# PVP 3

*a Renewed Vision product*

# System Requirements

Below are the minimum system specifications for a computer to run PVP:

- **Processor:** 64-Bit Intel Core 2 Duo processor or better
- **OS**
  - macOS 10.12.6 (Sierra)
  - macOS 10.13.6 (High Sierra)
  - macOS 10.14.4 and above (Mojave)*
- **RAM:** 4GB
- **Hard Drive:** 300MB (100 MB for application; 200MB for sample show)
- **Internet connection** (for registration and Sample Show download)

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Note that these are the minimum requirements.
For optimal performance, especially for higher end uses (such as multiple outputs, multiple layers, HD content, etc.), you will want to consider a stronger computer.

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*For Mojave (macOS 10.14) users, we recommend that you run PVP3 on 10.14.4 or above for optimal performance due to deprecation in the OpenGL technology on the Mojave macOS.  Common issues on macOS Mojave are dropped-frames and sub-optimal playback in some cases

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All Macs sold today will meet these specs, however, your best results will be with an iMac or MacBook Pro with a dedicated graphics card (AMD or NVIDIA), or a Desktop "Pro" computer (iMac Pro, or Mac Pro), especially for higher-end uses (such as multiple outputs,  multiple layers, HD content, etc.).

Additional consideration should be given to any hardware limitations of a given device (such as the number and type of ports available the computer).  For example, some MacBooks and MacBook Airs meet the specs to run PVP, however, they have limited ports available and as such we don't recommend those as production computers.

Additional hardware such as video cables and adapters may also be needed based on your computer's connections and the input options of your devices.

If you have questions about a specific setup and what computer we would suggest, please contact our Support team.

# Setting up your Mac

The first step in setting up PVP is getting the machine ready for the program by turning off a feature of the operating system that can conflict with Renewed Vision's products.

1. Click on the Apple icon  in the upper left corner of your screen and select **System Preferences**
2. Click on **Mission Control** (middle of the top row)
3. Uncheck **Displays have Separate Spaces**
4. Restart the computer

Additionally, we recommend setting the desktop background for all external monitors to a solid color (such as black) as well as disabling the screensaver and adjusting the energy settings as needed.

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Some LED screens can make it difficult to set the desktop background due to the way that the system preferences show on each output and how LED screens don't always show the entire output; in these cases it might be helpful to try a screen sharing software to see your output's screen and change the desktop background.

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# Setting up your Outputs

PVP can output to a multitude of software and hardware components. This section will provide a quick overview of the output types as well as how to get them ready to be seen by PVP. For more information on how to connect PVP to these devices, please see the Screens section.

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*Note that we recommend that you set up your Show while all hardware/software components are plugged in and turned on, however this is not required; it is possible to set up your Show using placeholders (called Custom Screens) and link them up to the actual components at a later time.*

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## System (External Monitors)

PVP can output to any external monitor that your operating system can see. Examples of this are VGA, DVI, and HDMI outputs (often requiring Thunderbolt or USB adapters), but there are other possible configurations that might fall under this heading. In general: If the operating system sees it as an external monitor (that is you can drag a window from your primary monitor to a given component), then it will fit into the "System" description.
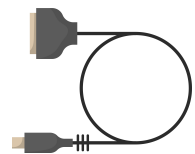
Setup for these outputs would be plugging the device into your computer (using any necessary adapters) and making sure that the operating system can see it as an external monitor. If the operating system can't see it, PVP won't be able to see it.

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*Note that USB adapters often require drivers to be installed before they will work; check with your device manufacturer for more information.*

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## SDI and HD-SDI

SDI (short for **Serial Digital Interface**) and HD-SDI are broadcast standards for sending digital video signals long distances. SDI and HD-SDI requires additional hardware to bring the signal out of your computer

(typically the Blackmagic UltraStudio Mini Monitor) as well as hardware on the receiving end that can interpret the signal.

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Note that PVP makes no distinction between SDI and HD-SDI; therefore in this user manual we will use the term "SDI" to refer to both.

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You can also send an Alpha Key output over SDI provided you have a supported BlackMagic hardware device.

Setup of an SDI output requires hardware to convert the signal to SDI (see a full list of supported hardware here) as well as the drivers associated with your device (click here for Blackmagic's support page).

# NDI

NDI (short for **Network Device Interface**) is a protocol created by NewTek that allows media to be sent over the network to other software or hardware devices. NDI is a new technology and adoption is continuing to grow, so continue to check for new hardware and software that supports this exciting new technology.

Setup for NDI is as simple as making sure that the computer running PVP is on the same network as the software/hardware receiving the signal.

You can send an Alpha Key output over NDI by enabling this in the Screens area of the Workspace Editor.

# Syphon

**Syphon** is an open source technology that allows programs to share media (videos and still images) with other software on the same computer. Common uses for Syphon would be to bring the output from PVP to a separate piece of software that would map it for environmental projection before being sent to the hardware.

Setup for Syphon would be to run the corresponding software before opening PVP so that PVP can acknowledge the other software's presence.

Syphon natively sends an Alpha Key output out of the program, so provided you are using content with transparency in it, that transparency would appear on the signal in the receiving software.

# Installing PVP

PVP is only available for download from our website. Go to the link below to download the latest version of PVP.

renewedvision.com/provideoplayer/download

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Even if you purchase PVP through an authorized reseller you should still download it from our website to ensure you have the latest version of the program.

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The current version is available at the top of the page; recent updates are available at the bottom of the page if you need an older version.
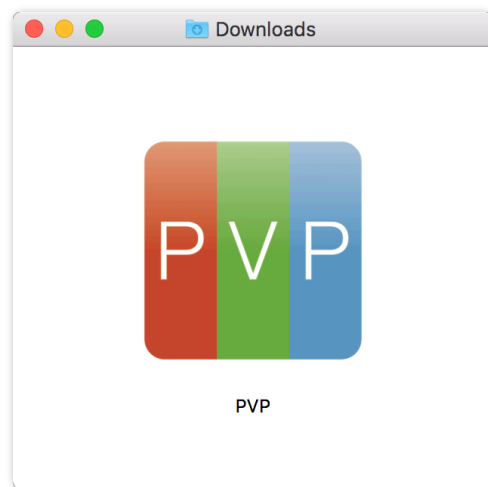


When PVP downloads it will download as a .zip file. If your browser doesn't automatically unzip the file, then after the file downloads you may need to double click on the .zip file to unzip it. Once you have the PVP application unzipped, simply drag it to your Application folder.

You can now open the application from the Applications folder. Many users also find it useful to add the application to the Dock by either dragging the application from the Application folder onto the Dock or, if the application is already running, by right-clicking on the application's icon in the Dock and selecting Options > Keep in Dock.

# Setting Up PVP

## Welcome Window

When you open PVP you will be welcomed by the Welcome Window, seen below.
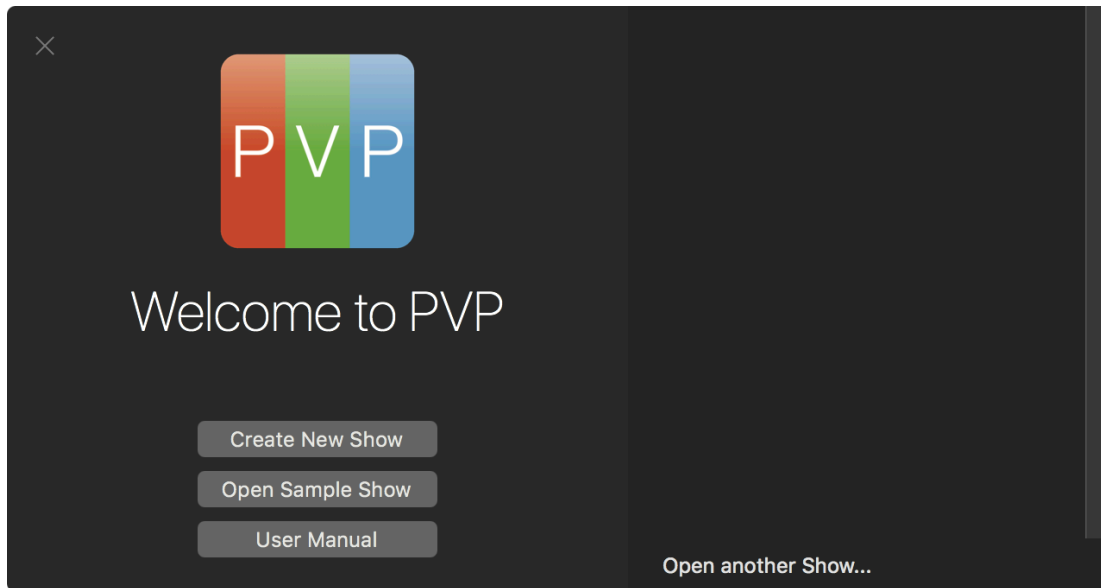


This window lets you get up and running quickly inside of PVP. The buttons in the center allow you to **Create a New Show**, **Open a Sample Show**, and open this **User Manual**. On the right there is a list of recently opened Shows; click on one to open it. Click on **Open another Show...** at the bottom to open a Show that is not listed in the list.

This Welcome Window can be opened at a later time by clicking on the Window menu in the menubar and selecting **Welcome to PVP**.

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If you want this window to show every time you open PVP, head to the System Preferences and, in the General tab, check the box next to **Close windows when closing an app**. If you want PVP to open to the Show that was open when you last quit PVP, uncheck the box next to **Close windows when closing an app**.

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# New Show Wizard

When you create a new Show, you will see the **New Show Wizard** which will help you to quickly set up Screens and Targets in your Show.
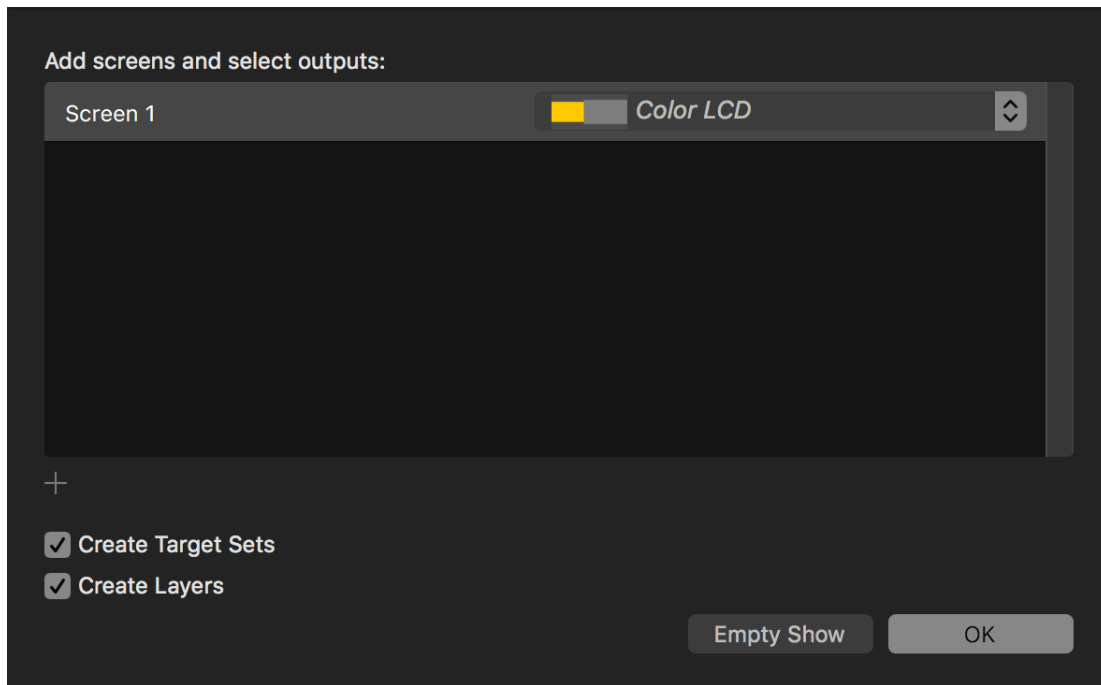


PVP will automatically add **Screens** for each external monitor that you have currently attached to your computer. If you would like to add additional Screens, click the + in the lower left of the window. To delete one of the Screens, select it and press the delete key, or, if you have a touch pad, swipe with two finders to the left over the name of the Screen and then click Delete.

For each Screen in the window, you can update the **Name** as needed by clicking on the name and typing in a new name. You can also adjust which device the Screen is **Linked** to by clicking on the drop-down menu on the right of the Screen.

You can also have PVP automatically **Create Target Sets** and **Create Layers** for each Screen that you create; check the box next to each of these respective features to have PVP create that content in your Show.

When you are done you can click **OK** to create your Show, or select **Empty Show** to close out of the Wizard without adding the content.

# Registering PVP

PVP has a fully featured **Demo Mode** which runs any time you open a copy of PVP that is not registered. The Demo Mode is fully featured (you can use every feature of the product), however there will be a watermark on all of your output screens. This allows you to get to know the program before you purchase it.
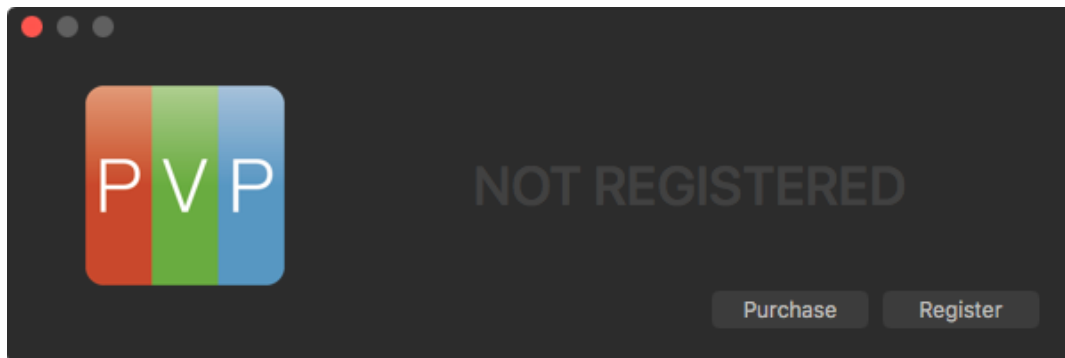


There are two ways to purchase PVP: first by purchasing it within the app, and second by purchasing it on our website.

## In-App Purchase

To purchase PVP from within the app click on the green bar in the top left of the main window that says **Register PVP...** From this window you can click on the **Purchase** button to purchase PVP from the in-app store.

Once you complete the purchase PVP will automatically register itself; it will also email you your Registration Name and Unlock Code. Be sure to keep this information safe and secure in case you need to register the software again in the future.

## Website Purchase

To purchase PVP from our online store, head to our website:

renewedvision.com/store.php?item=pvp

Add PVP to your cart and check out like usual. Once you finish the checkout process your Registration Name and Unlock Code will be shown on the screen as well as

emailed to you. Be sure to keep this information safe and secure in case you need to register the software again in the future.

You can then open PVP and click on the green box in the top left that says **Register PVP...** Inside of this window, click **Register** and enter your **Registration Name** and **Unlock Code**. You can enter a unique **Device Name** to help identify which computer your registration is attached to, and you must select a **Volume** where the registration will be stored. If you would like the registration to be attached to your computer then select the computer's name; if you would like to register a USB dongle then select that specific device (see below). Once all of your information is correct, click on **Register** to finish the registration.

## Dongle Registration

Most users will want to attach their registration information to the computer so that the computer itself is always registered and ready to use PVP, however some users prefer to have a more "mobile" registration code. With this in mind, PVP allows you to register a "dongle" (such as a USB thumb drive) with your registration information. Examples for using this feature would be to more easily move your registration information between computers, or if you regularly reformat your hard drives.

To register a USB dongle, proceed through the normal registration process (as seen above). When it asks which **Volume** you would like to register, select an attached USB dongle. This will attach the registration to the USB device.

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If you have previously registered PVP to your computer
and want to change the registration to a USB dongle,
you will first need to unregister PVP and then register it again.

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## Unregistering PVP

If you need to unregister your copy of PVP (such as to move the registration to a new computer or to a dongle), click on **PVP** in the menubar in the top left, come down to **Registration**, then click on **Unregister**. You can now use the same registration information to register another computer or a dongle.

# Getting Started

At this point PVP is up and running and ready to go. If you are new to PVP then the next step will be to familiarize yourself with the terminology and layout of PVP; see the PVP 3 Overview section for this. After that, for many users their first goal will be to set up their Screens/Outputs; see the section on the new Workspace Editor for full details on those features. Next set up your Layers to control how the media will play, and customize your Playlists and Cues for your setup. There are many additional features that you may want to check out, and of course there are many preferences that you can customize for your unique setup.

In addition to this User Guide we have a set of **Tutorial Videos** that you may find useful in your PVP 3 journey. Visit the link below to view these tutorials:

https://renewedvision.com/provideoplayer/tutorials/

Thank you for installing PVP, we hope you have an outstanding experience while using our products!

# PVP 3 Overview

PVP (an acronym for "ProVideoPlayer") is a video processor, a video playback solution, and a custom output generator, all rolled into one!

PVP 3 is a complete reimagining of what this software has to offer. We have added many outstanding features that are going to help users create custom outputs faster and better looking than ever before!

But these changes mean that users of previous versions of PVP will need to not only learn a new interface but also learn new and reimagined terminology. For example, the Macros feature has been completely reimagined as a Cue-based system. Similarly, the Target Set feature has been rebuilt from scratch for better control over your Targets and how they interact with your Layers.

The section below covers the terminology used in PVP 3 as well as the overall layout of the program. Due to the many changes that were made we recommend that all users of PVP 3 read this section to better understand the terminology used in the application and this user manual.

## Terminology

### Workspace
The **Workspace** is a coordinate system where you will set up digital versions of your outputs and then define where your media will play on those outputs. You will also use the Workspace to set up any Masks that you may want to create.

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Note that the Workspace (sometimes called the "Canvas") uses a measurement of units that the user can define. Many times you will want the units to relate to pixels (this is the setting by default), but other times you may want them to represent centimeters, or a fraction of an inch, or something else entirely. This feature is covered in the Unit Scaling section.

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# Screen

A **Screen** is the digital representation of your physical devices inside of the Workspace. The primary property for each screen is its Size (Height and Width) and its Position on the Canvas (X and Y).

*For example:* You are setting up PVP to control two TVs, so you add two **Screens** to your **Workspace**, one for each physical device you will be sending a signal to.

*For more information:* See the *Screens* section.

# Output

The **Output** is the property of a Screen which controls how the media is sent to the physical device. Its primary attribute is its Size (resolution) which will generally be the full resolution of the physical device, however it doesn't have to be.

*For example:* You are setting up two TVs, one will be using 1920x1080 and the other 1280x720. You would set up one **Screen** to use an **Output** size of 1920x1080 and another **Screen** to use an **Output** size of 1280x720.

*For more information:* See the *Output* section.

# Output Target

The **Output Target** is an optional setting where you can control where the Output will appear inside of (that is as a subset of) the Screen. The primary properties of an Output Target are its Size (resolution) and its Position on the Canvas (X and Y).

*For example:* LED walls often use only a small portion of your actual output, such as an LED wall that is 300 pixels by 300 pixels but whose processor wants a 1920x1080 signal from the computer. In this case you would set up your **Screen** to be whichever relative size you need it to be to match the other Screens (or use 300x300 if relative size is not a factor), the **Output** would be 1920x1080 (because that is what the computer is outputting to the LED processor), and the **Output Target** would be 300x300 because that is the actual resolution of the physical wall.

*For more information:* See the *Output Target* section.

## Target

A **Target** is an area of the Canvas where PVP will play content. It is defined by an overall shape (most often a rectangle, but it can be an oval or a custom shape) and its primary attributes are its Position and Size.

