



Juggler Systems

Marquee Source Layout Controller

User Guide



Marquee Source Layout Controller : User Guide

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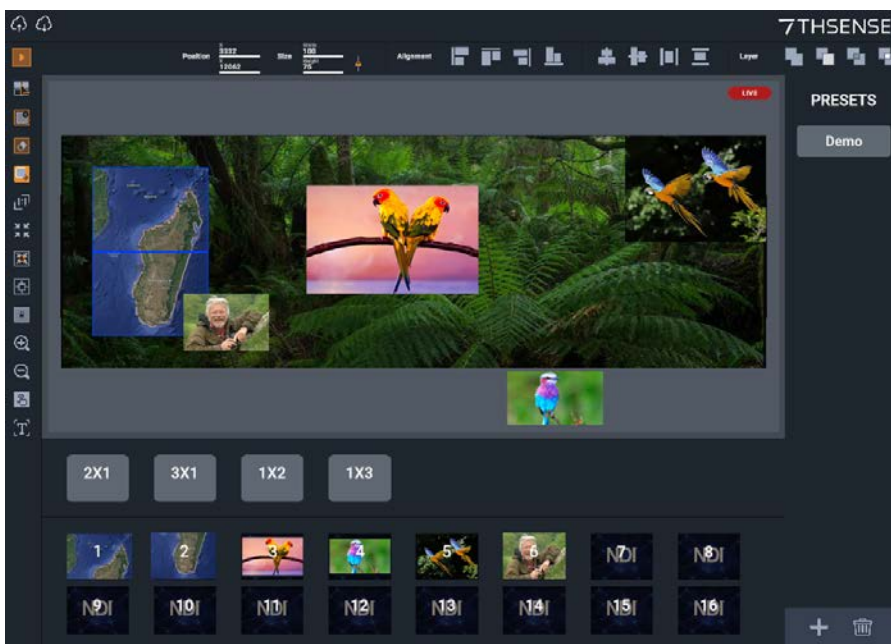
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Introduction



Medialon Marquee can be used with Medialon Manager as mediator, to utilise external control of Juggler systems. This implementation, the Marquee Source Layout Controller, provides for a graphical touch-screen control of Compere windows on a background canvas.

Whilst jugglers host Compere for the canvas windows, Delta Media servers can provide background media, but also carry the Medialon Manager interfaces.



Requirements

Per Compere Project Group server / control PC:

- Medialon Manager V6.7.3 [[download](#)] (licensed required)
- Compere MxM

Per Marquee PC:

- Medialon Marquee Runtime .exe and associated files
- The project folder containing the .mrq (Marquee) project file, plugins and associated files
- [Window group](#) ⁽¹⁶⁾ arrangements (concept supplied but configurable)

Setup and Technical

Background media

A full canvas background, if required, is provided direct from media server to display. In order to be shown in Marquee as NDI feeds, this is communicated via variables in the Compere MxM, *Manager Project > User Groups > Marquee*: and by defining the NDI feeds to cover it in JugglerPlugin.xml.

Connection, Compere and Marquee

Medialon Manager connects by IP to the Compere Project Group server via the Compere MxM in the GUI, and this MxM and its setup are saved into the Manager project.

Marquee connects to Medialon Manager at the Manager IP address set in the Marquee project xml file (*.mrq).

The canvas dimensions of Canvas1 in Compere should correspond to the background dimensions set in *Manager Project > User Groups > Marquee* background canvas variables.

Communication, Marquee and Compere

Property names for the canvas and its dimensions, for window canvasposition x, y, width and height, are assigned in the Compere project. These are used in standard external control string expressions, entered into the 'Description' fields for corresponding Medialon Manager variables that in turn are given values by Marquee.

Compere

Compere runs the Juggler project that drives a Project Group's display of Canvas and Outputs, and whatever else is added, configured and named. The connecting names are those of the canvas, the windows and the NDI feeds. Up to 16 Compere project canvas windows can be addressed by Marquee in a Compere project group. Marquee instructs the dimensions and positions of Compere windows when Marquee is running live. Marquee can also position windows when in Preview .mode, but the changes are only pushed through when Marquee is switched into Live mode.

