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Launch Control

Once AV-Playback begins, the first thing you will encounter is a convenient ‘Launch Control’ window.

1. Default File Store Path
   Establishing a default file store path is mandatory, hence why the very first-time AV-Playback is started from a new install, a folder browser appears. A default folder should be selected before trying to open or create a playlist. Once one has been established you are still free to deposit and retrieve files from any other location. However, anytime a file browser is opened it will always use the default folder as its starting point. The default folder is especially necessary when setting up for use with a backup workstation. In that situation, it is important that the root event folder path be the same on both workstations.

2. Default Audio Device
   Clicking will reveal a list of installed audio playback devices found on the local computer. Select the one AVP will choose everytime a new media element is added to the playlist.
   
   NOTE: If the last time your workstation was used, it employed an outboard audio device such as a USB to audio out or HDMI monitor audio out, and those devices are not being employed presently, there may no longer be a Windows default audio device and this list may appear blank. It is important that you always ensure you have a device selected before starting a new playlist or even loading a current one, especially if you plan to add any media to the playlist. If this is left blank all newly added media elements will not have an audio device assigned and when played any audio tracks will be mute.

3. Recall Saved Layout
   Clicking this will recall the last saved layout by automatically opening the saved number of playlists controls as well as load their respective files and position each window back to the state at which it was saved.
   
   NOTE: If no layout has been previously saved this button will be disabled

4. Start New Playlist
   Clicking this will first display a file browser requiring you to give the new playlist a name and location. Once you create and save the new playlist, a playlist control window will be opened.
   
   NOTE: Once this is selected the Launch Control will automatically close.

5. Browse Playlists
   As the name implies, this opens a file browser where you can find a particular playlist file to open. Once selected a playlist control window will be loaded.
NOTE: Once this is selected the Launch Control will automatically close.

**Recent File List**

This list displays all the most recently used playlist files in a reverse order with the newest at the top and working down from there. Double click on an entry to reopen and automatically load a playlist control window.

**Clear Recent**

Clicking this will remove all entries in the 'Recent List' and erase all history of them.

**Workstation Role**

When there are more than one AVP workstation on a shared network and you wish to synchronize their playback by employing the AV-Sync Hub, it is important to establish a proper control hierarchy. Here you select whether the workstation will serve as your primary and be the unit all commands are issued from or to serve as a direct backup to that primary.

NOTE: Only one primary and one backup can be on the same network at a time. If neither is checked then the node is considered neutral and can, if linked to the AV-Sync Hub, still will receive transport commands from the primary.

To learn more about these roles, refer to Understanding Workstation Roles.

**Workstation Name**

This title is what distinguishes each workstation apart from one another when connecting to the AV-Sync Hub. By default, this will first use the actual computer name that has been saved in Windows. You are however free to type in your own custom title if desired.

NOTE: All titles must be unique and never used more than once on the same network.

**Workstation Index**

Like the Workstation Title, each workstation must also have a unique index number and never be used more than once on the same network. Use this control to select that index number.

**Auto Launch AV-Sync Hub**

If this checked, once a playlist is launched the AV-Sync Hub will also be launched automatically.

NOTE: Only one instance of AV-Sync Hub can be on the network at a time. It can be assumed that whichever workstation is primary would also be the host for the hub. However, to ensure that communication continues to other workstations in the case of possible loss of the primary, the hub can be hosted on its own computer away from any running iterations of AV-Playback within the same machine.

**Play Command Delay**

When receiving transport commands from the primary you can choose to delay activation of the play command. This can be handy when you prefer to stagger play times between a primary and its backup. Default is 0.

**Show Tool Tips**

When enabled each individual control will produce a helpful popup describing its purpose. Due to it sometimes interfering with mouse clicks, it is recommended that this feature be disabled once you feel comfortable with all aspects of the program.

**Help Button**

Clicking will open this help file.

SEE ALSO

- Menus
- Playlist Control
- AV-Sync Hub
Display Output Selection Tool

This tool makes it easy to select the desired output screen for a given playlist.

Output Display Picker

The display picker automatically draws an individual icon representing a screen destination. Only destinations that qualify as an external output will be displayed. The only one not shown is the one classified by the workstation, as the 'Main Display'. AV-Playback will always reserve that one for its own user interface. Do not confuse this with AVP’s ‘Primary’ designation, that is simply the apps way illustrating the one that is selected.

Selected Destination

To select simply click on the desired output and select "Make Primary".

As illustrated the icon’s background color will turn color from gray to green and the word "Primary", as well as the owning playlist’s title, will also be displayed.

Another key feature of V2 is the ability to create custom spanned pixel spaces. A spanned space effectively extends a single program output across multiple display screens. This is useful when needing to display ultrawide resolutions that exceed the capability of a single output.

To prepare for a spanned space and before you open AV-Playback, first go to Windows Display Settings and ensure that all display outputs are arranged in a horizontal pattern with each aligned equally along the top of each other. Determine which outputs will be used together and arrange them in order left to right, like it appears below.

Now return to AV-Playback and this Output Display Control and select the first(left) output in your span and designate as the primary. Now right click on each of the next outputs in your span and select “Span With Primary”. After which it should appear like below:
Available Video Renderers

Use to select the desired video render that will be used for all video clips contained in the playlist.

Use Deeper Color:
When checked an additional filter will be applied to the display out that slightly increases black levels and richens overall color.

Test Pattern Generator

Here you can select to output a test pattern by selecting one from the drop-down list and then choosing to display in program or preview or both.

Available Patterns:
(None)
100% Colour Bar
Colour Bar & Grid
Gray Scale
Multiburst
Segment Boundaries
Segmented Grid
Spanned Grid

Once a chosen output has been checked the selected test pattern will appear immediately and will remain if checked, even after closing the display output tool.

Cancel button

This will close the form without saving any possible rendering changes.

Save / Re-Configure button

Click this to save the necessary selections. Once this is done, a sequence of events will occur... First, the window will close then the playlist will close but then immediately reopen using the newly selected outputs. It would be wise not to perform these steps while a clip is playing in program.

NOTE: This button will only become enabled once an active change to either the assigned display output, output spanning, default renderer or deeper color.

SEE ALSO
Playlist Control
Playlist Unit Control

At the heart of AV-Playback is the playlist unit control. It is with this control all primary functions are performed.

Things to Consider:

1. Up to four units can be open at the same time.

2. Each unit can only have one discrete pixel space assigned to it at a time. No other unit can share the same pixel space. A pixel space is defined as a single display channel output by default or one that is set to span across multiple display channels. Note: When spanning, all outputs the space it encompasses become unavailable for use by any other playlist unit.

3. To provide smooth operation, all clip elements in a playlist (base and layer) are loaded into memory at the same time. Careful consideration should be made to how much available system memory the workstation has on hand. The more elements in the playlist the more memory it will require. Without ample memory headroom, overall playback performance can be negatively impacted.

View Style

Use these to select the view style of the actual playlist data table. You can choose between a standard list style (default):

or the large thumbnail grid style:
Open Button

Browse and load an existing playlist file. If the control already has playlist open, this action will close that file first before loading the selected one.

New Playlist

Use this to create a new blank playlist. It will open browser window enabling you to name the new file and select where it will be saved. As with ‘Open’, if the control already has playlist open, this action will close that file first before loading the new one.

Select Output Screens

Clicking will bring up the ‘Display Output Selection Tool’. Use it to select the desired display output. Once assigned, that display will be owned by the playlist unit. If the playlist is open no other playlist unit will be able to utilize it.

Add Base Media Element

Clicking this will reveal the Media Selection Tool:

Click on “Browse” to search for the desired media.

Once files are selected, click open. At this point, the browser will disappear now to complete the add be sure to click on “Apply” on the selection tool.

NOTE: If adding base elements to the playlist you are permitted to select multiple files at the same time within the file browser. However, if you are selecting layer elements to a base, only one element can be added at a time.

If instead, you wish to add a live capture input, then select an available source from the “Capture Device” list.

NOTE: You cannot add media files and a capture source at the same time. If anything, other than “NONE” is selected that selection will overrule any selected media clips and the capture source will be the only thing added.

Edit Mode

To edit certain details of a media clip, this must be enabled. When enabled you can double click and on either the clip’s title, fade rate, link delay time and the punch in or out time to manually edit those properties.

NOTE: While enable you will not be able to select any clips for play.

Clear Selected

This will clear the selection of all media clips. Any that were selected for ‘Preview’ or ‘Program’ removed from display.
Auto Start Clip

When checked a clip will automatically begin playing as soon as it is selected. This also applies to selections generated when pressing the Previous or Next buttons.

Previous & Next

Click to select for preview, either the clip before or after the currently selected clip. If there isn’t one selected it will go from the one currently in program. If none are selected it will begin at clip number one.

Preview Control Group

Here you control transport functions, audio gain and output assignments for any media that currently resides in the preview slot. You also have the option to override what is outlined in the timeline section, So let’s say you need to do some last minute tweaks to a clip before it is taken to program but you currently have media playing out to the house, When the override is enabled the timeline control will now reflect your preview material, allowing to make the necessary changes and once done you can remove the override and the timeline goes back to showing program status.

CAUTION: While the preview override is active the running program clip may not be able to respond to timeline triggers required for linking and looping of media. Only override just long enough to perform preview edits then return to displaying program.

Temporary Hold/Freeze

When enabled a playing clip will pause and remain visible at its punch out time point and will remain there until the ‘Kill’ button is pressed. This feature overrides any of the clips individually enabled functions such as Fade, Link, Repeat and Hold. Once the ‘Kill’ button is pressed, the clip will return back to its starting point and this feature will become disabled.

Temporary Loop

When enabled a playing clip reaching its punch out time point will automatically return to the punch in point and begin to play again. This looping action will continue until the ‘Kill’ button is pressed. This feature overrides any of the clips individually enabled functions such as Fade, Link, Repeat and Hold. Once the ‘Kill’ button is pressed the clip will return to its starting point and this feature will be disabled.

NOTE: Both Temp Hold and Temp Loop can be enabled prior to the start of a base clip.

Program Transport Group

These should be self-explanatory but there are a few details that need to be discussed:

“Kill” will stop program play and automatically blank the video output as well as return the base clip and any layers back to its starting position. Note: Using this while the clip is running will only go back to the closest tag. To go back further you will need to pause playback.

“Pause” is a toggle. When paused the ‘Take’ button will be disabled you must click the ‘Pause’ again to resume play.

“Next Tag” Advance clip’s position to the next cue tag from your current position.

“Take” will always begin play at the base clip’s punch in point.

GoTo Time Out

Clicking any of the four will instantly reposition the base clip to either 60, 30 20 or 10 seconds before the base clips punch out time. If the clip is playing when pressed it will remain to play even after it is repositioned.
The green scrub bar moves across the span to reflect the play head’s current position. The small timecode display on top of the scrub line will always show the actual position within the clip’s native extents, regardless of current punch points. By clicking on and dragging the trackbar icon you can manually set the current position of the play head.

