Avenview

CONTROL YOUR VIDEO

VIDEO WALL VIDEO PROSESSORS MILTIVIEWERS DIGITAL SIGNAGE EXNTENDERS CONTROL CENTERS SCALERS WIRELESS

AVENVIEW 3 YEARS WARRANTY

Professional Video Wall Controller & Management System

HDMI | HD ready 1080p | 4K ULTRA HD | WUXGA 1920x1200 | RoHS Compliant | FC CE

SOFWARE GUIDE

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1. INTRODUCTION

The Avenview AVXWALLPRO™ is a lightweight, multi-platform solution for professional video walls, integrating all visual resources into a single canvas. It allows for smooth content handling to support decision-making and collaboration between local and remote peers in Command and Control Centers, War Rooms, and Digital Signage deployments.

Daily operations in Control Centers involve an intense volume of data that must be analyzed, monitored, and shared by teams. The AVXWALLPRO provides a powerful infrastructure, flexible enough to support operators in solving complex problems by aggregating IP streams, physical inputs, and web data onto a unified digital surface.

This manual presents hardware and software details to assist system administrators and users in configuring and operating the AVXWALLPRO system to extract maximum performance.

2. MAIN FEATURES

Dedicated Appliance:
A dedicated video wall appliance running on the robust, secure Avenview OS (Linux-based) architecture.

AVX-SmartPointer:
Allows multiple operators to simultaneously control the video wall using their own keyboard and mouse (Soft KVM).

Web-Based Control:
Client-server architecture allowing remote control of video walls via any standard web browser (Chrome, Edge, Safari).

Native Screen Sharing:
Low-latency software-based screen sharing from operator workstations to the video wall (up to 1080p@60Hz).

Unified Canvas:
Creates a single, continuous desktop for the entire video wall where applications and documents can be freely resized and positioned.

Remote Protocol Gateway:
Integrated AVX-Connect gateway for RDP, VNC, Citrix, and VMware ESXi sessions, allowing control of remote machines directly on the video wall.

Secure Communication:
High-level security with 2048-bit encryption on communication between the server and any external client (SSLv3, TLSv1.2).

IP Decoding:
Hardware-accelerated decoding of RTP/RTSP streaming video (H.264).

User Management:
Advanced user profile management with LDAP/Active Directory integration to set permissions and privileges.

Layout Management:
Create, save, and schedule preset layouts for periodical tasks or crisis scenarios.

Cross-Platform UI:
Control interface compatible with Windows, Mac, Linux, Android, and iOS.

