Autodesk®
WiretapCentral™ 2010

User Guide

Autodesk®

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Contents

Introduction 1

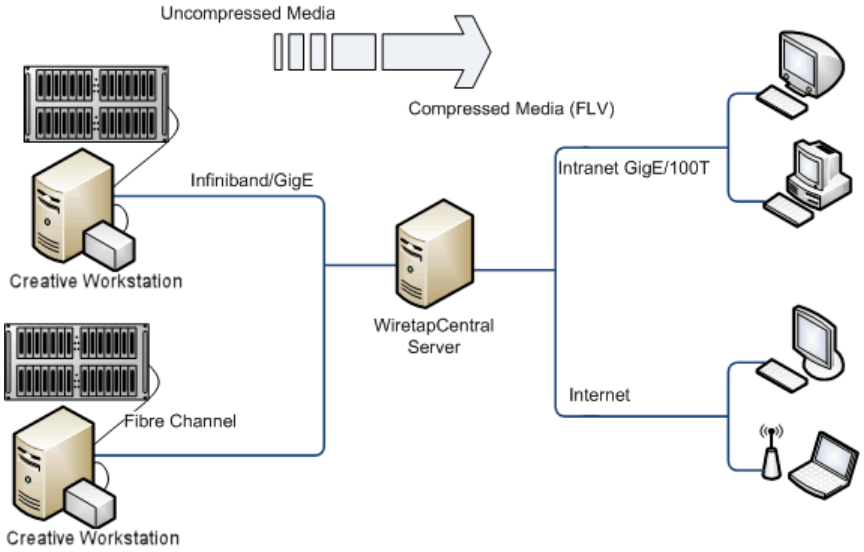
Topics in this chapter:

About WiretapCentral

Autodesk® WiretapCentral™ 2010 is a fully integrated Web application that provides interactive access to all media assets in your facility network. It presents editorial, visual effects, and grading assets stored on any network-accessible Stone or standard filesystem.

The intuitive Web interface eliminates the need to be at an Autodesk creative workstation to import, play, encode media, or to submit and monitor background jobs. This allows the artist to offload media management and transcoding, and stay focused on creative tasks.

WiretapCentral straddles several different technologies, including Autodesk Visual Effects, Finishing and Colour Grading workstations, low-bandwidth Web video, and several different networking and collaboration protocols and tools.



New in version 2010, WiretapCentral enables you to directly import REDCODE RAW and multi-channel OpenEXR files by leveraging the new Wiretap Gateway.

When importing media, WiretapCentral can use Autodesk® Backburner™ distributed background processing to maximize efficiency.

About this Guide

Notation Conventions

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

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. Press the Enter key after each command.	**`install rpm -qa`**
Variable names appear in Courier, enclosed in angle brackets.	`<filename>`
Feedback from the command line or shell appears in Courier.	`limit coredumpsize`
Directory names, filenames, URLs, and command line utilities appear in italics.	*/usr/discreet*

Related Documentation

Documentation for this release is installed with the product as PDF files and as an HTML help system, and is also available on the Autodesk web site at *http://www.autodesk.com/me-documentation*. From this page you can access the complete documentation library.

You should also refer to the product release notes for all late-breaking release information.

Contacting Customer Support

For Autodesk® Media and Entertainment Customer Support, visit *http://www.autodesk.com/support*.

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

Using Wiretap Central 2

Topics in this chapter:

Overview

WiretapCentral presents a Wiretap network as a hierarchy of hosts, volumes, projects, libraries, reels and clips. When you first point a web browser to the WiretapCentral server, the network tree lists all hosts detected on the network. Clicking on a host (which is the top-level data node) reveals its volumes, and so on down the hierarchy, to clips.

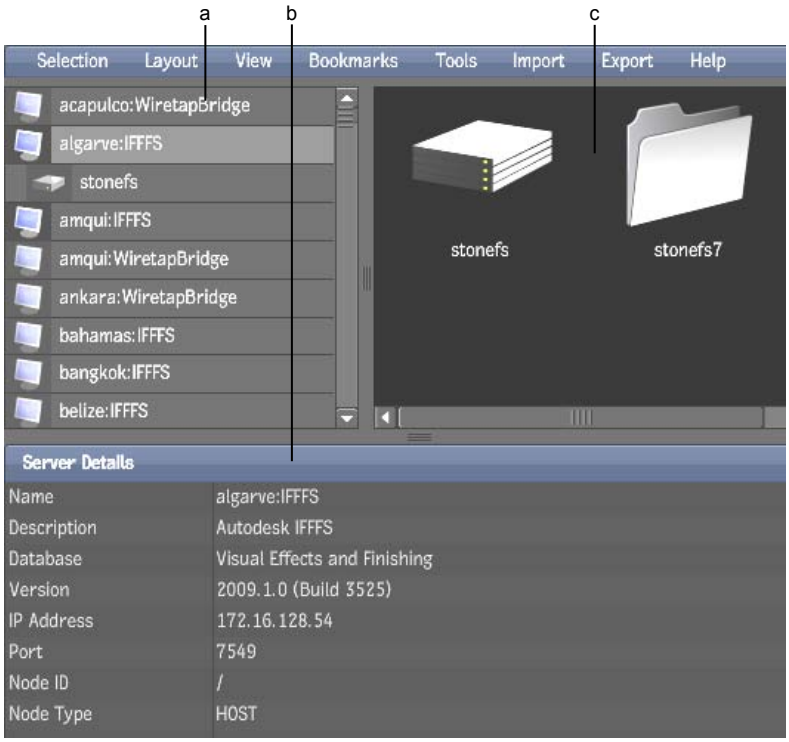
The network tree works in conjunction with the main view area to give you a more complete picture of the network and volume contents. Initially the main view area is empty. Once you start navigating a host, it displays the contents of the host's volumes, libraries, and reels, as you select them. By default it displays thumbnails for each clip, but it can also display clip metadata in a list view mode.

WiretapCentral can browse volumes on Autodesk Visual Effects and Finishing workstations. With Wiretap Gateway, it can browse volumes on Lustre workstations and any storage device accesible on the network.

NOTE Clips stored on a Finishing workstation's EditDesk or a Visual Effects workstation's Desktop are not accessible.

WiretapCentral User Interface

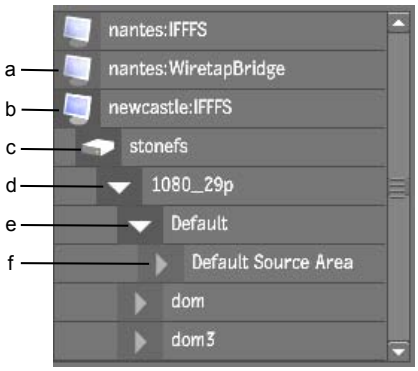
The user interface consists of three main areas, as shown in the following diagram.



(a) Network tree (b) Details area (c) Main view area

Network Tree

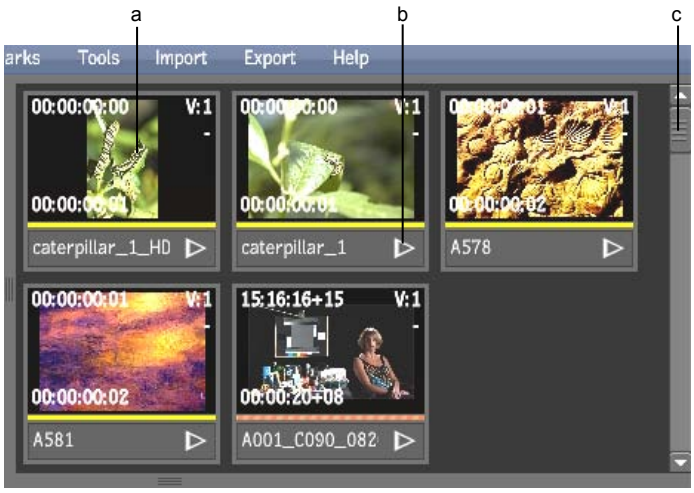
The network tree displays the contents of the Wiretap network in a tree hierarchy. Initially, it lists all the hosts discovered. Expanding a host displays its volumes, and the projects and clip libraries within.



(a) Host (collapsed) (b) Host (expanded) (c) Framestore (d) Project (e) Library (f) Reel

Main View Area

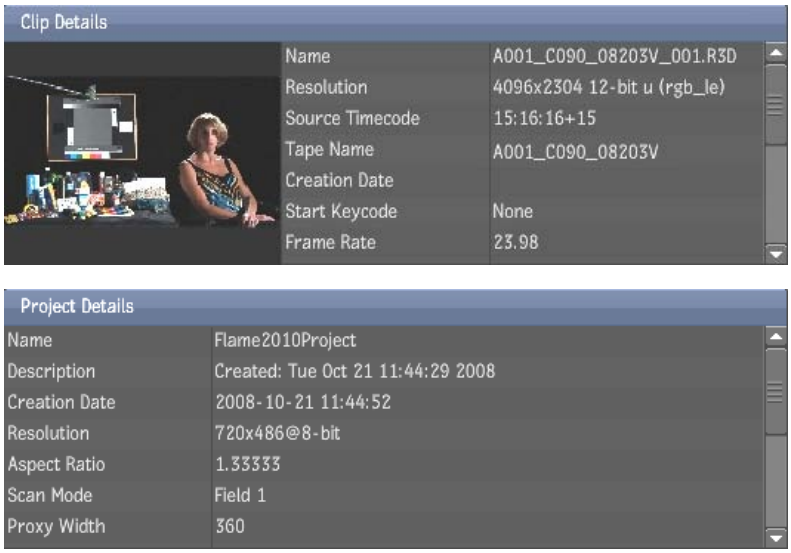
The main view area occupies a central portion of the UI. It presents clip thumbnails, the list view, and the player. Switch between these display modes using the View menu, or double-click a thumbnail to open the player immediately.



(a) Clip Thumbnail (b) Play/Pause button (c) Scroll Bars

Details Area

When you browse, the information for the node that you are currently on, whether server, volume, project, library, or clip, is presented in the Details areas. This information persists until you select another node.



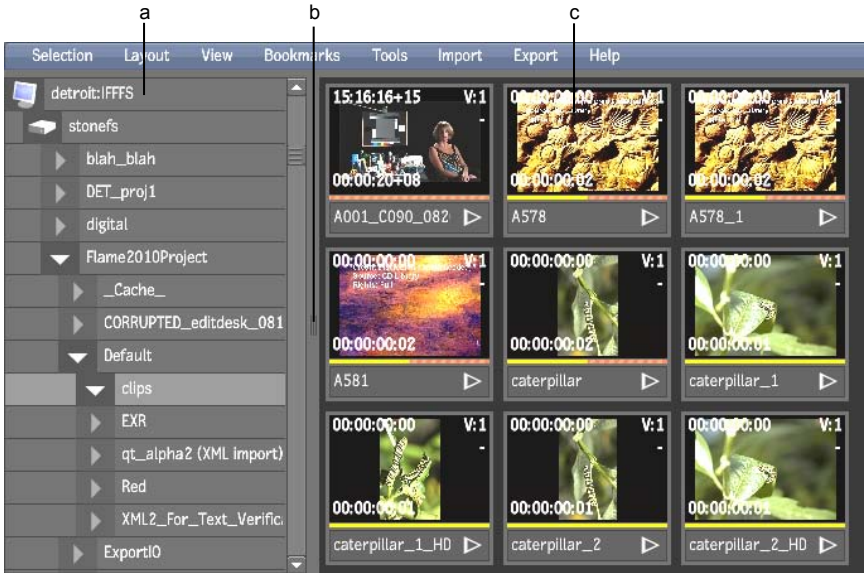
Changing the Layout

To change the layout of the user interface, select an option from the Layout menu.

Select	To
Normal	Display the network tree, the main area, and the details area. If displaying the player on higher-resolution monitors, this should be enough to show the whole frame.
Extended	Hide the details area, giving more space in the main area for thumbnails or list view items.
Full Screen	Hide the network tree and the details area, leaving only the main area. This is most useful when you need the most size in player mode.

Browsing using the Network Tree

The network tree is an interactive tool for browsing the network and volume hierarchy. It works in conjunction with the main view area to show clips as thumbnails or in a list view.



(a) Network tree with library selected (b) Draggable divider (c) Main view area showing clip thumbnails

To browse the network:

1 Click any host item in the network tree to display its volumes. While multiple volumes can be present, typically a host has just one volume — *stonefs*, for example.

Icons representing the volumes appear in the main view area, when in thumbnail mode.

NOTE When you expand an item in the network tree an animated cursor indicates that a metadata transaction is taking place. Depending on the complexity of the tree, this can take some time.

2 Click a volume in the network tree to display its projects.

Icons for the projects appear in the main view area.

3 Click collapsed items to further expand the network tree.

- The data structure hierarchy is exactly what you would find browsing a clip library in any Autodesk Visual Effects and Finishing workstation.

- Once an item is expanded, you can collapse it again by clicking its expand/collapse arrow.
- To switch between expanded items, click the item of interest. This changes the focus without collapsing the deselected item.

4 To expand all an item's selection at once, from the Selection menu, choose Expand Children.

5 To refresh the view, choose either Refresh All or Refresh Selection.

Using Bookmarks

Create and use bookmarks to keep track of frequently used locations by selecting an option from the Bookmarks menu. You can choose to add a bookmark for the currently shown location, or to go to a previously saved bookmark. You can also remove an unused bookmark.

Managing Libraries and Reels

You can create new libraries and reels in a project, on an accessible volume, by choosing the appropriate option from the Tools menu. You can also add/remove directories on a Wiretap Gateway server. You can also remove any clip, and some nodes, by using the Delete option.

NOTE The option that allows deleting is on by default but can be turned off in the configuration file, which is found at */var/www/html/WiretapCentral/wiretapcentral.cfg*. Under the Permissions section, uncomment the line: *DeleteEnabled=false*.

Browsing using Thumbnails

By default, the main view area presents the Wiretap network and volume content as icons and thumbnails. For example, if a library is selected in the network tree, the main view area displays icons for the reels it contains. When you select a library or reel, thumbnails are generated for their clips. Once you have selected a host in the network tree, you can do all of your downward browsing using icons and thumbnails.

To browse using thumbnails in the main view area:

1 Switch to thumbnail mode, if necessary, by selecting Thumbnails from the View menu.

2 In the network tree, double-click the icon for the volume of interest.

The main view area displays the projects contained by the selected volume.

3 Continue browsing the contents of the current host:

- Double-click any icon to open it.
- Double-click a clip thumbnail to switch the main view area to player mode and load the clip into the player.
- To navigate back up the tree or to switch hosts, select another node in the network tree.

Playing Thumbnail Previews

Icons and thumbnails in the main view area provide an intuitive means to navigate the network and volumes. More importantly, the thumbnails provide you with:

- Metadata corresponding to each clip, including the clip's name, timecode, duration, and tracks.

- A playable, scrubbable representation of the clip.
- A gateway to loading the clip directly into the player.

To play thumbnail previews in the main view area:

1. Navigate to the clip of interest.

   By default, a single-image thumbnail is automatically generated for each clip in the main view area.

(a) Current timecode (b) Duration (c) Audio track indicator (d)Video track indicator (e) Clip name (f) Scrubbable progress bar icon (g) Play/Pause icon

2. Click the progress bar to generate the playable thumbnail.

   Thumbnail generation is normally faster than real-time, depending on the network interface and processing power of the WiretapCentral server. Thumbnails are partially playable and scrubbable even when processing or downloading is not yet complete.

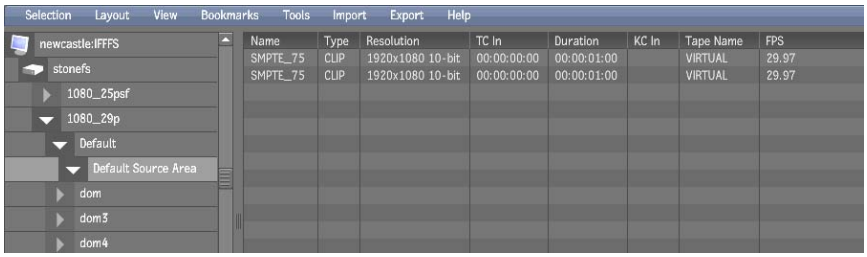
   The meaning of the different colours is explained below.

Time Bar Colour	Description
orange corkscrew	Thumbnail is not yet encoded.
grey	A grey progress bar indicates thumbnail is being generated. Grey from start-to-finish indicates thumbnail is generated and resides in your browser's cache.
blue	Playable thumbnail has been generated on the server, but remains to be downloaded into your cache.
yellow	Indicates position when playing or scrubbing.

