half of the clip.

Retiming a clip to 200% renders frames 1, 3, 5, 7, etc. in the Viewer, but the clip’s length on the Timeline remains the same and the second half of the clip is filled with black frames.

The following example shows a clip and the results of 50% and 200% retimes with the **Source** and **Destination** clamp selected.

Notice that the Destination clamp doesn’t change the length of the clip on the Timeline?



Original clip



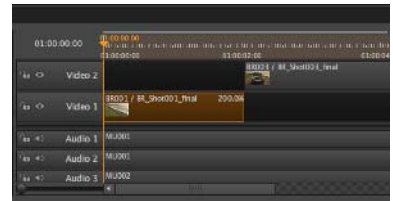
50% **Source** retime



200% **Source** retime



50% Destination retime



200% Destination retime

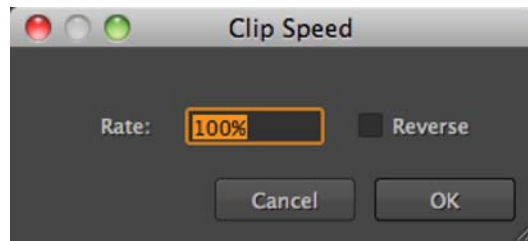
3. Double-click the **Speed** column and enter the retime value.

To retime or reverse a clip using the **Sequence** menu:

Note *Retimes using the **Sequence** menu are always clamped to the **Destination** duration.*

1. Select the required clip on the Timeline.
2. Navigate to **Sequence > Retime**.

The **Clip Speed** dialog displays.



3. Enter the required retime value as a percentage.
4. Select **Reverse** to cause the clip play in the opposite direction.
5. Click **OK** to retime the clip.

7 VERSIONS AND SNAPSHOTS

In addition to the regular project save and restore options, Hiero can record the different states of your workflow as you progress using Versions and Snapshots.

Hiero objects need a little explanation before getting into their uses:

- **Versions** are children of clips. You can have any number of Versions per clip as long as they reside in the same folder and follow the correct naming conventions.

Versions can only be applied to clips and can be swapped in and out without overwriting existing work.

- **Snapshots** are time-stamped copies of either a clip or a sequence, allowing you to save their current state without the inconvenience of saving the entire project.

If you restore a Snapshot, any unsaved edits are lost.

Using Versions

Versions can be added to clips to allow greater flexibility in your workflow. You can have as many Versions of a clip as required and cycle through them quickly using hotkeys.

Hiero relies on specific file naming or folder structure conventions to apply Versions:

- Versions of a clip must be named identically and be suffixed v1, v2, v3, etc., or
- Versions must reside in specifically named folders in the same root directory and be suffixed v1, v2, v3, etc.

You must use `_` or `.` before the suffix (in the example `_v1`) in order for Hiero to discover the available Versions. For example:



Figure 7.1: Versioning using filename.

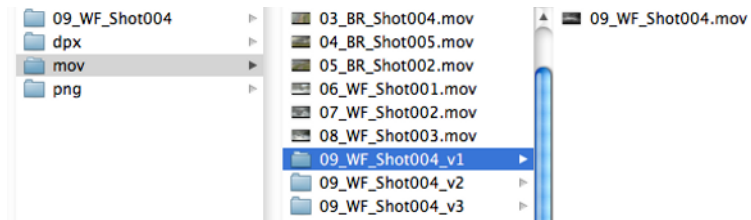


Figure 7.2: Versioning using folder structure.

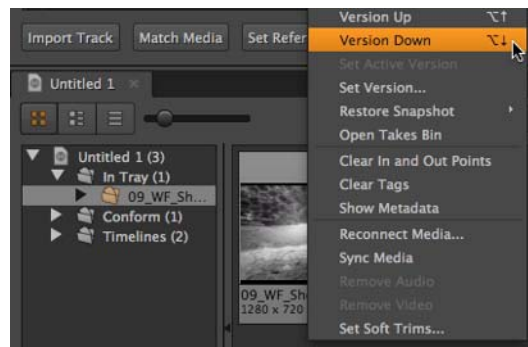
When you have named your Versions correctly, ingest one of the Versions into a Bin or sequence to let Hiero know where to start looking for Versions.

Versions in Bins

Versions behave similarly in both Bins and sequences, but in the Bin view you can see all available Versions by using the Takes Bin.

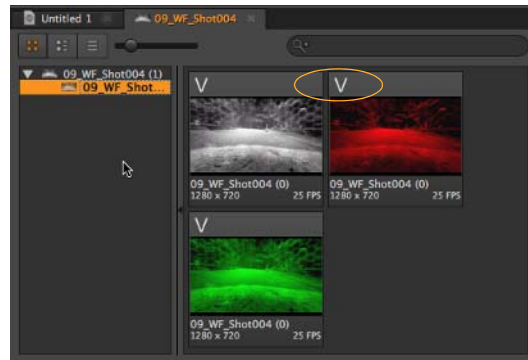
1. Locate the ingested Version clip, right-click, and select **Version Up** or **Version Down** to cycle through the available Versions.

Note You can also use the **alt + ↑↓** hotkeys to cycle through Versions.

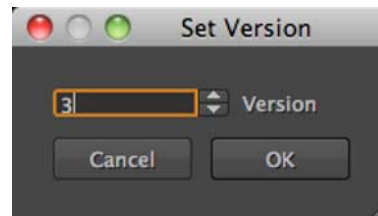


2. Right-click again and select **Open Takes Bin**.
The **Takes Bin** displays.
3. Select the Take in the left-hand pane to see all the available Versions.

Note Versions in Bins are easily identified by the "V" mark on the thumbnail.



4. You can also set the Active Version in the same way as Active Takes. Right-click the ingested clip and select **Set Version...**
The **Set Version** dialog displays.



5. Enter the required Version, or use the arrows to increment the Version number, and click **OK**.
All new instances of this clip now use the Active Version though existing clips remain the same.

Versions in Sequences

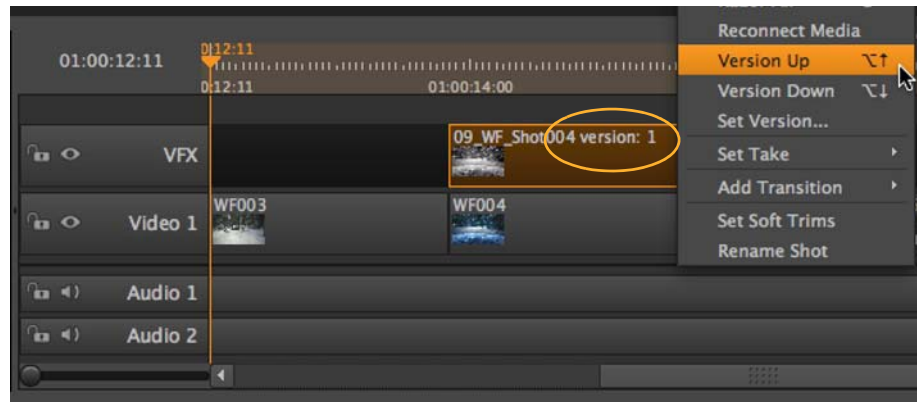
As mentioned previously, Versions behave similarly in both Bins and sequences, but swapping Versions in sequences allows you to compare results more easily.

