

Nucoda and Phoenix

Understanding how Nucoda and Phoenix
generates caches and proxies.

Rev 4

Notes on Caches, Cloned and Proxy media in Nucoda and Phoenix

1. Caches in Nucoda and Phoenix are created in DPX or EXR format depending on the project format. (EXR in Half projects)
2. Clip and FX Caches are mostly written to disk in the same format and resolution as the source images, unless the source is a RAW Camera format, MOV or MXF.

Using a Pan & Scan effect in the InputFX layer will allow for the generation of cache files in the project output format. This allows use of 4K source images as a source, while the caches created will be in the project output format.

3. Using the Cache Output button will generate cache in the final output format (size, bit depth and components).

If you have multiple source outputs, for example :

2K at 10bit RGB and PAL at 8 bit RGB

Caches will be generated at the 2K 10 bit RGB format and switching to the PAL format will create additional caches at PAL 8 Bit RGB

4. An adjustment segment will generate a separate cache in the output resolution.

There are potentially 5 types of cache generated.

Proxies / Clones

Clone of non EXR or non DPX media if required - Proxies (Low resolution files)

Directory on disk in Proxy Folder: xxxxx\Input.MaterialReader

InputFX Layer :

One cache for all FX

Directory on disk in Cache Folder: xxxxx\FXCache.MaterialCache

Base/CC/UserFX :

One cache for all layers

Directory on disk in Cache Folder: xxxxx\FXLayersCache.MaterialCache

Separate cache for layers with "Cache" selected in Router

Directory on disk in Cache Folder: xxxxx\FxLayers.Layer-x.LayerComposite

Master

One cache for each selected output format if "Cache Output" is selected

Directory on disk in Cache Folder: xxxxx\MaterialWriter

Paint Caches

Using the DVO Fix or paint effect will generate additional caches containing any frames painted. These are on disk in the cache folder: xxxxx\FXCache.materialCache.
painted

When is cloned media is used in Nucoda and Phoenix?

If there is a DPX or EXR sequence consisting of 125 frames and this media is on the media drive. Importing the media into Nucoda or Phoenix in it's native resolution will not use any more space than the 125 frames currently on disk.

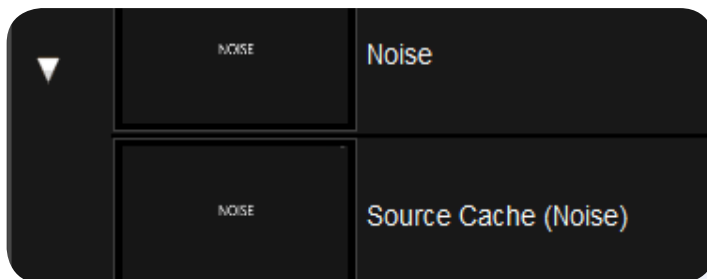
| | |
|--------|------------------------------|
| Source | 125 frames in DPX/EXR format |
|--------|------------------------------|

If the user wishes to clone RED, MOV, MXF, ARRI media to DPX/EXR, the caches will be generated once the media is on the timeline, creating 125 new frames in the Proxy directory. (Specified in general.prefs or in Project settings)

| | |
|---------------|----------------------------------|
| Source | 125 frames in Quicktime/Red/Arri |
| Cloned source | 125 frames, cloned on the drive |

The total on the drive would be 250 frames.

If a clip has cloned media or proxies you can access them by clicking on the small indicator next to the clip in the library.



Assume we have 125 frames of source media.

For any effects in the InputFX layers, new cache is generated. You would normally use tools here that you need to affect the whole image, for example the DVO Tools.

The cache from the Input FX layer forms the basis for future corrections. However, regardless of the number of effects used, the cache will only be 125 frames.