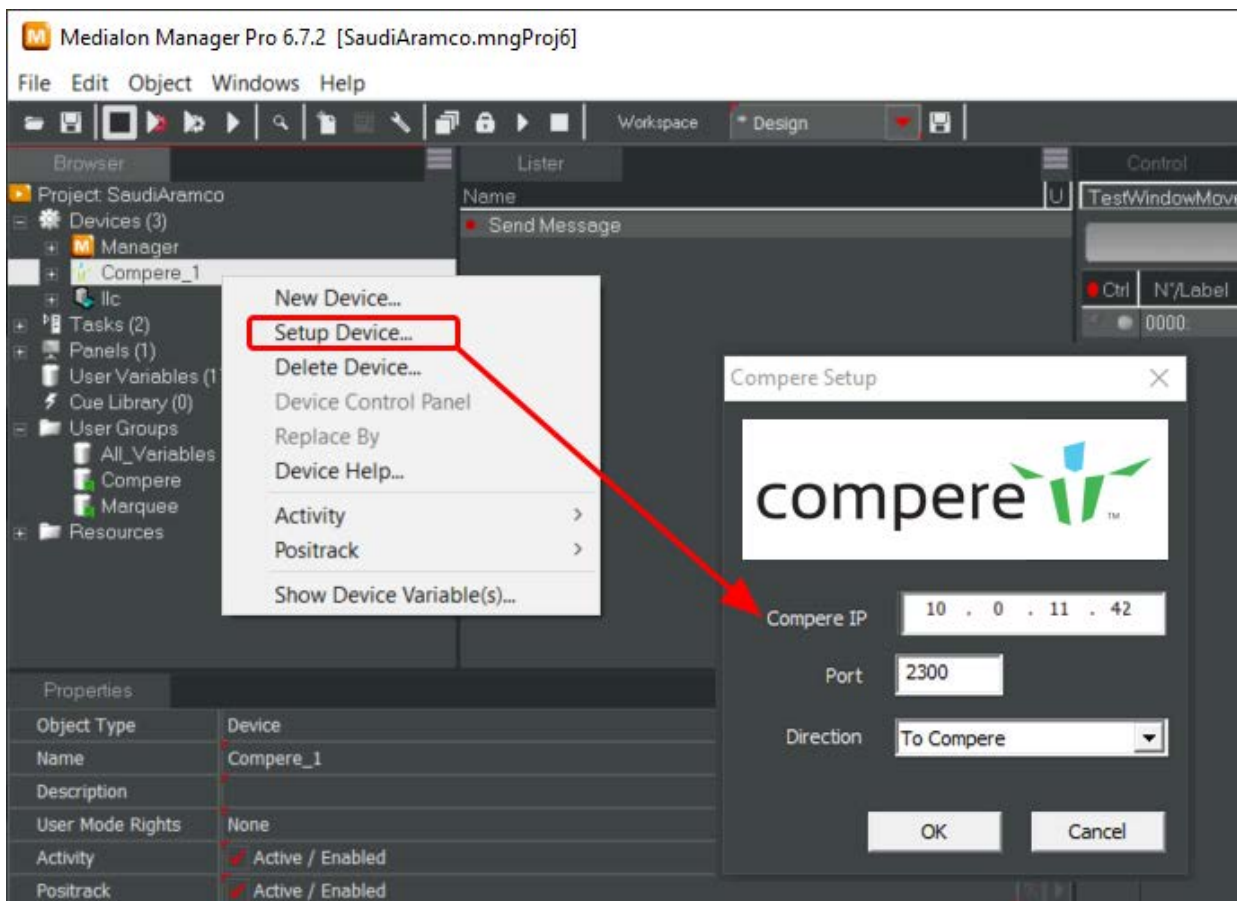
Changes to windows made in Compere are not currently passed back to Manager and Marquee.

Compere does not drive the background media – this is provided directly from Delta server NDI-enabled outputs.

Software Installation

Medialon Manager V6.7.2 (Compere Project Group Server / Control PC)

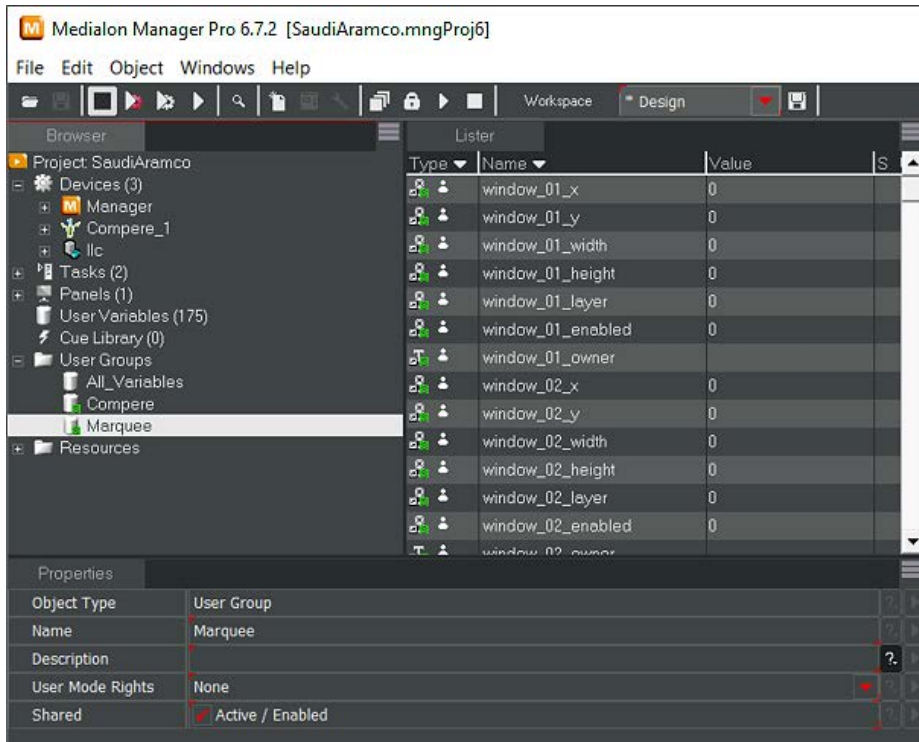
- Install Medialon Manager V6.7.2 onto the PCs to run as Compere project group server.
- Medialon Manager installs to C:\Program Files (x86)\Medialon\Medialon Manager 6
- Copy the Compere MxM (dll file) into C:\ProgramData\Medialon\Manager6\MXM.
- Start up Medialon Manager and open the required project (*.mngProj6) or start a new one. This will contain the setup of variables to work with the Compere MxM.
- Under Devices, find 'Compere' (the MxM). Right-click and select Setup, and type in the IP address for the Compere Project Group server (for the Zone). The direction is 'To Compere'.



Note: under User Groups you will see:

All_Variables
Compere
Marquee

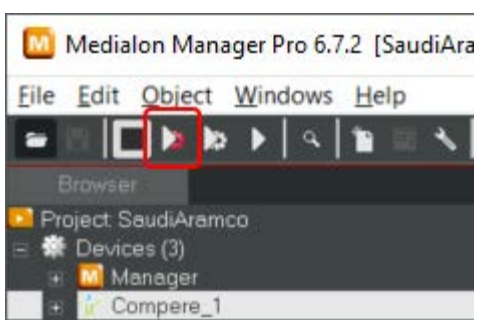
- Select Marquee, and in the Lister panel you will see the shared variables uniting Marquee with Compere:



These variable names must not be changed because they are used in the communications between the controllers and the Juggler system. Some of the variables need to be given values, once we have connected everything up. Every variable used to communicate window location and size will require an external control string in its Properties for Compere, to which dynamic values will be attached.

Save the Manager Project after editing and before closing.

Run the Project in Medialon Manager, to start the comms with Compere and Marquee:



Note: This is running in Debug mode while you set the project up.