3. Play the thumbnail by clicking the Play icon.
4. Scrub the thumbnail by dragging over the progress bar.

Browsing Using the List View

By default, the main view area displays the contents of the current library or reel as clip thumbnails. The list view presents an alternative view, presenting clips in table format, with sortable, repositionable columns.



The list view allows you to locate or compare clips based on clip metadata, such as name, tape name, and duration.

When used in conjunction with the Selection menu Expand Children command, you can list all the clips in all 'subdirectories', as well as the library structure, of any network object — host, volume, project, library or reel — in one click.

Browsing and Viewing Clips in the List View

The list view presents clip metadata in a sortable table with repositionable columns.

To browse and view clips using the list view:

1. In the network tree, navigate to the library or reel of interest.
2. From the View menu, select List View.

   The list of clips contained in the library or reel appears in the list view. The list view contains one row for each clip in the current library or reel.
3. Optional: Rearrange columns by dragging them to their new position.
4. Optional: Sort the list by clicking a column header.
5. Select a row to view its thumbnail in the Clip Details area.
6. Optional: Expand the selection of any network item — a host, volume, project, library or reel — all at once. From the Selection menu, click Expand Children.

   A confirmation dialog appears, cautioning you that the operation can take some time.
7. Click OK in the dialog.

   This populates the list view with information on all nodes found in the sub-hierarchy, including clips, reels, libraries, and projects.

   - In the Network tree, a spinning cursor indicates the recursive scan is in process. All sub-items are expanded.
   - As the scan proceeds, the list view is populated by the incoming stream of metadata.
   - Once complete, the results persist until you select something else in the Network tree. However, the data is cached locally for the duration of the session. The second time you expand the selection in the same place the results are loaded immediately.
8. To switch back to thumbnail mode, from the View menu, select Thumbnails.

Using the Player

Thumbnails are convenient for previewing clips, but the player is larger and offers considerably more playback options. It presents clips at a width of 720 pixels, and usually at 100% JPEG quality. In addition, the player has controls for stepping through the action, looping, and playing backward.

From most areas of the user interface, double-clicking a clip opens the player and loads the clip into it. WiretapCentral automatically generates and downloads the high-resolution version from the clip on the volume, then streams the playable version to the player. For long clips, this can take a few seconds, depending on the network interface and processing power of the WiretapCentral server. If the clip has an NTSC or PAL proxy on the volume, the process is usually very close to real-time. As with thumbnails, you can begin playing as soon as the clip begins downloading.

Loading a Clip into the Player

To load a clip into the player:

1. Navigate to the clip of interest.
2. Double-click on the clip to open the player and load the clip. You can double-click a thumbnail or a row in the list view.

   The player appears in the main view area with the clip loaded.

   The progress bar indicates how much of the clip has been downloaded. Clips in the player are partially playable and scrubbable even when processing or downloading is not yet complete.

   The meaning of the different colours in the time bar is explained below.

Time Bar Colour	Description
orange corkscrew	Clip is not yet playable.
grey	A grey progress bar indicates a playable clip is being generated. Grey from start-to-finish indicates the clip is generated and resides in your browser's cache.
blue	Playable clip has been generated on the server, but remains to be downloaded into your cache.
yellow	Indicates position when playing or scrubbing.

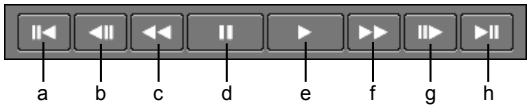
3. To switch back to the previous view mode, from the View menu, select either Thumbnails or List View.

Playing a Clip

You can play a clip using the player controls, as shown in the following diagrams.

(a) Loop/mute/smooth display (b) Playback controls (c) Time bar (d) Zoom controls

The playback controls are detailed below.



(a) First frame of clip (b) Back one frame (c) Fast backward (d) Pause (e) Play (f) Fast forward (g) Forward one frame (h) Last frame of clip

Panning and Zooming a Clip

You can pan the clip across the canvas and zoom in and out, even while the clip is playing.

To pan and zoom a clip:

1. To pan the clip, drag it using the mouse.
2. To zoom in and out:
   - Click the [+] and [-] UI buttons.
   - Use the wheel on the mouse.
3. To reset the player's default pan and zoom settings, click Home.
4. To fit the clip to the available player canvas, click Fit.

Decoding RED Media

3

Topics in this chapter:

About Importing RED Media

RED digital cameras record RAW media that is compressed using a proprietary codec known as REDCODE™, which is saved as an R3D™ file. R3D files contain very high-resolution digital images (2K, 4K, or even higher). These files require a computational-intensive debayering process to transcode to a file format that can be read by Autodesk Visual Effects and Finishing applications.

WiretapCentral can prepare a reel of clips, originating from RED source material, for conforming in an Autodesk Visual Effects and Finishing application. WiretapCentral is used to set up R3D transcoding jobs, which are sent to a Backburner network for decoding, leveraging a network of processing nodes (any Linux-based computers, including the application workstation) to provide maximum processing speed. The jobs output image sequences to a location that is accessible to Autodesk Visual Effects and Finishing applications.

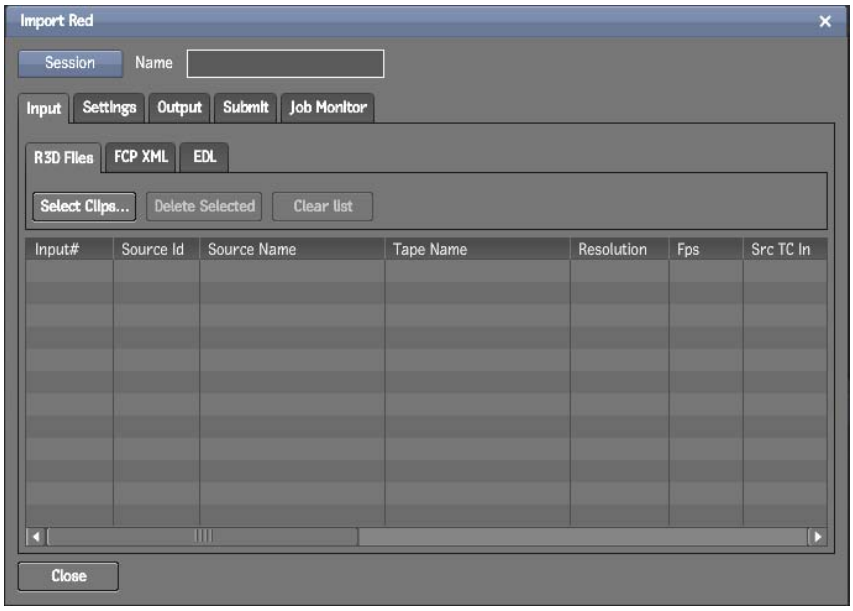
RED media can be imported as individual R3D files, or as either Apple® Final Cut Pro® XML or generic EDL files that contain RED media.

Importing RED R3D Media Files

RED media can be imported as individual R3D files. The workflow goes as follows.

1 In WiretapCentral, from the Import menu, select Red.

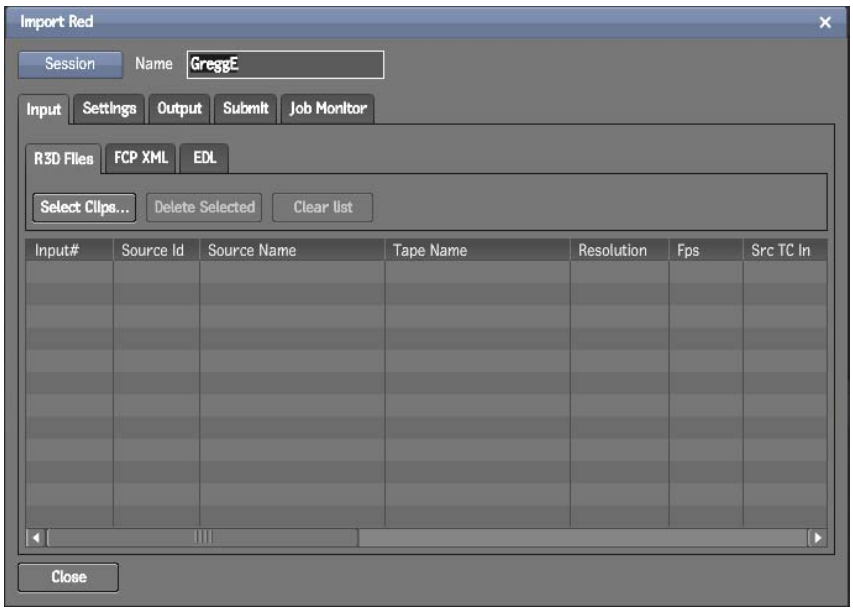
This will start a new import job. The Import Red window appears.



2 Enter a session name.

The session name is used to identify your import job when saving or loading a session, and when outputting the job. The session name is used as the job name in Backburner Manager.

You can save this session at any time. From the Session menu, select Save or Save As. From this menu, you can also load a previously saved Import Red session or delete one.

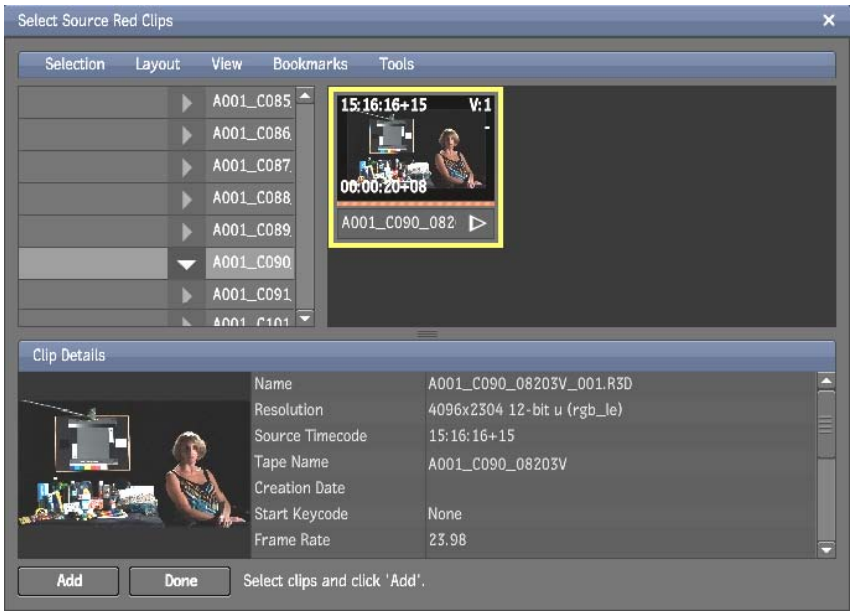


3 Ensure that the Input tab is selected.

4 From the Input tab, ensure that the R3D Files tab is selected.

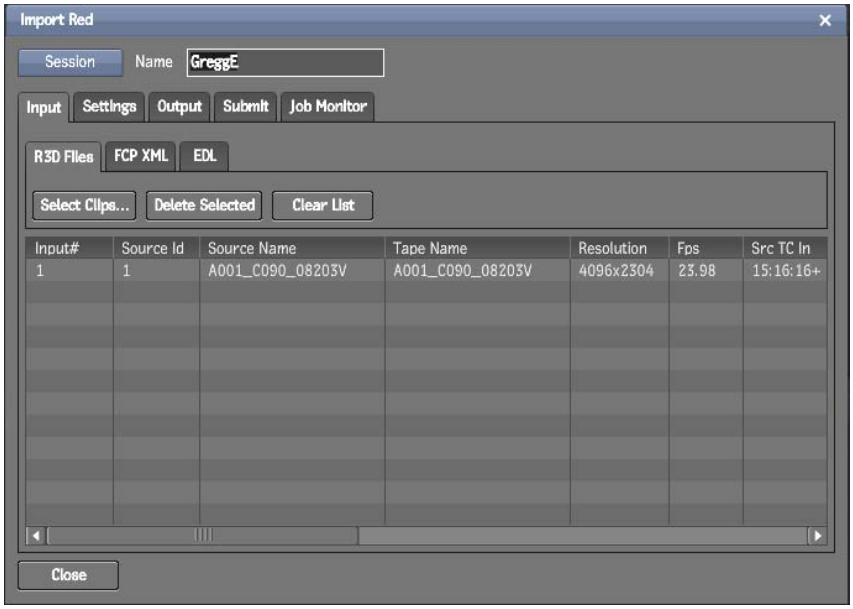
5 From the R3D Files tab, click Select Clips.
A browser appears.

6 By browsing through a Wiretap Gateway, select one or more RED clips and click Add.
You can select multiple files at a time by using the **Shift** or **Ctrl** key.



The number of clips selected is displayed at the bottom of the screen.

7 When you are finished, click Done.
The selected clips appear in the Input list.



8 When you are ready to proceed, click the Settings tab.
See Adjusting the Settings on page 25.

Importing FCP XML Containing RED Media Files

If you are importing an FCP XML pointing to RED media, then you must make sure to take the right steps in Final Cut Pro.

Working in Final Cut Pro

For interoperability with FCP, there are a minimal number of steps that must be performed before importing into WiretapCentral.

1. Ensure that the original R3D files are stored in a location that is accessible to FCP.
2. Using REDRUSHES™, convert the R3D files into the QuickTime® DVCPRO HD format. Use DVCPRO720 and burn-in the timecode.

   This is a less CPU-taxing format that you can easily import into Autodesk Visual Effects, Finishing, or Grading applications, and keep your entire edit, audio included, as a reference.

   NOTE Make sure that you do not modify the R3D filenames. Instead, use the various comment columns to identify your clips. Make sure that you keep the full 16-character filename as a reel name.

3. Edit in FCP using the QuickTime files (created in step 2) that contain the full original R3D filename. Be aware that the FCP XML file will be used in your Autodesk Visual Effects, Finishing, or Grading application, and that not all transitions, effects, and speed changes are supported. Consult your Autodesk Visual Effects, Finishing, or Grading application user guide.
4. Export an FCP XML of the final sequence for use in your Autodesk Visual Effects, Finishing, or Grading application.
   1. Select the sequence in the browser.
   2. Choose File > Export > XML.
   3. Select Apple XML Interchange Format, version 4.
      - Do not select Include Master Clips Outside Selection.
      - Check Save project with latest clip metadata (recommended).

      The generated XML file points to the QuickTime files that you used for your offline editing.

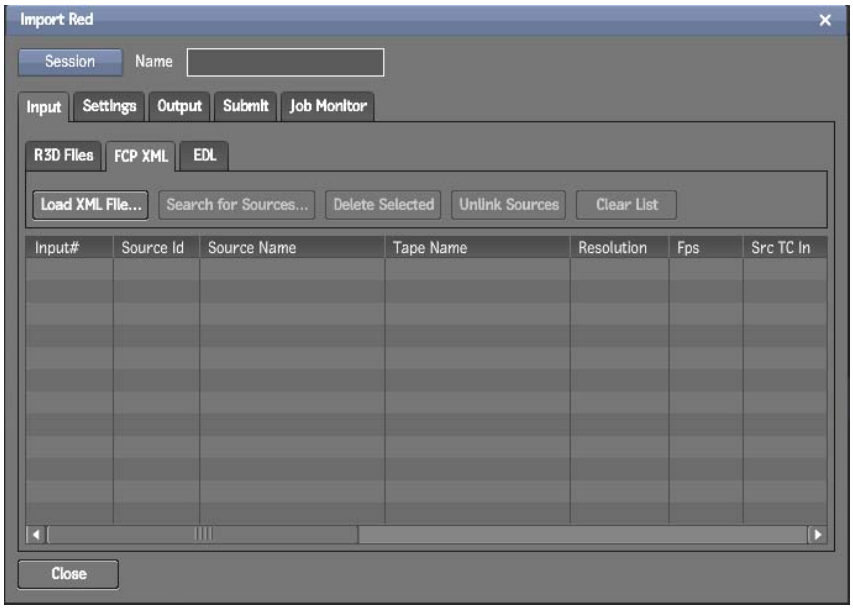
5. Copy the source R3D files, the QuickTime files, and FCP XML to a media folder on a SAN or NFS that is accessible to WiretapCentral and Autodesk Visual Effects, Finishing, and Grading applications. Keep the same file/folder hierarchy, where one folder will contain all .RDM and .RDC folders and subfolders. This makes it easier to search for and match events to media when loading the XML file.