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You can create a Target at any location, however only parts of a Target that overlap a Screen will render on your physical devices.

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*For example:* You want a piece of media to play only in the top left of one of your devices, so you create a **Target** that covers the top left of that **Output**.

*For more information:* See the *Targets* section.

## Target Set

A group of Targets that will all play the same media is called a **Target Set**.

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There is no limit to the number of Targets within a Target Set.

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*For example:* You want the same media to play on two different **Screens** at the same time, so you create one **Target Set** that contains two **Targets** (one on each **Screen**). You want different media to play on a third **Screen**, therefore you create a second **Target Set** which contains one **Target** on the third **Screen**.

*For more information:* See the *Target Set* section.

## Layer

**Layers** are capsules for controlling how and where media will play. To each Layer you will assign a Target Set (which is where the media will play) as well as effects and other attributes that might change how the media looks or plays.

*For example:* You create a **Layer** called Tiled; to this **Layer** you link the **Target Set** which has **Targets** tiled across your **Screen**. You also add an Effect to the **Layer** so that the media played back will have an Effect applied to it.

*For more information:* See the *Layers* section.

## Action

An **Action** is a single command that happens inside of PVP. This is most commonly sending media to a specific Layer, however it might be one of many commands such as Clearing a Layer or assigning an Effect to a Layer.

*For example:* You want to show a single piece of media inside of a **Layer**; to perform that command would be called an **Action**.

*For more information:* See the _Actions_ section.

## Cue

A group of Actions is called a **Cue**. To put it another way, a Cue is a way to trigger one more more Actions (visible or non-visible) with one click. You can have as many Actions inside of one Cue as you would like, and you can individually edit each Action that is inside of a Cue.

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The Cue feature is the next iteration of what is called Macros in PVP 2.

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*For example:* You want to show three pieces of media in three different **Layers** all in one click, so you create a **Cue** that has three **Actions**, one for each piece of media that will play in a **Layer**.
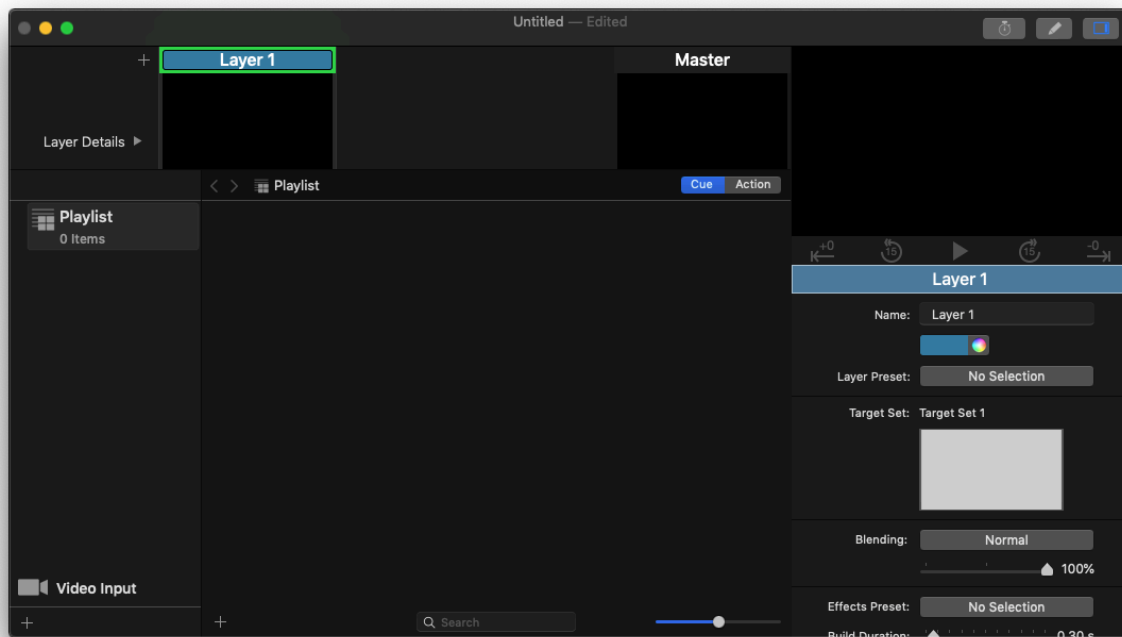
*For more information:* See the _Cues_ section.

## Show

A **Show** is a single file on the computer that contains all needed information for an event. The Show file includes all of your Screens, Outputs, Targets, Layers, Cues, Media, and anything else inside of PVP that you might want to save pertaining to one show/event. You can create as many Shows as you would like and save them on your computer, however you can only have one Show open at any given time.

*For more information:* See the _Shows_ section.

# Interface Overview



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For more information on a given topic, click on the underlined phrase.

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The primary interface is broken up into several sections. The **Playlist Bar** is on the left side; this is where you will create Playlists full of Cues and Actions. The **Layer Bar** is across the top and will show your Layers (and, optionally, details about your layers). The right side features the **Sidebar** which gives you easy access to whichever Layer is selected at the moment. (You can toggle the Sidebar on and off by clicking on the Sidebar button ▣ on the top right of the screen.)

The center area of the program is the **Cue/Action area**; for most users this will be the area that you interact with the most during a show. The default mode is the **Cue View** which shows you all of the cues in a selected Playlist, but you can change this area to the **Action View** which allows you to fire Actions directly as well as have a visual way to set up your Cues.

Click the Workspace Editor button ✏ in the top right to toggle the **Workspace Editor**; this is where you will edit items in the Workspace, such as your Screens, Targets, and Masks.

# Workspace Editor

The Workspace Editor is often the first place that users interact with PVP because it is the first stop in setting up your Screens, Outputs, and Targets. This section covers the visual aspects of the Workspace Editor, such as how to set the zoom level and how to turn on and adjust the grid.
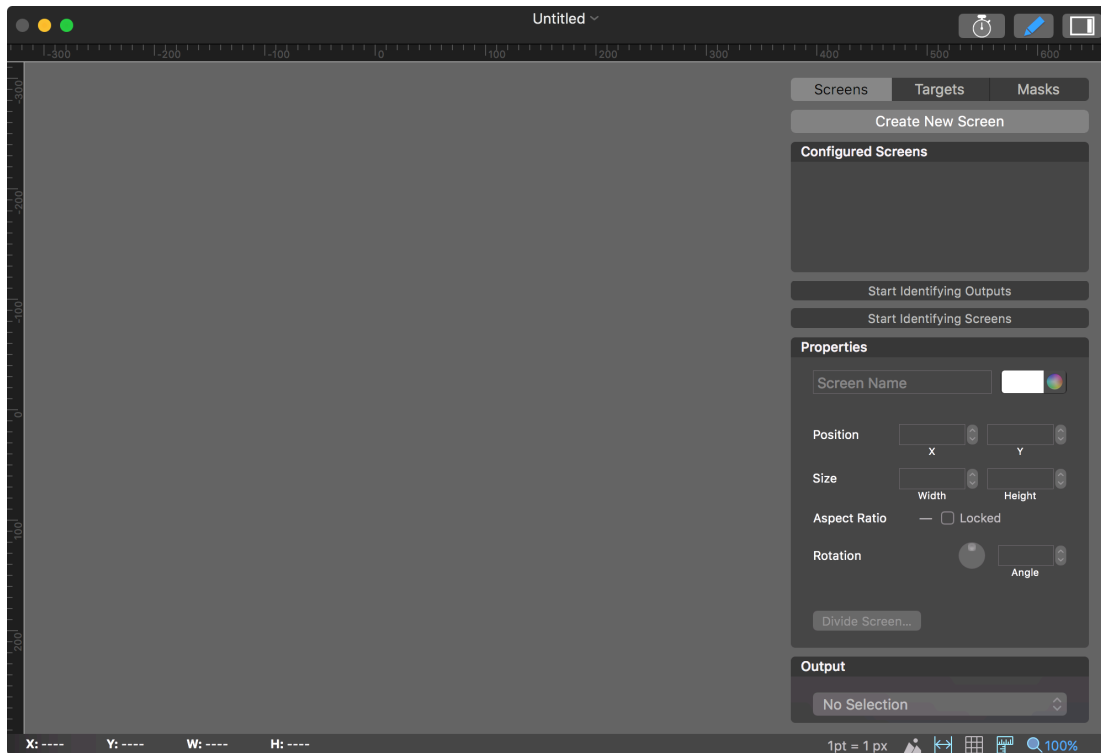


To open the Workspace Editor click on the Workspace Editor button ✏️ in the top right of the screen. To close the Workspace Editor, click on the same button again.

On the right are the three tabs where you will set up the different features in the Workspace Editor: Screens, Targets, and Masks; these tabs will be covered in their respective sections.

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Note that the Sidebar will continue to show even if you are in the Workspace Editor. This can be helpful if you want a live preview of what your Master or a specific Layer will look like while you are editing objects in the Workspace Editor.

# Canvas

The central area of the Workspace Editor is the canvas where you will see representations of the objects that you are setting up. The canvas uses an (X, Y) coordinate system which uses units that the user can define (see Unit Scaling). Many users will define one Point as one Pixel, however depending on your setup you might choose to define one Point as one-tenth of an inch, or one centimeter, or something else entirely.

Note that the coordinate system has changed slightly from previous versions. In PVP 3, (0,0) will be in the top left of the screen and (∞,∞) is in the lower right. (-∞,-∞) will take you up and to the left.
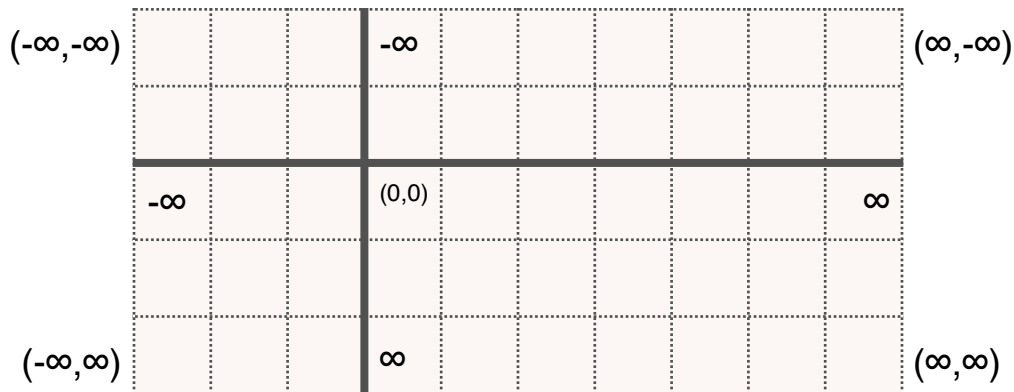


In the lower left of the Workspace Editor you will see the current position of your cursor as well as the Width and Height of the currently selected object.

## Moving within the Canvas

You can move around the Canvas using traditional methods (by using the scroll bars, for example), however there are additional shortcuts that can be used to make this faster.

If you have a mouse with a scroll wheel you can scroll vertically in the Canvas by using your scroll wheel, or hold Shift and scroll the wheel to scroll horizontally. If you are using a trackpad (including devices like the Magic Mouse) then use two fingers to scroll horizontally or vertically. You can also hold down the Command key and click and drag on the main Canvas window to drag the view.

To zoom in or out in the Canvas you can hold the hold the Option key down while you scroll, or use Pinch to Zoom if you have a trackpad. You can also use keyboard shortcuts to zoom; press Command-Plus to Zoom In, Command-Minus to Zoom Out, and Command-0 to Zoom to Fit. See the Zoom feature for additional control.

# Adjusting the Canvas

The Canvas contains several tools to customize how it looks and feels. These buttons are in the lower right of the Workspace Editor and are available any time the Workspace Editor is open.

## Unit Scaling

The **Unit Scaling** option allows you to specify a conversion rate for the Workspace Editor. This is useful if you will be using a custom scaling option when you set up your Screens, Targets, and Masks.
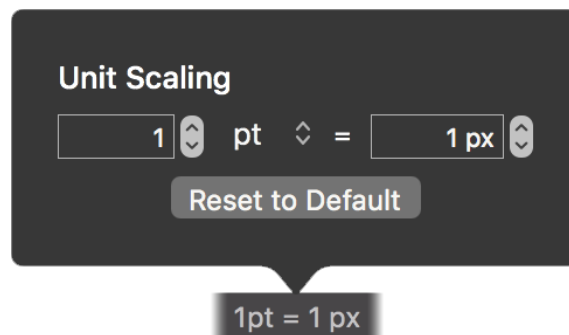


For example, if you are setting up two TVs and one is a 42" TV and the other is a 55" TV, then it would be helpful to set the Unit Scaling inside of the Workspace Editor to, say, *1 Inch per 10 Pixels*. This would mean that each Pixel ("px") is equal to one-tenth of an inch. You can then use a tape measure to measure your screens to create an accurate representation of your physical devices.

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Note that the sole purpose of Unit Scaling is to assist you in setting up your Canvas. This setting has no impact on the actual output of PVP.

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To set up a custom Unit Scale, click on "1pt = 1px" in the lower right of the Workspace Editor. Click on the up/down arrows in the middle to change the Unit.

Available Units are:
- Points ("pt", an arbitrary point value)
- Inches ("in")
- Feet ("ft")
- Millimeters ("mm")
- Centimeters ("cm")
- Meters ("m")

Change the number on the left and/or the right to adjust the ratio between the Unit and the pixels inside of the Workspace Editor. Click on **Reset to Default** to reset the feature to the default settings (1pt = 1px). Click outside of the Unit Scaling window to close the window.

## Background Image

The **Background Image** feature (accessible by clicking the Background Image button ⛰ in the lower right of the Workspace Editor) allows you to add an image as the background of the Workspace Editor. This can be helpful to line up Screens and Targets if you already have a diagram or a photo of your physical devices.
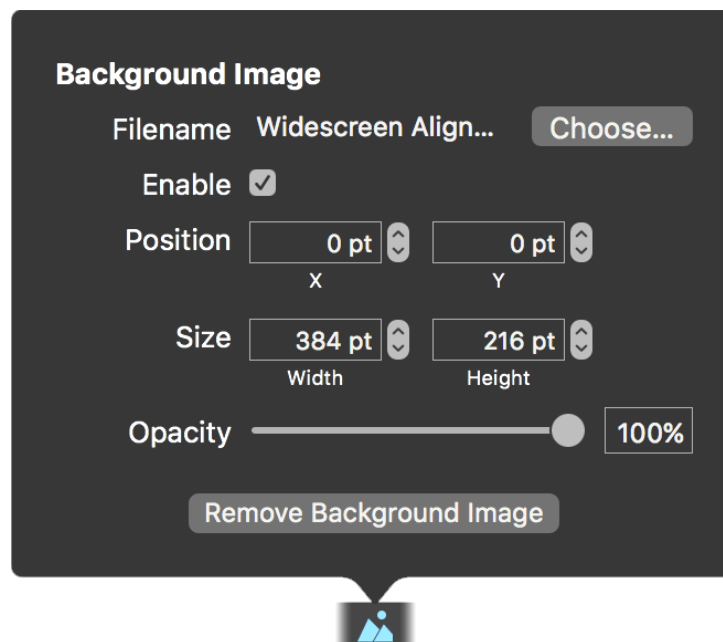


We recommend a .jpg or .png file for use as your Background Image, however this feature will support a wide range of still image file formats.

Click on **Choose...** to select an image file to use as your Background Image. You can toggle the feature on and off by clicking on the box next to **Enable** or by holding the Option key while clicking on the Background Image button ⛰. (This will allow you to hide the Background Image without it losing the settings.)

The **Position** and **Size** options will allow you to enter a specific coordinate and size for the image; you can also click and drag the bounding boxes around the background image itself. (These bounding boxes are only visible while the Background Image window is open.)

The **Opacity** slider allows you to adjust the transparency of the Background Image if needed. Click on **Remove Background Image** to remove the Background Image altogether. Click outside of the Background Image window to close the window.

## Guides

PVP allows items inside of the Workspace Editor to "snap" to **Guides**; you can adjust these Guides by clicking on the Guides button ↤↦ on the lower right of the Workspace Editor.
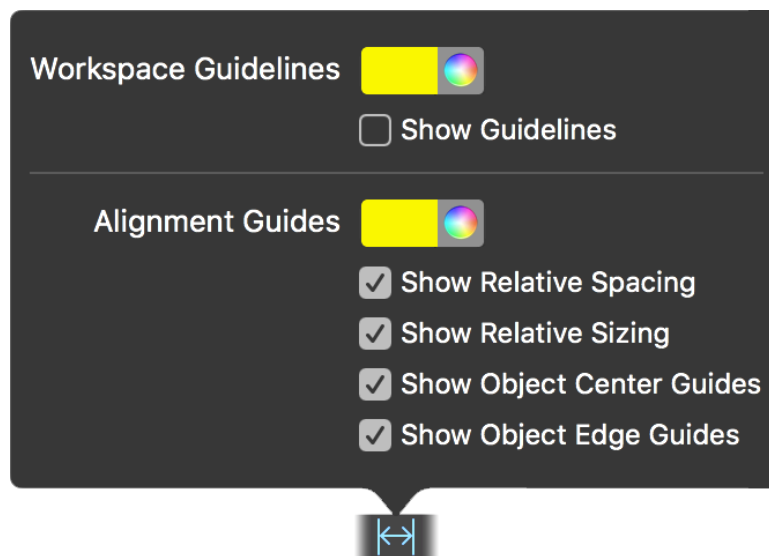


**Workspace Guidelines** are guides that you can add yourself to your Workspace Canvas so that you can "snap" your objects to a predefined coordinate.

Note: To create Workspace Guidelines you must have the Rulers feature enabled.

Once you click the checkbox next to **Show Guidelines** you can then create as many Guidelines as you would like. For a vertical Guideline, hover your mouse over the Ruler on the left side of the Canvas then click and drag onto the Canvas. Release the mouse where you want your Guideline to be placed. Horizontal Guidelines can be created by clicking and dragging from the Ruler on the top of the Canvas. To remove a Guideline, click and drag it up (for horizontal Guidelines) or to the left (for vertical Guidelines) and release the mouse when the ⊗ icon appears.

**Alignment Guides** will have objects snap to other objects that are in the Canvas. For example, if you are dragging some Screens around and you want them to all snap to the same distance apart, turn on **Show Relative Spacing**, set up two Screens at the desired distance, and then future screens will snap to their relative spacing. **Show Relative Sizing** works similarly in that it will have objects snap to the same size as other objects. If you want for your objects to snap to the centers and/or edges of other objects then you can turn on **Show Object Center Guides** and/or **Show Object Edge Guides**.

Each of these sections can have their own colors. Click on the color swatch to select a color (and optionally transparency) of that item. Hold Option when you click on the Guides button ↤↦ to quickly enable/disable this feature. Click outside of the Guide window to close the window.

## Grid

To add a grid of lines to the Workspace Editor to help align your objects click on the **Grid** button ⊞ in the lower right of the screen.
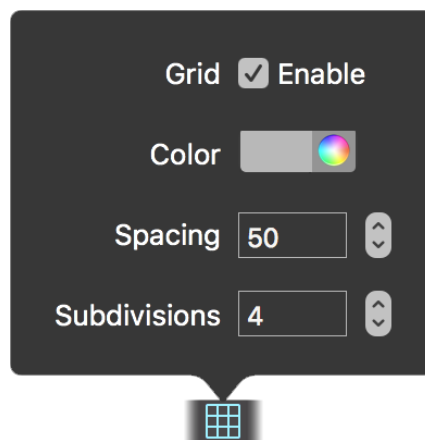
To toggle this feature, toggle the checkbox next to **Enable**, Option-click on the **Grid** button ⊞, or press Command-Option-Apostrophe. Click on the **Color** option to select which color you would like to use for your Grid.