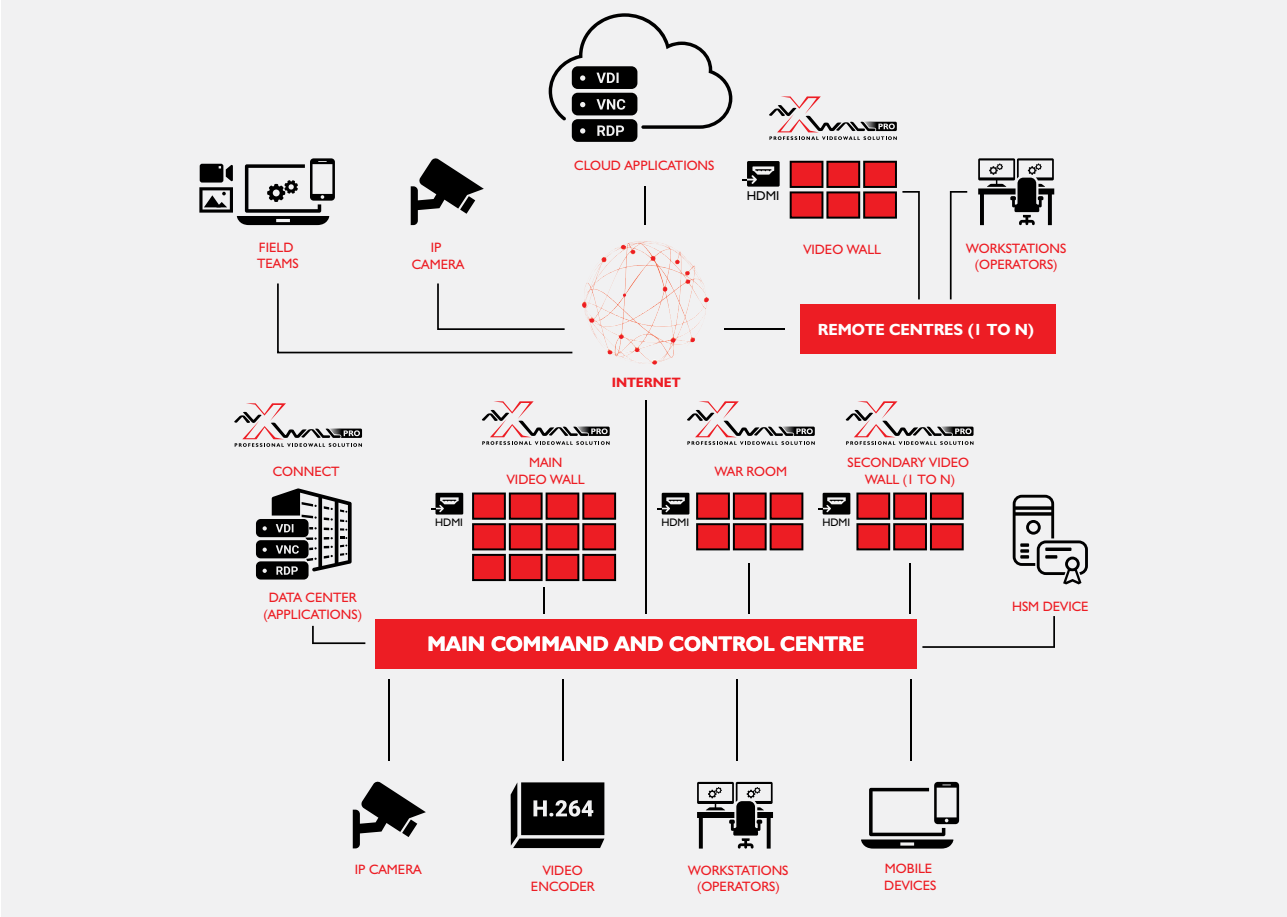
Audio Control:
Integrated audio server for connecting to external amplifiers/ DSPs with volume control.

Web Application Support:
Native execution of web-based dashboards, maps (Google Maps), and video conferencing tools (Teams/Zoom Web).

3. SYSTEM OVERVIEW

The AVXWALLPRO functions as a centralized computing appliance. To improve performance and reduce complexity, the operating system is hidden beneath an application-specific interface.

SYSTEM TOPOLOGY



The system can be installed as a Centralized System (Image Manager connected directly to displays) or a Distributed System (Clustered nodes connected via Gigabit network).

3.1 INPUTS:

Physical:
HDMI/DisplayPort inputs (Capture Cards).

Network:
IP Cameras (RTSP), Remote Desktops (VNC/RDP), Web Applications.

Mobile:
Content casting from tablets/phones.

3.2 OUTPUTS:

Main Wall:
The primary visualization surface.

Operator Consoles:
Local monitors for preview and control.

Remote Sites:
Mirroring content to secondary locations.

4. HARDWARE MODELS & SPECIFICATIONS

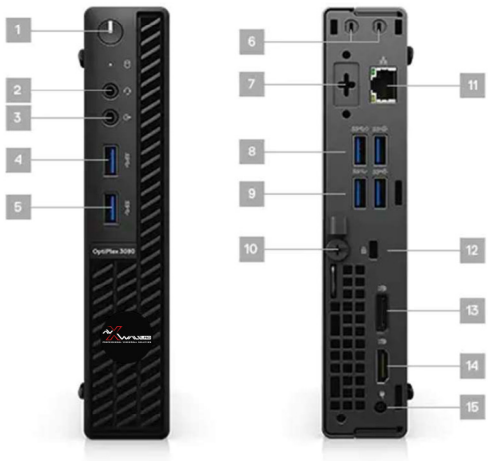
The AVXWALLPRO product line is composed of four distinct categories based on computational power and chassis form factor.

