

SHOWRUNNER

Users Guide
Documentation Version 1.0 - preliminary
Software Version V1.0.0.0

SHOWLOGIX
SHOW YOUR BEST

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Showrunner System Introduction and Overview

Showrunner is a complete show control and media playback system, designed to play high resolution multi-layer content across multiple displays. Showrunner synchronizes video, lighting, motion and many other devices, all on a standard IP network.

Showrunner consists of two major software components:

1. **Showrunner** - A show control application with drag and drop programming.

Showrunner allows you to create and manage multiple displays, distribute media and manipulate video in real-time. You can control and interact with any Ethernet compatible device, such as DMX lighting (via Art-net), projectors, AV switchers, audio processors etc.

Usually you will use one instance of Showrunner on a network.

2. Showplayer

Enables frame synchronized video playback across displays. Each display has up to eighty layers of video, audio, image or text with mixing options. By adding hardware capture devices, each layer can show an external input.

Showrunner can use up to ten displays on a single computer and have up to 255 computers on a single network. Displays may be mapped to create a large canvas in any arrangement and with any amount of displays.

Images can be wrapped around a 3D object or you can use manual image warping and edge-blending.

Interactive access may trigger events and manipulate video in real time.

Showrunner can control:

- Hundreds of frame-synchronized displays and up to 80 layers of content per group of displays
- Video effects
- Up to 32,768 DMX universes using the Art-net protocol
- Unlimited external devices on an Ethernet network

There is no code to learn and no compilation. Easy graphical programming environment lets you drag and drop the commands on a logical tree and immediately create the show the way you vision it. Using the timeline you can add commands that are frame-synchronized to a central clock.

Many sequences can run simultaneously and execute independently. Changes may be done in real time while the show is running. It is easy to position and reposition cues over many timelines and sequences.

Sequences may be started initially on power-up, by another sequence, by using display interactivity or IR cameras and by a variety of Ethernet compatible external triggering options, including: touch panels, third party control systems etc.

Showrunner Layer Concept

Showrunner uses 40 layers of content. Layer#1 is always the first layer, Layer#2 is placed on top of layer#1, layer#3 is on top of layer#2 and so on. These layers work across all displays on a certain group and behave as one big canvas.

A layer is actually a container of the media, it can hold one type of media at a given moment, it can be a video, image, audio file, or it can show an external input or text.

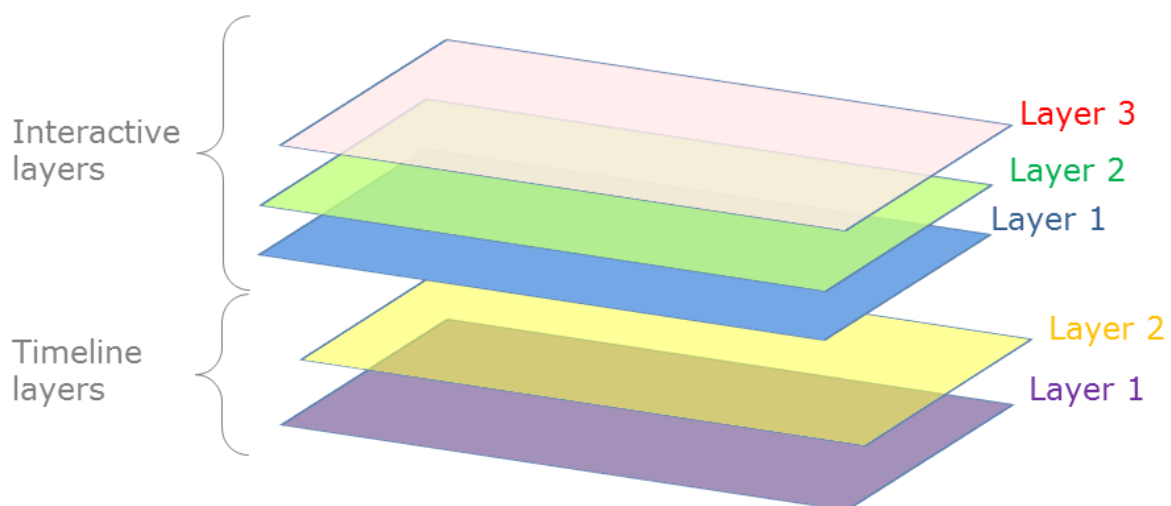
Layers may be manipulated at any time, by using any "video command". Manipulation made on a layer will set that parameter alone, without affecting other settings. So if, for example you have layer#4 playing a video and moving from one side of the canvas, it is possible to replace the playing video while the layer is in motion (and keeping all other caricatures). Other layers will not be affected.

A state of a layer will not change until a new command is sent. Any new video replacing a given video on same layer, will keep its size and any effects that were assigned to it.

Using a timeline, allows you to use another set of layers which are completely separated. You can use a timeline to play a full multi-display, multi-layer show and at any moment play another layer on your canvas without disrupting your timeline (for example: play a looped video which is not affected by the timeline's clock).

Timeline layers are always positioned under the workspace interactive layers.

A timeline, pre-loads all files used in the timeline, all video settings are done within the timeline and may not be manipulated with video commands.



Synchronization

Showrunner ensures a frame-accurate playback across any number of display computers on all outputs of a set group. Each group is synchronized separately.

Each layer can be synchronized separately, or each file can be played as free running video.

It is possible to synchronize between several groups. In this case the layers will be synchronized across groups according to number (for example layer1 of group2 will sync to layer1 of group1).

You can also synchronize layers together creating groups of synchronized layers (for example for multi-channel audio).

Masters are set automatically by the system and will broadcast sync data to the slaves. Slaves will compensate for any inconsistency between where the media is on the master display and where it should be. If a slave detects it is out of sync, it will smoothly bring it to the correct point.

Synchronization is done both internally on each multi-output server and over the LAN network using UDP packages on a multi-machine setup.

A timeline object has its own synchronization clock. All layers and commands inside a timeline object are synchronized to one clock.



On a multi-output computer, it is better to play one mega pixel file than to Pre-split for each display separately. This has better results, both in overall computer load and cross display synchronization.

Sound

Sound can be delivered by any one of the display computers using the built-in sound card or any add on cards.

If several cards and/or multi-channel cards are used, sound can be routed for each file played.

It is possible to use audio files with different formats within one project.

Playback of surround Streams (Surround 5.1/7.1) can be routed via the S/PDIF output to be fed into a surround receiver.

Other multi-channel tracks should be split into stereo pairs and then routed using a multi-channel professional sound card (don't forget to synchronize the audio layers).

Codec's

Reliable playback of video depends on the video codec's that you have installed on your PC.

The Showrunner Setup installs the free and trusted LAV filters, which are certified and published under the GNU license and are maintained by the open-source community.

The filters used by Showrunner may be changed and new filters may be added. This is done by installing any compliant DirectShow codec's. In this case you can use the "Tweaker Tool" (installed together with the Showrunner software) which allows you to configure your preferred decoders.



All computers in a sync group should have the exact same codec installed. All video files in a sync group should be encoded in the same way and have same frame rate. For optimum playback, choose the frame rate of the graphics card to be a multiple of the video frame rate (Usually 30/60 frame/sec).

Network

It is recommended to deactivate automatic DHCP Server. If using DHCP, IP addresses may change on rebooting the computers. Showrunner will try to access the wrong IP's and will fail.

If this is not possible in your network, contact your network administrator to make sure that the DHCP Server doesn't change the IP numbers of the Showplayer Computers.

To configure a Showplayer computer, you must configure the PC Ethernet card. It is necessary to set two parameters, the IP address and the Subnet Mask. These settings are adjusted in the Windows Network Settings Dialogue.

To access this, select the "Start Menu"– "Control Panel" menu.

In the "Control Panel", double click on the "Network" Icon.

Select the "TCP/IP protocol" line and then press the "Properties" button.

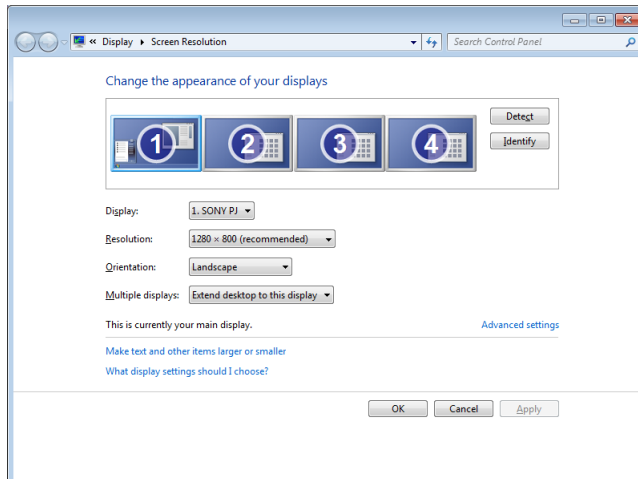
Select the radio button marked "Specify an IP Address". Specify a unique IP number for each player by changing the last group of IP address digits. "Subnet Mask" should be the same on all computers

If your Showrunner system is not stand-alone but connected to a larger network, you should consult your network administrator for the correct IP number, subnet mask, and other parameters.

Single or multi display configuration

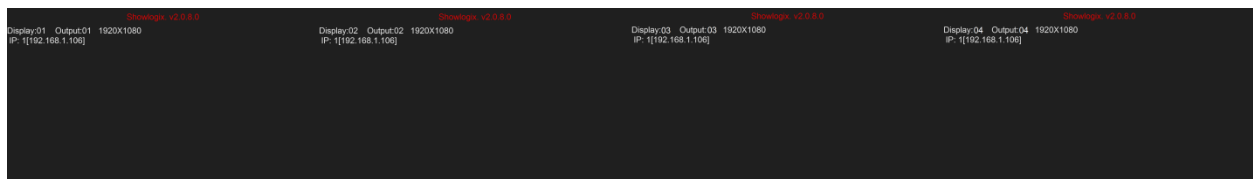
It is possible to use more than one graphic card with several outputs each. Showrunner support up to ten independent outputs.

To configure the outputs of the graphics card correctly, the required display devices have to be connected and work correctly.



When Showplayer is launched and connected, it opens on display number#1 even if it is not the primary display. As soon as the Showrunner connects to the first player (as long as multiple players are assigned), the remaining players will open according to the display number and will be connected to Showrunner (The display number is not necessarily the same number as you see in the Windows Resolution screen).

You can now use each display as if it is another player on the network.



On a multi-display computer, it is better to play one mega pixel video, than to pre-split to separate files for each display separately. This has better results, both in overall computer load and cross display synchronization.

License Key

The Showrunner system requires a hardware (dongle) license key. Plug the key into any free USB port on the manager computer.

You must use only the dongle distributed with your installation. The dongle must be inserted into the USB port at all times.

DMX over Ethernet using Art-Net protocol

To use Showrunner with an Art-Net device, you must configure the Art-Net device to work on same network segment as the Showrunner. It is necessary to set two parameters, the IP address and the Subnet Mask. To change these settings, consult the device manufacturer's manuals.

For more information on the Art-Net Protocol please go to www.artisticlicence.com
Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd

External devices (Ethernet control)

Showrunner allows controlling external devices or receiving commands from other programs or network devices using text strings sent to or received from a device through a TCP/IP or UDP connection.

These commands are defined by the device manufacturer, and you should consult their manuals to find out what commands your devices support. Typically a command will be a text 'string', or sequence of letters and numbers, that the device interprets and acts upon.

To do this, you must know the IP number and port number of the device to be controlled.

Motion Tracking

Showrunner uses a modified CCV.exe application which is an open source solution for computer vision and machine sensing. It takes video input from various cameras and video devices and broadcasts tracking data directly to Showrunner.

This data is used to create multi-touch events and real-time visual effects.

The Showrunner system is able to receive many trackers on separate UDP ports and assign a surface to each display or group of displays.

CCV is based on the work done by the NUI Group Community and is released under the LGPL License.

This application is delivered free of charge without any warranty.

Showrunner Installation and Setup

System Requirements

Hardware

If you are using Showrunner for running the show or for logical command editing, you can install on almost any Windows 7/8/10 computer. If you are using Showplayer or if using Showrunner for timeline editing you will need a computer that will support your media files.

Every digital media network will have different technical requirements and the type and format of the media and number of layers and effects used, will determine the type of PC and graphics card to deploy.

As a minimum, we recommend a PC configuration that has a compatible RAM / CPU chipset combination, ideally assembled around a fast Intel processor and a graphics card with Direct3D support.

Showplayer is based on a video engine which takes advantage of the capabilities of the latest hardware accelerated graphic cards. All video treatment and effects, keying and other blending possibilities are all computed in the GPU, All this in real time and with a very high image quality.

Showplayer can use up to ten displays on a single computer. Each display fully supports standard capabilities, such as geometry correction and edge blending.



The hardware specifications in this document should only be used as a guideline. We recommended that you thoroughly test any combination of PC, graphic card, sound card, screen and media before any bulk purchase is made.

It is recommended to dedicate computers for the show and remove unwanted background applications or services. The best way is to take a new hard disk and then install Windows operating system, device drivers, and Showrunner.

For most applications using synchronized playback, it is best to use playback computers with identical hardware and software.

Computer Preparation

Disabling unwanted Windows functions

Screen saver, energy saving measures, automatic cleanup and Automatic Access Control (UAC) functions, Firewall, Windows Defender will affect the performance. Before using Showrunner, disable them.



In the Windows "Personalization" menu, do not change the theme to Windows Classic or Basic, this may cause playback stuttering.

Software Setup/Installation

Install Showrunner by downloading the setup file from Showlogix website.

Follow the online screens and prompts.

1. Close all programs before beginning software installation.
2. Carefully read the Showrunner license agreement. The software installation only proceeds if the "Accept" button is clicked and the license terms are agreed to.
3. The installer will install both Showrunner and Showplayer.

The installer adds a Showrunner and a Showplayer icon to the *Windows Start Menu*, in a folder called Showlogix.



By default, Showplayer will start automatically when Microsoft Windows does. To change this, uncheck "Launch at PC Startup" in the player Setup window.

Launching Showrunner

When you start Showrunner, a window will open offering four options:



After a few seconds it will automatically load the last project that was in use and go to "Run Mode". If this is the first time you open Showrunner, it will open an empty project.

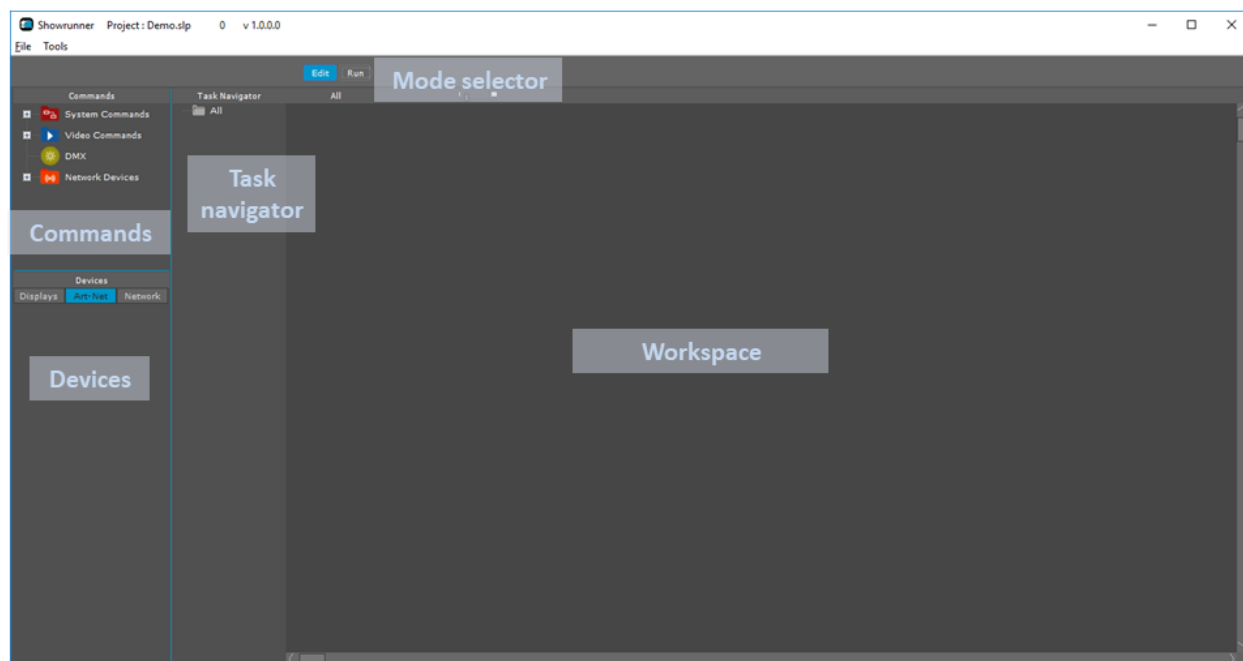
Blocking

If there is an active firewall, as Showrunner applications try to access the network, the firewall will display a dialog. Select "Unblock" option to allow Showrunner to work correctly.

Changes made take effect immediately.

In some cases, the firewall needs to be configured manually or disabled.

General view

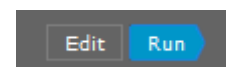


Run Mode

This is the mode for running shows.

In this mode Showrunner interacts with all devices and communications are open. Most actions are done at this mode.

You cannot add/delete devices and commands.

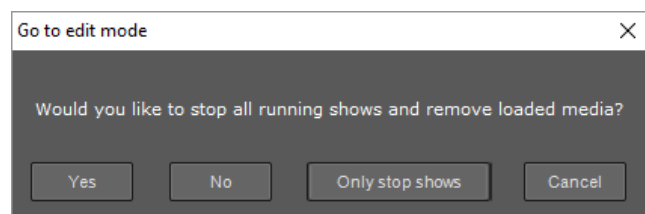


Edit Mode

In Edit Mode you configure all devices in the project and program the show.



While shows are running, if you press the Edit button, the following menu will open:



Yes – All shows will stop, any loaded media will be removed and displays will turn black.

No – Shows will keep running and will not be affected. This allows you to add commands and configure devices, while a show is running. Take care, as changing commands and devices may affect the show.

Only stop shows – All shows will stop and videos will pause on displays.

Cancel – Showrunner will stay in Run mode. Shows will not be affected.

Devices

Under this box you'll configure devices that are controlled by Showrunner. The devices are divided into three groups:

1. **Displays-** Here you configure all Showrunner displays (players).
2. **Art-net-** Here you configure all Art-net universes.
3. **Network-** Here you configure all external devices, to be controlled or to trigger event, using serial commands over TCP/IP or UDP network.

Commands

Under this box you'll find all available commands to be dragged to the Work Space. This list is updated dynamically according to the configured devices.

Task navigator

Here you can arrange your tasks into groups. You can add, remove, and arrange folders in this section to access your tasks more easily. When you click a folder in the Navigation Pane, that folder becomes the active folder and you can work with the tasks within it.

There are two ways to add tasks to a folder:

1. Create a folder by right click>Add folder, select it, and then drag commands to the work space. All new tasks will appear inside/under the folder.
2. Drag tasks from the workspace onto a folder.



This technique does not affect tasks, only the way tasks are shown. Deleting tasks under the "Task navigator", will not delete the tasks.

Work Space

To this area you drag the commands to create the sequences of the show.

Display configuration

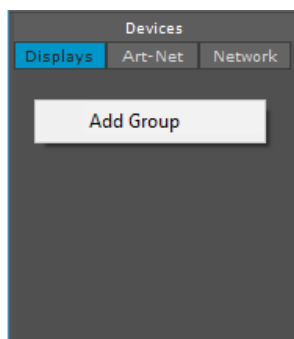
First you need to define a display group. A group is a set of displays controlled together and synchronized. For example: a PLAY command will play a specific layer across all displays in a certain group.

The Group also holds the default 2D and 3D Display Map parameters.