You can adjust the spacing of the Grid by setting the **Spacing** (the space between the major lines) and **Subdivisions** (minor lines that appear between the major lines). Click outside of the Grid window to close the window.

## Rulers

The Workspace includes a set of **Rulers** that will show on the top and left edges of the screen to better help you see the positioning of the objects in the Workspace.



You can enable and disable the Rulers by clicking on the Rulers button ⌗ in the lower right of the Workspace Editor or by pressing Command-R.

## Zoom

To adjust the zoom level of the Workspace Editor select the **Zoom** button 🔍 in the lower right.
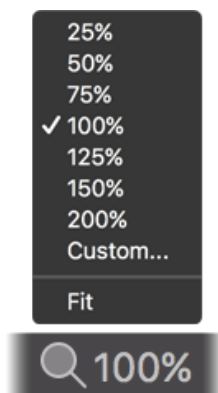


You can select a predefined value or you can select **Custom...** to enter your own value. To have PVP zoom so that you can see everything on your screen, select **Fit**, Option-click on the Zoom button 🔍, or press Command-0. Click outside of the Zoom window to close it.

# Interacting with Objects

There are several ways you can interact with objects (such as Screens, Targets, and Masks) in the Workspace Editor. Here are a few quick tips to get more out of PVP:

- Click and drag an object to position it where you want it to be
- Hold down the Shift key while dragging a bounding box to lock the aspect ratio
- Hold down the Command key while dragging a bounding box to scale from the center of the object instead of the far corner of the object
- Hold the Option key when you click and drag an object to copy (duplicate) that object
- Hold the Command key and hover your mouse near a bounding box to turn the cursor into a Rotate curser

To **Align** multiple objects, select multiple items, then, from the menubar, select Editor and click Align; from here you can align your items horizontally or vertically. Similarly you can select multiple items and select **Distribute** from the Editor menu to distribute your items horizontally, vertically, or evenly.

# Screens

The **Screens** tab inside of the Workspace Editor allows you to set up digital representations of your physical devices inside of PVP. Remember to read the Terminology section for an overview of the new terminology in PVP 3.

One additional term that will be used in this User Guide is the idea of **Linking** Screens. To Link a screen is to assign a Screen inside of PVP to either a device or, in some cases, a piece of software. It is this Link that allows PVP to know where to send the content.

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Note that Screens don't have to be Linked.
You can create a Custom Screen that is not linked to a specific device
or, in rare cases, you might have an Unconfigured Screen.

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## Screen Types

There are multiple types of Screens that PVP can output to. There is a list explaining the different connections in the Setting up your Outputs section, but there are two more types that need to be covered:

**Custom Screens** allow you to create a Screen that is not Linked to any particular type or device (that is, they are Unlinked at creation). Think of it as a blank slate that you will fill in (Link) later.

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Custom Screens are great for creating a Show when you don't have direct access to the hardware; simply create the Custom Screens now and Link them later!

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**Unconfigured Screens** can happen if you have a device is unplugged or is otherwise unable to be linked properly. You can relink it by clicking on the Screen and selecting a new Output from the Output menu.

# Create New Screen

To create a new Screen click the **Create New Screen** button on the top of the Screens tab. It will prompt you to select which type of Screen you would like to create.

## Configured Screens

The **Configured Screens** section will show a list of all of the Screens that are currently set up in your Show. Click on one of the Screens in the list to select it; click and drag on the name of a Screen to rearrange the order of Screens; click on a Screen and press the Delete key to delete a Screen.

This window will also show you the Linked status of your Screens. To the right of the screen name are some brackets; Green brackets ∞ indicate a Linked Screen, Orange brackets ⊂ ⊃ indicate a Custom or Disconnected Screen.

## Identifying Outputs and Screens

Sometimes, during setup, it can be helpful to be reminded which Screens and Outputs have been set up and how they have been Linked. To help with this there are options to help identify your Screens and Outputs.

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*Note that PVP's output must be turned on (Command-1) before these features can be used.*

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Clicking on **Start Identifying Screens** will toggle PVP's output to show you information for each of your linked Screens/Outputs. This is helpful if you are trying to set up multiple devices and you need to see which one is linked inside of PVP.

The **Start Identifying Outputs** button is similar, however instead of showing the entire resolution of the Output, it will show you the resolution of your Output
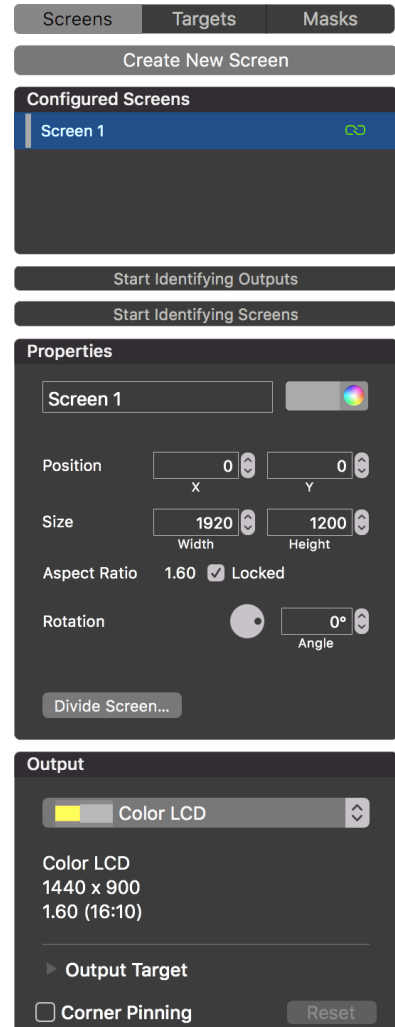
Target. This is helpful if you have used the Divide Screen option to create multiple Screens from one output, or if you have otherwise used the Output Target feature to show only a subset of the Output on your physical device (such as if you are using an LED wall).

## Properties

In the **Properties** section you will adjust the properties of a selected Screen. Adjust the **name** and **color** of the Screen at the top of the section, and below that you can see/adjust the Screen's **Position** and **Size**.

Note that the color of the Screen is only for organizational purposes; it doesn't affect the output.
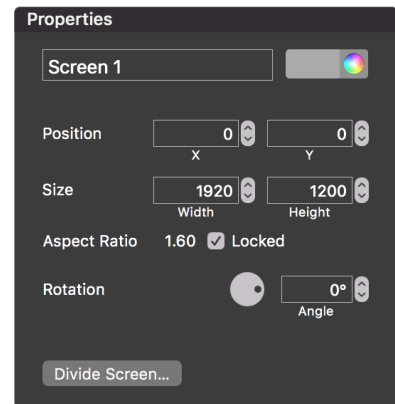
You can adjust the **Aspect Ratio** of the screen as well as control if the Aspect Ratio is **Locked** (changing either the Height or Width will also change the other one to keep the same Aspect Ratio) or Unlocked (changing one will not change the other). You can also adjust the Screen's **Rotation** by clicking and dragging on the wheel or manually entering a number.

Sometimes you want to create one Output, but you want to divide it up between multiple physical devices. One common example for this is the use of a Matrox TripleHead2Go which tricks the computer into seeing one external monitor then dividing that output to go out to three different devices. One quick way to set this up inside of PVP is to click on **Divide Screen...**; doing so will allow you to specify how many **Rows** and **Columns** you want the divided Screen to be. Once you click **Divide** it will cut the one screen up into smaller chunks that you can then move around the Workspace Editor as needed.

## Output

The **Output** option allows you to link a physical device to the **Screen** (which is the digital representation of that device).
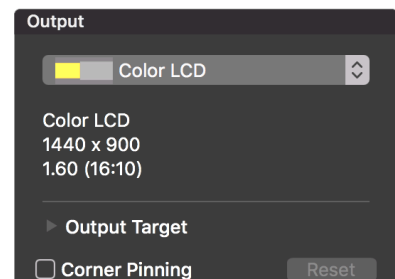
Click the drop-down menu to select which device you would like to link to your Screen. The parameters of the Output are editable after you have selected the correct link.

## Alpha Key

If you are using an SDI, NDI, or Syphon output, you can send an output with an alpha value for the purpose of keying outside of the software, which we call Alpha Key.  For specifically SDI or NDI, a check box for Alpha Key will appear allowing you to enable this key output while Syphon will do this automatically.  Enabling Alpha Key will allow PVP to provide perfectly keyed alpha-channel support for text, graphics and video.

For SDI, you will need a supported Blackmagic device that supports alpha key.  A list of supported devices can be found here.
You will be given the option for an Internal Key or External Key.

**Internal Key:**  This is a downstream key.  For example, if you are using PVP with a video input coming into the BlackMagic device, the BlackMagic device would act as the keying device placing the alpha key output from PVP over the video input signal.  The output of the BlackMagic device would be the composite output of the two inputs (Alpha Key from PVP and the video input).
**External Key:**  This is a linear key.  This would send a separate key and fill output to your broadcast switcher.  It sends the key and fill signals through two different output spigots on the BlackMagic device.
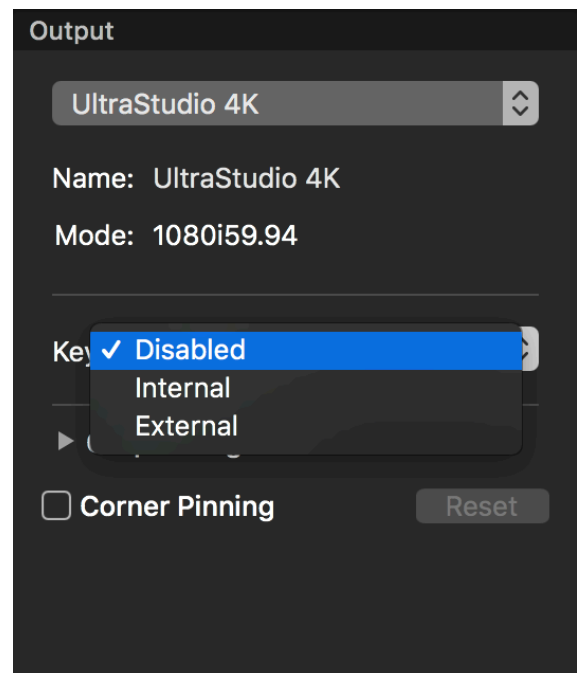
For NDI, simply checking the box will send an RGB-A signal out over the network. This is adding an Alpha channel to the output and then allows for overlay through your switcher or another source receiving the NDI signal.

Syphon will work this way automatically if the content being sent has an alpha channel in it already.

## Output Target

Some devices require that only a subset of the device has the output turned on. For example, many LED walls will require a 1920x1080 signal from the computer even though the wall itself has far fewer pixels.

The **Output Target** feature allows you to select a subset of the Output that PVP will use. Click the disclosure triangle ▶ next to Output Target to expand this area of the window. Set the **Position** and **Size** properties to the necessary resolution and position for your device. Click the checkbox next to **Locked** to lock the Aspect Ratio.

Click **Visual Editor** to see a visual representation of the full output on the Canvas. You can click and drag this new box to adjust the Output Target visually. Click on **Reset** to reset the Output Target settings.
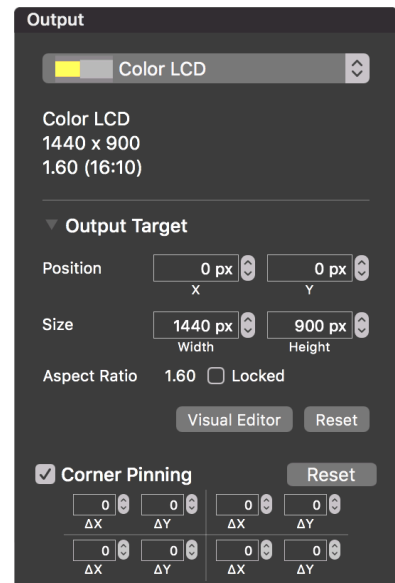
## Corner Pinning

If you need to fix a keystone issue (such as if your projector is not perpendicular to your screen) then you can use the **Corner Pinning** feature inside of PVP.

Check the checkbox next to Corner Pinning to enable this feature. You will see eight number boxes, two for each corner of the Screen. Manually enter a number or use the arrow buttons to adjust each value as needed; you will see a representation of the fix in the Canvas.

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Note that the Corner Pinning feature uses Delta Δ values; that is they represent the difference values from the coordinates of the original point. These values can be positive or negative and are limited to 25% of the resolution of the Screen.

# Edge Blending

PVP's **Edge Blending** feature allows you to set up and adjust edge blended projectors.

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Note that you can add as many screens to an Edge Blend as you want. You can create horizontal Edge Blends and vertical Edge Blends, however you cannot have a group of screens that are in both a horizontal and vertical blend configuration.

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To create an Edge Blended Screen, first create at least one Screen in the Workspace Editor. Then either right-click on the Screen and select one of the Edge Blend options or hover your mouse over the edge that you desire to use for the Edge Blend and click when you see the **Add Edge Blend** icon ⊕. Select an existing Screen or create a new Screen to generate an Edge Blend.

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If using the hover method, the edge that you hover the mouse over will be the side that the Edge Blend will be added to. Thus, if you want the current screen to be the left side of the Edge Blend, hover your mouse over the right edge as that is where the next Screen will be added.

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Once an Edge Blend has been created, all of the Screens that are linked to that Edge Blend will be locked together in the Workspace Editor, so clicking and dragging on any of the Screens will move all of the linked Screens.

When you select an Edge Blend the Screens pane on the right will change to allow you to control your Edge Blend.

## Configured Screens

When you create an Edge Blend the Configured Screens pane will update to list the Edge Blend as its own object and list the defendant screens below the Edge Blend name.
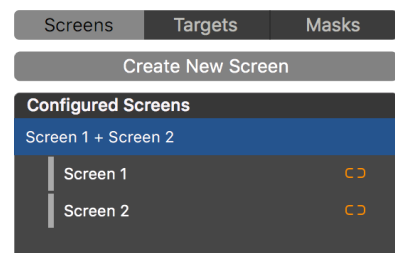
## Properties

If you have an Edge Blend selected then in the
Properties pane you can edit the **Mode** of the Edge
Blend by selecting **Linear**, **Cubic**, or **Quadratic** from
the drop-down menu. The **Radius** and **Intensity** of the
Edge Blend can also be adjusted as needed.

If you have selected an individual screen inside of an
Edge Blend then the Properties tab will add a **Gamma**
and **Black Level** option; these options will affect the
overall look of that Screen.
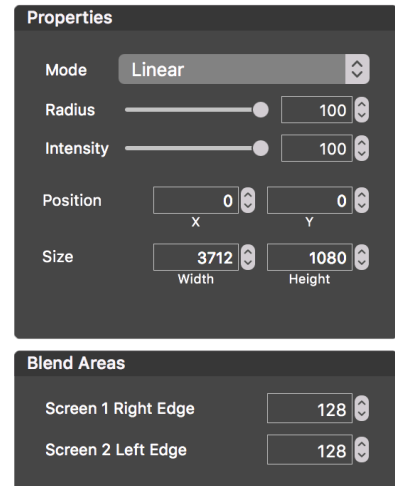
## Blend Areas

To adjust the amount of area that will be blended, select the Edge Blend and either
manually adjust the number in the **Blend Areas** tab or click and drag the blue
circles on the edges of the blue rectangle that represents the blended area.

Note that if all of your Edge Blended Screens are the same resolution, then any
Blend Areas listed will be the same; however if there are Screens of different
resolutions then the Blend Areas will automatically adjust and show different values.

# Targets

**Targets** are where your content will play. You will first set up a **Target Set** (which is a group of Targets), then set up your individual Targets. After you set up your Targets you will need to apply each Target Set to a Layer (which will be covered in the <u>Layers</u> section). Click on the Targets tab in the Workspace Editor to get started.
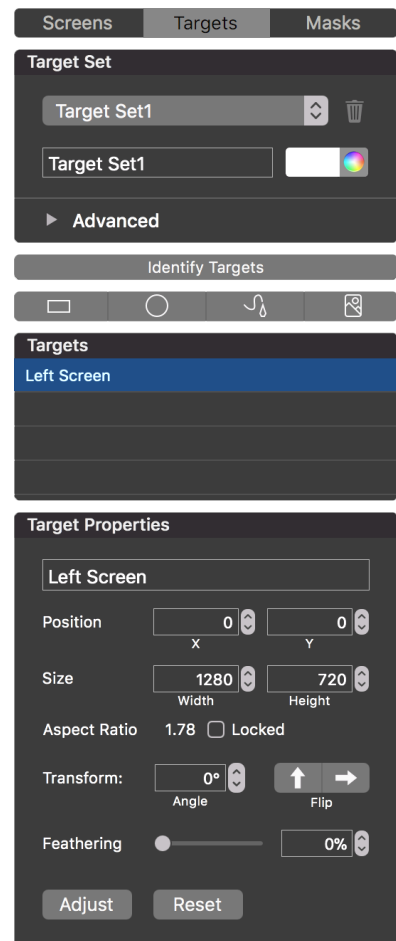
## Target Set

Target Sets are groups of Targets that you will then later attach to a Layer to show back the content.

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Note that the functionality of Target Sets is very different between PVP 2 and PVP 3. In PVP 2, Target Sets were an optional feature that was a subset of Targets. In PVP 3, Target Sets are required; you can't have a Target unless it is inside of a Target Set.

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### Configuring Target Sets

To create a new Target Set, click on the drop-down menu and select **Create new Target Set...** To select a different Target Set, click on the drop-down menu and click on the desired Target Set. Click on the trash can 🗑 to delete the currently selected Target Set.

Change the text in the text box to rename the current Target Set. To change the color of the Targets inside of a Target Set (the color of the outline as well as the internal color of the Target if you are using the default Test Image) click on either the color box (to select from a pre-defined set of colors) or the color wheel (to select a custom color).

## Advanced

By default your Targets will feature a **Test Image** that features a grid, circles, and lines to help you identify your Targets. To customize this Test Image, click on the disclosure triangle ▶ next to Advanced in the Target Set window.

The **Size** option will allow you to adjust the render resolution of the Test Image. Use this to adjust the grid size of the Test Image (as an example).
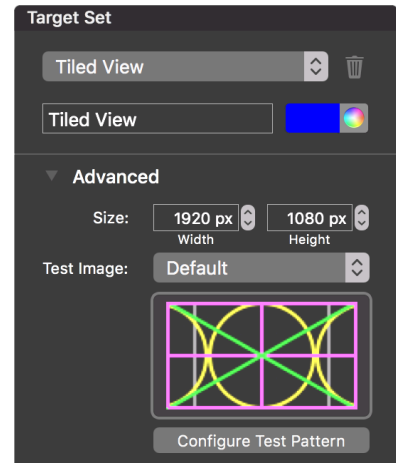
There are multiple default patterns that you can choose from inside of PVP. Click on **Configure Test Pattern** to select a built-in pattern or to customize the pattern that you have selected. Here are the patterns you can select from:

- Blend Grid (default)
- Color Bars
- Focus
- Gray Scale
- Black Color
- White Color
- Custom Color

To set your own Test Image click on the drop-down menu next to "Test Image:" and select **Custom**, or drag a still image from the Finder on top of the image below the drop-down menu. You can always select a different Custom Image or go back to the **Default** image.

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*We recommend a .jpg or .png file for use as your Test Image,*
*however this feature will support a wide range of still image file formats.*

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# Identify Target

Sometimes it is helpful to identify where your Targets are showing on the actual devices themselves. Clicking on the **Identify Targets** button will overlay the Test Image on top of the Outputs so that you can visually see how the Targets are set.

This is rendered in real time so you can turn on the feature and click and drag your targets around to see what they will look like as you drag them.

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## New Targets

Inside of each Target Set you can have as many **Targets** as you would like.

Under Identify Targets you can select one of the buttons to create a new Target in one of four shapes: Rectangle, Ellipse, Custom, and Image.