It’s also possible to move the scrub bar in one frame increments hover the mouse cursor over the track bar and then use the mouse’s scroll wheel to move its position. You can also use the left and right arrow keys on your keyboard to move by 3 frames at a time.

All adjustments can be made even while the clip is currently playing.

**Set Punch In / Goto In Point**

*SET IN* Click to set base clip’s punch in point to the current scrub line position.

*<<* Snap clips current position to the punch in point.

**Set Punch Out / Goto Out Point**

*SET OUT* Click to set base clip’s punch out point to the current scrub line position.

*>>* Snap clips current position to the punch out point.

**Rewind**

While pressing, the clip will rewind its position at a rapid pace.

**Fast Forward**

While depressed the clip will play forward at the faster than normal speed.

Click on the down arrow button to access the Fast Forward context menu.

**Auto Mute Audio:**

When fast forwarding the audio play heads are still active so to prevent the excess noise from being heard you can enable this feature to mute the audio for as long as the fast forward is engaged.

**Speed Value Slider:**

Adjust this slider to set the default faster than normal speed used when fast forwarding.

**In Preview Clip Title**

Once a clip is selected for preview its title will appear here.

Selecting a clip for standby is simply performed by clicking anywhere within the clip’s row, except for its checkboxes (Fade, Link, Loop & Hold), this is because those properties can be set without enabling the ‘Edit’ button.

**NOTE:** If the ‘Edit’ button is enabled you cannot make a preview selection.

**In Program Clip Title**

When the clip in preview is moved to program, its title appears here. The ‘Preview Clip Title’ text label will become blank until another clip is placed into preview.

**Timecode Display**

*Count down mode.*

*Elapsed time mode.*

**Transport Status Icon**
The above icons illustrate the transport status of either preview or program. That last icon represents a base clip that is set to loop. Digits will also appear inside the loop icon that represents the total number of iterations that have occurred since it began playing.

**Time Display Constraints**

Clicking this button will cycle through the three different modes that are used to determine the duration extents used for calculating the running time displayed.

- **(BLUE)** (Default) Total duration is within the boundary’s set by the punch in and out points.
- **(GRAY)** The clips native duration no matter what the punch points are set at.
- **(PURPLE)** Duration is the span between cue tags. If viewing countdown, the display will countdown to zero at each cue tag. When play moves beyond a tag the display will begin the elapsed countdown to the next tag and so on.

**Time Display Direction**

These two separate buttons control the counting direction of the current clip position. When the down arrow is red, the display is counting down to zero. Conversely, when the up arrow is green then the display is counting up from zero.

The color of the time display will also change. It will be red when counting down and green when counting up.

**Clip Data Fields**

The data fields contain pertinent information as well as user editable properties.

**TIP:** You can rearrange the column order within the playlist grid, by clicking on the column header and dragging it to the desired location.

Clicking most anywhere within the row will select the clip and place it into standby, with the exception of its checkboxes (Fade, Link, Loop & Hold). Clicking these only effects, a direct change to that function’s current state.

Once the clip is selected the row’s back color will become yellow. This signifies the clip has been loaded into the video engine’s memory and is now ready for play.

When a clip in preview is instructed to play out to program, it is now considered “In the gate” and the back color will turn to red.

If you left click and hold you can then drag that clip and all it settings to any other index position within the list.

To edit certain properties, ones that require the need for direct typing of a value will first require you enable the ‘Edit’ button. When ‘Edit’ is enabled you will be unable to select a clip for standby, instead, mouse clicks are treated as a request to edit a particular field.

**TIP:** Right clicking on any row will cause a small popup preview window to appear, which contains a thumbnail of a video frame at five seconds in. This time value is fixed and cannot be changed.

**Clip ID**

***Current screenshot is out of date and does not illustrate this column correctly.***

By default, when you add a new media element the system will insert a sequential index number. All single numbers will have a zero in front of them. Users, however, can enter any alphanumeric combination they like after the clip is in the playlist. There are some rules though. You can only use letters A to Z and number 0 to 9. No special characters or punctuation marks allowed, and there must always be at least two or more characters.

**NOTE:** It is this ID that you type when using a keyboard to select a clip for play.

**File Thumbnail**

By default, this column is hidden but can be made visible by selecting on the main menu; **Settings || Show Thumbnails**.

**NOTE:** When ‘Show Thumbnails’ is disabled, right-clicking anywhere on clip’s row will cause a popup thumbnail to appear.

**Layer Grid**

**Display Button**

Click on this button to display the layer subgrid for the selected base clip.

**Clip Title**
Displays the clip’s current title. By default, the title is the file name for the clip. This field can be changed by enabling the ‘Edit’ button, double clicking on the cell and then type in a title you prefer.

**Total Running Time**

This field shows the clips total running time the punch in and out points.

**Auto Fade Settings**

Each video or audio clip can be configured to perform a gentle fade in and out. By default, each new clip added will have this feature enabled along with a 1-second fade duration. This feature can be enabled or disabled at any time, even while the clip is playing.

However, to change its fade rate you can either at any time right click on it to show a popup slider control or if you choose to manually type in a value you must first enable the ‘Edit’ button, then double click on the text field.

*Note: This value cannot be empty, it will only accept values of 0.1 seconds or greater.*

**Link & Loop Settings**

**Link:**

Any clip can be linked with another. When one clip ends the next one will begin to play automatically.

To create a link, both clips their Link enabled. It is not required to have any of the linked clips next to one another in the list but the link flow is from top to bottom, so consider that when determining a sequence.

**Del(ms):**

If you wish, a delay of the next clip’s start can be implemented. By default, this value is ‘0’.

To edit the value, first, enable the ‘Edit’ button and then double click on the text field to type in a new value. This delay value must be set on the clip receiving the linked start. This way you can customize the delay value separately for each linked clip.

**Loop:**

As with the link, any individual clip can also be repeated automatically. When this is checked, the clip will loop continues until the ‘End’ button is pressed. The same delay value can be applied to the end of each iteration if you do not wish to perform a “seamless loop”.

*NOTE: By default, it is understood that when the loop is used, it will be seamless. When first checked the ‘Fade’, Link and ‘Hold’ features will be disabled. This strategy is helpful if you are instructed to loop the clip after it has already begun playing. Once it has been checked, you can re-enable the ‘Fade’ and/or adjust the loop’s delay time.*

There however one exception to this rule... The disabling of those of those other features will not occur if the clip already has its ‘Link’ enabled and is part of a sequence of linked clips,

**Looping Linked Clips:**

A sequence of ‘linked’ clips can also be looped. If the last linked clip has its ‘Loop’ enabled, then when that clip ends the first linked clip will begin playing. This entire sequence will continue until the ‘End’ button is pressed.

**Max:**

You can limit the total number of times a clip or linked group will repeat by entering a number other than zero. Once at the end of the last iteration the clip will automatically stop and return home. Otherwise if set to zero the element will continue indefinitely until you press the ‘Kill’ button.

**Clip Hold**
Like the 'Temporary Hold' function, when checked, each time the clip played it will pause/freeze right at the punch out point and remain visible until the 'End button is pressed'.

NOTE: Enabling this will automatically disable the 'Fade', 'Link' and 'Loop' functions.

**Play Speed**

If you require a clip to play either faster or slower than normal speed on cue, then you can enter a custom number between 0.1 and 4.0. (1.0 = normal speed) This value will be saved and used each time the clip is played.

Note: It is best to perform any changes while the clip is stopped. Any changes to this value while a clip is playing may cause erratic behaviour. This value cannot be empty, it will only accept a value of 0.1 or greater.

**Clip Properties**

These fields display more of the clip's properties. The native resolution the clip was rendered at, frame rate and its bitstream size.

TIP: The bit stream size is a property you need to pay close attention to, because it is the main reason for clips possible rough playback performance. Our tests have shown that on an average quality PC, the bit stream size should not exceed 400 megabytes. Of course, these assessments may vary from computer to computer but you should think of this limit as a good rule of thumb.

**Punch/Set Time Points**

These show the current punch in and out timecode points. By default, when a clip is added to the playlist these will show the clip's native extents. You can edit these directly by first enabling the 'Edit' button and then double click on either, then you proceed to type a timecode point in manually. Click enter when done.

NOTE: When manually entering a value you must adhere to the standard timecode format, ensuring that the colons appear between each element of time, (hh:mm:ss:ff).

**Display Confidence Monitor**

In some situations where a video file has a bit stream size greater than what the computer can handle comfortably, you can try and disable the program confidence view for just the selected clip. The confidence view does contribute greatly to the overall stresses undergone by the CPU and GPU. Perhaps by eliminating this factor, you may be able to get the clip to play out smoothly.

**Audio Settings Button**

Left click to mute audio output from only this element. Click again un-mute.

Any video or audio clip can be assigned its own separate audio output. By default, when you add a clip to a playlist it will use whatever the app's Default Audio Device is set to.

After a clip is added you can right click on this to display a popup menu which contains both a level control as well as a list of currently available audio outputs. Adjusting either will only affect the individual element. When overriding the system default with a different device the change will be permanently saved and not affect the app default or any other element.

NOTE: In most situations, the first time AV-Playback is started on a computer it will query Windows for what it has as the default audio device and automatically assign it as the app's default. Although there have been situations where no default was found. This can happen when at a previous time the computer used a particular HDMI monitor as default audio out but now without the monitor attached there is no longer a default. When no default is assigned to AV-Playback, anytime you add an element to a playlist it will load with no audio output assigned. It is very important to always have a default audio device assigned to the app.

**Clip Settings Button**

Clicking this will open a Settings Control Window. Please refer the link for detailed information on its use.

**Info Button**
Clicking this will display window with a detailed information of the selected clip’s properties.

### Notes Column

If you choose, you can save user notes to any base clip within a playlist. Click this button to display a small text entry window.

Type in what you like and then click the save button.

Once saved your note will appear as a popup tooltip anytime the cursor is hovering above the line item.

You have the option of displaying notes fulltime in its own text column by selecting the option in the “Visible Columns” window accessed by clicking on **Settings|Configure Grid Columns**

### Trash Button

Click to permanently remove the clip from the playlist.

### Layer Sub Grid

For a detailed explanation on adding and manipulating layer elements please refer to the [How To Add Media Layers](#) tutorial.

### Add Layer Link

Click this link to add media as layers that will appear on top of the base element.

**TIP:** For more information refer to information found in the description of the playlist “Add” button.

### Timeline Control

The timeline control gives a graphical display of the base element as well as any additional layer elements.
The overall time span of a timeline is determined by the base clip's native duration. The hash marks are automatically scaled based on the clips total length. Their placement interval on the line is approximately one second for each small mark and five seconds for the larger. For long running clips, the interval will change to reflect minutes instead.

Depending on the type of element and whether it is a base or layer, its icon will appear and behave differently.

**NOTE:** When the clip is currently in preview it will appear yellow. In program it will appear red.

**Video and Audio Clips:**

Other than providing a visual reference, the icon has a red vertical bar at the left and right edges, these are your trim point handles. You can use them to set the clip's punch in or out points by dragging them to the desired position.