FORM FACTOR	4K OUTPUTS	1080P INPUTS	4K INPUTS	SOFTWARE	
Embedded Micro	2	2	Custom	Basic	
Compact Tower	4	4	Custom	Advanced	
Professional Tower	8	8	Custom	Enterprise	
Server Rack 2U	16	Custom	Custom	Enterprise / Custom	

4.1 AVXWALLPRO EMBEDDED (MICRO)

Ideal for Digital Signage and Reception Areas.

FORM FACTOR:	MICRO DESKTOP
OUTPUTS:	2X 4K (INTEGRATED GRAPHICS)
INPUTS:	2X 1080P (CAPTURE)
PROCESSOR:	INTEL® CORE™ I3
MEMORY:	8GB DDR4
STORAGE:	128GB NVME SSD



1. Power Button
2. Universal Audio Jack
3. Line-out
4. USB 3.2 Gen 1 Type-A port
5. USB 3.2 Gen 1 Type-A port
6. Knock-out Slots for Wireless Antenna
7. Optional Video Port: Serial/DP 1.4/HDMI 2.0b/VGA)
8. USB 2.0 Ports (2) (1 with Smart Power on)
9. USB 3.2 Gen 1 Type-A ports (rear) (2)
10. Thumbscrew
11. RJ-45 port 10/100/1000 Mbps
12. K-lock Slot | 13. DisplayPort
14. HDMI Port
15. Power Connection

4.2
AVXWALLPRO COMPACT

Ideal for Small Control Rooms and Boardrooms.

FORM FACTOR:	**COMPACT TOWER**
OUTPUTS:	**4X 4K (NVIDIA QUADRO)**
INPUTS:	**4X 1080P OR 2X 4K**
PROCESSOR:	**INTEL® CORE™ I7**
MEMORY:	**16GB DDR4**
NETWORK:	**1X GIGABIT ETHERNET**

1. Power button
2. Universal Audio Jack
3. USB 3.2, Type A (Gen 2, 10Gbps)
4. USB 3.2, Type A (Gen 2, 10Gbps)
5. Optical Drive (optional)
6. SD Card reader (optional)
7. USB 3.2, Type C [10Gb]
8. USB 3.2, Type A [5Gb] (Power share)
9. Display Port 1.4 (2)
10. PS2 Keyboard
11. PS2 Mouse
12. USB 2.0 Type A
13. USB 3.2, Type A Gen 2 10Gbps (2 on left) Gen 1 5Gbps (2 on right)
14. Audio Jack
15. Lock slot
16. RJ45 Network Connection
17. Power Connection

4.3
AVXWALLPRO PROFESSIONAL

Ideal for Medium Mission-Critical Control Rooms.

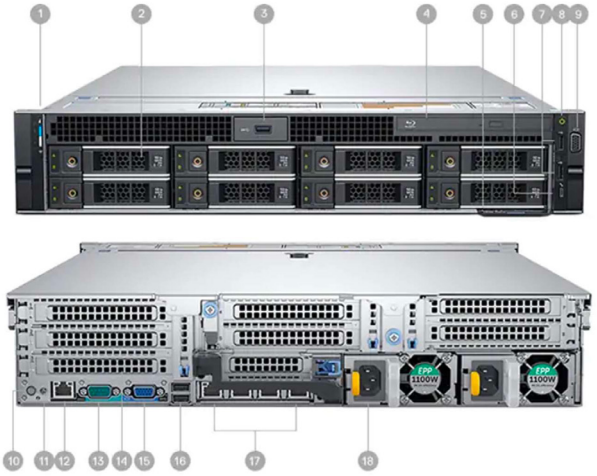
FORM FACTOR:	**MID-TOWER**
OUTPUTS:	**UP TO 8X 4K (DUAL NVIDIA QUADRO)**
INPUTS:	**UP TO 8X 1080P OR 4X 4K**
PROCESSOR:	**INTEL® CORE™ I9 X-SERIES (10 CORES)**
STORAGE:	**512GB SSD**
POWER:	**950W PSU**