**Rectangles** and **Ellipses** (sometimes called Ovals) are pretty straightforward; they have a Height and a Width and a position (X and Y coordinates on the Canvas). To create one of these Targets, click the Rectangle Target button ▭ or the Ellipse Target button ◯ and a Target will be created. (PVP will guess where you want the Target to be created, but you can always move and resize the Target as needed.)

The **Custom Target** tool ⌇ allows you to draw your own Targets via a Pen tool. To create one of these Targets, select the Custom Target tool then click on anywhere in the Canvas; this will set your first point. You can then click additional points to make corners in your Target. If you click and drag a point it will create a bezier curve. When you are done with your shape, press Escape on the keyboard, click on the first point again or double-click the mouse to close the shape.

If you need to edit the Custom Target after it was created, double-click on the edge of the Custom Target and you can adjust your points as needed.

The **Image Target** tool ▧ allows you to import an image to use as your Target shape. PVP will use the Alpha channel (transparency) of the image to create a Target Shape.

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We recommend a .png file with transparency for use as your Image Target, however this feature will support a wide range of still image file formats.

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If you want to create a Target that fills a Screen then there is a quick tool for doing that: Right-click on a Screen and choose **Add Target to [Screen]**. This will create a Rectangle Target that fills your Screen edge to edge.

## Target List

Below the New Target buttons is the **Target List** (labeled as "Targets"). This window will list all of the Targets in the selected Target Set as well as show you which order they are in. You can select a specific Target (say, if one is behind another one) by clicking on its name in this list. To reorder the Targets in the Target Set, click and drag the desired Targets to a new location in the list.
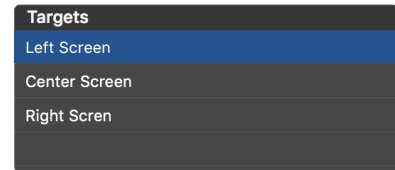
## Target Properties

To adjust the properties of a selected Target head to the **Target Properties** window. You can change a Target's name by typing a new name into the text box. Select and type new numbers or use the arrow buttons to manually adjust the **Position** (X and Y coordinates) and **Size** (Width and Height) of a selected Target.
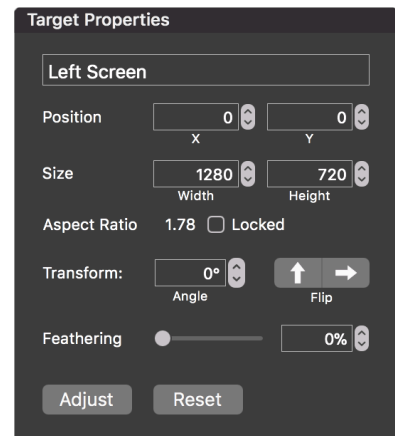
Next to **Aspect Ratio** it will show the Target's aspect ratio. Click **Locked** to lock the aspect ratio of a Target.

To rotate a Target, type in a new number or use the arrow buttons next to **Rotation**. Click the **Vertical Flip** or **Horizontal Flip** button to flip the content in the Target. To feather the edges of a Target, use the slider, type in a number, or use the arrow buttons next to **Feathering**. Click the Reset button to reset the properties back to default.

# Custom Scale Editor

There may be an instance where you want to have a Target that automatically crops an image or adjusts it to a different aspect ratio than what the Target itself has. You can use the **Custom Scale Editor** to get this result.

> Note that you can use the Custom Scale Editor to crop the edges of media
> that plays inside of a Target, however it cannot be used to make
> the media smaller inside of the Target.

Open the Custom Scale Editor window by pressing the **Adjust** button at the bottom of the Target Properties window or by double-clicking on a Target. (The Custom Scale Editor will appear below the Target Properties window.)
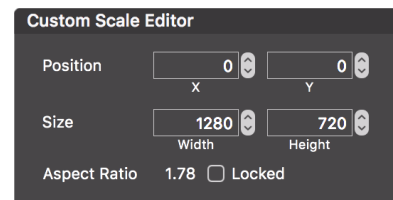
To visually adjust the Custom Scale, click and drag one of the black bounding boxes at the edges of the Target. (Remember that you can only drag the boxes away from the Target, you cannot make them smaller than the Target itself is.) You can also type in custom numbers or use the arrow buttons to manually adjust the Position and Size of the Custom Scale. You can see the current aspect ratio as well as lock the aspect ratio at the bottom of the Custom Scale Editor window.

To reset the Custom Scale back to the default settings, click the Reset button.

# Masks

There may be setups where you want to mask the output of PVP so that it doesn't show an image where you don't want it to. For example you may need to mask a projector that is overshooting your intended area, or you may need to mask around an architectural feature where you want nothing projected.

The Mask feature of PVP allows you to cover up a part of your Master Output so that no content is shown in that area

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Note that while the Mask feature allows you to set colors of your Masks, this is only for organizational purposes. All Masks inside of PVP will output as a solid black overlay on top of your Output.

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You can create as many Masks as you want, but only one Mask may be active at any given time. In addition to that, each Mask is made up of one or more Shapes; these Shapes control where the Mask will show on your devices.

## Mask Management

If you do not have any Masks created (such as when you are setting up your first Show), when you click on the Mask tab in the Workspace Editor you will see a button that says **Create New Mask**. Click on this button to create your first Mask.
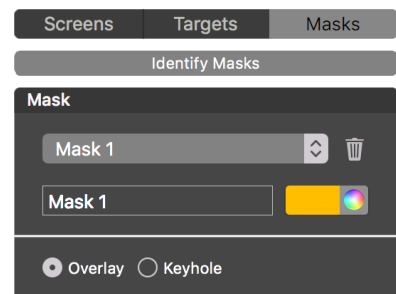
To create additional Masks, click on the drop-down menu and select **Create new Mask**. To select a different Mask, click on the drop-down menu and click on the desired Mask. Click on the trash can 🗑 to delete the currently selected Mask.

Change the text in the text box to rename the current Mask. To change the color of the Mask click on either the color box (to select from a pre-defined set of colors) or the color wheel (to select a custom color).

Click on **Identify Masks** to show the currently selected Mask on the output with the names of the Shapes; this may help in aligning or otherwise setting up your Shapes.

Selecting the **Overlay** button will set the Mask so that the shapes cover up whatever image is below it. Select **Keyhole** to invert the mask so that the shapes are the portion of the image that is showing and the rest of the output will be covered up.

## New Mask Shapes

Masks are made up of one or more **Shapes** that control where the Mask will be shown on the screen. The leftmost button in the Mask Shapes row is the **Selector Tool** ⬚; this tool allows you to select one or more shapes in the Editor.

Next to the Selector tool are four buttons for creating shapes inside of the currently selected Mask: Rectangle, Ellipse, Custom, and Image.

**Rectangles** and **Ellipses** (sometimes called Ovals) are pretty straightforward; they have a Height and a Width and a position (X and Y coordinates on the Canvas). To create one of these shapes, click the Rectangle Mask button ▭ or the Ellipse Mask button ◯, then click and drag on the Canvas to create the Shape.

The **Custom Mask** tool ⎯ allows you to draw your own shape via a Pen tool. To create one of these shapes, select the Custom Mask tool then click on anywhere in the Canvas; this will set you first Point. You can then click additional points to make corners in your shape. If you click and drag a point it will create a bezier curve. When you are done with your shape, press Escape on the keyboard, click on the first point again or double-click the mouse to close the shape.

If you need to edit the Custom Mask after it was created, double-click on the edge of the Custom Mask and you can adjust your points as needed.

The **Image Mask** tool ▣ allows you to import an image to use as your Mask shape. PVP will use the Alpha channel (transparency) of the image to create a mask.

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We recommend a .png file with transparency for use as your Image Mask, however this feature will support a wide range of still image file formats.

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# Mask Shapes List

Below the New Mask Shape buttons is a list (labeled as "Masks") of all of the Shapes that are inside of the currently selected Mask. You can select a specific shape (say, if one is behind another one) by clicking on its name in this list. To reorder the shapes in the Mask, click and drag the desired shapes to a new location in the list.
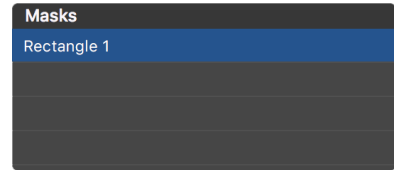
# Mask Properties

To adjust the properties of a selected shape head to the **Mask Properties** window. You can change a shape name by typing a new name into the text box. Select and type new numbers or use the arrow buttons to manually adjust the **Position** (X and Y coordinates) and **Size** (Width and Height) of a selected Shape.
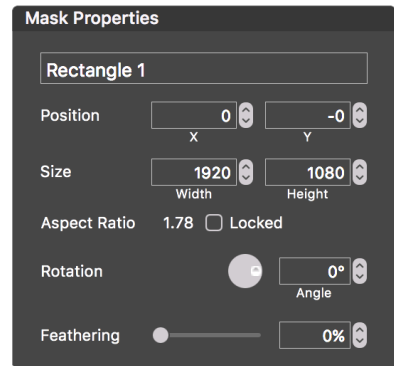
Next to **Aspect Ratio** it will show the shape's aspect ratio. Click **Locked** to lock the aspect ratio of a shape.

To rotate a shape click on the circle, type in a new number, or use the arrow buttons next to **Rotation**. To feather the edges of a shape, use the slider, type in a number, or use the arrow buttons next to **Feathering**.

# Layers



**Layers** are capsules for how to control the playback of your media. A layer can have a Target Set selected (which is how it determines where the media will play); in addition to that, you can control many other properties and effects of the media that is playing through that Layer.
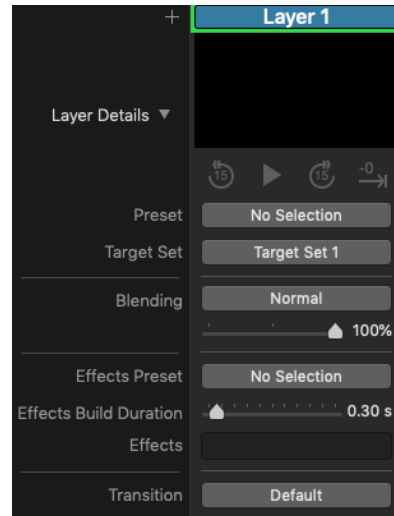
Your Layers are listed across the top of the primary PVP interface. Each Layer has a name as well as a color associated with it for organizational purposes. Below the Layer's name is a preview of the media that is currently playing back in that Layer.

Select and Target a Layer by clicking on its name. If the **Sidebar** is enabled (by clicking on the Sidebar button 🔲 on the top right of the screen) you can access and edit the properties of the currently selected Layer inside the Sidebar. Additionally you can click on the disclosure triangle ▶ next to **Layer Details** (on the left side of the Layers bar) to expand the details for each layer to see and make changes to all of the layers in the same area.

## Selected vs. Targeted Layers



There is a, important distinction to make between **Selecting** a Layer and **Targeting** a Layer. A Selected Layer (indicated by a black frame around the Layer's name) will be the layer that appears in the Sidebar whereas a Targeted Layer (indicated by a green frame around the Layer's name) is where media which has no specific target will play.
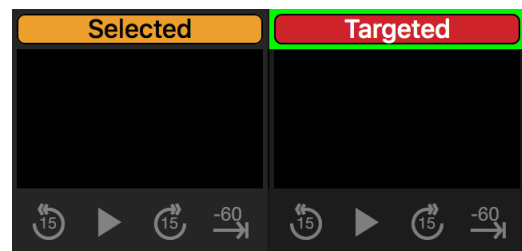
In a standard setup the Selected Layer and the Targeted Layer will be the same; left-click on the name of any Layer and it will both Select it and Target it. However there will be times where you want to Select one layer (to have it in the Sidebar, as an example) while having a different Layer Targeted.

To temporarily Select a Layer without Targeting it, hold the Command key while clicking on the Layer's name; this Layer will stay Selected until you Select (such as by left-clicking) on another Layer.

You can also **Lock** a Layer as Selected. One way to Lock a Layer would be to Option-click on that Layer; this will both Select and Target the Layer, but it will mark this Layer as Locked, meaning when you click on another Layer it will only Target it. You can also go to the menubar and select Layers > Lock Layer Selection > [Layer] or hold the Option key and press the number (1-9) corresponding to a given Layer and it will Lock that Layer as being Selected. Option-Click the Locked Layer or select Layers > Lock Layer Selection > None to turn off the Lock feature.

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Note that when any Layer is Locked as the Selection,
left-clicking will only Target the clicked on Layer.
In addition to this, the Master Layer can be Selected, but it can never be Targeted.

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## Layer Management

To **Rename** a Layer, **Change the Color** of a Layer, or **Delete** a Layer, right-click on the name of the Layer and choose the appropriate option from the menu.

There are two ways to create a new Layer. To create a new Layer on the far right of the Layer stack (it will be the "last" Layer), click on the + button on the left of the first layer. Alternately you can right-click on a Layer's name and select **Insert New Layer** to add a Layer to the left of that Layer.

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Note that you can have up to 23 Layers at any given time.

---

To move a Layer, right-click on that Layer and select **Move**, then select where you want the Layer to move to.

---

Note that the process of moving a Layer will first clear all media from all Layers.

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# Mute, Hide, and Clear

Sometimes you want to mute the audio or hide the video for a specific Layer, and other times you want to clear the media that is playing inside of a Layer. To see these functions you can hover your mouse over the media preview for that Layer.
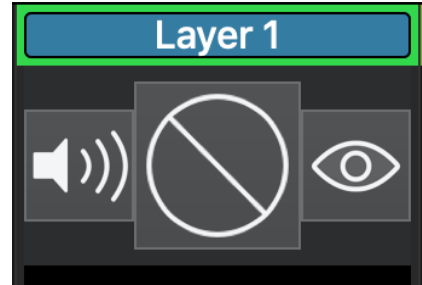
Click on the **Mute** button 🔊 to mute the audio of whatever media is being played in that Layer. Click the button again to unmute the audio.

Click the **Hide** button 👁 to hide any visual media that is being played in that Layer. Click the button again to show the visual media.

Click on the **Clear** button ⃠ to clear the media that is currently loaded in that layer. This removes the media from that layer; to show it again you would have to fire the media again.

Note that when a Layer is muted/hidden, there will be a visual indicator next to the name of the Layer.



All of these functions are also available via the Master Layer, which in turn controls all other Layers. That is, if you Mute or Hide in the Master, then the entire output of PVP will be muted/hidden and Clearing the Workspace will remove media from all Layers.

# Playback Controls

Below the preview are some **Playback Controls** to control video and audio that is playing in that Layer. Use the **Play/Pause** button ▶ / ❚❚ to pause or play the media, or use the **Skip Backwards/Forwards** buttons ↺ / ↻ to skip backward or forward 15 seconds.

Use the **Go To End** button ⏭ to skip directly to the end of the media; this is helpful if you want to jump directly to the End Behavior of the media such as looping a video back to the beginning or going to the next piece of media. You can also right-

click (or click and hold) on the Go to End button and choose how far from the end you want to jump to (90 seconds, 60 seconds, 30 seconds, 10 seconds, or directly to the end).

If you have the Sidebar open (by clicking on the Sidebar button ▣ on the top right of the screen) you will see all of these features plus an additional **Go To Beginning** button ↤⁺⁰ which you can similarly right-click on (or click and hold) and choose a length from the beginning that you want it to jump to.

---

Note that when you change the Go To Beginning or Go To End time, all instances of that button across PVP change to match the new setting.

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## Layer Presets

**Layer Presets** allow you to create a pre-configured list of settings for your Layers; this provides a way for you to set up all of the settings for a Layer and save those settings for later recall.

To create a Preset, first set up your Layer with all of the features in the settings that you want it to be saved in, then select the drop-down menu in the Preset area and choose **Save As...** This will show a window where you can name your Preset. Once you save your Preset you can choose the Preset drop-down menu in any Layer and select your saved Preset; when selecting a Preset the Layer's properties will be updated to match that Preset.
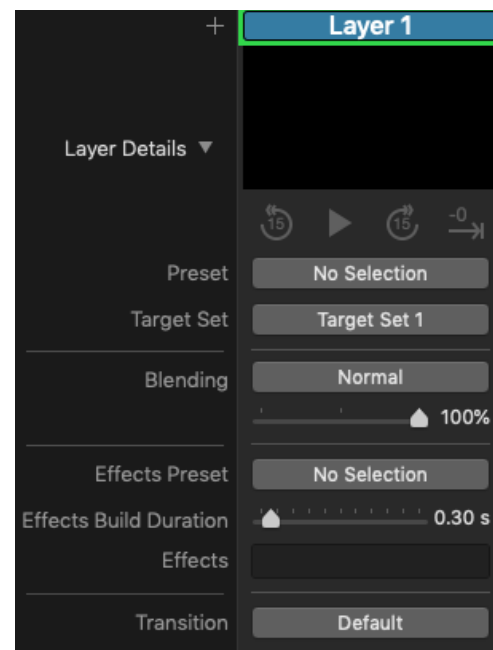
If you have a Preset applied to a Layer and you change a property of that Layer then the Preset will be marked as "changed" by showing an asterisk * next to the name of the Preset. If you want to update the Preset to save these changes you can click on the Preset drop-down and choose **Save**.

You can click on the drop-down menu and select **Unlink Preset** to remove the link to the Preset. To delete a Preset, click on the drop-down, hover your mouse over the name of the Preset, and select Delete.

# Target Sets

The **Target Set** is where the media will play on your screens. Click the drop-down menu to select which Target Set will be applied to this Layer. You can also select **None** to have no Target Set selected (such as if you want a Layer to be audio only).

For more information on how to create and edit Target Sets see the Target Set section under the Workspace Editor heading.

# Blend Modes

PVP 3 offers the ability for Layers to have a **Blend Mode**. This means that Layers can interact with other Layers in creative ways. Specifically you can set a Blend Mode which will have the given Layer interact with the content that is showing below that Layer.

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Explaining how each Blend Mode interacts with the content below it is outside the scope of this User Guide; there are many such guides online that can inform you as to how to get the look you are wanting by using Blend Modes, or experiment and create your own unique looks!

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To select a Blend Mode, click the drop-down menu and select the desired Blend Mode. To reset this feature, click the drop-down menu and select **Normal**.

For a list of the Blend Mode that PVP offers reference the Appendix.

You can also adjust a layer's Opacity so that it can be transparent (0%), opaque (100%), or somewhere in between.

Matte Blend Modes are available for showing transparency from one layer to the next.  More information on this can be found in our KnowledgeBase here.

# Effects

You can apply one or more **Effects** to your Layers to customize how the Layer will display on the output. You can manually add individual or multiple Effects to each Layer (there is no limit to the number of Effects that can be on a layer), or you can use Effect Presets to apply multiple Effects onto a Layer at once. You can also select how long it will take for the Effect(s) to transition onto the output.

To create an **Effects Preset**, first set up your Layer with one or more Effects, then select the drop-down menu in the Effects Preset area and **choose Save As...** This will show a window where you can name your Effect Preset. Once you save your Effect Preset you can choose the Effect Preset drop-down menu in any Layer and select your saved Effect Preset; when selecting an Effect Preset the Layer's Effects will be updated to match that Effect Preset.

If you have an Effect Preset applied to a Layer and you change an Effect of that Layer then the Effect Preset will be marked as "changed" by showing an asterisk * next to the name of the Effect Preset. If you want to update the Effect Preset to save these changes you can click on the Effect Preset drop-down and choose **Save**. If you want to save this version as a separate Effect Preset, click on the Effect Preset drop-down and select **Save As...**; enter a new name and a new Effect Preset will be created.