Importing FCP XML

RED media can be imported as FCP XML containing R3D files. The workflow goes as follows.

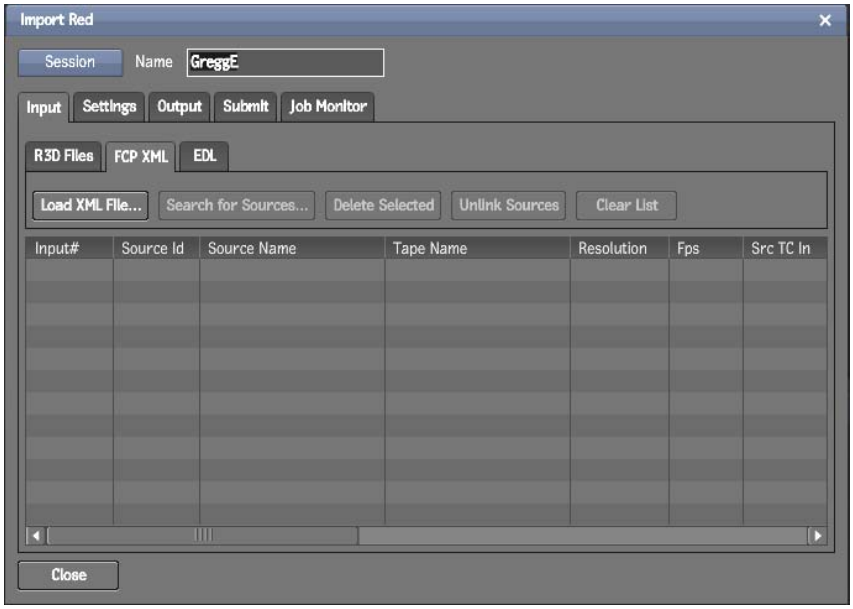
1. In WiretapCentral, from the Import menu, select Red.

   This will start a new import job. The Import Red window appears.



2 Enter a session name.

The session name is used to identify your import job when saving or loading a session, and when outputting the job. You can load a previously saved Import Red session, or save or delete your current Import Red session. The session name is used as the job name in Backburner Manager.



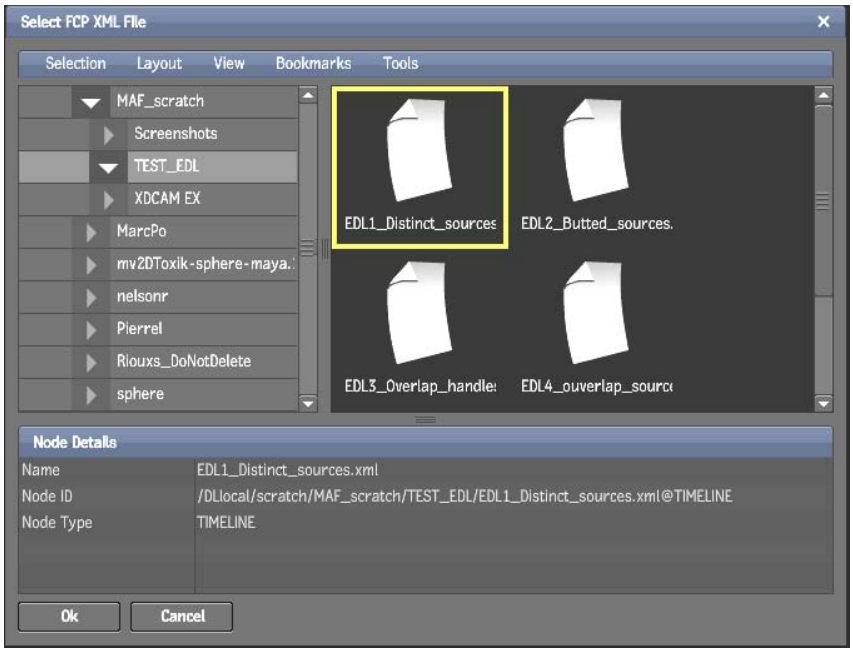
3 Ensure that the Input tab is selected.

4 From the Input tab, select the FCP XML tab.

5 From the FCP XML tab, click Load XML File.

A browser appears.

6 Navigate to the folder containing the FCP XML file to be imported, and select the file.

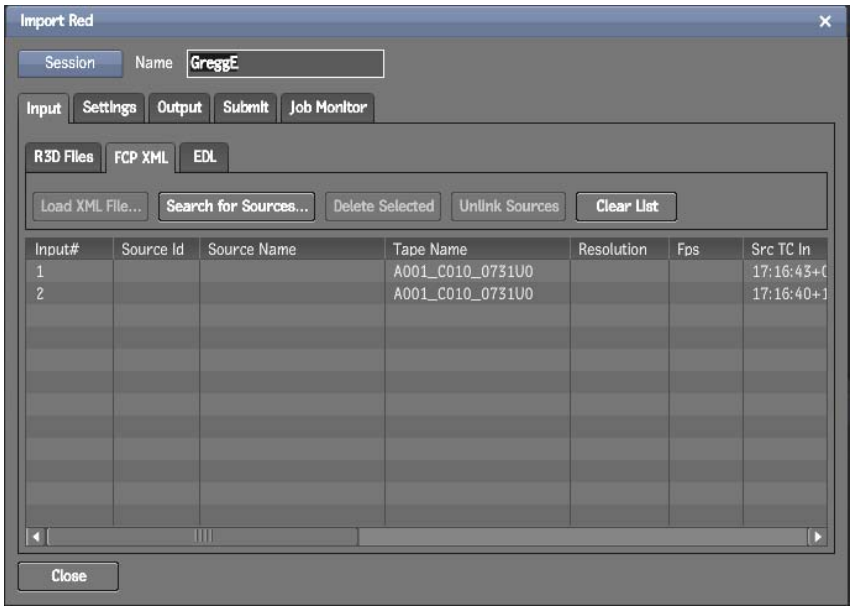


7 Click Ok.

The selected XML file, with the contained events, appears in the Input list.

If the source R3D media is contained in the same folder as the XML file (or in a subfolder), WiretapCentral will find it. In this case, the metadata (such as Source Id and Source Name) of the source R3D media appears in the Input List.

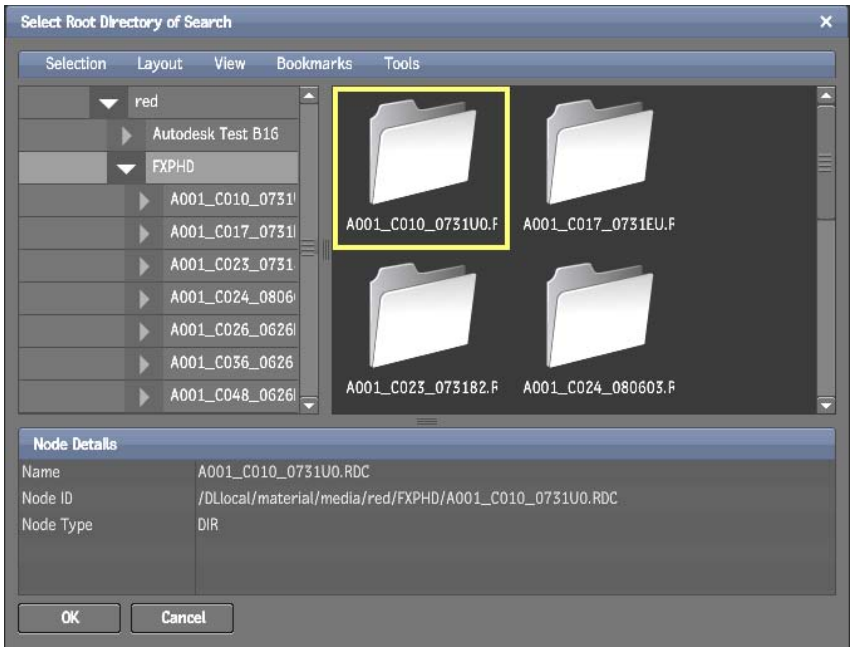
If the XML and source media reside in different folders, you can use Search for Sources to find it.



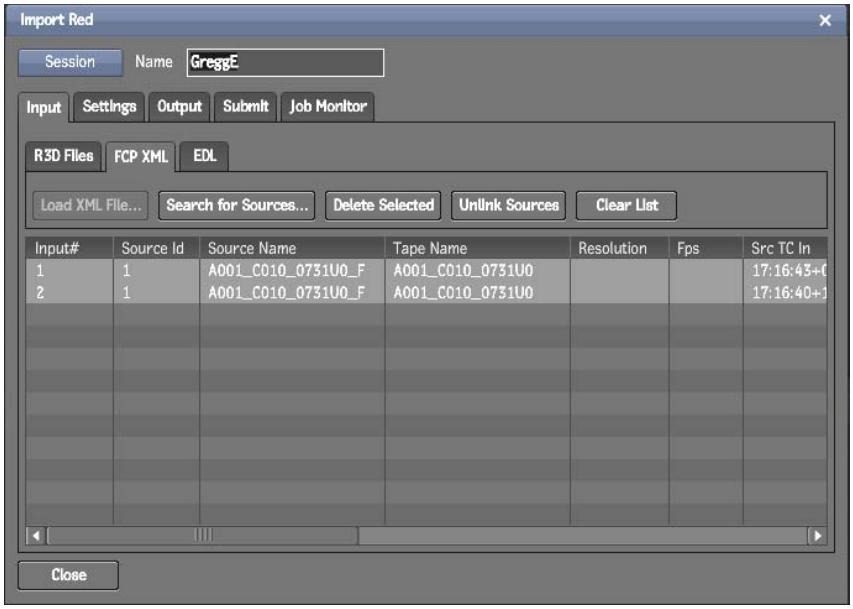
8 If required, click Search For Sources.

A browser appears.

9 Navigate to the folder containing the R3D files, select the location of your RED media files and click Ok.



WiretapCentral searches for each clip referenced in the XML. The found RED media files appear in the input list.



10 When you are ready to proceed, click the Settings tab.

See Adjusting the Settings on page 25.

Importing an EDL Containing RED Media Files

If you are importing an EDL file pointing to RED media, then you must make sure to take the right steps in your editing application.

Working in Avid

If you are editing in your Avid® application, you will need to export EDL sequences, since WiretapCentral does not support AAF.

Keep in mind that you will need to export one or more EDLs, so limit your edit to one video track. If you must edit using several tracks, you will have to make as many duplicates of your sequence as you have video tracks and remove any additional video from the duplicates. You will end up with several EDL files, one per video track.

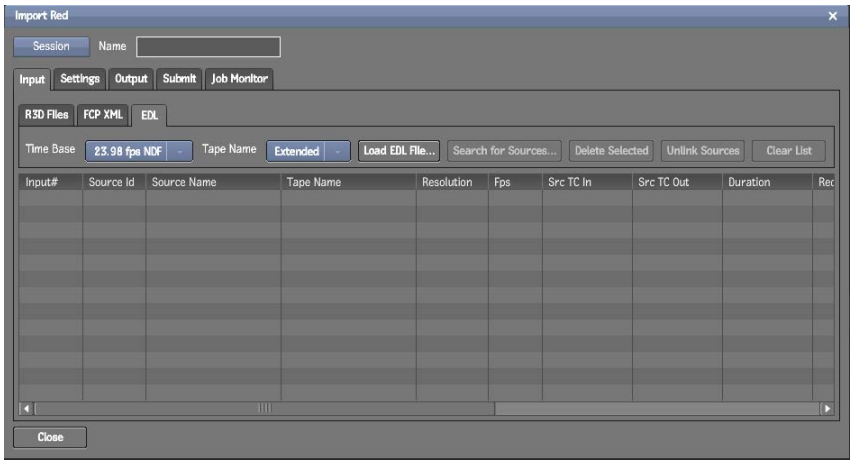
To export EDL files:

1. Edit your sequence in your Avid application.
2. Pare down your Avid sequence to make it more EDL-friendly.
3. Make as many duplicates of your sequence as you have tracks, and prepare video-only sequences, carefully naming each one.
4. For each sequence perform the following actions:
   - Select the sequence to export in its Bin, or select the Timeline to activate it.
   - From the Output menu, select EDL.
     AVID EDL Manager will launch.
   - In the main window, click the right-pointing arrow to update the display with your sequence's EDL.
   - Make sure that EDL type is set to CMX-3600.
     Do not use the RED16 EDL template, as WiretapCentral reads the tape conversion table written at the end of the CMX EDL.
   - In the Options menu, make sure that Reel ID Type is set to Cameraroll.
     There is no need to change any other settings.
   - From the File menu, select Save As… to save the resulting EDL.
5. Repeat step 4 for each video track's corresponding sequence.

Importing the EDL

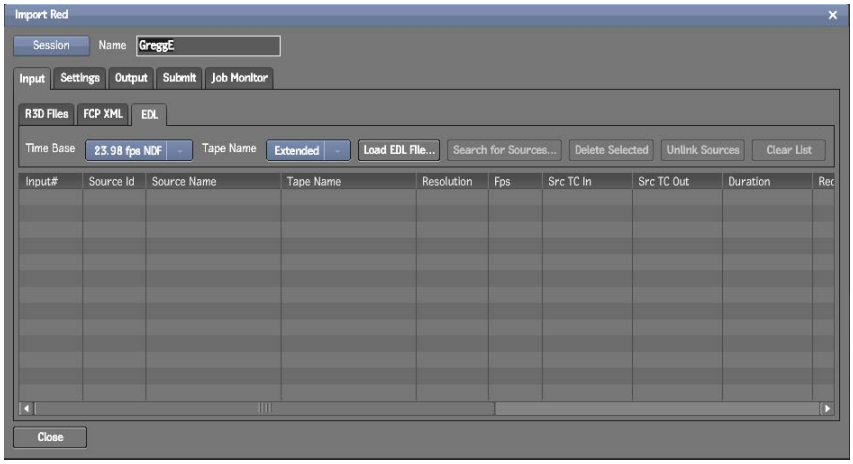
RED media can be imported as generic EDLs containing R3D files. The workflow goes as follows.

1. In WiretapCentral, from the Import menu, select Red.
   This will start a new import job. The Import Red window appears.



2 Enter a session name.

The session name is used to identify your import job when saving or loading a session, and when outputting the job. You can load a previously saved Import Red session, or save or delete your current Import Red session. The session name is used as the job name in Backburner Manager.



3 Ensure that the Input tab is selected.

4 From the Input tab, select the EDL tab.

5 Select the Time Base for your EDL.

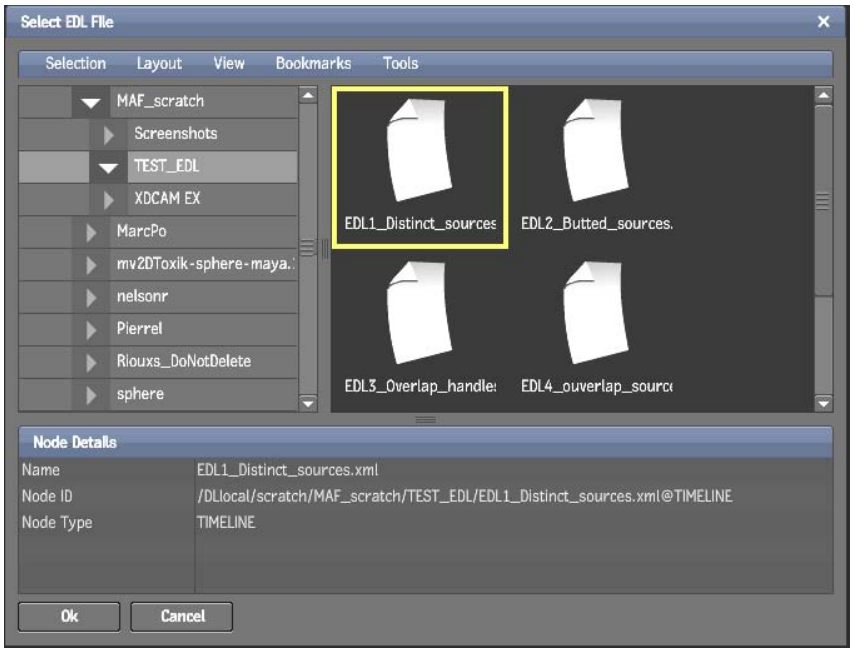
6 Select how Tape Name is written in the EDL.

If there is a tape name conversion, and the original tape name is written below each event, WiretapCentral will show the correct tape name. In the end you must have both the Source Name and Tape Name fields containing the same data.

7 Click Load EDL File.

A browser appears.