1. Power button/Power light
2. Drive activity light
3. SD card slot
4. USB 3.1 Gen 1 ports
5. USB 3.1 Gen 1 Type-C port with PowerShare
6. USB 3.1 Gen 1 Type-C port
7. Headset port
8. 5.25 inch bay (optional)
9. Optical drive
10. Drive access release latch
11. Drive carriers
12. Microphone/Line-in port
13. PS/2 Mouse port
14. USB 3.1 Gen 1 ports
15. Discrete graphics card slot (optional)
16. Padlock ring
17. Security cable slot
18. Power cable connector
19. Line-out port
20. Serial port
21. PS/2 Keyboard port
22. Network port
23. USB 3.1 Gen 1 port (supports smart Power-On)
24. Expansion card slots

4.4
AVXWALLPRO SERVER (2U)

Ideal for Large Scale Command Centers & Datacenters.

FORM FACTOR:	**2U RACKMOUNT**
OUTPUTS:	**UP TO 16X 4K (QUAD NVIDIA QUADRO)**
INPUTS:	**UP TO 16X 1080P OR 8X 4K**
PROCESSOR:	**DUAL INTEL® XEON® SILVER**
MEMORY:	**DUAL HOT-SWAP POWER SUPPLIES (1+1) & RAID 1 SSDS.**
REDUNDANCY:	**1X GIGABIT ETHERNET**



1. System Status Indicator
2. Hard drive (x8)
3. USB 3.2 connector
4. Optical-drive (optional)
5. Information tag
6. USB management port/iDRAC Direct
7. USB 2.0 connector (x2)
8. Power button/Power light
9. VGA connector
10. System identification button
11. System identification connector
12. iDRAC9 Enterprise Network connector
13. Serial connector
14. PCIe expansion card slots (x8)
15. VGA connector
16. USB 3.2 connectors (x2)
17. Network connectors (x4)
18. Power supply (x2)

5. SOFTWARE LICENSING OPTIONS

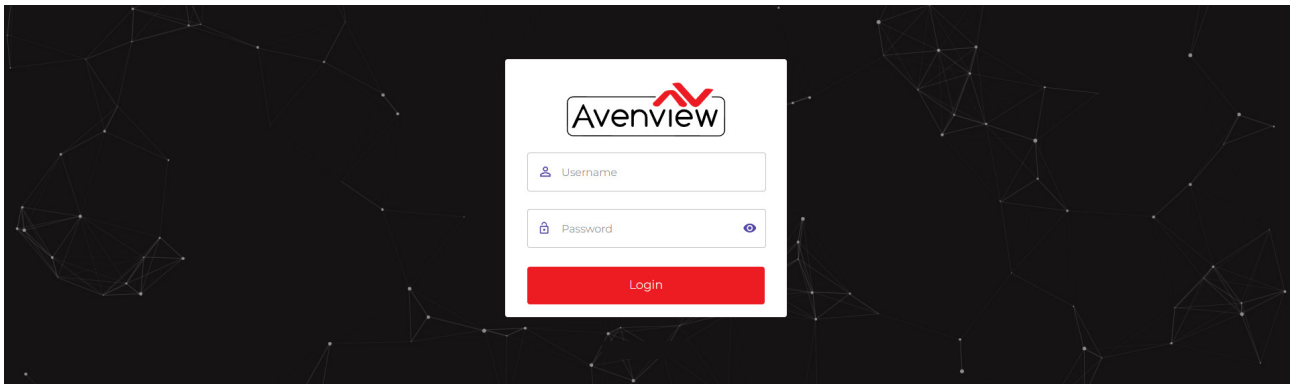
VIDEO WALL CLUSTERING	BASIC LICENSE	ADVANCED LICENSE	ENTERPRISE LICENSE
WEB UI & LAYOUTS	★	★	★
MEDIA PLAYBACK	★	★	★
USER MANAGEMENT	—	★	LDAP Support
IP VIDEO STREAMS	LIMITED	Up to 16	> 16 (Unlimited)
REMOTE DESKTOPS (RDP/VNC)	—	★	★
VIDEO WALL CLUSTERING	—	—	★
HOT STANDBY REDUNDANCY	—	—	★

6. SYSTEM SETUP & ADMINISTRATION

The **Administration Portal** is the web-based interface used to configure the hardware, network, and video outputs.

