

040b73747265616d747970656481a203840163c48403737373810a0a810b0b815f5f84012584067f411b312d37OneVision-Image: Interactive Warping

## WarpTool.tiff ↪ **Interactive Warping**

Warping refers to the geometric transformation of images. A warp can range from simple scaling to a convoluted transformation. Standard manipulations such as rotating, shearing, and scaling are handled with other OneVision tools. OneVision-Image's warp tool is used for more complex distortions.

### **Warp Scheme**

On contrary to other tools, the *Warp* panel supplies a viewer. Unlike other tool panels, the *Warp* panel contains a viewing window in which a copy of the selected image is displayed. You can enlarge the panel, which scales the image accordingly. However the image can't be scaled beyond its original size.

The image viewer is used for laying out the scheme for warping the image.

### *Warp Vectors and Blockers*

You define the part of the image you want to distort by drawing a warp vector at the corresponding position. To do this, move the mouse pointer to the spot where you want the warping to start. Keeping the left mouse button pressed down, move the pointer to the spot where you want the warp to end. While moving the mouse, an arrow with start and end handles is displayed. Its direction and length change according to your mouse movements. After releasing the mouse button, the arrow's location becomes fixed, describing the direction and distance of the warp.

A single warp vector simply smears the image in the direction that the vector is pointing. For a better effect, you need at least one blocker or a second warp vector. Blockers are used to confine the

area affected by the vectors, protecting other parts of the image from change. For setting a blocker, click the left mouse button once.

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*Figure: Warp vector and blocker.*

Existing warp vectors and blockers can be moved by clicking on their handles and dragging them around. Vector handles are displayed as squares at the beginning and the end of the arrow. Blocker handles are located at their centers. The handles are highlighted when you move your mouse pointer close enough to catch them by holding down the left mouse button.

There is no general rule for how to use vectors and blockers. Just playing around is the best way to learn about how they can be used to alter an image. In general, though, warp vectors shouldn't be placed too close to each other. Also keep in mind that warp vectors influence each other if no blockers are set between them.

Note: If you activate another image, the current vectors and blockers are kept and will be applied to the new image.

At the top of the image display, two counters keep track of the number of warp vectors and blockers you've created.

### **Removing Warp Vectors and Blockers**

After clicking the *<Remove Vector>* command, the button becomes highlighted until you click on the vector or blocker you want to remove or until you click the button again, which aborts the command.

*<Remove All>* deletes all vectors and blockers from the image without any further notice.

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*Figure: Portion of the Warp panel for removing vectors and blockers.*

To the left of the remove commands, two fields indicate the position of the mouse pointer inside the image area. The displayed coordinates always refer to the original size of the image, which may be different than that used in the document.

## **Anti-aliasing**

When warping images that contain sharp edges, or patterns with strong contrasts, lines in the warped image may look jagged. To avoid this, the *Warp* tool includes a set of anti-aliasing options. Anti-aliasing softens edges in images, obscuring jagged lines.

In most cases, you won't need anti-aliasing because the warping tool smooths lines automatically. The following options are available:

### *No Anti-aliasing*

This is the default setting. No anti-aliasing is used and warping is done with maximum speed.

### *RF-Gauss Rough / Medium / Fine*

These anti-aliasing algorithms use a Gaussian function for smoothing lines. Rough, medium, and fine describe how strongly the edges are obscured. There is no significant difference in speed among the three options.

### *Nearest Neighbor*

This anti-aliasing algorithm bases its smoothing on the values of neighboring pixels. It is faster than the RF-Gauss algorithms.

Note: Anti-aliasing algorithms consume a lot processing time (more than the warping process itself).

## **Preview and Real Time Preview**

There are two ways to see a preview of the warped image.

Checking the *<Real Time Preview>* button opens a panel in which the effects of entered or moved vectors and blockers are displayed immediately. No anti-aliasing is used for this real-time preview.

Executing the *<Preview>* command shows the effects of the warping directly in the document by overlaying the selected image with a copy of the warped one. If an anti-aliasing algorithm is selected, it is used in the calculations. The preview image is discarded if you change or add any warp vector or blocker, or if you deselect the image.

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*Figure: Portion of the Warp panel for Real Time Preview and Preview*

## **Apply**

This command warps the image in the document according to the warp vectors and blockers you've created. If an anti-aliasing algorithm is selected, it will be used in the calculations. This command cannot be reversed.

Note: If you haven't licensed the *Warp* tool, this command is disabled and you can't apply your modifications to the image.

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