When used as an additional layer and if that element's duration is shorter than base you can drag the entire icon and line up its left edge to any desired starting time point within the range of the base clips TRT.

If a motion layer has been set to loop, you set a total duration for the repeating clip by grabbing the right edge of the icon and dragging it out to the desired end time.

**NOTE:** The overall length of the icon is determined by the elements native duration. However, the actual starting point of the element is this plus any additional span to reach finally reach its punch in point, e.g. left trim handle.

**Still Image Files and Live Capture Input:**

If these element types are used as a base clip since they have no clock to run the timeline the icon will provide only a visual representation providing no user control. However, when used as layer to a video or audio base layer, the icon will by default span the entire running time of the base clip but to control when the element appears on and off screen you can use either it’s left or right trim point handles to drag them effectively to the desired start and end time points.

For all element types; anytime it has had its in or out point trimmed the area between them and the elements extents will appear as a faded color with a crosshatch pattern.

**NOTE:** To provide activation of additional layers, the base clip must always be either a video or audio clip. It is from these clips the timeline's clock is derived. Without a clock, layers cannot be triggered to appear on the screen.

The green scrub bar moves across the span to reflect the play head’s current position. The small timecode display on top of the scrub line will always show the actual position within the clip's native extents, regardless of current punch points. By clicking on and dragging the trackbar icon you can manually set the current position of the play head.

It's also possible to move the scrub bar in one frame increments hover the mouse cursor over the track bar and then use the mouse's scroll wheel to move its position. You can also use the left and right arrow keys on your keyboard to move by 3 frames at a time.

**NOTE:** All adjustments can be made even while the clip is currently playing.

**Cue Tag Marker**

A cue tag is a marking tool you can add to a timeline. When a marker is in place and the 'Time Display Constraint' is set to the purple, the timecode display will show a running countdown to each tag. When playback moves beyond a tag the display will begin the elapsed countdown to the next tag and so on. These tags can be useful when the director needs to issue instructions to other cue members during playback.

You can add as many tags as you like, and they will be automatically saved to that clip. After a tag as been inserted you can move it on the timeline by dragging it to the desired point in time.

To remove a tag simply drag it all the way off the timeline to the left or right.

A brief crib note can be added to each tag by right-clicking it and typing your note into a simple dialog box.
After the note has been saved it will appear as a tooltip anytime the cursor is hovering over it.

After a tag has been inserted, you can move it on the timeline by dragging it to the desired point in time. Tags can also be an easy way to jump the play-head directly to any point within the clip by using either the 'PREV TAG' or 'NEXT TAG' buttons.

**Add Cue Tag**

Use this to add a 'Cue Tag' to the timeline. By default, the tag will first be placed at the 'Scrub Line's' current position.

**Sync To Hub**

Use this to activate a link to the AV-Sync Hub. This as a toggle so click once to connect, click again to disconnect. When connected anytime a Primary workstation issues a transport command, such as Take, Pause, Kill, Scrub and Time Out will cause the exact same command to occur on the other linked playlists. This also makes it possible to sync playback of multiple destinations simultaneously.

**NOTE:** One AV-Sync Hub anywhere on the network must be up and running for this function to be enabled.

**Backup Status & Update Button**

Another exclusive feature is to have one networked workstation serve as a direct backup to the primary unit. The pictures above show the five different states of the backup's status. These will only appear within the one workstation designated as the primary. Refer to Setup Backup Workstation to learn more.

SEE ALSO

*Menus*

*Confidence Monitor*

*Settings Control Window*
Confidence Monitor

Every active video playlist will feature its own confidence monitor. By default, the window will appear to the right of the Playlist Control. Its height will match that of the playlist control and its width reflect the aspect ratio of the assigned destination screen. Each monitor window can be resized and/or moved and anywhere to suit your desired layout. You can even drag it on to an extra screen output. The location and size information is stored within the playlist file. Meaning that the next time you load this playlist file, the confidence window will automatically return to the last position it was in at the time the list was closed.

Program Display
Displays in real time, the clip currently playing out to program.

Preview Display
When a base clip is first selected this will display a simple thumbnail image retrieved from the files own header. (Same thumbnail that appears in the file explorer.) This is done to provide the user with a quick confirmation of the chosen clip and to prevent unnecessary reloading of the preview buffer when rapidly selecting next or previous clips.

Once a clip is instructed to play in preview this image is replaced with the clips actual video output.

Display Orientation Menu
If desired the user can right-click anywhere within the preview display to access the popup menu that allows you select between a vertical split (shown above) orientation or a horizontal split.

Audio Output VU
For both program and preview respectfully, this provides an active display of audio levels for the currently playing clip.

Positioning Data
For both program and preview respectfully, this provides an active display of the clips current transport status as well as positioning data.

SEE ALSO
Playlist Control
**Settings Control Window**

Every base and layer media element are capable of being manipulated to suit your design needs. This control gives you access to tools that can help to make it possible.

1. **Page Selection Tabs**
   Settings are separated into six easy to understand categories. Use this tab control to select from any one of them.

2. **Treatment Functions**
   It is possible to save the current array of settings into the form of a treatment that can be later applied to any other media element.

   You can choose just which properties are to be saved by checking off categories in this popup control that first appears after clicking the "Add" button:

   After making your selections you can either accept the default auto indexing title or you can type in a unique title of your own that is easily recognized later when you wish to apply it to another element.

   To apply to another element simply click on the "Retrieve" button to reveal this control:

   Select a treatment in the list and click “Apply”. All save properties within the treatment will be immediately applied to whichever element you are currently editing.

3. **Keep Open**
   For convenience and to make sure when revealed it remains above all other windows The setting control window is this a modeled form. Now anytime it is opened it will lock out access to all other windows. However, If you wish to keep the control open while you are needing to manipulate transport controls, perhaps to change the clips current time position, you will need to check this box. After doing so the window will reopen but this time it will behave like a normal window.
Reset Button

If while affecting a change within any of the pages, you wish to snap them back to their defaults then simply click this button.

NOTE: The reset will only return the currently visible page settings to their default and not affect the custom settings within any other page.

Done Button

When finished click this button to close the control.

Tab Pages

Below are screen captures of each of the six tab pages.

For the first five pages, values can be altered by either moving its slider control or typing a value directly into the adjoining text box. When typing in a value you will need to hit your enter key when done, otherwise, the value will not change. Also, keep in mind that all values are either a decimal or integer number, any other characters will be rejected.

Things you need to consider:

1) It is assumed that you are already up to speed on the basics of many of these properties and hope they are self-explanatory enough. We will, however, provide further explanation to function that perhaps may be more obscured to you.

2) It is important that you understand many of the properties are decimal values between 0.000 and 1.000. Imagine that the screen has a size of 1x1 (not in pixels, but in an abstract measure). Then the coordinates of a full size picture is 0 0 1 1, which means left edge is at coordinate 0, top edge at coordinate 0, width full size = 1, height full size = 1. This same concept carries over to other functions as well.

Geometry Page:

Maintain Aspect:
When checked the element’s fill height will always remain equal to the fill width divided by the elements native aspect ratio.

Clip Container:
There are two way to think of the clipping.

1) Unchecked: (default)
Imagine the fill rectangle (pos, scale) is the hole in which the image is shown thru and does not change. However, when adjustments are made the image inside the hole will effectively change pos and size, sort of like zooming in.

2) Checked:
In this case, it is the sides of the fill rectangle that are adjusted, the image inside remains the same size. This is more like cropping in on the image.

Transform Page:

You can employ 3D Prospective to create the illusion that an object is rotated toward or away from you.

2D Transformation provides the ability to either rotate an element around 359 degrees or to skew horizontally or vertically.

Use the Anchor X & Y to set the exact location of the center point of any rotation.

NOTE: In order for the 3D projection to not have portions of its frame clipped off “Clip Container” must remain unchecked.

Warp Page:
In some cases, you may want to distort the overall shape of the media so as to map projection onto 3D shape as opposed to a flat 2D screen. When the “Enable Warping” is checked then use the sliders to contort the image at eight points, four on the left and four on the right.

Proc Page:

NOTE: Proc adjustments other than “Opacity” are not available on any media that has been rendered using the QuickTime codec such as MOV’s. If that codec is detected in the media file, then all controls except for “Opacity” will be disabled.

Keying Page:

Layer elements that are added over a base element can use the chroma keying feature. A chroma key will render certain colors in the media to become transparent allowing the layer underneath to show thru. That trigger color can be adjusted using the red, green and blue adjustment controls. The RGB values are a floating decimal that range from 0.0 (0) to 1.0 (255). The tolerance adjustment acts like a threshold and can be used to fine-tune the cut.

Properties Page:

This list outlines all graph filters currently in use. To access their available property page, select one then click the “Show Properties Page” button. Note: This only populates when the currently select media is active in either preview or program. Caution: Some filters may retain changes made and utilize them across all future instances.

SEE ALSO
Playlist Control
AV-Sync Hub

The AV-Sync Hub is a powerful tool that can be used to control and synchronize multiple AVP workstations together.

**Things you need to consider:**

1) Only one hub can be active on the network at a time.

2) It is not necessary for this program to be running if all you want to do is use workstations in a neutral standalone fashion.

3) However, if also employing our MCS5 or 6 control surfaces, it will be required that the hub is incorporated and launched by either ensuring the “Auto Launch Hub” property is checked or manually launching it before AV-Playback.

4) It is assumed that the hub would run on the primary workstation given the use of the auto start feature but if desired a hub can reside on its own computer and remain safe from possible shutdowns, ensuring communications remain open with back up units. Keep in mind that run on another computer and you using a control surface. The controller will need to the same computer as the hub.

**Current Networked Workstations**

This data grid displays all discovered AV-Playback workstation actively running within the local network.

**Linked / Primary / Backup:**

These three buttons not only provide you with current property status of the workstation but also provides control of the properties without the need to perform the change directly within the workstation itself. Clicking “Linked” will toggle whether that workstation will receive broadcasted commands. Keep in mind though if the primary is unlinked then no one receives commands. “Primary” show which station is considered primary. You can change that assignment by simply clicking on another workstation. The same holds true for “Backup” as well.

**Workstation:**

Displays the title given to that workstation. This is the same as what appears in the Launch Control.

**Unit:**

Displays the current tile of the play unit's playlist file.

**IP:**

Displays the IP address of that workstation.

**Latency:**

To provide tighter command synchronization between workstations, the time it takes for packets to be received and returned to the hub are being constantly measured. The amount of time required to complete the round trip is considered latency. When command packets are sent out one at a time and since that action itself presents its own slight latency we can better compensate for that if we use this value to assign the transmission array from longest to shortest latency. You will see those numbers constantly fluctuate, this is due to varying traffic loads within the network.

**Master Clock Section**

The master clock is what all connect workstation use to synchronize their own clock with.