8 Navigate to the folder containing the EDL file to be imported, and select the file.

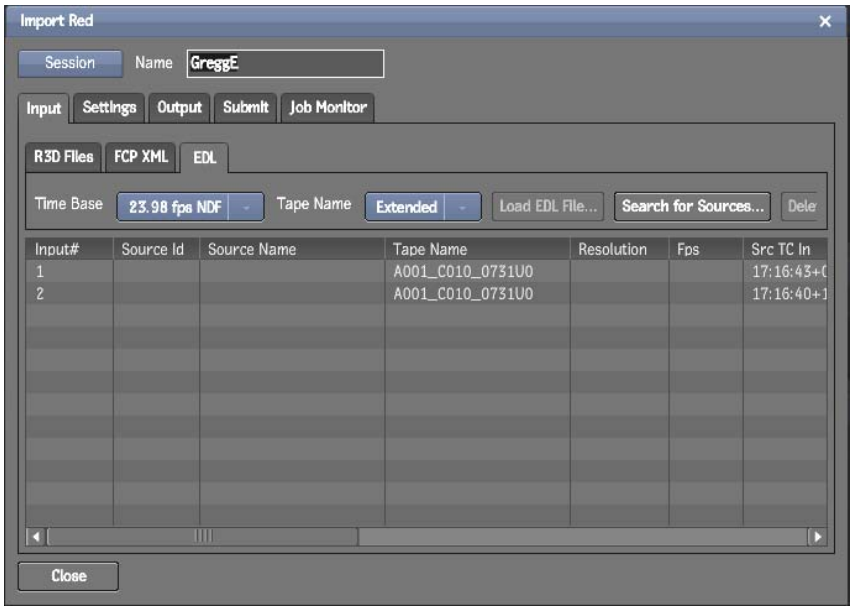


9 Click Ok.

The selected EDL file, with the contained clips, appears in the Input list.

If the source R3D media is contained in the same folder as the EDL file (or in a subfolder), WiretapCentral will find it. In this case, the metadata (such as Source Id and Source Name) of the source R3D media appears in the Input List.

If the EDL and source media reside in different folders, you can use Search for Sources to find it.

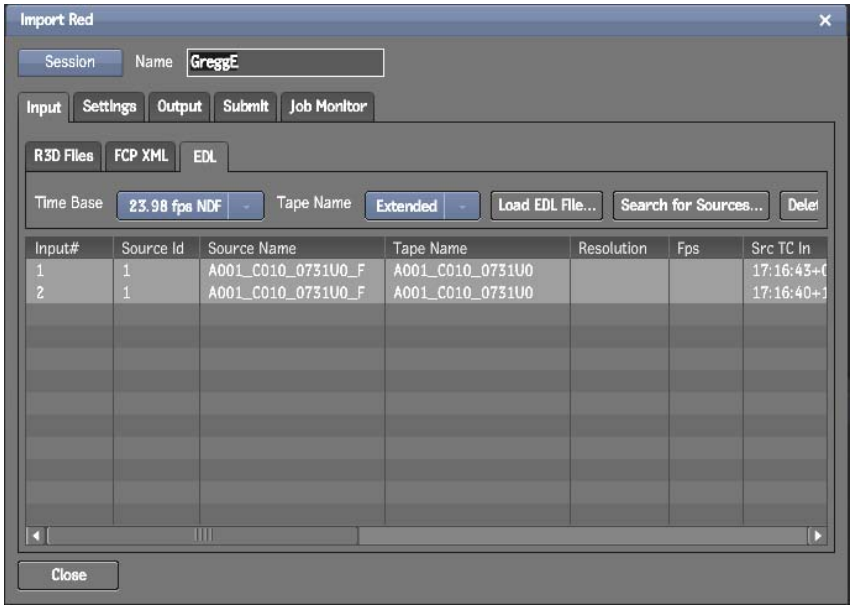


10 If required, click Search For Sources.

A browser appears.

11 Navigate to the folder containing the R3D files, select the location of your RED media files, and click Ok.

WiretapCentral searches for each clip referenced in the EDL. The found RED media files appear in the input list.



12 When you are ready to proceed, click the Settings tab.

See Adjusting the Settings on page 25.

Adjusting the Settings

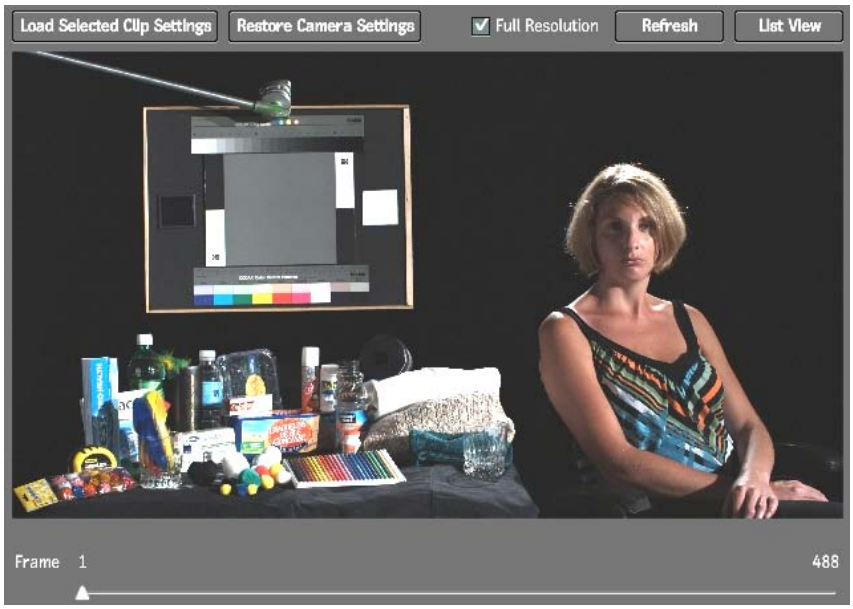
The Settings tab contains a number of parameters that can be set for the clips in your RED decoding session. These are divided under the Format, Image, Basic Color, and Advanced Color tabs. The settings under these tabs are the staging area for the RED settings, and are not applied until you click the Apply button.

WiretapCentral reads the format and color metadata in the clip, as set in the camera, and populates the parameters as appropriate. You can additively load presets, or change the settings manually.

Settings that are not changed are greyed out. Clicking one will activate all in the group. Settings that are not enabled will not be applied.

When you are done adjusting, click Apply to apply the settings to the selected clips in the list. The settings can be applied to all of the clips or to individual selections.

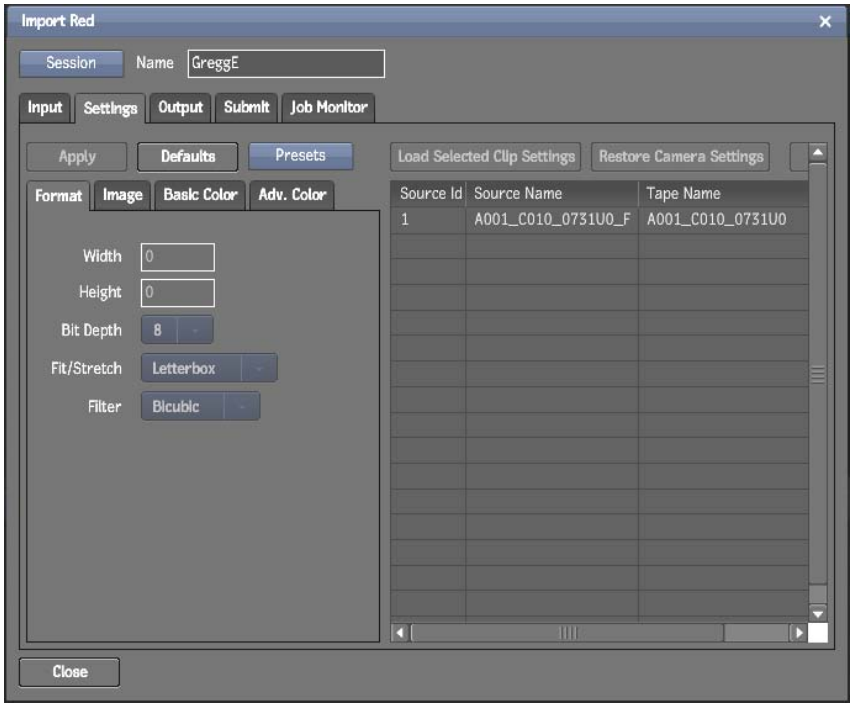
You can also preview the settings applied to the first selected clip at any time by clicking the Preview button.



Click List View to exit preview mode and view the list of files.

Format Tab

Use the Format Settings options to perform any resizing, including resize filter options.



Width / Height Enter the desired resize settings. Note that a resize setting that is not directly proportional to the size of original media takes longer to process.

Bit Depth RED media is 12-bit, but it can be converted down to 10-bit or 8-bit. If you are outputting DPX files on a Wiretap Bridge, you will need to downsize the bit depth to 10- or 8- bits.

Fit/Stretch To use a different aspect ratio during resize, select a fit method option to be applied to the exported clip.

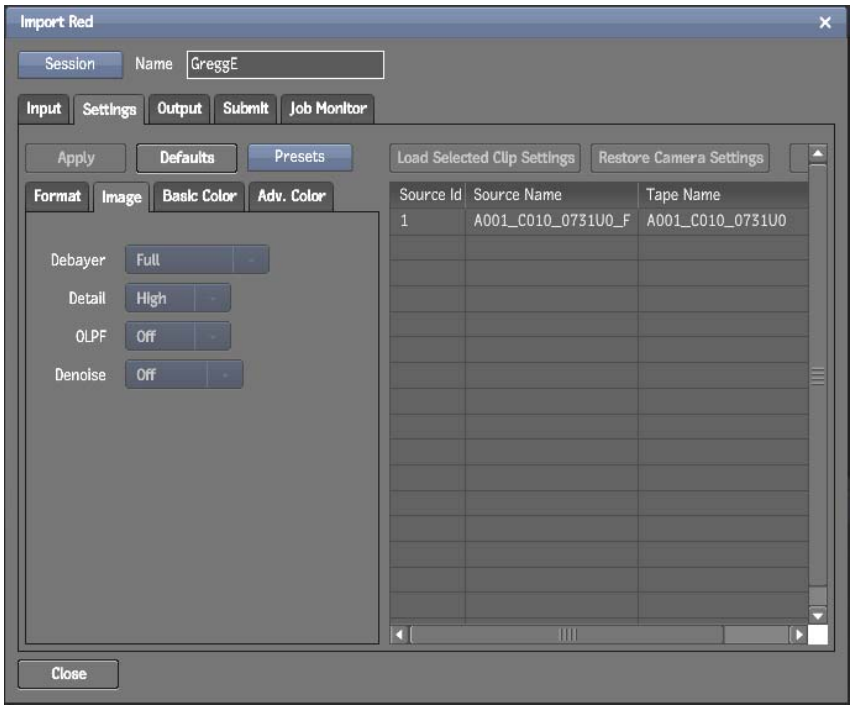
Select:	To:
Centre/Crop	Fit the source image, centred, over the destination frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	Fit one edge of the source into the destination frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	Fit the source, width and height, into the destination frame. If the source and destination frames do not have the same aspect ratio, the image can become distorted.
Letterbox	Fit the source to the destination frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is contained within the destination frame.

Filter Select the filter option to determine the quality of the interpolated resize result.

Select:	To get:
Impulse	Quick, low-quality results.
Triangle	Moderate results with little processing overhead.
Mitchell	Best results when resizing a clip to a higher resolution.
Bicubic	Very good results for resizing soft-looking images. Use to sharpen the image.
Quadratic	Good results for resizing simple images with straight edges. Similar to Gaussian but with more blurring. Use to soften the image.
Gaussian	Excellent results when resizing a clip with no patterns and a lot of straight edges to a lower resolution. Useful for softening some detail.
Shannon	Excellent results when resizing a clip to a lower resolution. Very similar to Lanczos, but results are a little softer.
Lanczos	Best results when resizing a clip containing a variety of patterns and elements to a lower resolution. It is the most complex with the longest processing time.

Image Tab

Use the Image Settings options to adjust the quality settings for Debayer, Detail, Optical Low Pass Filter, and Denoise.



Debayer Select the level of quality required from the debayering algorithm. Higher resolutions take more time to process.

Detail Select the level of detail extraction required.

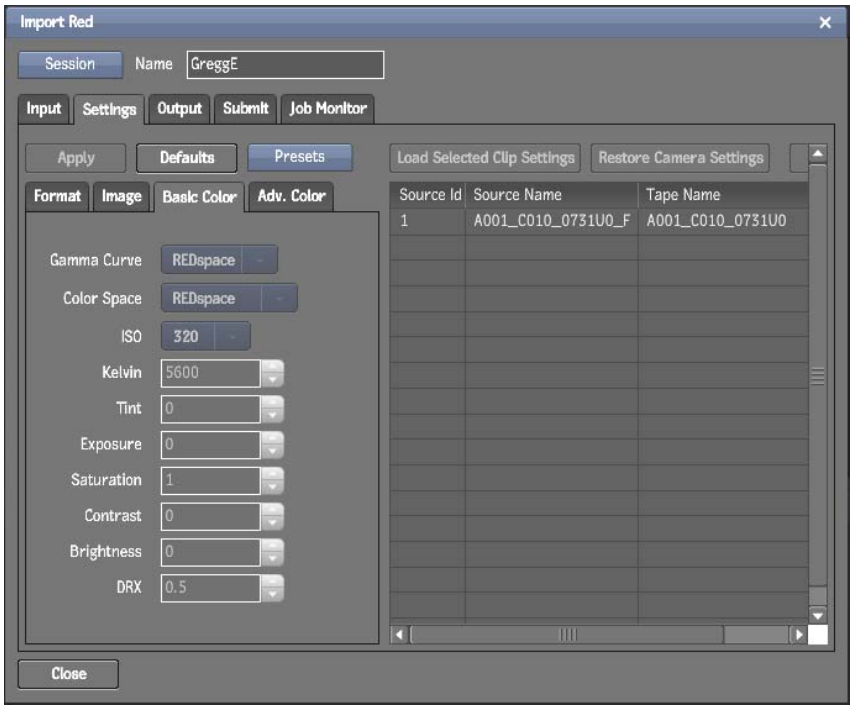
OLPF Select the level of Optical Low Pass Filter compensation to use. OLPF is a type of sharpening used to compensate for the optical anti-aliasing filter, which can induce softening of the image during recording.

Denoise Select the level of noise reduction applied to the debayered clip.

Basic Color Tab

WiretapCentral supports most color options available in RED applications, such as RED Alert!™ .

The Basic Color Tab displays the settings for the clip metadata, as set in the camera. These settings may be altered, but you must take care, since overiding some values may produce unexpected results.



Gamma Curve Displays the value of the output gamma curve that is applied to the clips.

Color Space Displays the value of the native color space of the images, as set in the camera. Overiding this value may produce unexpected results.

ISO Displays the value of the linear gain operation. Red images are always shot at 320 ISO.

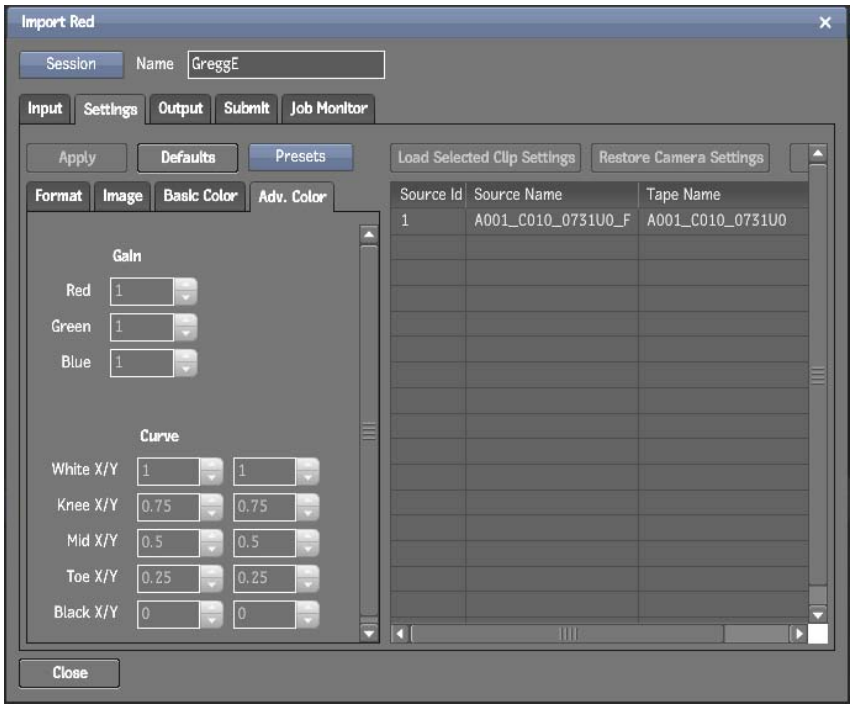
Kelvin Displays the perceived color temperature of the image.