1. Locate the ingested Version clip and drag it to the Timeline pane.
2. Right-click, and select **Version Up** or **Version Down** to cycle through the available Versions.

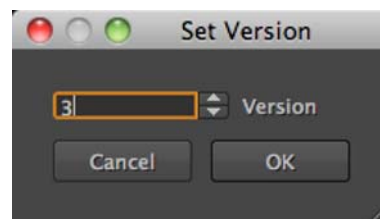
Note *You can also use the **alt + ↑↓** hotkeys to cycle through Versions.*

Tip *You might want to rename the video track to something more meaningful, such as **VFX**.*

The clip is labelled with the Version number currently in use.



3. You can also set the Active Version in the same way as Active Takes. Right-click the ingested clip and select **Set Version...**
The **Set Version** dialog displays.



4. Enter the required Version, or use the arrows to increment the Version number, and click **OK**.
All new instances of this clip now use the Active Version though existing clips remain the same.
5. You can also select the Version in the Timeline pane, Viewer, or Bin view and press **V** to display the available Versions of the clip.



6. Select the required Version from the popup to use it in the sequence.

Using Snapshots

Within a Hiero project you can save the current state of a clip or sequence as a Snapshot, including a comment or tag to describe that Snapshot. You can see what Snapshots exist for a clip or sequence in the Take's sub-directory, and flip it back to any previously saved state.

As an example workflow, take a look at Figure 7.3.

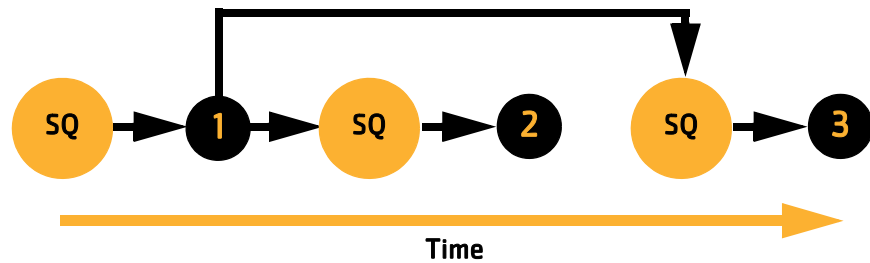


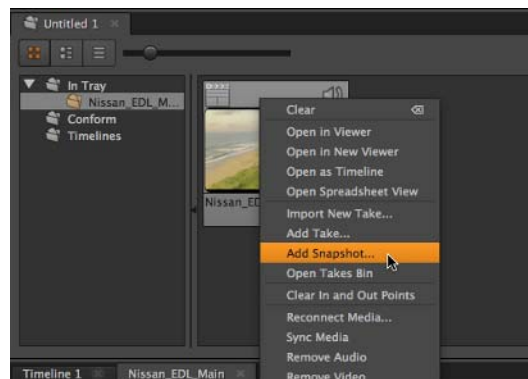
Figure 7.3: A typical workflow using Snapshots.

1. Two Snapshots of the sequence (SQ) are recorded after edits. See [Creating Snapshots](#).
2. Snapshot 1 is then restored. See [Restoring Snapshots](#).
3. Further edits are made, then the sequence is recorded as Snapshot 3.

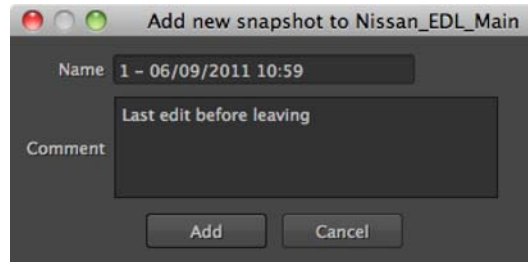
Creating Snapshots

To create a Snapshot for a clip or sequence:

1. Locate the clip or sequence in the Bin view.
2. Right-click the clip or sequence and select **Add Snapshot**.



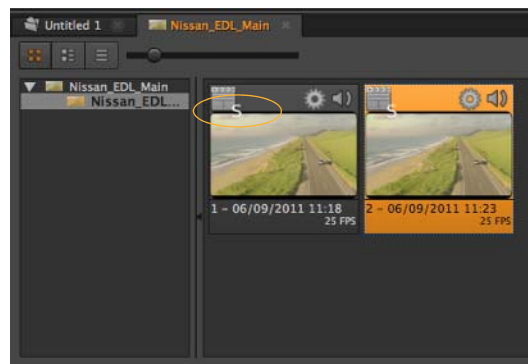
The **Add new snapshot** dialog box displays.



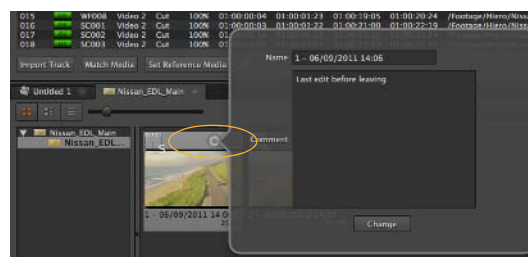
3. Enter a name and comment, or use the default date and time supplied.
4. Click **Add** to create the Snapshot.

A new tab is created containing the Snapshot in the Take sub-directory if no others exist, or the Snapshot is added to an existing list as shown.

Note *Snapshots in Bins are easily identified by the "S" mark on the thumbnail.*



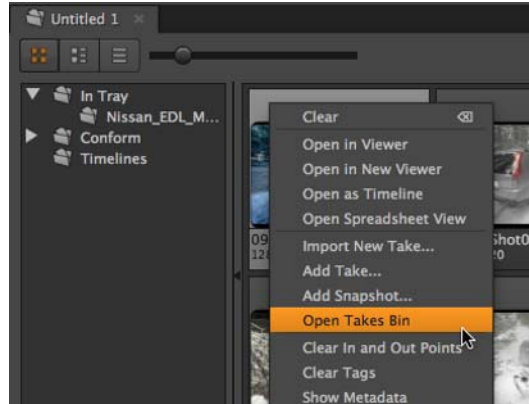
5. You can edit the name and comment associated with a Snapshot by clicking the cog icon on the thumbnail.



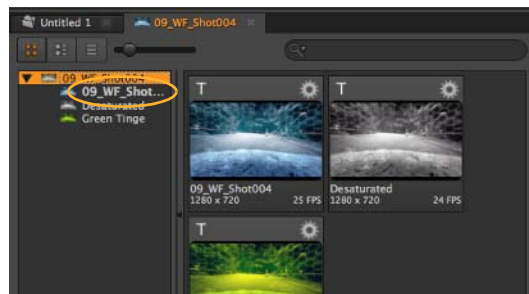
To create a Snapshot for a named Version:

1. Locate the clip or sequence in the Bin view.

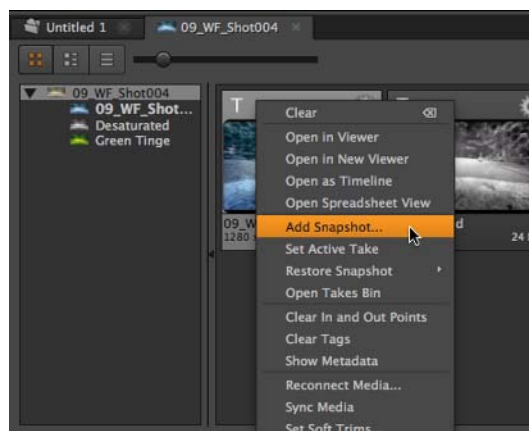
2. Right-click the clip or sequence and select **Open Takes Bin**.