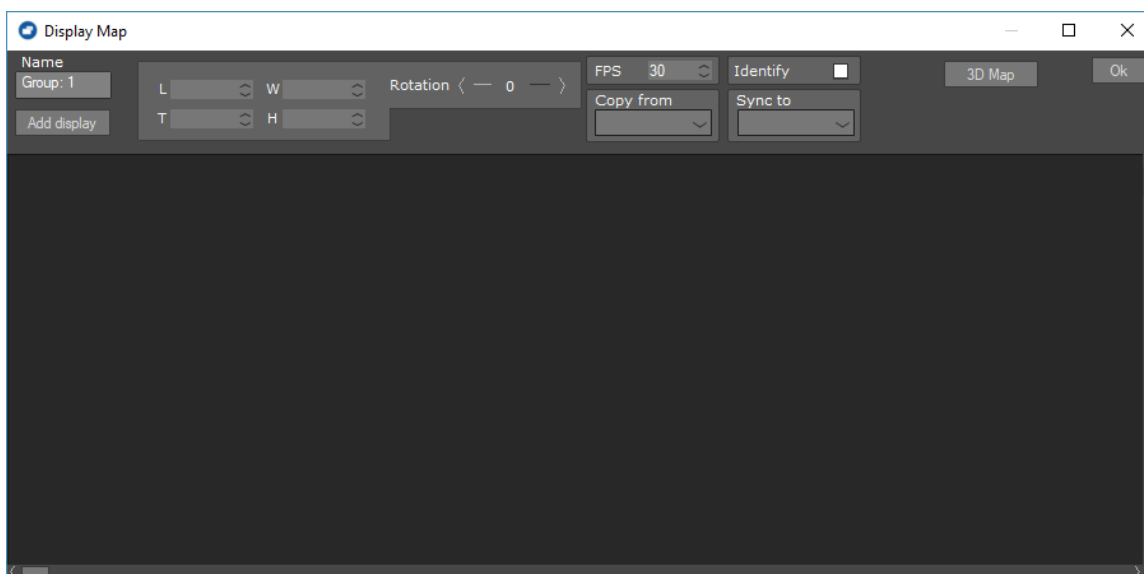


There is no limit of amount of display groups used in a project.
Any display can be used in several groups and in different sync arrangements.

To create a group, go to "Edit Mode".

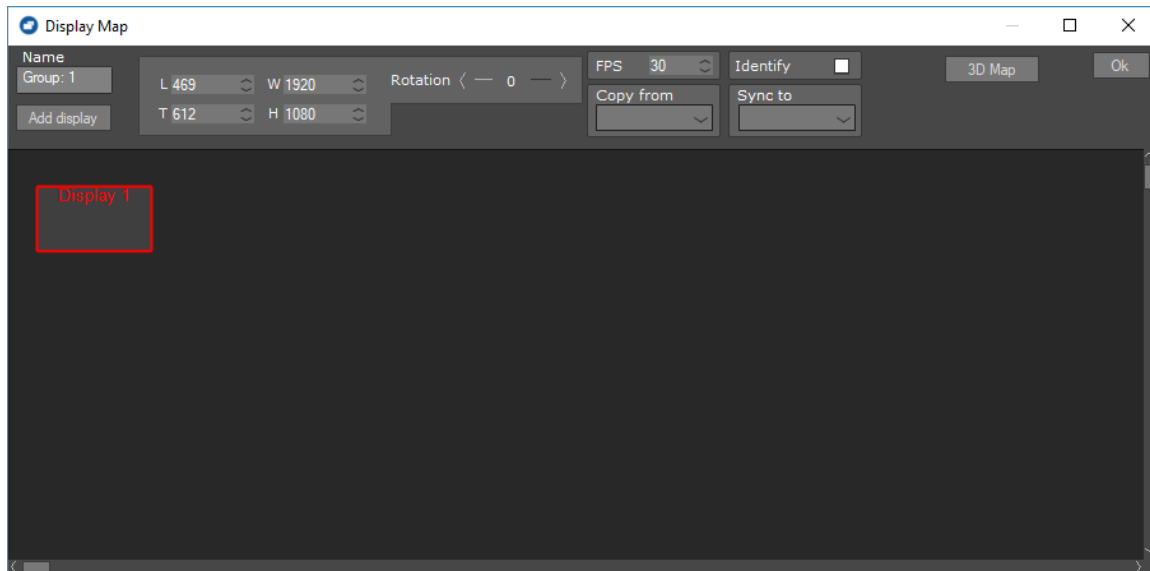


Under the Displays tab, Right click>"Add group". The following window will open:

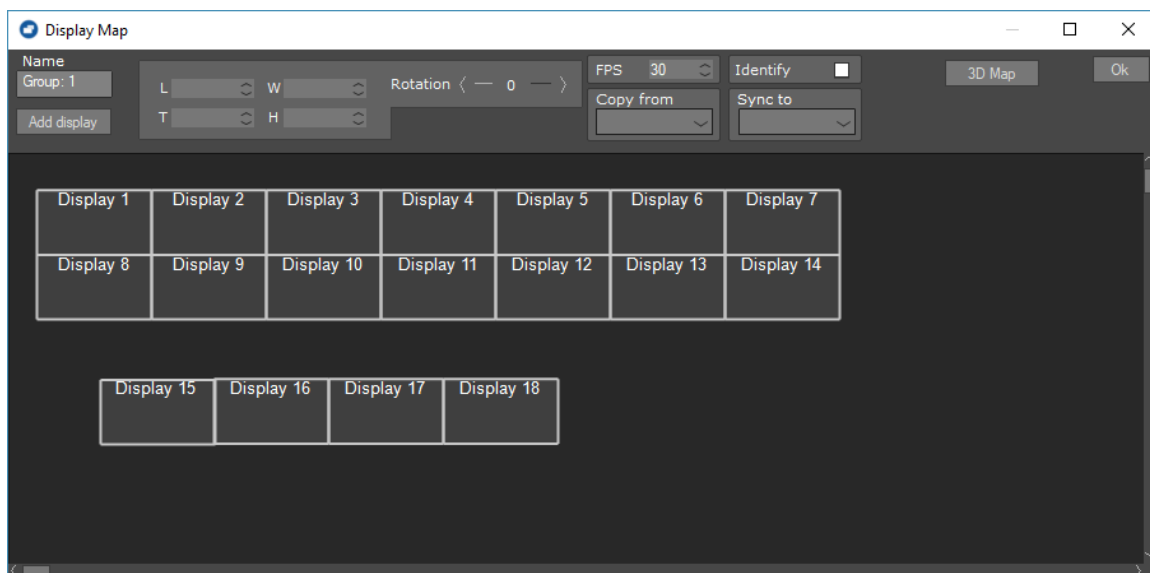


This is the display map, it allows you to arrange the displays and place them in respect to each other.

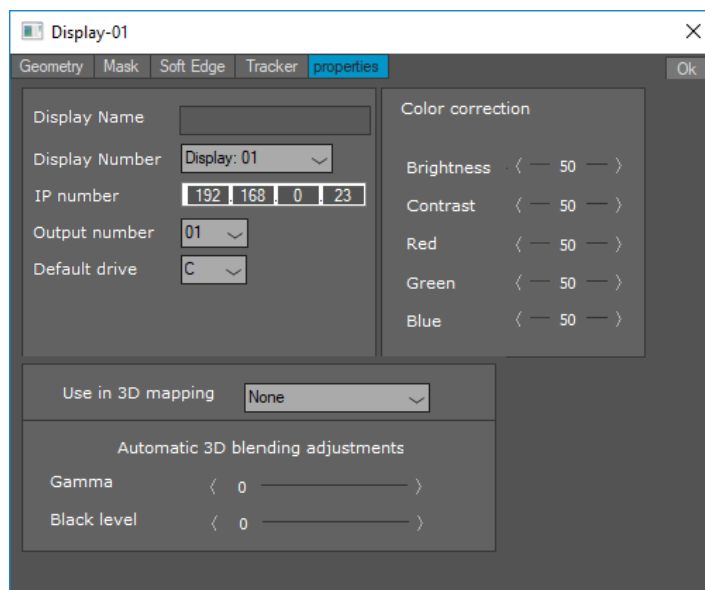
To assign displays to the group, press the "Add display" button, or right click on the surface to create a specific display.



Add as many displays to fit the number you want to assign to this group.



By double clicking on each display rectangle, you can set the display specifications:



Name - Assign a name (not compulsory).

Display number – this is set automatically.

IP number - Set the IP number of the computer which the Showplayer is installed on.

Output number - Assign output number 1. If you are using multiple displays from one computer, keep same IP address and change the output number to fit the graphics card output you are using on the display computer. This allows you to drive multiple displays from one computer by entering the same IP number but different output numbers.

Default drive - Assign a default drive on the remote computer.

This drive will be used by the Showplayer; a folder named "ShowLogix Media" will be created automatically on the selected drive. Showrunner will upload all content to that folder and Showplayer will play all content from this folder (The drive and folder can be changed any time by using the "Switch media folder" command, even while the show is running).

Color correction - Here you can adjust the color, brightness and contrast levels of the whole surface, this is used to balance different display devices or in the case you are using projectors with un-even lamp outputs.

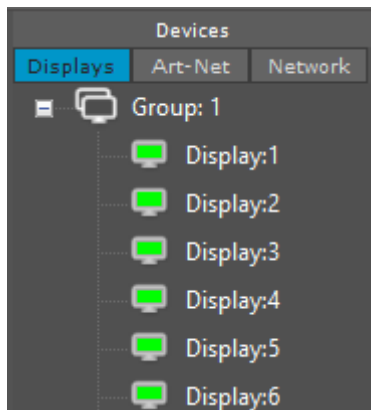
Use in 3D mapping – A display can be used in one of the display map options. By default it is used in the 2D group display map. By selecting a projector from the drop down list, it is used in the 3D display map (It can still be used also in the 2D display map).

3D mapping uses automatic soft edge blending between projectors. You can manually adjust the levels to fit real world projector brightness and coloring. These adjustments affect only 3D mapping mode:

Gamma – Adjust the intensity of the blended area on the current projector.

Black Level – Raises the brightness of the none-overlapped areas to compensate for the double (or more) light output of the overlapped projectors.

After the group display map is closed, assuming the player computers are connected to the network and the Showplayer is open, the display icons will turn yellow and then green, showing connection has been established.



2D Display Map

By using the 2D display map function you can add and arrange the display areas. The mapped data is then used by the "Move layer" command to map the media across displays.

Every group has its default display map which is created while setting the Group. This display map can be replaced at any time by another pre-configured display map.

A Display map holds information of the whole canvas and is configured by several parameters:

- 2D Display arrangement simulating physical placement.
- 3D Display arrangement simulating physical placement.
- Geometry correction of each display or for each layer
- Mask areas of each display or for each layer
- Soft edge blending configuration of 4 corners of each display
- Color correction of each display

By clicking on any display you can move a display freely. All changes affect players in real time. The display sizes are in pixels.

To navigate around the display map, use a mouse with a wheel:
Middle click and move – pan
Mouse wheel – zoom

Display map can be pre-configured, saved, and then triggered by any incoming event to simultaneously, change mapping characteristics on all or selected displays. There is no limit to amount of display maps.



The display arrangement works only on layers that have been positioned using the "Move layer" command.

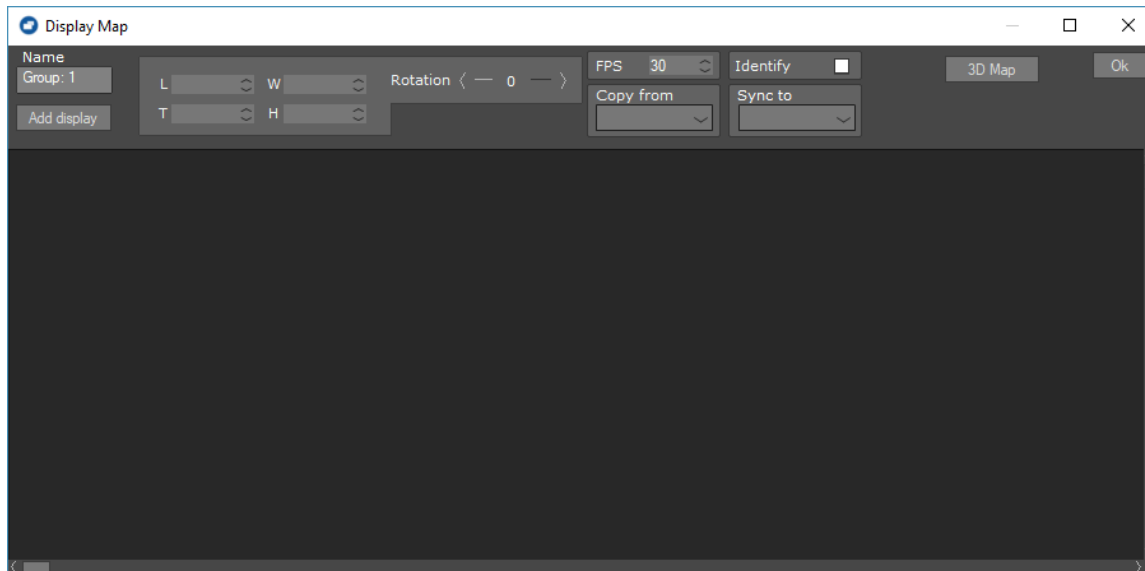
Every "play" command has a check box allowing you to use current 2D display map arrangement. If not checked, files will be played relative to the display (each display is treated as a separate canvas). This is useful for playing pre-split large videos. This checkbox does not affect geometry, mask, soft edge and color correction (which always use last assigned display map).

2D Display map configuration

To adjust the default display map, double-click on The "Group" icon.

To create a new display map to be triggered along the show, go to "Edit Mode" drag "Display map" command and click on the display map object

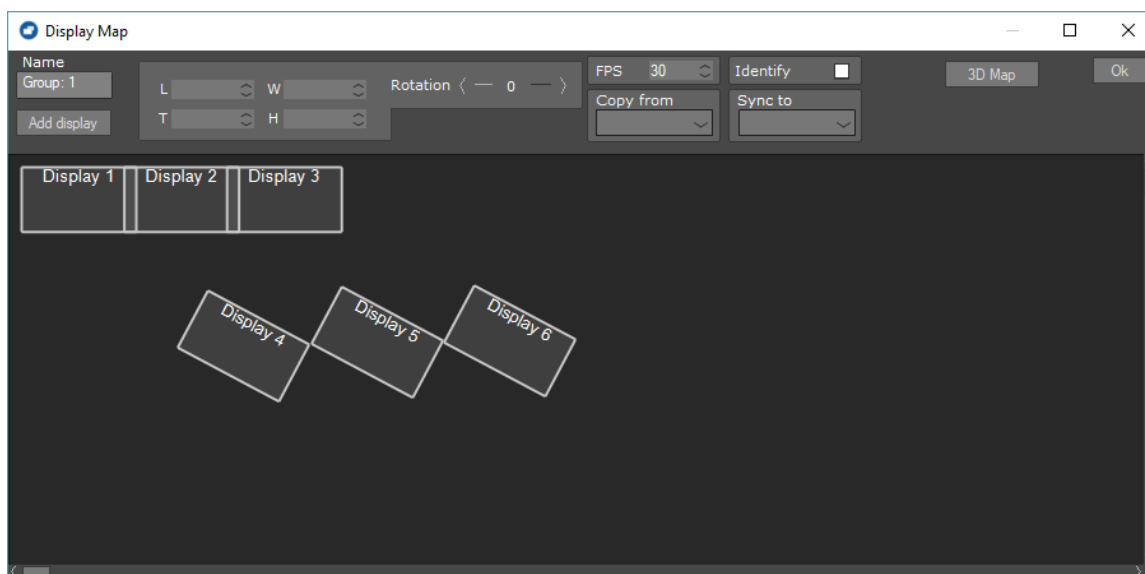
The following window will open:



This is the display arrangement window, here you add and arrange displays.

To add a display, press on the "Add display" button.

Drag a display to the desired position using the mouse. The display resolution can be altered by changing Width/Height parameters on the top bar. Add as many displays needed in this group. Any adjustment is updated on connected displays in real-time.



Shift+Left click: This will add sensitivity to the way displays move as mouse is dragged.

For fine tuning the position, use the "Size & Position" arrows. The values are in Pixels.

Name: A name is assigned automatically to a new group; this can be changed any time.

Rotation: Each display can be rotated. The values are in angle degrees.

Copy from: Here you can copy all display configuration parameters from another display map.

Sync to: To synchronize playback timecodes between groups

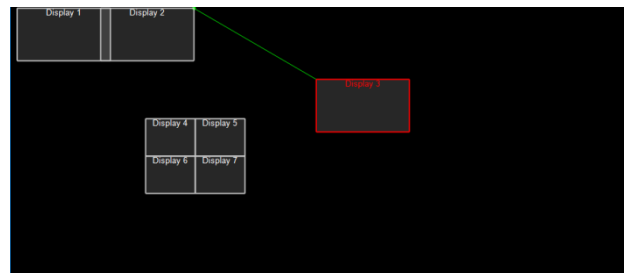
For fast positioning and sizing, right + click on the upper left point:

Stick To – will move the display and stick to the left of a second selected display.

Make same size width - will resize the display and fit to the width size of a second selected display.

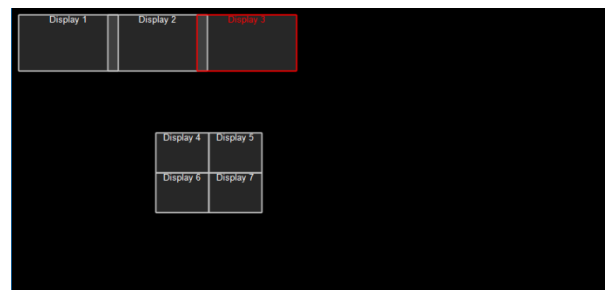
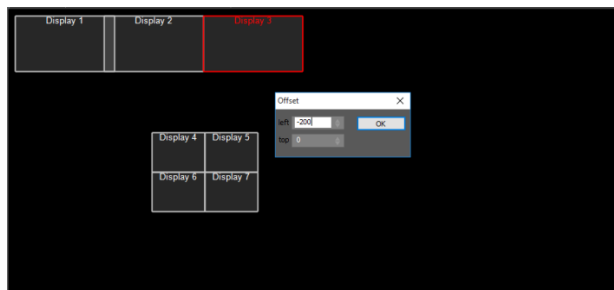
Make same size height - will resize the display and fit to the height size of a second selected display.

Make same size both - will resize the display and fit both the width and height of a second selected display.



For fast overlapping and underlapping, right + click on the center of a display:

Offset – will open a dialog box. By selecting a number of pixels (+/-), the display will move to the new position.



Right + click on the center of each display:

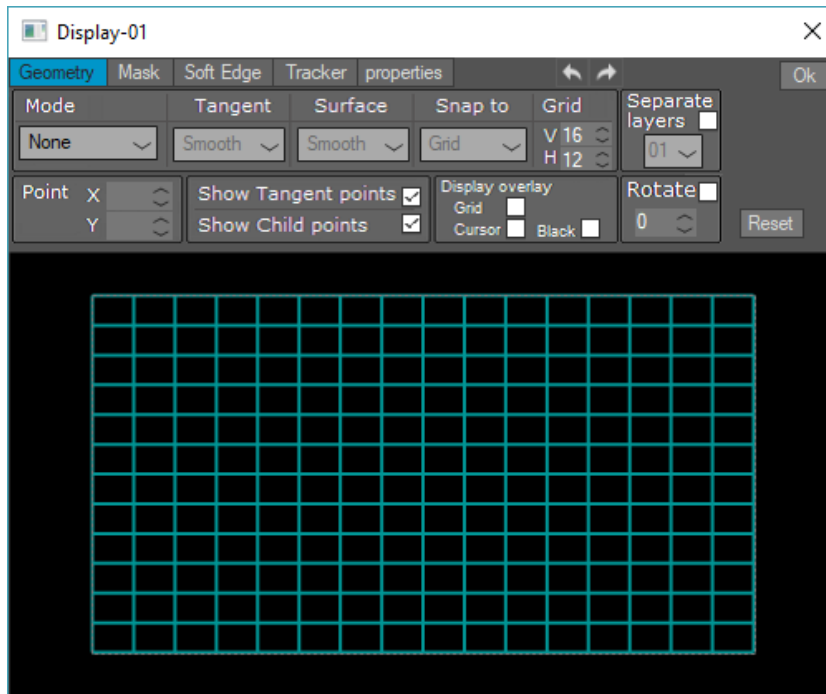
Display Settings- Open display settings window (pressing double click will also open display settings).

Copy display settings – Create a temporary duplicate of display settings for transferring to another display. These settings include: Geometry, mask and edge blending.

Paste display settings- Transfer display settings held by the "Copy display settings" to the current display. This will update both manager and display computers.

Delete display- Delete display from current display map. If this is the default group display map, it will also be deleted from group.

Display Settings - Geometry Correction



Geometric correction via image warping is a process of digitally manipulating the image, and is used to fix projection issues in several circumstances:

1. **When the projected surface is not flat.** Images can be warped to fit virtually any non-standard 3D surface, like a dome or sphere. Showrunner can distort any standard media so it appears correct on any dimension or shape surface.
2. **When projector is off-axis to the screen.** Showrunner will compensate for any offset projector placement. Keystone, perspective and size can be accurately corrected for any off-angle projection, with perfect linearity adjustment.
3. **When more than one projector is used and overlap areas are created for seamless projection.** Achieve perfect pixel to pixel alignment needed for projection blending while minimizing distortions.

The Showrunner geometric correction method allows you to create any kind of deform by setting any grid and adding a point almost anywhere on the surface. In addition you have a selection of deform controllers you can use.