Exposure Displays the exposure increments, which are equivalent to f-stops.

DRX Displays the setting for Dynamix Range Extension, which sets how much pixel data is copied from non-saturated channels into saturated channels.

Advanced Color Tab

The Advanced Color tab contains settings for Red, Green, and Blue Gain, as well as Color curve settings. Change them only if you know what you are doing.



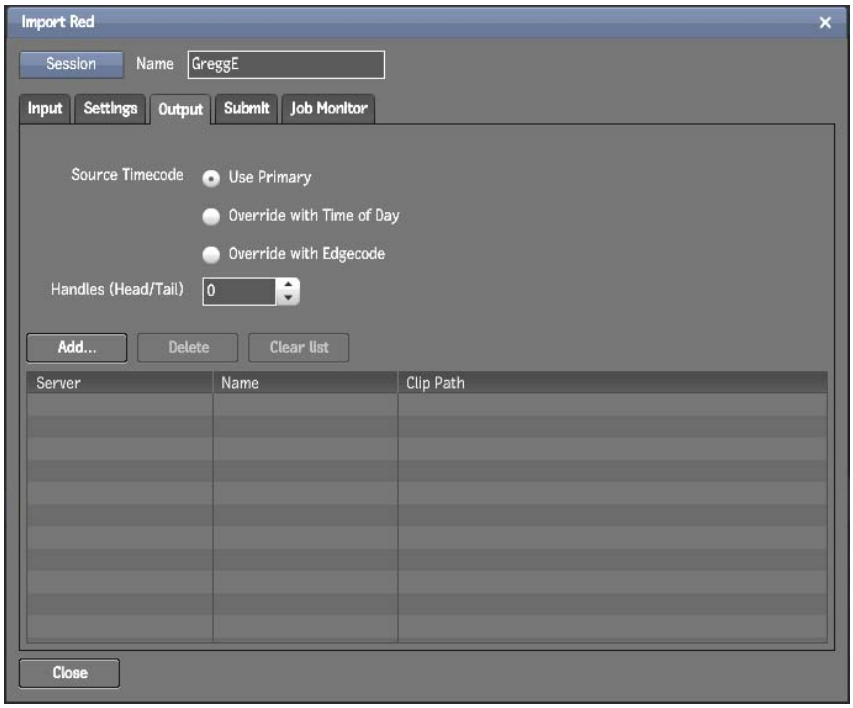
Defining the Output Destination

Use the Output tab to change how timecode is used in the clip, to use handles, and to set one or more output destinations for your import RED job. A job can be sent to multiple destinations. The decoding is done once and streamed simultaneously to each location.

The clip placeholder is created right away and the media is populated in the background without locking the clip library in your Autodesk Visual Effects and Finishing application.

1 Click the Output tab.

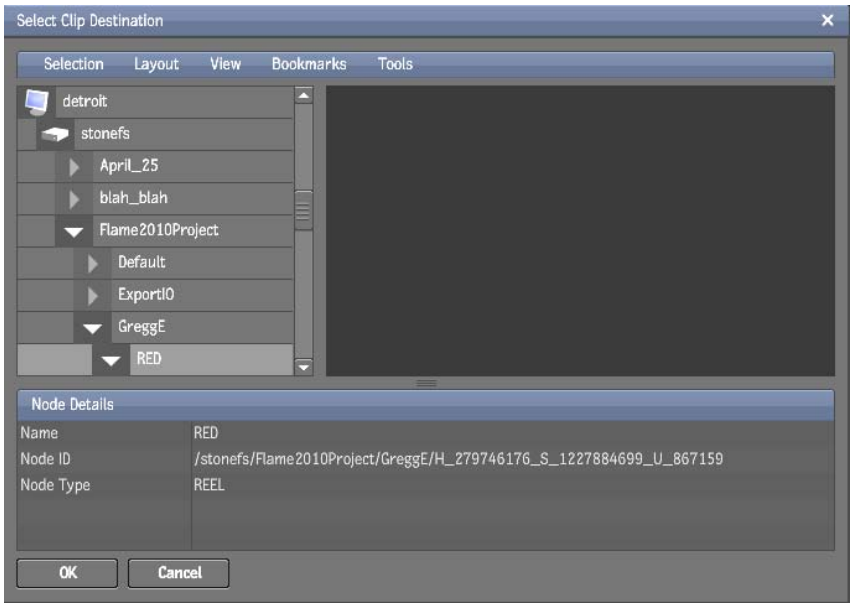
The output options appear.



2 Click Add to add a destination for the given jobs.

A browser appears.

3 Select one or more destination locations for the processed clips.



Depending on whether the destination is a StoneFS or a standard, unmanaged filesystem, different kinds of images sequences will be created.

4 If the selected destination is a StoneFS on an Autodesk Visual Effects and Finishing workstation, uncompressed RGB images are generated and the corresponding clips are created in Project/Library/Reel. Clips are named according to their source R3D file name.

- To create a new library, select a project then, from the Tools menu, select New Library.

- To create a new reel, select a library then, from the Tools menu, select New Reel.

5 If the selected destination is on a Wiretap Gateway server, then stand-alone DPX sequences are created in Main folder/Resolution.

You should create a folder using the project name to identify your clips.

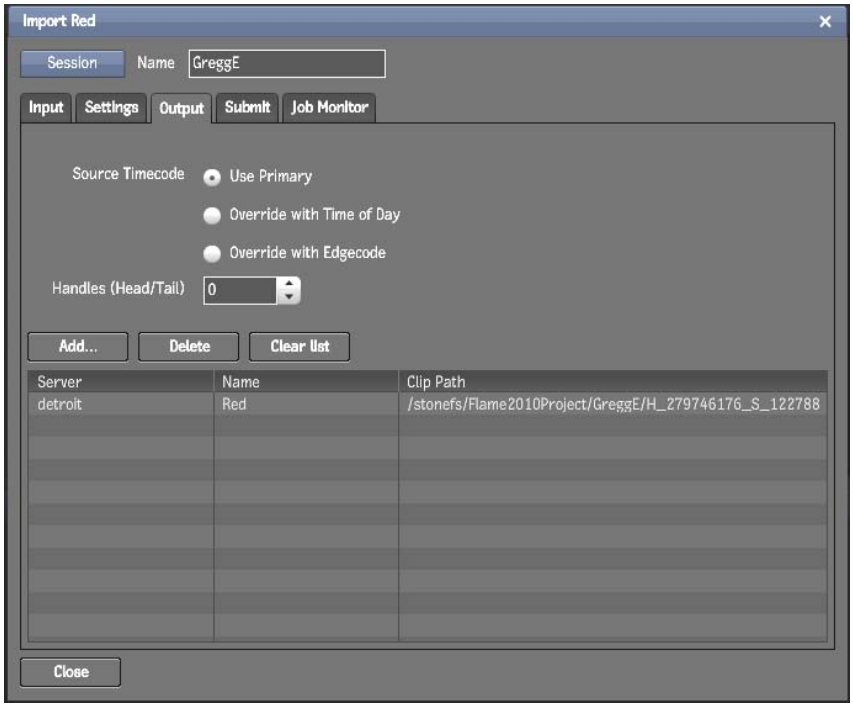
- Select a destination then, from the Tools menu, select New Reel.

The DPX file name is always timecode-based, and is padded to 7 digits. Metadata is maintained in the DPX header. Other metadata gets written into the XML file that WiretapCentral produces for each clip.

DPX sequences can be imported directly into Lustre, or as clips in Autodesk Visual Effects and Finishing applications.

6 When done, click OK.

The selected destinations appear in the Output list.



7 Set timecode and handles as follows.

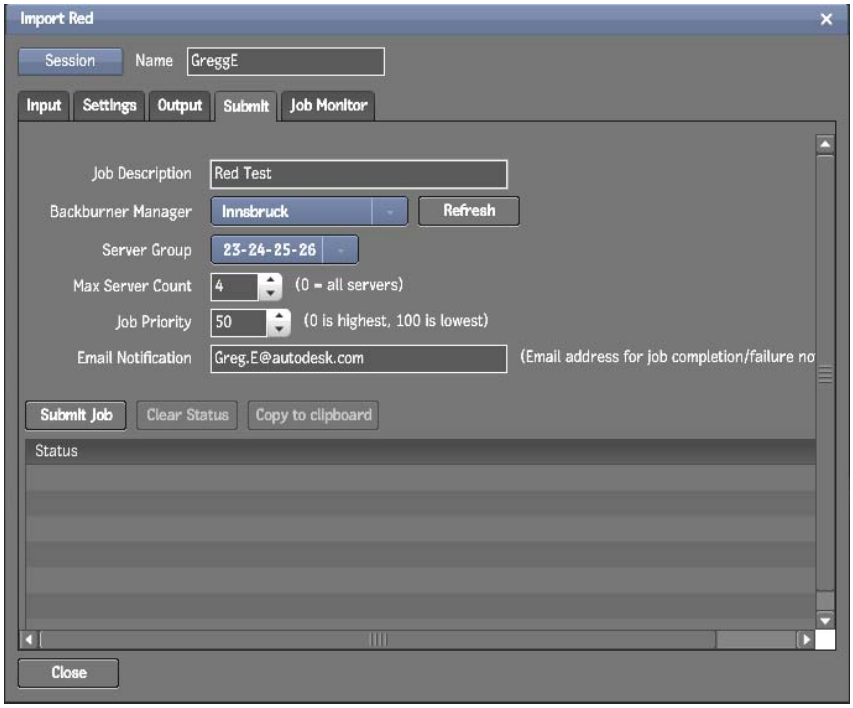
- **Source Timecode** Check one of the timecode option boxes to overide the metadata of the resulting clips with the chosen source timecode, instead of using the primary timecode set in the camera. Note that when conforming an edit list (EDL or XML), overiding the timecode data of the clips with a different timecode track will prevent relinking in Autodesk Visual Effects and Finishing applications.

- **Handles** In a conforming workflow, you may add extra frames to the heads and tails of clips to provide for dissolves and other transitions during finishing. Always set handles when importing FCP XML, since FCP sometimes adds an extra frame at the end of the last clip in the sequence which may cause problems upon import. WiretapCentral automatically adds enough handles to cover for transitions such as dissolves and wipes.

Submitting the Job

Use the Submit tab to set your processing options and execute your job.

1 Click the Submit tab.



Set any of the following parameters.

Job Description Enter the description that will appear in Backburner monitor.

Backburner Manager WiretapCentral scans the local network for all available Backburner managers. Select the one to which you want to send the Import Red job.

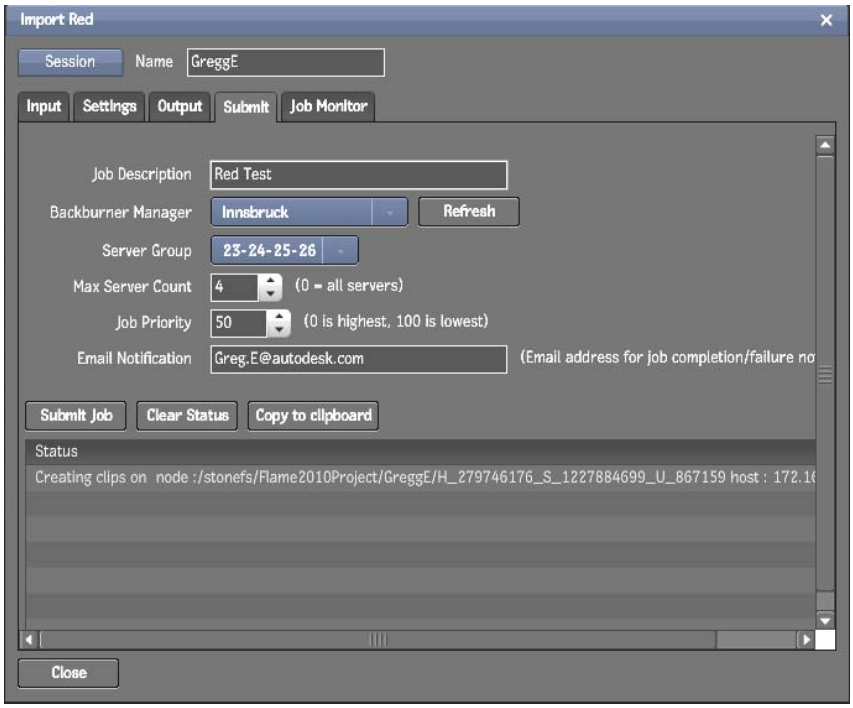
Server Group Select the server group (if available) for the given Backburner manager. A server group is a virtual arrangement of processing nodes. By default, a job will go to all servers (up to the server limit), which may not be advantageous to your job or work environment. Server groups need to be set up in Backburner if you have a processing farm. See the *Backburner User Guide*.

Max Server Count Select the number of processing nodes to be used on the job.

Job Priority Set the job priority that is used in Backburner Manager for queued processes.

Email Notification Enter your e-mail address if you want to be notified of job completion or failure.

2 When done, click Submit Job.



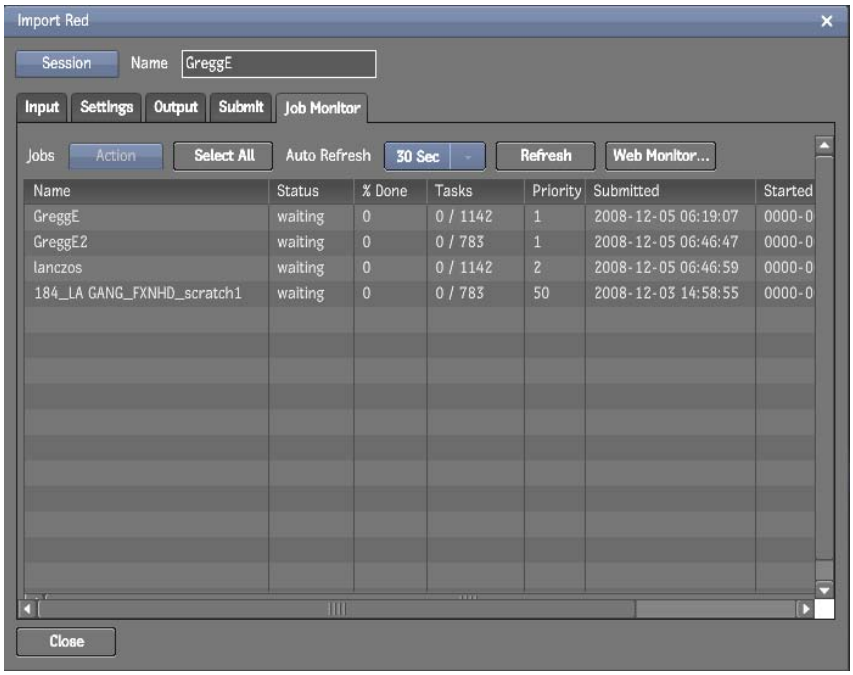
This sends the jobs to Backburner for processing. The job status (clip creation on all destinations and submission of the job to Backburner manager) is displayed in the Status list.

Monitoring the Job

Use the Job Monitor tab to follow the progress of all your submitted jobs.

1 Click the Job Monitor tab.

All the currently submitted jobs are displayed along with their status.



See Monitoring the Decoding Jobs on page 47.

You can also open the Backburner monitor selected in the Destination pane by clicking Web Monitor.

2 When you are done, from the Session box, select Save to keep your session information, then click Close to end the session.

Decoding OpenEXR Media

4

Topics in this chapter:

About Importing OpenEXR Media

OpenEXR files are designed to support multiple resolutions and additional channels, making them appealing for compositing. Since OpenEXR can store arbitrary channels (such as specular, diffuse, alpha, RGB, normals, etc) in one file, it takes away the need to store this information in separate files. However, to support all these arbitrary OpenEXR channels in Autodesk Visual Effects andFinishing applications, they need to be converted to separate sets of RGB clips upon import. These RGB files can then be modified and combined, for example in Action, to reconstitute the final clip.