To remove all Effects from a Layer click on the Effects Preset drop-down and select **Remove All**. To see all of the Effects that are inside of an Effect Preset, click on the Effect Preset drop-down and hover your mouse over the name of the Effect Preset. To delete an Effect Preset, click on the Effect Preset drop-down, hover your mouse over the name of the Effect Preset, and select **Delete**.
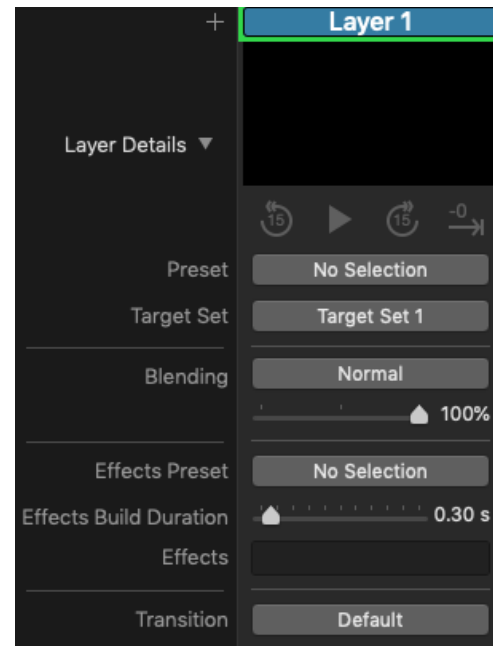
To change the length at which the Effect will transition onto the screen adjust the **Effects Build Duration** by dragging the slider or, in the Sidebar, manually entering a number into the box.

To add an **Effect**, hover your mouse below the Effects Build Duration slider and click the + button, then select the desired Effect. Once you have added an Effect to a Layer you can temporarily toggle an Effect by clicking the checkbox next to the name of the Effect. Click the down arrow ⌄ to the right of the Effect name and select **Remove Effect** to remove the Effect, or select a different Effect to change that Effect to a different Effect.

Many Effects have parameters that you can adjust. These parameters are automatically shown in the Sidebar; in the Layer Strip you can click on the name of the Effect to access these parameters.

For a list of the Effects that PVP offers reference the Appendix.

## Transitions

Each Layer can have its own **Transition** applied to it. If you apply a Transition to a Layer then any media that is played in that Layer will use the appropriate Transition instead of the Transition that is selected in the Master Layer.
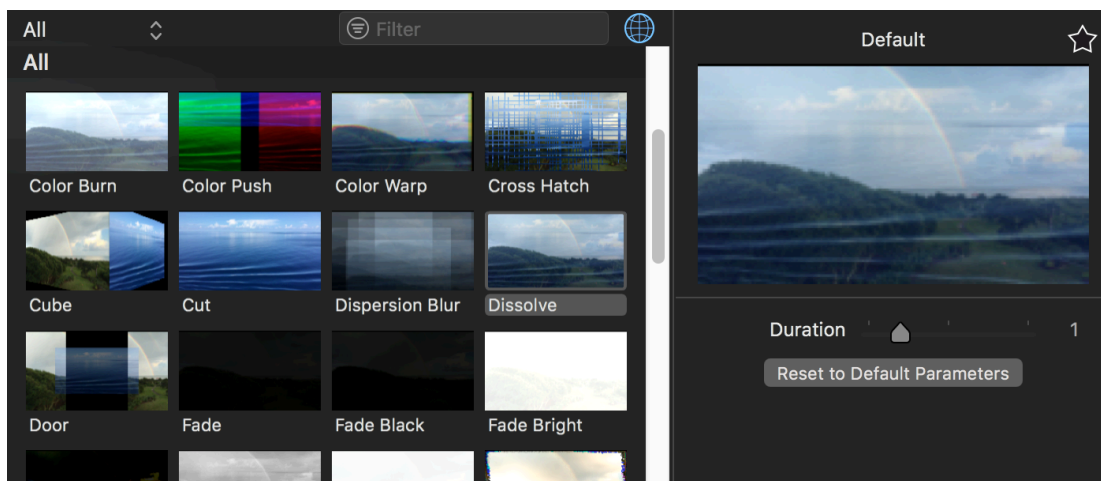


Note that a Layer's Transition will trump the Master Transition, however if the Media that you fire has its own Transition then this, in turn, will trump the Layer Transition.

In the Sidebar the Transition preview and its parameters are always available to be viewed and edited. In the Layer Detail view click on the name of the Transition to view these features.

Click on the Transition Drop-down (will either be labeled "Default" or have the name of the currently selected Transition) to see a list of the available Transitions; click on one to select it. Scrub your mouse over a Transition preview to see a preview of that Transition.

On the top left of the Transition Drop-down you can click on the **Sort By** drop-down to limit the list to only a sub-section of Transitions. Type a phrase in the **Filter** field to search for available Transitions. In addition to an organizes list of available Transitions there is also at the top of the list your **Favorite Transitions** and **Recent Transitions**. (To clear your Recent Transitions, click on **Clear** to the right of the Recent Transitions section.)

Some Transitions have parameters that you can adjust; when present these parameters are always shown in the Sidebar; to access them in the Layer Strip you can click on the Transition Drop-down and the parameters will be shown on the right side of the drop-down. Click on the star to create a Favorite Transition.

Click the **Use Master Transition** button ⊕ to toggle the custom Transition for that layer; this will set the Transition to "Default" which will allow future media to use the Master Transition again.

For more information about Transitions visit the <u>Transitions</u> section. For a list of the Transitions that PVP offers reference the <u>Appendix</u>.

# The Master Layer

The **Master Layer** is a unique Layer which controls the overall output of PVP and thus offers you several controls above and beyond a normal Layer.

The Master Layer preview shows you all of your Screens at the same time. This allows you to see a quick and clear overview of your entire Show.

Hovering over the preview of the Master will show you the standard **Mute** 🔊 and **Hide** 👁 options which, when clicked, will toggle all of the audio/media in the entire Show. Similarly, the **Clear Workspace** ⊘ and the **playback controls** will affect all Layers; this allows you to, for example, pause all of your videos at the same time or clear all of your Layers with one click.

Click the **Output Status:** button (or press Command-1) to toggle your output on and off. When the output is turned on there will be a green light next to the Master title which will indicate that your output is on and working; if this tally light is missing then your output is turned off.

Selecting a **Mask** on the Master Layer will apply that Mask to your entire output; any time the Mask feature is enabled, PVP will display a Mask icon ⬒ next to the Master Layer name to remind you that you have Masks enabled.

The Master includes an **Effect** feature that applies selected Effects to the entire output. This section follows all of the same rules for standard <u>Layer Effects</u>; see that section for more information.

You also select your **Default Transition** in the Master Layer. This is the transition that will be used for all Media and Layers (unless it is overridden for a given Layer or media item, see the <u>Transitions</u> section for more information). See the <u>Layer Transition</u> section for information on how to use this feature.
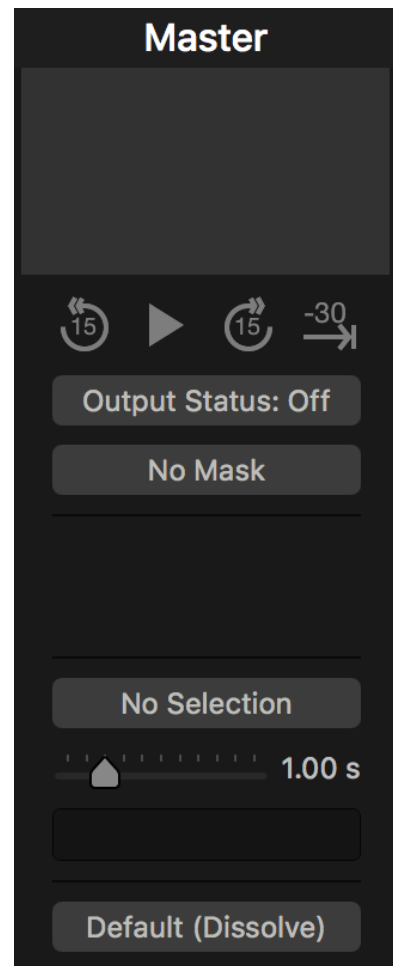
# Playlists

The left column of PVP is devoted to **Playlists**, each of which contains Actions (for telling PVP what you want to do) and your Cues (for firing one or more Actions at the same time). You can create multiple Playlists for organizing your Actions and Cues so that related items are grouped together.

## Playlist Types

There are three types of items that you can create in the Playlist area:

### Playlists
A standard **Playlist** ⊞ is a container for holding your media Cues and Actions. Create as many Playlists as you want to best organize your content.

### Smart Playlists
A **Smart Playlist** ⚙ will look at a folder on your computer and always keep your media up to date based on what is in that folder.

For example, let's say you have your media already organized into a folder on your computer. You can add this folder into PVP as a Smart Playlist at which point PVP will actively look at that folder and relay its contents into your Smart Playlist. Any media that is added or deleted from the folder on the computer will automatically be similarly changed in your Smart Playlist.

### Groups
A **Group** ◼ is a folder to organize your Playlists. You cannot add Actions or Cues into Groups directly, you can only add Playlists, Smart Playlists, and other Groups into a Group folder.
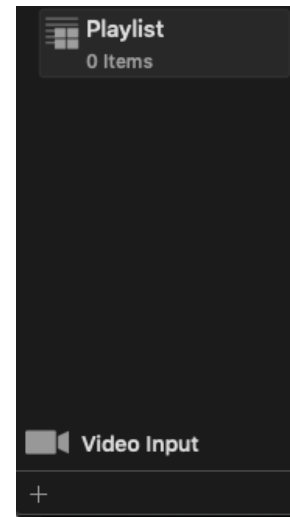
# Managing Playlists

To add a Playlist click the + button at the bottom left of the Playlist area or right-click on a Playlist and select New, select which type of Playlist you would like to create. Press Command-N to create a new standard Playlist. To rename a Playlist, right-click on the playlist and choose Rename. To delete a Playlist, select it and press the delete key on your keyboard or right-click on the item and choose Delete. Duplicate a Playlist by right-clicking on the Playlist and selecting Duplicate or by pressing Command-Shift-D.

# Secondary Playlist

Sometimes you want to have two different Playlists open at the same time so that you can fire content from different areas, or maybe you want to be able to see two separate locations inside of one Playlist at the same time. In PVP 3 we added a feature called **Secondary Playlist** which allows you to do precisely that. By holding the Option key while clicking on a Playlist or, in the menubar, selecting Playlist > Secondary Playlist > [Playlist], it will open that playlist in a secondary window below the primary Playlist for extra access to your content.
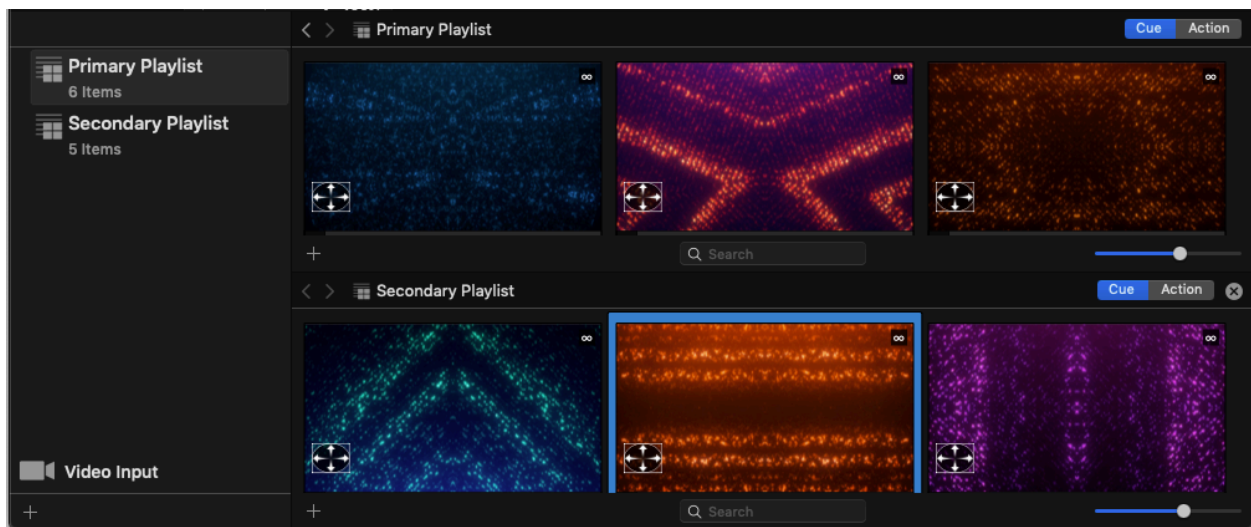


You can choose between a horizontal or vertical orientation of the Secondary Playlist by selecting in the menubar Playlist > Secondary Playlist Orientation. Close the Secondary Playlist by clicking on the ⊗ in the top right of the Secondary Playlist or, in the menubar, selecting Playlist > Secondary Playlist > None.

# Video Input Playlist

The **Video Input Playlist** can be accessed by clicking on the ◼◀ **Video Input** button on the bottom of the Playlist area. This is a custom playlist type that will show live previews of all of your Video Input Actions. This allows you to see all of your video input feeds at once and fire them directly as needed.

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*Note that video inputs will show live previews while inside of the Video Input Playlist, however they will not show live previews if you copy the Actions to other playlists.*

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Add Video Inputs to the Video Input Playlist by clicking the + in the lower left and selecting your desired Input.  If you have not created an Input, you will be directed to **Video Input Setup** from the + menu.

**Video Input Setup** is done in the Video Input tab of PVP Preferences.  For information on defining your inputs, reference the Video Input Setup section.

# Set Targeting Layer

By default media that has not been attributed to a specific Layer will play in the currently Targeted Layer. Setting a Playlist's **Targeting Layer** will override this function and assign a specific Layer for any media that is not already assigned to a specific Layer.

To assign a Targeting Layer to a Playlist, right-click on the Playlist and select **Set Targeting Layer**, then select the Layer in which you want the media to play in. You can also select the desired Playlist then, in the Menubar, select Playlist > Set Targeting Layer, then select your desired Targeted Layer. This will show a bar to the right of the Playlist name matching the color of the Layer that is Targeted so that you can easily see which Layer the media will play in.

To turn off this feature for a Playlist, repeat the above steps but choose **Current Layer** to return the function to the default setting.

# Timecode

PVP can listen to a **Timecode** signal and fire Cues at a specific Timecode frame so that you can set your Show to fire all necessary media at the precisely correct time.

To assign a Timecode to a specific Playlist, right-click on the Playlist and choose **Timing**, then choose **Timecode**. You can then head to the Cue View to assign the Timecode to the necessary Cues. Right-click on a Playlist and choose **None** to turn off this feature.

To find out how to set up and use these features please see the <u>Timecode</u> section.

# Cue/Action View

The Cue/Action View area is where most users will spend most of their time during an actual event/show. This is where you import media, create Cues assign them to Layers, and set up and run your Shows!

First, we want to differentiate between Cues and Actions. **Actions** are specific individual *actions* that you want PVP to perform; **Cues** are groups that can fire one or more Actions at the same time. It is possible to perform some Actions manually, but usually you will put your Actions into a Cue. For example: If you import a piece of media into PVP, it is automatically bundled into a Cue with a single Action (to play the media); from there you can click on the Cue to fire it (to show the media) or you can add other Actions to the Cue to further customize the Cue.

## Actions

**Actions** are individual *actions* that you perform inside of PVP. This can be firing a piece of media, clearing a Layer, assigning an effect to the Master, or one of many other actions.

## Types of Actions

Here is a list of Actions that you can choose from:

| Media Actions | Layer Actions | Workspace Actions |
|---|---|---|
| • Play media to a predefined Layer<br>• Play media to a Targeted Layer | • Clear<br>• Mute<br>• Unmute<br>• Hide<br>• Unhide<br>• Assign a Layer Preset<br>• Assign a Target Set<br>• Assign a Blend Mode<br>• Assign an Opacity<br>• Assign an Effets Preset<br>• Assign an Effects Duration<br>• Assign an individual Effect<br>• Assign a Transition<br>• Fire Cue from a Playlist | • Clear All<br>• Mute All<br>• Unmute All<br>• Hide All<br>• Unhide All<br>• Clear Mask<br>• Assign a Mask<br>• Assign an Effects Preset<br>• Set an Effect Duration<br>• Set an individual Effect<br>• Assign a default Transition<br>• Fire Cue from a Playlist |

# Cues

A **Cue** is a trigger for one or more Actions, including visible Actions and non-visible Actions. Think of them as groups of Actions that fire at the same time. You can add as many Actions into a single Cue as you would like, and you can always edit each Action as well as customize the Cue itself.

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Cues may be referred to as Single-Action Cues or Multi-Action Cues depending on how many Actions they contain.

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To fire a Cue, simply click on it. You can also type the number of the Cue (using your keyboard) and press enter.

To create a cue click the + button at the bottom left and select one of the options there (**From Finder**, **From Video Input**, **Snapshot**, or **Empty Cue**) or drag media from the Finder into PVP.

## Cue Thumbnails



Each thumbnail is a wealth of information about that Cue. The main area of the thumbnail will show you any media that will be playing back when you fire that Cue.

In the top right it will show you the length of the Cue (how long the Cue will play). For example, if you have one video clip that is 30 seconds long in the Cue and the video clip is set to Stop, then the top right will show "00:30:00" (meaning the Cue will play for 30 seconds and then stop). If that same video is set to Loop then the Cue will have an infinite duration and thus will show the infinity sign: ∞. There is also an icon in the lower left that will tell you how your media will be scaled when you click on it. (See the Scale Behavior section to find information on the icons and what they represent. You can turn these icons off by unchecking **Show Scaling Icons** in the General tab of Preferences.)

If you have your media assigned to a specific Layer (or to multiple Layers) then the color of those Layer(s) will show across the bottom of the Cue; across the top of the

Cue you will see similar color bars (called "pills") if the media in the Cue is currently being played back in a Layer.

## Snapshot

Say you have multiple Layers with media playing back in the different Layers, and you want to save this "look" out as a Cue. The **Snapshot** feature was designed to do this that!

To create a Snapshot, click on the "+" icon in the lower left of the Cue or Action View and select **Snapshot**. When you do a window will pop up showing your available Layers as well as your Master Layer.

For any Action that is currently active that you want to save to your Snapshot Cue, click on the appropriate box. For example, you could click on the boxes for the Media in Layer 1 and 2, then click the box for Target Set in Layer 1 and the Mask for Master; once you click on **Save** it will select the current setting for each of those selected boxes and save them out as a Cue, ready for replaying at any time!
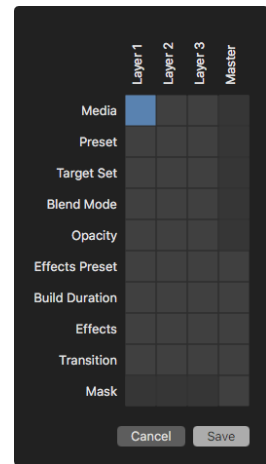
# Navigating the Cue/Action View

In the top left of the Cue/Action View, click on the **Playlist** button ▤ to open a drop-down where you can jump directly to any Playlist. Use the arrows to the left of that button to **browse** (backward and forward) through the Playlists that you have recently viewed.

Across the bottom click on the magnifying glass 🔍 to **Search** your Cues; type in any text and the Cues that match that text will be shown accordingly. On the bottom right there is a slider that controls how large the thumbnails are in the view.

# The Cue View

The **Cue View** (enabled by clicking on the "Cue" toggle Cue on the right side under the Master Layer) is the default view in PVP and it shows an overview of all of the

Cues that are inside of your currently selected Playlist. To fire a specific Cue simply click on it and it will fire all of the Actions that are inside of that Cue.

