



4K HDMI IP Video Wall Controller, IPVDS-500-ED

User Manual



Doc No. : OIPVDS-171123E / Rev1.3

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1. Product Description

IPVDS-500-ED, 4K HDMI IP Video Wall Controller, is an integrated control solution that plays multi-source of audio/video (such as PC, Media player, DVD, or Blu-ray) on the video wall system and multiple individual displays simultaneously.

This solution offers advanced video/audio matrix feature as well as control of video wall system which divide high quality video source(4K30Hz or 1080p60Hz) into multiple video walls with using IPVDS-500-E(encoder) and IPVDS-500-D(decoder) on IP network. IPVDS-500 enables convenient system configuration and control for AV system integrator and installer, and cost-efficiency compared to complicated matrix system. For these reasons, solution using IPVDS-500-ED provides optimal solution not only to large video wall system like control room, security, traffic control system, but also to general venues like conference room, classroom, presentation room, and worship service.

Program provided for system control offers preview function for source devices, and various display configuration like merging, overlaying, clearing of displays on the layout management with allocating audio/video sources with drag and drop operation of mouse.

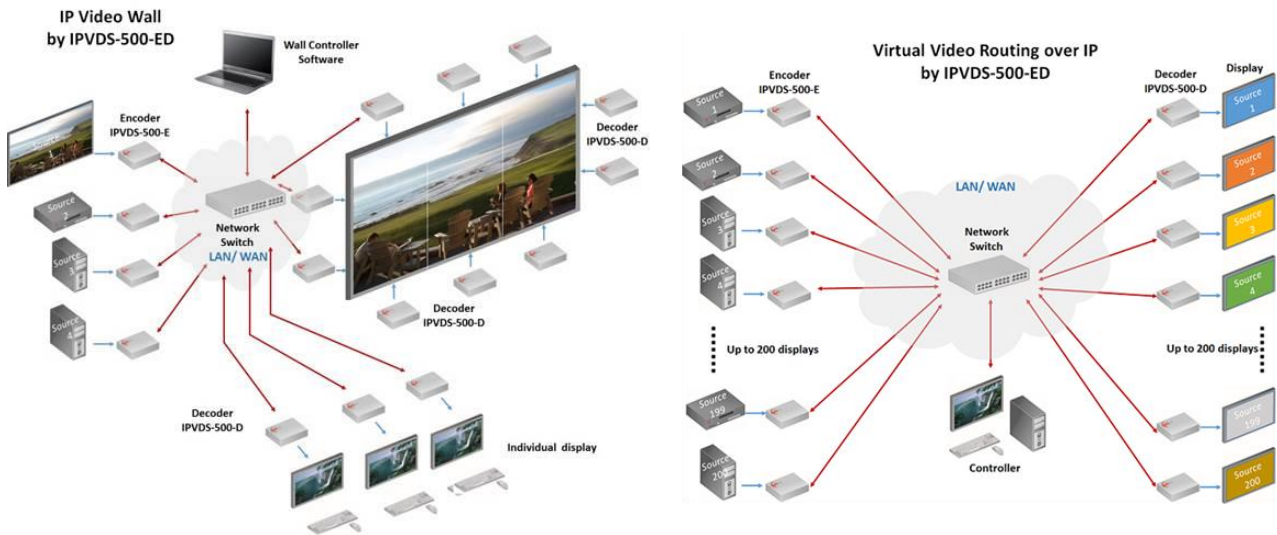


Figure 1. Connection Diagram

1.1 Main Features

- TCP/IP based IP network: Gigabit Ethernet
- Up to 4K resolution (3840x2160 at 30Hz) or 1080p at 60Hz.
- Up to 256 displays (16x16, 4x64, 1x256 and etc) Video wall and multi-source support
- Supports analog/HDMI audio input and output
- Fast switching time / Low video latency
- Transmit HDMI/DVI video, USB, RS-232, Audio, DIO signal via IP network
- Provides HDMI loop-thru port for Local display
- Provides merge, overlay and split features on Layout Management
- Support preset mode for user defined layout (save/load)
- Provides scheduling action with preset function (sequential/weekly mode)
- M:N virtual matrix supported
- Provides mounting bracket (model: OPSCB): VESA 75,100 standard (optional)
- Provides 1U rack, 4 in 1 rack & Power rack, PR5V-16: 16* 5V output (optional)

IPVDS-500 Control PC Application

- PC application for controlling Video wall and individual displays
- Provides drag and drop operation for host allocation and preview
- Provide allocate, merge, split, overlay function on Layout Management
- Provides preview screen before applying it to actual displays
- Provide total of 99 pre-sets for user defined layout (save/load)
- Provides pre-set scheduling function in Sequential (dwell time based) / Weekly mode (hourly/weekly based)
- Bezel compensation in 0.1mm unit



Figure 2. PC Application

- **Application**
Control Room / Traffic Control System / Security and Education / Digital Signage / Pro AV Field

1.2 Supporting Video Resolution for Input / Output

- 1) Supports HDMI 1.4, 3840x2160p/24/25/30Hz
- 2) Supports HDMI 1.4/HDTV, 1920x1080p60Hz
- 3) Supports VESA digital, 1920x1200p60Hz

2. Shipping Group



IPVDS-500-ED



Power Adapter



HDMI cable 1.2m



Mini-USB cable



User Manual

2.1 General Specification

- IPVDS-500-E: TX (Encoder) or IPVDS-500-D: RX (Decoder)
- AC / DC power adaptor: One (1) unit of 5V / 2A
- One (1) HDMI male to male cable (1.2m)
- One (1) Mini-USB Cable for PC
- User manual

2.2 Optional Specification

- RS-232 cable: DB-9 male to 3pin terminal block
- Mounting bracket (OPSCB) complying with VESA 75, 100 standard



- 1U rack (4 in 1 rack) and power rack (PR5V-16, 16*5V output)



3. System Requirement

3.1 Hardware Requirement

- Video source with HDMI output
- Display with HDMI input
- Support USB port of source when using HID feature
- No special requirement for memory size, CPU speed or chipset

3.2 Software Requirement

- No special requirement

3.3 Network Requirement

- L2/L3 Gigabit management Ethernet Switch is required for video matrix application to apply correct operation.
- Below features are requirement for L2/L3 Gigabit management Ethernet Switch
 - 1) Gigabit Ethernet
 - 2) Jumbo frame (8K or more)
 - 3) L3 : IGMP and multicasting protocol
 - 4) L2 : IGMP snooping

Note: Although satisfaction of above requirement, some Network Switch might not transmit video signal due to its performance.

