



# Smoke-Lustre wiretap interoperability. V1.01

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## 1 Introduction

Lustre and Smoke are used in a lot of configurations and the new wiretap implementation bring some very interesting stuff. Depending on the kind of project, more grading or VFX oriented the original footage would sit on a shared storage or on the machine where realtime playback is more critical. For the rendered files they would be sent on the machine that would do the final output.

## 2 Before starting

check and configure:

*Hardware config:*

check documentation about Infiniband connectivity and configuration.

*On Smoke side:*

check that the dl\_wiretap daemon is running.

Good to know `/usr/discreet/wiretap/2007/iffswiretap`. Start to restart the wiretap server when it crashes. A good old `/usr/discreet/sw/sw_restart` would restart the whole Stone&Wire including the wiretap server (need to be su or to sudo it).

if using soft-import verify that the file `sw_wiretap_translation_db.xml` in `/usr/discreet/wiretap/X.X/cfg` (in 2009, it's in `/usr/discreet/sw/cfg` in previous versions) is properly configured, so the addresses to be translated correctly.

This is with OS, good for machines that have the same mountpoint

```
<map src_os="Linux" src_path="/mnt/lustre/"
      dst_os="WindowsNT" dst_path="v:\\" />
<map src_os="WindowsNT" src_path="v:\\"
      dst_os="Linux" dst_path="/mnt/lustre/" />
```

This is with hostnames, when you need to differentiate the paths from one machine to another (in this case every Windows machine has its local drive mounted as V):

```
<map src_host="smoke2" src_path="/lustreTVC/" dst_host="lustre-tvc" dst_path="V:\\" />
<map src_host="lustre-tvc" src_path="V:\\" dst_host="smoke2" dst_path="/lustreTVC/" />
```

```
<map src_host="smoke2" src_path="/lustreDI/" dst_host="lustre-di" dst_path="V:\\" />
<map src_host="lustre-di" src_path="V:\\" dst_host="smoke2" dst_path="/lustreDI/" />
```

```
<map src_host="smoke2" src_path="/lustreASSIST/" dst_host="lustre-assist"
```

```
dst_path="V:\\" />
<map src_host="lustre-assist" src_path="V:\\" dst_host="smoke2_ib"
dst_path="/lustreASSIST/" />
```

**Note:** With 2008 and later check the wiretap.cfg file in /usr/discreet/wiretap/cfg to see if the wiretap translation file is in the right place, there is a -misleading- keyword there.

Set a CIFS mount on the Smoke machine so it can see the Lustre framestore.  
mount -t cifs //lustre/STORAGE /mnt/lustre -o username=discreet,password=password  
This will allow to use Lustre storage for softimport workflow

**Note:** this can also be put in /etc/fstab with something like  
//lustre/STORAGE /mnt/lustre cifs  
auto,user,username=discreet,password=discreet,uid=500,gid=500,rw 0 0

*On Lustre side:*

if the Wiretap server are not recognized automatically check the wiretap server (i.e. Smoke) IP Address is set in the wt.config file in the Lustre install directory. I generally prefer to have the WtServerNoAuto keyword enabled so Lustre doesn't look for all the wiretap servers on the network at launch.

### 3 Project creation

*Smoke Project creation:* as 2K or HD can't be played in realtime from Smoke storage on Lustre thru Infiniband it's interesting to have proxies set, but 10 bit to get ability to grade on them on Lustre side. It's also possible to set local proxies by enabling Local Proxies for wiretap in the setup/Project menu.

Create a softimported library to avoid confusion with local clips.

**Beware:** No spaces in clip names on the Smoke side, they won't load on the Lustre side!!

*Lustre Project creation:*

Create 2 projects:

1. To be able to render back on the Wiretap server's framestore the RENDER\_HOME in Setup/Project needs to be set to a wiretap address, i.e.

RENDER FULL HOME: [10.10.10.110@wt:/stonefs/Ctest/FROM\\_LUSTRE](#)

2. If rendered files are to be played out from Lustre it's better to keep it on the local storage, so create a project where RENDER\_HOME is set to local or shared storage. i.e.

RENDER FULL HOME: [V:\renders](#)

for both projects it's important to match exactly the framerate, for example you need to type 23,976 in the Lustre Setup/Project menu if this is to match a 23,976 project in Smoke.

### 4 Smoke operation

Smoke or Backdraft Conform could be used as VTR for data ingest from a Telecine for example.