To navigate around the display map, use a mouse with a wheel:

Middle click and move – pan

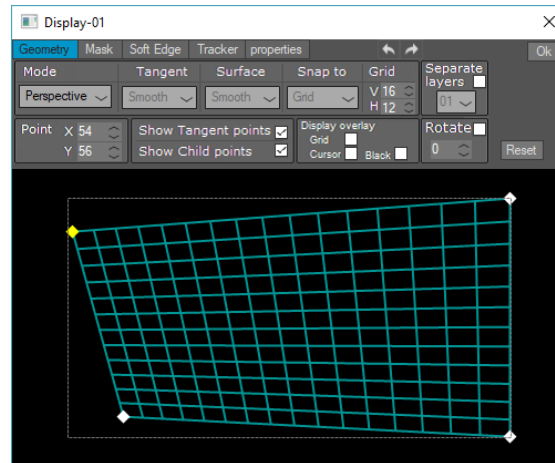
Mouse wheel – zoom

To define what kind of deform you need for correcting your image, select from the "Mode" drop down menu:

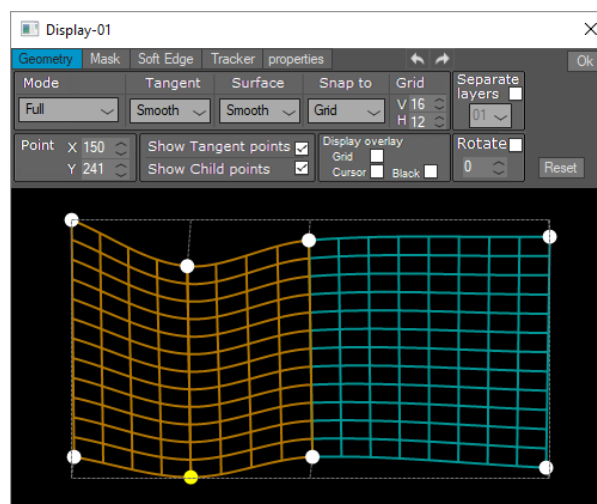
Mode

None- No deform is applied.

Perspective- used for perspective and keystone correction.



Full- At this mode you can add/remove as many point as needed by double clicking on the grid. Affected area will change color from green to orange on the grid. Child points will be added at certain circumstances, adding another level of control to your correction.



In full mode, you can define the way points behave:



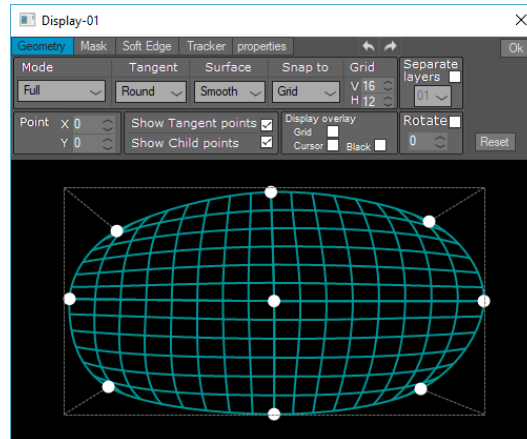
For better control, points can be adjusted using arrow keys on keyboard.

Shift+Left click: will add sensitivity as mouse is dragged.

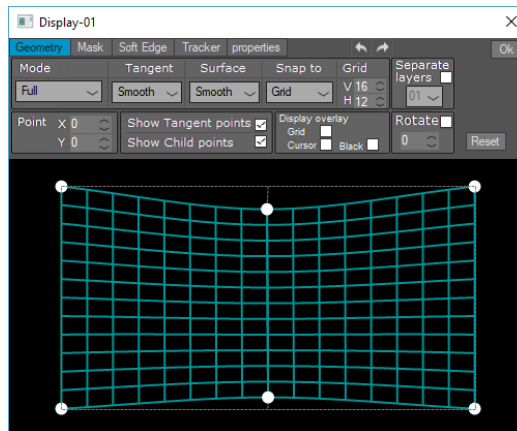
Several points can be moved together, using Ctrl+click to selected points and move mouse, "Point X Y" arrows or keyboard arrows.

Tangent

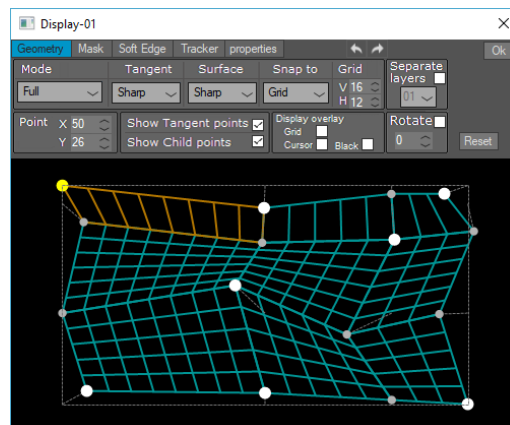
Round- Changes corner points to round points. They are used to project on ball shaped objects. For more accurate option, use free tangent and free surface.



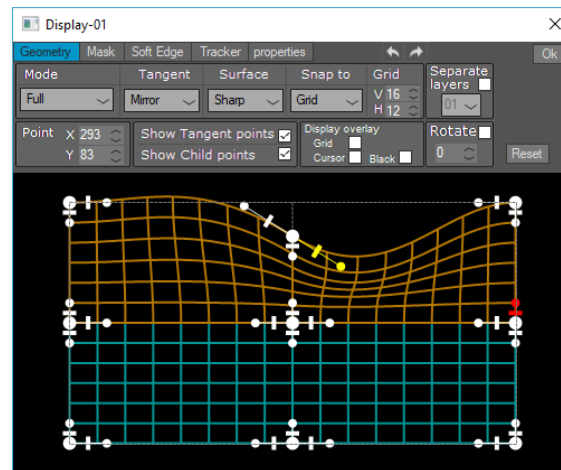
Smooth- Changes all points to smooth points. These are automatic points, adjusting a point will affect nearby points.



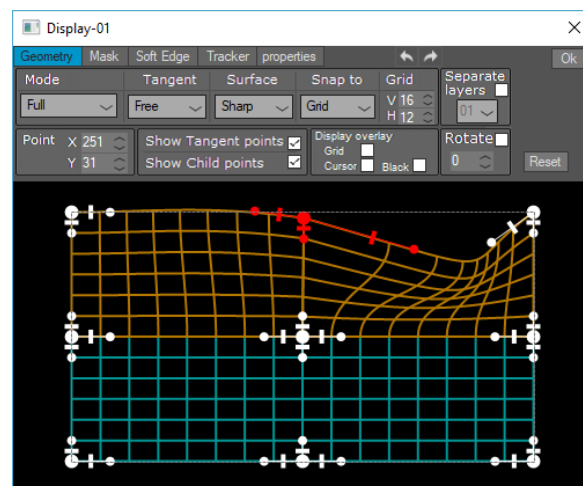
Sharp- Changes all points to sharp points. These are points used for projection on 3D polygon shaped surfaces, adjusting a point will not affect nearby points.



Mirror- Changes all points to mirror points. Adds 4 Bezier handles to allow full control over the 3D surface. Parallel handles will move simultaneously.



Free- Changes all points to free points. Adds 4 Bezier handles to allow full control over the 3D surface. Each handle will move separately, pull the bars for distribution of grid lines.



Surface

Smooth- Changes the behavior of the surface between points.

Sharp- Changes the behavior of the surface between points. This is used for projection on 3D polygon shaped surfaces.

Free- Changes the behavior of the surface between points. Adds 4 more handles to freely adjust surface.

Snap to

Grid- New points are created only on grid junctions.

Point- New points are created only in line of nearby points.

None- New points are created freely.

Grid - Grid size can be changed anytime to add flexibility

Reset- Resets both, perspective and full modes to default position

Point Adjustment- For better accuracy, you can click on any point or handle to change its values using the up and down arrows. Selected item will turn yellow.

Show Tangent points– Un-check to hide handles on Mirror and Free tangent points.

Show Child points– Un-check to hide automatic child points.

Separate for each layer- In default, the layout is configured to adjust the whole surface. By checking the box, the Layer drop down menu will be enabled. Now you can shape each layer separately.

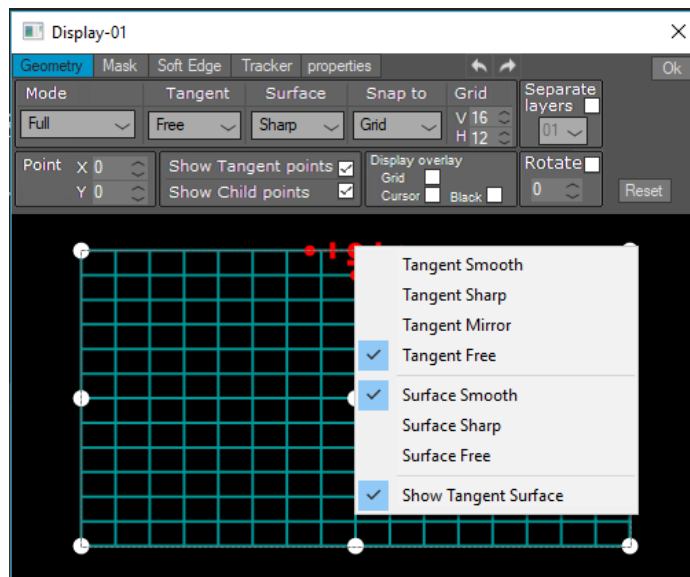
Display overlay

Grid- Draws a grid pattern on all players in the group. The grid will be drawn over playing files on background layer (1). Current player – green, other players – purple.

Cursor – Draws a cursor on the player relative to the mouse position inside the dotted borders.

Black – Mutes the display

For greater flexibility, you can mix and match different types of points by Right clicking on any Control point to change its function.

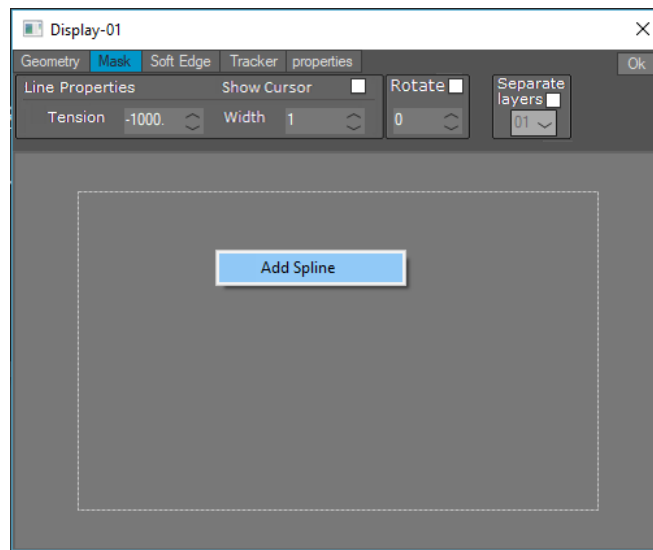


Display Settings - Mask

Masking is used to create a video image that is not rectangle, or to hide areas in the video layer. You can create your mask in any shape by using the Mask controller.

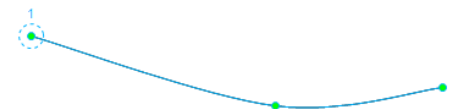
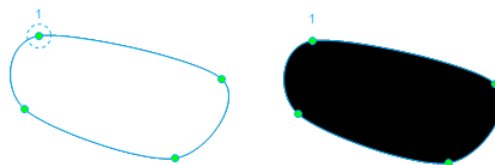
Mask configuration

To open the Mask controller screen, go to "Run Mode" right click on a "Player" icon, you wish to adjust, click on "Layout" and press the "Mask" tab.



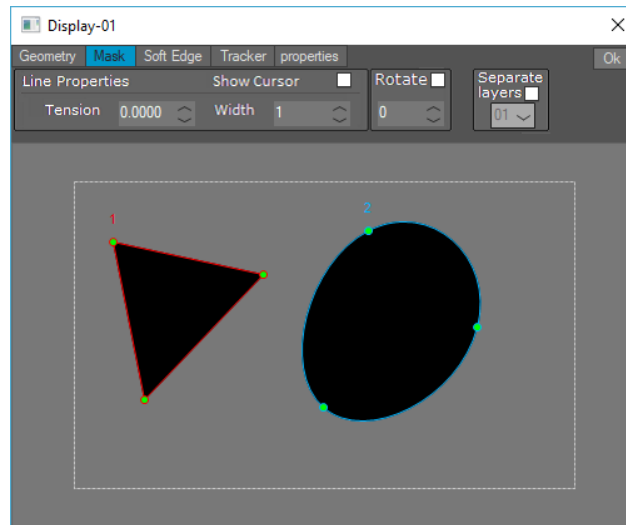
List of Tools

1. **Right Click >Add Spline** – draw a line to create a shape. Each mouse click on the surface will add a movable point. To close a shape you need to click the dotted circle
2. **Right Click >Fill** - Fills a shape with black. To fill a shape, you need to close it by connecting the end of the line to the beginning of the lines small circle.

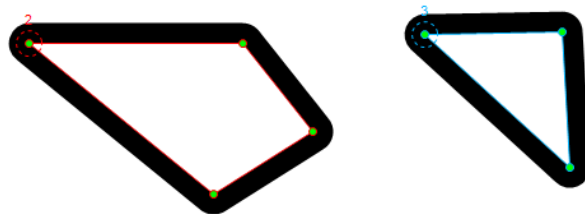


3. **Select** – Selects a mask by clicking on it. The color of the line will change to red
4. **Move mask**- Moves a mask by clicking on the small circle and drag.
5. **Delete mask**- Delete a mask by right-clicking the small circle.
6. **Add point** - Add a point to existing mask by right clicking on a point.
7. **Move point** - Moves a point by clicking on a point and drag.
8. **Delete point** - Delete a point by right-clicking on it.

Tension – This sets tension of the curve of each selected line. By changing the tension you can create different shapes (for example a rectangle or circle).



Width – This sets the width of all lines used.



Separate Mask for each layer- In default, the layout is configured to create masks on whole surface. By checking the box, the Layer drop down menu will be enabled. Now you can mask each layer separately.

Display Settings - Soft Edge Blending

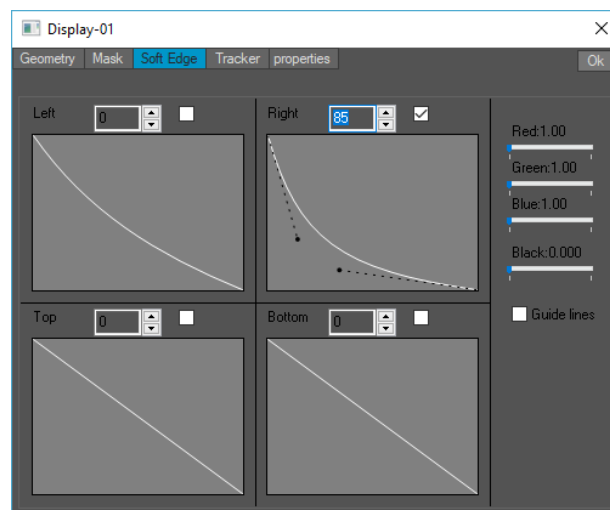
Soft edge blending is a method used to create a larger video display by combining the image of two or more projectors. When overlapping projectors, the overlapped region has higher brightness than the non-overlapped regions, so there is a need to feather the edges. The process of edge blending, involves manipulation of individual pixels to ensure perfect intensity over a specified blend zone.



If you plan to use pre-split files, you need to take care to split the media correctly with the overlapping areas.

Soft Edge configuration

To open the Soft Edge screen, go to "Run Mode" right click on a "Player", you wish to adjust and click on "Layout" and press the "Soft Edge" tab.



Left/Right/Top/Bottom Enable check box – If checked, a feathering effect will be applied to the side of the output image, according to the overlapping percentage selected.

Blend area edit box – select percentage of the surface to apply soft edge. Two projectors that are overlapping should usually have same percentage.

Soft edge curve – simulates the intensity of the blended area. Points may be added, for greater flexibility, by right clicking on the curve. Before attempting to adjust the edge blend curve, make sure the projectors are set up properly.

Gamma Correction – Gamma correction on the overlapped area of each color separately.

Black Level – Raises the brightness of the none-overlapped areas to compensate for the double light output of the overlapped projectors. Use this adjustment on a full black image.

Show guide lines – Draws a guide pattern on all players in the group. The pattern will be drawn over playing files on layer 1. Current player – green, other players – purple.

3D Display Map

The 3D mapping tool is used to wrap content on a 3D object in real time. Automatic edge blending is applied.

This done by importing a 3D model .obj file. This model can be embedded with a UV map.

Showrunner allows you to use 3D object in three ways:

UV mapping

The UV map is a 2D representation of the 3D object. It transforms the 3D X, Y, Z coordinates to the 2D U and V coordinates.

The UV map is used as a template by the content creators program. The template aspect ratio should match the UV map's aspect ratio.

To play 3D content in Showrunner, you need an .obj file with the UV mapped embedded, and content created based on the UV template.

By using UV mapped content, the artists can work using their own programs and templates without being concerned by the physical layouts of the projectors.

Projective texture

You are not obligated to use a UV map. You can also use standard 2D content so it is viewed un-distorted from the viewer's point of view. This is also known as projective texturing.

No Mapping

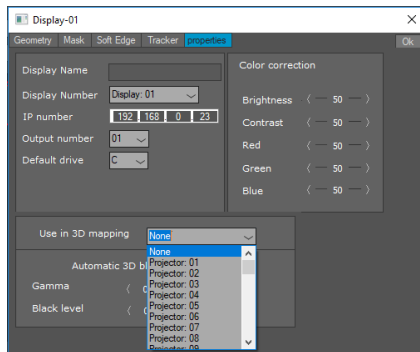
A third option is to use the 3D tool, only for masking and blending on the 3D object, without any 3D mapping.

After assigning a 3D object and calibrating the projectors on to it, you can decide which layer will use the 3D map and in what mapping technique.

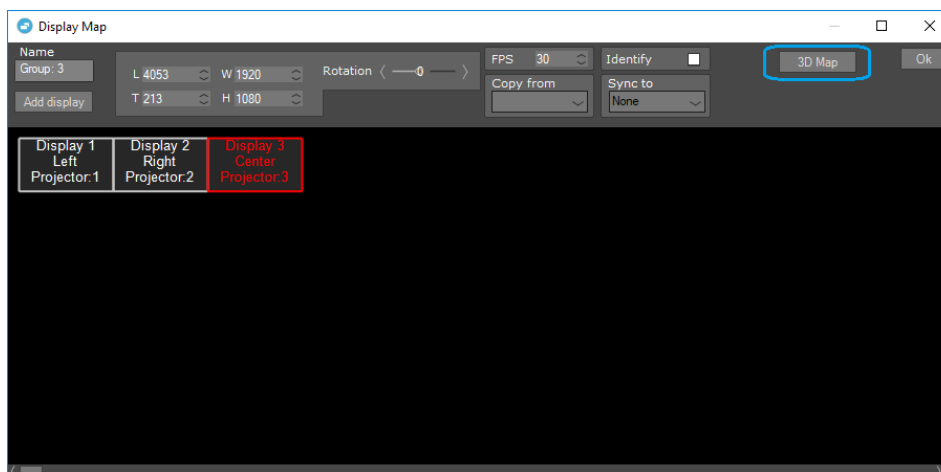
Assigning displays for 3D mapping

A display can be used both in the 2D display map and the 3D map. To use a display in the 3D projection mapping tool, you need to assign it as a projector under the display properties tab.

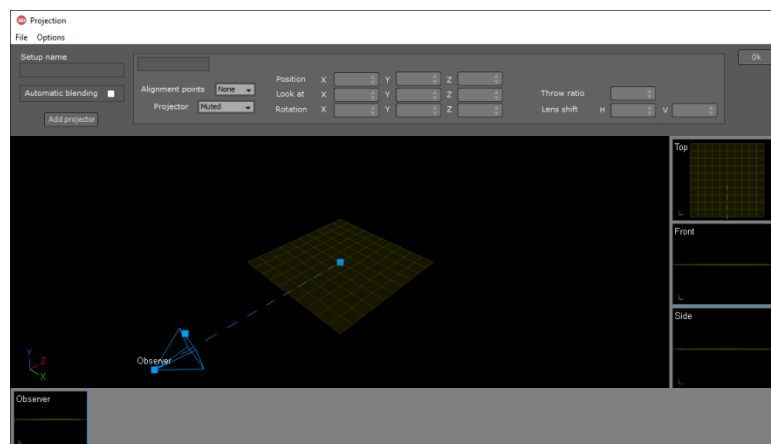
To get to the display properties, double click on the display icon or double click on the display, inside the display map.