- Please visit Opticis website or contact techsupp@opticis.com for technical support such as bandwidth design, network topology and selection and setup of L2/L3 network switch

3.4 Control PC Requirement

- OS version check for video wall controlling PC application
- Requirement: Windows7 or higher

3.5 AC / DC Power Adapter

- IPVDS-500-ED is designed to use +5V AC/DC external power adapter

4. Exterior Description

4.1 IPVDS-500-E, Encoder



Figure. 3 Encoder Front Panel



Figure. 4 Encoder Back Panel

- 1** **USB IN** : Connection with PC USB port for use of keyboard and mouse(HID)
- 2** **L-IN** : Line input port. Connection with line out audio
- 3** **DIO / RS-232** : Optional
- 4** **USB A**: Connection of Keyboard / Mouse. (support F/W Upgrade)
- 5** **Power Jack**(5V, 3.5mm) : 5V DC power input
- 6** **Reset** : Reset button. (Factory reset when pressing more than 5 seconds)
- 7** **HDMI IN** (Source) : Video source input
- 8** **Local Display** (Monitor) : HDMI output for the local display
- 9** **RJ-45** (LAN) : Connection with RJ-45 network cable (CAT5e / CAT6)

L/R/C Switch : TBD

4.2 IPVDS-500-D, Decoder



Figure. 5 Decoder Front Panel



Figure. 6 Decoder Back Panel

- 1** **L-OUT** : Audio Line out port
- 2** **DIO / RS-232** : Optional
- 3** **Dual USB A** : Connection of remote Keyboard / Mouse (F/W Upgrade support)
- 4** **Power Jack**(5V, 3.5mm) : 5V DC power input
- 5** **Reset** : Reset button. (Factory reset when pressing more than 5 seconds)
- 6** **HDMI OUT** : HDMI output for the display
- 7** **RJ-45** (LAN) : Connection with RJ-45 network cable (CAT5e / CAT6)

Note1: If replacement of video source is needed, power reset of both encoder and decoder is required as re-connecting +5V power adapter.

4.3 LED Indication

IPVDS-500-ED indicates power and network status with 2 LED on the front panel.

- Power status LED (RED)

'Blinking' Booting, Initializing status

'ON' Completion of booting, working status

- Link LED (Green)

'Blinking' Ready to work with network connection, waiting for source status

'ON' Connection with network link (encoder and decoder)

'OFF' Disconnection with network link (encoder and decoder)

5. Installation

5.1 Hardware Installation Procedure

Important: Please follow below procedure. If not installed properly, it can suffer malfunction.

Step 1

Unpack the package.

Step 2

Turn on Source, Display, Network Switch (L2/L3).

Step 3

Turn on the PC for Video Wall control application and connect LAN cable (CAT5e / CAT6) to network switch.

Step 4

Connect HDMI cable from display source to HDMI IN port of IPVDS-500-E (TX).

Step 5 (Optional)

Connect supplied USB cable in IPVDS-500-E (TX) to USB port in PC.

This step can be skipped if you don't need local/remote control of keyboard and mouse.

Step 6 (Optional)

Connect HDMI cable from display output of HDMI monitor to IPVDS-500-E (TX).

Step 7

Connect LAN cable (CAT5e/6) from IPVDS-500-E (Tx) TO RJ45 port of network switch.

Step 8

Connect HDMI cable from IPVDS-500-D(RX) HDMI OUT port to Display. Then, connect keyboard and mouse for remote control.

Important: IPVDS-500-D has to be connected to each of video wall displays in order. Refer to display placement section for more detailed information.

Step 9

Connect LAN cable(CAT5e/6) from IPVDS-500-D(RX) to network switch.

Step 10

Plug +5V power adapters to both IPVDS-500-E(TX) and IPVDS-500-D(RX).

Note: Rebooting is mandatory for proper working if change of input source is needed.

5.2 Reset and Factory Reset

- ◆ **Reset:** Device will reboot when reset button is pressed shortly
- ◆ **Factory Reset:** Press and hold a reset button for approximately 5 seconds, then LED of device will be turned OFF for factory reset after blinking

5.3 PC Application Installation

1) Download

- (1) Visit Opticis website at www.opticis.com
- (2) Click PRODUCTS > IP Video Wall / IPVDS-500-ED
- (3) Download PC program (Password : **0315**)

2) Installation

- (1) Run setup.exe file in Windows operating system
- (2) Follow on screen instruction
- (3) Delete previous version of PC Application on the control panel of Windows OS, before re-install or upgrade PC Application

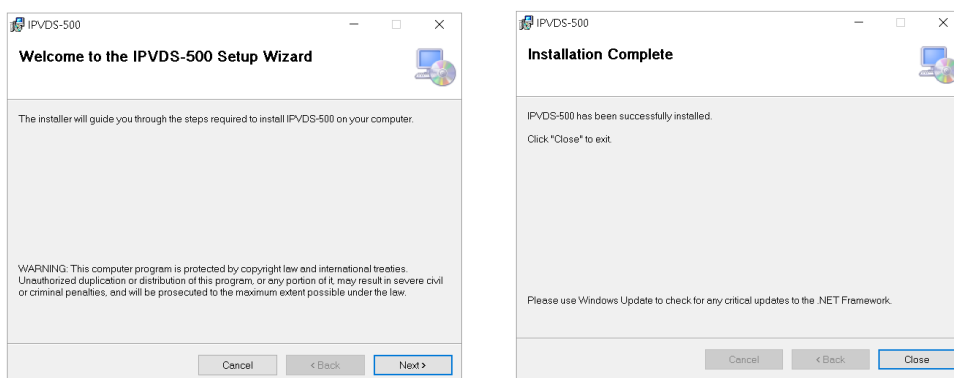


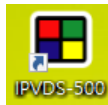
Figure. 7 Application Installation

6. Start Video Wall

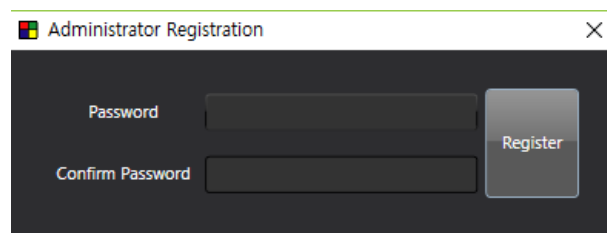
IPVDS-500 allows convenient use of its features with IPVDS-500 Video Wall control PC Application. User can merge, split, overlay and clear video source for Video Wall by dragging & dropping the mouse for host allocation. Not only that user can also check and confirm preview screen on the layout management before applying it to the display.