By default, master time is derived from the internal clock of the computer hosting the hub. If you wish to utilize an external timecode generator and make it the master clock, then first connect the LTC signal of the generator to an available audio input on the computer and then click on the down arrow next to the LTC button and ensure that the input has been selected. Now click on the ‘LTC’ button. If working correctly the display will now display the generators current time.

**NOTE:** This implementation is meant for a future enhancement and performing actual system clock updates is not fully implemented at this time. Considering this we have still found that if you allow each workstation to be connected to the internet long enough for you to forcibly get windows time to update by way of an internet time server, then in most situations you will still achieve good synchronization even after the internet connection has been removed.
Primary Unit Position Status

A key feature of the AV-Sync Hub is the ability to generate and output a linear timecode signal. This signal conforms with LTC standards and can be read by any device designed to read LTC signal streams. Before activating first click on the down arrow button and select an unused but active audio output channel.

**WARNING:** You do not want to make the mistake of enabling transmission on the same audio channels feeding speakers. The sound you will hear is horrendous. It sounds like a very rude alarm clock.

When the “Transmit LTC” is clicked and enabled the signal will begin and remain constant for as long as the transmit button is enabled. The timecode that would be transmitted is the current position data of the primary play unit. The above display always shows what that current position time is even when the primary is not linked to send or receives transport commands.

External Control Listeners

Like the listeners built directly into the AV-Playback app, you can choose to use the AV-Sync Hub to be the listener of external control strings instead. The benefit of using this listener means that any single external device can access all networked AVP nodes through this single connection. The AVP protocol structure contains an element that instructs which workstation index the command is meant for and the hub will handle delivery to the correct one. Please refer to the [AVP Protocol Commands](#) section to learn more about formulating command strings.

When enabled the button will glow blue.

**NOTE:** Only one program can open the listing port at any one time. It should be assumed that if the AV-Sync Hub is being employed at all, then all external commands strings should be directed to this control only.

Show Log Window

Use this to expand the window size and reveal a log window.

Log Window

This will continually update and provide confirmation of data coming and going through the hub’s data ports. Click on the “Clr” button to clear all text for the list.

SEE ALSO
- [Launch Control](#)
- [AVP Protocol Commands](#)
- [Working With AV-Sync Hub](#)
AVP Timecode Display

This easy to use self-contained app can be freely distributed without license to any other networked workstation and provide its user with a live timecode display of any currently running AV-Playback unit that has been set to broadcast their position data.

Things to Consider:
1) For a play unit to be received that unit must first enable the broadcasting of its position data. To do this go to Settings || Enable Timecode Broadcast.

Settings Menu
Click this to display the setting menu.

Available Play Unit List:
All currently broadcasting play unit will appear here. Click on the desired workstation to set its activity as the one being displayed.

Direction:
Select from its sub menu whether the time display will be either counting down or up with elapsed time.

Show Trimmed Time:
When checked time will reflect position data relative to duration between any punch in and out points.

Current Clip Title
Show the title of media currently in program for the connected play unit.

Current Timecode
Shows position timecode for media currently in program on the connected play unit.

The text color shows red when time is counting down and green when viewing elapsed time.

SEE ALSO
Settings || Enable Timecode Broadcast.
Another key feature is the convenient file conversion utility. From this control, you can easily convert any video or music file to a format that may better suite your needs.

### File Conversion Utility

**Source File Path**

Type in the location and file you wish to make a converted copy of.

**Source Browser**

Click here to display a file browser in which you can find and select the source file.

**Conversion File type**

Click to select the desired file type you want to convert to.

#### Available file types:

- "AC-3"
- "Audio IFF (AIFF)"
- "raw PCM A-law"
- "ASF"
- "AST (Nintendo audio format)"
- "Sun AU"
- "AVI (Audio Video Interleaved)"
- "Apple CAF (Core Audio Format)"
- "raw DTS"
- "raw E-AC-3"
- "FFM (FFserver live feed)"
- "raw FLAC"
- "FLV (Flash Video)"
- "GIF"
- "raw H.261"
- "raw H.263"
- "raw H.264"
- "raw H.265"
- "HAP (vidvox codec)"
- "Matroska"
- "raw MPEG-4 video"
- "raw MPEG video"
- "QuickTime / MOV"
- "MP4 (MPEG-4 Part 14)"
- "MPEG-4 Systems / MPEG program stream"
- "PCM mu-law"
- "Ogg"
- "OMA (Sony OpenMG audio)"
- "RM (Sony OpenMG audio)"
- "SWF (Sony OpenMG audio)"
- "WMV file (alias for ASF format)"

**Destination File Path**

Type in the destination location where you wish to save the converted file.
Type in the location and file title you wish the converted copy to have.

**Destination Browser**

Click here to display a file browser in which you can use select the destination folder.

**Begin Button**

Click to begin the conversion process.

**Abort Button**

Click to abort the current conversion.

**Progress Bar**

Displays the progress of conversion.

**Progress Log**

Displays a much more detailed analysis of the conversion process.

**Close Button**

Click to close the conversion utility control.

**Converted Frames Per Second & Resolution**

Use these to adjust these values of the finished converted file...
Menus

Save Current Layout:
Select this to save the current layout of all control windows. This also records which playlist file belongs to each open playlist, along with the screen destination and position/size of each window. (Playlist and Confidence Monitor.)

Recall Saved Layout:
Clicking this will recall the last saved layout by automatically open the saved number of playlists controls as well as load their respective files and position each window back to the state at which it was saved. Nothing will happen if a layout has never been previously saved.

Minimize Background:
This performs the same function as the form’s minimize button. When selected the main background window will effectively roll up only leaving the top menu bar and the bottom status bar. Allowing easier access to other open programs that may have been covered over by AV-Playback.

Return To Launch Control
This will close any open playlists and display the same Launch Control that appears when the app first begins.

Open New Playlist Unit:
Opens an empty playlist unit control. Once open you can then either open or create a new playlist file.

Quit:
Shuts down the entire program.

Settings Menu

Force Computer To Stay Awake:
When enable AVP will periodically alert Windows to the fact that it is running and should not let the computer hibernate. This feature is recommended when configured as a remote node because of the lack of any mouse or keyboard activity while operating.

Show Tool Tips:
When enabled each individual control will produce a helpful popup describing its purpose. Due to it sometimes interfering with mouse clicks, it is recommended that this feature be disabled once you feel comfortable with all aspects of the program.

Show Thumbnails In Playlist View:
By default, anytime the playlist control is in list view you can right-click on any line item to reveal a pop-up thumbnail of that media item

When this checked and the playlist is being displayed in list form, it will instead always display a visible thumbnail inside the grid itself.

Configure Grid Columns:
Clicking this menu item will reveal the “Visible Columns” control window.
From this control, you can select which columns in the list view are themselves visible. This can help relieve some of the visual congestion and allow other text columns to spread out for a more complete view of their content. Towards the bottom of the control is not only the option to view the notes column, but you also have the option to view notes as a full-text column.

Or as simply a button column that when pressed reveals a popup note editing control.

When this mode is chosen the user note will also appear as a tooltip when you mouse cursor hovers over the line item.

Video Codec Settings:
Displays the properties dialog for the installed LAV video decoder.

Audio Codec Settings:
Displays the properties dialog for the installed LAV video decoder.

NOTE: Use this link to learn more about tweaking any of the codec settings: http://www.codecguide.com/faq.htm

Default Clip Storage Path:
Establishing a default file store path is mandatory, hence why the very first-time AV-Playback is started from a new install, a folder browser appears. A default folder should be selected before trying to open or create a playlist. Once one has been established you are still free to deposit and retrieve files from any other location. However, anytime a file browser is opened it will always use the default folder as its starting point. The default folder is especially necessary when setting up a backup or remote node infrastructure. Each will employ automated functions such a media file transfer as well as depositing playlists where the app can find them.

Default Audio Output:
Clicking will reveal a list of installed audio playback devices found on the local computer. Select the one AVP will choose everytime a new media element is added to the playlist.

NOTE: If the last time your workstation was used, it employed an outboard audio device such as a USB to audio out or HDMI monitor audio out, and those devices are not being employed presently, there may no longer be a Windows default audio device and this list may appear blank. It is important that you always ensure you have a device selected before starting a new playlist or even loading a current one, especially if you plan to add any media to the playlist. If this is left blank all newly added media elements will not have an audio device assigned and when played any audio tracks will be mute.

AV-Sync Manager:
When clicked a small popup window will appear allowing access to the same AV-Sync settings that are included in the Launch Control.

Enable Timecode Broadcast:
For the standalone AVP Timecode Display program to receive position data, this menu item needs to be checked (enabled).

Allow Local Remote Connections:
To prevent conflicts occurring between AV-Playback and AV-Sync Hub when both are running on the same computer and you want to open a remote-control network listener, it is important to understand only one of the apps can have a port open at any one time. When the AV-Sync Hub is launched it should be considered as the entry point for all remote command strings. So, in order to gain access to the “Enable External Device Control” submenu items, you must first override the protection and click this menu item first.

Enable External Device Control:
Clicking will reveal a submenu with two options one is to start our exclusive HyperDeck Emulation the other provides additional network protocol options enabling you to open a listener for AVP’s own External Device Command strings.
Utilities Menu

Debug Log:
Opens the debug log window. This only necessary if working with our technical support staff.

Launch AV-Sync Hub:
Click this to launch the AV-Sync Hub.

NOTE: Only one instance of AV-Sync Hub can be on the network at a time. It can be assumed that whichever workstation is primary would also be the host for the hub. However, to ensure that communication continues to other workstations in the case of possible loss of the primary, the hub can be hosted on its own computer away from any running iterations of AV-Playback within the same machine.

Launch AVP Timecode Display:
Click this to launch an instance of the AVP Timecode Display program.

File Conversion Utility:
Opens the File Conversion Utility window.

Help Menu

About AV-Playback:
Should be self explanatory.

View Help:
Your already here.

Check For Updates:
Click this to query our servers for any updated versions. If found, you will be given the option to install it.

NOTE: Must be connected to the internet in order to perform this function.

Transfer License:
Transfer utility allows the user to deactivate and then reactivate it on a different computer.

Please refer to How to transfer license to another computer for step by step instructions.

Remake License:
The Remake utility is useful for resolving problems related to the license for the protected application. For example, the user may upgrade hardware to the machine without deactivating the license properly. This can affect the Key system and give the error messages such as "Error loading Key device!" or "Invalid Key device!".

The user can run the Remake utility to remake the license, and activate it again.

NOTE: The Activation Key you received upon ordering is necessary for performing any action to the embedded machine license.

SEE ALSO
Playlist Control
Understanding Playlist Types
Understanding Workstation Roles
Tutorials

As with any complex program step by step instructions are vital asset in achieving a successful operation of the program.
Basic Single Clip Playback

The purpose of this guide is to provide a basic outline of AV-Playback’s major components as well as step by step instructions on playing out single clips to a single destination.

When the app is started the first thing to appear is the launch control.