WiretapCentral is used to set up OpenEXR transcoding jobs, which are sent to a Backburner network for encoding, leveraging a network of processing nodes (any Linux-based computers, including the application workstation) to provide maximum processing speed. The jobs output RGB image sequences to a location that is accessible to Autodesk Visual Effects, Finishing, and Grading applications.

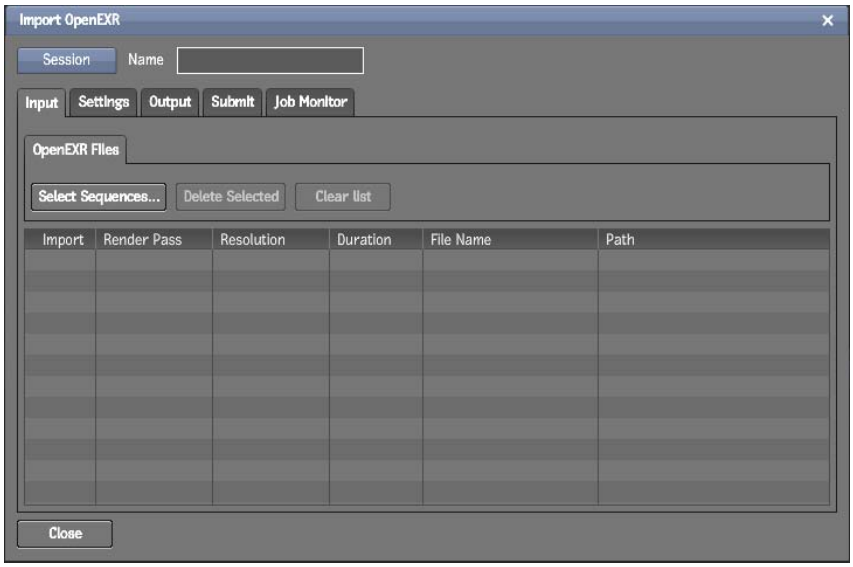
NOTE Multi-channel OpenEXR sequences are imported as 16-bit float. OpenEXR sequences at 32-bit float are converted to 16-bit float automatically.

Importing OpenEXR Media Files

OpenEXR media can be imported as individual multichannel files. The workflow goes as follows.

1 In WiretapCentral, from the Import menu, select OpenEXR.

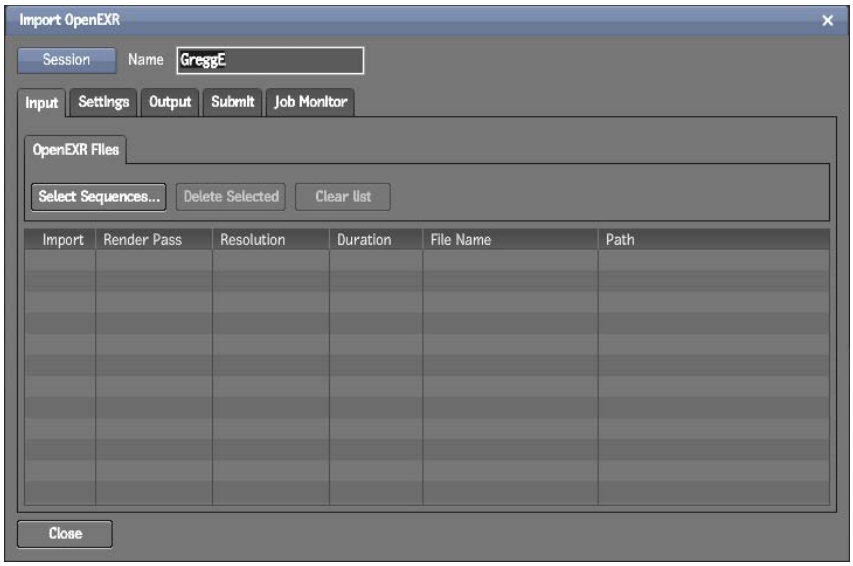
This will start a new import job. The Import OpenEXR window appears.



2 Enter a session name.

The session name is used to identify your import job when saving or loading a session, and when outputting the job. The session name is used as the job name in Backburner Manager.

You can save this session at any time. From the Session menu, select Save or Save As. From this menu, you can also load a previously saved Import OpenEXR session or delete one.



3 Ensure that the Input tab is selected.

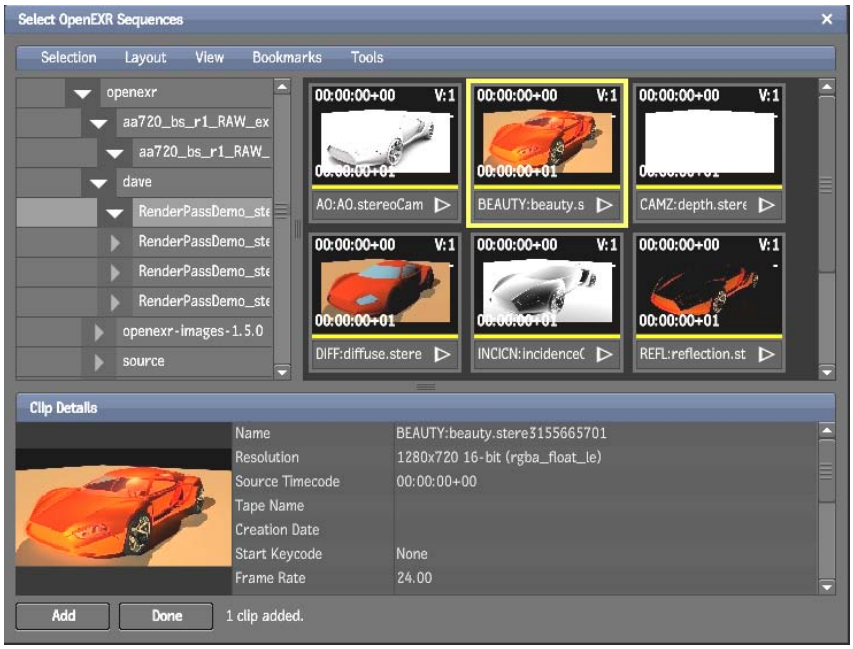
4 From the OpenEXR Files tab, click Select Sequences.

A browser appears.

5 By browsing through a Wiretap Gateway, select one or more clips and click Add.

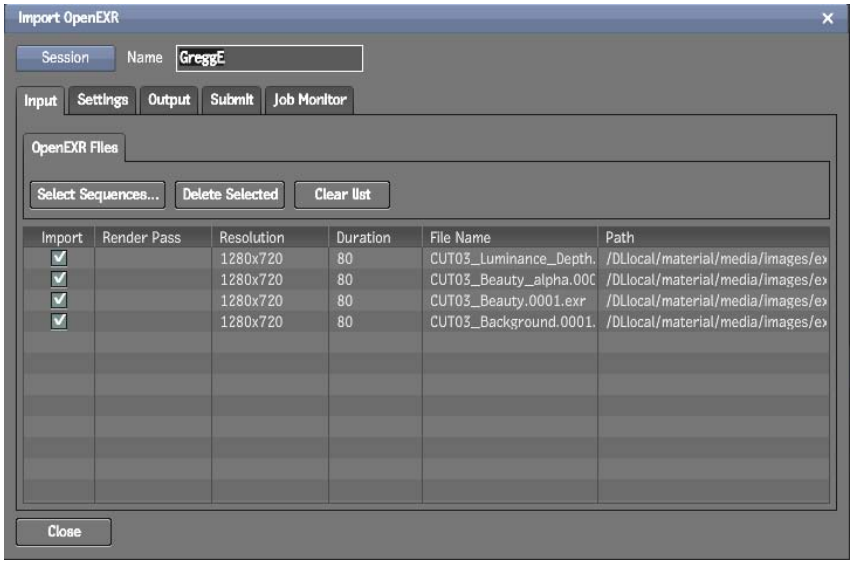
You can select multiple files at a time by using the **Shift** or **Ctrl** key.

For OpenEXR files containing multiple render passes, you can select the file, to select all render passes, or double-click the file to show the contained render passes. The render passes can then be added individually.



6 When you are finished, click Done.

The selected clips appear in the Input list.



7 When you are ready to proceed, click the Settings tab.

See Adjusting the Settings on page 40.

Adjusting the Settings

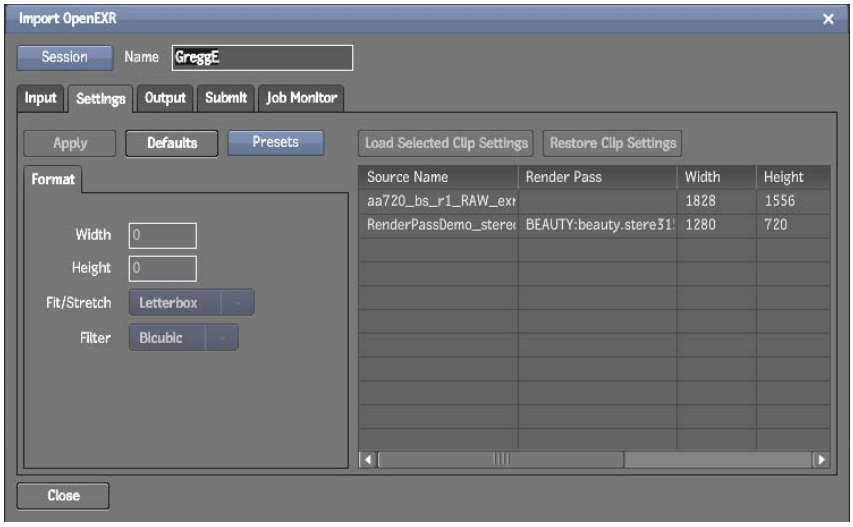
The Settings tab contains a number of parameters that can be set for the clips in your OpenEXR decoding session. These settings appear under the Format tab, and are the staging area for the OpenEXR settings. You can additively load presets, or change the settings manually. The settings are not applied until you click the Apply button.

Settings that are not changed are greyed out. Clicking one will activate all in the group. Settings that are not enabled will not be applied.

When you are done adjusting, click Apply to apply the settings to the selected clips in the list. The settings can be applied to all of the clips or to individual selections.

Format Tab

Use the Format Settings options to perform any resizing, including resize filter options.



Width / Height Enter the desired resize settings.

Fit/Stretch To use a different aspect ratio during resize, select a fit method option to be applied to the exported clip.

Select:	To:
Centre/Crop	Fit the source image, centred, over the destination frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	Fit one edge of the source into the destination frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	Fit the source, width and height, into the destination frame. If the source and destination frames do not have the same aspect ratio, the image can become distorted.

Select:	To:
Letterbox	Fit the source to the destination frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is contained within the destination frame.

Filter Select the filter option to determine the quality of the interpolated resize result.

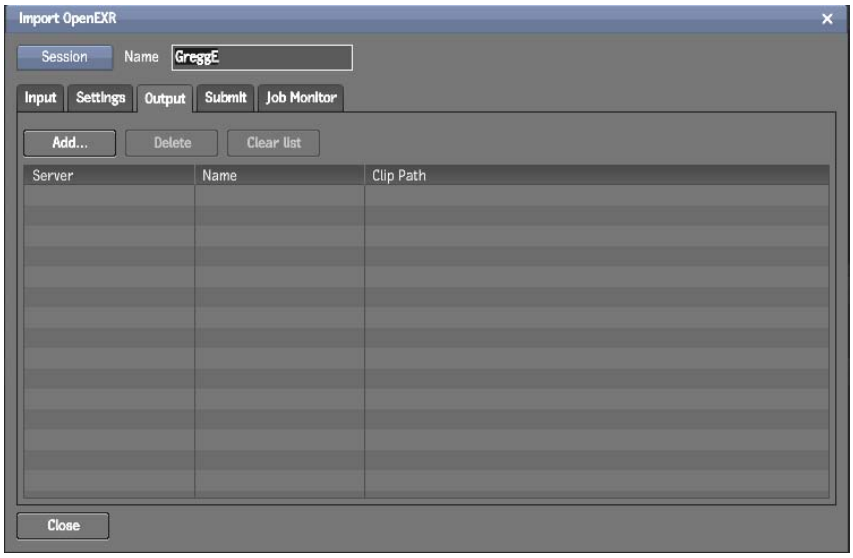
Select:	To get:
Impulse	Quick, low-quality results.
Triangle	Moderate results with little processing overhead.
Mitchell	Best results when resizing a clip to a higher resolution.
Bicubic	Very good results for resizing soft-looking images. Use to sharpen the image.
Quadratic	Good results for resizing simple images with straight edges. Similar to Gaussian but with more blurring. Use to soften the image.
Gaussian	Excellent results when resizing a clip with no patterns and a lot of straight edges to a lower resolution. Useful for softening some detail.
Shannon	Excellent results when resizing a clip to a lower resolution. Very similar to Lanczos, but results are a little softer.
Lanczos	Best results when resizing a clip containing a variety of patterns and elements to a lower resolution. It is the most complex with the longest processing time.

Defining the Output Destination

Use the Output tab to set one or more output destinations for your import OpenEXR job. A job can be sent to multiple destinations. The decoding is done once and streamed simultaneously to each location.

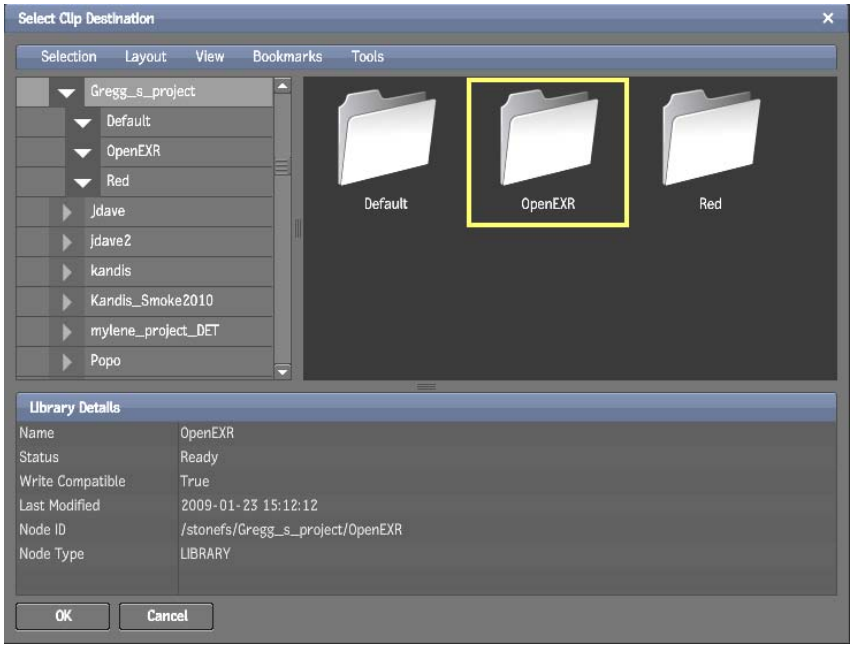
The clip placeholder is created right away and the media is populated in the background without locking the clip library in your Autodesk Visual Effects and Finishing application.

1 Click the Output tab.
The output options appear.



2 Click Add to add a destination for the given jobs.
A browser appears.

3 Select one or more destination locations for the processed clips.

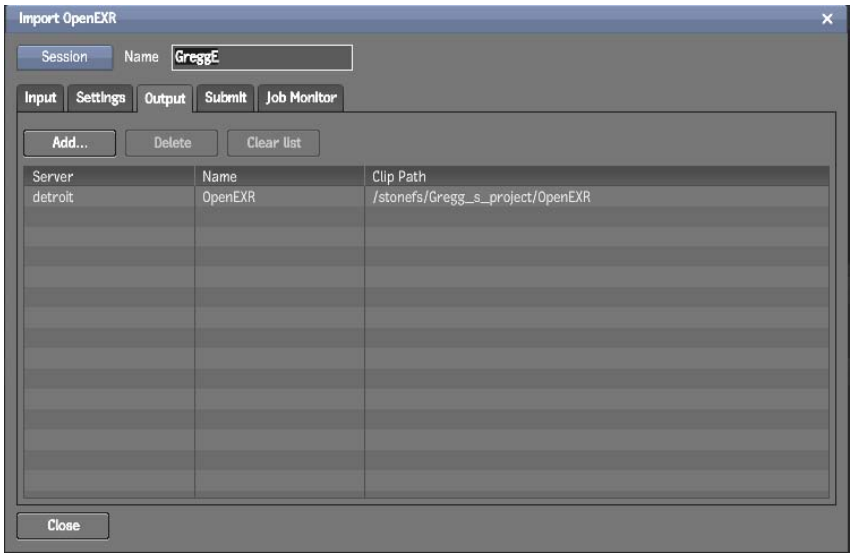


The destination can be any StoneFS on an Autodesk Visual Effects and Finishing workstation. Uncompressed RGB images are generated and the corresponding clips are created in Project/Library/Reel. Clips are named according to their source file name.