6.1 Log-in

- (1) Run IPVDS-500 PC Application



- (2) Insert Password & confirm password for administrator (**ID: admin**) when first-time log-in



- (3) Log-in with admin ID and its password

- (4) To log-in with different ID, restart the PC App. or click Log-out button

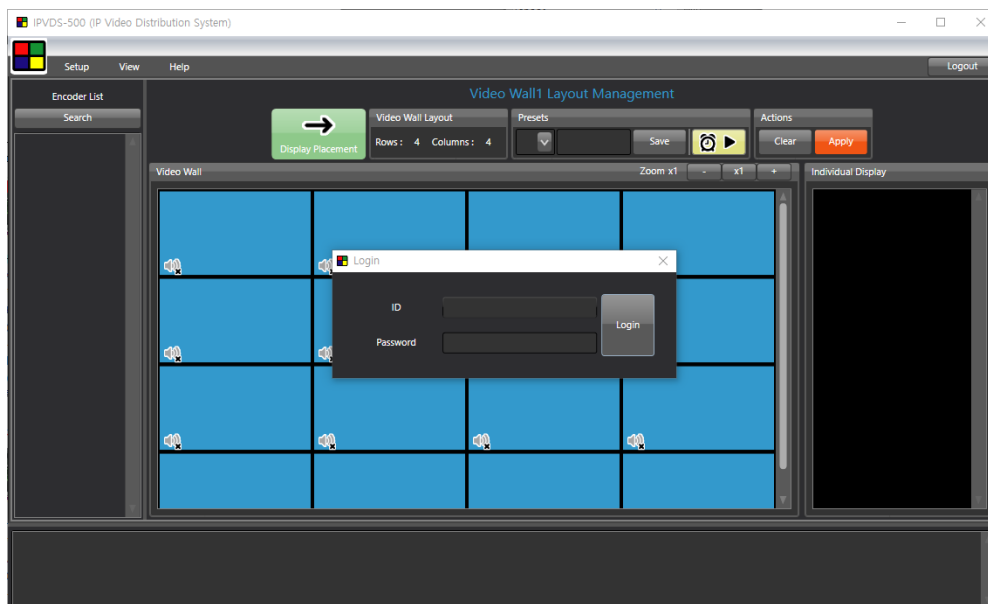


Figure. 8 Log-in Screen

Note: After launching PC App, it will automatically search for the device and have you log-in when it is done with searching.

6.2 Menu Contents

6.2.1 Application Menu

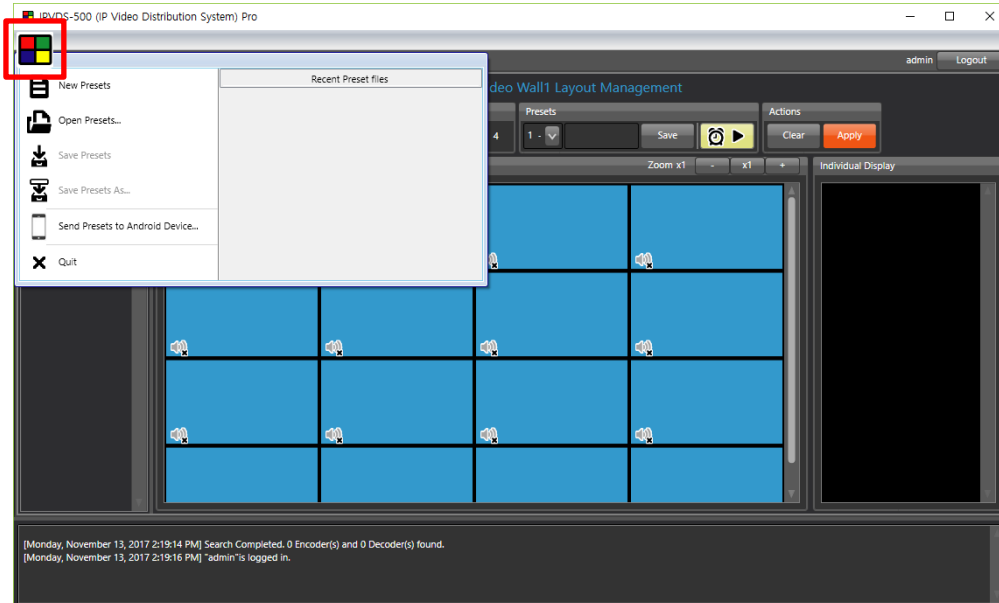


Figure. 9 Application Icon Menu

- (1) **New Presets:** Create new presets
- (2) **Open Presets:** Open saved presets
- (3) **Save Presets:** Save current presets in file
- (4) **Save Presets as:** Save current presets in different file name
- (5) **Send Presets to Android Device:** Send saved presets to Android devices
- (6) **Quit:** Close IPVDS-500 PC Application

6.2.2 Ribbon Menu

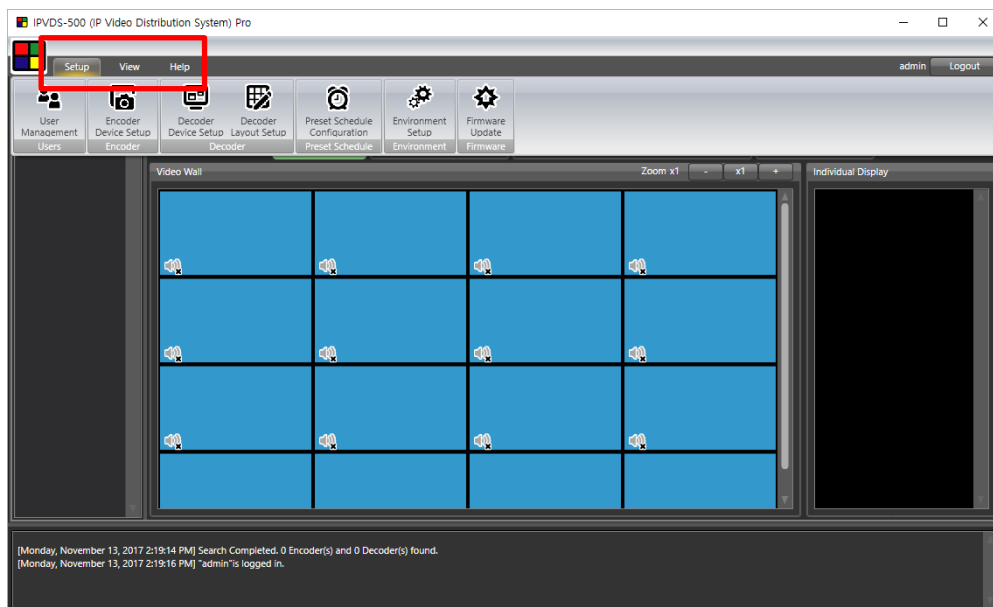


Figure. 10 Ribbon Menu

(1) User Management

Administrator ID (**Admin**) can only fix their password. As logging-in with administrator, User/Guest add, change password, remove user/guest can be made.

