Netvio-Videowall

NETVIO

Netvio JP4 Systems

Videowall Configuration Guide for Netvio JP4 Systems AVoIP

Netvio Ltd
www.netvio.co.uk

support@netvio.co.uk

UK +44 (0) 800 464 7445
US +1-941-285-4227

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INTRODUCTION

This guide provides a comprehensive overview of how to design, configure, and deploy videowalls using Netvio's JP4, JP4-60, and JP4-60-DNT AVoIP decoders. Whether you are building a small 2x2 display wall or a large-scale 16x16 installation, this document outlines the best practices and technical considerations required for successful setup and optimal performance.
With support for both landscape and portrait orientations, advanced synchronisation via Genlock, and seamless integration with the Netvio GO control platform, Netvio's AVoIP decoders offer flexible and scalable solutions for modern videowall applications.
Follow the steps and recommendations in this guide to ensure precise image alignment, effective system control, and a reliable viewing experience across all connected displays.

SUPPORTED VIDEOWALL CONFIGURATIONS

All Netvio **JP4, JP4-60**, and **JP4-60-DNT** AVoIP decoders support videowall creation in both **landscape** and **portrait** orientations, with configurations of up to **16x16 displays**. Each display must be paired with its own decoder to enable independent content control and preset management across the videowall.
There is **no limit** to the number of videowalls a Netvio **CL controller** can create. However, please note that the controller supports a maximum of **150 total endpoints** across the system.

ASPECT RATIO & SIZE CONSIDERATIONS

LANDSCAPE ORIENTATION

To preserve the **native aspect ratio** of video content and avoid cropping, it is recommended to use **equal numbers of displays along the horizontal and vertical axes**—for example, **2x2**, **3x3**, or **4x4**.

PORTRAIT ORIENTATION

A perfect 16:9 aspect ratio is not possible until the videowall reaches **16x9 displays**. Therefore, when working in portrait mode, aim to achieve the **closest proportional ratios** such as **3x1**, **6x2**, **9x3**, or **12x4**.

LARGE-SCALE VIDEOWALLS

For particularly wide videowall setups, you may group multiple videowalls side by side and treat them as a **single unified wall**. This is the recommended approach for easier management and control.

Example:
Instead of creating **three individual 4x4 videowalls,** configure the layout as a **single 16x4 wall**. This enables unified control and visual representation in the **Netvio GO app**, where all three sections are accessible on a **single interface page**.

Important Note:
Presets applied to a unified videowall will affect all grouped sections. Evaluate whether this behaviour is desirable for your installation. If independent control is needed, configure them as separate videowalls.

SYNCHRONISATION AND GENLOCK SUPPORT

Only the JP4-60 and JP4-60-DNT decoders support Genlock for frame-accurate synchronisation across the entire videowall. Genlock eliminates issues such as:

- Frame misalignment
- Screen tearing
- Jitter

These artifacts are especially noticeable during **fast-motion video playback**.

Non-Genlock Systems (IP-JP4-RX-10):
In the absence of Genlock, synchronisation relies entirely on the **network switch**. Therefore, all decoders in a videowall configuration must be connected to the **same network switch** to ensure optimal performance and timing accuracy.

PRE-INSTALLATION PREPARATION

Before beginning the videowall setup, follow these essential preparation steps:

1. Measure Display Dimensions:
    - Measure the width and height of one videowall display in millimetres.
    - Record the bezel width on all four sides, as these often vary and impact final image alignment.
2. Ensure Display Uniformity:
    - All displays should be the same make and model number to guarantee consistent performance and visual quality.
3. Plan Endpoint Layout:
    - Organize your output endpoints in a logical sequence:
        - Row by row, from top to bottom
        - Left to right within each row (e.g., Row 1 Left, Row 1 Right, Row 2 Left, etc.)
    - This preparation enables the use of the Auto Assignment tool, significantly reducing setup time—especially valuable for large videowalls.