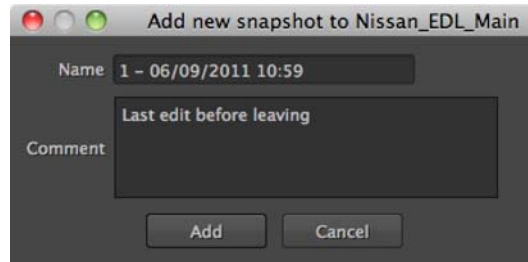
The **Takes Bin** displays, including the current **Active Version** which is bolded on the left-hand side of the tab.



3. Right-click the required Version and select **Add Snapshot**.



The **Add new snapshot** dialog box displays.



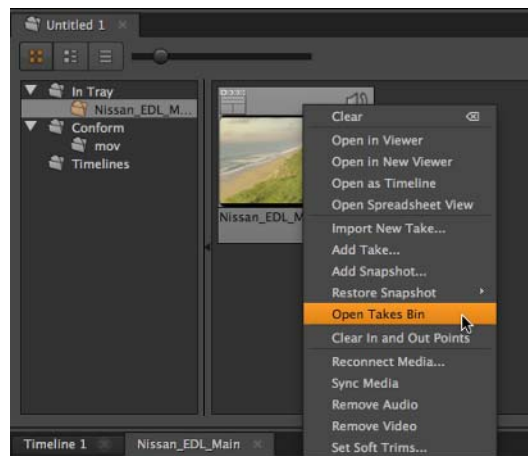
4. Enter a name and comment, or use the default date and time supplied.
5. Click **Add** to create the Snapshot.

The Snapshot is added to the Version sub-directory list.

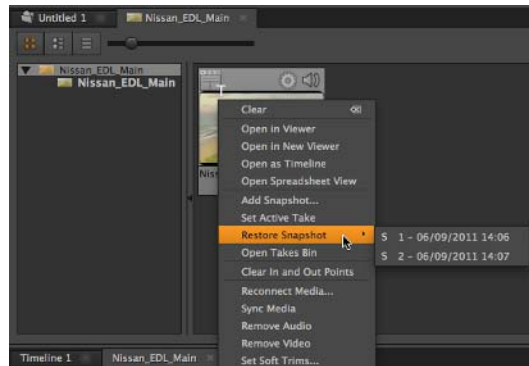
Restoring Snapshots

To restore a Snapshot:

1. Locate the clip or sequence in the Bin view.
2. Right-click the clip or sequence and select **Open Takes Bin**, if it's not open already.



3. Locate the Version associated with the Snapshot, in this case there is only one version, right-click and select **Restore Snapshot**.

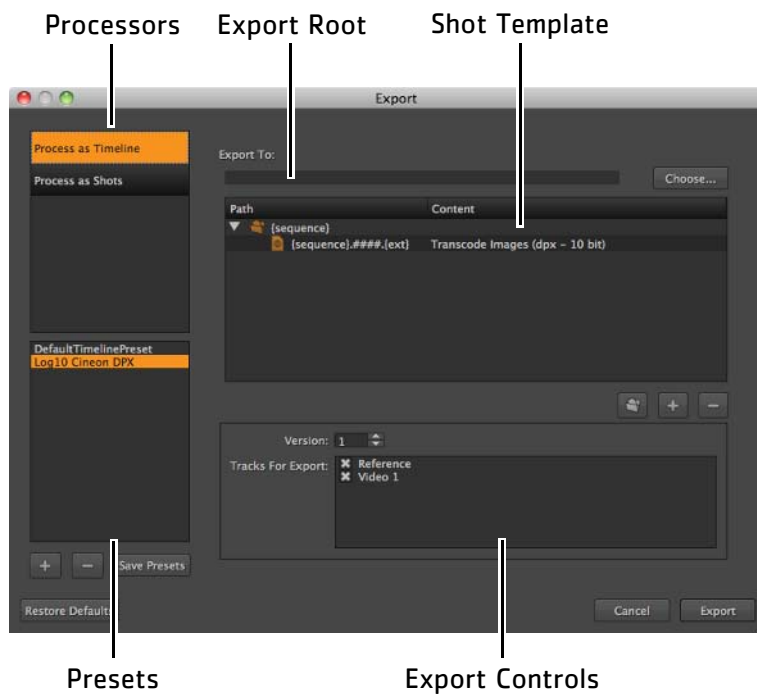


4. Select the required Snapshot from the list to restore the Version to the point at which the snap was recorded.

8 ROUND-TRIPPING AND EXPORT MANAGEMENT

Hiero uses **Shot Templates** and processors to perform all export operations, including round-tripping and EDL/XML creation. With the addition of Python bindings to perform the same functions, this infrastructure provides a massive amount of flexibility, whether your pipeline is GUI or command line orientated.

Note *Hiero is non-destructive and can slot into your existing pipeline if you setup your Shot Template to mirror the existing file structure.*



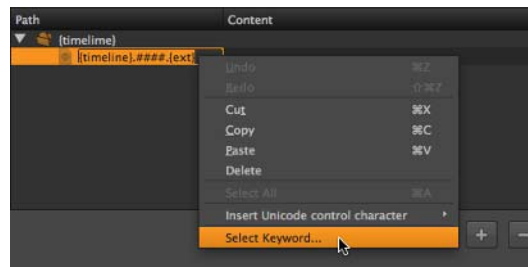
The **Shot Template** sets up the folder hierarchy and naming conventions for export processors such as Transcode Images. Any folders added to the template are created during export unless they already exist, in which case the export writes to the existing structure.

Hiero ships with default templates for your convenience, but you can quickly create custom templates using folders and “tokens” which are replaced with the relevant information during export:

- **{filebase}**—the base of the clip name to process. For example, the filebase of Shot01_####.dpx is Shot01.
- **{fileext}**—the format of the clip to process, such as **.dpx** or **.mov**.

- **{filename}**—the source clip name of the media to process.
- **{sequence}**—the sequence name to process.
- **{shot}**—the name of the track item to process.
- **{track}**—the name of the track to process.
- **{version}**—the version of the clip to process denoted by the **v01** suffix.