Medialon Marquee (Source Layout Controller PCs)

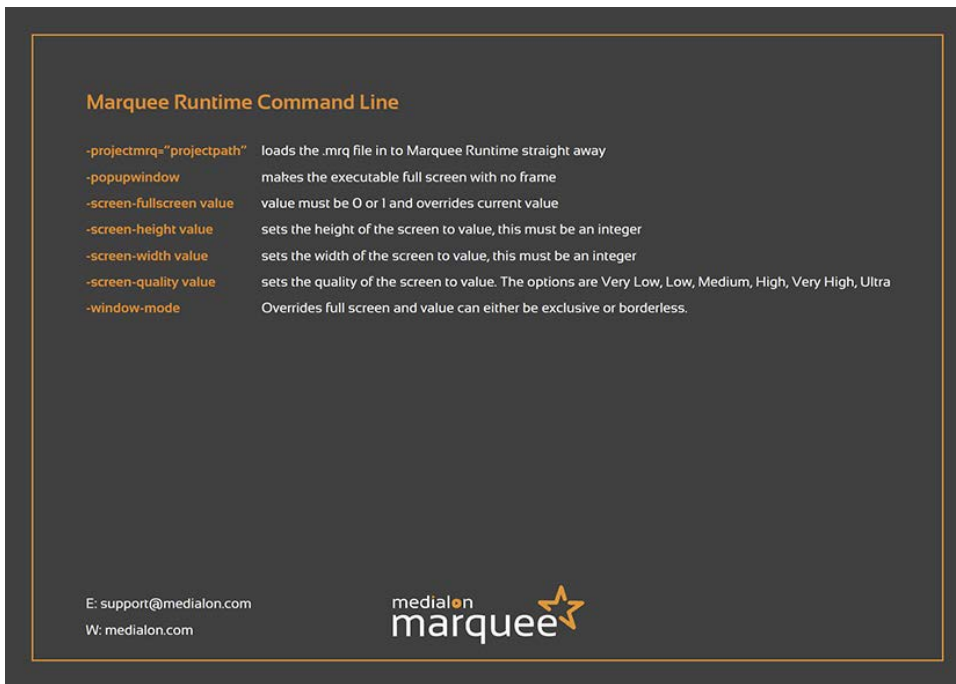
Runtime application

- Copy the Marquee Runtime folder onto the Source Layout Controller PC.

- Marquee can be saved anywhere, but we suggest C:\Marquee-Runtime.
- Create a shortcut, and add in any command line parameters needed (see illustration below) or press [F2] to bring it up in Marquee.

Example: for Marquee Runtime to open the UIC project at startup:

In the Shortcut Target, after the runtime.exe, add: -projectmrq=C:\path\to\projectfile.mrq



Project files

For the project-related files, we suggest creating a C:\Marquee-Project folder. This will contain the project file, assets for the application, plugins and backups. There are two files you need to edit.

1. In a text editor, edit the IP address for the PC carrying Medialon Manager in the project .mrq file. This will connect with Medialon Manager:

```
<Marquee>
  <Settings>
    <IP value="10.0.11.42" />
    <Port value="9255" />
    <Username value="" />
    <Password value="" />
    <Group value="Marquee" />
    <Width value="1440" />
    <Height value="1024" />
    <GridSpacing value="1" />
    <Grid-Colour value="101,101,101,255" />
    <Font value="Roboto-Medium" />
    <UserLevel value="All" />
    <JugglerPluginEnabled value="True" />
  </Settings>
```


...

- The Marquee project needs to know about the canvas setup in Compere – how many background NDI feeds, how many windows, and what window cluster arrangements will be useful? These are held in \Plugins\JugglerPlugin\JugglerPlugin.xml

```
<JugglerPlugin>
  <BgNDIs count="4"/>
  <WindowGroup name="2x1" rows="1" columns="2"/>
  <WindowGroup name="3x1" rows="1" columns="3"/>
  <WindowGroup name="1x2" rows="2" columns="1"/>
  <WindowGroup name="1x3" rows="3" columns="1"/>
  <Windows count="16"/>
</JugglerPlugin>
```

Here the background canvas is populated by a specified number of NDI feeds `<BgNDIs count="n"/>` in a single row. Match this to your background canvas. There are up to 16 windows possible, that must be connected to named canvas windows in the Compere project ([Connecting Marquee to Compere](#)⁽¹⁰⁾).

Marquee panel space allows for up to 8 grid (WindowGroup) arrangements to be created here as rows × columns. These appear in Marquee as light grey blocks ready to be populated by windows, as buttons that can then be dragged into the canvas as single entities. An arrangement can be used multiple times.

WindowGroups are user-definable but not created in the Marquee user interface.

Compere (Project Group server)

The Compere project group will have a canvas, and the name for this in Compere must be used in all external control strings in Medialon Manager. Outputs on this canvas will be configured for the display devices. Onto these, up to 16 canvas windows can be addressed by the layout controllers on which you have installed the Marquee app.

The names for these windows must be used in all external control strings in Medialon Manager. Other windows may be present in Compere, but will not be addressed by the layout controllers.

The Source Layout Controller should now be ready for configuration.

Connecting Marquee to Compere

Marquee needs to know what the canvas and the windows are called, the names for the NDI feeds, so that the media can be seen in Marquee. In turn, movement in Marquee sends values for location, dimension and grouping for each of these window on the canvas. All this is done in the Medialon Manager variables. Only variables with valid Description (Compere external control) strings will connect.

At this point of development, some values that may be dynamically derived in future must be entered manually.