# The Action View

The **Action View** (enabled by clicking on the "Action" toggle ⬚Action⬚ on the right side under the Master Layer) is an alternate way to view, organize, and fire Actions and Cues.
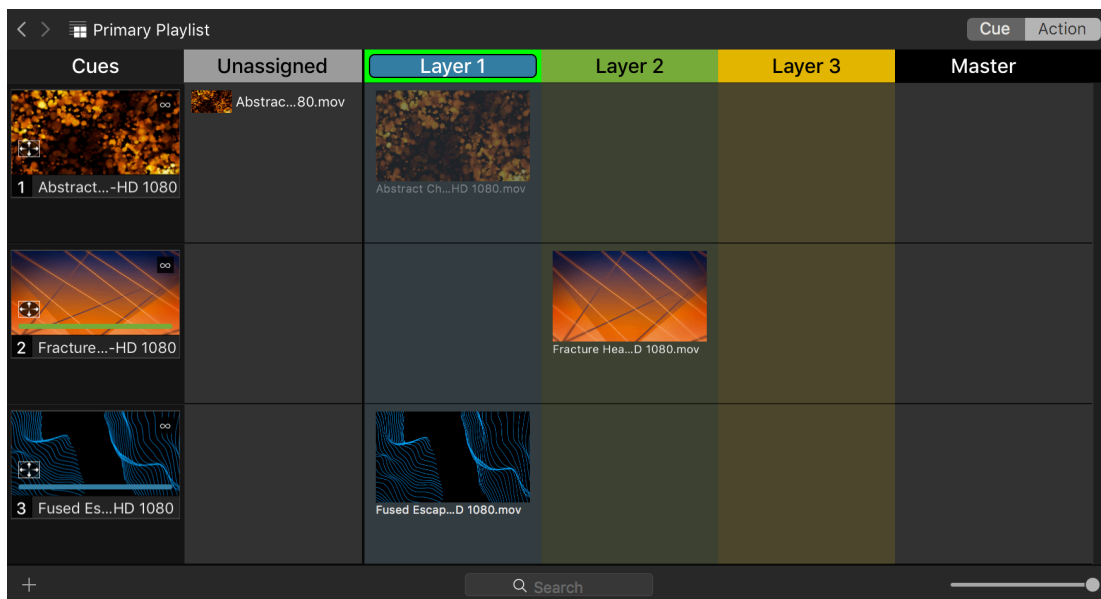


Each Cue in the currently selected Playlist will show up as a row (the thumbnail of the Cue will be on the far left, next to the Playlist window). Across the top (forming columns) will be a list of Layers. The middle area is a grid where you can fire specific Cues to specific Layers without having to select a given Layer. Let's look at the different columns for the Action View.

## Cues

On the left-hand side of the Action View it will list all of your **Cues** that are in the currently selected Playlist. The thumbnails that are in the Cue Column are the same thumbnails that are shown in the Cue View, and anything you could do to the Cues in the Cue View you can do in the Cue Column of the Action View; for example, to fire any Cue simply click on it in the Cue Column.

## Untargeted

The **Untargeted** column shows media that is inside of a Cue that has not been assigned to a Layer. Click on the media to show it to the currently Targeted Layer. To assign an Untargeted media to a specific Layer you can click and drag it to the column of the desired Layer. You can also right-click on an Untargeted piece of media to manually **Assign** it to the desired Layer as well as **Removing** the Action and a plethora of other options.

## Layers

The main section of the Action View is a series of columns that represents each **Layer** (including the Master Layer) that you have in your Show. This is not only a visual indicator of where media is assigned, it is also an easy way to assign and organize your media into Cues as well as fire specific media to specific Layers.

Thumbnails that are opaque represent Media Actions that are assigned to that specific layer. Click and drag Media Action thumbnails (including Untargeted thumbnails) to a Layer where you want it assigned. To duplicate an assignment (for example if you want one piece of media playing in two different layers when you click on the cue) hold the Option key down when you click and drag.

Thumbnails that are semi-transparent represent Media Actions that will play in that Layer if they are clicked on. This will happen in two instances:
• There is one Untargeted media Action and no targeted media Actions; in this case the media will appear as a transparent thumbnail under the currently selected Layer, or
• If there is only one media Action assigned to a Cue (be it targeted or not) and you hover your mouse over a space that does not already have an Action in it.

In any case (opaque or transparent) you can click on a thumbnail to fire it directly to that Layer.

To make a transparent Action opaque (that is, to assign it to that Cue) you can click and drag an opaque Action (including from the Untargeted area) to where you want it to be assigned.

In addition to Media Actions, you can also perform many of the same functionality with Non-Media Actions (see Types of Actions for a list of Non-Media Actions). Click the + button in any cell (will be below the thumbnail if there is Media already in that cell) to see a list of Actions that you can add to that cell. Once an Action is added to a cell you can right-click on the Action to adjust its properties (if present) or to **Remove** it if needed.

To move all Actions from one Layer to another, click and drag any Action to a new Layer. If there are multiple Actions on one Layer and you only want to move one of the Actions, Command-click and drag that Action to a new Layer.

# The Inspector

The **Inspector** is an in-depth window for editing the properties for your Cues and Media Actions. This is the go-to place for customizing how your Cues and Media Actions will look, play, and act when you click on them.



To open the Inspector to a Cue, right-click on a Cue and select **Inspector...** To jump straight to editing one of the Media Actions inside of that cue you can right-click on the Cue, hover your mouse over **Inspector...**, then select the Media Action that you would like to edit.

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You cannot add/edit/remove non-Media Actions via the Inspector.

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## Cue/Media Action List

Inside of the Inspector the far left area is the **Cue/Media Action List**. This will list any Cues that you had selected when you opened the Inspector, as well as any Media Actions that are inside of those Cues.

Click on a Cue or a Media Action in the list to select it and edit its properties.

## Preview Pane: Cue



Nature Remix Blaster Fast-HD 1080
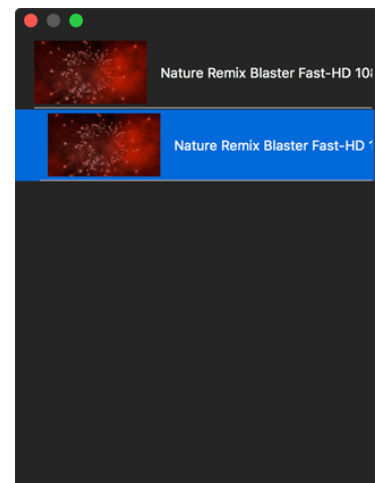
When a Cue is selected the main Preview area will show you the same "preview" as its thumbnail; that is, it will show you an overview of all of the media that is inside of that Cue.

Across the top it lists the Cue's **name**. To edit the name, click on the name and enter a new name.
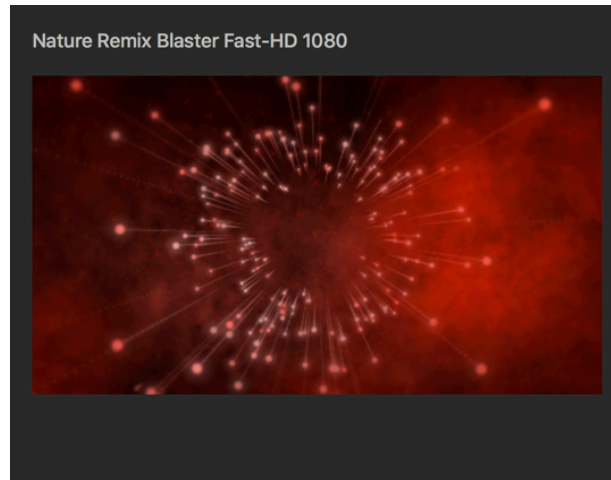
## Preview Pane: Media Action

When a Media Action is selected the Preview Pane offers a place for you to customize the settings for your Media.

Across the top it lists the **name** of the Media Action. By default this is the name of the file, however if you would like to change this then you can click on the name and enter your own name. On the top right is a **Layer Assignment** drop-down menu; to change which Layer this media will play in click the drop-down menu and select the appropriate Layer.



Nature Remix Blaster Fast-HD 1080.mov    Unassigned

The main preview area will show you a preview of your media. If the media is a video or audio then use the **scrubbing bar** to jump the preview to a specific place in your media. Below the scrubbing bar are some **Playback Controls** to control the playback of the media. Use the **Play/Pause** button ▶ / ‖ to pause or play the media, or use the **Skip Backwards/Forwards** buttons ↺₁₅ / ↻₁₅ to skip backward or forward 15 seconds.

Click the **Step Backward/Forward** buttons ◀‖ / ‖▶ to step frame-by-frame through your media. Use the **Go To Beginning** button ↞⁺⁰ or **Go To End** button ⁻⁰↠ to skip

directly to the beginning or end of the media. You can also right-click (or click and hold) on the Go to Beginning/End buttons and choose how far from the beginning/end you want to jump to (90 seconds, 60 seconds, 30 seconds, 10 seconds, or directly to the beginning/end).

To change the starting point of a video or audio move the playhead to the desired location and then click **In** to set the In Point. Similarly you can click on **Out** to set the Out Point. Click **Reset In** or **Reset Out** to reset the respective features.

# Edit Pane: Cue

When a Cue is selected in the Inspector, the Edit Pane on the right will show two options. **Completion Action** controls what triggers the "end of the cue"; click on the drop-down to inform PVP when the Cue should end (the **First** Media Action that ends, the **Last** Media Action that ends, or a specific Media Action). The **Next Behavior** drop-down allows you to select what happens when the Cue ends (such as go to the **Next** Cue, a **Random** Cue, or a specific Cue).

---
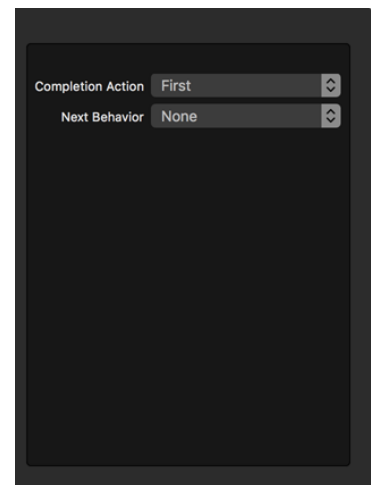
Note that the **Completion Action** option is only available if there is more than one Media Action inside of the Cue.

---

# Edit Pane: Media Action

When you have a Media Action selected the Edit Pane on the right allows for fine-tuning your media by way of the Info, Properties, Effects, and Audio tabs.

## Info Tab

The **Info Tab** has information about the media that you have selected. Across the top it lists the **Action's Name** (which you can click on to edit) as well as the **File Path** to where the file that PVP is referencing is located. Click on
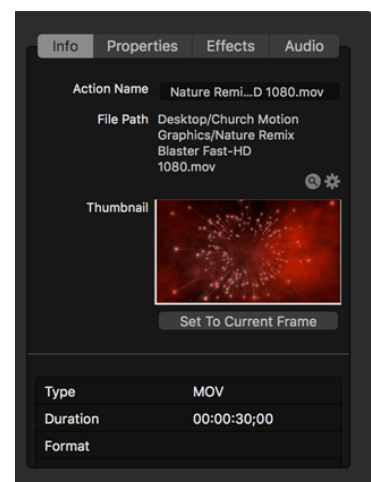
the **magnifying glass** 🔍 to open the location of the file in the Finder. If you want to change the file that PVP is linking to or to point PVP to a different copy of the same file, click on the **gear** icon ⚙ to open a Finder window where you can select a new file to reference.

The **Thumbnail** feature will show you the thumbnail for the media. If your media is a video and you want to change the thumbnail, use the scrub bar in the Preview Pane to select the desired location then click **Set to Current Frame**.

The bottom of the Info Pane will provide **information** about the media itself, such as its Type, Duration, Format, Size, and Frame Rate (FPS), depending on the type of media that is selected.

## Properties Tab

The **Properties Tab** of the Inspector allows you to adjust multiple properties of your Media Actions.

Click the drop-down menu next to **Scale Behavior** to adjust how the media will scale in your Target:
- **Scale to Fit** ⊕ will make sure that all of your content shows within the bounds of a given Target and the media won't be stretched; it will achieve this by adding black bars on the top/bottom or sides of the media as needed.
- **Scale to Fill** ↔ will keep your media not stretched and it won't have any black around the sides or top/bottom; it will achieve this by cropping off the top/bottom or sides as needed.
- **Stretch to Fill** ⊕ will fill the bounds of the Target with the media and it won't crop any of the media out; it will achieve this by stretching the media as needed.
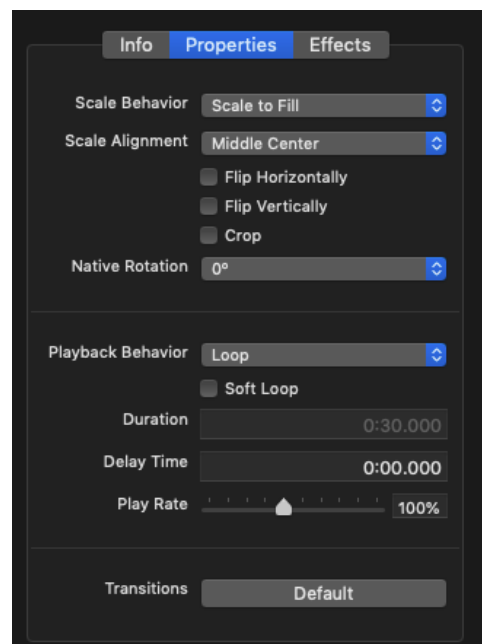
Change the **Scale Alignment** to control if the media will try to stay in the center of the Target or if it will tend towards one of the corners or sides of the Target. **Scale Alignment** is only available if you set the **Scale Behavior** to **Scale to Fit** or **Scale to Fill**. You can also enable **Flip Horizontally** and/or **Flip Vertically** to flip the media.

Enable **Crop** to scale the media yourself to a subset of the original image. For example, if you wanted to show only the top left of a piece of media but have it fill the screen, you would adjust these numbers to do so. Options for adjusting this are to enter numbers into the boxes as needed, use the arrow buttons next to the boxes, or use the black bounding boxes that surround the media itself in the Preview Pane.

If you have a video or audio action selected then you can set the **Playback Behavior** which will affect what happens at the end of the media; depending on which Playback Behavior you select there may be other options available to you.

For still images and video inputs, you can set the **Duration** (that is, how long it will show on the screen); videos and audio will have their Duration pre-filled. You can set the **Delay Time** which is how long the media will wait before it plays. For audio and video actions you can also set the **Rate** at which it will play (from 20% to 200%).

---

If you set a Delay Time then the following icon will show on the thumbnail: ◐

---

At the bottom of the Properties tab you can select a **Transition** for non-audio pieces of media. This Transition will trump the Master Transition which allows media to have custom transitions which are unique to just that media.

For more information about Transitions visit the Transitions section below. For a list of the Transitions that PVP offers reference the Appendix.

## Effects Tab

The **Effects Tab** allows you to add and edit Effects to Images, Videos, and Video Inputs. Click the plus button to add an Effect to the media. Adjust an Effect's properties by adjusting the options below that Effect (note that not all effects have properties that you can edit). To disable/
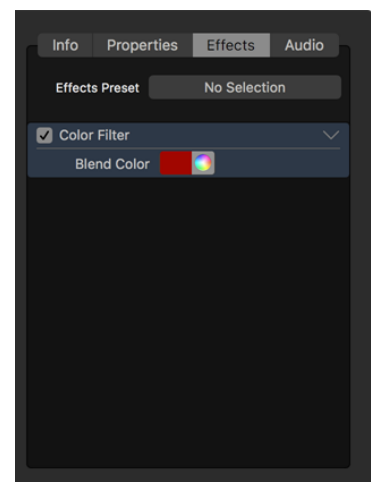
enable an Effect click on the checkbox to the left of the Effect's name. To change an Effect to a different Effect or to remove an Effect, click on the down arrow to the right of the Effect's name.

The **Effects Preset** allows you to assign a predefined set of Effects to a Media Action. If you have previously saved an Effect Preset you can use this drop-down to apply it. If you have applied an Effect Preset and you make changes you can **Save** those changes or **Save As** a new Preset. You can also use this drop-down to **Remove All** Effects from this media.

For more information on Effects see the Effects section below. For a list of the Effects that PVP offers reference the Appendix.

## Audio Tab

If you have a video selected which includes audio or you have an audio file selected then there will be an **Audio Tab** available to adjust the audio properties for that item.

Under **Transition Behavior** you can add a **Fade In** and/ or a **Fade Out** to your audio. Check the boxes that you want to enable and adjust the slider to customize how long the fade will last.
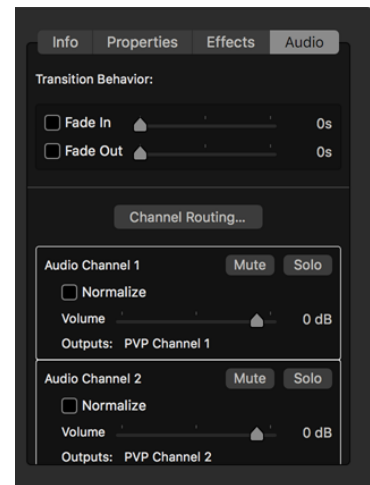
Click the **Channel Routing** button to open a window where you can route audio channels to specific outputs. See the Audio Routing section for more information.

The boxes at the bottom of the Audio tab give you more insight into each audio channel. For each channel you can **Mute** or **Solo** the channel, you can **Normalize** the audio, and you can adjust the **Volume**. This area will also tell you which **Outputs** each channel is assigned to (which is set via the Audio Routing button above).

# Miscellaneous Features

This section covers features of PVP that aren't covered anywhere else as well as more information on some features that were touched on above.

## Audio Routing

PVP allows you to route your audio to any output that the computer can see. For example, if you want all of your audio to go to a specific device or output, you can route it in the Preferences to go there. You can also route specific channels of audio to specific output channels.

In addition to simple default setups (Channel 1 is Left, Channel 2 is Right, etc.), PVP is capable of fully customizing your audio setup. Clicking on **Channel Routing** in either the Preferences or the Inspector will bring up a window that allows this custom routing.

This section will specifically cover how Audio Routing works; for more information on audio properties in general see the Preferences and Inspector sections.

### Audio Routing via Preferences

The left side of the Audio Routing window shows you one PVP Channel for each Channel Count set in Preferences. Click on the channel name to rename it. To the right are 16 channels that you can output to.



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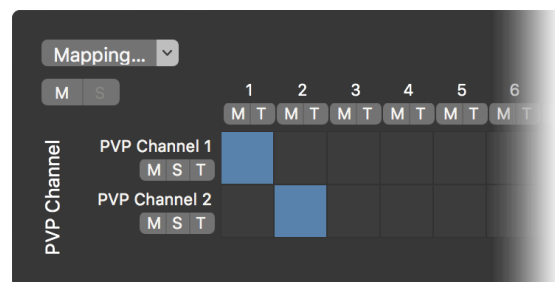
Note that not all devices support up to 16 channels. Selecting cells in columns higher than your device can support may result in unpredictable results.

---

Click on the cells where you want the audio to be heard. For example, if you want PVP's Channel 1 to output to Channel 3 of your output, click on the cell at the intersection of those two selections and the box will light up. To turn off a cell, click on it again.

Click on the **M** next to a channel to **Mute** that channel. Click **S** to **Solo** that channel. Click **T** to send a **Tone** to that channel. You can turn on and off as many of these features at the same time as you would like.

In the top left you can click on the **M** to mute all of the channels. If you have one or more channels soloed, click the **S** in the top left to turn them all off at the same time. Click on the **Mapping** drop-down and select **Auto** to autofill the cells or **Clear** to remove all of the selected cells.