Note *After selecting the path column, right-click and choose **Select Keyword** to display a list of available export tokens.*



Content Presets are used in all Shot Templates, enabling you to create commonly used export conditions, which are then available across all projects. For your convenience, Hiero ships with a number of ready-made presets, but you can edit these as required:

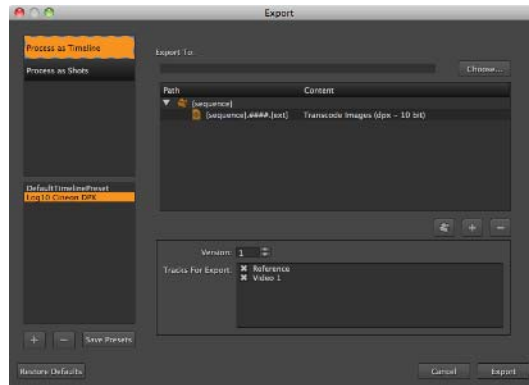
- **Transcode Images**—defines transcode processors allowing you to save your most used file type conversions.
- **Nuke Project File**—defines the paths used by Nuke Read and Write nodes during a round-trip.
- **Nuke Render**—defines the render format for Nuke Write nodes.
- **External Render**—defines the export paths used by third party applications, such as Adobe® After Effects®, during a round-trip.
- **EDL Exporter**—used to export a sequence to the EDL format.
- **SymLink Exporter**—creates symlinks to the location of the source files, rather than making copies.
- **XML Exporter**—used to export a sequence to a Final Cut Pro-friendly XML format.
- **Copy Exporter**—creates copies of the source files to a specified location, rather than symlinking.

Round-Tripping

A round-trip describes the process of exporting clips to another application, in this case Nuke, and then paving the way back into Hiero to conform the new VFX clips.

Exporting to Nuke


1. Select a sequence in the Bin view and navigate to **File > Export**. The **Export** dialog displays.



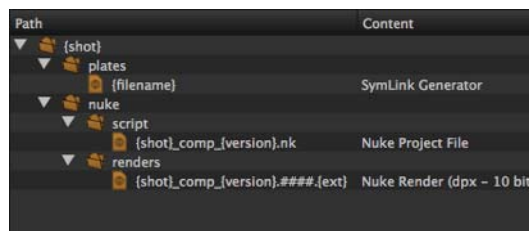
2. Select **Process as Shots** from the Processors list.
3. Enter the **Export To** directory or click **Choose...** and browse to the location.

The **Export To** directory is the starting point from which the shot exporter builds your shot hierarchy.

4. Select the **Basic Nuke Shot** preset in the bottom-left pane to auto-complete the Shot Template with the preset values.

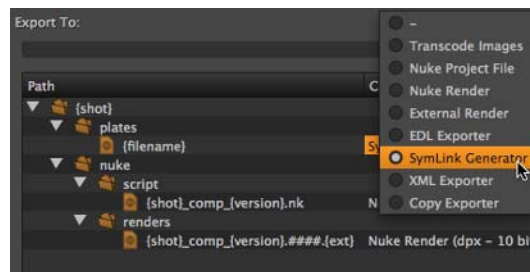
Note You can build a custom Shot Template using **Path** tokens, the **Contents** field, and the  buttons.

Basic Nuke Shot creates a folder for each clip, or shot, containing a **plates** folder and a **nuke** folder containing **script** and **renders** folders.

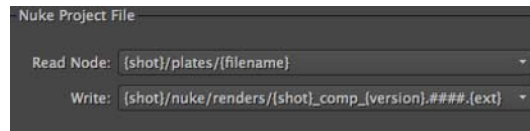


The tokens in the **Basic Nuke Shot** template break down as follows:

- **{filename}** simply extracts the source filenames as they appear in the file browser.
 - **{shot}_comp_{version}.nk** extracts the sequence name for each clip and the version selected in the **Export Controls**. For example, **Shot01_comp_v03.nk**
 - **{shot}_comp_{version}.####.{ext}** appends padding and the specified file extension. For example, **Shot01_comp_v03.0001.dpx**
5. Click the **Contents** column to display a list of available presets and the associated **Export Controls**.



6. Click the **Nuke Project File** preset to display the **Read Node** and **Write** Export Settings.
7. Using the **Read Node** dropdown, set the Nuke read path to **{shot}/plates/{filename}** which resolves to the symlinks during export.
8. Using the **Write** dropdown, set the Nuke write path to **{shot}/nuke/renders/{shot}_comp_{version}.####.{ext}** which resolves to the render path where Hiero expects to find the Nuke files.



9. Set the **Handles**, if required:
 - **Clip Length**—exports the full clip length available, as if the clip was opened as a Viewer.
 - **Cut Length**—exports only the cuts included on the Timeline.

Note *Selecting **Cut Length** allows you to add handles to each clip, up to the maximum available source clip length.*

10. Set the **Version** number and **Master Track**, if applicable.

Note *See [Using Versions](#) for more information on how versioning works in Hiero.*

11. Click **Export**.

The **Export Queue** window displays an estimate of how long each component of the export is expected to take.



Once the export is complete, the file structure specified in the Shot Template is created. You can then import the Nuke clips on a separate track when they're ready.

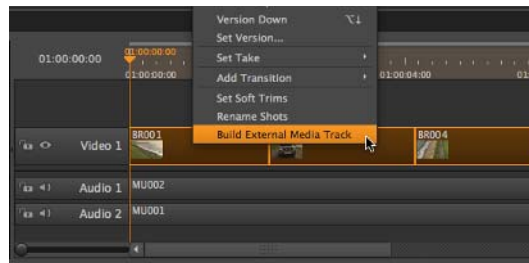
Tip *Hover the cursor over Status Warnings to display a popup containing more detailed information.*

Re-ingesting VFX Media

When the compositing work is complete, the clips are ready to re-ingest. The Shot Template defines where the Nuke files reside, so all you need to do is instruct Hiero to build a track from a known folder structure.

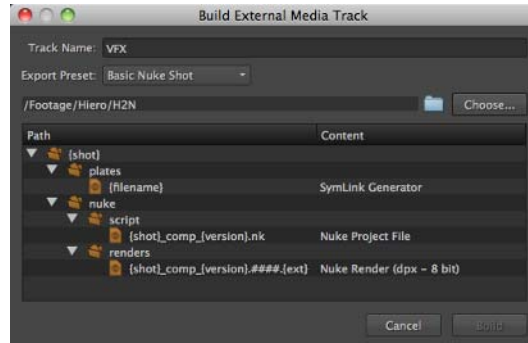
1. Select the required clips on the Timeline and right-click to display the context sensitive menu.

Tip *You may find it easier to select clips in the spreadsheet and then right-click on the Timeline.*



2. Click **Build External Media Track**.

The **Build External Media Track** dialog displays.



3. Enter a **Track Name** or use the default **VFX**.
4. Select an **Export Preset** using the dropdown menu. In this case, select the same preset used during the export.
5. Enter the filepath of the **Export Root** directory or click **Choose** and browse to the location.

Note *The root directory is the location entered in **Export To** when exporting the project.*

6. Select the content you intend to ingest from the Shot Template. In this case, the **Nuke Render**.
7. Click **Build** to create the VFX track.

Note ***Build** is greyed out until a Shot Template entry is selected.*

Hiero automatically creates the new track containing the VFX clips.