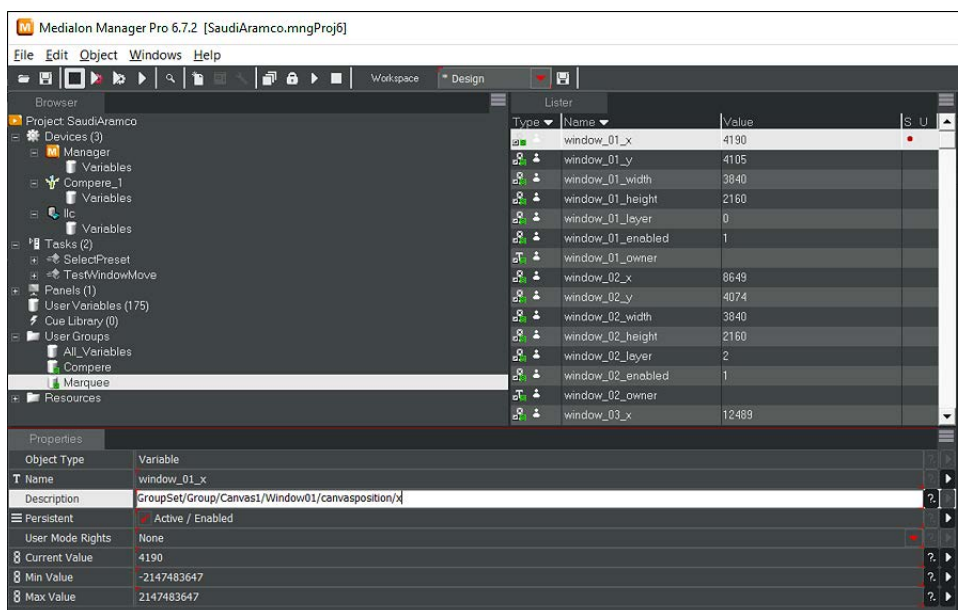
Medialon Manager: Variables

All the variables for the location setup are found in *Manager > Project > User Groups > Marquee*. These include all the window dimensions, layers and locations, NDI feed names and current ownership, background canvas dimensions, background NDI feeds, and the current preset. Many of these will appear also in the list of variables under *User Groups > Compere*. Edit for 'Marquee'.

- Variables are listed in the **Lister** panel along with their current values.
- In the **Properties** panel below this, each variable can be given a **description**, which in this situation is a communicated string.
- **Do not edit any variable names.**

Variables: Descriptions

Assign the names used in Compere to build external control strings in the Description fields. This is only required for window locations and dimensions, and window and canvas NDI feed names:



Shown here: a window named Window01 on a canvas called Canvas1 in a Compere project, has a Medialon Manager variable for its x position called window_01_x.

It is given a **Description** that is the required external control string but without the value, which will come from Marquee (you can see where these values have already come from Marquee in this table, above).

The most important thing here to note is that these description strings are external controls, so the names they use are those in the Compere project. There can be a lot to add, so be systematic, check and test every window for behaviour in presence, movement/position and size from Marquee.

Variables: Values

canvas_width
canvas_height

These variables for the canvas: height and width define the background canvas dimensions seen in Marquee. These are manually entered in the table, because Compere is not the source for background media, but we do want to see the canvas size for reference in Marquee.

window_01_nativewidth
window_01_nativeheight
window_02_nativewidth
...

These 'native' values determine the resolution of the sources going to windows. A value of 0 (zero) is UHD. This determines the size of a window when dropped onto the canvas in Marquee, and when the 'Reset window to native size' button is pressed.

bgNDI_01_ndi
bgNDI_02_ndi
...

These are the names of the NDI feeds for the background canvas.

window_01_ndi
window_02_ndi
...

These are the names of the NDI feeds for each window.

Layer values are determined by the top right icons in Marquee.

Ownership is the device by which conflict is avoided between instances of Marquee trying to address the same window at the same time. There is an ownership time-out of around 20 s. The current owner sees window outlines in blue, if a window is already owned, its outline is red.

Example, set the position of a window in a canvas.

Marquee sends the x-position of a window numbered '4' to Medialon Manager. Example:

3840

Medialon Manager receives this value into its MxM variable for this window's x-position on the canvas. Example:

window_04_x, value=3840

Manager appends this value to the equivalent external control string for this window on the canvas in Compere, and sends it to Compere using the names in the Compere project. Example:

```
<command cmd="set" path="/GroupSet/Group/Canvas1/Window04/canvasposition/x" value="3840"/>
```

The same is done for the y-position, and for width and height (/canvasposition/width and /canvasposition/height).

Whilst the *user-defined names* given to canvas and windows in the Compere project are assigned in the Description field for the Manager variables thus:

```
window_04_x, Description = /GroupSet/Group/Canvas1/Window04/canvasposition/x
```

the Manager variable names must not be edited because they are hard-coded also into Marquee.

Save the project after editing variables properties.

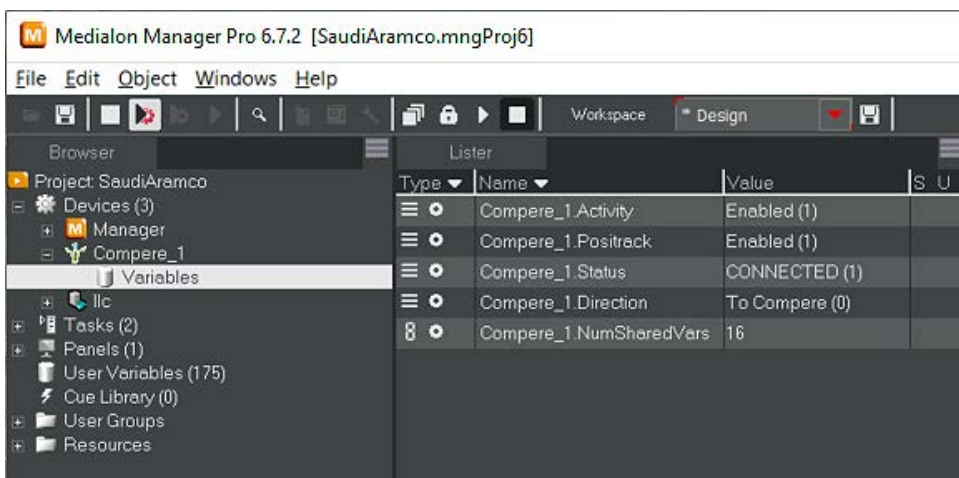
Testing Communications

With Compere running the overall Juggler project, with Medialon Manager running its communications project, and with Marquee running its project on the Source Layout Controller PC, you should see the number of windows available as numbered black buttons in the bottom of the Marquee app.