- User type

User: All authority without user/guest management (add/delete)

Guest: Select preset, and apply function only

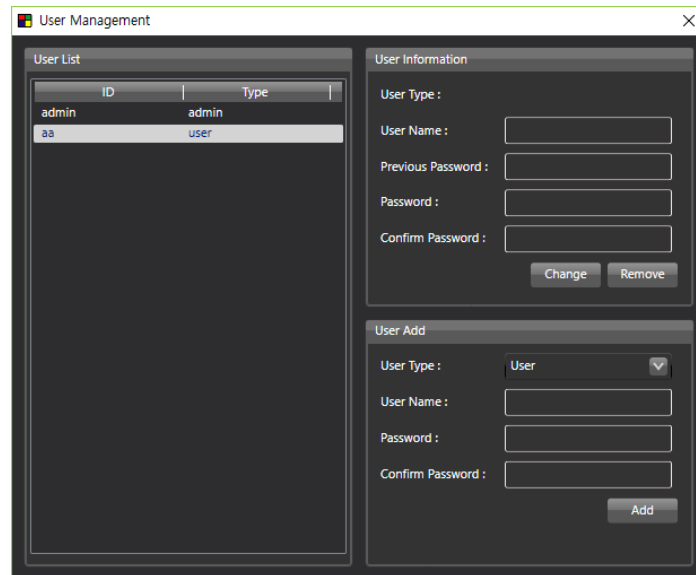


Figure. 11 User Management

(2) **Encoder Device Setup:** Refer to encoder setup on layout management (P 27)

(3) **Decoder Device Setup:** Refer to decoder setup on display placement (P 35)

(4) **Decoder Layout Setup:** Refer to decoder layout setup on display placement (P 38)

(5) **Preset Schedule Configuration:** Refer to scheduling function (P 39)

(6) Environment Setup

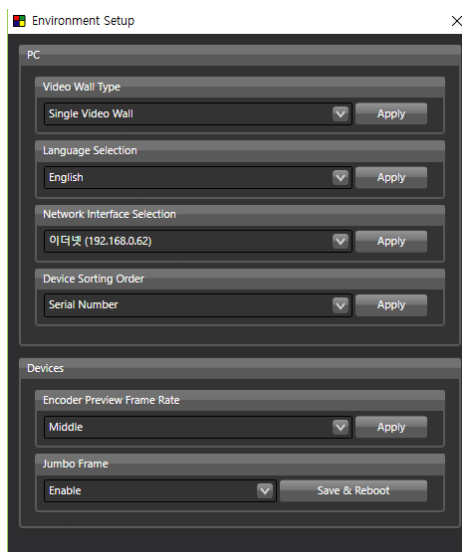


Figure. 12 Environment Setup

➤ **Video Wall Type**

Select 'Single Video Wall' (Default) or 'Multiple Video Wall' (Pro)

In order to use Pro version, license key is required.

To obtain license key, contact tosales@optisc.com or techsupp@optisc.com

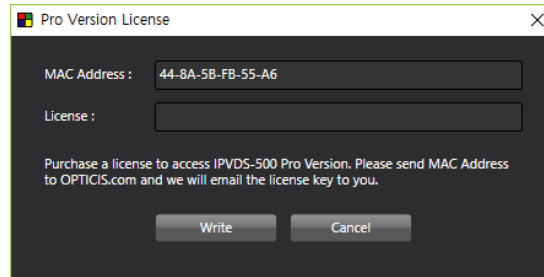


Figure. 13 Pro Version License

➤ **Language**

Select 'English' or 'Korean'

➤ **Network Interface Selection**

If there are more than one network interface for the Control PC that IPVDS-500 PC App has installed, problem can be occurred when searching or operating. Appointing correct network interface can solve this problem.

➤ **Device Sorting Order**

Appoint sorting order of searched devices.

When decoder is automatically sorted, it will be placed automatically as its order, default setup is 'serial number'.

➤ **Encoder Preview Frame Rate**

Change preview frame rate in 'Low/Mid/High'

Users who want to use KVM function in priority, has to select it as 'Low' as preview frame rate is related to HID (Keyboard & Mouse) function.

➤ **Jumbo Frame**

This option decides MTU size, and video quality will be affective when disabled.

'Enabled' **8000** byte

'Disabled' **1500** byte

(7) Firmware Update

Step 1

Run Firmware Update.

Step 2

Select 'All Decoders', 'All Encoders' or specific device need to be updated.

Note: Change IP address and Gateway from control panel, if IP address and gateway of PC and desired device don't match.

Step 3

Click Browse button, and open particular firmware file to update.

Note: User can check firmware version of selected device from right space.

Step 4

Click 'Upload' button, and make sure power adapter is connected firmly.

LED will flash while updating and device will automatically reboot when update is done.

Note: Pop-up message will appear when update is done. (approximately 5 minutes)

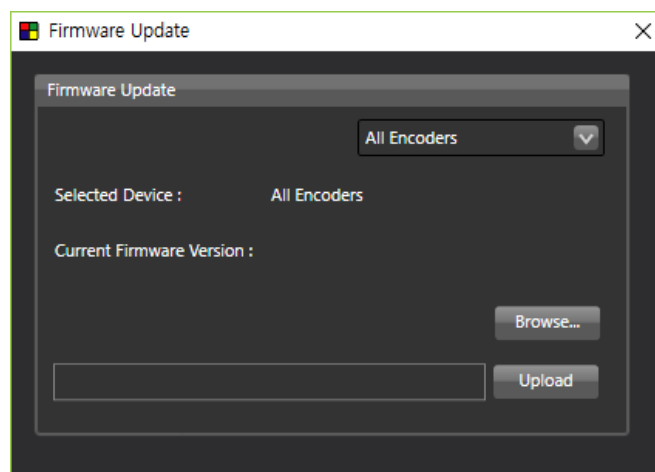


Figure. 14 Firmware Update Window

✓ Note : Firmware update with USB flash drive

Step 1: Save firmware file (IPVDS-500-X-xxxxxx.tgz) in USB flash drive.