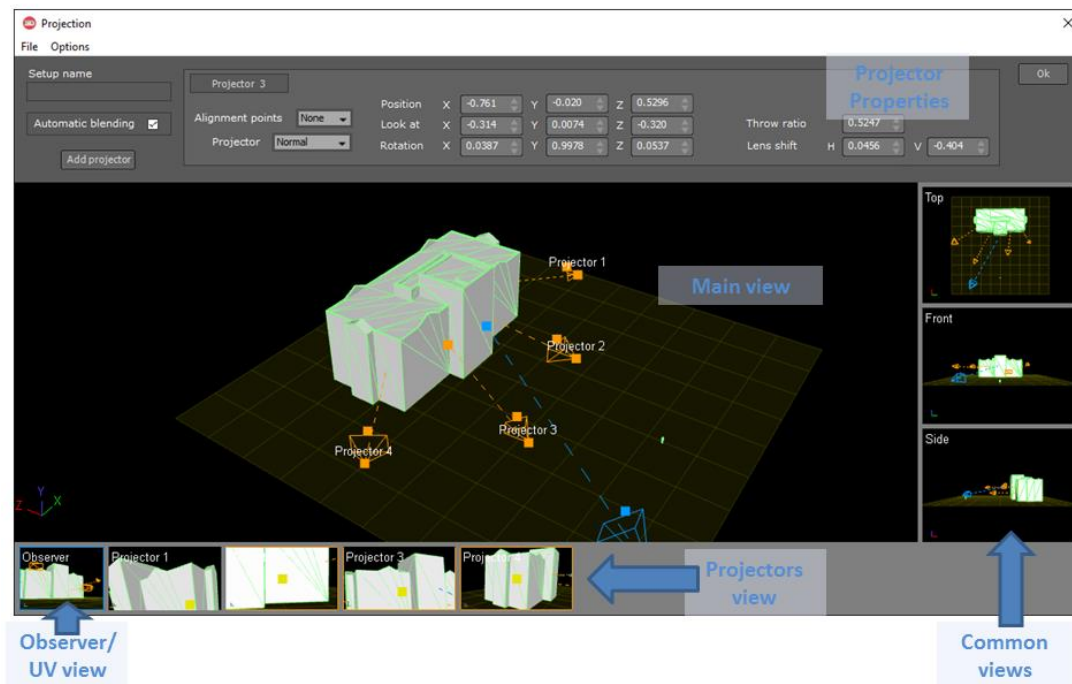
To open the 3D map, press the 3D Map button inside the 2D display map window.



The following window will open:



3D mapping controller overview:



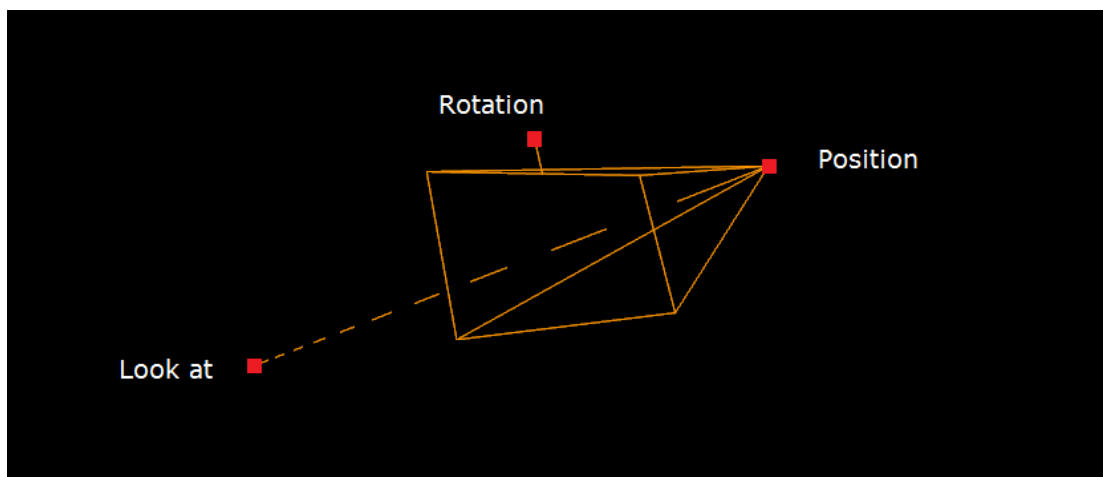
Main view - Here you can view and navigate your scene using the mouse:

Left click and move – free rotation

Middle click and move – pan

Mouse wheel –distance

You can control projectors and observer point of view by clicking on the rectangles on each projector. Highlighted point can also be moved using arrows on the keyboard.



Common views- common views for better orientation in space: top, front and side. In these views you can only zoom using the mouse wheel. By clicking on each of the views, it will also show on the main view.

Projectors view - shows the scene from the projector's point of view. Here you can position the projector using the mouse:

Left click and move – free rotation

Middle click and move – pan

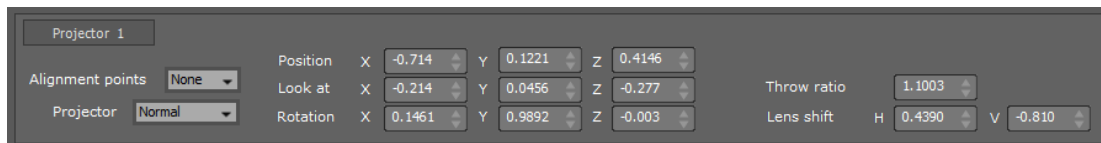
Mouse wheel –distance/zoom

Yellow rectangle – Lens shift

Projector will also move in the main view and also on the projected image on the physical object.

Observer view - shows the scene from the observer's point of view. If content is played back in projective mode, the mapping is done as should be seen from observer point of view. This view can be changed to view the UV map template of the loaded object. This is done from the top menu.

Projector properties



Projector 1	
Alignment points	None
Projector	Normal
Position	X: -0.714, Y: 0.1221, Z: 0.4146
Look at	X: -0.214, Y: 0.0456, Z: -0.277
Rotation	X: 0.1461, Y: 0.9892, Z: -0.003
Throw ratio	1.1003
Lens shift	H: 0.4390, V: -0.810

This is the dynamic properties controller. Each projector you select will show its properties here. Parameters can be adjusted numerically from here.

Position - Parameters of the position of the projector, in 3D space.

Look at - Parameters of the target position of the projector, in 3D space.

Rotation - Parameters of the rotation position of the projector, in 3D space.

Throw ratio -The Throw Ratio is actually the angle of the projectors view and measured horizontally in degrees. It is related to the projectors zoom. If you know exactly your projectors angle of view, enter it here.

Lens Shift H - Changes the Horizontal Lens shift

Lens Shift V - Changes the Vertical Lens shift

Alignment points – selects number of points to use for calibrating projector. If a number is selected, calibration mode will turn on.

None - not in calibration mode.

3-12 point – Select number of points to calibrate projector parameters. Points can be added at any stage.

Projector - controls what is projected on the physical projector connected to the display computer:

Normal: Project the image which was played using the Playlist editor.

Muted: Project black.

Solid: Project solid representation of the 3D object.

Wireframe: Project green wireframe representation of the 3D object.

Add Projector - Projectors represent projectors in the real world. Click to add a projector.

Automatic Blending - Unchecking will remove automatic blending on projector outputs.

Menu

File

Load object - To import a 3D model. Showrunner currently supports Wavefront OBJ (*.obj).

Save setup as – saves the whole 3D setup as a separate file.

Load setup – Loads a saved 3D setup file.

Options

Rotate model – Swap Y/Z to fix objects created on third party software.

Fine Adjust Projectors – By checking, mouse is less sensitive, making it more accurate.

Zoom Using Distance – By unchecking, mouse wheel will control Throw ratio.

Orthogonal View - will change the main view to a two dimensional view (or parallel projection).

Orthogonal Observer - will change the observer view to a two dimensional view (or parallel projection).

Show Wireframe – Object will be shown on the controller as a wireframe.

Show Solid – Object will be shown on the controller as a white solid.

Show Ground- Uncheck to remove ground on the controller view.

Show UV/Projective – Check to see the UV map on the observer view. If there is no UV map embedded with the object, it will show black.

Alignment

Stick to vertex – By checking, points will stick to closest edge while aligning points on to the virtual object. This affects points on the main view.

Lock Lens shift – By checking, the system will not calculate these parameters at the calibration procedure. Use this option if you have determined the lens shift accurately.

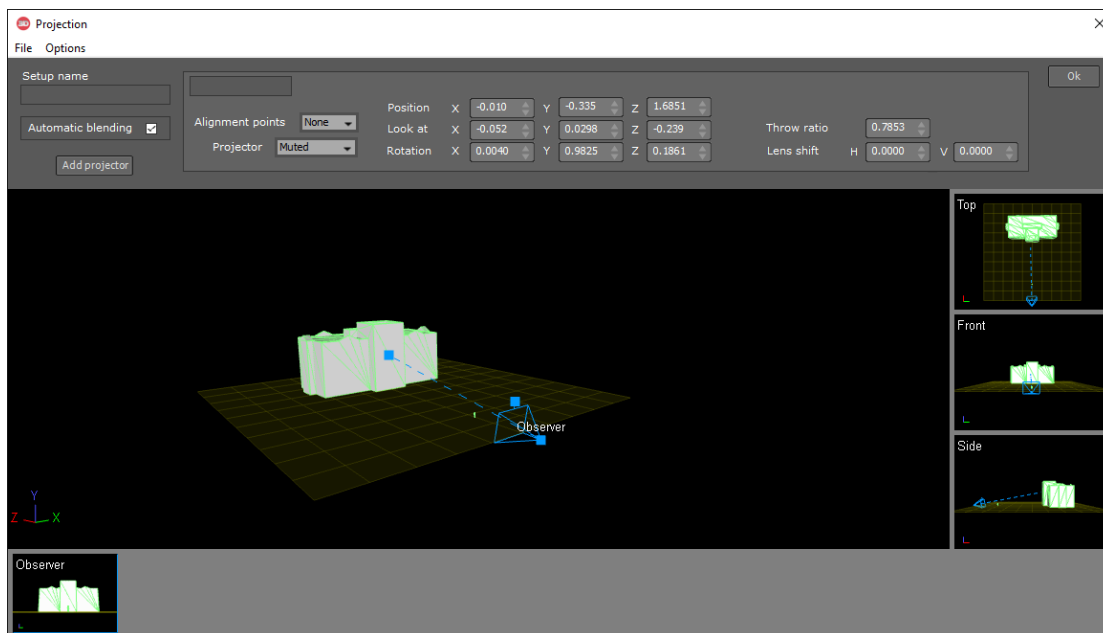
Lock Throw ratio – By checking, the system will not calculate these parameters at the calibration procedure. Use this option if you have determined the lens throw ratio accurately.

Lock Rotation- By checking, the system will not calculate these parameters at the calibration procedure. Use this option if you have determined the projector will not be rotated.

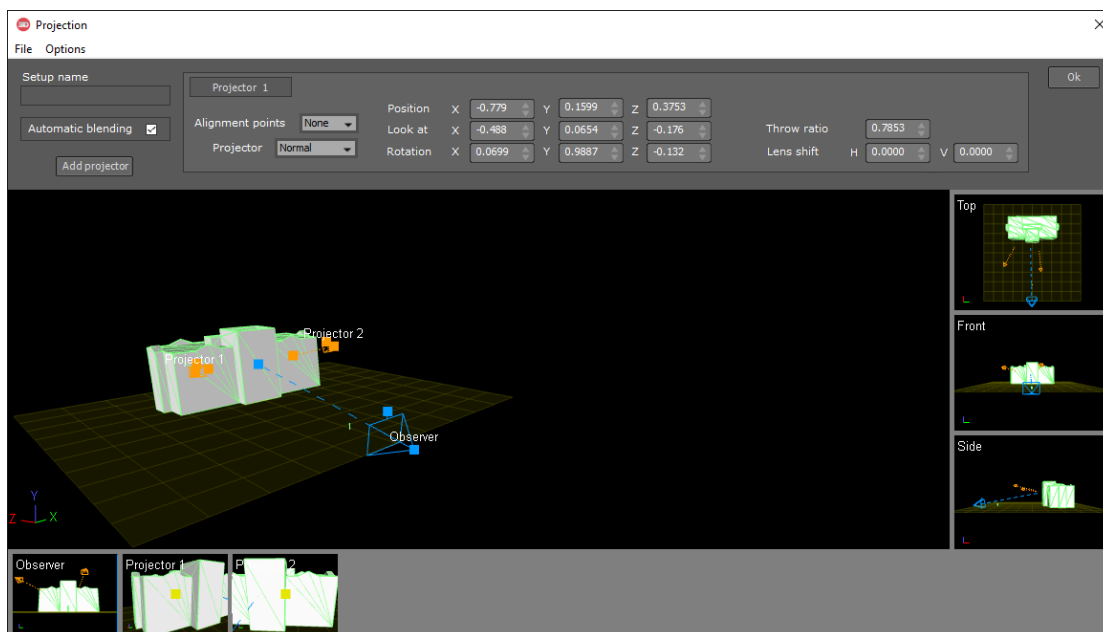
Mouse sensitivity – By checking, mouse is less sensitive, making it more accurate.

3D mapping and Alignment workflow

Load the 3D obj file: File>Load

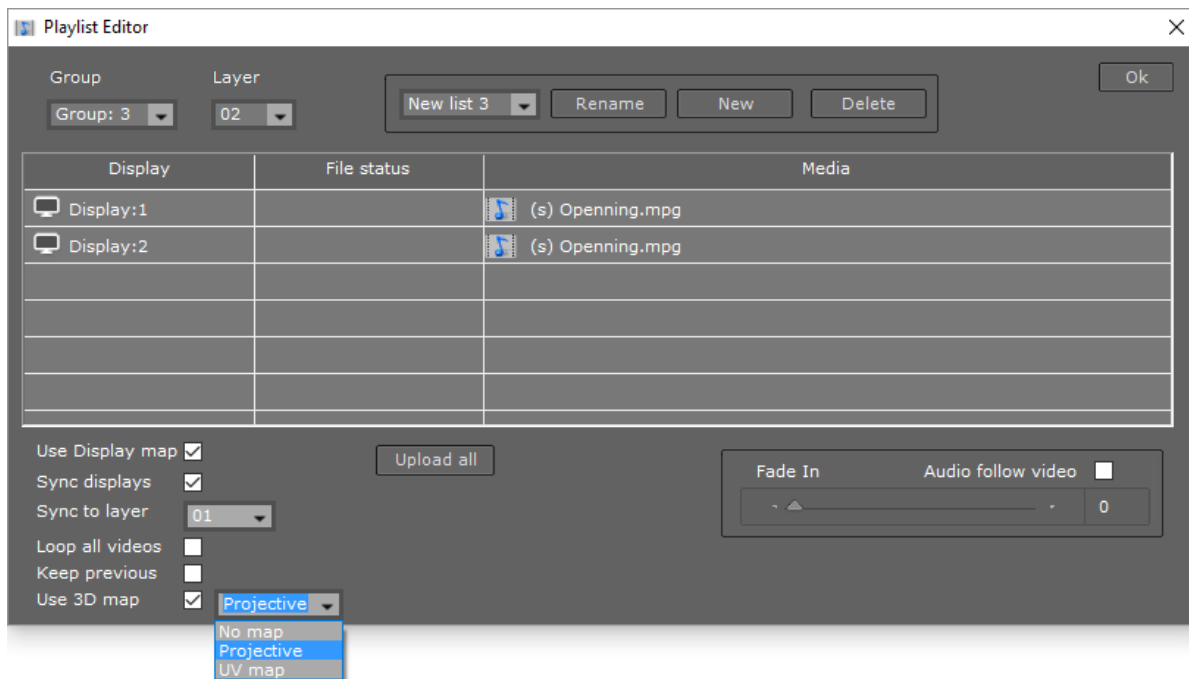


Add projectors to fit the number of projectors you plan to use to map the physical object: press “Add projector” for each one.



Position projectors as close as you can to real situation, using any of the options above. Uncheck “Automatic blending” for easier adjustments.

To test playback on the 3D object, close the 3D controller and create a task to play your content. Check "Use 3D map" in the Playlist Editor.

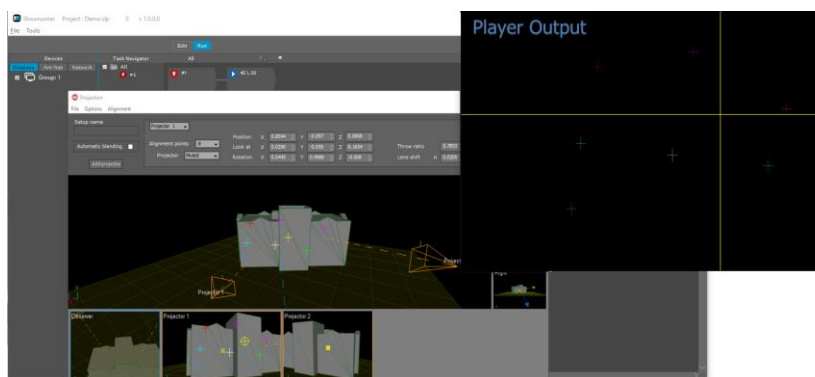


Once all projectors are positioned as close as possible to real world situation, use the alignment point calibration tool.

Select a projector to align by selecting from the dropdown menu. Select number of points to use from the "Alignment points" drop down menu.

You'll see crosses on the projector view and on the projected image on the physical object. By moving the crosses on the projector view, crosses on the projector will move accordingly.

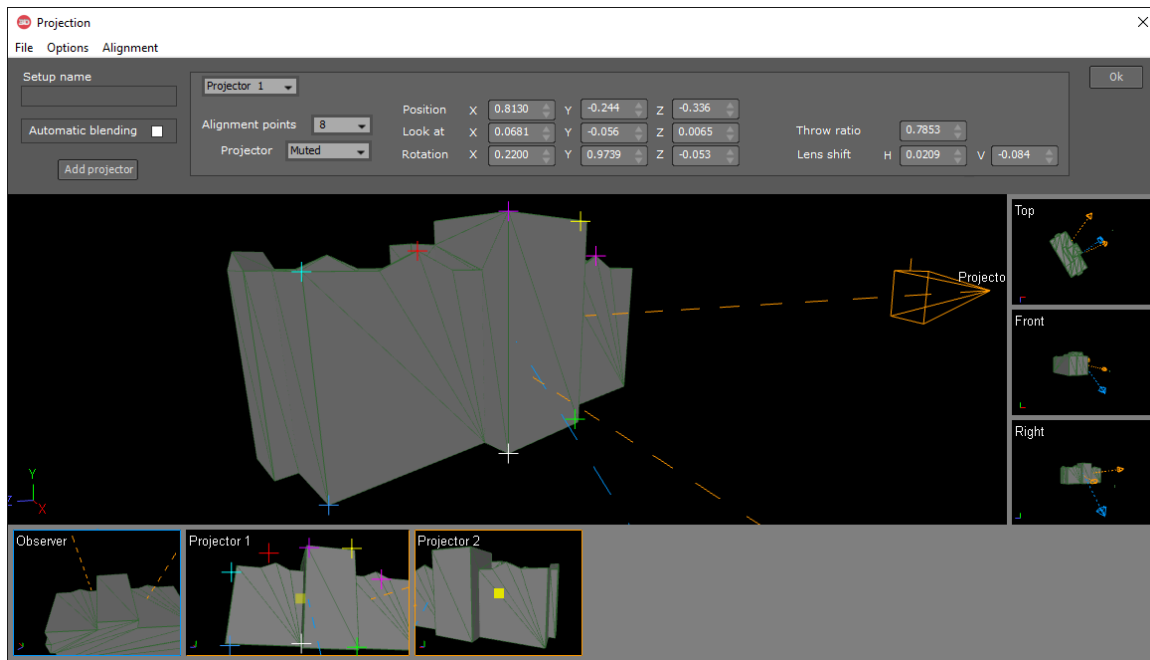
Calibration points should be moved to distinctive positions on the projected object, allowing accurate corresponding point on the 3D model. It is best to select points that are far apart from each other and at varying depths.



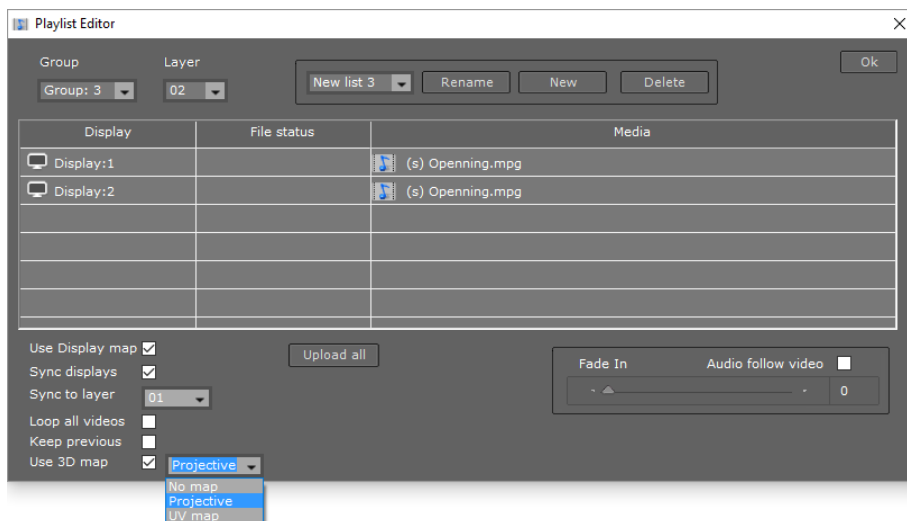
After all the points are positioned on the projected object, go to the main view and move the crosses on the 3D model until they hit the same exact spots as on the physical object. Take care to use same colours on both corresponding points.