PROCESS OVERVIEW

The videowall creation process is structured into six clear and sequential steps. Each stage plays a critical role in ensuring an accurate, synchronised, and flexible videowall configuration.

1. Create
   Begin by initiating the videowall setup. In this step, you will create and name a new videowall, establishing the foundation for all subsequent configuration tasks.
2. Display Panel
   Define the physical characteristics of each display, including panel dimensions and bezel measurements. Accurate input here ensures precise visual alignment and image continuity across all screens.
3. Layout
   Configure the overall structure of the videowall by specifying the grid layout (e.g., 3x3) and applying any required display rotation. This determines how video content will be arranged across the videowall.
4. Assign Endpoints
   Map each display position to its corresponding AVoIP decoder endpoint. This can be done manually or via the Auto-Assign tool for bulk configuration, linking each display to its designated hardware decoder.
5. Source Groups
   Create logical source groups, allowing specific sections of the videowall to function independently or as mini-walls within the main installation. This enables flexible content control tailored to different zones.
6. Presets
   Combine your source groups into complete videowall layouts using presets. Each preset includes a visual preview and can be instantly recalled via the Netvio GO app or through API integration, delivering dynamic control over content presentation.

CREATING A VIDEOWALL

ACCESSING THE VIDEOWALL CREATION WIZARD

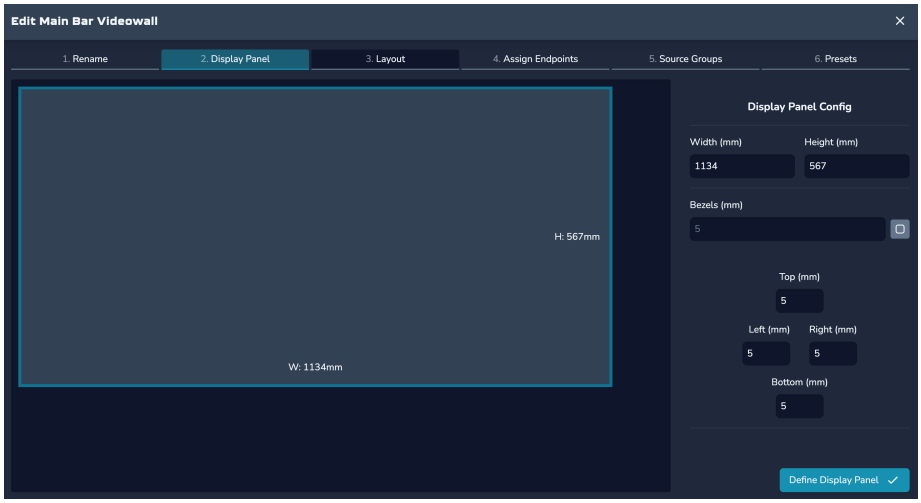
To begin creating a videowall, navigate to the **CL web interface** and select **“Videowalls”** from the top menu bar. Then click **“Create Videowall”** to launch the Videowall Creation Wizard.

If this is your first videowall, the list will be empty. Otherwise, any previously created videowalls will be displayed. It is recommended to **delete any unused videowalls**, as they will still appear in **Netvio GO projects**, regardless of whether they are actively in use.