Step 2: Insert USB flash drive in USB port of IPVDS-500 device.

Step 3: Plug-in +5V power adapter.

Step 4: While booting, device will search for the firmware file which has saved in USB flash drive, and it will start updating if file exist in USB flash drive.

Step 5: While updating, LED will be blink, and it will reboot when update is completed. Update will take approximately 5 minutes and make sure power adapter is not disconnected during update.

(8) View: Adjust size of device list, layout, and log record on IPVDS-500 PC application.

(9) Help: Check version of IPVDS-500 PC application

6.3 Layout Management



Figure. 15 Layout Management

1 Encoder List

- **Search:** Search IPVDS-500-ED on the network
- Encoder device list that is connected to the IP network
- Check preview scene of Video sources connected
- Assign preview screen for Video Wall layout with drag and drop


2 Video Wall

- Assign encoder devices, edit layout for video wall in rows and columns
- Audio ON/OFF



3 Display Placement

- Change display layout, move to setup page for decoder assign and change

4 Preset

- Save current edited video wall layout
- Load layout that had saved previously
- Start preset scheduling button ()

5 Actions

- Clear button  will empty all the encoder that has assigned in video wall region
- Apply button  will apply current video wall setup, which can be check on preview screen, to the video wall and individual displays

6.3.1 Layout Editing

Step 1

After searching devices, drag and drop video source from the encoder list on the left side to the video wall layout.

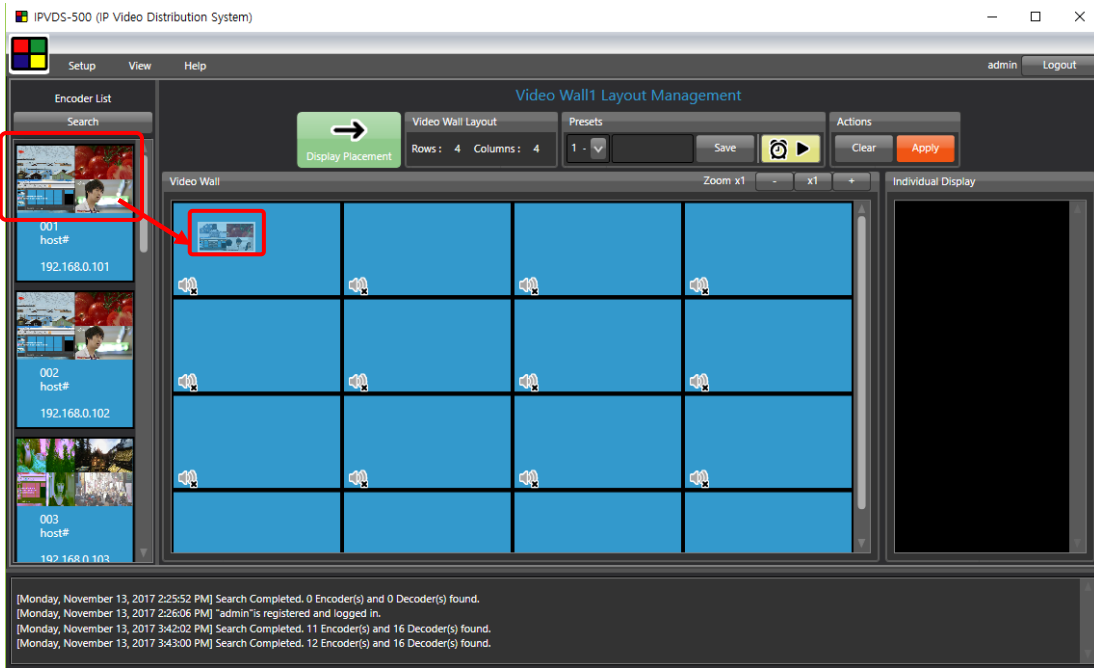


Figure. 16 Encoder Placement

Step 2

Drag-pointer will appear with clicking assigned video source. User can stretch or reduce size of video source as direction of arrow.

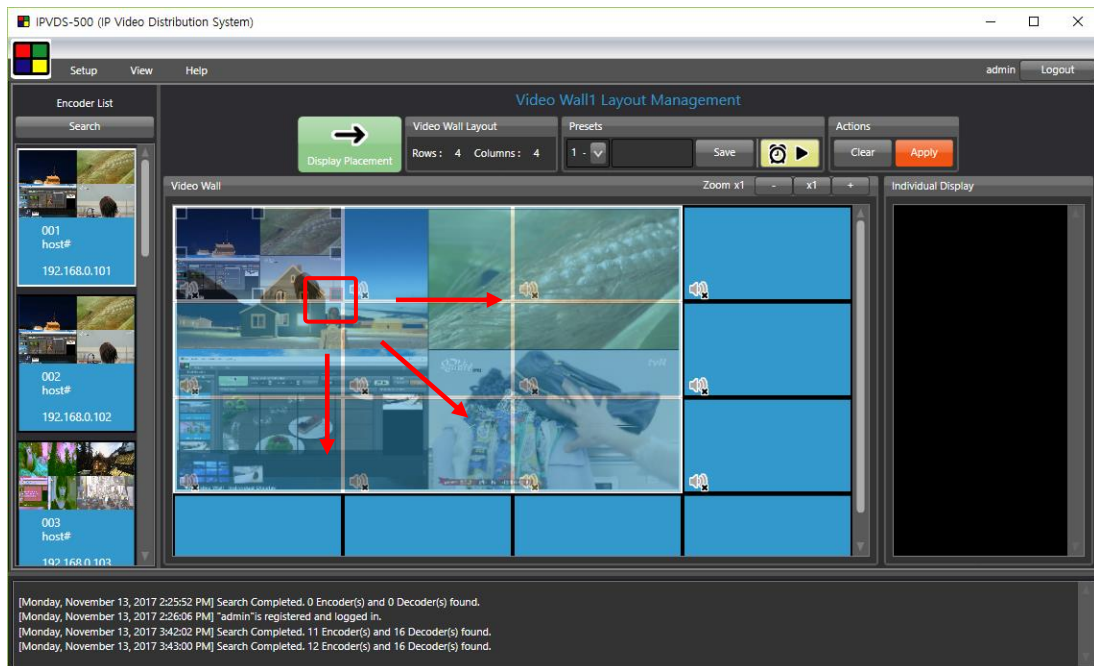


Figure. 17 Stretch and Reduce

Step 3

With using Audio ON/OFF icon, audio of display can be turned ON or OFF.