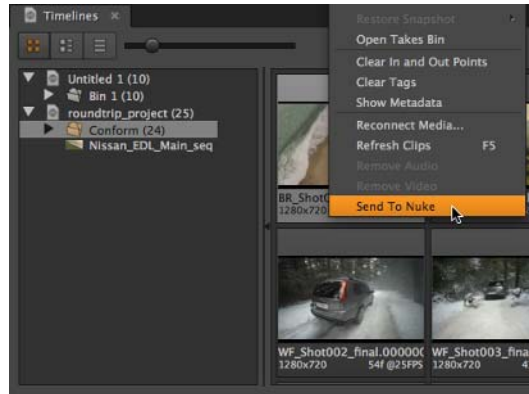
Sending Clips and Bins to Nuke

Hiero provides a single clip or Bin **Send to Nuke** along with other export functionality.

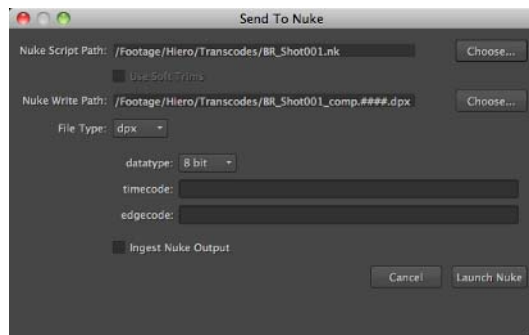
To send a clip or Bin to Nuke:

1. Locate the required source clip or Bin in the Bin view.

2. Right-click the clip or Bin and select **Send to Nuke**.



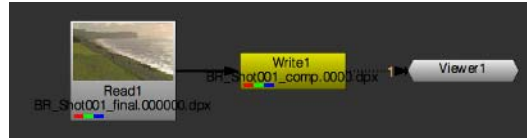
The **Send to Nuke** dialog displays.



3. The Nuke Script and Write paths are already filled in from the default Transcode Shot Template, but you can edit these as required.
4. If the clips you're exporting have Soft Trims enabled, check **Use Soft Trims** to adjust the frame range accordingly.
5. Select the **File Type** to transcode to within Nuke. See [Supported Image Formats](#) for more information.
The available transcode options depend on the **File Type** selected.
6. If you intend to bring the transcoded clips back into Hiero, check **Ingest Nuke Output**.
7. Click **Launch Nuke** to send the clip to the Nuke specified in **Preferences > Nuke Path**.

Nuke starts up with Read and Write nodes for each clip incorporating the selected **File Type** settings and **Write Path**.

Note *The Nuke script is saved in the directory specified as the **Write Path**.*

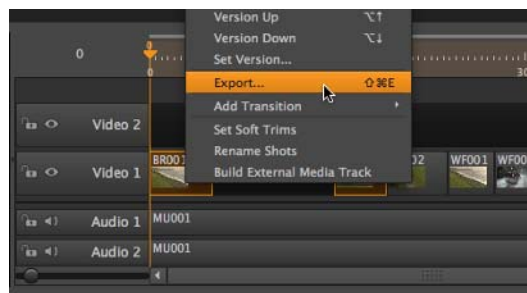


Sending Timeline Selections to Nuke

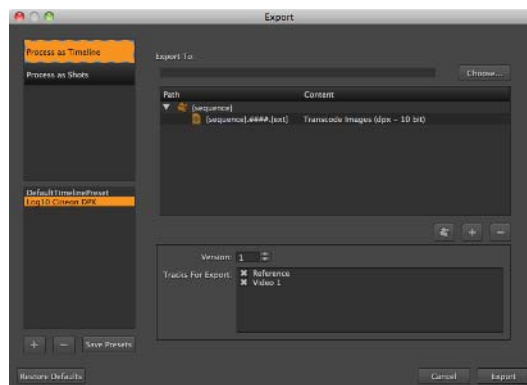
Sending an entire Timeline to Nuke can be time consuming, or even unnecessary, if all you're looking for is a new version of a selection of clips.

To send a selection of clips to Nuke from a Timeline:

1. Select the required clips on the Timeline.
2. Right-click a highlighted clip and select **Export**.



The Export dialog displays.



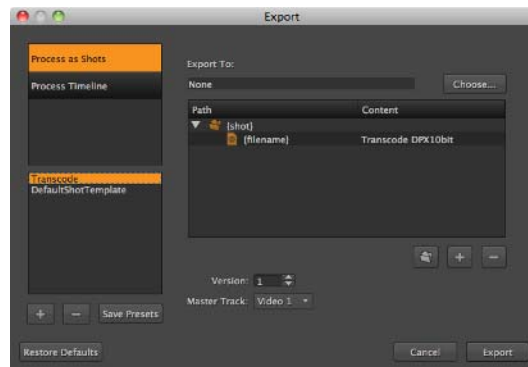
3. Follow the steps shown in [Exporting to Nuke](#) to complete the export.

Transcoding

Transcoding in Hiero uses a specified external Nuke application or a command line only version of Nuke, included in the Hiero package, to convert one file format to another.

Note *Before you transcode using Hiero, select the required Nuke application using the **Preferences > General** tab as described in [Workspace Preferences](#).*

1. Select a sequence in the Bin view and navigate to **File > Export**.
The **Export** dialog displays.



2. Select the **Transcode Shot Template** in the bottom left pane.
3. Enter the **Export To** directory or click **Choose...** and browse to the location.

The **Export To** directory is the starting point from which the shot exporter builds your shot hierarchy.

4. Build a Shot Template using the **Path** and **Contents** fields and the



buttons, or use the defaults supplied.

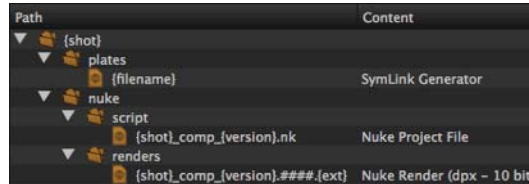
The default Shot Template creates a folder for each Timeline clip to contain the transcoded files.

5. Select the **Version** number to add to the export, if applicable.

Note *See [Using Versions](#) for more information on how versioning works in Hiero.*

6. Set the **Master Track** using the dropdown menu.
7. Click **Export**.

The **Export Queue** window displays an estimate of how long each component of the export is expected to take.



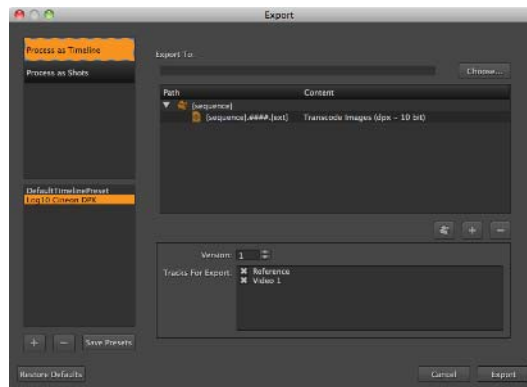
Once the export is complete, the file structure specified in the Shot Template is created containing the transcoded files.

Exporting EDLs and XMLs

Hiero supports export to EDL and XML using very similar methods, the main difference being that EDL doesn't support multiple video tracks in a single file whereas XML does.