Here you will want to ensure that the default file store path is set to the root event folder which you would have already created prior to starting the app. It is recommended that the folder is located under the “C” drive. NOTE: If also setting up for a synced backup unit and you want to use something like the Desktop to house the folder then you should be logged in to all other networked computers with the exact same user ID and/or make sure that the appropriate permissions are set to share those user folders on the network.

Next, select the correct audio output device for your current system setup. This is important because each clip as it is being added to the playlist will first use this default as its output. If the default is blank, then each video/audio clip will not have an audio render assigned and will end up playing mute. You can, however, change the audio renderer individually for each clip, but I will leave that discussion for later.

If you are using a single standalone with no backup computer, make sure the “Auto Launch Hub” is not checked

Now the rest may be self-explanatory. So, go ahead and either create a new playlist or open an existing one. Once selected the launch window will disappear and the playlist unit, the program engine and your confidence monitor with preview engine will begin to load.

To simplify, we will assume you only have one additional display monitor attached to the computer. AVP will automatically assign that output as the program out and its screen should now appear black.

Now to add a media file, click on the “ADD” button. This will bring up another dialog. Here you can either browse for media files or select an available live input capture device instead.

NOTE: If a capture device is selected it will defeat any possible media file selections. In other words, it’s either files or a capture device selected one at a time never both.

Another way to add files is to simply drag them from Explorer and drop them into the blank area in the playlist.

Now the playlist will have some elements in it. You can just click on a line item to load that clip into preview.

Note that the line item is yellow, and the timeline displays in yellow. This signifies that we are in preview. You are free to perform trim edits and test them in preview only by selecting from the Preview Control group.
Here you control only the preview functions such as Play, Pause and Stop as well as, audio mute, master audio level (just for the exclusively separate selected preview output.) and whether the base element will fade in and out - preview only.

Lastly, there is an override button that is used when a clip is playing out to program and you need to perform edits to another clip in preview. You will be able to click this button and force the timeline to show the preview elements. This action has no adverse effect on the clip playing out to program.

When you are ready to play to program you will need to interact with these controls. Most should be self-explanatory, but we added some callouts for the more discreet ones.

SEE ALSO
Playlist Unit Control
Launch Control
How To Add Media Layers

This tutorial will shed some light on how to go about adding media elements as a layer to appear above a base clip.

First, we need to understand some of the fundamentals.

Terminology:

**Base Element:** This refers to any media file or source that has been added directly to a playlist and can be played out on their own. (standard playlist entry.) (z-order 0)

**Layer Element:** This refers to an element that will be associated only in conjunction with the playing of its base clip and will appear above it. (z-order 1+)

**Z-Order:** Refers to the order of objects along the Z-axis. Z refers to the axis perpendicular to X and Y. One can think of layers as a series of planes parallel to the surface of the monitor. The layers are therefore stacked along the Z-axis, and the Z-Order information thus specifies the bottom-to-top ordering of the layers above the base element (layer 0).

**Timeline:** A timeline is a graphical depiction of media elements sitting on individual tracks and where they sit within a span of time.

Limits and ground rules:

The clock that drives the timeline is a media clock generated by the base element. Since the base element supply's the clock, the only media types that can have layers on top of them are either video or audio type clips. Still, images or live capture does not run on a media clock, hence those elements not qualify. If you try to run a layer on top them, those layers will never appear because there is no ticking clock to drive that trigger needed to start it.

The total length of a timeline is determined by the overall duration of the base media element. If you add another video or audio clip as a layer and the clip is longer in duration, then the base element the layer element will be truncated to fit within the base element’s duration.

**NOTE:** You will see a message box appear informing you of this discrepancy.

Maximum number of tracks AVP-V2 can handle including the base element is five.

**NOTE:** Keep in mind that since AVP does not re-render elements into a single video clip but instead runs each element on their own, every element including layers increases the memory, CPU & GPU burden on the local computer. Be sure that before attempting to add the max number of layers your computer qualifies and can handle that much load. Refer to Suggested Minimum Requirements and see if your system qualifies.

Any layer that is not set to run in lockstep with its base (sync enabled) cannot start at the same time as the base element. By default, AVP will automatically ensure that any none sync layer will not be able to position its start point less than 15 frames after the start of the base clip. This is needed to allow time for internal events triggered by ticks of the base clip’s media clock to begin. Without this gap, there is a chance that the layer element may never be triggered.

**Sync:**

There are two forms of synchronization. The first isn’t in the true since of “In Sync” rather the element free runs using its own clock, or in the case of live capture and stills simply appear on the screen. This is referred to as running async. Synchronization here is the fact that we are controlling the precise moment in time to which it will appear on screen. For any elements that were not originally rendered to the exact same frame rate as the base clip must be run async. The second is where we instruct the moving layer element to plug directly into the base element’s media clock. Now both streams are triggered to display their next frames on the exact same tick. It is recommended that that this only be employed when the individual media elements were created to work together as one.

How to add a layer:

Before we can add layers, we first need the base element:

Click on the “ADD” button. This will bring up another dialog. Now select the media file. Remember it can only be either a video or audio type file.

![Media Selection Tool](image1)

Now click on the Layer button for that clip. This will cause a separate data table to appear.

![Layer Data Table](image2)

Click on the “+Element” link at the bottom left of the layer data table and using the Media Selection Tool select a file to serve as a layer. This can be any of the four different media types.

**NOTE:** You can also add elements by dragging a file from Windows file explorer and drop it directly onto the layer list.

You will now see a new entry in the layer data list as well as an added track to the timeline.

For this example we added a lower third type video file.
In the case of a still image or live capture, the graphic icon will span the entire length of the timeline. Now if you do not wish to see this image overlay for the entire duration you can grab the red bar on either end and drag them to the desired time point within the timeline’s bounds. The left side determines when the element will appear, and the right is when it will disappear. (punch in and punch out) If you wish you can type the time directly into the layer’s respective columns of the layer data list.

NOTE: For motion elements such as a video or audio track, when added their icon length is in relationship to its native duration. If the element’s duration is longer then the base, the layer clip will be truncated to fit and you will see this prompt:

Let’s go back now to the data list. In each row, there are many of the same columns found in the main playlist but for layers, there is now an “Enable” and “Sync” checkbox. The enable to determine whether the layer will appear when triggered. The sync is what we use to instruct the layer to use the base elements media clock.

The “Start Time” column displays the moment when the layer will appear on the screen. You can type in values here if you wish otherwise dragging the element’s icon in the timeline will set this automatically.

The rest should be self-explanatory however I would like to discuss how looping works with a motion layer element. If this set the element’s icon on the timeline behaves a little differently. You can still control when the looping element will end and disappear. Simply grab the red bar at icons right edge and drag it out to the desired end. Now the clip will continue to loop for that duration and then fade away.

This screen cap shows that we dragged the layer file to start at later time point. The scrub bar shows that it will appear on screen 42 seconds after the start of the base clip.

You may also notice the gray areas to each side of the icon. The entire icon represents the native length of the file where the gray areas represent the amount time that has been trimmed off after setting both a punch in and out point. Just so you know the layer will not appear on screen until reaches the punch in point.

Here we added a PNG image file. Note that since the file as no clock its icon fills the whole timeline. As mentioned before simply drag its in and out point to set when it appears and disappears.

Audio Concerns:
Audio level on every video and audio element within the entire playlist, layer, and base can be controlled separately as well as be assigned to any available audio output. Care needs to be given as to whether the audio output from a layer is even desired. If not be sure to mute it by clicking on the element’s speaker button.
NOTE: This button is disabled on all still image and live capture elements.

Property Settings:
Click on the setting button and use the same settings control window to tailor your element. This is especially important for layers because just like any other element when first added they will stretch to full screen.

Z-Order:
Since all layers will have a higher z-order then its base, If the layer’s geometry is not adjusted in any way, when triggered it may conceal your base element from view entirely.
We now know that the base element is layer 0 and cannot be changed however the z-order for layers can be changed. Simply click and drag either the element's icon in the timeline or its row in the data list, up to increase its index or down to lower it.

The rest now is up to you and your creativity.
How To Create Spanned Pixel Space

Creating a spanned pixel space is AVP is a very simple process. In this tutorial, we will outline the steps for not only spanning multiple screens but also show a possible use for it.

In this example, we provide step by step instruction that was actually employed at a recent event.

The event required that all media playback supply to separate discreet outputs. One for the projection screens and the other to a live webcast. At first, it sounds simple just use a DA. The thing was, the feed going to the webcast required to also show closed captioning was the feed to screens were to be clean. This rules out using a distribution amp. We needed to run two separate versions of the same video file at the same time. Here is it was set up:

How to setup for dueling clips on two outputs, with only one having captioning:

1) Go to Windows Display Settings and make sure that it shows at least three separate displays are shown (for simplicity have the primary desktop display is all the way to the left and the other two are sitting to the left and right of each other. All should be the exact same resolution.) Also, text scaling on ALL displays needs to be set to 100%.

![Diagram of three displays](image)

2) After receiving media from the client ensure each video clip has its matching SRT file. Copy all into your event show folder.

NOTE: SRT files are simple text files that contain the actual caption text that will appear on the screen when triggered by the clip’s current time position. This is all handled by one of the filters that is automatically added to the play out the graph. The great thing about this captioning system is the SRT files can be easily edited in a simple text editor without having to re-render the entire video.

3) Select each MP4 file and copy. Then simply paste them into the same folder. You should now have duplicate video files with the word “COPY” added to the file name.

4) Start AV-Playback as usual and create a new playlist.

5) Once the playlist unit is loaded click on the “Output” button.

![Playlist control](image)

In this control, right click on the first program display output and select it as the AVP primary.

Now right click on the output to the right of it and select “Span With Primary”. It should now look like this…

![Span With Primary](image)

Click “Apply/Exit” and wait for the program to refresh.

6) Add the copied version of each clip to the playlist.

7) One at a time perform the following to each base clip in the playlist:

a) Click on the Layer button. This will cause a separate data table to appear.

b) Click on the “+Element” link at the bottom left of the layer data table and using the Media Selection Tool select the matching file (one without "Copy" in the file name.) and add it as a layer.

c) Check the “Sync” box and wait for the program to refresh.

8) Next, align each element so they appear only in their respective display output. The first one (Local projection screen) is without captioning and the second one (Webcast) is with captioning.

a) Now click program pause. This will cause the clip to show up in program. Manually move the play-head to a point where you can see a visible frame.

b) One at a time, click on the base and layer element’s property settings button.

c) Use the geometry controls to left or right justify each clip respectfully.
After you have done each element, base & layer, each should now be filling their respective display outputs.

And your confidence monitor will look like this when playing.

Now all you have to do press “Kill” to reset each clip to their start point and then press the “Take” button. You are now playing both versions at the same time. It’s that easy!

You can use these same steps to add even more outputs and widen the space to even provide a three or four screen output. Just add more layer elements and adjust geometry accordingly.