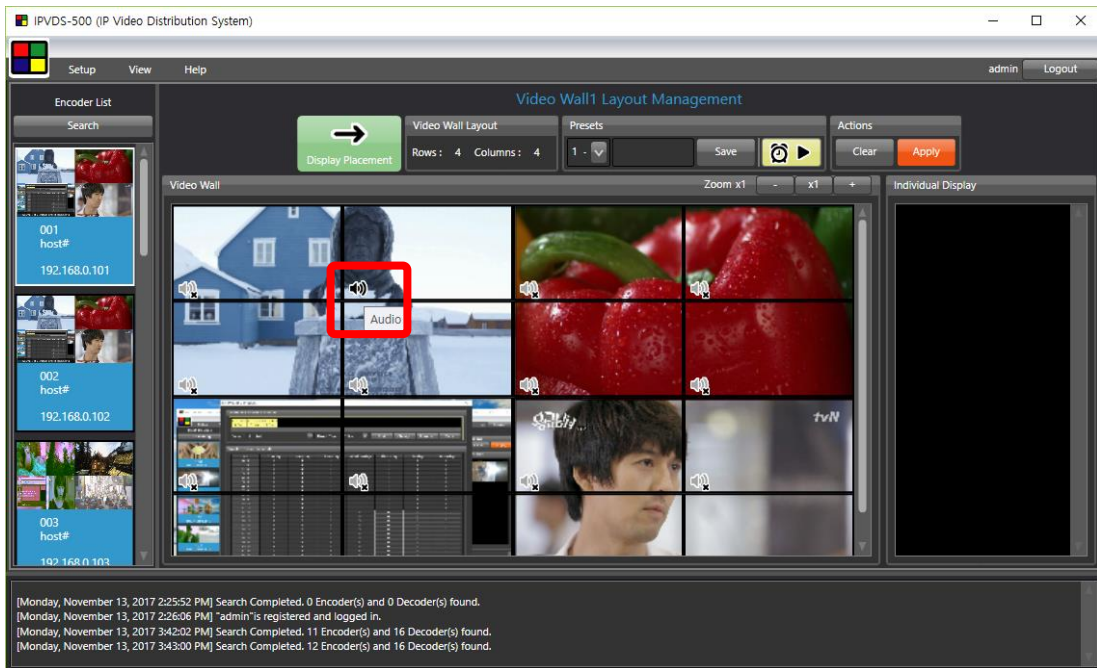


Figure. 18 Audio On/Off

Step 4

Repeat Step 1~3, and click 'Apply' button for actual application to decoders and displays.

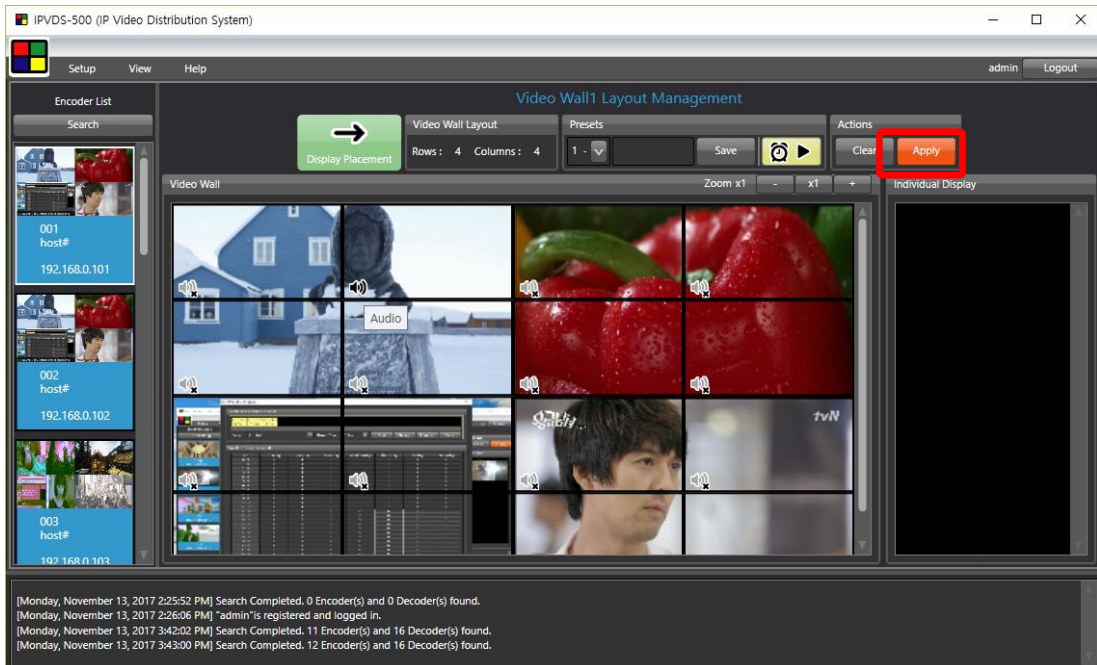


Figure. 19 Apply Setup.

Step 5

When rows and columns of layout is numerous so decoders can't fit in the display, zoom button can be used (x0.2 ~ x5) to check overall layout. (less than x0.5 : Audio setup only)

6.3.2 Preset Save

Step 1

Type name of current preset, and click 'Save' button to save current display placement.