Create

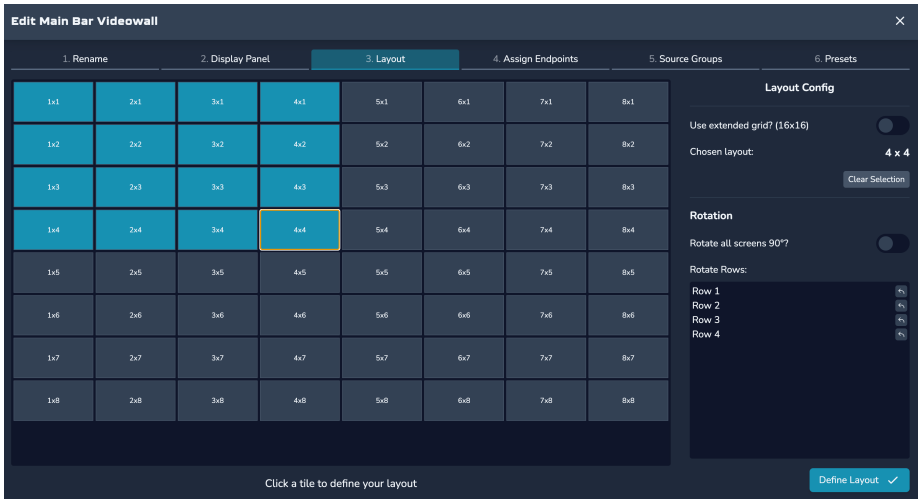
- In the 1. Create tab, give the videowall a suitable name.
- Press Create Videowall + to proceed

Display Panel



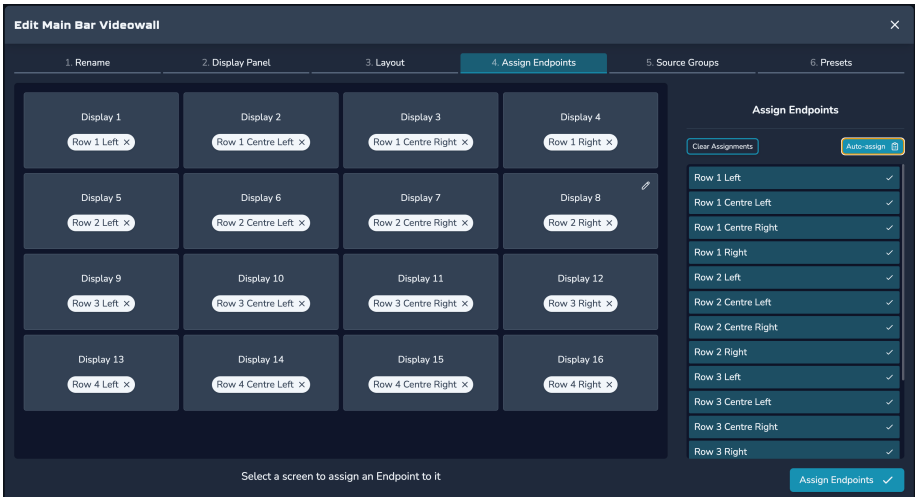
- In the 2. Display Panel tab, enter the width & height measurements of the video wall display (not including the bezel) in mm.
- Depending on whether the display has uniform bezel measurements, use the button to toggle between equal or independent bezel sizes and enter the measurements accordingly.
- Note, it is essential that these setting are entered correctly as it is not possible to change these measurements later and the wall must be recreated from scratch if errors are made.
- Press Define Display Panel to continue.

Layout



- In 3. Layout, use the table to select the number of displays required. Use the extended grid if larger that 8 displays in either direction is needed. And use the rotate toggle switch to rotate the displays for portrait walls.
- Note that displays should be hung with the bottom of the display to the right.
- Note, again it is essential that these setting are entered correctly as it is not possible to change the size of wall later and the wall must be recreated from scratch if errors are made.
- Press Define Layout when ready to proceed.