To export to EDL or XML:


1. Select a sequence in the Bin view and navigate to **File > Export**. The **Export** dialog displays.



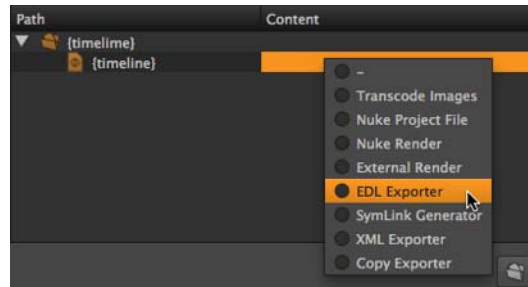
2. Select **Process as Timeline** from the Processors list.
3. Enter the **Export To** directory or click **Choose...** and browse to the location.

The **Export To** directory is the starting point from which the shot exporter builds your shot hierarchy.

4. Select the **DefaultTimelinePreset** in the bottom-left pane to auto-complete the Shot Template with the preset values.

Note You can build a custom Shot Template using **Path** tokens, the **Contents** field, and the  buttons.

- Click the **Contents** column to display a list of available presets and the associated **Export Controls**.



- Select the **EDL Exporter** or **XML Exporter** as required.

Note *When exporting EDLs, check the additional EDL Exporter controls if required:*

- *Include Absolute Path*
- *Truncate Reel Name*

- Set the **Version** number and track or tracks to export.

Note *EDLs only support one video track per file.*

- Click **Export**.

The **Export Queue** window displays an estimate of how long the export is expected to take.

Once the export is complete, the file structure specified in the Shot Template is created. You can then import the EDL into other applications.

9 HIERO AND PYTHON APIS

Hiero ships with a comprehensive Python application programming interface (API) enabling you to perform all user interface actions using Python scripting.

This chapter provides a basic overview and some simple examples to get you started, but more information is available in the dedicated Python API documents included in the Hiero package.

Note *If you copy and paste example scripts from this user guide into the Script Editor, line indentations may not be preserved. If this is the case, correct the indentations manually.*

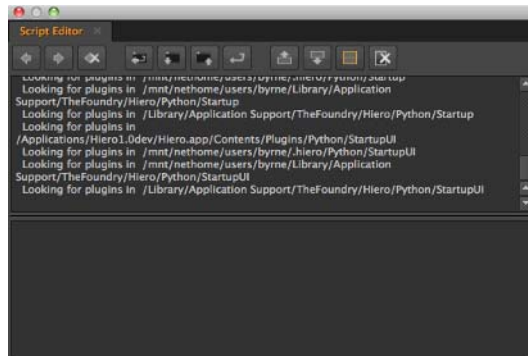
Using the Script Editor

Hiero includes a Python **Script Editor**, accessible from the user interface, allowing you to enter Python statements directly.

To access the Script Editor:

1. Navigate to **Window > Script Editor**.

The **Script Editor** displays.














2. Enter scripts in the lower half of the editor and press **cmd/ctrl + enter** to execute the script.

The results are displayed at the top of the editor. A simple example might be:

```
from hiero.core import *
bin = project().clipsBin()
bin.addItem(Bin("Plates"))
bin["Plates"].importFolder("/Footage/Hiero/finalshots")
```

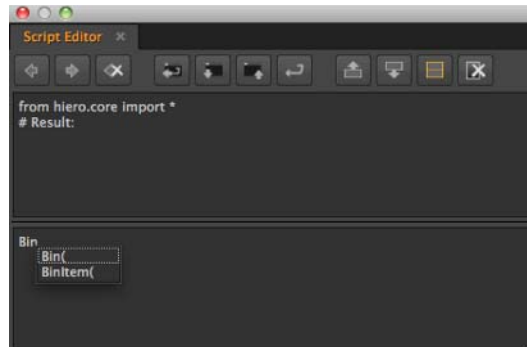
Which imports **hiero.core**, defines **bin**, creates a Bin called **Plates** at root level, and imports the specified folder into Plates.

Script Editor buttons and commands are described below:

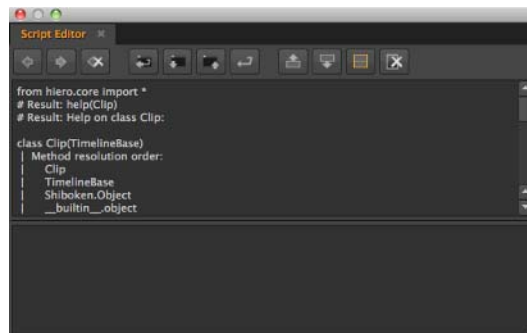
Icon	Hotkey	Description
	cmd/ctrl + [Go to the previous script.
	cmd/ctrl +]	Go to the next script.
	-	Clear the script history.
	-	Load and execute a script.
	-	Load an existing script.
	-	Save a script as a .py file.
	-	Run the current script.
	-	Show the input pane only.
	-	Show the output pane only.
	-	Show both the input and output panes.
	cmd/ctrl + backspace	Clear the output pane.

Hiero's Script Editor also features auto-completion and help for commands. Classes, attributes and so on are discoverable by:

- Entering the beginning of an object name and pressing the **Tab** key. For example, typing **Bin** and pressing **Tab** displays a list of objects starting with Bin:

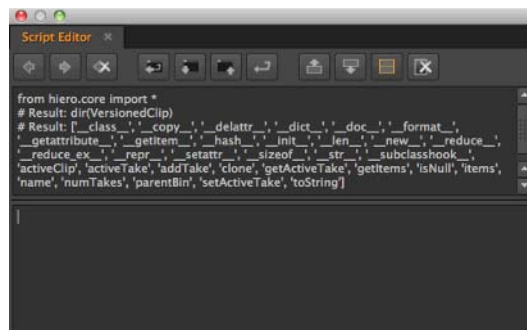


- Using the **help** command for a known object.
For example, **help(Clip)** returns a list of useful information on Clip:



Scroll down in the top pane to see more information relating to **Clip**.

- Using the **dir** command for a known object.
For example, **dir(VersionedClip)** returns a concise list of useful information on VersionedClip:



For more information on Python scripting within Hiero, see the dedicated Python API documents included in the Hiero package.

Adding Panes Using Window Manager

You can also add custom interface panes to Hiero using Python. You can create hybrid panes consisting of existing functionality or create your own from scratch. You can add panes on a per session basis or, if you save the script to the startup locations defined in [Running Python During Startup](#), load them at startup.

The following script example creates a Web Browser entry in the Windows menu. Select **Web Browser** to display a Hiero pane containing a simple browser.

The script ships with Hiero and can be found in the following locations:

Mac OS X

- /Applications/Hiero 1.0/Hiero.app/Contents/Plugins/site-packages/hiero/examples

Linux

- /usr/local/Hiero 1.0/Plugins/site-packages/hiero/examples

There are a few thing to note in this script:

- **WA_DeleteOnClose** is commented out in the script. If you uncomment this line the widget is destroyed when closed. Otherwise, the browser remains in the **Window** menu and can be displayed again.
- It's not compulsory to have The Foundry's website as your home page!

Adding Menu Items

Two main types of menu items exist in Hiero's interface, regular **dropdown** and **context sensitive** items. You can use Python to add these on a per session basis or, if you save the script to the startup locations defined in [Running Python During Startup](#), load them at startup.

Tip *It's a good idea to use Hiero internal names, like **foundry.menu.view**, instead of interface names like **View**. Problems with interface language differences are avoided if you script using the internal names.*

Dropdown Menus

The simplest menu items to add are in dropdowns, so we'll start with those. The following example script adds a menu item, **Foo Report**, to Hiero's View menu.