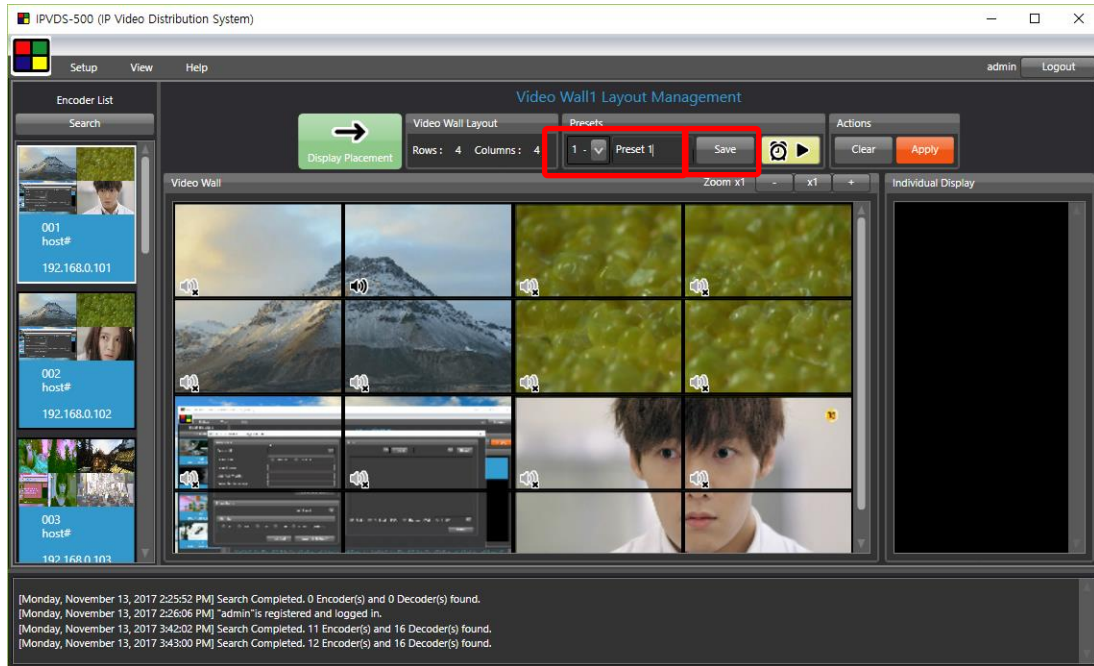


Figure. 20 Preset Save

Step 2

If select non-saved preset number, video wall placement will be initialized, and it will become editable status. Place sources and save as Step 1.

Presets can be saved up to 99.

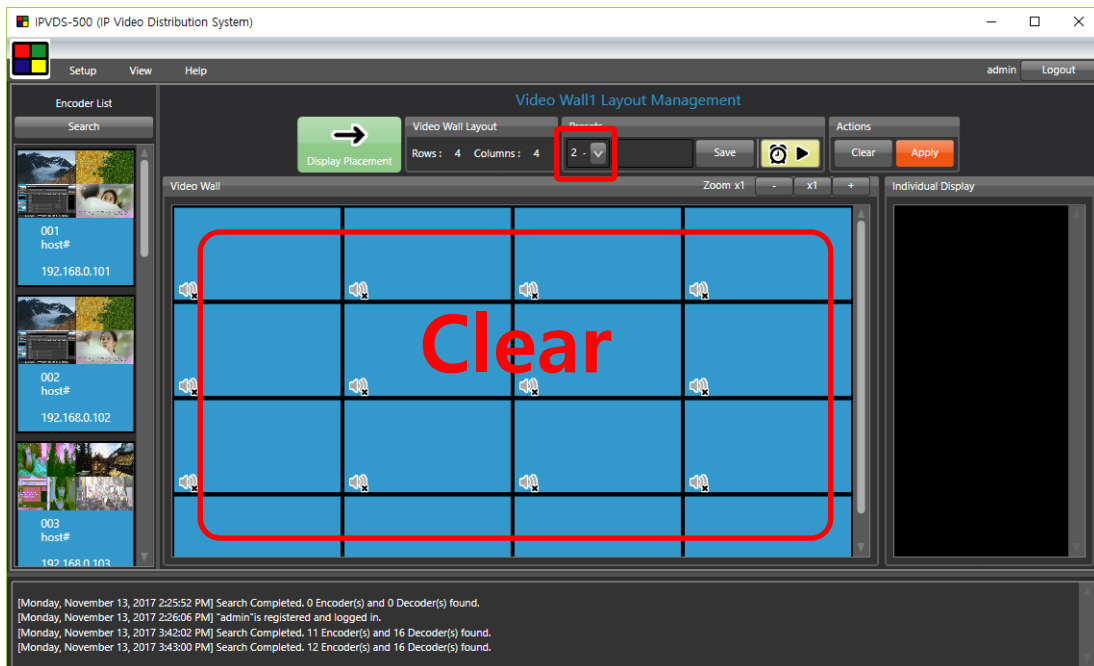


Figure. 21 Change Preset

Step 3

As selecting particular preset number, user can load saved video wall layout.

Click **'Apply'** button to have current preset to decoder devices and displays.

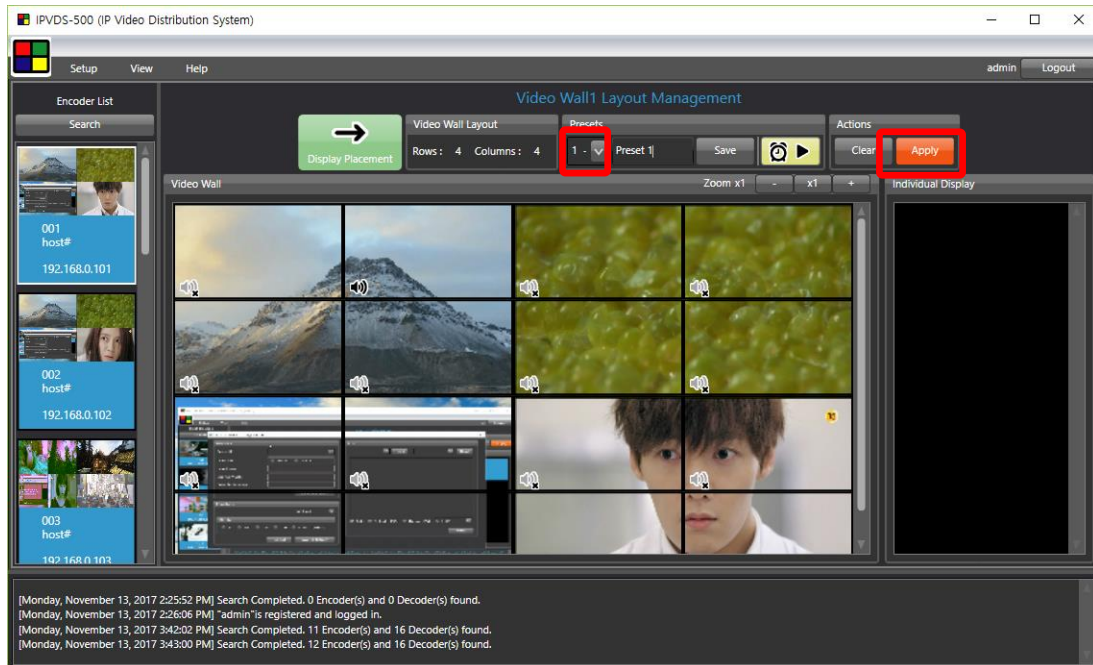


Figure. 22 Apply Setup

Step 4

When user re-launch IPVDS-500 application, last saved preset will be loaded if user save preset setup with 'Save Presets' from icon menu.