By moving points, the virtual projector and the projected image will move on the physical object. Do this for all calibration points until the image maps properly onto the model.

Repeat for each projector separately.



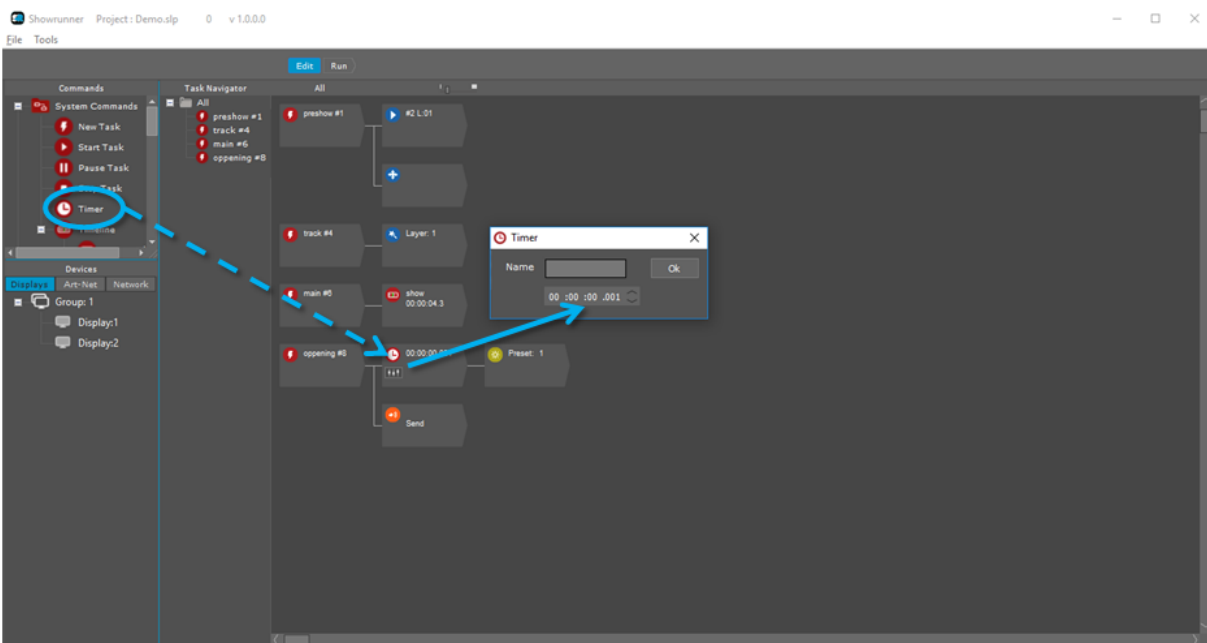
After all projectors are assigned and calibrated, you can decide whether to use 3D mapping and in what mapping technique. This is done for each layer separately inside the "Playlist editor".



Logical Tree

With its drag/drop interface, the logical workspace allows you to build your entire show.

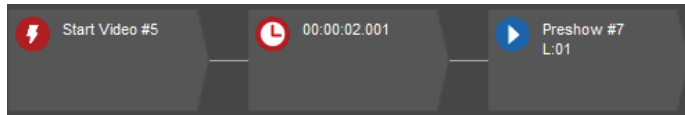
Commands can be dragged from the Toolbox on the left, and all their behavioral characteristics can be defined simply by pressing the edit button on the related object.



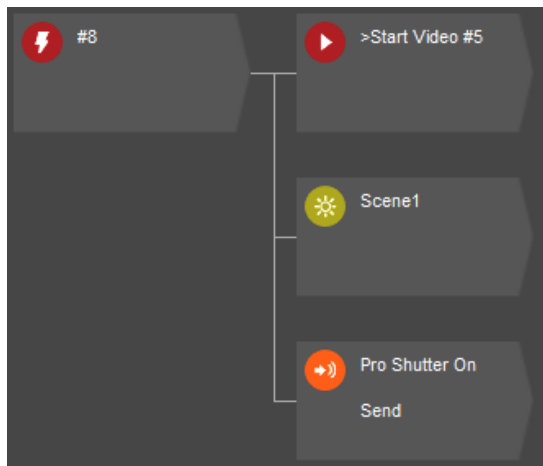
Logical Commands

There are two different commands that are used in Showrunner's main logical tree:

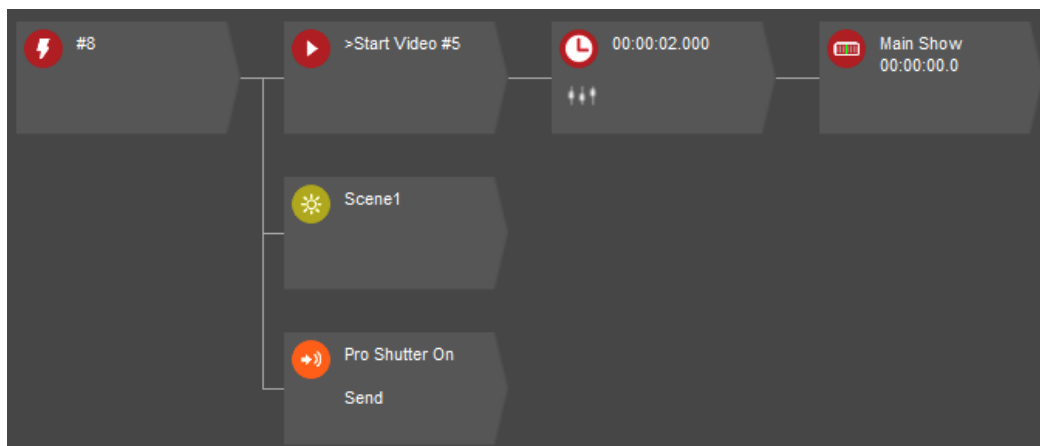
1. Step commands - One command after the other.



2. Parallel Commands - Two or more commands that are activated at the same time

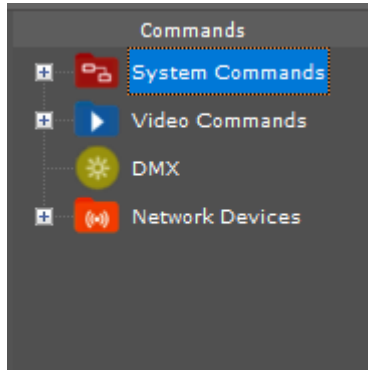


The two types of commands can be mixed together in one sequence



Commands

The "Commands" list is available only in "Edit Mode". On the upper left side of the application you will see a tree with four main groups. Under each group, depending on your initial configuration, you will find the commands that are available for you to drag to the work-space.



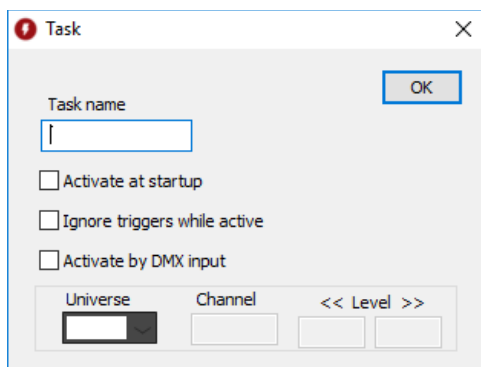
System Commands

New Task

Every sequence starts with a task. It is actually the trigger to start a sequence of commands.

There are several ways of triggering a task (in "Run Mode"):

- Hover with mouse over the task and press the green triangle.
- By dragging the "Start Task" command elsewhere in the project.
- By using one of the logical tasks



Task name- Give a descriptive name to remember what the task does.

Activate at startup- checking will activate task as soon as the Showrunner application is launched.

Ignore triggers while active - checking will disable re-triggering the task while active.

Activate by DMX input - checking will activate task as soon as an input on a connected Art-net universe, reaches the assigned level. This useful for controlling tasks using a lighting desk.

Start Task/Resume

Start a task. You can perform this command only on tasks that are used in the work space. If a task is in a pause state, this command will resume the task.

Pause task

Pause a running task. This command will also pause any playing video which was executed by the selected task. You can perform this command only on tasks that are used in the work space.

Stop task

Stop a running task. You can perform this command only on tasks that are used in the work space. Selecting "Stop All" from the drop-down list will stop all running tasks (except current one). It is optional to stop also all videos triggered by the task.

Timer

Add a pause for a certain amount of time.

Timeline

Add a timeline object

Load Timeline

Add a load timeline command. This is useful to pre-load a timeline which is already programmed.

Play Timeline

Add a play timeline command.

Pause Timeline

Add a pause timeline command.

Stop Timeline

Add a stop timeline command.

Goto Timeline

Add a go to time command. Moves Timeline to a specified Time code.

Video Commands



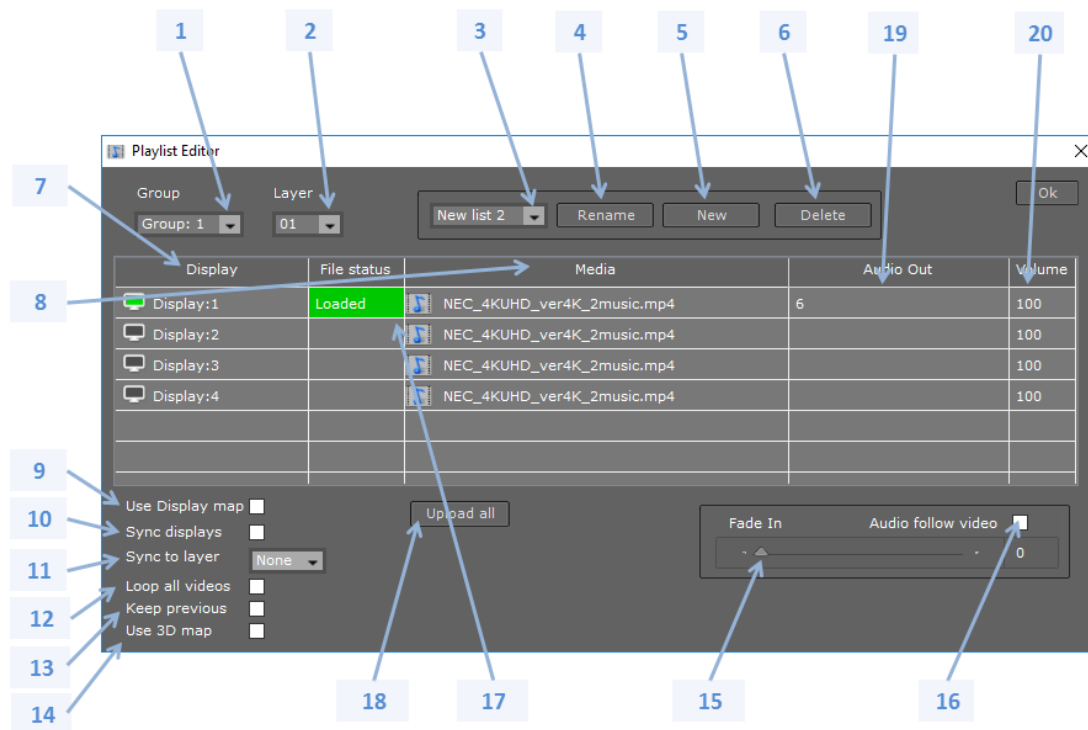
Before using Video commands you will have to create at least one Display group. These commands work only on available groups.

Each Play command holds separate playlist information. To open the playlist editor, hover over the Play object and press the playlist button.



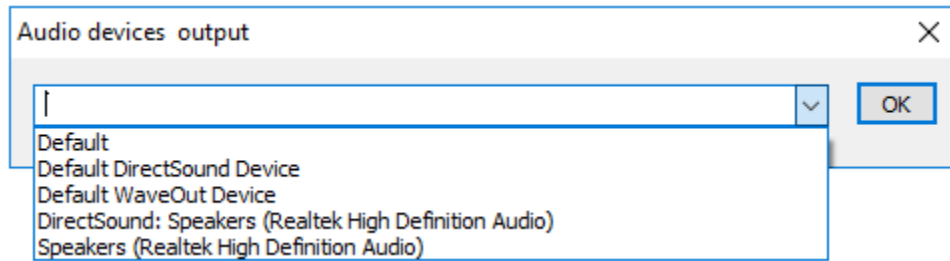
Playlist Editor

This dialog allows you to create playlists of video, audio, image files and external inputs. A playlist defines a single file or external input on a selected layer to play simultaneously across all players. You can play up to 40 layers on each player.



1. **Group dropdown box** - Select a group of displays to apply the playlist to
2. **Layer dropdown box** - Select a layer to apply the playlist to
3. **Playlist Dropdown Box** - These are the available playlists, select a playlist from here or create a new one.
4. **Rename**- Give the playlist a name
5. **New**- Create a new empty playlist
6. **Delete**- Delete the current playlist
7. **Display Row**- This row will show available displays in the group
8. **Media Row** - Select the media by double-click on the row or drag media to this row
9. **Use Display map** - If checked video will play according to last "Move layer" command and current display map parameters.
10. **Sync displays** - Check this box to use frame accurate cross-display sync between all the videos playing on the selected layer. You may choose to sync all of the players together or let players be 'independent' (not synchronized with the other players).
11. **Sync to layer**-Synchronize to another layer in this group
12. **Loop all videos**- Check to loop all files in the playlist
13. **Keep previous**- If a file is already playing on this layer, it will not be removed when this play command is triggered. This is used for seamless switching of media on a single layer.
14. **Use 3D map** - If checked, the media will be wrapped around a 3D object (more in the 3D mapping section).
15. **Fade time** - the media can be dissolved throe previous media. Here you can alter the length of time.
16. **Audio follow video**- check this box to fade also audio together with video dissolve.
17. **File status** - Shows if media files exist on the display computers.
18. **Upload all** - Transfers missing media files to the display computers.

19. **Audio Out** – Select audio device to use for this file. Double click on the row to open remote player device options:



Select one device from this list.

20. **Volume** – Select audio level for this file (0-100). Click on the row and select the level using up/down arrows.

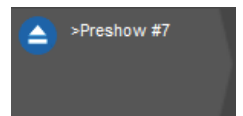
By right clicking on each cell you can:

1. **Select File**- This will open a Windows browser to select a file to play as soon as this playlist is triggered by the Play command in Run Mode. You can also double-click on the row or drag media to this row.
2. **Select Image Sequence**- This will select the folder storing the frames which make the image sequence.
3. **Select Input**- This will select an external input (1-10) to show as soon as this playlist is triggered by the Play command in Run Mode.
4. **Loop On**- Check to loop the selected file.
5. **Remove**- removes the file or external input from the current Playlist.

Pre-load

A Pre-load command will load the associated files in the background, to be ready for a "play" command. The Pre-load command will not stop any playing videos.

Assign playlist/s to preload by pressing the edit button on the object. All "Play" commands in the projects will show in the drop-down menu.



Only one playlist can be loaded for each layer (the last one triggered).

Play

The "Play" command has different characteristics depending on the situation it is being used:

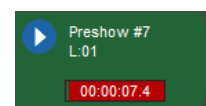
1. If a playlist is assigned (by pressing the edit button on the Play object), the command will replace files or external inputs on the selected layer, and will load and play files as fast as possible. Other layers will not be affected.
2. If no playlist is assigned, a "play" command will be sent to the selected layer on remote players and if files are loaded, they will start playing instantly. If paused, they will resume playback instantly. If files are not loaded or paused, there will not be any change on the player side.



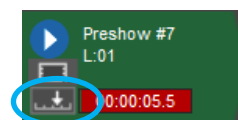
If a command is dragged after a "Play" command, the command will be executed as soon as the playback of the master player reaches the last frame. If the "Play" command is in "Loop", the next command will be executed every time playback reaches the end.

If you want a command to be executed while the group is playing, use the command in parallel to the "Play" or open a timeline for commands synchronized to video.

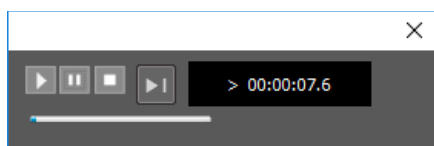
In "Run Mode" while the master player (first player on the group list) is connected, you will see the video state on the related object.



By pressing the timeline button on the "Play" object in "Run Mode", a player panel will open. This allows you to control the group of players. You can go to a randomly selected point anywhere in the video, while keeping all video players synchronized. This can be done in two ways:

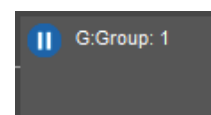


1. Clicking anywhere along the duration bar.
2. Clicking on the "Locate" button and inserting a specific Time-code.



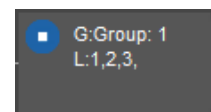
Pause

Pauses a selected layer/s on all Players in the group. Click on the "Edit" button to select a layer/s to pause.



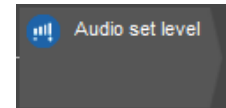
Stop

Stop a selected layer/s on all Players in the group. Click on the "Edit" button to select a layer/s to stop. You can add a fade-out time.



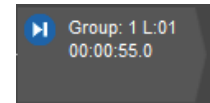
Audio set level

Use this command to move an audio level on defined layers, to an absolute value



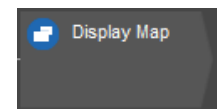
Go To

Moves videos to a specified Time code. This works on a selected layer on all players in the group. Click on the "Edit" button to select a layer and alter the time code.



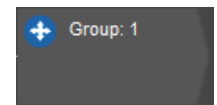
Display Map

Sends a "Re-call Display Map" command to all players in the group. This will instantly recall a pre-saved Display Map to all players in the group. A "Display Map" holds all display arrangement settings, geometry, mask, soft edge and color correction parameters. Press the edit button on the object to create a new Display Map. For detailed information go to the Display Map chapter.



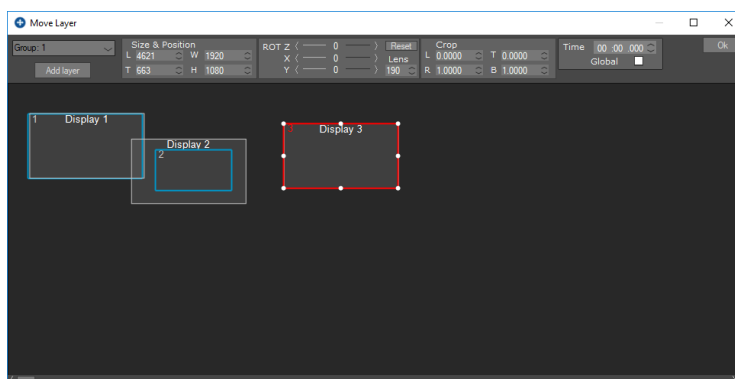
Move layer

Sends a "move" command to all displays in the group. This will move the image on a specific layer or layers to a new location according to the time set. Parameters include size, position, crop and X Y and Z rotation.



Video will move across players on a group of synchronized players (as long as all players have same file playing on a given layer).

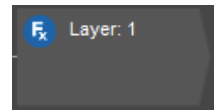
Press the edit button on the object to set the parameters.



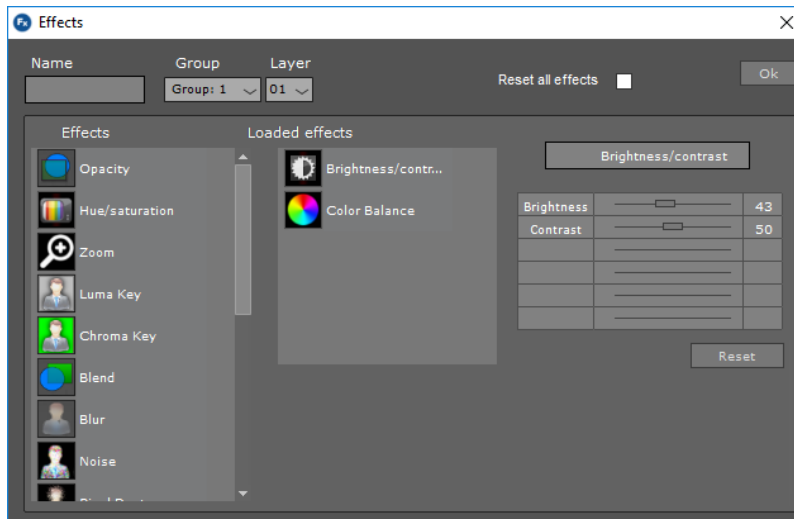
Layers are positioned one on top of each other according to their number, for example Layer 2 will always be positioned over Layer 1.