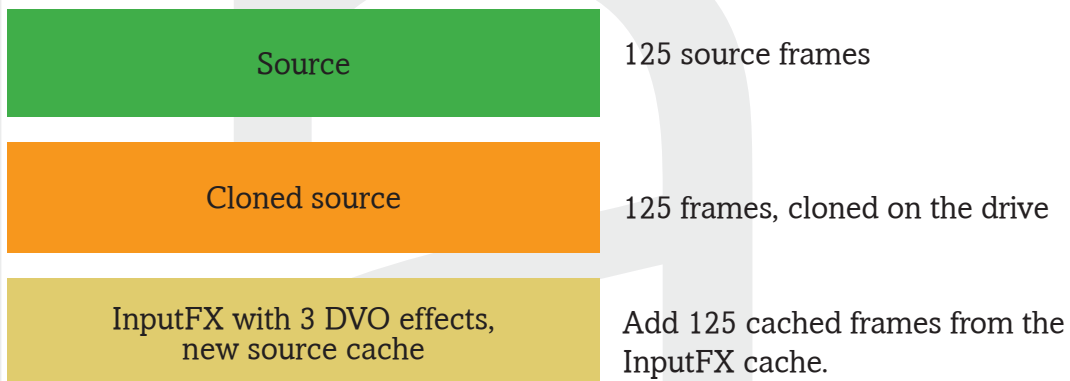


This image shows a single DVO Dust effect in the Input FX layer.

When rendered this will use 125 frames of cache



In this image, we have added DVO Clarity and DVO Sharpen to the stack in the Input FX, even though there are three DVO Tools, the rendered cache will still only be 125 frames.



The total frame count on disk for this clip is now 375 frames.

Adding a CC or UserFX layer

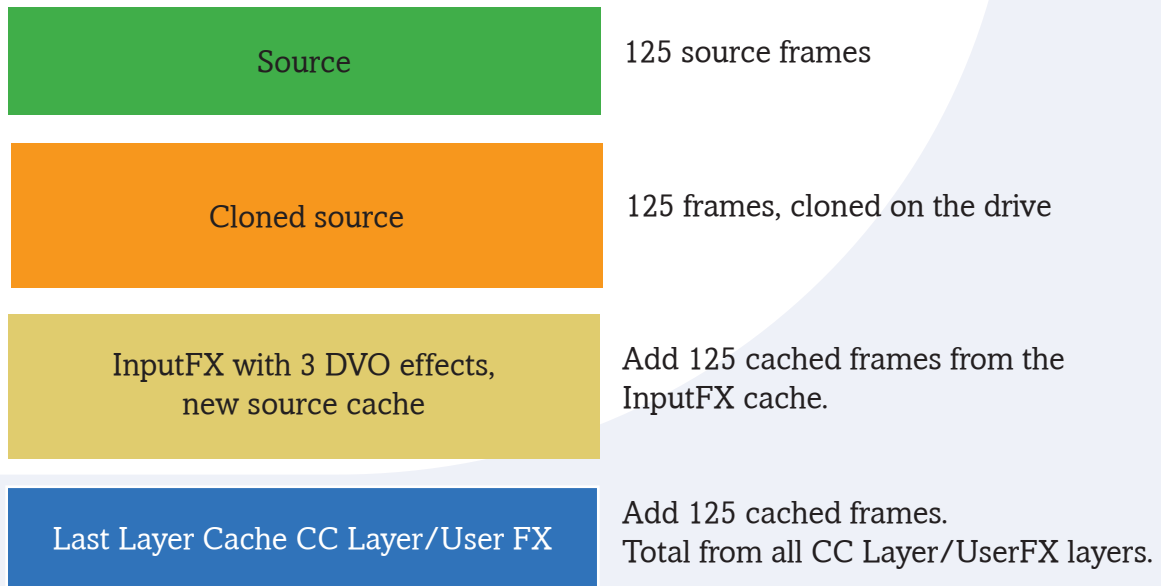
If a Colour Correction or UserFX Layer is used, a new layer of cache will be generated based on the source frames from the InputFX layer., creating 125 new frames.

Adding additional layers of Colour Correction or UserFX Layers will cause new cache to be generated, but the previous cache will be overwritten, therefore not using any additional space.



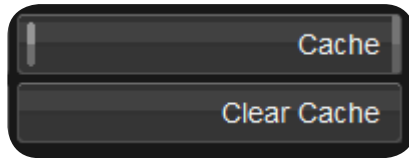
In this image we have the three DVO Tools.