## Audio Routing via Inspector

The Routing window that is accessible from the Inspector is more basic than the Preferences version, however the core functionality is the same. The left side lists all of the audio channels for the piece of media that is selected. The top lists the audio channels that are available in PVP (set up in the Preferences).
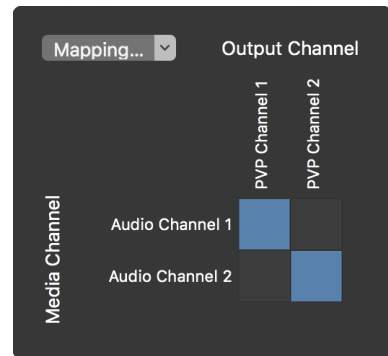
Click on the cell of the row/column that you want the audio to play in. Click on the **Mapping** drop-down and select **Auto** to autofill the cells and **Clear** to remove all of the selected cells.

# AutoSave

PVP 3 features **AutoSave** which means that all of your changes are saved immediately to file. You can still Undo actions that you want to undo, however once you quit PVP (or if PVP otherwise is no longer running) the Undo cache will be emptied and you will no longer be able to Undo any actions.

# Calendar

The **Calendar** allows you to schedule Playlists to fire at specific times of the day including specific dates and/or reoccurring days of the week. This feature is great if you want a slideshow to change at a specific time or if you want a countdown to start five minutes before an event, just to name a few examples.
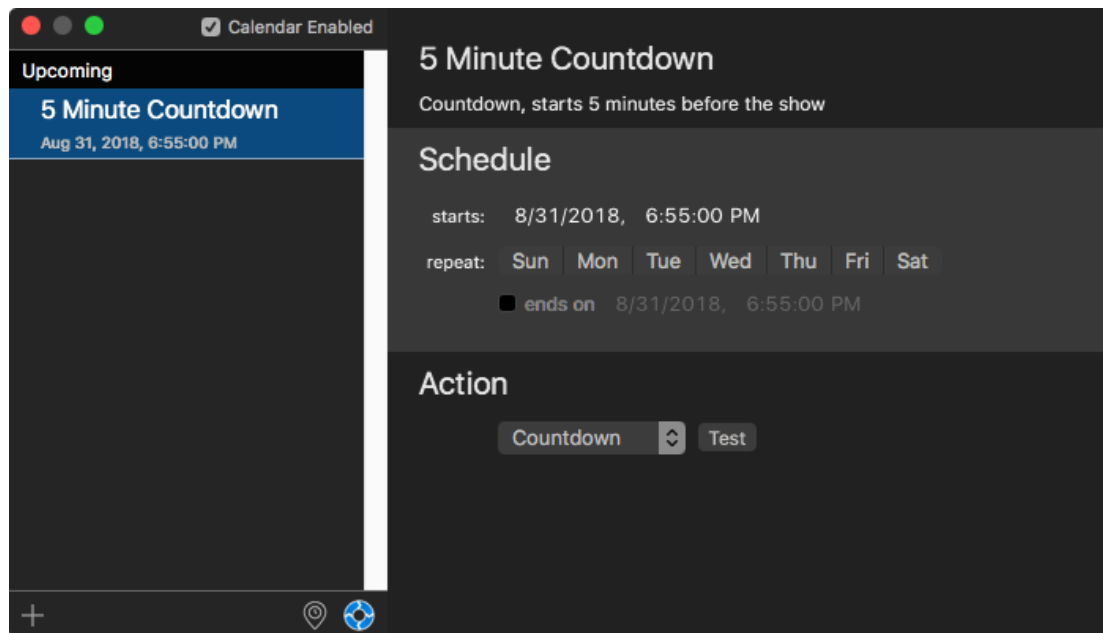


Note that the Calendar feature is the latest iteration of what was called the Scheduler in previous versions of PVP.

To open the Calendar feature, choose Calendar from the View menu or press Option-C. To disable all Calendar functions uncheck the **Calendar Enabled** checkbox across the top of the Calendar window, press Command-Option-S, or select Calendar > Enable Calendar from the menubar. (Note that these options are only available while the Calendar window is open.)

The left side of the window will list all of your Events and the right side shows you information about the currently selected Event. If there is an Event that is currently active, you can select it by clicking the **Current Event** button ⊚. The **Show/Hide Reoccurring Events** button 🌀 will toggle the left pane between showing only one copy of each event and showing all occurrences of all events.

# Events

An **Event** is a single or reoccurring Playlist or Action that fires at a given day and time. Note, though, that once the Event fires it is still considered "active" until another Event becomes active, you disable the Calendar feature, or you delete the Event. This means that if PVP is shut down and is later re-opened while the Event is still active, the Action that is associated with that Event will fire again. This is very helpful if you want PVP to auto-play an Action every time it opens.

To create a new Event click on the + button in the bottom left of the Calendar window or from the menubar select Calendar > New Event. To delete an Event, select it in the Calendar window and press the delete key or, if you have a touch pad, you can use two fingers and swipe to the left on the name of the Event and then click Delete.

---

If you are deleting an Event that has more than one occurrence then it will ask you if you want to delete only that one occurrence or all occurrences of the Event.

---

You can customize an Event's **Name** and **Description** on the top right of the Calendar window. Below that is where you set the Event's scheduled time to fire; each Event must have a date and a time that it will become active.

Next to **Repeat** you can select days of the week that you want the Event to repeat. If you select one or more days of the week then you can optionally set a date and time for the Event to **End On**.

At the bottom of the window you can select the **Action** which will control what happens when the Event fires. This can be a Clear action or it can be the first Cue of a specified Playlist. Click on the **Test** button to immediately see what will happen when the Event activates.

# Master Layer

The **Master** refers the entire PVP output and can be referenced in several ways:
- The **Master Output** refers to everything that is being output from PVP; that is everything that the audience would see.
- The **Master Layer** is a custom Layer which allows you to set custom settings that applies to the Master Output, such as Masks and Effects.
- **Master Transition** refers to the default settings for Transitions that applies to all media that does not have an override on the media itself or on the Layer that it is playing back in.

---

Note that the words "Master" and "Workspace" can be used interchangeably.

---

# Monitor Output

The **Monitor Output** allows you to send the entire PVP workspace to an external screen. This is helpful in that you can see a larger preview of the full PVP workspace.

To turn this option on, you will click on the Master Layer Strip and then will see a dropdown for **Monitor** in the Sidebar under the Output Status option.

---

To enable the Sidebar, click the Sidebar button in the upper right of the program or hit Option+Command+I

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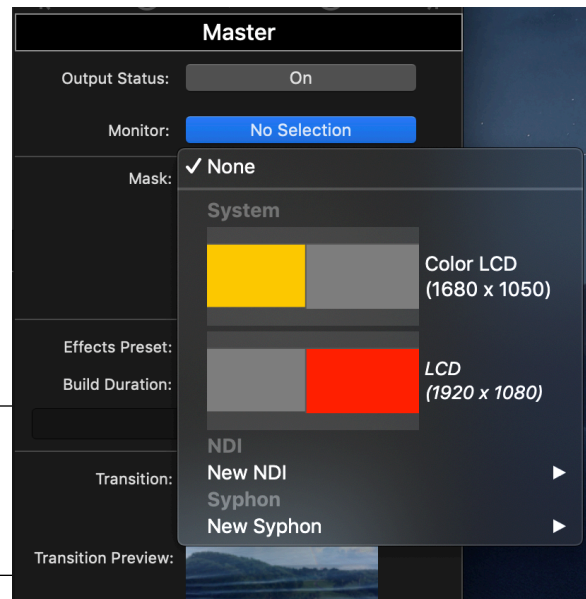
Here, you can choose which output you wish to use. This can be a system output, sent through a supported SDI device or be sent over NDI or Syphon. This feature is limited to sending to only one output and will need to have the **Output Status** toggled ON for the monitor to appear.

# Network Backup Triggering

PVP has the ability to send Cues and other triggers to one or more Backup ("Slave") computers. This feature is designed so that you can have a backup computer running PVP that is automatically following the primary computer. You can set up as many Backup computers connected to one Primary computer as you would like.

---

Note that, while similar to the Master/Slave functionality of previous versions of PVP, the core functionally of this feature has changed and thus has new abilities as well as new limitations in how it can be used.

---

## Setup

The connection process is controlled by the Primary computer, however you will first need to set up and retrieve information from your Backup computer(s). First, on each Backup machine, head to the Network tab of PVP's preferences and click the checkbox next to **Enable** to turn on this feature. Make a note of the **Port** number (which will be automatically generated).

---

For added security click the checkbox next to **Use HTTPS Connection** and/or **Require Authentication**; if enabling the latter then you will need to make a note of the **Authentication Token** for that computer.

---

In addition to this, you will need the **IP Address** of the computer; click on the Apple icon  in the upper left corner of your screen, select **System Preferences**, then click on the **Network** tab to see the computer's IP address.

Once you have all of the necessary information for each Backup computer, head to the Primary computer and open PVP's Preferences to the Network tab. Click the checkbox next to **Enable** to enable the feature. **Add a Slave** by clicking the + in the lower left. To delete a machine, right click and select **Delete** or, if you have a touchpad, swipe to the left while the mouse is over that machine.

For a given machine, click the checkbox to enable or disable that machine. You can add a custom **Name** to the machine to help remember which machine you are controlling. Type out the IP **Address**, **Port**, and **Authentication Token** (if required)

of the backup machine. Click the **Uses HTTPS** checkbox if you have that option selected on the Backup machine.

## How to Use

Once set up, the Primary computer will send commands to all Backups that are enabled. Supported commands would be any changes made to PVP from the primary window; primarily this would include clicking on Cues and other Actions, but it can also include other events such as changing the Opacity on a specific Layer, or changing an Effect on the Master Layer.

---
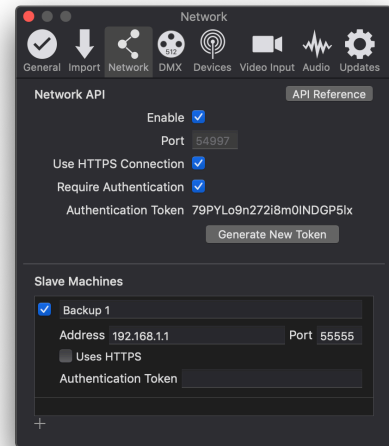
For more information on what does and does not get sent over the Network Backup Triggering feature, see this article.

---

We recommend using the Use Relative Media Paths feature to assist with moving your Shows between computers; see Use Relative Media Paths for more information.

---

# Shows

A **Show** is an encapsulated file on your computer that contains all of the information for an event, such as your Cues, media settings, Screens, Outputs, Targets, Masks, etc.

---

Note that a Show does not contain the media itself (including Image Targets and Image Masks). If you share the Show between computers then you will need to re-link your media on the new computer.

---

If you have multiple events that have different Screens, Outputs, Targets, and/or Masks, then you can create a new Show to easily switch between these features. If your events all share the same Screens, Outputs, Targets, and Masks but simply reference new media, then it might be easier to create a Playlist for each of your events.

To create a new Show, select New > Show from the File menu or press Command-Shift-N. To duplicate your Show choose Duplicate Show from the File menu or press Command-Shift-S.

---

Note that only one Show can be open at any given time.

---

## Use Relative Media Paths

By default, when you add media into PVP, it references the media on the computer via an **Absolute Path**; that is, the link that PVP uses to access the media on the computer is the full path from the root of the hard drive to the file itself. This is beneficial in many cases (it allows you to be able to move your Show file without having to worry about your media), however it makes it difficult to share Shows and their media across multiple computers (as the Show would be referencing the media on the original computer which might not be the same path on the new computer).

If you will be sharing your Shows across multiple computers then you can tell your Show to instead use **Relative Paths** for the media. You turn this feature on by going to File > **Use Relative Media Paths**. (You can revert to Absolute Paths by going to File > **Use Absolute Media Paths**.)

When using Relative Paths, PVP references the media relative to the Show file on the computer. The recommended use for this would be to create a folder on your computer that houses both your Show file as well as all of your media; these files can be in sub-folders if needed. Once you have created your Show, added the media into the Show, then saved the Show in the folder, you can move that folder anywhere on the computer or even to another computer, and because the media is linked using a Relative Path, the Show will continue to be able to find it.

---

To see an example of the Relative Path feature in action,
click Open Sample Show in the Welcome Window.

---

## Media Management

PVP always links to the media based on where the media was when the media was added into PVP. This means that if you rename/move/delete media after you add it into PVP, then PVP will not be able to find the media and it will thus show the media as missing.

When PVP can't find a piece of media, PVP will show a warning triangle ⚠ to indicate that the media is missing. To fix this, right-click on the Cue, select **Fix Invalid Action**, and click on the name of the media that needs to be fixed; a dialogue box will appear where you can select a replacement file to be used for that Action.

# Test Patterns

PVP allows you to show customizable **Test Patterns** on your screen to help align and calibrate your devices.
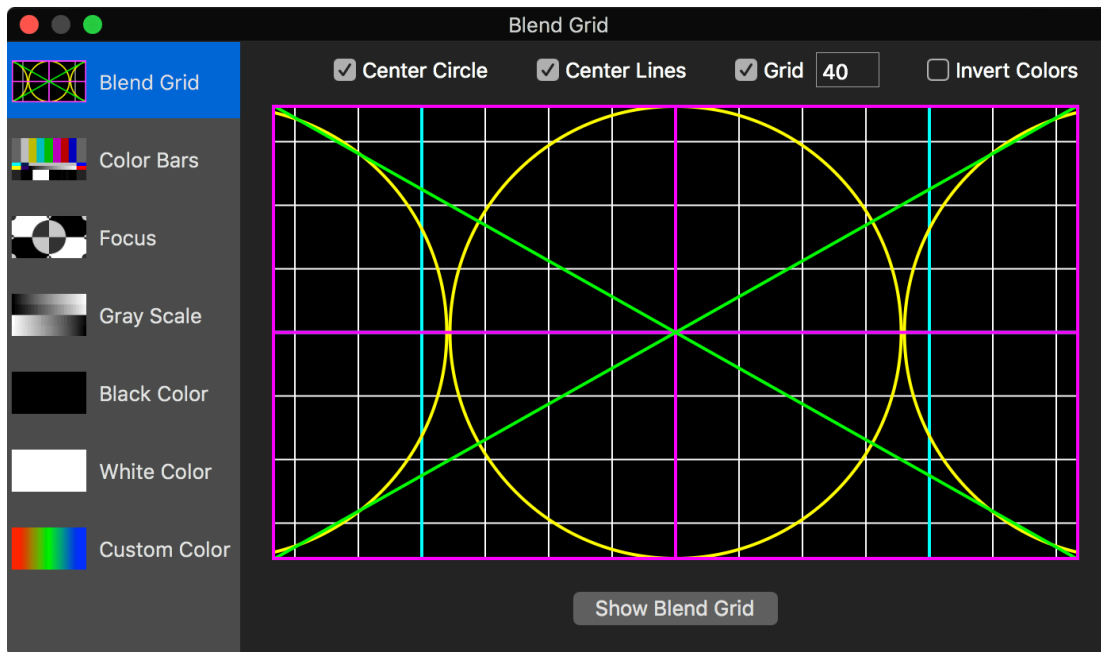


To open the Test Pattern window, in the Menubar select Layers and click on Test Patterns. This will open a window that allows you to select which type of Test pattern you want to use as well as customize the selected Test Pattern.

You can choose from the following Test Patterns:
- Blend Grid
- Focus
- Black Color
- Custom Color
- Color Bars
- Gray Scale
- White Color

To show the Test Pattern on all of your Layers, click the **Show** button at the bottom of the Test Pattern window. To edit a given Test Pattern, adjust the parameters at the top of the Test Pattern window.

---

Not all Test Patterns have properties that can be adjusted.

---

# Timecode



PVP can listen to a **Timecode** signal and fire Cues at a specific Timecode frame so that you can set up your Show to fire all necessary media at precisely the correct time.

There are two steps to have PVP fire Cues at a given Timecode; one step is to have PVP listen to the Timecode, and the other is to enable the Timecode feature for a Playlist and to tell your Cues when you want them to fire.

---

Note that you can perform these steps in any order,
but they must both happen before the Timecode feature will work.

---

## Listening to Timecode

Timecode works by PVP listening to an audio signal that is then decoded into hours, minutes, seconds, and frames. The first step would be to get the audio feed into the computer; this could be, for example, plugging the audio signal into the computer via the microphone port, using a USB audio card, or via a software solution. In any case, the computer must see it as an audio feed before PVP can listen to it.



Once the audio feed has been brought into the computer, inside of PVP click on the **Timecode** button ⏱ on the top right of the window (or, alternately, access these same options via the Audio tab in Preferences). Inside the Timecode window you can select the audio **Device** that is supporting your Timecode signal. Click and hold the speaker button 🔊 to listen to the current feed.
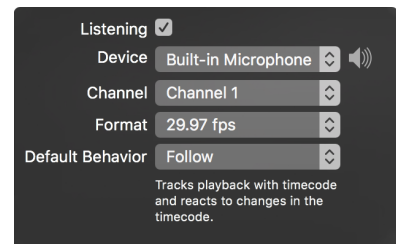
Next, select the correct **Channel** and **Format** for your system. You can also select your **Default Behavior**: **Trigger** will have the media trigger at the correct time, while **Follow** will have PVP listen to the timecode and if the Timecode changes (say the Timecode jumps backward five seconds) then PVP will update the media that is playing (the media will also jump back five seconds, in this example).

Click on the **Listening** checkbox to have PVP enable the Timecode feature; while this checkbox is checked PVP will listen to the Timecode signal and show you the current Timecode in the top right of the screen. Uncheck this box to have PVP stop listening to the signal.
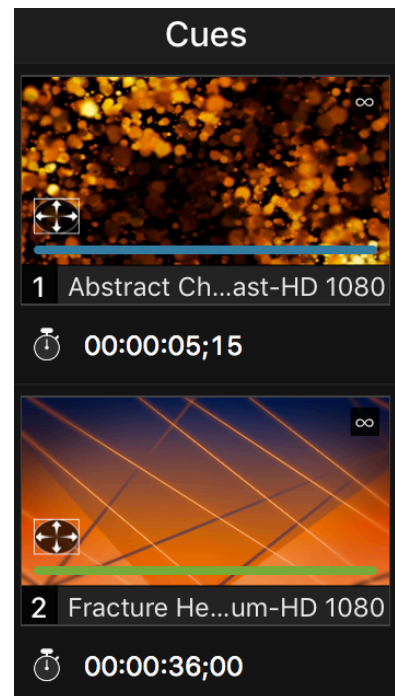
---

Note that the Listening checkbox must be checked (the Timecode icon ⏱ will be red) for the Timecode feature to fire Cues at their appointed time.

---

## Applying Timecode to Cues

The other step to getting PVP firing your Cues at a given Timecode frame is to tell PVP which Cue you want to fire, and when you want it fired.

First, add your Cues into a Playlist. Then right-click on that Playlist, hover over **Timing**, and click on **Timecode**; the Timecode icon ⏱ will appear next to the Playlist. To turn off this feature, right-click on the Playlist, hover over Timing, then click on None.

To select a specific Timecode frame that a Cue will fire you must first be in the Action View (click on the Action View button  Action  in the upper right of the Cue/Action View area). When the Timecode feature is enabled for a given Playlist, the Timecode icon ⏱ will appear below each Cue on the left side. Click on the time to change when the Cue will fire (HH:MM:SS;FF). Now enable the Timecode feature on this Playlist by clicking the Timecode icon ⏱ in the top right of the Action/Cue View area or by right-clicking on the Playlist and choosing **Enabled** under Timecode.

---

Note that the Timecode feature must be enabled for that Playlist (the Timecode icon ⏱ will be red) for the Timecode feature to fire Cues at their appointed time.

# Transitions

PVP has a robust Transition feature that allows for media to be transitioned to and from the screen in many creative ways. For a list of the Transitions that PVP offers reference the Appendix.