Effects

Sends effect-command to a specific Layer of all players in the group. This will manipulate all players at once.



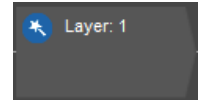
By pressing the edit button Effect object, the effect editor window will open:



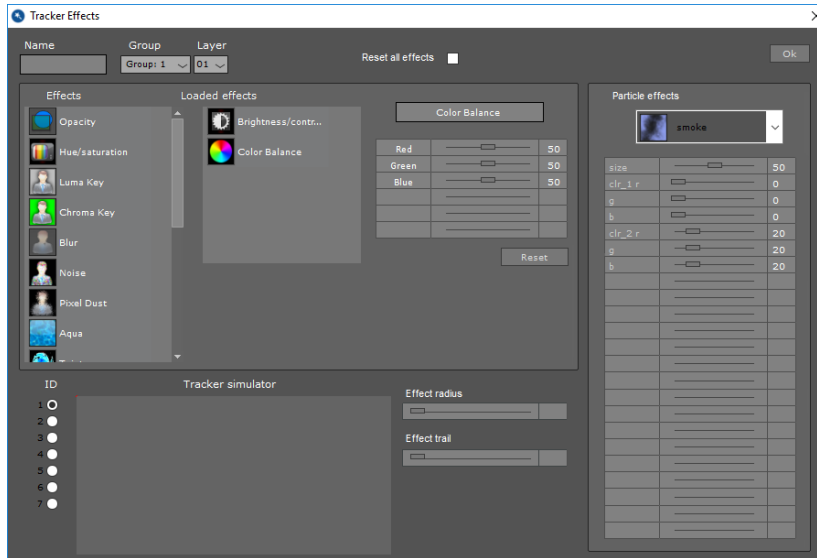
1. **Name** - Give a name which describes the effect behavior.
2. **Group** - Select the group to control.
3. **Layer** - Select the Layer to control.
4. **Effects** - This is the list of available effects.
5. **Effects in** - This the list of loaded effects. Select the effect to control. As soon as an effect is selected, the relevant control sliders will appear.
6. **Effects Control** – here you control the way the effect will act. Effects may be used in any combination.

Tracker Effects

Sends a "tracker effect" command to a specific Layer. It is sent to all players in the group. This effect is controlled with the Showlogix tracker application and/or by mouse left click on the players' computer (for more details go to tracker Configuration).



By pressing the edit button on the Tracker Effect object, the editor window will open:



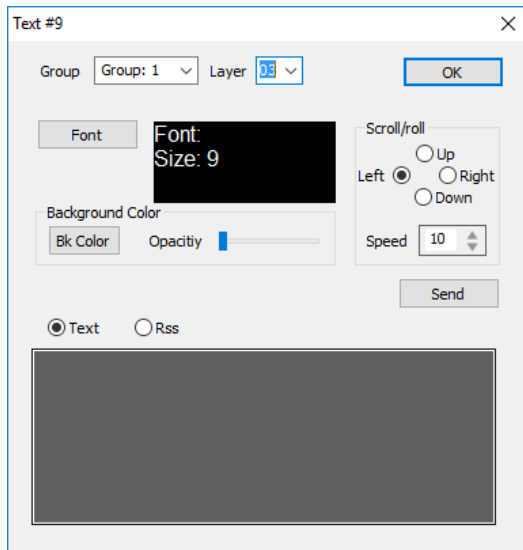
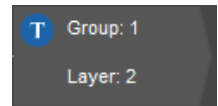
1. **Name** - Give the effect a name which describes its behavior.
2. **Group** - Select the group to control.
3. **Layer** - Select the Layer to control.
4. **Effect** - This is the list of available effects.
5. **Loaded Effects** - This the list of loaded effects. Select the effect to control, the relevant control sliders will appear.
6. **Effects Control** – here you control the way the effect will act. Effects may be used in any combination.
7. **Radius**- here you can set the radius of the effect.
8. **Trail**- here you can set how long the decay of the trail will last.
9. **Particle Effect List**- This is the list of available particle effects.
10. **Particle Effects Control** – here you control the way the effect will act. Each effect can be used independently.
11. **Tracker simulator** – If no tracker is connected, you can simulate motion by selecting an ID (1-7), left-click on the surface, while the mouse is pressed, move it and the effect will be created on the player/s.

Particle effect can be created only on players with graphic cards supporting hardware vertex processing. "Hardware Vertex" must be selected (on the properties of the Showlogix Player panel).

Text

You can use dynamic text or RSS feeds on any specific layer. Sending text will replace any playing file or external input. All effects and other manipulation may be used on text. Text may be static, scrolled or rolled. You can add background with transparency to scrolling text.

By pressing the edit button on the object, the editor window will open:

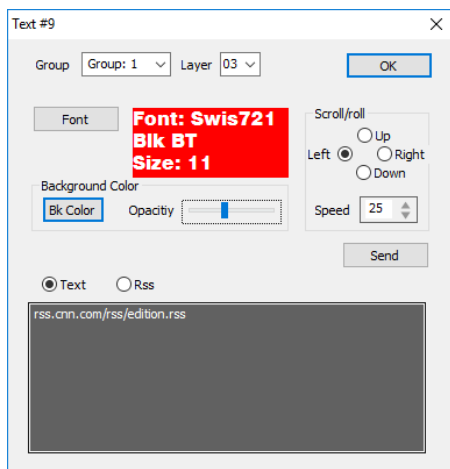


If "Text" is selected, the text in the edit box will be sent to the selected layer.

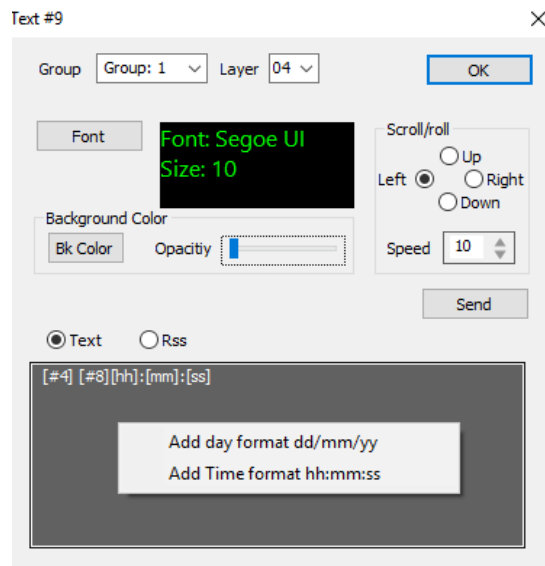
If RSS is selected, type an RSS address into the edit box, (do not use "http://" prefix).

The display players will attempt to get the text feed from this address. Refresh time can be edited.

For example:



By right clicking on the edit box you can add dynamic time and date.

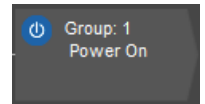


Computer Control

Sends a "Restart", "Turn Off", "Turn On" or "Close Player" command, to all players in the group. This will Shut down, Restart or turn on a computer. You can also close player remotely.

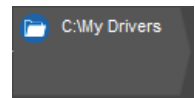
For restarting or shutting down, the Showlogix Player on the remote computer must be up and connected to Showlogix Manager.

For turning on a computer, the Wake-On-LAN should be enabled in the BIOS and the Ethernet card of the computer.



Switch Media Folder

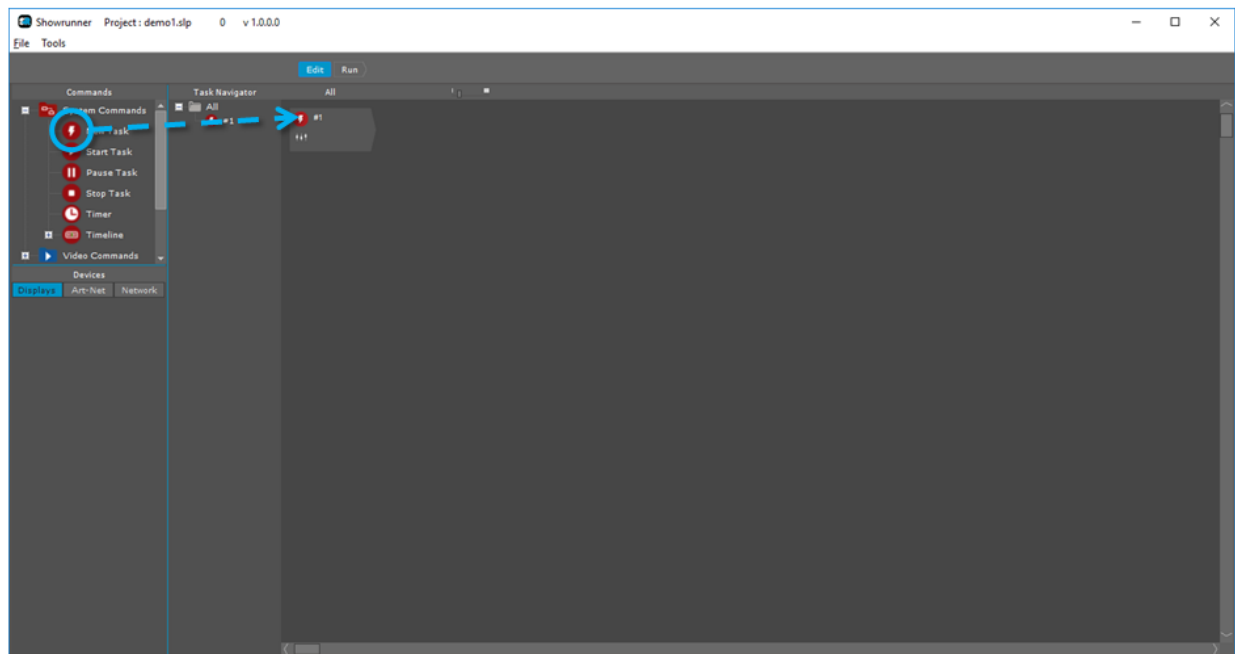
This allows you to dynamically change the folder to read and play files from. This is useful if you want to play different files using same file names without re-programing your project (for example a show with several languages).



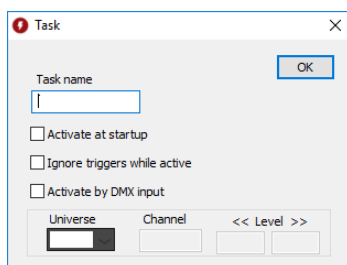
Programming a Sequence

Every sequence starts with a button (Create a New Task), Network device "Receive" or a "Layer Touch" command.

Go to "Edit Mode". Drag the "Task" (Create a new task) icon to the work space. The following object will be created:



By pressing the edit button on the object, a Task dialog will open allowing you to edit the Task parameters.



Task number – index number given automatically by the system

Task name- Give a descriptive name to remember what the task does.

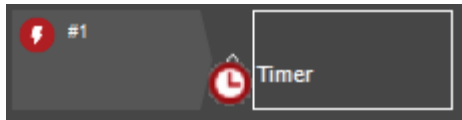
Activate at startup- checking will activate task as soon as the Showlogix Manager application is launched.

Ignore triggers while active - checking will disable re-triggering the task while active.

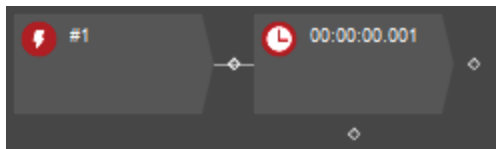
Activate by DMX input - checking will activate task as soon as an input on a connected Art-net universe, reaches the assigned level. This useful for controlling tasks using a lighting desk.

Click OK to save changes.

After a Button/Task is dragged to the work space, you can drag any of the available commands to create your sequence.

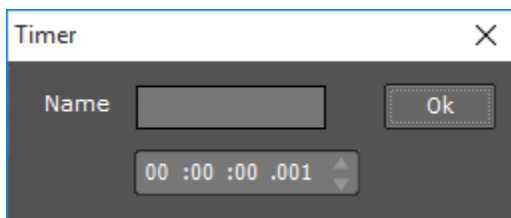


As soon as you start dragging a command, a connection point will be highlighted on the left side of the object. A new command will be created after you release the mouse on the connection point.

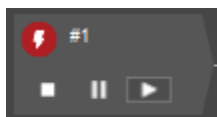


As soon as you start dragging the next command, all previous commands (accept the first Button/Task object), will appear with four connection points allowing you to add a command before, after or parallel (at the same time) to a command. A new command will be created after you release the mouse on a selected connection point.

To configure a command, double click on it and a dialog window will open according to the command. For example if you double click on a timer command, this window will open:



To test your sequence, go to "Run Mode", select the task by hovering over it and click the play button.



Time Line

The Timeline offers a tool to easily synchronize commands to a central timecode in frame accuracy. You can program and monitor the playback in real-time.

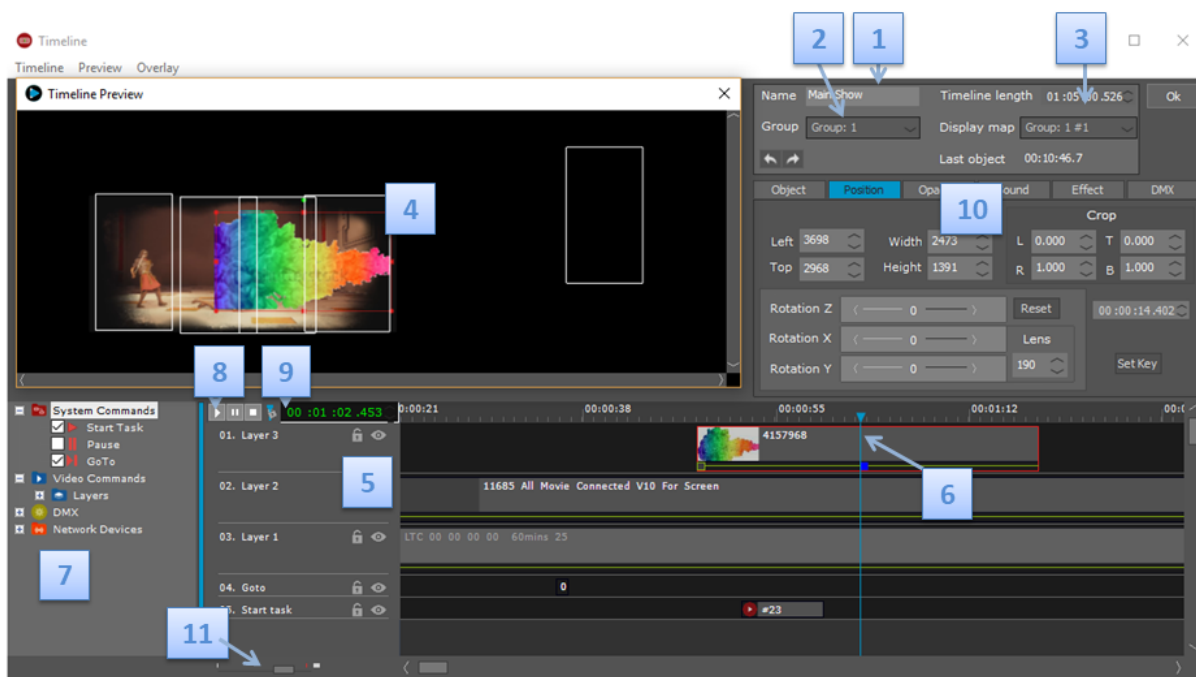
A timeline, allows another set of layers which are completely separated. You can play a full multi-display, multi-layer show and at any moment play another layer on your canvas without disturbing your timeline (for example: play a looped video which is not affected by time).

A timeline, pre-loads all associated files. All video settings are done with-in the timeline and may not be manipulated using video commands.

Each timeline can use up to 40 layers of content. Layer#1 is always the first layer, Layer#2 is placed on top of layer#1 and so on.

Timeline layers are always positioned under the workspace layers.

Timeline General View



1. Timeline Name - Give a descriptive name to remember what the timeline does.
2. Group – assign the group of displays to use in this timeline (The default is the first group).
3. Display Map – assign a display map to use in this timeline (The default is the group display map).
4. Preview Window – displays a preview of your show as you move along the timeline. You can also use the preview to position media on the displays. Use mouse wheel to zoom in/out and middle button to navigate.
5. Tracks for the Layers or control objects. Every track shows on the left the type and name of the layer/track.

6. The current time position is indicated by a vertical blue line
7. Command Pool – contains all layers, devices and commands that are available for use on the Timeline. Tracks/Layers can be added and removed by opening the command tree and checking the required layers and commands. Each checked command will add a related track.
8. Buttons for playback control - Click the play button to start playback, the pause button to stop playback and stop button to stop the playback and move the time position to -0. If players are connected, this also controls playback on remote players. Pressing the spacebar is equivalent to the play/pause buttons.
9. Video Time code - shows the current time-code of the video (1/1000 sec).
10. Control tabs – click a tab to adjust it's properties.
 - The Object tab allows you to access the current layer's item settings and edit them.
 - Size & Position tab allows you to set key points within the clip. clip's size, position, crop, rotation, etc. can be set with different values.
 - Effect tab allows you to set key points within the clip and add an effects.
 - DMX tab allows you to add key points inside a DMX object and change it's values.
 - Video tab shows the opacity curve and allows you to set the levels inside the clip.
 - Audio tab shows the audio level curve and allows you to set the levels inside the clip.
11. Zoom in/out slider for expanding and compressing the time axis.

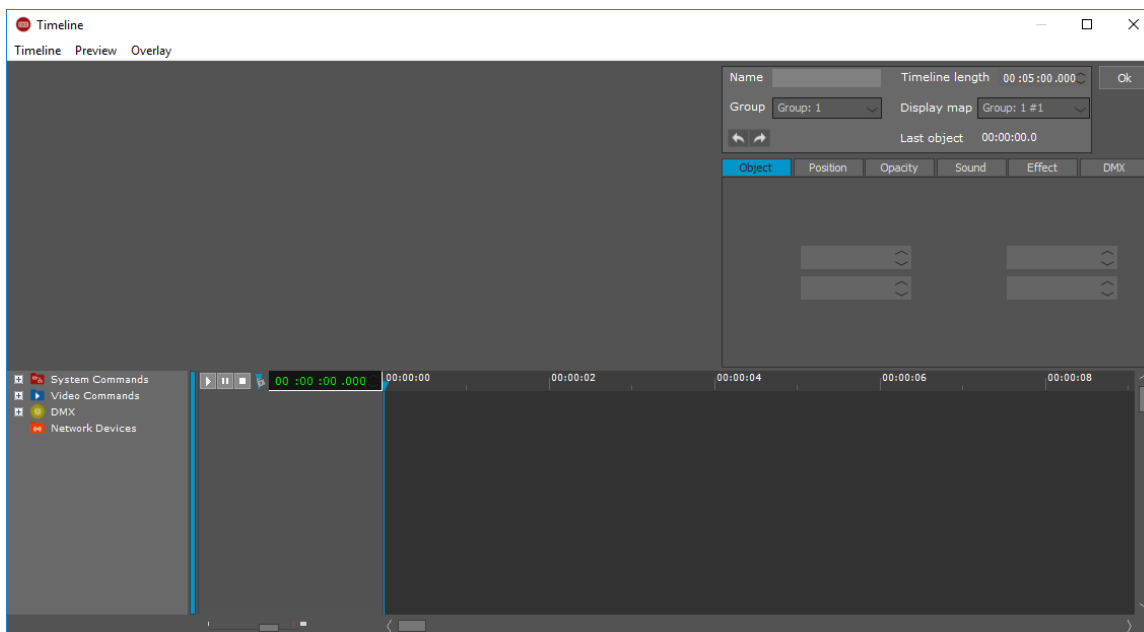
Programming a Timeline

In "Edit Mode" Drag a "New Task" to the work space
Drag a timeline icon connected to the task object.

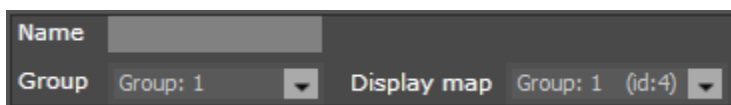


Hover over the timeline. The edit button will appear, press it

Timeline will open.

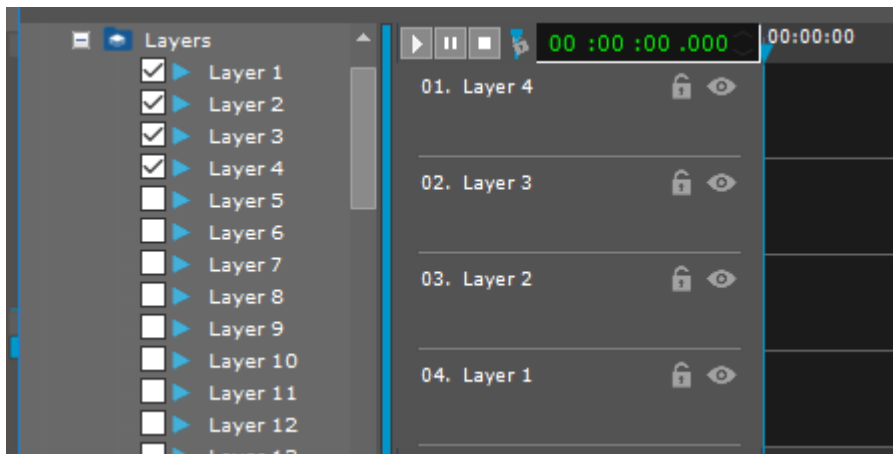


If automatic preview is checked, the preview window with the default display map will load after several seconds.