6.1 ACCESSING THE ADMIN PORTAL

1. Connect the AVXWALLPRO to your network via the Ethernet port (eno1).
2. Open a web browser (Chrome recommended) on a computer on the same network.
3. Enter the default URL: http://[Device-IP]:10000
4. **Default Credentials:**
   - **Username:** admin
   - **Password:** admin (Please change this immediately after first login).

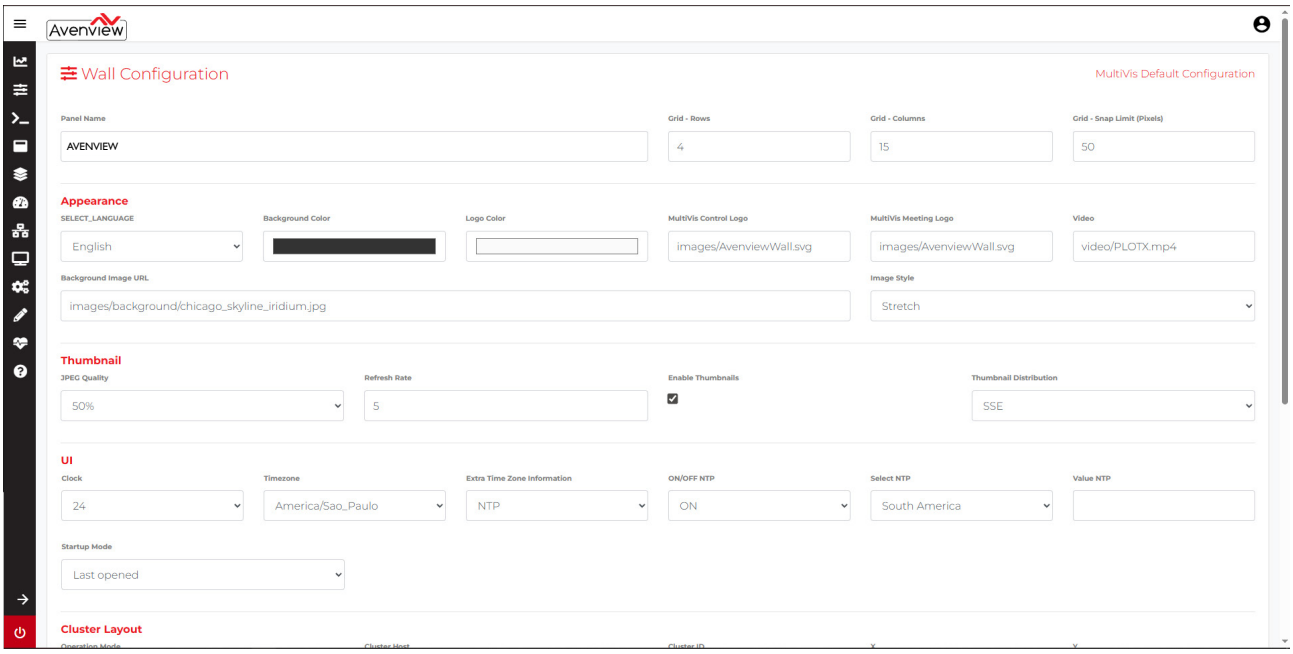


6.2 WALL CONFIGURATION

This section defines the logical grid and resolution of your canvas.

- **Panel Name:** Name your video wall (e.g., “NOC_Main”).
- **Grid Rows/Columns:** Define the snap-to-grid lines for operators.
- **Resolution:** Set the total canvas width and height (e.g., for a 2x2 1080p wall, Width: 3840, Height: 2160).
- **Background/Logo:** Upload your corporate logo to appear on the background.