We also added a Blur and DVO Regrain on User FX layers

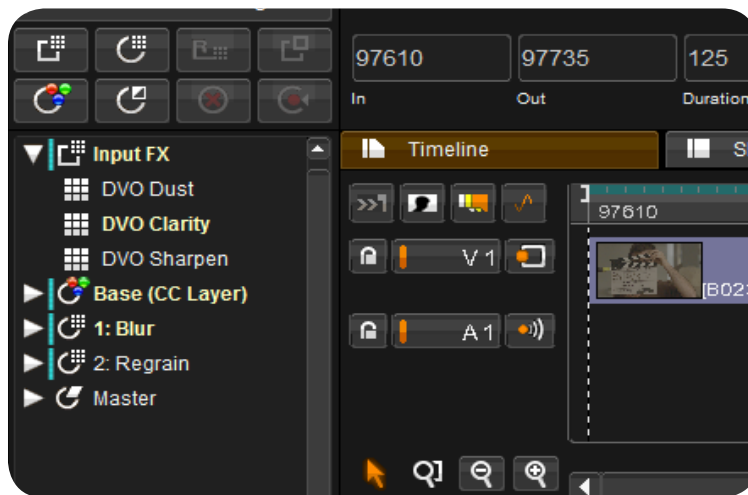


The cache for this clip is now 500 frames on the disk .

Using the Cache per Layer option

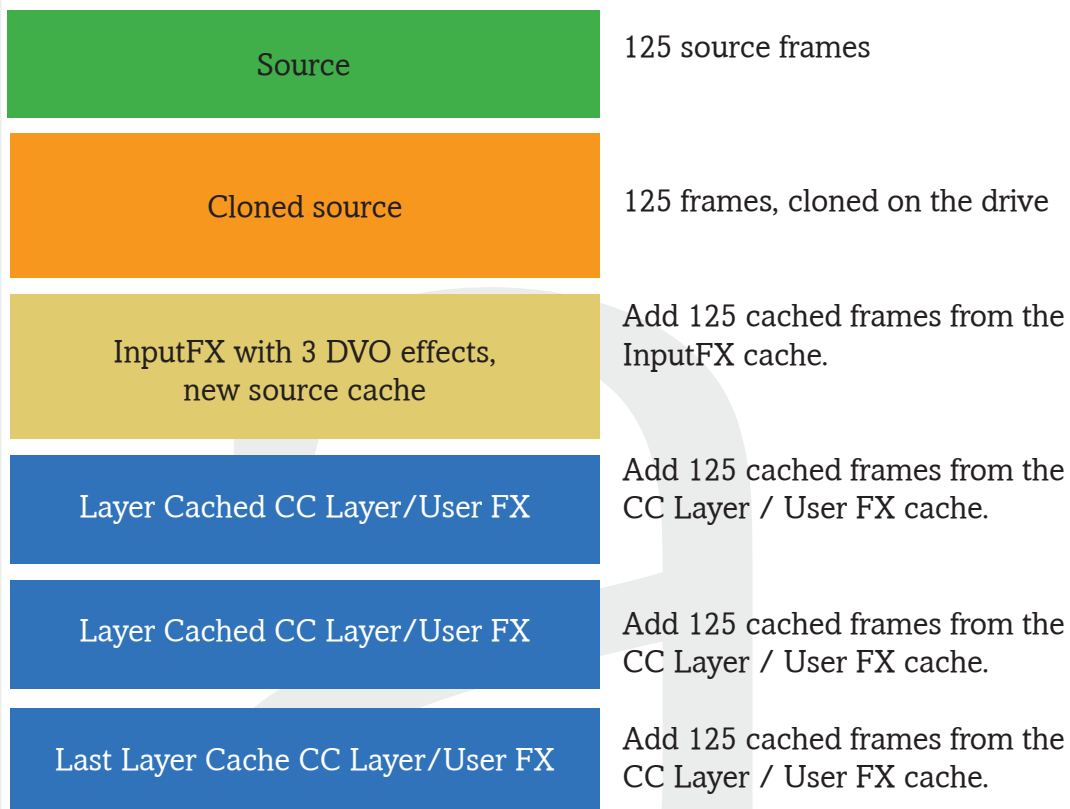


In order to allow for greater interactivity and flexibility, you can specify that Colour Layers and UserFX Layers are cached on a per layer basis. This is done by enabling the “Cache” option from the Layer Router menu in the GUI or the Precision Panel.



A small vertical line next to a layer indicates the presence of a cache on that layer.