Note *Make sure you reapply line indentations if they are not preserved when pasted into the Script Editor.*

```
import hiero.ui
import PySide.QtGui
```

```
class StuffAction(PySide.QtGui.QAction):
    def __init__(self):
        PySide.QtGui.QAction.__init__(self, "Foo Report", None)
        self.triggered.connect( self.doit )

    def doit( self ):
        print "Report Results."

stuffAction = StuffAction()
hiero.ui.addMenuAction( "foundry.menu.view", stuffAction,
"foundry.viewer.nextEdit" )
```

The result from this script is the string "Report Results" in the Script Editor.

Context Sensitive Menus

These are slightly trickier as they rely on an event from the interface. When the following example receives a registered event (`kShowContextMenu`) from the Timeline editor, a menu item is inserted into the right-click Timeline menu if the context is satisfied.

Note *Make sure you reapply line indentations if they are not preserved when pasted into the Script Editor.*

```
import hiero.core
import hiero.ui
import PySide.QtGui

class PrintSelectionAction(PySide.QtGui.QAction):
    def __init__(self):
        PySide.QtGui.QAction.__init__(self, "Print the
        Selection", None)
        self.triggered.connect( self.doit )
        hiero.core.events.registerInterest( "kShowContextMenu/
        kTimeline", self.eventHandler )

    def doit( self ):
        print "This is what is selected in the timeline view:"
        for i in hiero.ui.getActiveView().getSelection():
            print " -", i

    def eventHandler( self, event ):
        print "Menu event, sender", event.sender
        print " - type", event.type, event.subtype
        print " - selection", event.sender.getSelection()
        if hasattr(event.sender, 'getSelection') and
        event.sender.getSelection() is not None and len(
        event.sender.getSelection() ) != 0:
            event.menu.addAction( self );
```

```
printSelectionAction = PrintSelectionAction()
```

The script checks for a valid selection of clips on the Timeline, and if valid, the **Print the Selection** item is added to the right-click menu. If the selection is invalid, the context is incorrect and the menu item is not created.

Select one or more clips on the Timeline, right-click and select **Print the Selection** to print the selected clips in the Script Editor.

Running Python During Startup

On startup, Hiero scans various directories for Python scripts that customise the behavior of Hiero. These scripts can be downloaded from online resources such as www.nukepedia.com, and placed in a specific location on disk depending on the platform running Hiero.

If you're familiar with Python scripting, you can place custom startup scripts in the same locations, though bear in mind that you should take care as mistakes can produce performance issues.

Hiero looks in specific subdirectories of the application directory path as follows:

Mac OS X

- /Applications/Hiero 1.0/Hiero.app/Contents/Plugins/
- /Library/Application Support/TheFoundry/Hiero
- ~/Library/Application Support/TheFoundry/Hiero
- ~/.hiero

Linux

- /usr/local/Hiero1.0/Plugins
- ~/.hiero

Hiero then searches `<path>/Python/Startup` and `<path>/Python/StartupUI` for any Python `.py` files or folders containing `_init_.py`. Scanning is done in two passes—all the Startup folders are searched and then all the StartupUI folders.

Each package or module discovered is imported and added to the built-in package `hiero.plugins`.

Note *Python startup scripts are imported in alphabetical order so you can force ordering if necessary.*

Hiero Environment Variables

Running Hiero from the command line allows you to set additional paths that are checked on startup using environment variables.

For example, you can guide Hiero to folders containing scripts at startup using the `HIERO_PLUGIN_PATH` variable.

To set the plug-in environment variable:

1. From a command line, enter:

```
export HIERO_PLUGIN_PATH=$HOME/<script folder>
```

Note You can use *.<script folder>* to point to hidden folders, for example *.myPlugins*.

2. Launch Hiero from the same command line:

```
open /Applications/Hiero1.0v1/Hiero1.0v1.app
```

3. In Hiero, navigate to **Window > Script Editor**.

The **Script Editor** displays.

4. In the bottom pane, enter:

```
import hiero.core
print hiero.core.pluginPath()
```

5. Press **cmd/ctrl + enter** to execute the script.

The results are displayed at the top of the editor.

6. Check that your scripts folder is included in the result. For example:

```
# Result: ('/Applications/Hiero1.0v1a8/Hiero1.0v1a8.app/Contents/Plugins', '/Users/byrne/.myPlugins', '/Users/byrne/Library/Application Support/TheFoundry/Hiero')
```

Another useful variable is `HIERO_DISABLE_THUMBNAIL_CACHE`, which as the name suggests, stops Hiero caching thumbnails.

To set the thumbnail environment variable:

1. From a command line, enter:









```
export HIERO_DISABLE_THUMBNAIL_CACHE=true
```






2. Launch Hiero from the same command line.


APPENDIX A: HIERO HOTKEYS




Hiero Hotkeys

This appendix lists the hotkeys used by Hiero, along with their function.

Hotkey	Button	Menubar	Function
Viewer			
shift + cmd/ctrl + 1	-	View > Zoom to Actual Size	Zoom the contents of the Viewer to actual size.
shift + cmd/ctrl + 2	-	View > Zoom to Half Size	Zoom the contents of the Viewer to half size.
H	-	View > Zoom to Fill	Fit the current clip to the height of the Viewer.
F	-	View > Zoom to Fit	Zoom to fit the clip to the Viewer.
cmd/ctrl + F	-	View > Full Screen	Toggle Full Screen mode.
cmd/ctrl + Shift + F	-	View > Full Quality 1:1	Toggle Full Screen mode at Full Quality 1:1 zoom.
Esc	-	-	Exit full screen mode.
E		View > Clipping Warning	Toggle the Level Warning tool on and off.
I		View > Mark In	Set the In Point at the current frame.
O		View > Mark Out	Set the Out Point as the current frame.
shift + ←		View > Go to Start	Go to the start of all clips.
shift + →		View > Go to End	Go to the end of all clips.
shift + I	-	View > Go to In Point	Go to the In Point in the current clip.
shift + O	-	View > Go to Out Point	Go to the Out Point in the current clip.
←		View > Frame Backward	Skip one frame backward.
→		View > Frame Forward	Skip one frame forward.
↑		View > Previous Edit	Go to the previous clip in the Viewer.