4 To create a new library, select a project then, from the Tools menu, select New Library.

5 To create a new reel, select a library then, from the Tools menu, select New Reel.

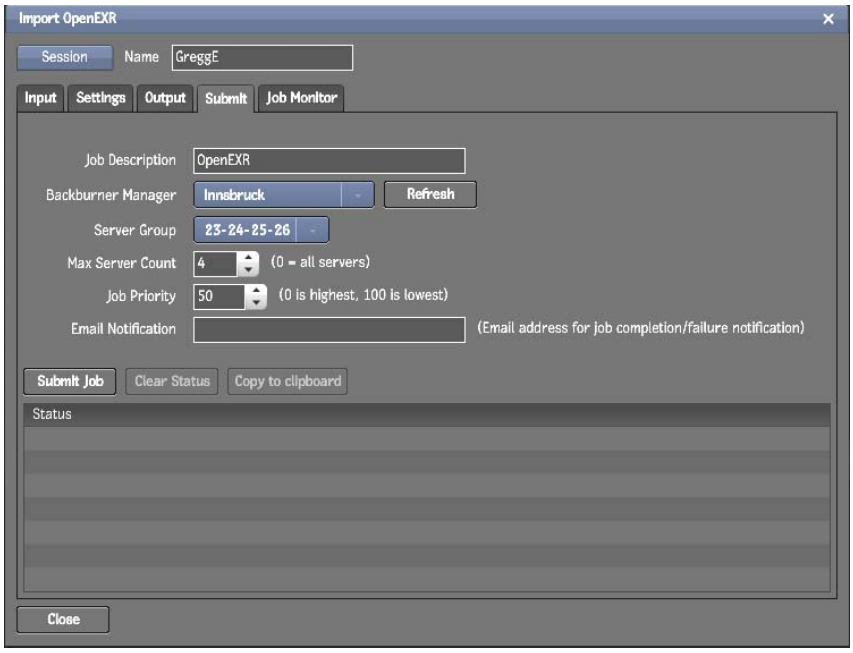
6 When done, click OK.
The selected destinations appear in the Output list.



Submitting the Job

Use the Submit tab to set your processing options and execute your job.

1 Click the Submit tab.



Set any of the following parameters.

Job Description Enter the description that will appear in Backburner monitor.

Backburner Manager WiretapCentral scans the local network for all available Backburner managers. Select the one to which you want to send the Import OpenEXR job.

Server Group Select the server group (if available) for the given Backburner manager. A server group is a virtual arrangement of processing nodes. By default, a job will go to all servers (up to the server

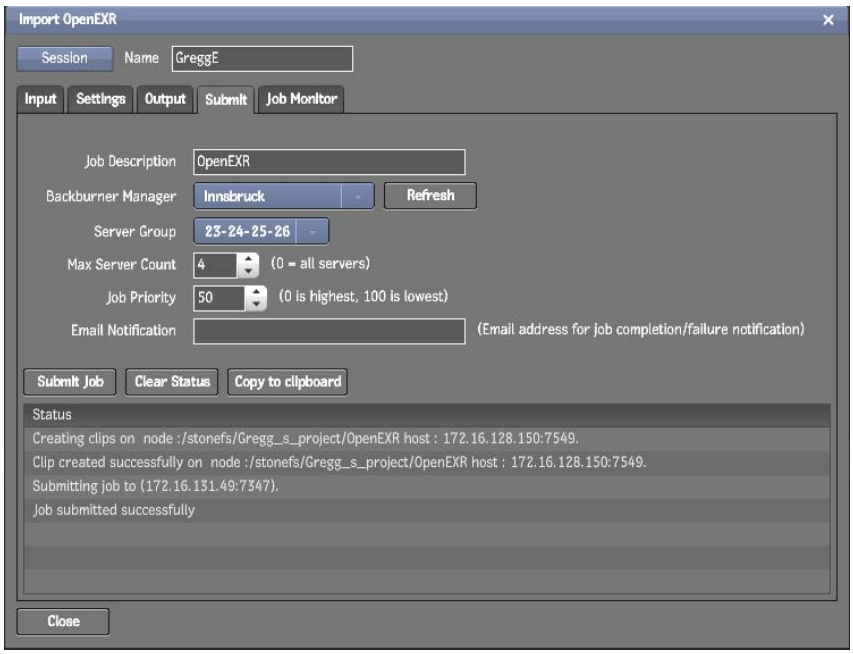
limit), which may not be advantageous to your job or work environment. Server groups need to be set up in Backburner if you have a processing farm. See the *Backburner User Guide*.

Max Server Count Select the number of processing nodes to be used on the job.

Job Priority Set the job priority that is used in Backburner Manager for queued processes.

Email Notification Enter your e-mail address if you want to be notified of job completion or failure.

2 When done, click Submit Job.



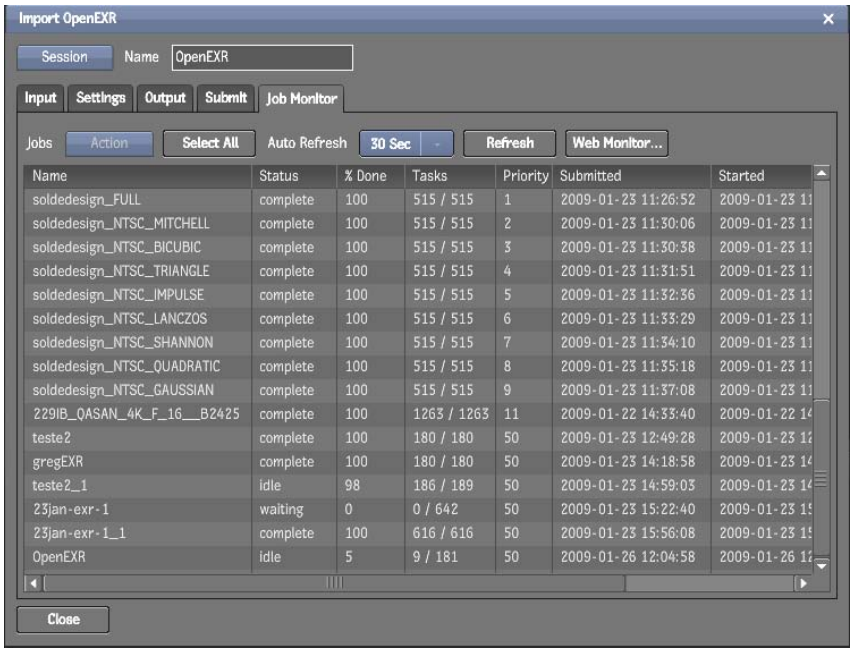
This sends the jobs to Backburner for processing. The job status (clip creation on all destinations and submission of the job to Backburner manager) is displayed in the Status list.

Monitoring the Job

Use the Job Monitor tab to follow the progress of all your submitted jobs.

1 Click the Job Monitor tab.

All the currently submitted jobs are displayed along with their status.



See Monitoring the Decoding Jobs on page 47.

You can also open the Backburner monitor selected in the Destination pane by clicking Web Monitor.

2 When you are done, from the Session box, select Save to keep your session information, then click Close to end the session.

Monitoring the Decoding Jobs

5

Topics in this chapter:

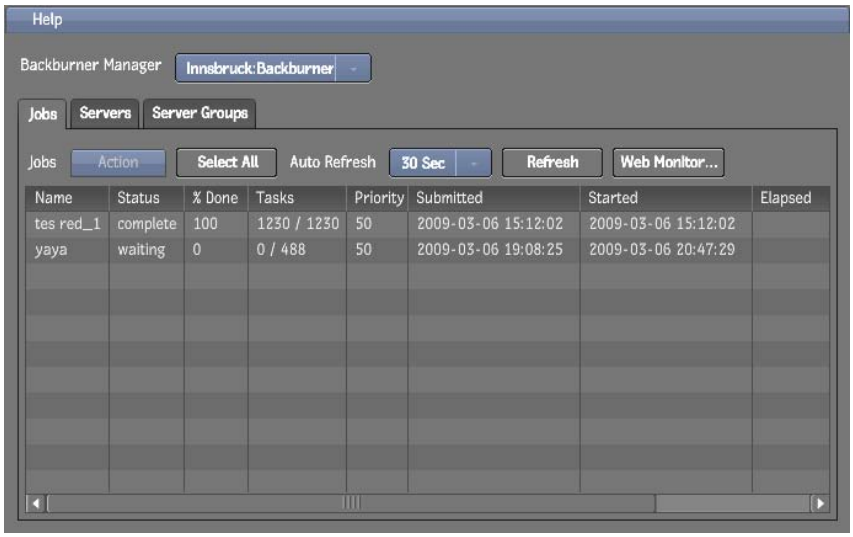
Overview

The monitor provided in the media import workflow is suitable for monitoring and controlling your own recently submitted R3D and OpenEXR jobs. WiretapCentral also provides a more comprehensive monitor, available directly from the Tools menu. It has all the features of the monitor embedded in the media import workflow, plus two additional tabs, for viewing servers and server groups associated with the currently selected Backburner Manager.

NOTE For administrative-level control, including the ability to create server groups, use the Backburner Web Monitor or Backburner Windows Monitor instead. A shortcut to the Backburner Web Monitor has been provided in the WiretapCentral user interface. See the *Backburner User Guide* for operating instructions.

To gain access to the WiretapCentral Backburner Monitor:

1. From the Tools menu, select Backburner Monitor.
   The WiretapCentral Backburner Monitor appears in a new browser window.
2. From the Backburner Manager drop-down list, select the Backburner Manager of interest.
   The information in the current tab is updated automatically.



3 You can update the display manually by clicking the Refresh button, or you can set a refresh rate from the Auto Refresh menu.

4 To perform an operation on a job, select the job in the Jobs tab, then select the desired operation from the Action menu.

Shift-click or **Ctrl-click** to perform the same operation on more than one job at a time.

5 To view job details, double-click the job of interest.

6 To open the Backburner Web Monitor, click the Web Monitor button. See the *Backburner User Guide* for details.

User Access Control

By default, all jobs submitted from WiretapCentral to Backburner are owned by user “apache”. As a result, you can easily perform operations on all WiretapCentral jobs on the Backburner network, including suspending, activating, and deleting jobs submitted by other users. However, you cannot control other Backburner jobs, such as Burn jobs submitted by an Autodesk Visual Effects and Finishing application.

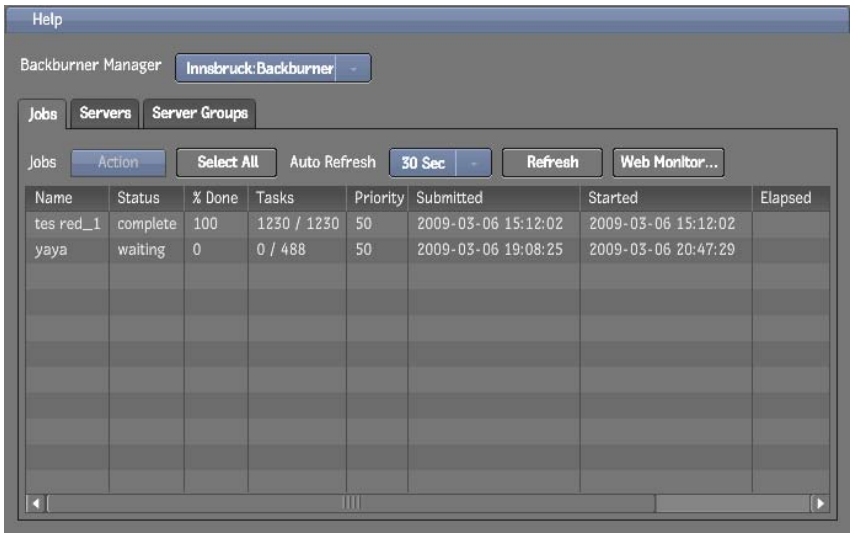
To control other Backburner jobs from WiretapCentral, add user *apache* to the list of user accounts with administrator privileges for Backburner. This list is found in */usr/discreet/backburner/Network/wiretap.cfg*. For details see the *Backburner Installation Guide*.

Understanding the Monitor User Interface

The standalone monitor user interface features three tabs for viewing job, server, and server group information respectively. This section describes each of these tabs.

Jobs Tab

The Jobs tab presents information relating to all jobs associated with the selected Backburner Manager. Use it to view and control the decoding jobs submitted from WiretapCentral, as well as to view jobs submitted to Backburner by other Autodesk Visual Effects and Finishing applications.



The following table describes the operations available from the Action menu.

Select	To
Settings	Open the Job Details window for the selected job. See Viewing Job Details and Job Tasks on page 51.
Activate	Resume a suspended job from where it was halted. Tasks that were already completed are left as-is, and are not redone.
Restart	Restart a suspended job and all its tasks from the beginning, setting the job status to *waiting*.
Suspend	Place the job on hold.
Delete	Remove the job from the job queue.

The following table presents the information found in the Jobs tab.

Column	Description
Name	This corresponds to the session name specified when submitting the decoding job..
Status	The current state of the job: complete: Completed successfully. active: Currently being serviced. suspended: On hold. idle: Not scheduled for service. waiting: Ready, and waiting to be serviced.
% Done	Percentage of tasks that have been completed.
Tasks	The number of completed tasks and the total number of tasks for the job. For example “55/145” indicates 55 out of 145 tasks for the job have been completed.
Priority	The job priority, from 0 to 100. Zero is the highest priority. 100 means the job is suspended. Default is 0.
Submitted	The time at which the job was originally submitted, in the following format: YYYY-MM-DD HH:MM:SS

Column	Description
Started	The time at which the job started, in the following format: YYYY-MM-DD HH:MM:SS. If the job has not started, zeros appear for the values.
Type	The processing engine needed for the job.
Owner	The name of the user that submitted the job. This value is set automatically by Backburner when the job is first created. By default, all jobs submitted from WiretapCentral have an owner of "Apache".

Servers Tab

The following table presents the information found on the Servers tab. This tab is found in the standalone monitor only. It is not found in the embedded monitor that is part of the WiretapCentral media decoding workflow.

Column	Description
Name	Server name (host name).
Status	The current activity of the server: absent: Server is no longer seen by the manager, possibly down. active: Server is currently working on a job. suspended: Server has been put on hold. idle: Server is inactive. error: Server is experiencing a problem.
Adapters	A comma-separated list of installed plug-ins and adapters, for example: Burn: The Burn renderer. Command Line Tool: The Backburner cmdjob command-line plug-in allows you to submit batch, executable, or script files to Backburner as "custom" jobs. mio: the MIO adapter is the processing engine responsible for carrying out transcoding jobs. Wire: Installed with Stone and Wire. Can be used to import/export media, perform Wire transfers, etc. Used by the Wiretap SDK's background I/O tool, wiretap_bgio_tool.

Server Groups Tab

A server group is a collection of render nodes grouped together for the purpose of organizing a render farm. It acts as a shortcut to multiple render nodes. By default, the Backburner Manager sends a job to all the render nodes equipped with a suitable processing engine. When you submit a job to a server group, it is sent to the render nodes within the group only, leaving those outside the group free for other uses.

The following table presents the information found in the Server Groups tab. This tab is found in the standalone monitor only. It is not found in the embedded monitor that is part of the WiretapCentral media decoding workflow.

Column	Description
Name	The name of the server group.
Servers	The current activity of the server: absent: Server is no longer seen by the manager, possibly down. active: Server is currently working on a job. suspended: Server has been put on hold. idle: Server is inactive.

Column	Description
	error: Server is experiencing a problem.

For information on creating server groups, see the *Autodesk Backburner User Guide*.

Viewing Job Details and Job Tasks

Double-clicking on a job name opens the Job Details window where you can view additional information about a job, including its associated tasks, where they have been sent for processing, and their status.

General Info Tab

The following table describes the information found in the General Info tab.