Assign Endpoints

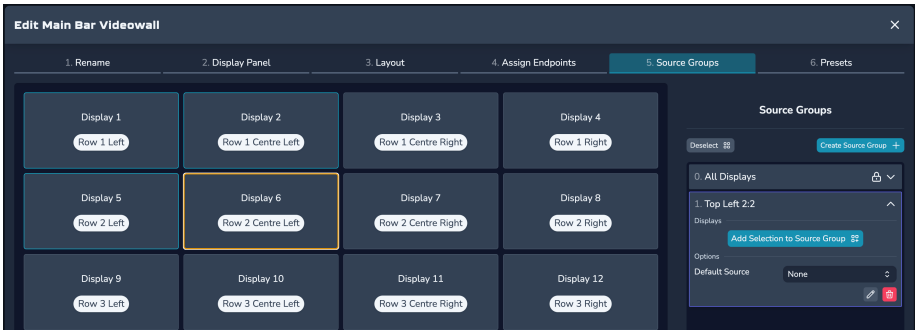


- In the 4. Assign Endpoints tab you assign each decoder to a display in the video wall. Simply click on an endpoint and then a display, or vice versa to assign the correct decoder to each display location in the videowall.
- If your displays are correctly ordered, you can use the Auto-assign button to open the tool. Simply click the first Endpoint of you video wall and the software will automatically assign all the remaining endpoints to the correct location.
- Use Clear Assignments to start over if needed.
- Press Assign Endpoints when finished to proceed.

Source Groups

- In the 5. Source Groups tab, you create areas of the video wall that you wish to display a single source. This could be a single display or a group of displays. By default, the software automatically creates a source group for the entire video wall, which you can rename by pressing the pencil icon.
- Select a default source for the source group which will be selected automatically as you use the group in the next step.
- To create a new group, click the Create Source Group + button and give it a suitable name.

In this example we will split our 4:4 videowall into 4 x 2:2 videowalls, so name the first group Top Left 2:2. Press Create Source Group to continue.

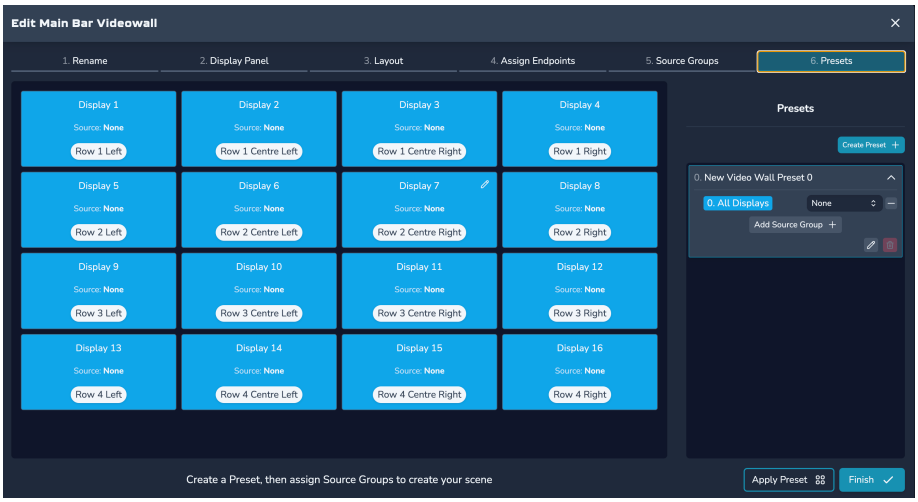


- Next, select the displays you wish to add to the group by holding down Control or Command (Windows or macOS).
- With the appropriate displays selected, press Add Selection to Source Group in the right-hand Source Group Area. (You may have to expand the source group to see the details of the group.
- Repeat these steps for the top right, bottom left and bottom right 2:2 videowalls remembering to select a different default source for each group. As you select each source group from the right-hand menu, the assigned displays will highlight.