SEE ALSO
Display Output Selection Tool
Playlist Unit Control
Settings Control Window
Workstation Roles & Networking Ground Rules

One of AV-Playback's key features is its ability to establish a node based network hierarchy with multiple workstations containing the AV-Playback program.

By having a combination of individual workstations configured to function as one, offers you the ability to create a large scale topology of interlinking workstations, expanding the total number of destinations all while relieving the stress a single workstation trying to supply all of the needed display outputs.

Workstation Roles:

As in any hierarchy, there are multiple roles that members are given. In our case, there are three keys roles a given workstation can have.

Primary:
The workstation in this role is responsible for the transmission of all its transport commands to the AV-Sync Hub. Which is, in turn, the hub relays to all other listening AVP workstations. It also serves as the unit supplying current clip position data to the hub’s LTC timecode output signal.

If a backup workstation is currently linked to the primary then anytime media is added to the primary’s playlist and if those files do not currently exist in the backup’s default file folder, the primary will automatically copy through the network those files directly to the backup unit’s default event folder.

Backup:
A workstation designated as a backup will support the primary in that it will remain in sync both with media elements and their properties, as well as with following along automatically with the primary’s current play status. This means if in the event the primary crashes and shuts down the backup will continue unimpeded.

Neutral:
When neither Primary or Backup is checked, the workstation effectively does not belong to any hierarchy, instead, it operates somewhat independently but can still link to the hub to receive transport commands from the Primary.

NOTE: This mode is the system’s default.

Ground Rules:

AV-Playback communicates too much of its other internal function by way ethernet packets. Despite this, if AVP is just running on a single computer, having it connected to an external network topology is not necessary. However, the computer must have a fully functioning NIC so as internally, AVP can still pass data amongst itself.

If you are needing to employ the AV-Sync Hub to share data with other AVP nodes, then the proper setup of a local network is required.

To ensure a smooth and reliable exchange of data between workstations here are some recommended guidelines:

1) All AVP workstations must be on the same network switch or router. It is recommended that if you are not clear on how to set up using static IP’s then you should employ a DNS equipped router and setup each workstation to simply utilize DHCP. This way all IP’s will be assigned automatically.

NOTE: If using a network switch with static IP’s Windows will classify the network as Public. If you are using DHCP on a router, and each computer requires a password to log into it then make sure that Windows declares it as a Private network.

2) Enable advanced sharing of the "C" drive and set it permissions by enabling full control of the "Everyone" user group. This is mostly necessary for the backup node but will make other changes easier if you do this on all AVP workstations.

3) In the case of a primary and backup setup, both machines should have a common user ID. If not, then you will at least need to know the user login for each workstation. It is also helpful if all user ID’s have administrative rights. If that is not possible or if the computers are set up to not require login passwords at all, then the following steps need to be followed, primarily on the backup computer, but again it may come in handy if you do this on all non-password protected computers as well.

a) Right click on the Network Notification Icon in the right-hand corner of the system tray and select Open Network & Internet Settings from the context menu.
b) Click on "Sharing Options"
c) Now expand the "All Networks" section.
d) Finally switch the radial button to the "Turn off password protected sharing" setting and click "Save Changes"
4) Again in the case of a primary/backup scenario setup exactly matching show folders on both machines. This means all subfolders, as well as the drive letter, should also be the same. It is recommended that the folder be directly under the “C” drive (that is now shared). It is not recommended but if you want to use something like the Desktop to house the folder then either be logged in to both computers with the exact same user ID and/or make sure that the appropriate permissions are set to share those user protected folders on the network.

NOTE: The end goal we are trying to achieve here is the freedom to be able to copy files from one computer to another. The above steps are just one possible way to achieve that. If perhaps you know of another feel free to give it a try. Just remember when we are trying to copy files from the primary to a backup the only information AVP has to guide it is the file path of media elements that have been added to the primary playlist. Therefore, attention needs to be paid to the setup of matching event media folders on both machines. This is the reason it is preferred to make the entire drive sharable as opposed to just a folder. If it was just a shared folder then the network path Windows assigns it will not match the path in the playlist.

SEE ALSO
Working With AV-Sync Hub
Working With AV-Sync Hub

The AV-Sync Hub plays a vital role in today’s complex play out scenarios. It makes it possible to coordinate the activity of multiple iterations of AV-Playback running on separate computers and do it all simultaneously. Another important aspect is that it also coordinates activity between a primary workstation and for most events, the required backup unit.

The hub is just that, a network connection point where play units can either deliver or receive broadcasted commands. However, it goes further than that by actively measuring network latencies and then uses that information to regulate, individually, the timing at which commands are received by each unit. This technique works well in getting all units to work in a tight formation with one another.

Before we continue here are some things you first need to consider:

1) To better understand topics discussed here you should first read up on Workstation Roles & Networking Ground Rules.

2) Review the control outline of the AV-Sync Hub.

3) Only one hub can be active on the network at any one time.

4) It is not necessary for this program to be running if all you want to do is use workstations in a neutral standalone fashion.

5) However, if also employing our MCS5 or 6 control surfaces. It will be required that the hub is used and launched by either ensuring the “Auto Launch Hub” property is checked or manually launching it before AV-Playback.

6) It is assumed that the hub would run on the primary workstation given the use of the auto start feature but if desired a hub can reside on its own computer and remain safe from possible shutdowns, ensuring communications remain open with back up units. Keep in mind that run on another computer and you using a control surface. The controller will need the same computer as the hub.

How to Launch:

1) Ensure that “Auto Launch Hub” option contained in AV-Playback’s "Launch Control" is checked. When checked, every time AV-Playback is started, and you load its first playlist file, the hub will start.

2) Remember only one workstation within a network can run the hub so you will not want the box checked on any of the other workstations.

3) From AVP’s main menu click on “Utilities || Launch AV-Sync Hub”

Why a unique workstation name and index is important?

Technically it is having a unique index number that is most important. The name is merely to make it easier for you to distinguish between different workstations. Index, however, is what the hub uses in coordination with the stations IP to cross-reference them internally. There can never be two workstations on the same network with the same index number. This is so important that the hub will automatically force a new index number assignment to any workstation that newly connects and carries an index number already being used. You will know if it happens because this message will appear on the offending workstation:

As a good rule of thumb, for you to think of the designated primary as index 1, the backup as index 2 and all other can just be any number other than 1 or 2.

Delay Setting:

The delay setting can be used to delay activation of a received “Take” command from the primary. Generally, this is only used on the backup unit but can be applied to any other including the primary.

How to link up to the hub:

Since much of programs other features are already described in the control outline we will focus just on how to connect a play unit to the hub.

Once the hub and all copies of AV-Playback are up and running you will note that each AVP node is represented in the hub’s workstation list.
We will get back to that but now let get familiar with the link button which appears on each playlist unit control window.

This button has three states-

**Disabled:**

Anytime there is no active AV-Sync Hub detected on the network this button will be disabled. Clicking it will have no effect.

**Unlinked:**

Here a hub has been detected but the play unit is not currently linked to it and will not receive any broadcasted commands. Clicking it will initiate a link with the hub.

**Linked:**

Now we are currently linked to the hub and if you are working on the primary workstation all **Program only** transport commands will be broadcasted to all other workstation that is currently linked to the hub.

Coming back to the workstation list you will find these three columns.

True they are an indication of its current state but they are also buttons that you can click. If you click on the one in the **Linked** column it will force toggle the link state of that workstation.

The **Primary** indicates of course which unit is the primary, but you click on another one to force the primary designation onto it.

The **Backup** column is discussed in another tutorial.

Commands that are passed from the Primary to all subordinates are as follows:

**Selected Clip ID** (NOTE: It refers to whatever appears in the primary’s playlist clip ID column. If no match is found on a remote, the command is ignored.)

- Take
- Pause
- Kill
- Rewind
- Fast Forward
- 60/30/20/10 Out
- Scrub Position
- Temp Hold
- Temp Loop

**NOTE:** In the case of a backup subordinate there are a number of commands that are passed as well. We outline those in **How To Setup Backup Workstation**.

SEE ALSO

- AV-Sync Hub
- Workstation Roles & Networking Ground Rules
- How To Setup Backup Workstation
How To Setup Backup Workstation

Instrumental in the success of a live multi-media event is to have a backup solution for many of the supporting systems involved. This tutorial outlines the steps you always need to take to make one workstation simply act as a direct backup to a primary and be ready to take over if necessary.

NOTE: Since so much about the setup of a backup node relies on you fully understanding your network and the role it plays here. We strongly recommend you first review the following topics:
Workstation Roles & Networking Ground Rules
Working With AV-Sync Hub

For this tutorial, we are going to assume you have already established a proper network topology and are able to successfully pass files between nodes.

1) First Setup exactly matching show folders on both machines. This means all sub folders, as well as the drive letter, should also the same. It is recommended that the folder be directly under the “C” drive. If you want to use something like the Desktop to house the folder, then either be logged in to both computers with the exact same user ID and/or make sure that the appropriate permissions are set to share those user folders on the network.

2) On at least the primary, add the events media file that you already have.

3) Now let’s start with getting the backup workstation ready and standing by:
   a) Launch AV-Playback and at the Launch Control and assign the show folder as the Default File Store”.
   b) Select the “Default Audio Device” appropriate for your current setup.
   c) Go into the AV-Sync group box and make sure “Auto Launch Hub” is unchecked.
   d) Now check “Is Backup”. If this is blacked out, you will need to un-check “Is Primary” first.
   e) Next select 2 as the workstation index.
   f) (Optional) If you wish to have all play commands delayed, go ahead and set the amount now.
   g) If you are setting up for a new show go ahead and open a brand-new playlist.
   h) Once it is open go ahead and assign your display output if necessary.

4) You can now leave this workstation alone and go over to the primary.

5) Here you follow many of the same steps except for on the primary you need “Auto Launch Hub” to be checked as well as “Is Primary” Also make sure that the index is set to 1 and delay is 0.

6) Now you can launch either a brand-new playlist or one you have already created.

NOTE: The playlist filename you create needs to be identical on both the backup and primary.

Incidentally, the AV-Sync Hub should have been launched and is showing both workstations in the connected list. Also, make sure the each reflect their correct workstation role.
If for some reason it did not launch, then you click on Utilities || Launch AV-Sync Hub menu item on the primary.

NOTE: If after launching the hub you do not see both workstations in its connection list, then something is wrong with your network. You will need to correct before continuing with this tutorial.

Again, if creating a new playlist set the display output for the primary before continuing.

On the primary, you should see the button at the bottom right of the playlist control glow either amber and read “Refresh Backup” or simply be gray and say, “Backup Online” this is normal.

Now on the primary go ahead and add the event media files to its playlist. All the files should have already been deposited into the default even folder.
NOTE: It is very important that when you add elements to the playlist, they all must come from the default event folder or any of its sub folders. If you pull from some other folder on the computer, the backup may not be able to find it properly on its end.

OK, now is a good time to perform any necessary edits to the media files on the primary.

