

Harmonic (Rhozet) Carbon AviSynth Video Filter Plugin

About

This Plugin is designed as a functional enhancement for Harmonics (Rhozet) „Carbon Coder“. It adds a video filter that allows to utilize AviSynth for video processing. This is achieved by executing AviSynth scripts on the decoded source. This said this filter gets configured by scripting. That way all the power from AviSynth is made available within Carbon.

License

- This is a Demo Version, limited on number of input frames. It will throw an error message after 1000 Input frames.
- AviSynth is covered by GPL License, but does allow making use of it from Applications with other licenses.

How it works

- The Integration between AviSynth and Carbon Coder is done truly Native for both sides.
 - As both programs have a C++ API, it is possible to integrate any exchange of Video Frames “directly in-memory”.
 - This means, the frame buffer is not written to a harddisk, but handled in the RAM.
 - Both programs are 32bit, so the maximum memory consumption per process can only be theoretical 4GB at maximum on a 64 bit system, but:
 - Tests showed, that at least Carbon Coder does not address larger memory than about 2,5 GB. So this is the critical memory usage for any AviSynth experiments that you are going to try...
- It only makes much sense as “Source Filter” within Carbon Coder.
 - At Target Filter, Carbon Coder will already have done all the necessary filtering from Source to Target Format.

Prerequisites / Installation

Installing AviSynth requires an offtime of the Carbon Server/WFS Node/Carbon Coder where it is installed on.

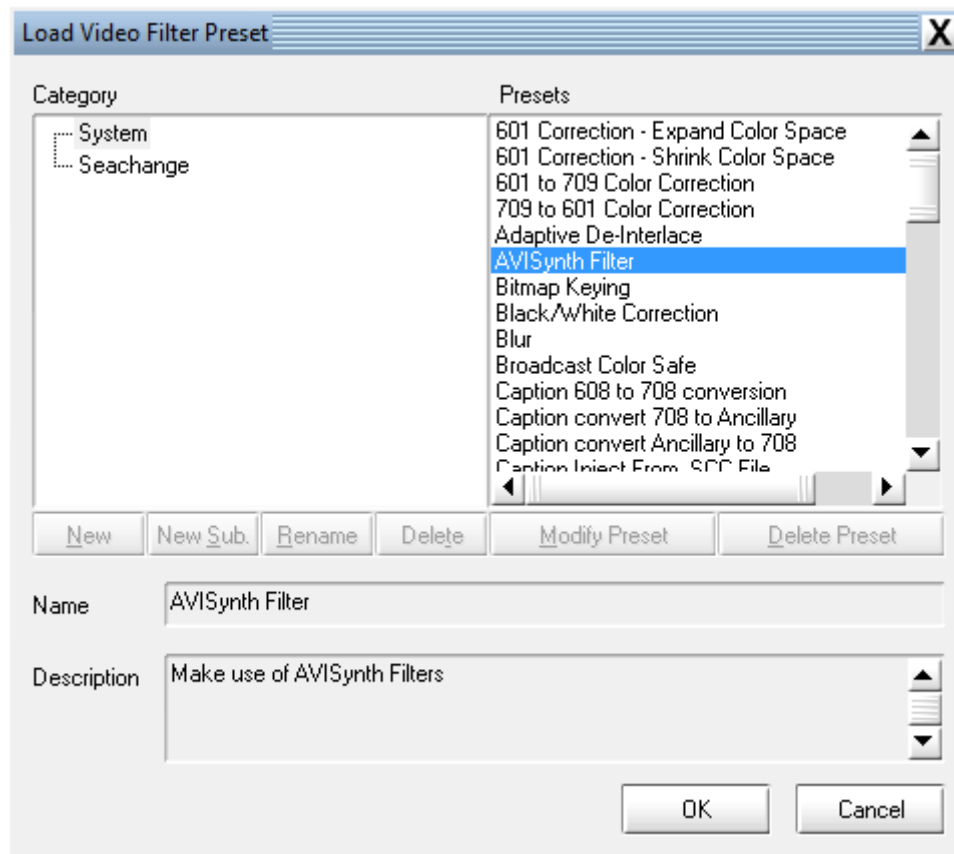
- Stop Nexus service and make sure none of the following processes are running:
 - Carboncoder.exe
 - PNKKERNL.exe
 - Outproc.exe
 - Any mediaplayer that makes use of AviSynth
- Uninstall any previous Version of AviSynth and delete or rename the AviSynth folder in “Program Files (x86)”.
- Make sure, AviSynth.dll is **not** located in your syswow64 folder (if it was before).
- Install the following program. You can also download it with source code from AviSynth.org:
 - AviSynth_130114.exe (2.6 alpha 4), standard installation
- Copy the Carbon Coder Plugins to the Video Filter Plugin folder of a Carbon Coder: C:\Program Files (x86)\Common Files\Rhozet\Carbon Coder\Plugins\VFltRpi:
 - All files from VFltRpi folder (4 dll files)
- Place the Carbon Coder.avs file into the AviSynth examples folder:
 - C:\Program Files (x86)\AviSynth 2.5\Examples
- For using the example Carbon Coder.avs script with deinterlacing, just copy this file into the AviSynth folder (C:\Program Files (x86)\AviSynth 2.5\plugins):
 - yadifmod.dll
 - nnedi3.dll