In our demo 3 timelines have been prepared on Smoke:

1: sources in C-Mode

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2: sources with rough editing

3: sources with final editing, soft effects

Clips to be sent to Lustre need to respect the Lustre wiretap limitations:

One track

Hard committed effects

Hard committed colour clips

No Gaps (replace with hard committed black)

Centered and linear dissolves

After Lustre has rendered the clips as Src Grade the 3<sup>rd</sup> timeline can be unlinked then relinked to the graded media.

## **5 Lustre operation**

The Smoke library appears in the Lustre library as a disk in Editing/Browse, the EDL clip includes editing metadata, the RGB clip only shows the footage as one clip. Before dragging the EDL clip create a new cut file as putting a EDL clip on the current will overwrite it.

Dragging the clip into the timeline will create the cut file. The wiretap translation happens then, the original address is translated into the Lustre address. If SCANS\_HOMES are well configured they will be translated into [HOME] in the picture path ("Homification"), and so can be translated for Slave Render and Burn as well. Once the cut is created there is no more communication with the IFFS machine, so it will run even if it's shutdown, the cut file is now a regular Lustre one (with more info).

Different workflows:

- original files can sit on the Lustre storage, then be softimported in Smoke and wiretapped to Lustre
- original footage can sit on the Smoke framestore, then wiretapped to Lustre
- There are different behaviours depending on the original footage. If it's softimported compressed footage, the path won't be translated, the Stone+Wire will do the decompression to expose uncompressed files to Lustre.

Create a new grade, a new cut and drag the first EDL clip

do grading

create a new grade, a new cut and and drag the second EDL clip

do a change cut, the grading should follow

## **6 Rendering options**

depending on the machine that does the final step rendering can also be sent to shared storage, Lustre or Smoke local storage.

Lustre can render to the Smoke framestore using either Src Grading (recreate graded versions of original clips)

*One sequence:* create just one clip

*Src Grading:* recreate the source with handles, so it can be unlinked/relinked from the

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Smoke timeline. Beware that if proxies are activated on Smoke side the clips generated won't have proxies rendered and will be seen as Pending Render. Importing them on the desktop and force generating proxies would refresh them.

Lustre can render on its storage or an open filesystem (SAN-NAS). Lustre can automatically create a softimported clip into the Wiretap's server library using the Wiretap Publish option: set the library destination (i.e.

[10.10.10.110@wt:/stonefs/Ctest/FROM\\_LUSTRE](mailto:10.10.10.110@wt:/stonefs/Ctest/FROM_LUSTRE)) and press the Wiretap Publish button **after** the render.

**Note:** The library path you type must exist, and Smoke must not be in that library, otherwise it's read-only and Lustre cannot write the clip

**Note:** if proxies are turned on on the Smoke project importing the clips in the timeline would force to regenerate proxies and there is NO progress bar to show how long it takes.

Lustre can also render directly on the Smoke framestore

**Note:** for the same reason if proxies are enabled on the same project clips generated will be displayed as Pending Render and proxy regenerate is done only when loading clips onto the desktop.

For Smoke to be able to relink a clip metadata in clip has to be exactly the same: verify that you have in the Lustre project the same framerate as the Smoke project, the same size, so if you use a crop for better performance, disable it.

Before rendering make sure you're not in the Library defined in `RENDERS_FULL_HOME` otherwise it would be read-only. Despite that Lustre will start the render and be very fast, since it doesn't write anything.

The library name typed must exist on Smoke side before you render, it won't be created by Lustre.

On Smoke take a timeline edited with the original footage, copy it and unlink with the Tools in the library, then drag it to the grd library and hit relink, it should find its clips. Sometimes a relaunch of Smoke helps. Sometimes not.

## **7 2008 Update**

The new StandardFS implementation in IFFS 2008 brings some new possibilities in IFFS interop. It doesn't change anything in Wiretap but can make Lustre Publish interesting: if the media is stored on the same StandardFS as the framestore Publish only creates hard links, which is really fast. However remember that Lustre doesn't read any of the comments written in the CMX output by Lustre Publish, so every clip has to have its own metadata (hence tape name and different timecode) to be recognized and conformed by Lustre, so everything has to be renamed accordingly in IFFS before the Publish.

Running a browsed on the IFFS machine could make some interesting performance with Infiniband, however it may seriously slow down the machine and is not supported. I hope to try such a setup with an Incinerator config soon.

## **8 2009 Updates**

Support for compressed footage

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