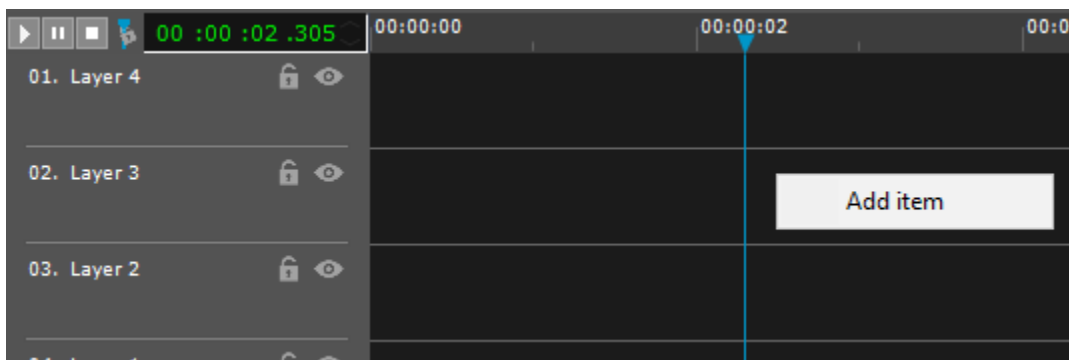


Name - Type a name. This is not compulsory
Group - Select the Group of displays to use in this timeline.
Display Map - Select the Display map to use in this timeline

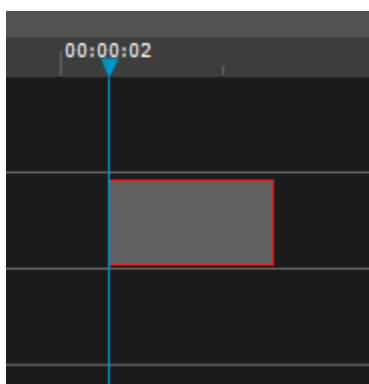
Open the Video commands tree and check the number of layers you want to use (you can add layers at any time). Layers are added to the project from bottom to top, the top layer being the front layer. A clip in the layer contains image, video or audio.



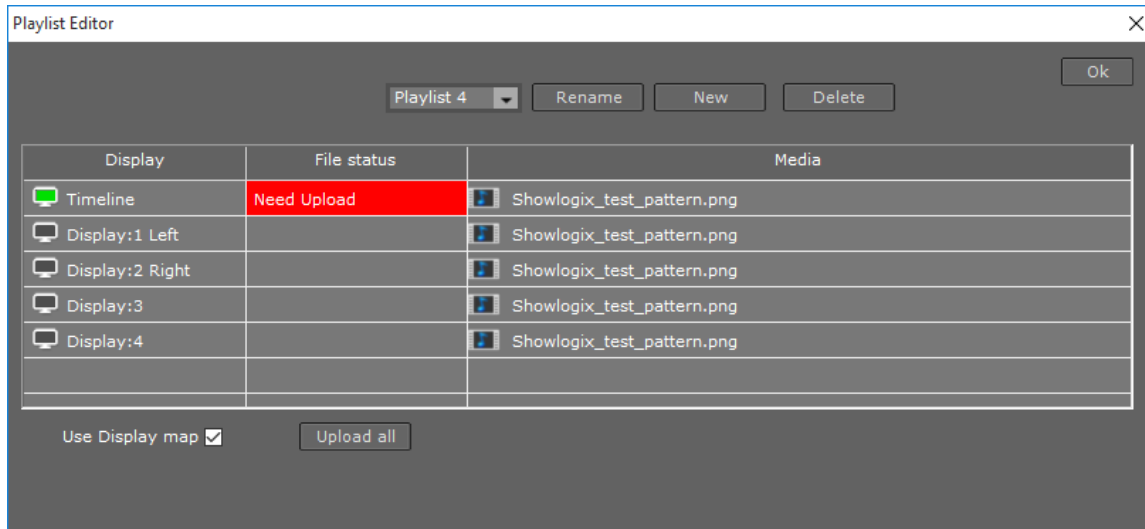
Right+click on any layer to add a media file or drag a media file directly to a layer



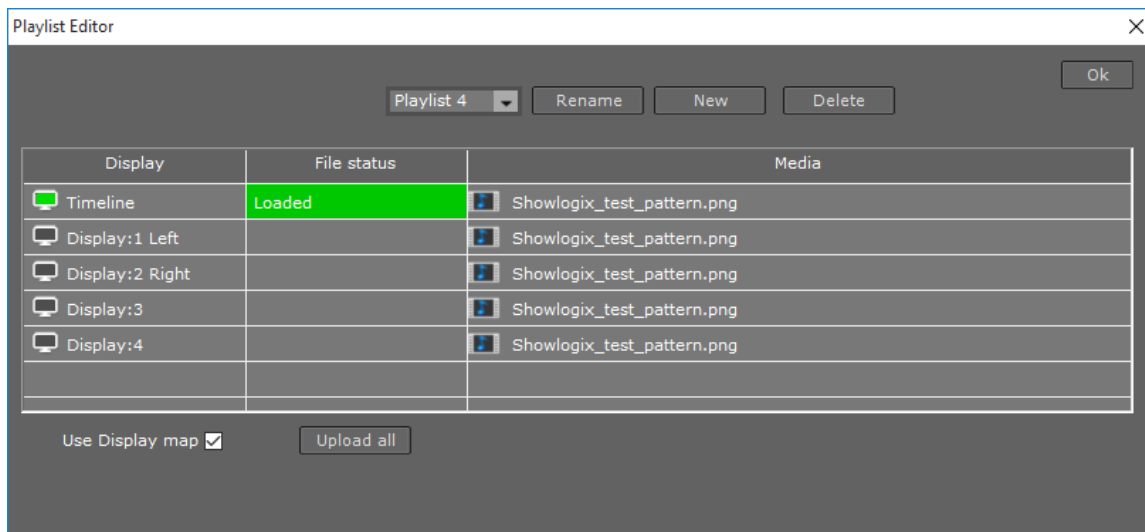
Double click on the created object



The Playlist editor will open
Double click on the first row to assign a file to all displays in the list (this is done automatically if you drag a file directly to the timeline).

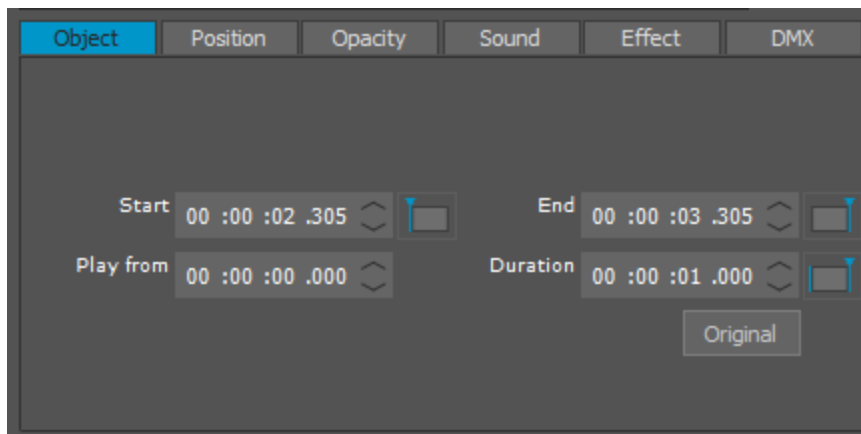


Upload the file to displays by pressing "Upload all" (you need to upload, even if displays are not connected, as Showlogix treats preview window as a display).



Add as many files as needed.

Object

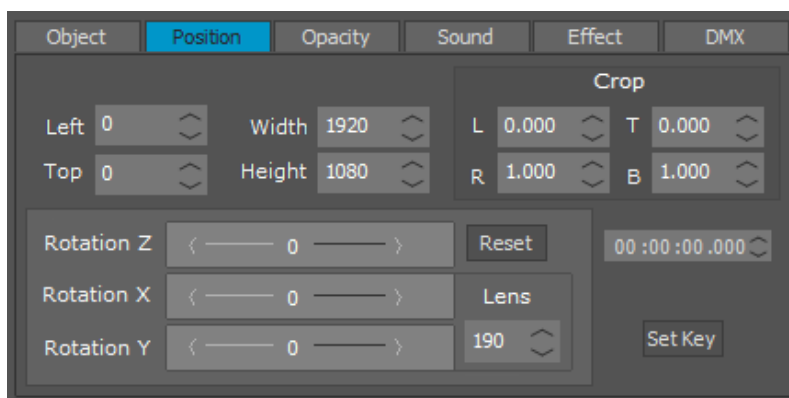


The Object tab allows you to access the current layer's object settings and edit them. Once an object is selected, you can access its properties, change its start point, end point and duration within the timeline. You can also set the time it starts within the clip ("Play from").

You can do the same also by grabbing the left side (start) of a clip, you change its start point within the timeline. By dragging the right side (end), you can change the clip duration. Note, you can make the clip longer than its original duration but in such a case, the added duration contains only the last frame of the video. You can also reduce the clip duration the same way, by dragging the end side of the clip, but only the end side actually cuts the clip. By dragging the clip from anywhere else, you move the clip start point within the timeline while keeping its duration.

Settings affect all displays in real-time

Size & Position

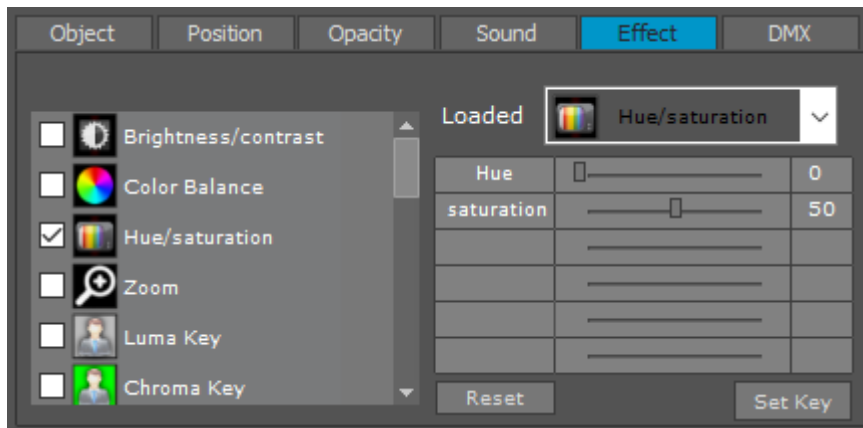


By pressing the "Size & Position" tab, you can set key points within the clip. clip's size, position, crop, rotation, etc. can be set with different values.

During playback, the values are linearly interpolated between two key points, allowing you to animate the clip within the timeline layer.

A key frame can be added in two ways: 1. Right click on the green line. 2. Automatically, by changing a parameter on the preview window: Drag the highlighted rectangle on the preview window. When clicked anywhere in the picture, grab the picture so you can change its spatial position. When clicked on the size handles located in each corner and in the middle of the picture's border, grab the handles so you can change the picture size. Settings affect all displays in real-time

Effect



By pressing the "Effect" tab, you can set key points within the clip and add an effects by selecting from the list. You can combine several effects to create a new one. The current clip's effects can be set with different values.

During playback, the values are linearly interpolated between two key points, allowing you to animate the effects within the clip.

A key frame can be added by pressing "Set key"

Opacity

By pressing the "Opacity" tab, media objects will show opacity curve inside them. This curve is used to fade objects in and out, or to make objects semitransparent.

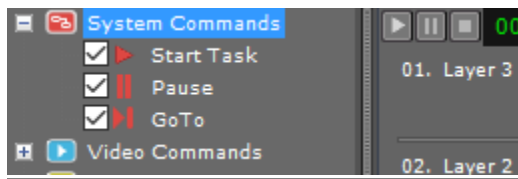
To cross-fade from one image to another, you need to fade the opacity of the image on the layer above.. To add or remove a point on the curve, double click on it.



Sound

By pressing the "Sound" tab, media objects will show a curve to control the volume of audio files and videos containing embedded audio. To add or remove a point on the curve, double click on it.

System Commands



Start Task – triggers a pre- programmed task on the main work space. Double click on the object to assign the task to trigger.



Go to - Use the "Go to" command to create a loop or to skip a section of the timeline. To set the timecode, select the object and in the "object" tab type the timecode you wish the command to go to. Alternatively, move the vertical line to the selected timecode and press the "Goto" button.



Pause - When reached during playback, makes the whole timeline pause.



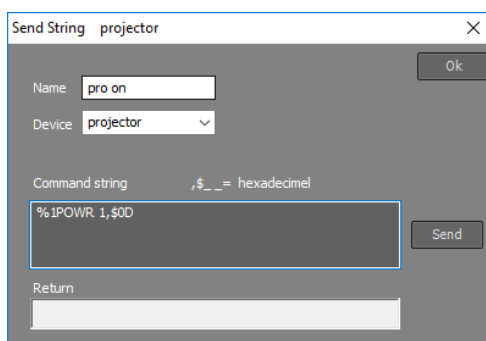
Network Devices

In the External Devices list you will find all the devices that were created in the project. By dragging a "Send" command you can enter the data to send to the device.

You can enter any characters into the edit box and they will be sent as-is. To send control characters that cannot be entered from the keyboard you enter a "\",\$" followed by the 2 digit hexadecimal number for the control character. If, for example, you want to send the "Enter" character, which has a hexadecimal code of 0D, you would enter "\",\$0D" into the edit box.



Double click on the object to assign the string to send.



DMX object

To allow DMX transmission over the Art-Net protocol, first you need to add an Art-net node to your project. Go to "Configuring DMX" for more on this.

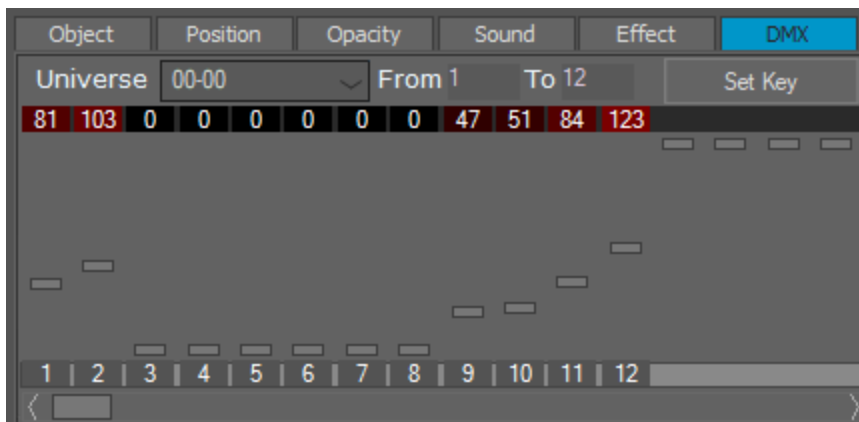
Open the commands tree and check the "DMX Preset"



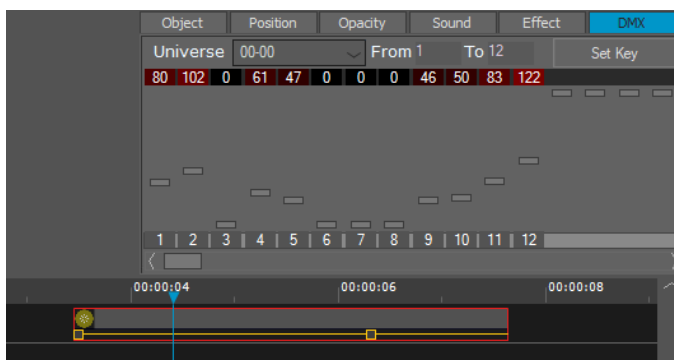
A layer will be added. Right-click on the DMX layer to add an object. Double click on the object or press the Select channels button.

Select channels to use in the "Channel assignment" box by checking them. You can use channels from one or more universes. Press "OK".

This will enable the DMX faders under the DMX tab.



While object is highlighted and the DMX tab is pressed you can add key-frames. A key frame can be added by pressing "Set Key".



Selecting and positioning objects

Click on the object to select it.

Use Ctrl+click to select multiple objects.

Drag, stretch and compress

To drag an object or selected multiple objects, click on the object, or if they are multiple selected objects, you can click on any highlighted object and move left or right. To stretch or compress, move the mouse to the right or left of the highlighted object till the mouse symbol changes to double horizontal arrows, then click, and all selected devices will stretch or compress as you move the mouse.

Copying and deleting

Right click on an object, a menu will open allowing you to copy or delete the object/s.

After programming the Timeline, close it by pressing the ok button. All the programming you have done is saved inside the "Timeline" object in the work space.

The timeline and all its commands will be triggered as soon as this timeline object is triggered in "Run Mode".



Tracker

Showrunner uses the Showlogix_CCv tracker application, to send interactive data. This application encodes control data from a connected camera and sends it to any Showplayer that is assigned to decode the data. Showrunner is able to assign and receive many trackers on separate UDP ports and assign a surface to each player or group of players.

Each player can receive data from one tracker.

This data can then be used to create touch events and dynamic effects on running videos.

Showrunner can map the Tracked data on several displays and non rectangle surfaces.

Tracker Quick Start Configuration

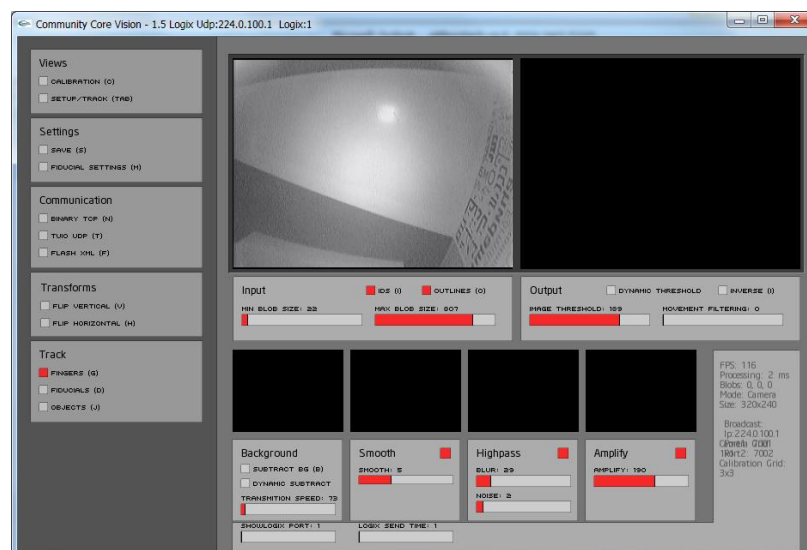
Software Setup/Installation

Install Showlogix Tracker by downloading the setup file from the internet
<http://www.showlogix.com/ContentPage.aspx?id=108>

Follow the online screens and prompts.

1. Close all programs before beginning software installation.
2. Carefully read the license agreement. The software installation only proceeds if the "Accept" button is clicked and the license terms are agreed to.

The installer adds a Showlogix Tracker icon to the *Windows Start Menu*, in a folder called Showlogix. Click on the icon. The application will launch and a camera or video image should be displayed under Input Image.



While no object is present, press the “background remove” button to capture the background. If in an environment where lighting changes often, turn on “dynamic subtract”.

To track the darker areas, press “Inverse”.

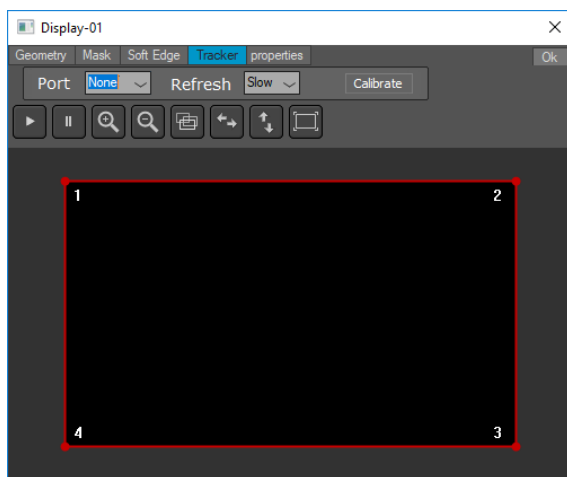
The goal is to have a final tracked image that has white blobs coming from the objects placed on the interactive surface

Calibration may be done using the tracker node, pressing “calibration (o)”, however it is not necessary, as calibration is done easily using Showrunner.