Column	Description
Description	Job description as entered when the job was submitted.
Type	The processing engine needed for the job.
Submitted By	The owner of the job, and the host from which it was submitted.
State	The current state of the job: complete (%): Completed successfully. The percentage is set by the Backburner Manager as each task is completed. active: Currently being serviced. suspended: On hold. idle: Not scheduled for service. waiting: Ready, and waiting to be serviced.
Max Server Count	The maximum number of render nodes made available for the job, as specified when the job was submitted.
Priority	The job priority, from 0 to 100. Zero is the highest priority. 100 means the job is suspended. Default is 0.
Email Notification	The address to which job completion or job failure notifications are sent.
Assigned Servers	A comma-separated list of servers in the assigned server group.
Assigned Server Group	Name of the server group to which the job was assigned. A server group is a collection of servers. Only servers in the specified group will work on the job.
Node Id	The job's ID as assigned by the Backburner Manager.
Last Task Error	The last error message for the most recent task (associated with the job) executed by the Backburner Manager.

Tasks Tab

The following table describes the information found in the Tasks tab.

Column	Description
ID	The task number for this task.

Column	Description
Status	The state of the task (active, complete, waiting, error).
Server	The name of the server where the task is being executed.
Start Time	The time stamp at which the task was started (YYYY-MM-DD HH:MM:SS).
Elapsed Time	The time duration consumed by the task (HH:MM:SS.MS).
Last Error	The last execution error message associated with this task.

Encoding Clips

6

Topics in this chapter:

About Encoding Clips

Encoding clips is a three-step process that is done within the Export window: you select the input clip, set the processing options, and submit the job. Once the clip is encoded, you have the option of creating a package (containing all the clips you created), to upload to a web server.

NOTE Only fully-rendered clips can be encoded.

WiretapCentral guarantees frame and timecode accuracy; however, it is important to note the following limitations:

- Video clips are not broadcast-quality
- Clips are down-converted to 8-bits per channel RGB
- Film clips lack colour management
- All effects must be rendered
- Audio must be mixed down to 2 tracks; all other tracks are ignored

With these limitations in mind, it is recommended that any client final approval be done using the final delivery medium.

WiretapCentral encodes clips on the server, and they remain there once complete. The default storage capacity of this location is set at 20GB. Once this capacity is reached, older clips are automatically deleted to make room for the new.

NOTE The option to adjust the capacity of the default storage can be set in the configuration file, which is found at */var/www/html/WiretapCentral/wiretapcentral.cfg*. Under the Export section, uncomment the line: SizeGB=20 and adjust the size.

Supported Export Codecs

WiretapCentral can export clips in the following formats.

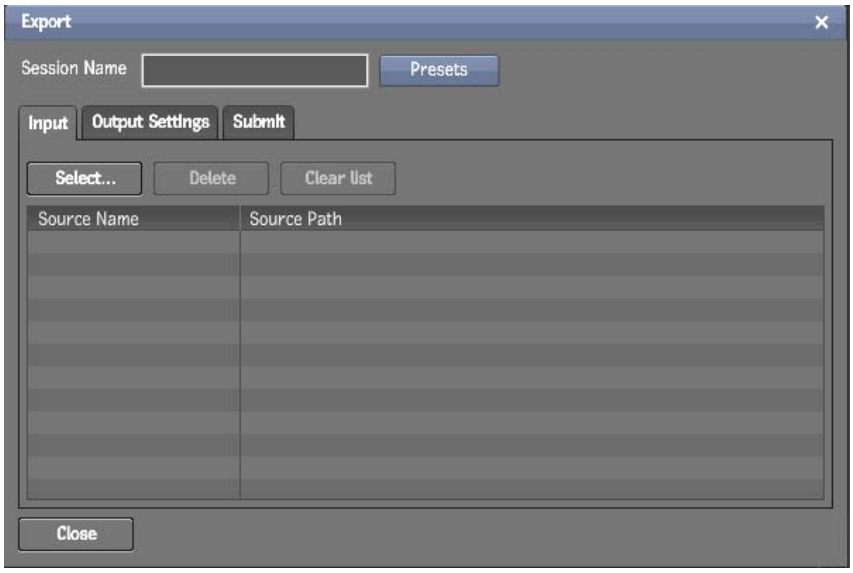
Codec	Comments
H.264	Main, High. Use Main when you want to minimize the use of computing resources. This is the setting used by QuickTime Pro. Use High for broadcast or disc storage at high-definition, such as for HD DVD or Blu-Ray.
MPEG-4	
MPEG-2	
MPEG-1	
FLV	Flash Video
QT Animation	
RAW DV	pal, ntsc
MS MPEG-4	
MS WMV-2	

Encoding Clips

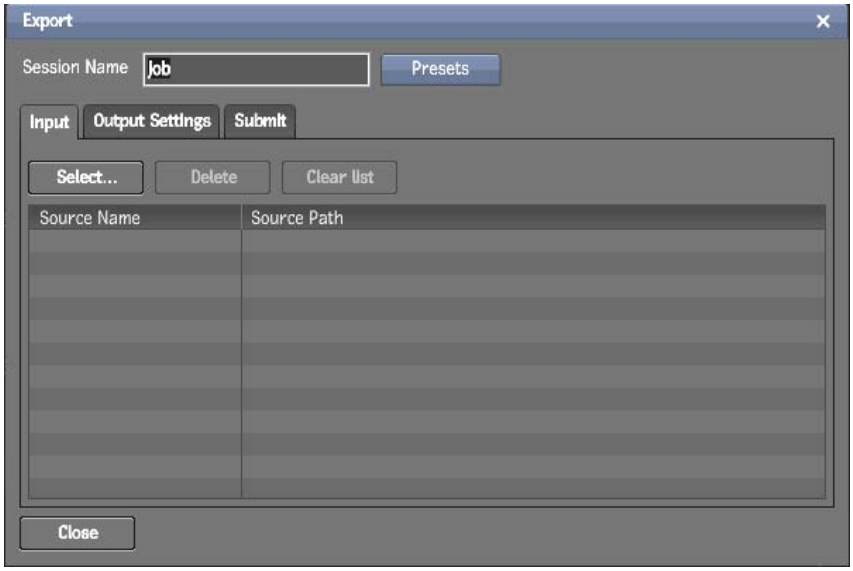
Encode clips using the following procedure.

To encode a clip:

1 From the Export menu, choose Selected or Entire List.
The export window appears.



2 Name the export session.

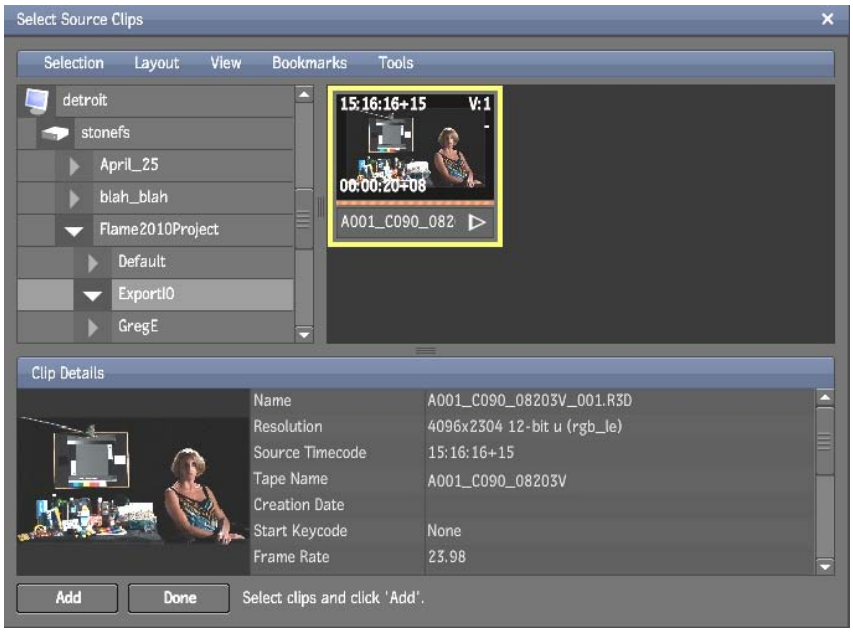


This name is used to create a subdirectory on the server to hold the encoded clips. If no Session name is entered, the name of the first clip selected, when entering the export panel, is used.

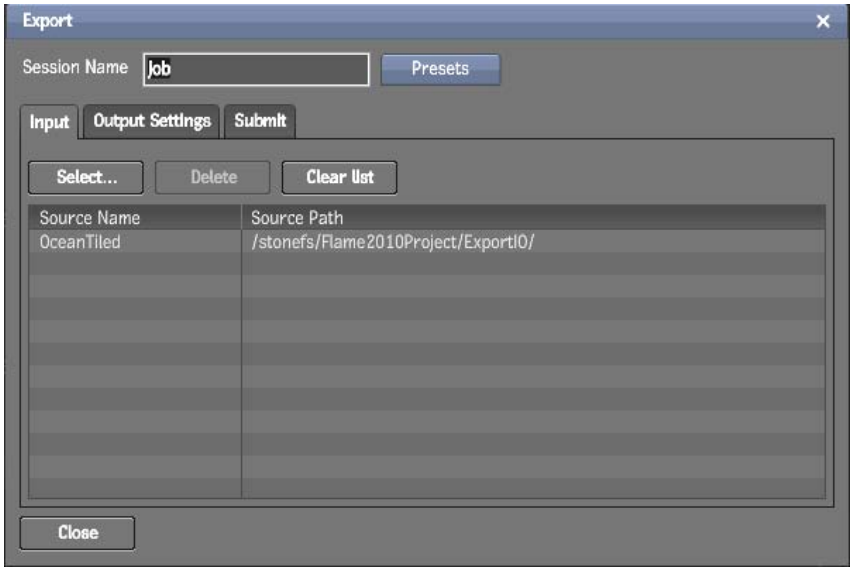
You can save this session at any time. From the Presets menu, select Save or Save As. From this menu, you can also load a previously saved session or delete one.

3 If you previously made a selection of clips, it will appear in the list. Otherwise, click Select.

A browser appears.



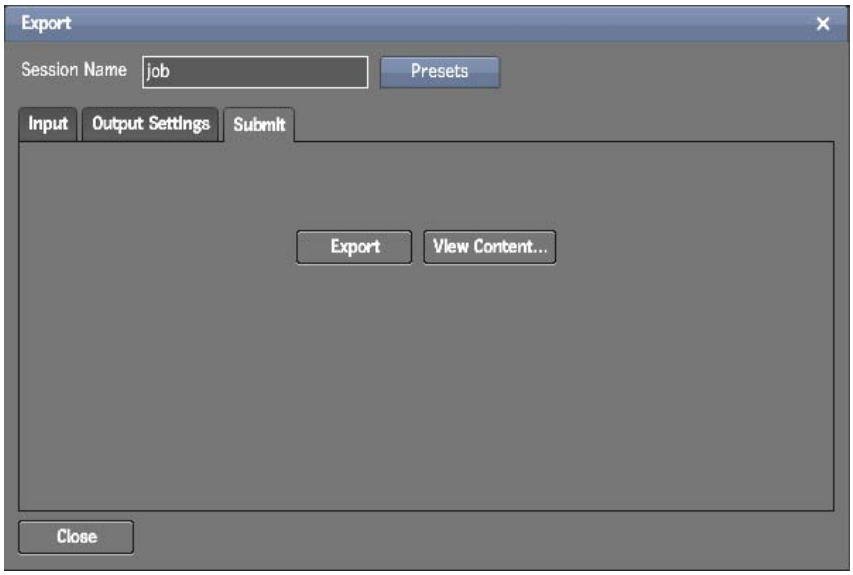
4 Select one or more clips and click Add. When you are finished, click Done. The selected clips appear in the Input Clips list.



5 Click the Output Settings tab and set your encoding options, as desired. You can select multiple output widths.

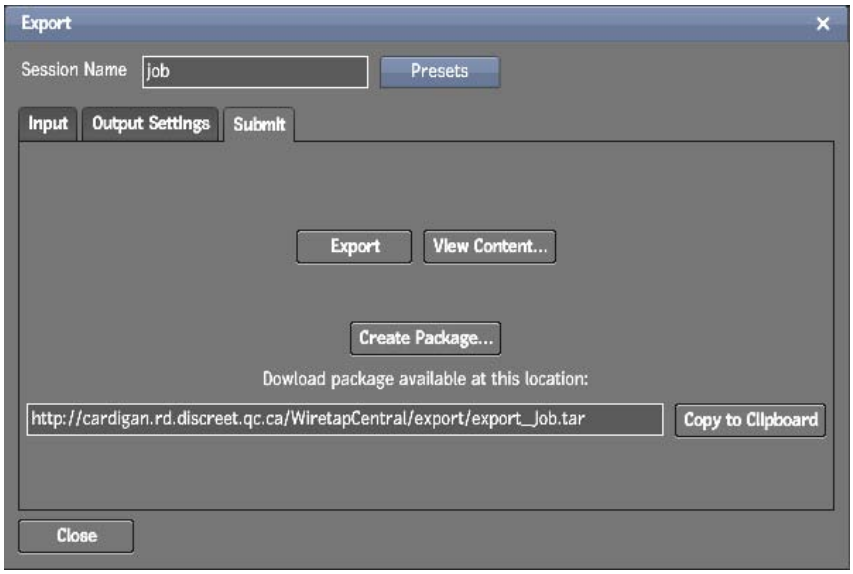
NOTE For information on defining the values of the steps in the Quality slider, see Customizing Encoding Presets on page 58.

6 Click the Submit Job tab and click Export.



A progress bar appears to indicate how much of the job has completed.

7 Click Done to continue.
The Submit Job tab reappears with new options.



8 Click View Content to open a new browser displaying the server directory containing the generated clip.

The directory created on the server is based on the export session name.

WiretapCentral exports encoded clips to the following directory, as seen by a Web browser:

`http://<hostname_or_IP>/wiretapcentral/export/<session_name>/`

9 Click Create Package to add the clip, or clips, to a TAR file.

You can copy this path to the clipboard and then paste it in a browser to access the file.

You can also view this, and all created, packages. From the Export menu, click View Packages.

You should download the files once the encoding is complete to avoid losing them if the storage capacity is reached.

10 When you are done, close the window.

You can also return to the previous tab to export other formats of the same clips.

Customizing Encoding Presets

When you submit an encoding job in the WiretapCentral UI, the WiretapCentral *ffmpeg* encoder is called with a series of command-line parameters, depending on the codec preset and quality level selected in the Export window.

These presets are stored in the *export_presets.xml* file, located at */var/www/html/wiretapcentral/presets/* on the WiretapCentral server machine.

Each preset defines the audio and video encoding format and parameters, as well as the video encoding quality.

WiretapCentral provides a number of useful default presets. Advanced users are encouraged to add new presets, or modify existing presets to better suit their needs.

To modify encoding presets:

1 Open a terminal to the WiretapCentral server machine, and log in as root.

2 Open the file */var/www/html/wiretapcentral/presets/export_presets.xml* in a text editor, such as *nano*.

- Each encoding preset is defined by a `<preset>` node in the XML file.
- Each `<preset>` node has an `<audio>` child node that defines the audio codec parameters, and a `<video>` child node that defines the video codec parameters.
- `<audio>` nodes have a `<base>` child node that defines audio encoding parameters.
- `<video>` nodes have a `<base>` child node that defines most of the video encoding parameters, as well as a number of `<quality>` child nodes that define the steps of the Quality slider in the Export window for that preset.

3 Modify the parameters in the `<base>` nodes, as well as the number and values of `<quality>` nodes. The number of `<quality>` nodes in the XML file for a preset will be reflected by the number of steps in the Quality slider for the respective preset.

4 Save and close the *export_presets.xml* file, and refresh the Web browser that points to WiretapCentral.

NOTE Incorrect parameters may cause encoding jobs to fail. Read the information available online about *ffmpeg* parameters before making changes.

If an encoding job fails without a clear error message after you have modified export preset settings, perform the following procedure to obtain detailed error information from the codec.

To troubleshoot clip encoding:

1 In the Export window, click View Presets.

A new browser window opens to the `http://<hostname_or_IP>/wiretapcentral/export/<session_name>/` URL.

Where `<session_name>` is the name of the failed export job.

The list of files in the export session is displayed, including a file named *info.txt* .

2 Click the *info.txt* file.

The browser displays the contents of the file.

3 Locate the "Full command (execute as apache or root):" line at the end of the file.

The next line in the file contains the command and parameters that were sent by WiretapCentral to the codec when attempting to encode the clip.

4 Select the entire line and copy it to the clipboard.

5 Log into the WiretapCentral server machine as root, paste the command, and run it.

The codec outputs detailed messages on the reason for the failure.

6 Refer to online *ffmpeg* discussion groups for information on how to troubleshoot the reported problems.