Next, you can go ahead and click on the “Refresh Backup” button. At this point, AVP will transmit the playlist. The backup may now respond back with the fact that it does not have some or all needed media files. If that is the case the primary will pop up a dialog showing the progress of its automatic coping all missing files onto the backup’s assigned default show folder.
You should now wait until this process is completed before doing anything else.

Once complete you should now see all of the same playlist entries appear in the backup playlist and on the primary backup status button should now glow green and say, “Backup In Sync”.

**Going forward from here:**
Now that everything is connected and in sync, you only need to now enable the “Link to Sync Hub” on both computers. If the sync hub was launched successfully they should both glow red.

From this point, most of the activities performed on the primary will be duplicated on the backup as well. This includes all program transport functions, (preview commands are not transferred,) and any individual property adjustments performed on all media elements.

There are however some functions that will not be instantly mimicked on the backup unit until you perform a refresh. So, anytime you perform an action not handled automatically, the backup status button will turn yellow and read “Refresh Backup”. At this point, you would need to press the button to imitate the update.

**WARNING:** Any time you perform a refresh backup all playback on both machines will stop and any selections for preview and program will be cleared.

Here is the list of functions that require a manual refresh of the backup unit:

1) Adding or removing any media elements within the playlist.
2) Changing the list order (drag and drop) of any base or layer elements.
3) Changing either the video renderers or audio outputs.
How to transfer license to another computer

For customers that did not purchase a USB license dongle and instead activated their copy using our online server you can still easily transfer your embedded license to another computer by following these simple steps.

NOTE: In order to perform this operation both computers need to be connected to the internet and you will need a copy of the activation key data you received after making the original purchase.

1) Open the AV-Playback application but do not load any playlists. Instead click on Transfer License under the Help menu.

![Transfer License Window]

This window will now appear:

2) In this utility paste in the activation key you received after purchase into text box labeled Activation Key and click Deactivate.

3) At this point the current license status is encoded into the License Key and sent to the server automatically and the Key on the present computer is destroyed.

4) Now you can go to the new computer and activate its installed copy as if it were new by starting the unlicensed app and when the welcome dialog appears click YES which will then open the Registration & Activation dialog. Go ahead and insert the same activation code into the text box labeled Activation Key and click Activate.
Thats your done!

There is no limit to how many times you can do this.
External Control
There is several ways that AV-Playback can be controlled externally. The following describes how to use these features
AVP Protocol Commands

To begin communicating with AV-Playback from an external controller, first open a network listening port. If you are already incorporating the AV-Sync Hub then you will need to open the port listener included in that control.

If you are not using the AV-Sync Hub then you will need to use a listener incorporated directly into the AV-Playback program.

NOTE: Before you can gain access to the AVP Protocol menus you need to first check the “Allow Local Remote Connections” menu item.

Enable the UDP communication listener. By clicking on Settings || Enable External Device Control || AVP Connectionless Protocol (UDP), after which AVP will begin listening on the default port number ‘7000’ for any command strings that match the appropriate structure outlined below.

NOTE: If you find that port 7000 conflicts with other software apps running on the same computer, you can go ahead and change it by going to the “Port Number” menu item and then using the up or down arrows on the numeric display. Once you have completed the change the port will automatically refresh itself and begin listening on the new port.

Direct the transmitting device to send strings to the workstation IP containing AV-Playback.

Control protocol is in simple ASCII text strings and are not case sensitive. I do use in the following explanations a combination of upper and lowercase characters, this is purely for clean document formatting.

Every command string needs to start with the prefix “AVP”, followed by playlist unit index (starting from 1) surrounded on each side with the pipe character “|”.

Example: AVP|1|

NOTE: If commands are being received via the AV-Sync Hub and you want all attached play units to receive the same command then use “-1” as the unit index. If you are incorporating a backup node it will be treated as if it were just another play unit so even if all you have is one primary and one backup you will still need to use -1 as the unit id in all strings.

Example: AVP|-1|

Following the opening character string, proceed immediately with the command string. Some commands require an additional integer value. Separate the command name and the number value with a comma “,”.

NOTE: If your chosen control software removes commas from all command strings (e.g Universe V3) you can replace the use of a comma with a space “ “ instead.

Load clip to standby: ‘LoadClip’ + ‘,’ + ## (clip ID)

NOTE: Clip ID is what ever is currently appearing in the clips ID column.

Complete example to load clip third down for the top, that is still using the default ID in the first playlist unit: AVP|1|LoadClip,03
Start playing program: 'PgmStart' + ',' + ## (operational flag)
Set the operational flag to '-1' to start the clip currently sitting in standby.
You can also use a clip's ID number to take it straight to program, bypassing the 'LoadClip' function.
Note: There will be a slight delay when taking a clip straight to program. This is due to the fact that it must still be placed into standby first before it is executed to program.
Example to play clip in currently in preview: AVP|1|PgmStart,-1
Example to load clip ID '2A' and take it straight to program: AVP|1|PgmStart,2A

Stop program: 'PgmStop'
Complete example to stop clip: AVP|1|PgmStop

Pause program: 'PgmPause'
Complete example to stop clip: AVP|1|PgmPause
Note: The pause command is a toggle, simply send the command again to resume program play.

Start playing program: 'PrvStart'
Example to preview play clip in standby: AVP|1|PrvStart

Stop preview: 'PrvStop'
Complete example to stop previewed clip: AVP|1|PrvStop

Pause preview: 'PrvPause'
Complete example to pause previewed clip: AVP|1|PrvPause
Note: The pause command is a toggle, simply send the command again to resume preview play.

Fast forward clip: 'FForward'
Set the operational flag to the desired faster than normal speed.
The range of speed is entered as an integer value between 1000 to 4000. (1000 = normal and 4000 = 4X faster)
To end the fast forward and resume normal play speed then set flag to '0'
Complete example to start fast forward on the currently selected clip to 3.5X speed: AVP|1|FForward,3500
To end fast forward on the currently selected clip: AVP|1|FForward,0

Rewind clip: 'Rewind'
Set the operational flag to activate or deactivate rewind. (1 = On , 0 = Off)
Complete example to begin rewind of the currently selected clip: AVP|1|Rewind,1
To end and resume normal play: AVP|1|Rewind,0
Note: The pause command is a toggle, simply send the command again to resume play.

Set current position: 'SetPosition' + ',' + *timecode
*The current position is formatted as a timecode string ('hh:mm:ss:ff'.)
Complete example to set clip position to 30 seconds and 12 frames: AVP|1|SetPosition,00:00:30:12

Advance to time out: 'GotoTimeOut' + ',' + ## (operational flag)
Set the operational flag using numbers 1 to 4 (1=60sec, 2=30sec, 3= 20sec, 4=10sec)
Complete example to advance to 10 seconds out: AVP|1|GotoTimeOut,4

Advance to next tag: 'NextClip'
Complete example to select the next clip: AVP|1|NextClip

Go back to previous tag: 'PrevClip'
Complete example to select the previous clip: AVP|1|PrevClip

Advance to next tag: 'NextTag'
Complete example to advance to next tag marker: AVP|1|NextTag

Go back to previous tag: 'PrevTag'
Complete example to advance to the previous tag marker: AVP|1|PrevTag

Enable Temp Hold: 'TmpHold'
Complete example to toggle the temp hold: AVP|1|TmpHold
Note: The command is a toggle, simply send the command again to disable.

Enable Temp Loop: 'TmpLoop'
Complete example to toggle the temp looping: AVP|1|TmpLoop
Note: The command is a toggle, simply send the command again to disable.

Enable Auto Start: 'AutoStart'
Complete example to toggle the auto start feature: AVP|1|AutoStart
Note: The command is a toggle, simply send the command again to disable.

SEE ALSO
AV-Sync Hub
HyperDeck Emulation

Blackmagic ATEM users will really appreciate this feature. When AVP's "HyperDeck Emulation" sever is enabled, AVP presents itself on the network and to an ATEM switcher as if it was an actual HyperDeck video play unit. This means that you can use the ATEM's built-in deck control feature to control AV-Playback.

The ATEM even will be able to update automatically when clips are either added or removed from the AVP playlist.

To activate the server simply go to “Settings||Enable External Device Control” and click on “HyperDeck Emulation”.

NOTE: Before you can gain access to the AVP Protocol menus you need to first check the “Allow Local Remote Connections” menu item.
**MCS5 Control Surface**

The MCS5 is one of our exclusive tactical control solutions for the AV-Playback system.

This controller is purchased separately and not included with a standard license purchase. You can easily purchase one directly from our website. Please visit http://www.ifelseware.com to place your order.

**Menu Button**

Pressing this button will direct the display and its associated function button to return to the root menu.

**Menu Display**

Root menu:

Across the top from left to right:
- **PLYRS**: Displays the console’s play unit submenu.
- **LOOP**: Toggles the current Temp Loop state.
- **HOLD**: Toggles the current Temp Hold state.
- **CNFG**: Displays the console’s configuration submenu.

Across the bottom from left to right:
- **PRGM**: When selected the transport buttons will only affect change to program functions.
- **PRVW**: When selected the transport buttons will only affect change to preview functions.
- **30>>**: Jump play head to 30 seconds out from the end of clip.
- **10>>**: Jump play head to 10 seconds out from the end of clip.

**Play Unit Submenu:**
From left to right:
• <BACK: Returns to the root menu.
• ALL: When selected transport commands will be directed to all play units currently linked to the AV-Sync Hub.
• U1 through 6: If you wish to only control one of the linked play units then select the one you would like.

NOTE: The number following “U” is that workstation unit ID. If the workstation has more then one active playlist unit open the each is designated with a letter starting with “A”.

Configuration Submenu:

Across the top from left to right:
• <BACK: Returns to the root menu.

• TAKE-: This only serves as a label and the button above it has no direct function.

The following determine a default action.

• AUTO: When set the console will follow the play units current in preview or program status. If program is stopped transport controls will handle preview functions To take a clip to program you will need to press the PRVW root menu item before pressing the play button.

• PGM: When set the console’s play and pause button will always take a clip in preview to program.

Across the bottom from left to right:
• ADV-: When selected the transport buttons will only affect change to program functions.

The following set the function of the two small function buttons flanking to jog wheel.

• FF/REW: Press and hold the left button to rewind to the position of the currently active clip.

Press and hold the right button to shuttle the position forward.

• PUNCH: Press left to set punch in point to current scrub bar position.

Press right to set punch out point to current scrub bar position.

• TAG: Press left to go to the previous tag marker.

Press right to go to the next tag marker.

NOTE: Settings performed here are saved and will remain even after rebooting.

Status Button

When the Status button is pressed the display will change and look like the image below.

The top row displays the title of the current clip in program.

The bottom row displays from left to right, current elapsed time, current play status followed by the countdown time.

Jog Wheel

Use this heavy duty rotary encoder to jog through the frames of the currently active clip.
For the clip to respond to jog commands the console’s function menu must be at "Root", or be in 'Status' mode. Also, the clip must already be paused.

For each increment, clockwise the clip will advance one frame. Rotating counter-clockwise steps it back one frame.