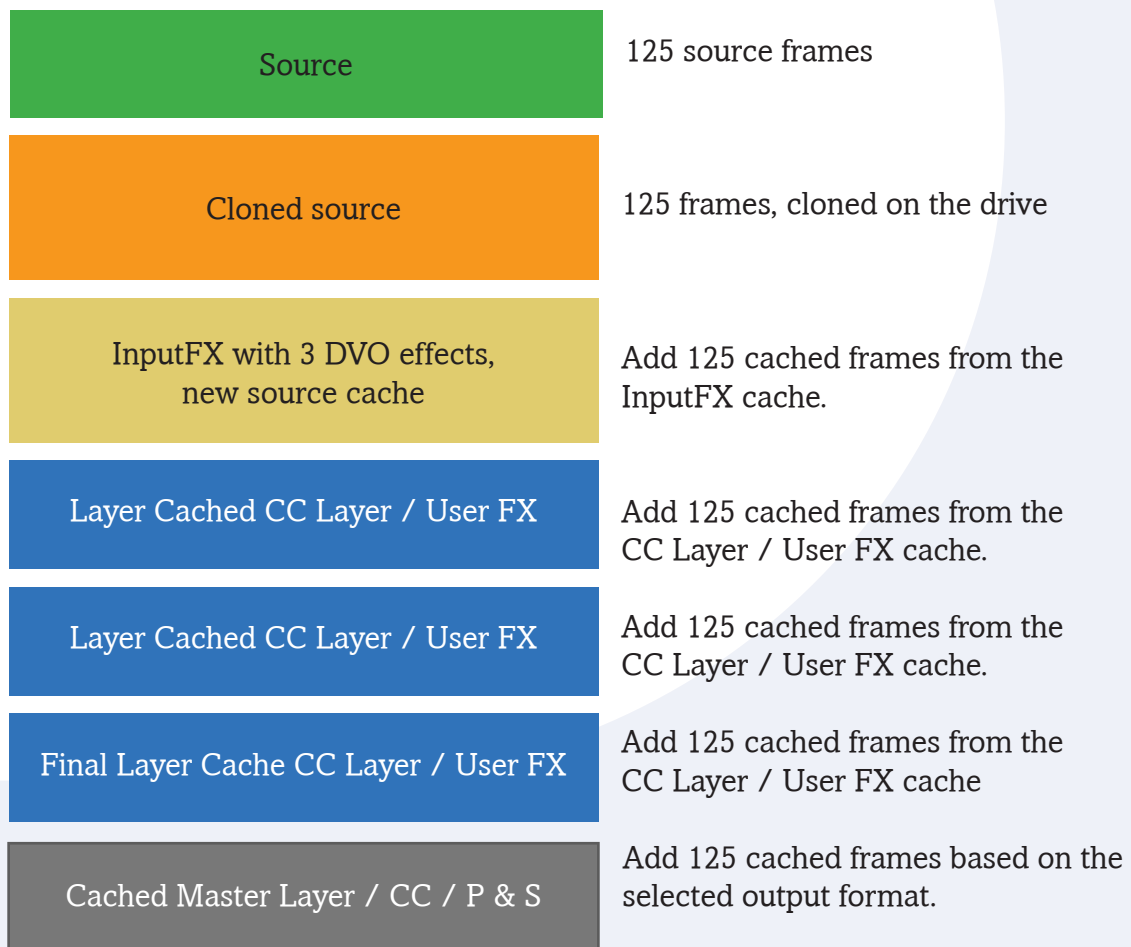
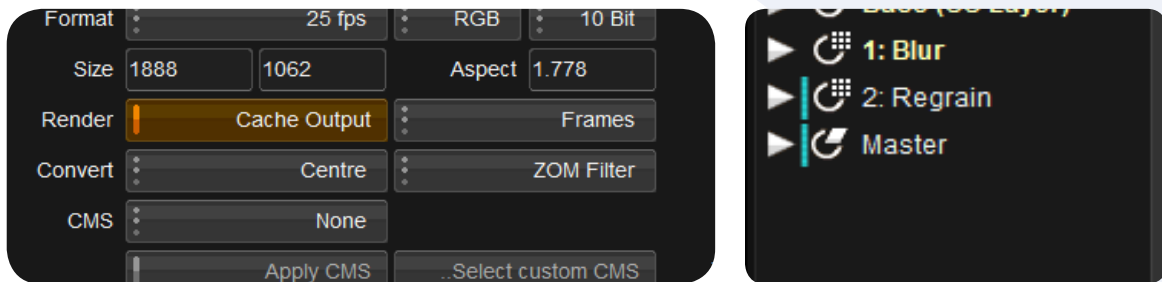
The Input FX Layer and the last layer in the stack will always have the line caches will always be generated at these point if required.