Note: here, no NDI feeds have been named, but 16 windows have been linked. They are black, so available to be placed. The grey buttons are [Window Groups](#) ⁽¹⁶⁾. There are no [Presets](#) ⁽¹⁷⁾ showing.

In Medialon Manager, you can see the Compere MxM connection in *Project > Compere > Variables*:



If you already have media directed to the canvas background, you will see this represented in the Marquee background. If not, you will see 'NDI'. This is what you will also see until you have assigned the NDI feeds in Medialon Manager.

Make sure you can see the Compere canvas panel as well as the Marquee window and the actual display, if possible. In Marquee, press the top left mode button to make sure you see the red pulsing 'Live' icon, not the blue-green 'Preview' one.

Drag the first of these Windows, numbered 1, into the background canvas area.

As you move and scale this window in Marquee, you should see the corresponding window move around in the Compere Canvas panel, and on the actual display.

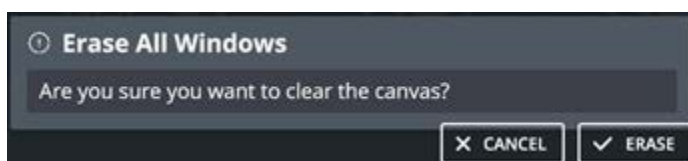
If this does not happen straight away, close the Marquee app, close Medialon Manager, then:

- Run Medialon Manager
- Open the Manager project
- Run the Manager project
- Open Marquee
- Run the Marquee project

Test each window in the same way and verify each is working.

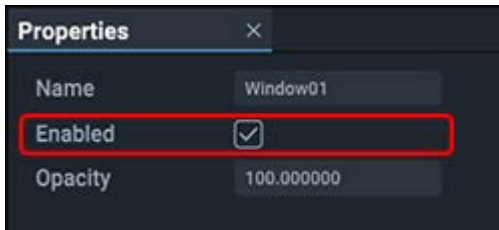
You will by now have created a mess of windows, so press the eraser toolbar button on the left to

clear the canvas. press 'Erase':



Erase and Remove in Marquee

It is important to understand how the Marquee canvas relates to that in Compere. Traffic is one-way, and window information must remain accessible to Marquee, in order to create, re-add or recall Window presets. Erase means 'remove all' rather than 'remove selected'. 'Remove' simply means 'un-enable' in Compere:



The Window remains where it was in Compere, but can only be resized or positioned in Compere itself by re-enabling it first. When re-added to the canvas in Marquee, by dragging or enabling a preset, it is re-enabled in Compere.

Window Groups

Window groups are row × column arrangements of windows that scale and move together. These are predefined, in the Marquee project folder, \Plugins\JugglerPlugin\JugglerPlugin.xml. Marquee uses these but does not define them. Edit this file as required.

```
<JugglerPlugin>
  <BgNDIs count="4"/>
  <WindowGroup name="2x1" rows="1" columns="2"/>
  <WindowGroup name="3x1" rows="1" columns="3"/>
  <WindowGroup name="1x2" rows="2" columns="1"/>
  <WindowGroup name="1x3" rows="3" columns="1"/>
  <Windows count="16"/>
</JugglerPlugin>
```

Here four groups have been defined as typical arrangements of 2 and 3 windows.

Presets

In the same way as they are created in Compere, Marquee Presets are a store for reusable arrangements of windows, with their size, locations and groupings. Their properties are held in the Marquee project: \Plugins\JugglerPlugin\Presets.xml. When a preset is selected, it replaces whatever arrangement is on the canvas.

The format is (line breaks for clarity):

```
<Presets>
  <Preset Name="Demo">
    <Window WindowId="0" XPosition="1689" YPosition="511" Width="5597"
Height="3148"
      GroupId="-1" GroupColumns="0" GroupRows="0"
GroupWindowIndex="0" />
    <Window WindowId="1" XPosition="10224" YPosition="768" Width="3840"
Height="2160"
      GroupId="1" GroupColumns="2" GroupRows="1"
GroupWindowIndex="0" />
    <Window WindowId="2" XPosition="14064" YPosition="768" Width="3840"
Height="2160"
      GroupId="1" GroupColumns="2" GroupRows="1"
GroupWindowIndex="1" />
  </Preset>
</Presets>
```