To allow tracking transmission, assign a Showlogix port using the “Showlogix port” slider

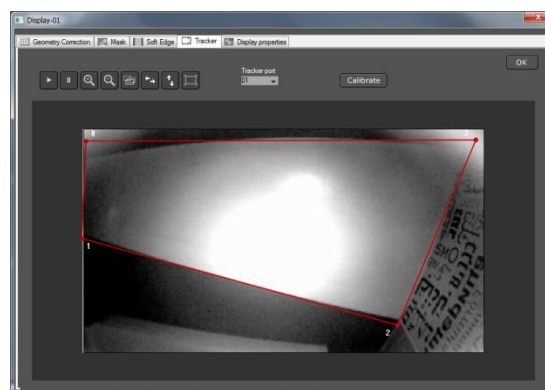
Configuration on the Showrunner

Once trackers have been configured, assign UDP ports for each display used in the interactive surface. To do so, double click on the player icon on the left and press the “Tracker” tab



Select a port according to tracker nodes in use. The port can be found on the Showlogix tracker top bar.

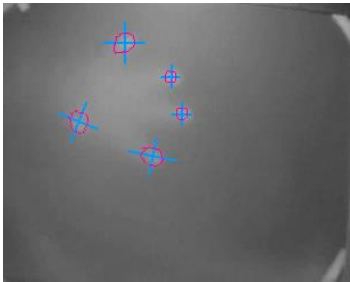
Now you need to calibrate each player to the tracking data. This is done by moving the red polygon to fit the surface you wish to track



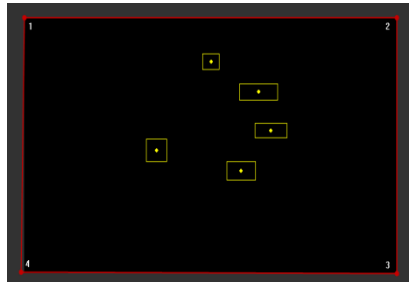
If tracker is transmitting and objects are tracked, yellow rectangles will appear simulating the tracked objects.

By pressing "Calibrate", if the player is connected, any object tracked will be simulated on the display as a yellow rectangle. Any layer used, will have a grey frame around it (and will turn red if it is touched by a tracked object).

Tracker view



Tracker tab on Showrunner



Display



By moving your hand, an IR flash light or Laser pointer on each corner, you will see yellow rectangles both on the manager window and on the display simulating the motion.

Calibrating:

Move the object to a corner on the display, you should see rectangle/s projected on the display surface.

Move the corners of the red controller towards the yellow rectangle till it appears cycling the object. Do the same on each corner of the display.



Showrunner uses 4 points for calibration and is sufficient for most surfaces and applications. For more precise calibration and complex surfaces, use the Tracker calibration. Read the Showlogix Tracker user guide, for details.

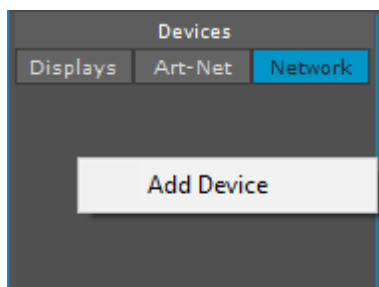
Network Devices

"Network Devices" allow serial commands to be sent or received in order to control devices or for controlling Showrunner from an external device capable of communicating using the TCP/IP or UDP protocol.

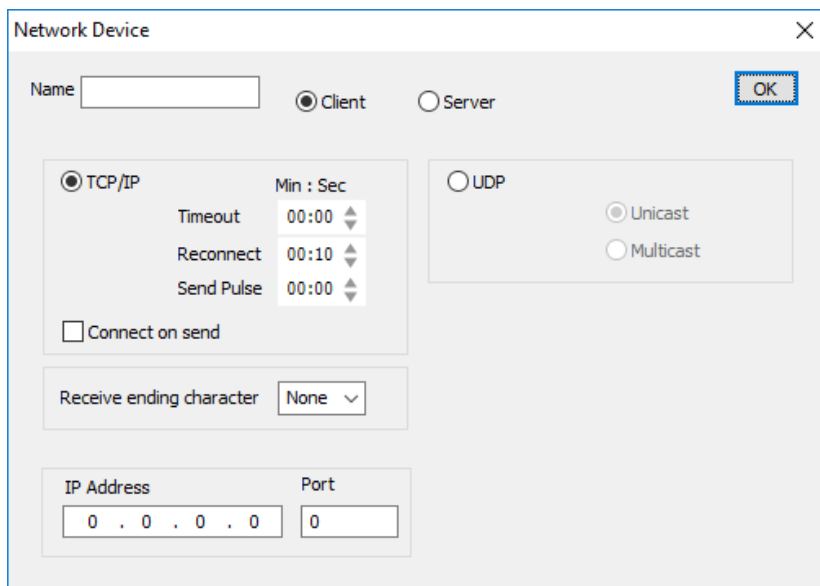
This provides a way to hold all the IP settings required to communicate with a particular device in one place. Actions can then refer to the Device rather than having the communications settings encoded directly into the Action. This means that if the communications settings ever change, they can be adjusted in a single location.

Device Creation

Go to "Edit Mode".



Under the Network tab, Right click>"Add Device". The following window will open:

A screenshot of a "Network Device" configuration window. At the top, there's a title bar with a close button (X). Below the title bar, there's a "Name" text box followed by two radio buttons: "Client" (which is selected) and "Server". To the right of these is an "OK" button. Below this, there are two main sections. The left section is for "TCP/IP" (selected with a radio button) and contains a "Timeout" spinner set to "00:00", a "Reconnect" spinner set to "00:10", a "Send Pulse" spinner set to "00:00", and a "Connect on send" checkbox which is unchecked. The right section is for "UDP" (unselected) and contains two radio buttons: "Unicast" (selected) and "Multicast". Below these sections, there's a "Receive ending character" dropdown menu currently set to "None". At the bottom, there's an "IP Address" field with four boxes containing "0", "0", "0", "0" and a "Port" field with a box containing "0".

Name - Assign a name.

Client – Showrunner will initiate the connection, if a device accepts the connection, the device icon will turn green.

Server - You can specify a network port that Showrunner will monitor for incoming connections. If a remote computer or device tries to connect to this port, Showrunner will accept the connection and the icon will turn green. If the device does not use permanent connection, the icon will not turn green; however, commands will be received and acted upon.

Default communication is TCP/IP.

Connect on send – If this option is checked, the connection is done just before sending a frame. If this option is unchecked, the connection is done when Showrunner starts.

Timeout - Specifies the time, with no activity until the device gets actively disconnected. 0=Do not use Timeout

Reconnect -If "Connect on send" is not checked, Showrunner will periodically try to reconnect if connection is lost. This option sets how often to try to reconnect after disconnection. 0=do not reconnect

Send pulse -This allows to automatically check if the session is still alive when there is no communication. It is useful to detected unplug cables or any link problems. 0=Do not send pulse.

If your device accepts UDP, press the UDP radio button.

Unicast- in Unicast transmission, a packet is sent from a single source to a specified destination.

Multicast- Multicasting is the networking technique of delivering the same packet simultaneously to a group of clients. It is useful if a group of clients require a common set of data at the same time. Multicast addresses range from 224.0.0.1 through 239.255.255.255.

Every device you create, adds a device icon in the device list which has two kinds of commands "Send" for controlling external devices and receive for triggering tasks in Showrunner.

You can use a "send" command Cue anywhere in the show by dragging the device onto a timeline or a logical tree and adding the appropriate string.

A "Receive" command can be dragged only to the main workspace. Receive actions allow you to execute actions when messages are received by Showrunner. Incoming messages are matched against the string and if any incoming message matches a stored message it will trigger a pre-defined task.

Receive ending character - When this character is received, it is considered to be the last character of a frame and only then will be reacted upon.

IP Address – IP Number of the remote server for this client to connect.

Port – Port on which this client will connect or this server will listen on.

Network Devices Commands

In the Network Devices list you will find all the devices that were created in the project. By dragging a "Send" command you can enter the data to send to the device.

You can enter any characters into the edit box and they will be sent as-is. To send control characters that cannot be entered from the keyboard you enter a "\",\$" followed by the 2 digit hexadecimal number for the control character. If, for example, you want to send the "Enter" character, which has a hexadecimal code of 0D, you would enter "\",\$0D" into the edit box.

The Receive command can be dragged only to a new sequence (much like the "Task" command) "Receive String" defines the characters used to match against the received message to execute a sequence of commands.



Before using External Devices commands you will have to create at least one Device under the device Tab. These commands work only on available devices.

Send

Name- Give a descriptive name to remember what the command does.

Device- Select a device out the device list. All devices created under the Network tab will show in this list.

Command String- This defines the string of characters that are sent out.

Return- Here you can monitor what the device is sending back.

Test- This button performs the Action you have created.

Receive

Receive String	Activate Task	Play	Reply

Name- Give a descriptive name to remember what this object does.

Device- Select a device out the device list. All devices created under the Network tab will show in this list.

Socket Monitor- Here you can monitor what the server is receiving. String can be viewed in ASCII/Hex/Integer.

Store/Edit- This button stores the current data shown in the socket monitor as the receive string. You can edit this string to change the way the string is compared and triggers an event.

Analyze partial string- Checking this will compare also partial incoming string to compare to a stored frame.

task001

Double click on the "Activate task" rectangle and select a task to trigger.

There is also an option to trigger playlist directly without using a task. This is done by double clicking on the "Play" rectangle.

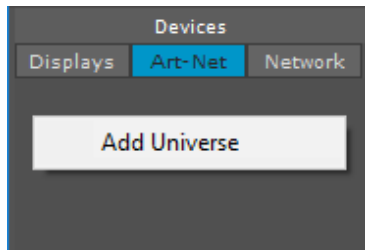
If you'd like to send a reply to the device which sent the incoming string, double click on the "Reply" rectangle and type the returned string.

ACK

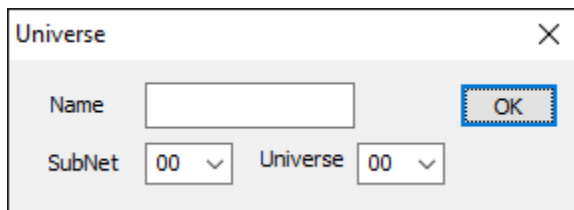
Art-net configuration

To allow DMX transmission over the Art-Net protocol, first you need to add an Art-net node to your project.

Go to "Edit" mode Under the Art-net tab, Right click>"Add Universe".

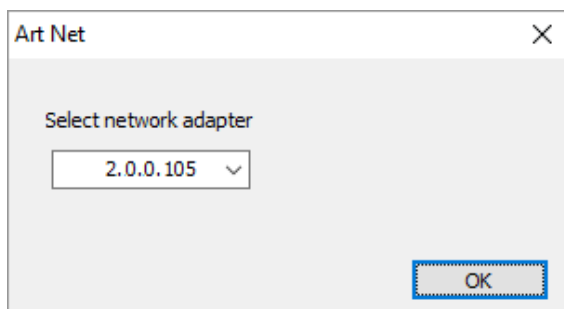


The following window will open:



Assign a name (not compulsory).
Select subnet and universe according to Art-net nodes in use.
Add as many universes as needed.

If you have several network adapters you should select which one to use for Art-net communication. Select "Art-Net Configuration" from the "Tools" menu and select the right option out of the drop down menu.



Connected universes will have an orange icon.

There are two ways to control DMX devices using the Showrunner:

1. Objects with key frames synchronized to time-code (see Time line programming).
2. Scene presets that are used on the main work space.

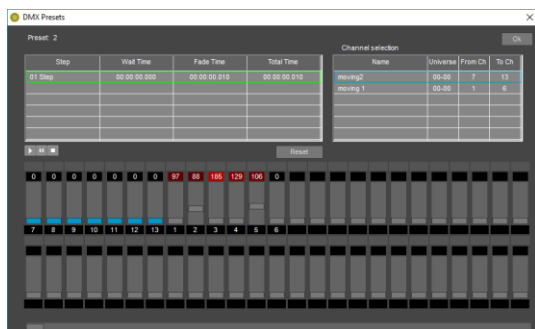
DMX Preset Scenes

Go to "Edit Mode".

Drag the DMX icon from the command tree to the work space. Press the settings icon on the DMX object.

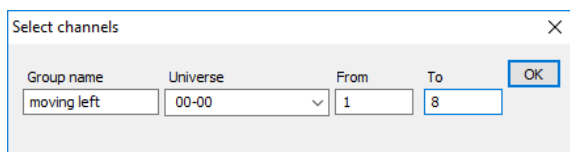


The following screen will open:



In the "Scene Name" edit box write a name for the scene.

Select channels to use in the "Channel selection" box by right+click>Insert. You can use channels from one or more universes.



Test DMX devices by using the sliders. Assign a name to each channel by double clicking on the channel or by tapping the rectangular space above each slider and type the name you wish to give the channel. This name will follow the channel everywhere in the project. You can change this name anytime by opening a DMX scene and editing the text

To add a step, Right+click on the table to the right.

Design the step using the sliders.

To pause before the step starts, add "Wait time" by clicking on it and altering the time.

To adjust the fade time between this step and the next step, alter the "Fade time".

The step is saved automatically to the highlighted line.

To load a step, click on the step line.

Add as many steps as you wish to create the scene

To test the scene, click on the first line and then press the PLAY icon.

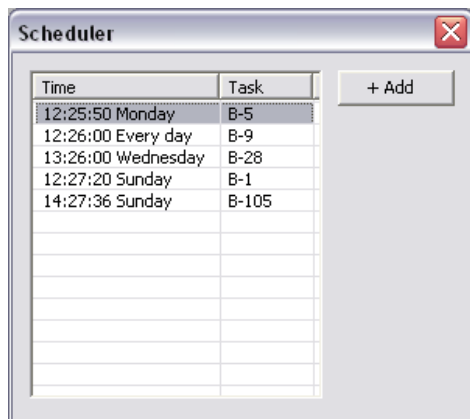
As soon as you are satisfied with the scene press the OK icon. This will close the screen and save it.

Scheduling Tasks

The Scheduler allows you to schedule Tasks to be done at certain times of the day, on a repeating schedule. You could use this, for example, to start a show in the morning and off at night. You can specify actions to occur only on certain days or every day.

Once you have added a scheduled Task it will be executed on the day and time you have selected. Showrunner must be in "Run Mode" in order for this to occur.

Select Scheduler from the "Tools" menu to open the "Scheduler" dialog.



Add Button- Adds a new scheduled Task. This opens the Edit "Time Scheduler" dialog.



Action- Selects the task you want to execute when the scheduled time is reached. The drop-down list will show only tasks that were created on the work space.

Days- Select the days this Task should execute on. You can select a single day or all days.

Time- Enter a time of day into the Time field. The time must be entered as a 24 hour clock time.

The list displays the currently scheduled Tasks. By double clicking on an item selected in the list, the Edit "Time Scheduler" dialog opens allowing you to edit the scheduled Task.

To delete a scheduled item, select it in the list, Right click and press Delete.

Showrunner Logical Interface

Coming soon...

Running Showplayer

When Showplayer starts, It will open as a movable window, with the panel open.

As soon as the player connects with the Showrunner, the panel will disappear and (if checked in the Options settings), it will go into full screen mode.

Blocking

If there is an active firewall, as Showrunner applications try to access the network, the firewall will display a dialog.

Select "Unblock" option to allow Showplayer to work correctly.

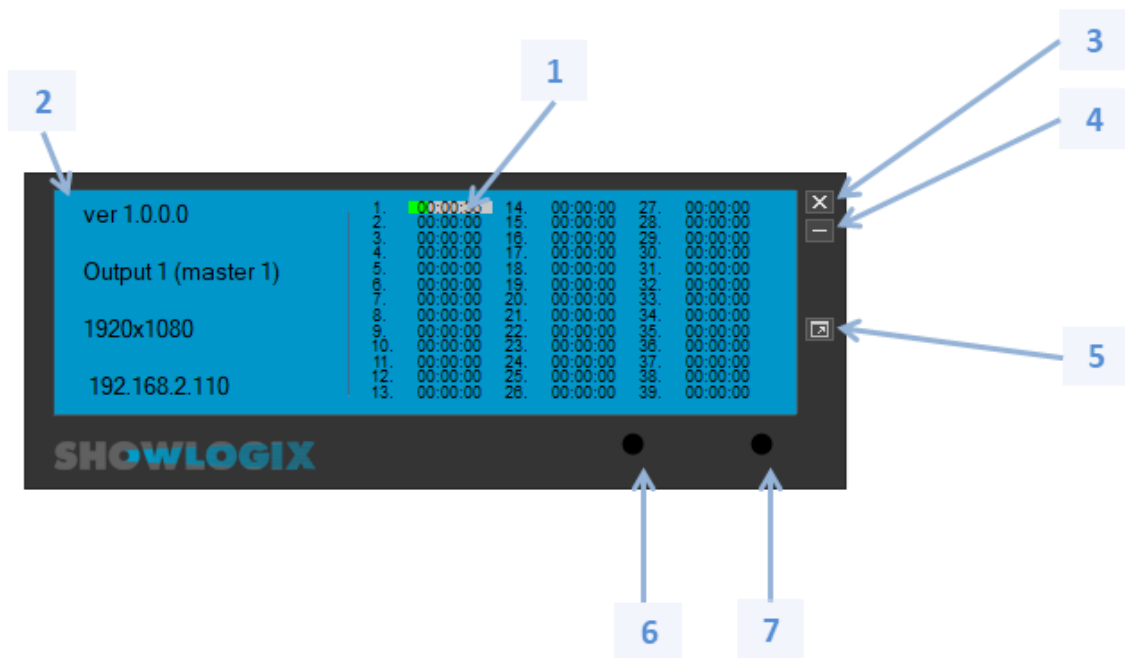
Changes made take effect immediately.

In some cases, the firewall needs to be configured manually.

Showplayer is controlled remotely via network. To configure the options available, right click anywhere on the player window; the Showplayer panel will open.

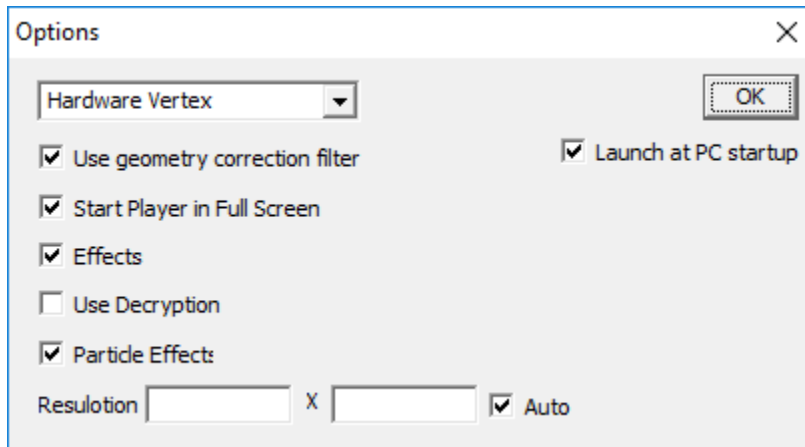
To quit the Player, press "x" on the panel.

Showplayer General View



1. Duration bars – shows the current position relative to the duration and current timecode. Clicking anywhere along the bar will bring the video to that point. Each layer has a separate bar (Timeline layers are not displayed here).
2. Display information view
3. Close player.
4. Close panel.
5. Open/close full screen.
6. UDP Sync send/receive indicator:
 - Black – Idle
 - Blue - Master sending timecode data
 - Green - Slave receiving timecode data
 - Yellow – Slave waiting for UDP data - No UDP is coming in
7. UDP Tracker receive indicator:
 - Black – No UDP is coming in
 - Blue – UDP data is received from Showlogix Tracker application

Options settings



Vertex Drop down selection- selection of how the player processes vertex calculations. This depends on the graphic card in use. For best results use strong graphic card and Hardware Vertex. For weak graphic cards use Soft Vertex (in this case particle effects are not available).

Use geometry correction filter- Remove for testing or for low specification computers (in this case none of the advanced Showplayer features are used except multi-display synchronization).

Start Player in Full Screen Video- If marked, the player opens in full-screen at player start-up after connection with the Showrunner.

Effects- Un-check to disable all visual effects.

Use Decryption – Use Showlogix decryption method. For use with files encrypted with the Showlogix file encrypter.

Particle Effects- Un-check to disable all particle effects.

Launch at PC startup- If checked, the Showlogix Server will attempt to open Showplayer at Wt Windows startup.

Technical Support

Users can access our technical support line via email, usually with a response within 24 hours.

Send an email to info@showlogix.com with as much information about your system as possible. To enable a quick response we need to know the following details:

- Specification of the PC - including processor speed and graphics card
- Operating System
- Application Software
- Hardware / Software version in use
- The exact nature of the problem