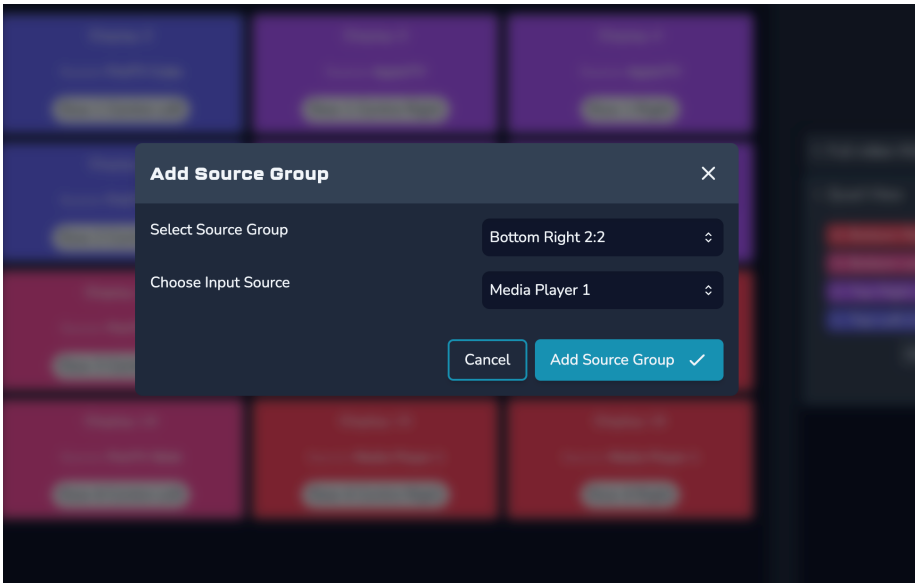
- When you have created all the source groups required, press Define Presets to move on to the next step. You can return to this section later to add more groups if required.

Presets

You are now ready to combine the source groups into a preset that can be triggered from the Netvio GO app or Netvio API. Creating different presets that the video wall can be switched to is where the real value of Netvio JP4 Videowalls can be found. Offering an incredible videowall control solution, for a fraction of the cost of other solutions.



- By default, the software will automatically create a preset using the All Displays source group.
- Use the pencil button to edit the name of the Preset and select a default source for the source group from the drop-down menu. Leaving this set to None will use the default set on the previous page.
- Note: It is possible for the user to edit the source assignment via the Netvio GO app, however they cannot edit the arrangement of, or create Presets and Source Groups from the app, these can only be configured in the CL web interface and in Netvio360.
- If you do not wish to use the default full video preset, it can be deleted afterwards.
- To add a new preset, click the Create Preset+ button.
- In the window that appears enter a name for your preset.
- Press Create Preset to proceed.
- In the right-hand list, you will see the new preset has been created with an incremented index number. Click on the preset to expand it.
- Click Add Source Group+



- Select the source group you wish to add from the drop down and then select a default source for the group. Press Add Source Group.
- The window will not close to allow you to add more source groups to the preset. Repeat the above step for each group you wish to add and when finished click the X to close the window.
- Note: It is possible for source groups to overlap, making it possible for example to create a 'Wall Within a Wall". However, it is important that the top source group is added to the preset after the underlying source group to ensure the correct ordering when recalling the preset.
- Any source groups mistakenly added to a preset can be removed using the – button to the right of the source group list in t he presets list.
- When you are ready you can test the preset by using the Apply Preset button in the bottom right of the display.
- Note: Putting an RX into videowall mode so that it is showing only a subsection of a source cannot be undone elsewhere in the CL interface. Only in the videowall configuration by applying a different preset with only a single source group for that decoder. The only means to remove the video wall configuration is to factory reset the unit, or by deleting/unassigning the decoder from the project.
- When ready press Finish and repeat the preset creation steps until you have created all the layouts required for the videowall.

If you have more than one videowall in the project, simple return to the videowalls page and press Create Videowall and repeat this process for the new wall.

API CONTROL

If you wish to control Videowalls from a third-party control system, you will find the commands to do so in the Netvio Universal API.

Netvio Universal API

VIDEO WALL CONTROL WITH NETVIO GO

BEFORE YOU START

Before creating a Netvio GO project, it is essential to first complete the entire configuration of your AVoIP system. Making edits to the system later is time consuming and prone to error. Ensure that all encoders/decoders have been assigned to endpoints and that the ordering of the endpoints is correct as well as the video walls being configured before continuing. Ensure that your CL IP address is set correctly and you have changed the password as changing these later will break the settings automatically applied to your GO project file.