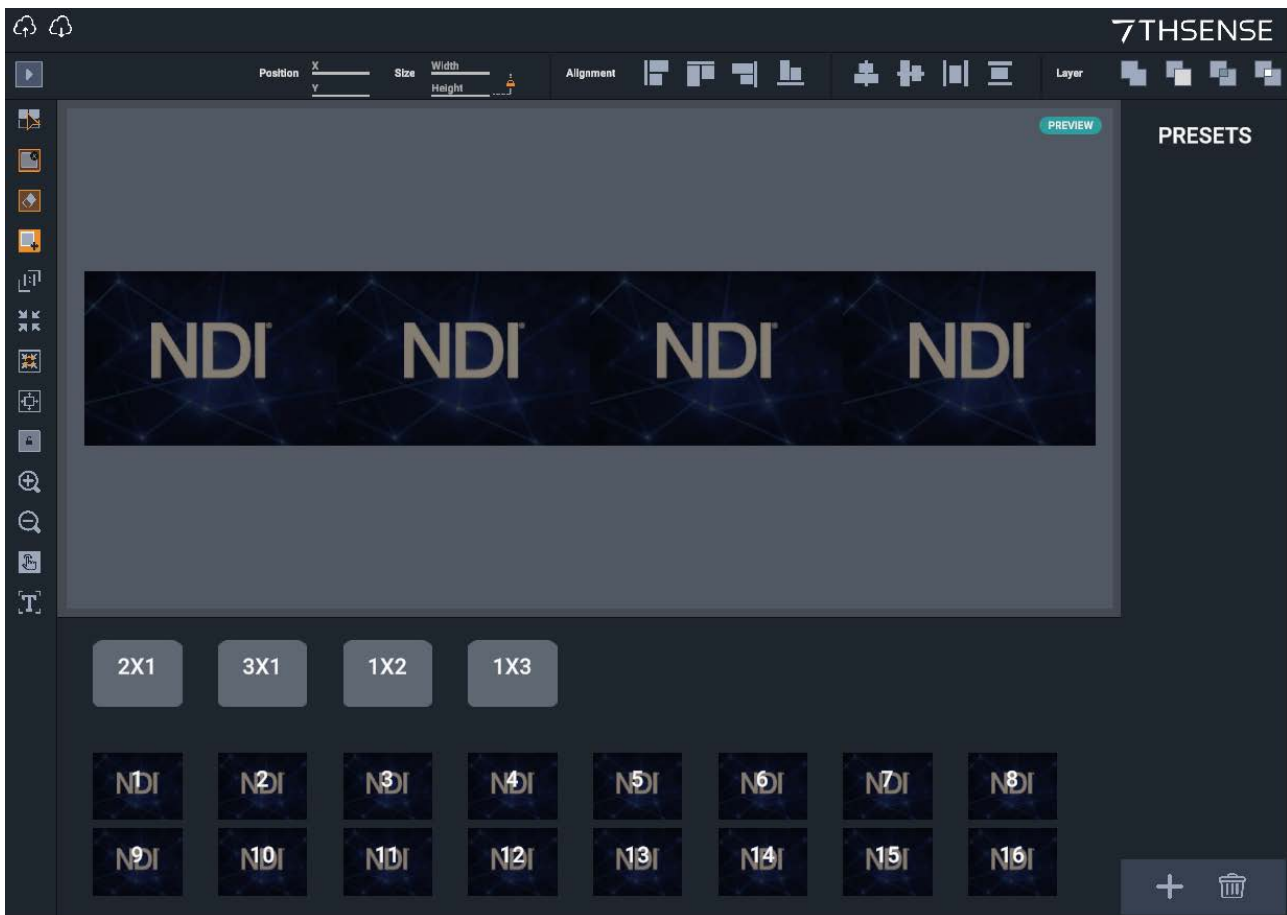
A single window has zero **GroupColumns** and **GroupRows**. (Its Id is -1 because 0 would infer a group in base 0.)

Each Window in a Group is described separately, so above, WindowId 1 and 2 each belong in WindowGroupID="1".

WindowId is base zero, so WindowId="3" refers to window_04 in Manager.

Using Marquee Source Layout Controller

This is an interface designed using Medialon Marquee, with the purpose of providing an easy-to-use touch-screen interface to interact with windows on a Compere canvas, easily adding standardised matrix groups of windows, saving preset arrangements to be recalled from a list. Effectively it offers a simple way of laying out a canvas and sending external control messages to Compere, without having to know how.



The working space of the controller contains the canvas of the connected Compere project group, and any active canvas windows. The central block is the canvas and any background NDI feeds (in this example, there are four). Into this space, dynamic media windows are added, positioned and scaled, on or off the canvas. Any part of a window that is on the canvas will be seen on the actual display.

The controller only interacts with Compere windows that are connected with Marquee in Manager.

The first row of light grey buttons represent grid arrangements for groups of windows. Up to 8 of these 'window groups' can be defined in the project folder \Plugins\JugglerPlugin\JugglerPlugin.xml (see window cluster arrangements).

The next rows show the available (connected) window resources that can be added to the canvas. Like the background, they too will show thumbnails of their NDI feeds, coming through the Juggler system.

'NDI' shows when an NDI feed name has not yet been added to the variables in Medialon Manager. Once named, the actual media will be seen.

Interface Modes

The Layout Controller operates in either Preview or Live mode. In Preview mode, changes that are made are not communicated to the Juggler system straight away. Arrangements can be made, presets created and saved, and only when switched into live mode is the arrangement sent to the Juggler system.

The first function button, top left, toggles between the two (Live On/Off):



Button Tooltips

To see the function tooltips, press the [T] tooltip button on the left toolbar. This creates an overlay describing the functions (as below). Press again to turn them off. They do not disable any functionality.

Toolbar Buttons



Select multiple windows.

Use this to move or resize several windows at once.



Remove the selected window from the canvas.

This removes the window, but does not delete anything.



Clear canvas.

This removes all windows from the canvas.



Move canvas.

Use this to move the whole canvas within the viewing area without changing any window positions.



View window 1:1 ratio.

(full scale, instead of as a thumbnail at a zoom ratio).



View all windows.

A zoom setting that brings all windows into view.

**Reset window to native size (resolution).**

Set windows to resolutions as defined in the Manager variables.

**Fit window to canvas.**

Use this to bring all windows into complete view on the display.

**Lock/Unlock windows.**

Prevents selected windows being dragged around

**Zoom in.**

Scales the view.

**Zoom out.**

Scales the view.

**Touch mode.**

Brings up an onscreen keyboard when required for input.

**Tooltip on/off.**

View all tooltips as an overlay.

Window Toolbar



Position

Windows can be dragged around, or you can specify their x and y coordinates here.

Size

Windows can be dragged to size, or you can specify their size here. When scaling, the aspect ratio can be unlocked by clicking the padlock icon (it is orange when locked). Other buttons down the left hand size are also available to reset, fit, and to bring windows into view when zooming. Windows have native resolutions and media will be scaled to the window size, so keeping aspect ratio matters.

Align

Select multiple windows and click to align.

Layer

Select a window to send it to back, front, or to increment the layer level.

Presets menu

Presets are window arrangements that you can create and reuse. As presets are created they are added to the list on the right. Only one can be live at a time, it replaces what is on the Marquee canvas, and any one can be selected. Creating Presets is covered below.