Hotkey	Button	Menubar	Function
↓		View > Next Edit	Go to the next clip in the Viewer.
shift + ↑	-	View > Previous Tag	Go to previous frame tag.
shift + ↓	-	View > Next Tag	Go to next frame tag.
space		View > Play	Play the clip or Timeline currently in the Viewer.
J		View > Play Backward	Play clip or Timeline currently in the Viewer backward (click multiple times to increase playback speed).
L		View > Play Forward	Play clip or Timeline currently in the Viewer forward (click multiple times to increase playback speed).
K		View > Pause	Pause playback.
Enter (numeric keypad)	-	View > Swap Inputs	Controls the AB inputs: <ul style="list-style-type: none"> • Stack - swaps which input is visible. • Horizontal - swaps the inputs horizontally. • Vertical - swaps the inputs vertically.
alt + left-click + drag	-	-	Pan the contents of the Viewer.
Scroll wheel alt + middle-click + drag (over Viewer)	-	-	Zoom the contents of the Viewer.
Scroll wheel (over mini Timeline)	-	-	Zoom the mini Timeline and Viewer waveform.
middle-click (over mini Timeline)	-	-	Zoom to fit the mini Timeline and Viewer waveform. Note: If your mouse preferences are not set to Button 3 for the middle mouse button, you may have to use ctrl + middle-click .
alt + O	-	View > Show Overlays	Toggle the HUD overlays.
Bin			
cmd/ctrl + B	-	File > New Bin	Create a new Bin in the current Bin.
cmd/ctrl + Y	-	File > New Tag	Create a new Tag in the current Bin.
cmd/ctrl + T	-	File > New Timeline	Create a new Timeline in the current Bin.
cmd/ctrl + X	-	Edit > Cut	Cut the selected item(s) to the buffer.
cmd/ctrl + C	-	Edit > Copy	Copy the selected item(s) to the buffer.

Hotkey	Button	Menubar	Function
cmd/ctrl + V	-	Edit > Paste	Paste item(s) from the buffer.
cmd/ctrl + A	-	Edit > Select All	Select all files in the current Bin.
cmd/ctrl + D	-	Edit > Duplicate	Duplicate the selected object(s).
backspace	-	-	Delete selected item(s).
Timeline			
left-click	-	-	Select a clip including any linked tracks.
alt + left-click	-	-	Select a clip, ignoring linked tracks (for example, audio only).
F	-	View > Zoom to Fit	Zoom to fit the clips on the Timeline to the available space.
backspace	-	-	Remove the selected clip(s) or gap(s) from the Timeline.
Ripple Delete	-	Timeline > Ripple Delete	Remove the selected clip(s) and ripple clips down stream to close gaps in the Timeline.
cmd/ctrl + A	-	-	Select all clips in the Timeline.
left-click then shift + left-click	-	-	Select all clips between the left-clicks (use shift + alt + left-click to ignore linked tracks).
alt + ↑	-	-	Cycle up through the available clip Versions.
alt + ↓	-	-	Cycle down through the available clip Versions.
Shift + C	-	Timeline > Razor Selected	Apply the Razor tool to the currently selected track(s) within the selected clip(s).
C	-	Timeline > Razor All	Apply the Razor tool to all tracks within the selected clip(s).
drag then alt	-	-	Activate Ripple mode while dragging clips.
alt then drag	-	-	Duplicate the dragged clips.
alt and drag	-	-	Ripple and duplicate the dragged clips.
spacebar		View > Play	Play through the Timeline currently in the Viewer.
alt + middle-click	-	-	Fit the Viewer to marked In and Out Points.
<	-	-	Trim, roll, or shift a selected transition or clip to the left (within the available handles for trim and roll).
>	-	-	Trim, roll, or shift a selected transition or clip to the right (within the available handles for trim and roll).
User Interface			
cmd/ctrl + 1	-	Window > Workspace > Conforming	Switch to the default Conforming workspace.
cmd/ctrl + 2	-	Window > Workspace > Editing	Switch to the default Editing workspace.

Hotkey	Button	Menubar	Function
cmd/ctrl + 3	-	Window > Workspace > Reviewing	Switch to the default Reviewing workspace.
cmd/ctrl + n	-	Windows > Workspace > Custom Workspace Name	Switch to the custom workspace associated with the number selected.
~ (tilde)	-	-	Toggle between full screen and preset pane size for the pane currently under the mouse pointer.
cmd/ctrl + N	-	File > New Project	Open a new project.
cmd/ctrl + O	-	File > Open	Open an existing project.
cmd/ctrl + W	-	File > Close	Close the current project.
cmd/ctrl + S	-	File > Save	Save the current project.
shift + cmd/ctrl + S	-	File > Save As...	Save the current project with a different name.
cmd/ctrl + I	-	File > Import Clips	Import a clip or clips.
shift + cmd/ctrl + I	-	File > Import Folder	Import a folder or folders.
V	-	-	Display the available Versions of a clip or sequence.
Media View Searchbox			
left-click	-	-	Select search criteria.
cmd/ctrl + left-click	-	-	Toggle select individual search criteria.
Shift + left-click	-	-	Select a range of search criteria.
Script Editor			
cmd/ctrl + [	-	Go to the previous script.
cmd/ctrl +]		-	Go to the next script.
cmd/ctrl + backspace		-	Clear the output pane.

APPENDIX B: SUPPORTED FILE FORMATS

Supported Image Formats

The following table lists supported image formats.

Format Name	Bit Depths	Read/Write	Extension
AVI	n/a	read only	avi
CIN	10 (log)	read and write	cin
DPX (see the notes below)	8, 10, 12, and 16	read and write	dpx
EXR (see the notes below)	16 and 32	read and write	exr
GIF	8	read only	gif
Radiance	16	read only	hdr, hdri
JPEG	8	read and write	jpg, jpeg
Maya IFF	8 and 16	read only	iff
PNG	8 and 16	read and write	png (8-bit) png16 (16-bit)
PSD	8	read only	psd
QuickTime	n/a	read and write	mov
RAW	n/a	read only	n/a
REDCODE (see the notes below)	16	read only	r3d
SGI	8 and 16	read and write	sgi, rgb, rgba (8-bit sequences) sgi16 (for 16-bit sequences)
SoftImage® PIC	8	read and write	pic
TIFF	8, 16, and 32	read and write	tif, tiff (8-bit sequences) tif16, tiff16 (16-bit sequences) ftif, ftiff (32-bit sequences)
Truevision® TARGA	8	read and write	tga, targa
Wavefront® RLA	8	read only	rla
XPM	8	read only	xpm
YUV	8	read only	yuv

Optimised Formats and Limitations

Hiero plays frames as fast as they can be read from the file system. The frames are cached in RAM up to the cache limit specified in the **Preferences** dialog. When the cache is full, frames are ejected and must be re-read from disk if needed again.

Most file formats are read through the same image I/O library used by The Foundry's Nuke. Formats are optimised for real-time playback based on user feedback about what is most frequently used. The following formats have been optimised, so that the only limiting factor in achieving realtime playback is the rate at which files can be read from the file system:

R3D

In conjunction with a RED Rocket, Hiero can take advantage of the lower scale/quality available from the RED SDK based on the current viewer zoom level.

EXR

EXR reads have been partly optimised. They currently still load more slowly if any part of the data window lies outside the display window, or if the data window is smaller than the display window and aligned to one of the edges of the display window. This reduction in speed is most noticeable for large data windows.

DPX

8, 10, 12 and 16 bit RGB and RGBA reads are optimised, if the channels are all stored in the same element. Reads of other formats may be optimised depending on the number, bit depth and layout (within elements) of the channels. Future releases will handle more formats.

Supported Audio Formats

The following table lists supported audio formats.

Format Name	Extension
All platforms	
Broadcast wave format	bwf
Wave	wav
Mac	
Audio interchange format	aif
	aiff
MPEG Layer III Audio	mp3
Linux	
Audio interchange format	aif
	aiff

APPENDIX C: THIRD PARTY LICENCES

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