Each layer that is activated will take an extra 125 Frames of Cache, so caching 2 additional layers will add another 250 Frames, for a total of 750 frames on disk.

The Cache output button, caching the Master layer and Output Formats

Finally, using the Cache Output button on the project screen will force a render of the Master Layer and Pan & Scan, this cache will be in the currently selected output format. There will be a cache for every additional output format you select.

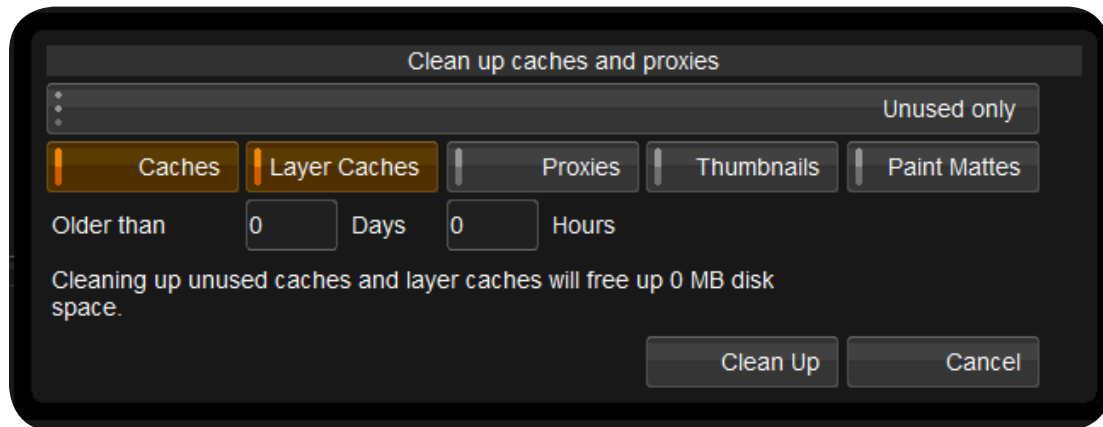


That will use another 125 frames. Making the total for the project 875 frames on disk.

If you have more than one output format, caches in the relevant resolution and bit depth will be created when the user switched formats with “Cache Output” turned on.

What can you do if you suspect that your disk space is being used up by unnecessary caches.

1. Delete caches and media from old projects from the media drive, you might need to do this manually if you have detached the projects from Nucoda / Phoenix
2. When deleting a project from the project list, caches are automatically deleted. Try and keep your project list relatively clean.
3. When projects are complete, but you plan on keeping it in the project list, use the cleanup tool in the Nucoda / Phoenix to remove Caches, Layer Caches, Proxies, Thumbnails and Paint Mattes - using the clean up tool, set the option to "All in Project".
4. Use the "unused only" option to do a cleanup.



5. It is safe to delete the cache folders from a project, on a windows level, the result will be a re-processing of all the material but as long as your Sources and Proxies are available.
6. Delete "per layer caches" that are no longer required (go to the router for the track and select delete cache for the layer.
7. Remember, exporting media and source also takes up space on the drive.

Image Systems AB (HQ)
Ågatan 40
SE-582 22 Linköping
Sweden
Tel:+46 (0)13 200 100
Fax:+46 (0)13 200 150

Image Systems AB
Telefonvägen 30
126 26 Hägersten
Sweden
Tel:+46 (0)8 546 18200
Fax:+46 (0)8 546 18209

Digital Vision (UK)
11 Wardour Mews
London, W1F 8AN
United Kingdom
Tel:+44(0)20 7734 8282
Fax:+44(0)20 7292 6969

Digital Vision (US)
4605 Lankershim Blvd
Suite 700
North Hollywood, CA 91602
USA
Tel:+1 818 769 8111
Fax:+1 818 769 1888

DigitalVision
www.digitalvision.tv