Creating Source Layouts

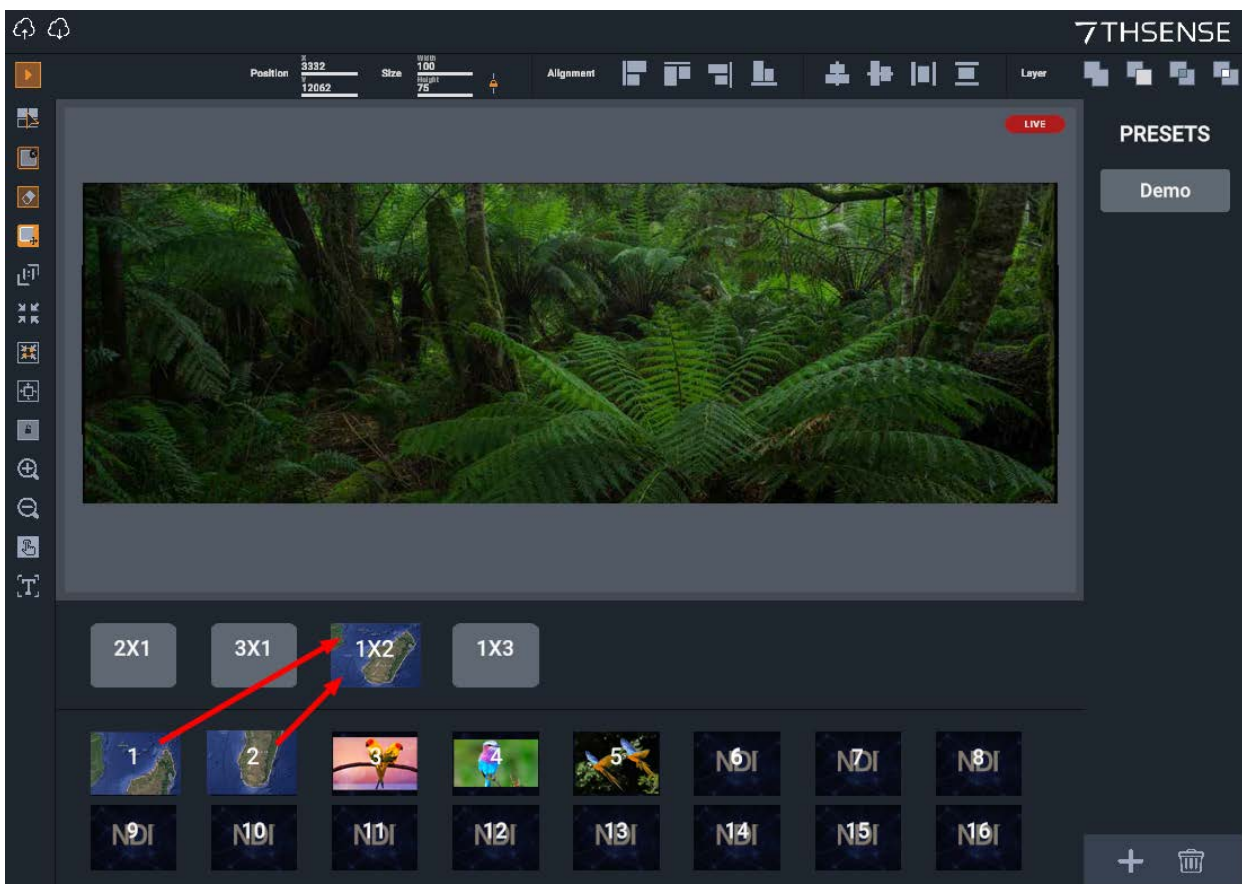
Adding windows to the canvas

Windows can be added individually: simply drag a numbered window from below onto the canvas background. This 'enables' the window in Compere. Since the background dimensions should match what you see on the actual display, only those portions of windows that overlap the Marquee canvas will be seen, just as in Compere. In this way, active windows can be held off-canvas, out of sight, until needed, or removed (not enabled). For example, different presets can move the same elements in and out of display, or by only enabling windows that are required.

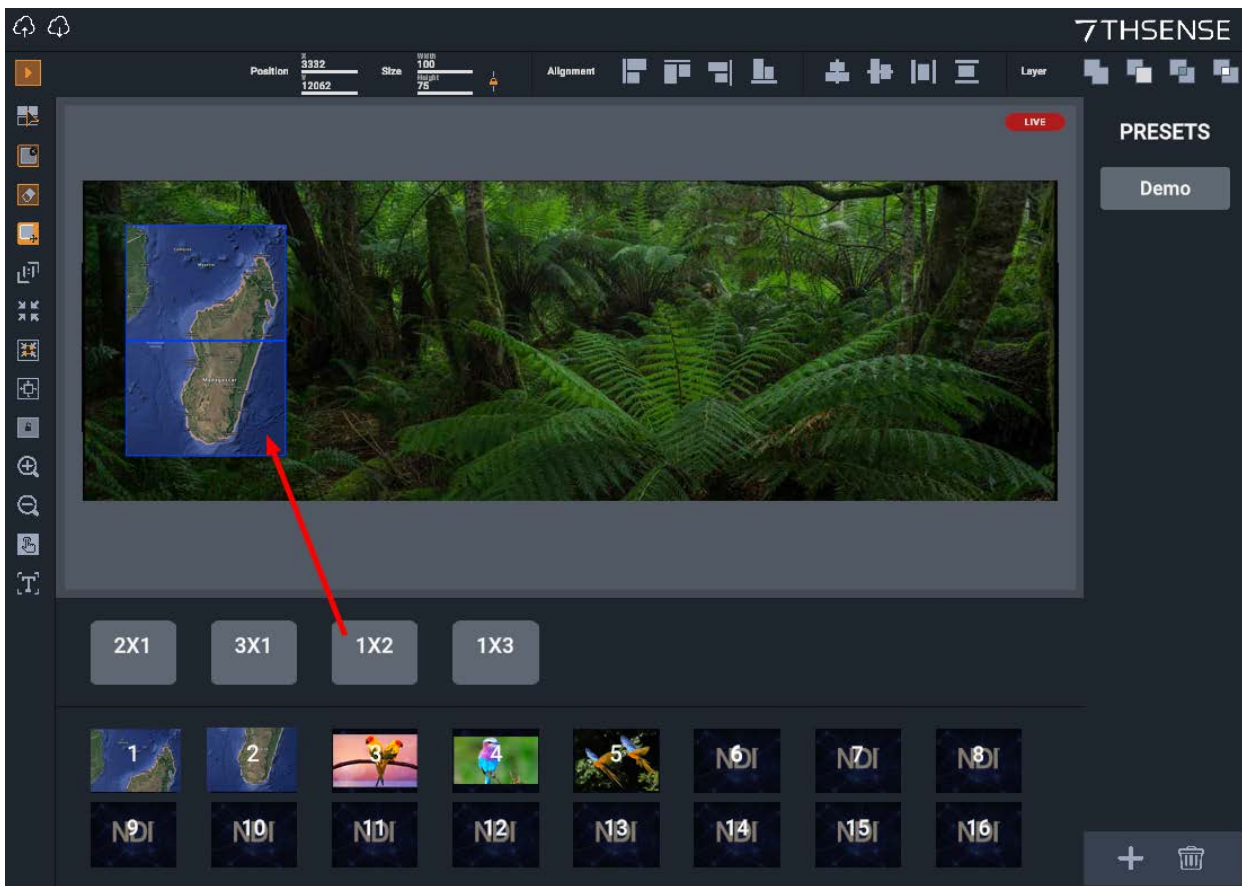
Once on the canvas, windows appear in their native resolution, but can be rescaled and reset.