## Transition Hierarchy

There are many ways to assign Transitions; here is the hierarchy of how PVP will decide which Transition to use for a given piece of media:

- **Master Transition** (set in the Master Layer) is the "default" transition for all media
- **Layer Transitions** (set inside of individual Layers) will override the Master Transition
- **Media Transitions** (set inside of the Inspector for individual pieces of media) will override the Master Transition as well as any Layer Transitions that might be active

To set a Layer or Media Transition back to using the Master Transition, click the **Use Master Transition** button ⊕ at the top of the respective Transition window.

# Preferences

Open PVP's **Preference** window by clicking on PVP in the menu bar at the top left of your screen and selecting Preferences or by pressing Command-Comma.

## General

### Appearance

macOS Mojave allows for the use of Light/Dark mode for software programs. Choosing **Dark** will allow the program to run in Dark Mode with many darker black/grey colors in the program interface. Choosing **Light** will allow the program to run in Light Mode with many white and lighter grey colors in the program interface. The **Use System Appearance** checkbox enables/disables the option to use whichever mode is selected in the Mac System Preferences. The program runs by default in **Dark Mode**.
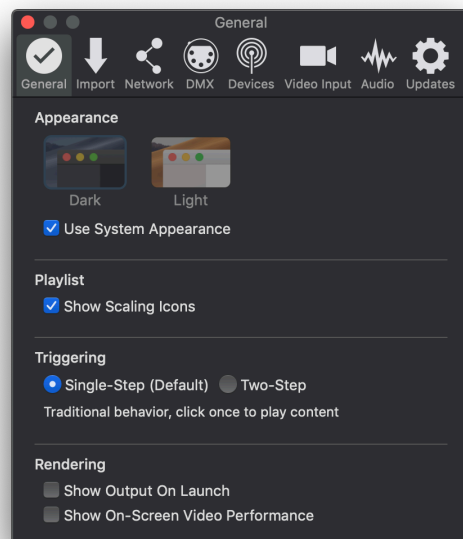
### Playlist

Enabling **Show Scaling Icons** will show an icon in the lower left of the media's thumbnail to indicate what the scaling option is for that media.

### Triggering

By default the **Triggering** system is set to **Single-Step**; using this option, when you click on an Action or a Cue PVP will load all of the media into memory and then fire all of the media files at the same time. This will fire all of the media as fast as it can, however because it loads all of the media first, in some situations (such as with high-quality video and/or with more complex setups) there may be a noticeable delay between the time you click on the media and the time it actually fires.

In these cases you may desire to change this setting to **Two-Step** in which one click will cue all of the media into memory and a second click will fire the media. Using this option takes an extra click, but because it loads the media first it means that the second click will fire the media instantly (without a delay for loading the media).

## Rendering

Check **Show Output On Launch** to automatically turn the Output on whenever PVP launches. (Turn this feature off if you will be routinely opening PVP without your output devices connected.) Enable **Show On-Screen Video Performance** will enable on-screen diagnostics for your outputs.

# Import
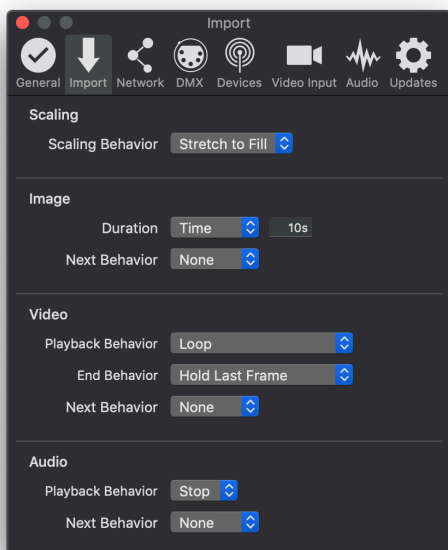
The **Import Tab** customizes the defaults for when a piece of media is imported. For example, under **Scaling** select which **Scaling Behavior** will be used any time a piece of media is imported into PVP.

In the **Image** section you can select the default **Duration** that the Action will have (you can set it to a constant **Time**, a **Random Time**, or **None**). You can also select the default **Next Behavior** to control what will happen after the Duration finishes.

You can also select which **Playback Behavior** and **Next Behavior** will be set any time a **Video** or **Audio** is imported.

# Network

Use the **Network Tab** to enable and customize the **REST API**, which allows you to control PVP over the network.

Click **API Reference** to open a web page which will tell you more about the REST API as well as have full documentation for this feature; this documentation will be updated as the API is updated, and therefore is the recommended place to learn about the API.

Click the checkbox next to **Enable** to allow PVP to receive commands via the REST API as well as enable the Network Backup Triggering feature of PVP 3. The **Port** number will be automatically filled, however it can be manually adjusted if needed.
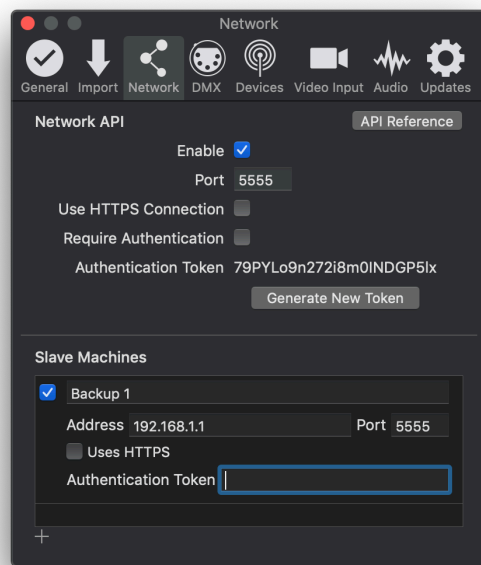
Check **Use HTTPS Connection** to force the REST                                API and Network Backup Triggering to use a secure connection. Check **Require Authentication** to force PVP to only allow devices to control it with an **Authentication Token**. Click **Generate New Token** to create a new Token.

See Network Backup Triggering for more information on how to add and edit Slave Machines.

# DMX

The **DMX Tab** in Preferences is where you set which DMX channels will control PVP.

Set the **Base Address** and the rest of the Addresses will automatically be filled in for that section. Click on the section on the left to see the full list of options on the right. Uncheck the check box to disable that section.
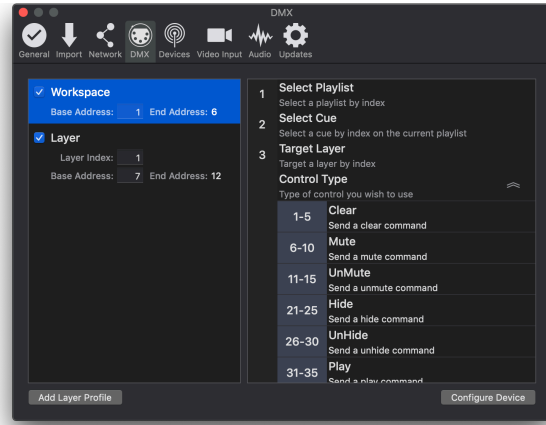
Note that one or more options may have a submenu that you can drill into.

The **Workspace** option controls the overall performance of PVP. For example, if you want to select a Playlist, or a Cue within the currently selected Playlist, you can do that using the Address listed in the Workspace option.

There are also controls for specific **Layers**. Click the **Add Layer Profile** button to add additional Layers to the DMX control. You can set the **Layer Index** which controls which Layer that section will control.

Click the **Configure Device** button to open the **Devices Tab** of the Preferences (covered below).

# Devices

The **Devices Tab** of PVP allows you to configure the devices that are connected to PVP. To add a new DMX device, click the + button in the lower left and select **DMX**.

Note that PVP 3 supports ArtNet over a network only; USB-DMX interfaces are not supported.

You can give each device a unique **Name**, and you can tell it if it should **Auto Reconnect** if the connection is lost. Next to **Hardware** you can select **Art-Net**, and next to **Behavior** select **Device**.

> As of the writing of this User Guide, Art-Net and Device are the only options.

At the bottom of the window you can set up the **Address**, the **Port** number, and other options. Once you are done setting up your device you can click on the **Back** button on the top left.

Once you have created a Device you will see it listed in the Devices Tab of preferences. Click the **Connect** button to connect to that Device. To Delete a Device, right click on it and select **Delete**, or click the **Delete** button from within the **Settings** window.
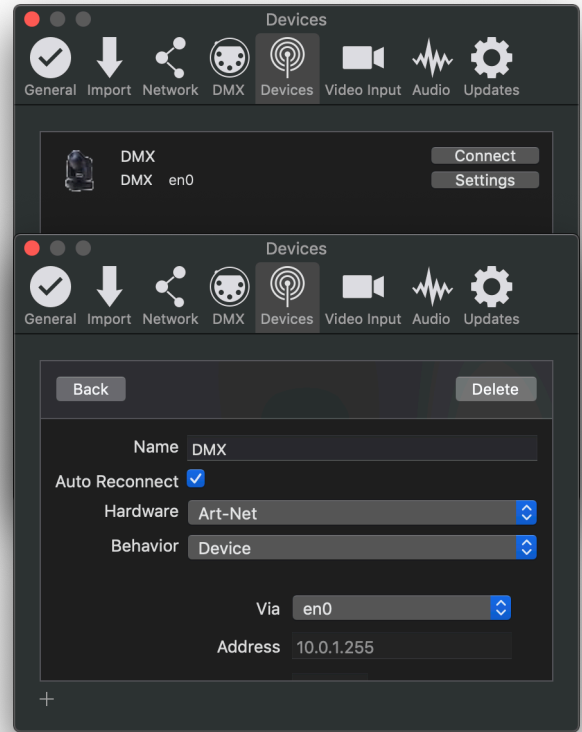
## Video Input

This tab allows you to set Video Inputs into the program and then add them more easily into the Video Input Playlist.  Upon opening the window, you can select the number of **Video Inputs** you wish to have in the program by either manually entering the number or using the arrow buttons.

You then can go to the dropdown menu by each input and select the Input device you wish to link it to.  This can be an internal camera on the Mac, SDI Input, NDI Input or Syphon Input.
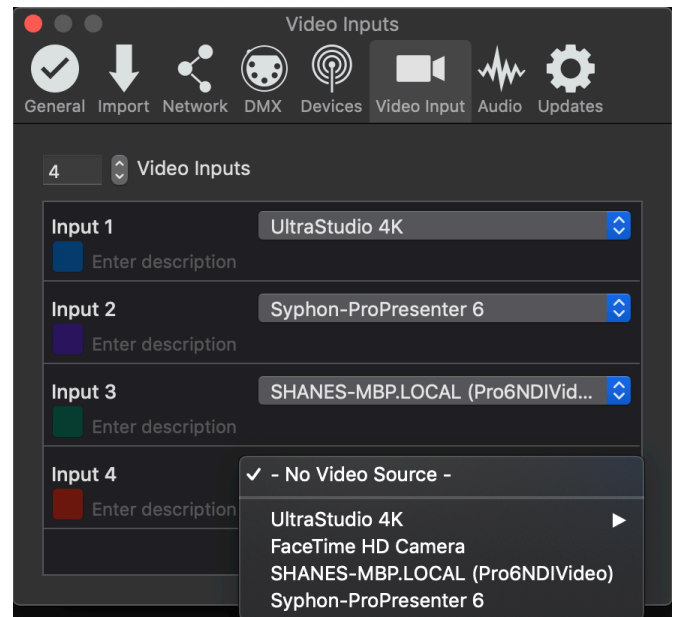
To change which input device is assigned to an input, simply go to the dropdown for that Input and select either a new Input device or choose **Remove Input Device** for that Input to not be linked to a Video Source.

You can also enter a **Description** here, this description is used for the Label on the Cue and for the **+** menu in the Video Input Playlist.

# Audio

PVP 3 features many new Audio options that allow you to customize your audio inputs and outputs in many ways. The new **Audio Tab** is where many of these features are controlled.

## Timecode

PVP has the ability to listen to a Timecode feed and fire media at a given frame. The settings in PVP's Preferences mirror the settings set via the Timecode button ⏱ in the main window. See the Timecode section for more information.

## Inspector Output

PVP allows you to Monitor audio from the Inspector on a different audio feed than your main output. This allows you to preview media in the Inspector during the show without the audience hearing it.

To select which audio feed you want to hear audio from the Inspector, click on the drop-down menu next to **Device** and choose an audio output. To turn off this feature, click the checkbox next to **Monitor On Main Output**.
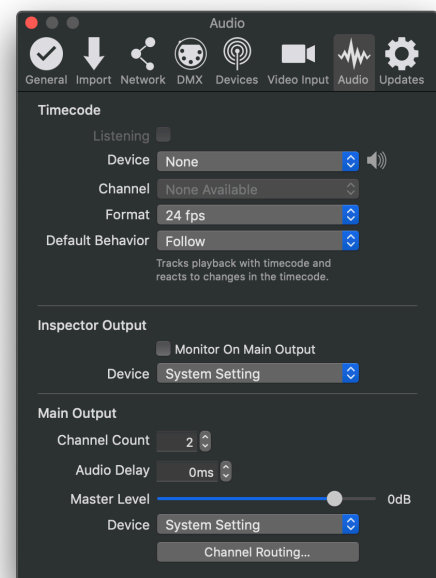
## Main Output

Use the arrow buttons or manually type in a number to set the **Channel Count** (how many channels of audio will be generated) of PVP. Similarly adjust the **Audio Delay** if you want all of the audio to be delayed out of PVP's main output (this is useful if your video system has a delay in it and you need to delay your audio to match).

Adjust the **Master Level** to control the volume of all audio being sent out of PVP.

Click the drop-down next to **Device** to set which output will be used for the main output. Click **Channel Routing** to customize where specific channels of audio will be routed. (See the Audio Routing section above for more information.)

# Updates

Enable **Automatically Check for Updates** and PVP will look for any new updates to the program when it launches and prompt for installation if an update is available.

The Renewed Vision Development team will receive information from your usage of the program by enabling both **Report Errors and Crash Reports** and **Share PVP Analytics**.
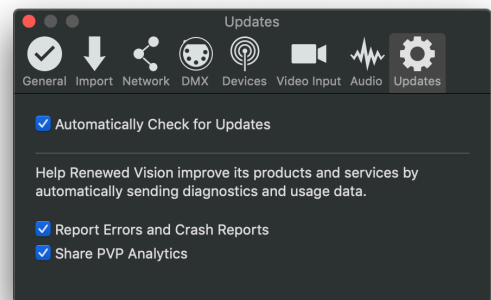
# Appendix

## Blend Modes

- Normal
- Alpha Matte
- Luma Matte
- White Matte
- Dissolve
- Darken
- Multiply
- Color Burn
- Linear Burn
- Darker Color
- Lighten
- Screen
- Color Dodge
- Linear Dodge
- Lighter Color
- Overlay
- Soft Light
- Hard Light
- Vivid Light
- Linear Light
- Pin Light
- Hard Mix
- Difference
- Exclusion
- Subtract
- Divide
- Hue
- Saturation
- Color
- Luminosity

## Effects

- Adjust Color
- Blur
- Color Filter
- Color Invert
- Color Key
- Color Posterize
- Color Swap
- CRT Monitor
- Dots
- Edge Blur
- Edge Outline
- Emboss
- Gray Invert
- Halftone
- Heat Signature
- Hexagon
- Image Distortion
- Kaleidoscope 1
- Kaleidoscope 2
- Lens Distortion
- Old Film
- Picasso
- Pixelize
- Plasma
- Radial Blur
- RGB Adjust
- Ripple Center
- Ripple Side
- Sepia
- Shake
- Stars
- Strobe
- Tile
- Toon
- Two Color
- Vignette

## Transitions

**Blurs**
- Dispersion Blur
- Noisy Zoom
- Zoom In

**Color**
- Color Burn
- Color Push
- Color Warp
- Film Burn

**Dissolves**
- Dissolve
- Fade
- Fade Black
- Fade Bright
- Fade Dark
- Fade Gray
- Fade White
- Warp Fade
- Wave Dissolve

**Movements**
- Flip
- Fly In
- Iris
- Mosaic
- Move In
- Push
- Ripple
- Swap

**None**
- Cut

**Objects**
- Cross Hatch
- Cube
- Door
- Kaleidoscope Wipe
- Random Pixels
- Random Squares
- Random Squares Flicker

**Wipes**
- Amoeba
- Reveal
- Square Wipe
- Wipe

# Keyboard Shortcuts

## PVP Menu

| | |
|---|---|
| Preferences | Command-Comma |
| Hide PVP | Commmand-H |
| Hide Others | Command-Option-H |
| Quit PVP | Command-Q |

## File Menu

| | |
|---|---|
| New Show | Command-Shift-N |
| Open Show | Command-O |
| Save | Command-S |
| Duplicate Show | Command-Shift-S |
| Save Show As | Command-Option-Shift-S |

## Edit Menu

| | |
|---|---|
| Undo | Command-Z |
| Redo | Command-Shift-Z |
| Cut | Command-X |
| Copy | Command-C |
| Paste | Command-V |
| Duplicate | Command-Shift-D |
| Delete | Delete |
| Select All | Command-A |
| Deselect | Command-D |

## View Menu

| | |
|---|---|
| Workspace Editor | Command-E |
| Calendar | Option-C |
| Sidebar | Command-Option-I |

## Layers Menu

| | |
|---|---|
| New Layer | Command-Option-N |
| Target Next Layer | Option-Right Arrow |
| Target Previous Layer | Option-Left Arrow |
| Select Master | Option-0 |
| Target Layer [1-9] | Option-[1-9] |
| Clear All Layers | Option-Shift-L |
| Clear Layer | Option-L |
| Play/Pause Layer | Option-P |
| Skip Backward | Option-[ |
| Skip Forward | Option-] |
| Go To Beginning | Option-Shift-[ |
| Go To End | Option-Shift-] |

## Editor Menu

Only available when the Workspace Editor is open.

| | |
|---|---|
| Zoom In | Option-Equals |
| Zoom Out | Option-Minus |
| Zoom to Fit | Command-0 |
| Show/Hide Rulers | Command-R |
| Show/Hide Grid | Command-Option-Apostrophe |

## Playlist Menu

Only available when the Workspace Editor is closed.

| | |
|---|---|
| New Playlist | Command-N |
| Zoom In Playlist | Command-Equals |
| Zoom Out Playlist | Command-Minus |
| Zoom In Secondary | Command-Shift-Equals |
| Zoom Out Secondary | Command-Shift-Minus |

## Calendar Menu

Only available when the Calendar window is open.

| | |
|---|---|
| Enable Calendar | Command-Option-S |

## Window Menu

| | |
|---|---|
| Toggle Output | Command-1 |
| Minimize | Command-M |
| Enter Full Screen | Command-Control-F |

## Help Menu

| | |
|---|---|
| Find my Mouse | Command-Option-M |

## Inspector

| | |
|---|---|
| Play/Pause | Space |
| Mark In | I |
| Mark Out | O |
| Step Back | Left |
| Step Forward | Right |
| Skip Back | Option-Left |
| Skip Forward | Option-Right |
| Go To Beginning | Command-Left |
| Go To End | Command-Right |

# Additional Resources

## Tutorial Videos

In addition to this User Guide we have a set of Tutorial Videos that you may find useful in your PVP 3 journey: https://renewedvision.com/provideoplayer/tutorials/

## User Forums

If you have any questions or if you just want to join the community of PVP 3 users, feel free to post in our User Forums: forums.renewedvision.com

## Technical Support

We hope that you have a trouble-free experience with our software, however if you are in need of technical support then don't hesitate to reach out to us.

We offer a wide variety of support options, including live chat, e-mail and scheduled phone support. Please visit our Support page for more information: support.renewedvision.com

## Social Media

Twitter: @ProVideoPlayer, @RenewedVision, and @RVSupport
Facebook: fb.com/ProVideoPlayer and fb.com/RenewedVisionApps
Instagram: @ProVideoPlayer

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