NOTE: Since the affected change is very small, you should reserve using this only when accurate positioning is required. For best response, use slower movements when rotating the control.

Transport Controls

From left to right-

Previous / Next: Click to select for standby, either the clip before or after the currently selected standby clip. If there isn’t one selected it will go from the one in the gate. If none are selected it will begin at clip number one.

‘End’ will stop play and will automatically blank the video output and return the clip back to its starting position.

‘Pause’ is a toggle. When paused the ‘Start’ button will be disabled you must click the ‘Pause’ again to resume play.

‘Start’ will always begin play at the clips punch in point. If the clip’s current position as been manually moved it will automatically be in a paused condition, so if wanting to start from the manually adjusted point, you will need to click the ‘Pause’ button instead.

Function Buttons (Adv- & Adv+)

Depending on the current setting within the configuration menu these two multi-function buttons can be programmed to perform one of three different actions:

To set their current function press the button directly above "CNFG" while in the root menu. Please refer to Menu Display for detailed instructions.
### Keyboard Shortcuts

**NOTE:** For a chosen playlist to respond to shortcuts, that play unit must have keyboard focus. You can tell if the control has focus by noting whether or not a glowing red bar appears at the top of the play unit control.

#### Operational Commands:

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬆️ UP ARROW</td>
<td>Previous Clip</td>
<td>Select previous clip and place in standby.</td>
</tr>
<tr>
<td>⬇️ DOWN ARROW</td>
<td>Next Clip.</td>
<td>Select next clip and place standby.</td>
</tr>
<tr>
<td>###</td>
<td>Select Clip By ID</td>
<td>Simply type the same characters that appear in the clip's ID column within 3 seconds. Once the last character is typed that clip will be selected and placed into preview. <strong>NOTE:</strong> If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retrying.</td>
</tr>
<tr>
<td>RIGHT ARROW</td>
<td>Advance Program Position Forward</td>
<td>Advance current position 1 frame. Hold key to quickly repeat move.</td>
</tr>
<tr>
<td>LEFT ARROW</td>
<td>Move Program Position Back</td>
<td>Rewind current position 1 frame. Hold key to quickly repeat move.</td>
</tr>
<tr>
<td>PAGE UP or ALT + A</td>
<td>Previous Cue Tag</td>
<td>Jump position back to previous cue tag.</td>
</tr>
<tr>
<td>PAGE DOWN or ALT + S</td>
<td>Next Cue Tag</td>
<td>Jump position forward to next cue tag.</td>
</tr>
<tr>
<td>HOME</td>
<td>Goto In Point</td>
<td>Jump position back to current punch in point.</td>
</tr>
<tr>
<td>END</td>
<td>Goto Out Point</td>
<td>Jump position forward to current punch out point.</td>
</tr>
<tr>
<td>ENTER</td>
<td>Start playback</td>
<td>Starts playback from punch in point.</td>
</tr>
<tr>
<td>SPACE</td>
<td>Pause Playback</td>
<td>Function is a toggle. press again to resume.</td>
</tr>
<tr>
<td>ESC</td>
<td>End Playback</td>
<td>Stops play and rewinds clip back to starting point.</td>
</tr>
<tr>
<td>ALT + P</td>
<td>Toggle Program/Preview</td>
<td>Toggles control focus between preview and program. If necessary completes the loading of a preview element that is only in standby.</td>
</tr>
<tr>
<td>ALT + ENTER</td>
<td>Start Preview Playback</td>
<td>Starts preview playback from punch in point.</td>
</tr>
<tr>
<td>ALT + SPACE</td>
<td>Toggle Preview Playback</td>
<td>Function is a toggle. press again to resume.</td>
</tr>
<tr>
<td>ALT + E</td>
<td>Stop Preview Playback</td>
<td>Stops preview play and rewinds clip back to starting point.</td>
</tr>
<tr>
<td>ALT + L ARROW</td>
<td>Advance PreviewPosition Forward</td>
<td>Advance current position 1 frame. Hold key to quickly repeat move.</td>
</tr>
<tr>
<td>ALT + R ARROW</td>
<td>Move Program Position Back</td>
<td>Rewind current position 1 frame. Hold key to quickly repeat move.</td>
</tr>
<tr>
<td>ALT + F1</td>
<td>Preview 10 Seconds Out</td>
<td>Advances current position to 10 seconds before the end of clip</td>
</tr>
<tr>
<td>ALT + F2</td>
<td>Preview 20 Seconds Out</td>
<td>Advances current position to 20 seconds before the end of clip</td>
</tr>
<tr>
<td>ALT + F3</td>
<td>Preview 30 Seconds Out</td>
<td>Advances current position to 30 seconds before the end of clip</td>
</tr>
<tr>
<td>ALT + F6</td>
<td>Preview 60 Seconds Out</td>
<td>Advances current position to 60 seconds before the end of clip</td>
</tr>
<tr>
<td>ALT + I</td>
<td>Set Punch In Point</td>
<td>Set in point to the current scrub bar location.</td>
</tr>
<tr>
<td>ALT + O</td>
<td>Set Punch Out Point</td>
<td>Set out point to the current scrub bar location.</td>
</tr>
<tr>
<td>ALT + T</td>
<td>Insert Cue Tag</td>
<td>Set tag at current scrub bar location.</td>
</tr>
<tr>
<td>ALT + L</td>
<td>Toggle Temp Loop</td>
<td>Function is a toggle. press again to disable.</td>
</tr>
<tr>
<td>ALT + F</td>
<td>Toggle Temp Hold</td>
<td>Function is a toggle. press again to disable.</td>
</tr>
<tr>
<td>ALT + K</td>
<td>Increase Fade Rate</td>
<td>Increases fade rate on the currently selected base clip. If there are selections in both program and preview, the program one will have priority.</td>
</tr>
<tr>
<td>ALT + J</td>
<td>Decrease Fade Rate</td>
<td>Decreases fade rate on the currently selected base clip. If there are selections in both program and preview, the program one will have priority.</td>
</tr>
<tr>
<td>ALT + H</td>
<td>Increase Loop/Link Delay</td>
<td>Increases delay time used between loops or links on the currently selected base clip by 100 milliseconds at a time. If there are selections in both program and preview, the program one will have priority.</td>
</tr>
<tr>
<td>ALT + G</td>
<td>Decrease Loop/Link Delay</td>
<td>Decreases delay time used between loops or links on the currently selected base clip by 100 milliseconds at a time. If there are selections in both program and preview, the program one will have priority.</td>
</tr>
<tr>
<td>+</td>
<td>Increase Volume</td>
<td>Increase current gain 1%. Hold key to quickly repeat.</td>
</tr>
<tr>
<td>-</td>
<td>Decrease Volume</td>
<td>Decrease current gain 1%. Hold key to quickly repeat.</td>
</tr>
<tr>
<td>ALT + M</td>
<td>Mute Audio</td>
<td>Function is a toggle. press again to un-mute.</td>
</tr>
<tr>
<td>ALT + C</td>
<td>Clear Selected</td>
<td>Clears the selection of all clips and closes any open clips.</td>
</tr>
<tr>
<td>Key</td>
<td>Function</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td>10 Seconds Out</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advances current position to 10 seconds before the end of clip</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>20 Seconds Out</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advances current position to 20 seconds before the end of clip</td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>30 Seconds Out</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advances current position to 30 seconds before the end of clip</td>
<td></td>
</tr>
<tr>
<td>F6</td>
<td>60 Seconds Out</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advances current position to 60 seconds before the end of clip</td>
<td></td>
</tr>
<tr>
<td>SHIFT + TAB</td>
<td>Select Playlist Control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change focused playlist to the next one in order</td>
<td></td>
</tr>
<tr>
<td>CTRL + F1</td>
<td>Show Help</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display help window</td>
<td></td>
</tr>
</tbody>
</table>
Suggested Minimum Requirements

Establishing what is a suitable minimum component standard can be difficult. The stresses a system undergoes is in direct relationship to several different factors such as output resolution, file stream size, the total number of elements being run simultaneously as well as the total number elements contained in a single playlist. This is before we even attempt to run multiple playlists at the same time. Another reason it is difficult to gauge is simply that there is a considerable amount of differences between manufacturers and their chosen architecture. This is painfully true in PC laptops. You could easily have two systems by two different manufacturers, where both advertise the exact same internal components, but still, have the potential of exhibiting much different performance results. Let's not also forget the considerable changes that occur when any program is installed and/or even when some Windows subsystem configuration has been altered. These all can have unforeseen consequences down the road as many programs are expecting those subsystems to be set in a certain way. With all that said, we will at least try to give you a foundation to work from, that is based on what you expect to be average usage limits.

ATTENTION:
AVP IS A 64 bit PROGRAM AND WILL ONLY OPERATE FULLY ON 64 bit VERSIONS OF WINDOWS 10 HOME, PROFESSIONAL OR LTSB.
** WE CAN NOT ENSURE PROPER OPERATION ON ANY WINDOW 7 PLATFORMS **
ALL SYSTEMS MUST HAVE AT LEAST A 1920 x 1080 PRIMARY DESKTOP SCREEN FOR THE USER INTERFACE GUI.
IT IS NOT ABSOLUTELY NECESSARY TO BE CONNECTED TO A NETWORK ROUTER, BUT THE SYSTEM MUST HAVE A FULLY FUNCTIONING NETWORKING ADAPTOR

Single playlist unit / Output resolutions up to 1080p / Total number clip elements (base & layer) per playlist is 20 and below:
CPU: Intel i7 2.7Ghz / AMD A-Series Pro A10
System Ram: 8GB
Hard Drive: 500GB / SATA 3GB
Graphics: (Intergated) Intel 530 + (Desecrate) Nvidia GForce GTX 1060 6GB

Single playlist unit / Output resolution up to 2160p / Total number clip elements (base & layer) per playlist is 20 and below:
CPU: Intel i7 3Ghz / AMD A-Series Pro A12
System Ram: 16GB
Hard Drive: 1TB / SATA 6GB SSD
Graphics: (Intergated) Intel 530 + (Desecrate) Nvidia GForce GTX 1070 8GB

Multiple playlist units / Multiple simultaneous output resolutions 4k + / Total number clip elements (base & layer) per playlist is 20 and above:
CPU: Intel i9 or 8+ Core Xeon 3Ghz+ / AMD Ryzen Threadripper
System Ram: 32GB+
Hard Drive: 1TB / SATA 6GB SSD M.2
Graphics: (Desecrate) Nvidia Quadro 8GB+ / AMD FirePro

NOTE: IT IS RECOMMENDED THAT NO LAPTOPS BE EMPLOYED AT THIS LEVEL BESIDES, MANY OF THE LISTED COMPONENTS ARE NOT READILY AVAILABLE IN LAPTOP FORM.

Please keep in mind that these are purely estimates. As noted above there are way too many variables associated with the playing of high-resolution video material. However, we can say that you can never have enough computing power. So please consider when working in the very demanding A/V business, performance and reliability should greatly outweigh any sort of budgetary concerns.