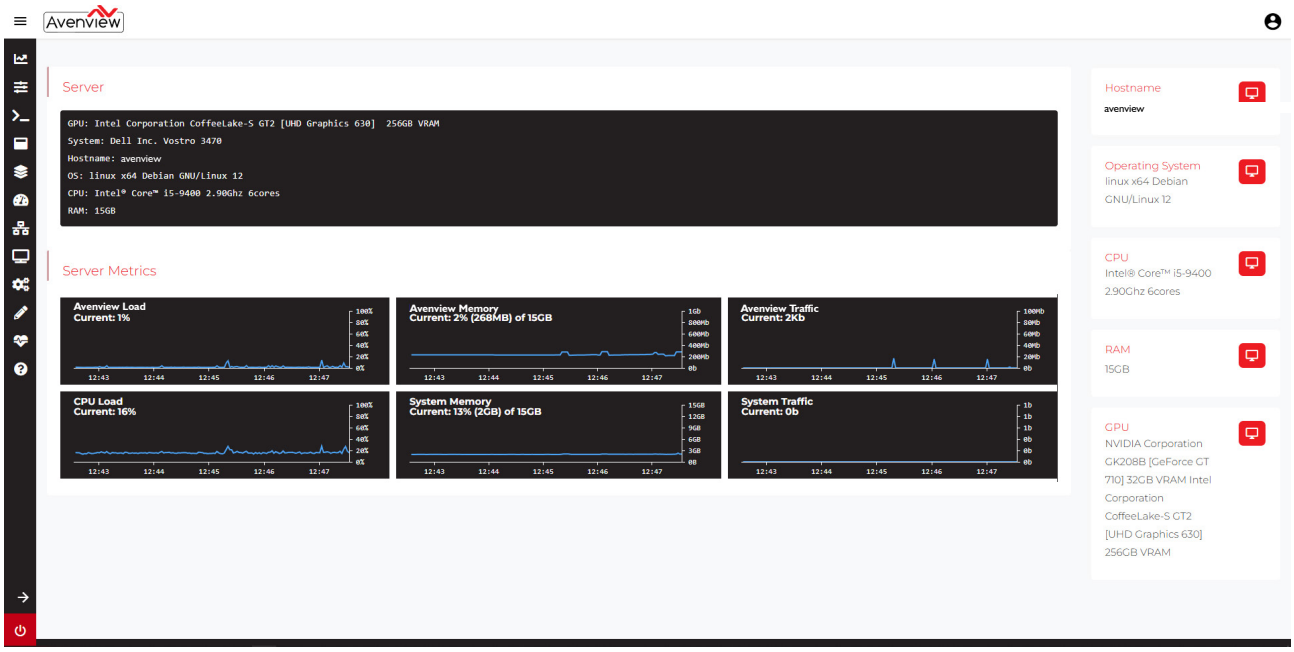
Note: You must press Save then Apply for changes to take effect. The screen may blink momentarily.



6.3
NETWORK SETTINGS

Configure the network interfaces (IP, Subnet, Gateway, DNS).

- **Interfaces:** eno1 is the default wired connection.
- **Addressing:** Supports both DHCP (default) and Static IP.
- **Hostname:** Assign a unique network name to the controller.



