

DVO
UPSCALE
USER GUIDE

WHAT DOES IT DO?

DVO Upscale offers optimized up-scaling capabilities for various types of content. It proves particularly valuable when converting material from Standard Definition (SD) to High Definition (HD) resolution. This feature enhances the quality of the upscaled output, ensuring that the converted content retains as much detail and clarity as possible during the transition from SD to HD.

If you need to upscale from HD to UHD, use DVO Zoom instead.

The algorithm employed by **DVO Upscale** is specifically designed to preserve the high quality of edges, even those with diagonal orientations. This capability makes it particularly well-suited for handling graphics and other content that heavily relies on sharp and well-defined edges.

HOW DO YOU USE IT?

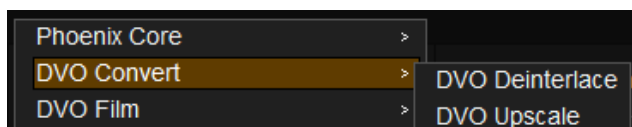
DVO Upscale works on the following platforms:



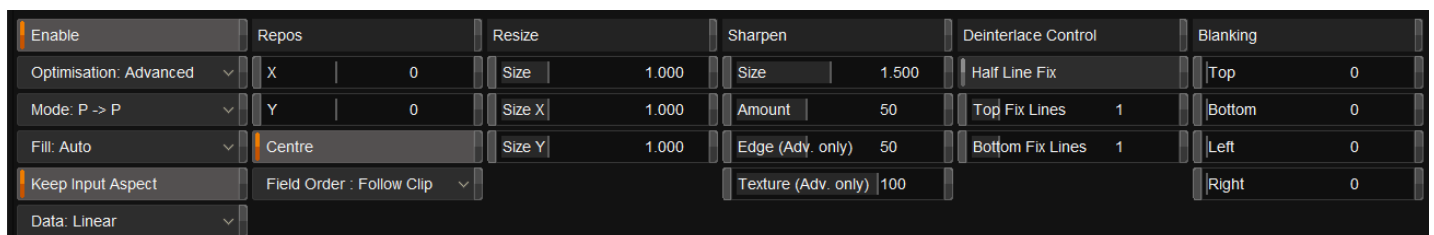
If you're already a Filmworkz veteran, you can jump right in and use **DVO Upscale** however if you need a hand with anything, our friendly AI assistant [Juno](#) is your first port of call. Whether it's guidance with DVO tools, help getting started in Phoenix, Nucoda or Loki, access to the latest versions or discovering best practices, **Juno's** here to offer instant, accurate support, any time you need it - that's 24/7 because **Juno** never sleeps!

GETTING STARTED

1. Launch your platform on your workstation.
2. Locate the toolbar, (positioned on the left-hand side of the interface)
3. Scan the toolbar options until you find the **DVO Upscale** tool.



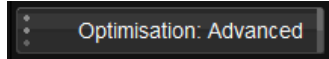
4. Click on it and the control panel under appears:



CONTROL PANEL EXPLAINED

BASIC PARAMETERS

OPTIMIZATION



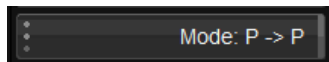
The *optimization* setting in **DVO Upscale** allows you to find the appropriate balance between speed and quality during the up-scaling process.

When set to "Advanced" mode, a specialized algorithm is utilized specifically for the high-frequency portions of the image. This algorithm is designed to minimize scaling artifacts, resulting in higher quality output.

On the other hand, when set to "Fast" mode, this specialized algorithm is disabled in favor of faster processing. By prioritizing speed over quality, the up-scaling process can be accelerated. However, this may come at the expense of some visual quality, as scaling artifacts in high-frequency areas might be more noticeable.

Values: Fast, Advanced (default)

MODE



DVO Upscale includes an internal de-interlace function to effectively handle multiple formats.

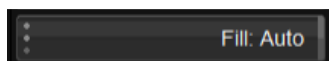
De-interlacing is a process used to convert interlaced video, typically found in older formats, into progressive video, which is the standard for modern displays.

The internal de-interlace function applies advanced algorithms and techniques to effectively process interlaced video content. By performing de-interlacing internally, the tool can seamlessly convert interlaced formats to progressive formats during the up-scaling process. This helps to improve the overall visual quality and compatibility of the output, making it suitable for a wide range of devices and platforms that require progressive video content.

Values: P>P (default), i>P, I>I (*P for progressive, I for interlaced*)

The setting for progressive or interlaced is used to set how the footage was created and if it should be kept the same as the source. The *project* must be set up to render frames even if the output mode is interlaced. Internally, the effect needs to use a progressive (frame based) format for optimal results when both input and output are interlaced.

FILL



Controls how the input picture is mapped (scaled) to the output picture.

Auto: Scales input picture until the vertical or horizontal limit of the output picture is reached, without changing aspect ratio.