If all endpoints are not yet online, it is recommended that you create blank endpoint locations for the missing units before creating your GO project. You can assign the missing devices to the blank endpoints later, but your Go project will be created with the correct endpoint numbers and names and will not need to be reconfigured.

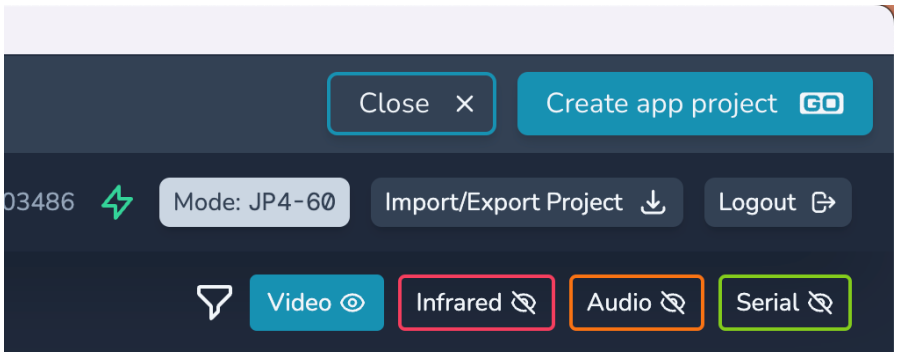
AUTOMATIC PROJECT CREATION

Netvio GO project creation requires Netvio360 and cannot be completed from the CL web UI.

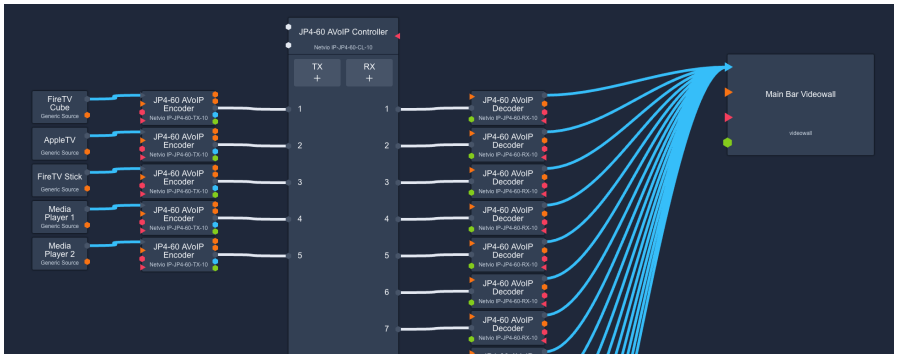
The Netvio GO project file that the 360 software's App Builder creates, is separate from your CL configuration. Only the videowall configuration is automatically synchronised during the sync process. During the video wall synchronisation, endpoints in the videowall and any created presets are automatically added to the videowall in the GO project.

Endpoint names and IDs, as well as the CL IP address and password are not automatically synchronised to your GO project. Changing these in the CL configuration will require the same change to be made in the GO app manually or else your GO project will not operate correctly.

- In Netvio 360, in the Configuration tab, Press the Create app project button in the top right-hand corner to automatically generate a Netvio GO project for your system.



- App Builder will load and will automatically configure a system to match your CL project, including setting the CL IP address and password, the correct number of encoders and decoders as well as their names.
- The tool will synchronise your videowall/s with the CL and will connect all its decoders to the wall.



- Click the area box from the an area and place the video wall
- You can then continue with the standard GO commissioning process, adding source control, amplifiers and publishing to your project.
- If you need to make any changes to your videowall presets, you will need to open your GO project in App Builder and allow the videowall to sync, before re-uploading your project to the control device running the GO app.

If you require any assistance with your videowall configuration, we would be more than happy to assist. Please contact support@netvio.co.uk for assistance.

SUPPORT

If you were not able to find the answers to any of your questions, or have not been able to get your system operational by following the steps in this guide, please do not hesitate to contact Netvio support:

support@netvio.co.uk
UK: 0800 464 7445
USA: +1-833-720-0637

Or contact your local Netvio distributor.