WFS installation

- Install the Plugin on all active Nodes that should make use of the Plugin.
- In WFS Manager, go to File-Preset Connection.
- Update all filters by using manual preset connection, adding the IP of a Node where the Plugin is installed and proved to be working. This can be done using the local Carbon Coder application on the node and trying out the AviSynth Video Filter.

Usage / first steps

You should be able to see the AVISynth Filter plugin when opening your Local Carbon Coder application, loading a source file and choosing Source Video Filters (Source - Advanced).



- Note that you must use it as a **“Source Video Filter”** instead of a target one in order to override Carbon’s internal filter (e.g. for deinterlacing, fps change or scaling).
- Leave the path to the avs script default: **C:\Program Files (x86)\AVISynth 2.5\Examples\CarbonCoder.avs**

Debugging

When you enable the checkbox for debug logging, c:\AviSynth_CarbonSource.txt will be written. Take care, this file will grow forever.

This will slow down the transcode process up to 50% or more.

The keywords error or warning should always be paid attention.

Inputs / Outputs

Only raw decoded frames are passed between AviSynth and Carboncoder.

- Inputs:
 - Only the path to an avs script is provided within Carbon Coder
 - AviSynth and Carbon only support 8 bit and 422 colorspace at maximum

AviSynth-Carbon Scripting tipps

It is highly recommended that you try to get AviSynth running without carbon if you are completely new to it. Just open one of the example files with windows media player. Then try to do some scripting work within the example scripts.

Carbon Coder:

You can check the plugin is working, when using one of the subtitle lines:

```
Subtitle("hello world",align=5)
```

- Input and output colorspace is YUY2 (YUV422)
- MT Mode 5 should work, but is not tested in this Version
- Use AviSynth.org and similar sources for more documentation on avs scripts

The basic limitation on the whole integration is that one cannot just use ANY function of AviSynth. As we deal with an incoming RAW data stream from Carbon Coder, we can only hold a buffer of +/- a few frames for AviSynth Input. Seeking cannot be done as a Source Filter Plugin within Carbon.

Buffer maximum is a user setting within Carbon Coder Interface, Buffer minimum is 0.5 seconds @ input framerate.

You can only use filters that require at maximum a few seconds up and down from the current position. Seeking and similar cannot be supported.

Known bugs

- Changing to framerate 60.000/1001 from avs script freezes first frame within output video.
- Application/transcode process exits at initialization when the avs script that you pointed to is empty or non-existent.

Version

Version 0.9 „Prerelease“

AviSynth Version 2.6 Alpha 4 support only

DEMO Limitation: 1000 Input Frames

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