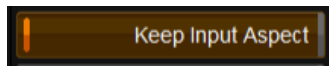
Vertical: Fills the output picture vertically without changing aspect ratio. The scaling of a SD 4:3 picture into an HD 16:9 output format will result in a pillarbox image.

Horizontal: Fills the output picture horizontally without changing aspect ratio. The scaling of an HD 16:9 picture into a 2k 4:3 picture will result in a letterboxed image.

Both: Fills the output picture both vertically and horizontally. It doesn't keep the original aspect. It will also override the "Keep Input Aspect" option. The scaling of an SD 16:9 anamorphic to HD 16:9 will result in a full 16:9 format.



KEEP INPUT ASPECT

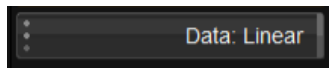


This option reads the clip properties and keeps the input aspect ratio; it will also automatically compensate for non-square pixels.

This option should stay enabled, especially when upconverting from standard definition sources (525 or 625).

If the clip has an incorrect aspect ratio you will have to change the clip properties in the library. To change this setting, select the clip and, in the Library section of the interface click on the "Properties" button. You can also select the clip, right-click and select "Properties".

DATA



Select the data format of the image; video cameras typically use a Linear data format.

If the Data setting is incorrect, the result can be affected

Values: Linear, Log (default follows the project setting)



OTHER PARAMETERS

REPOS

Repos

X	0
Y	0

X and Y repositioning after the Fill mode is chosen.

CENTRE

Centre

This centers the scaled image on the output picture. If disabled, it maps the scaled image on the output picture from the lower left corner.

Values: On (default), Off

FIELD ORDER

Field Order : Follow Clip

The Field Order parameter sets the input field order in time for *interlaced* input. This setting is *independent* of the output field order as set in the **project properties**.

Follow Clip - Uses the clip properties (assumed correct)

F1:F2 - Assumes top field first.

F2:F1 - Assumes bottom field first.

Values: Follow Clip (default), F1:F2, F2:F1

RESIZE

Resize

Size	1.000
Size X	1.000
Size Y	1.000

X and Y scaling after Fill mode is chosen



SHARPEN

Sharpen

Size

1.500

Amount

50

Edge (Adv. only)

50

Texture (Adv. only)

100

Adjusts post-scaling sharpening.

Some controls options are only available when you choose Advanced mode.

SIZE

Size

1.500

Adjusts the sharpening radius.

Values: 0.5 - 2.0 **Default:** 1.5

AMOUNT

Amount

50

In the "Fast" mode it represents the overall sharpness amount. This means that it controls the sharpness applied to the entire image, regardless of the specific characteristics of different areas.

On the other hand, in the "Advanced" mode, it determines the sharpness amount specifically applied to flat areas within the image. Flat areas generally refer to regions with less texture or detail, such as smooth surfaces or uniform backgrounds.

Values: 0 - 100 **Default:** 50

EDGE

Edge (Adv. only)

50

Defines the amount of edge sharpening (Advanced mode only)

Values: 0 - 100 **Default:** 50

TEXTURE

Texture (Adv. only)

100

Balances the texture in flat areas and the noise introduced by the sharpening process. It helps to find the optimal balance between enhancing the texture in smooth or flat regions of the image and avoiding excessive sharpening artifacts or noise.

By adjusting this parameter, you can control the level of texture enhancement applied to flat areas. Increasing the value may enhance the texture, making the flat regions appear more detailed. However, it can also potentially amplify any noise or artifacts present in those areas. On the other hand, reducing the value may decrease the sharpening noise but may result in less texture enhancement. (*Advanced mode only*)

Values: 0 - 100 **Default:** 100

The recommended settings are 100 for normal images and 0 for graphics. If the noise in the flat area is intrusive, a setting lower than 100 will give less noise at the expense of texture definition.



DEINTERLACE CONTROL

Deinterlace Control

Half Line Fix

Top Fix Lines1

Bottom Fix Lines1

In an analog video signal, it is not uncommon to encounter visible half lines, unless they were removed during the capturing process. This occurs when half of a line is intentionally blanked, while the remaining portion contains the actual image information. However, during the de-interlacing process, the last half line is typically considered unwanted and is usually discarded.

By removing the unwanted half lines, the deinterlacing algorithm can effectively reconstruct the missing lines and create a complete and progressive frame without the artifacts caused by the half lines. This helps in achieving a high-quality, flicker-free output when converting interlaced video to progressive formats for better display on modern devices.

To remove the blanked part, enable *Half Line Fix* and select the line(s) to address for top (*Top Fix Lines*) and bottom (*Bottom Fix Lines*). This will ensure that the blanked part of the line is not visible in the final image.

BLANKING

Blanking

Top0

Bottom0

Left0

Right0

Blanking controls can be used to cover up soft image edges or any other edge-related problem.



WANNA KNOW

MORE?

JUNO

WEBSITE

SALES