Window Groups

When sections of media frames are shown in multiple windows, they can be made to move and display together. First drag windows in order into a window group (the light grey buttons). For example, two NDI feeds may together, in a group of 1 × 2, form a single video display area. Drag the window media first into the matrix required:



Once added into the 1 × 2 group, the group button can be dragged onto the canvas where both sources will adopt their native resolution, and move and scale together as one.



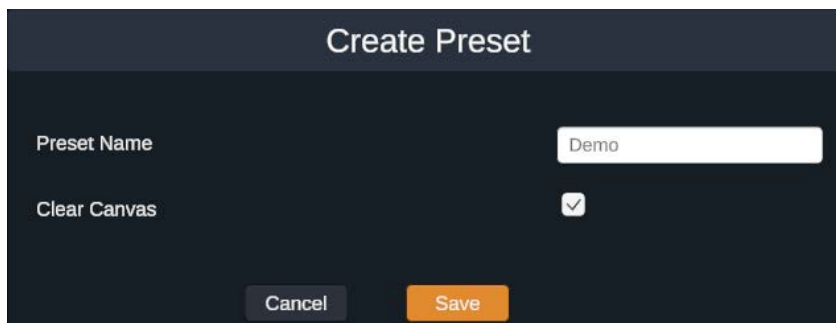
Group buttons become reusable, whereas windows are unique and can be used only once in the canvas area, and become greyed out again (as above).

Marquee Presets

If you want to create an arrangement of windows and/or groups, to be recalled and reused as required, create a preset. For example, you may want to create a default preset to return to at any time, even if the display is mainly used interactively.

To create a preset:

- Press the + button, bottom right.
- Add a name for the preset (this will appear on the button).
- Select 'Clear Canvas' if you do not want to use what is already there.
- Save the preset name.



Now populate the canvas with windows, located and scaled as you wish.

Whilst the button is usable, it is not yet saved to the presets file, from where Marquee can collect it at next start-up. To save presets, press the 'save to cloud' button top left. All presets are saved to a separate file in the Marquee project folder: \Plugins\JugglerPlugin\Presets.xml. This can be shared or copied to other users of the Layout Controller that share the same canvas and windows in the same Zone / Compere project group.

Presets can be created and saved in Preview mode, leaving the current show undisturbed.

- To **apply** a preset, click the preset button for it.
- To **delete** a preset, select it (label goes orange) and press the trash can, bottom right.
- To **alter** a preset arrangement, select it, change the canvas content and resave to the presets file.

Marquee Presets and Compere Presets

Compere also has a feature called Presets, which can do a similar job, if the task is simply to recall window arrangements. Compere presets are designed to capture the arrangements and settings for components in a particular project. When recalled, dimensions and locations etc. of existing canvas objects will be set again to those of the saved preset. Presets can be recalled using external control,

so conceivably Marquee as a baseline product can be used to provide remote push-button control to select named arrangements.

- Whilst Compere presets connect to the UUIDs of a specific project, Marquee presets connect to canvas and window names in any project using the same names.
- Marquee Source Layout Controller adds the convenience of using predefined window groups for quicker standard matrix arrangements.
- When creating presets, Marquee clears the working space for a rebuild, rather than just a rearrangement. This does not delete anything in Compere, it just un-enables it.
- In Compere, you can, but you don't have to enable/un-enable windows not required in an arrangement. Rather you can just relocate them off the canvas.
- Compere presets only require a rearrangement of selected windows to be captured.
- Both, however, rely on the Compere project of canvas with all outputs and windows populating the canvas panel working space.

Multiple Layout Controllers

There can be several Marquee Source Layout Controllers connected to a Compere project, perhaps a very large display with multiple user areas.

When one controller is manipulating a window or group, other controllers are locked out. This ownership persists for around 20 seconds after last action. When there is an owner active on another controller, blue window outlines will be red.

One controller can be creating arrangements and presets in preview mode while another is interacting dynamically. When they go live, their arrangement will be asserted.

Document Information

Date	Document edition	Software version	Revision Details	Author/Editor
March 2021	1	Medialon Marquee V1.1 Medialon Manager V6.7.2	New release, technical guide	Andie Davidson
May 2021	2	Medialon Marquee V1.1 Medialon Manager V6.7.2	Addition of user information	Andie Davidson

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