6.4
DISPLAY CONFIGURATION

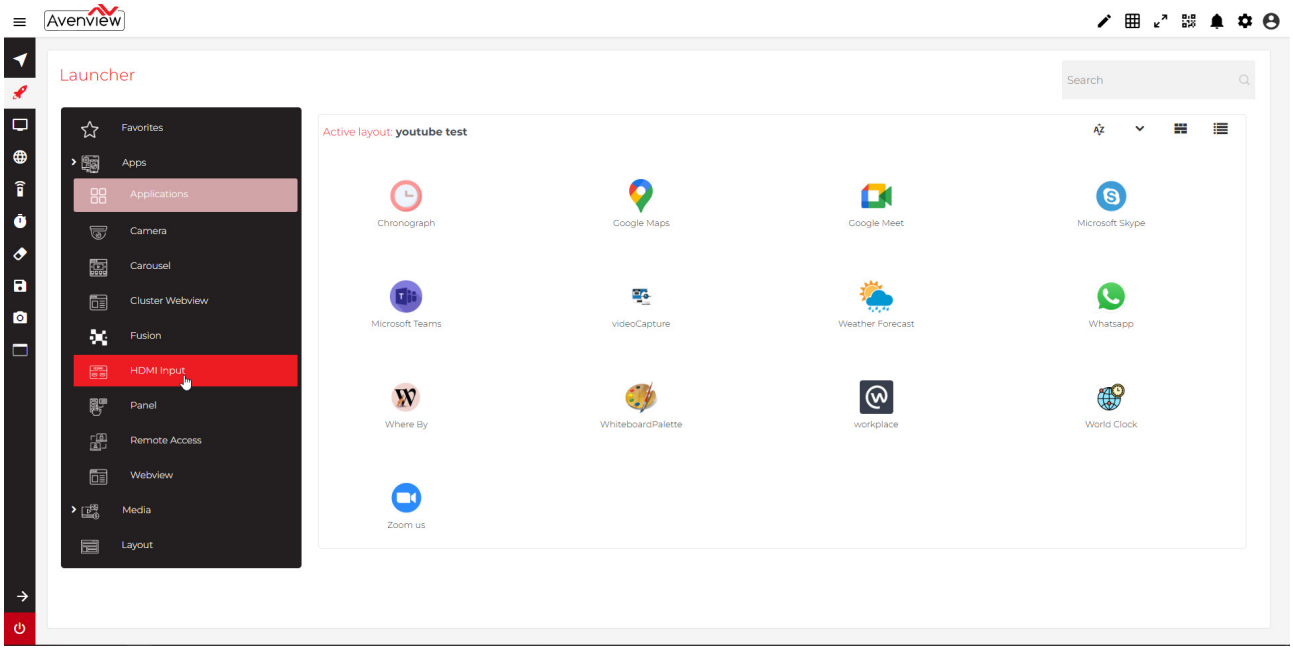
This critical section maps the physical GPU outputs to the physical screens.

1. **Select Interface:** DisplayPort (DP) or HDMI.
2. **Resolution:** Set the resolution per screen (e.g., 1920x1080 @ 60Hz).
3. **Matrix Setup:** Enter the array size (e.g., 2 Horizontal x 2 Vertical).
4. **Generate Matrix:** The system will generate a visual grid.
5. **Mapping:** Drag and drop the **GPU Outputs** (represented as white squares, e.g., "GPU-0 OUT1") onto the corresponding **Screen Matrix** square.

Tip: If using UHD Daisy-Chaining (one 4K output driving four 1080p screens), configure the output resolution as 3840x2160.

6.5
USER MANAGEMENT (ADVANCED SETTINGS)

- **Users:** Add new users and assign passwords.
- **Groups:** Create groups (e.g., “Admins”, “Operators”) and assign specific permissions (e.g., allow “Layout Recall” but deny “System Reboot”).



7. AVX-CONNECT (REMOTE DESKTOP GATEWAY)

AVX-Connect integrates RDP and VNC sessions, allowing operators to interact with remote computers directly on the video wall.
Access URL: http://[Device-IP]:8081/connect/

7.1
CREATING A NEW CONNECTION

1. Navigate to **Settings -> Connections**.
2. Click **New Connection**.
3. **Name:** Give the connection a friendly name (e.g., “SCADA Server 1”).
4. **Protocol:** Select VNC or RDP.

7.2
RDP CONFIGURATION PARAMETERS

- **Hostname:** IP address of the target PC.
- **Port:** 3389 (Default).
- **Security:** Select NLA (Network Level Authentication) for modern Windows systems.
- **Ignore Cert:** Check “True” to bypass self-signed certificate errors.
- **Authentication:** Enter the Windows Username and Password for the target machine.

7.3
VNC CONFIGURATION PARAMETERS

- **Hostname:** IP address of the target machine.
- **Port:** 5900 (Default).
- **Color Depth:** Setting to 8-bit or 16-bit can improve performance over slow networks.

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