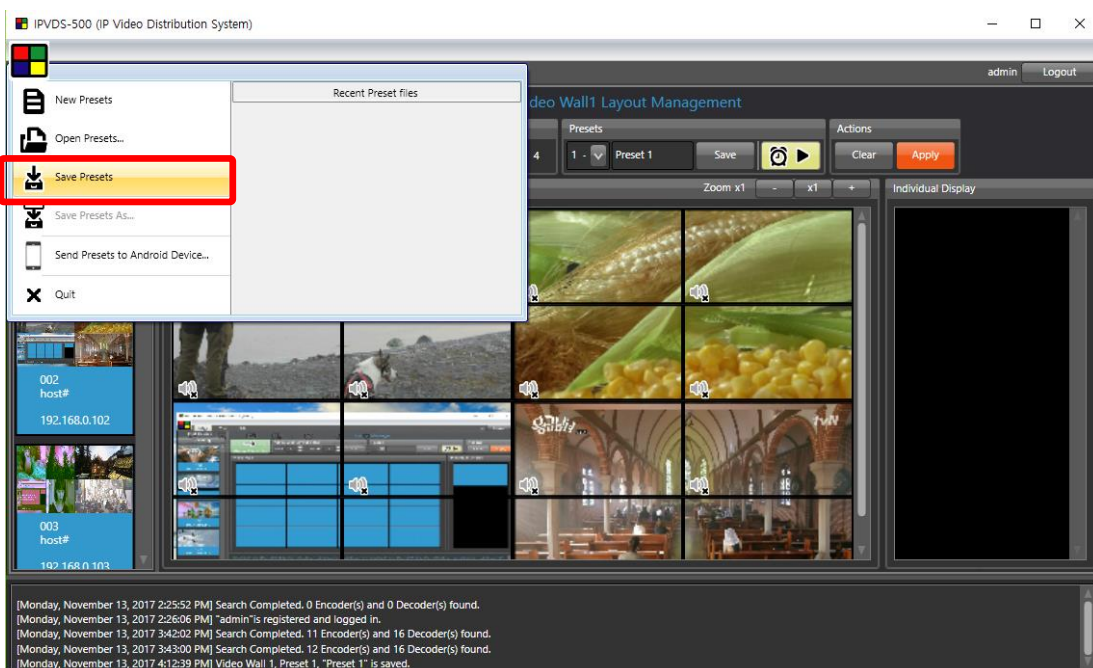


Figure. 23 Save Preset File

6.4 Display Placement



Figure. 24 Display Placement Screen

1 Decoder list

- List of Decoder device list which has connected to IP Network
- Assign Video wall layout with drag and drop

2 Video Wall

- Adjusting physical placement as placing decoder device to particular video wall layout
- Display rotation: Rotate separately 180°, entirely 270°
- Individual display: Display except for rows x columns video wall setup

3 Layout Management

- Move to layout management page







4 Video Wall Layout

- Edit rows x columns layout for video wall

5 On Screen Display (OSD)

- Present number, which has assigned from decoder, to connected monitor
- Display sequence check and replacement as confirming OSD information that can be indicated on display when OSD is ON

6 Display Replacement

- Locked ( Unlocked): Disable to replace display, enable to use Apply () button
- Unlocked ( Locked): Enable to replace display, disable to use Apply () button
- Clear (): Empty all the display that has assigned
- Reset (): Display replacement with 'serial number' or 'IP address'

6.4.1 Edit Display Layout

Step 1

Change display layout to desired rows and columns (Default: 4x4)

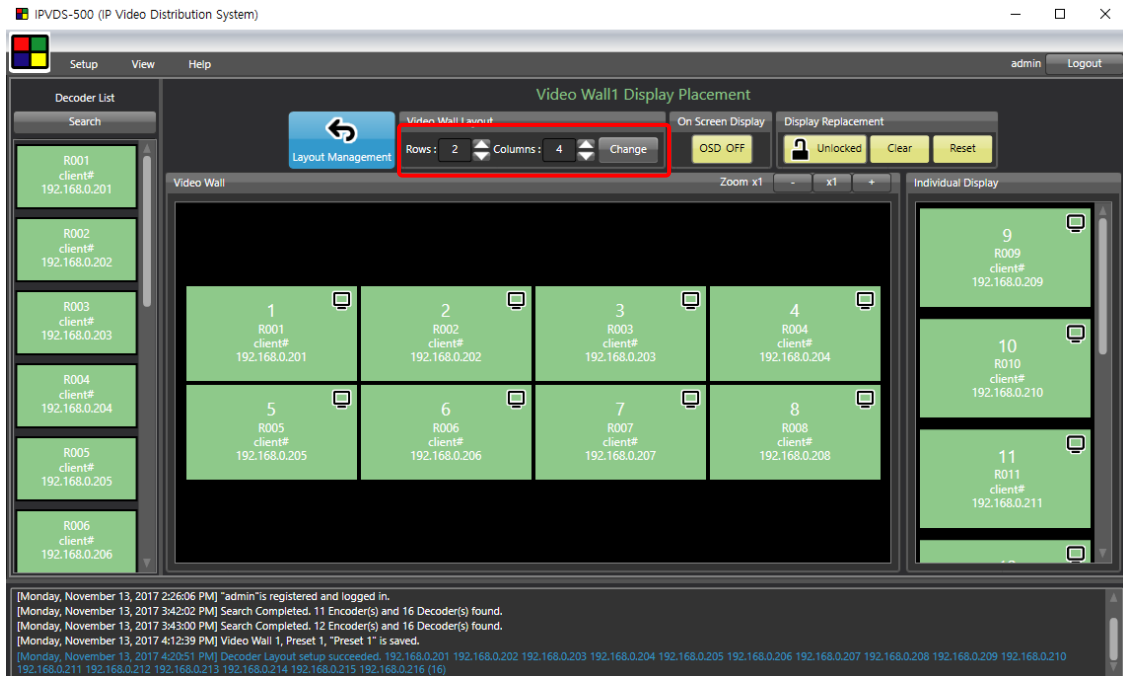


Figure. 25 Change Video Wall Layout

Step 2

Replace decoder placement to desired place with drag and drop when 'unlocked'

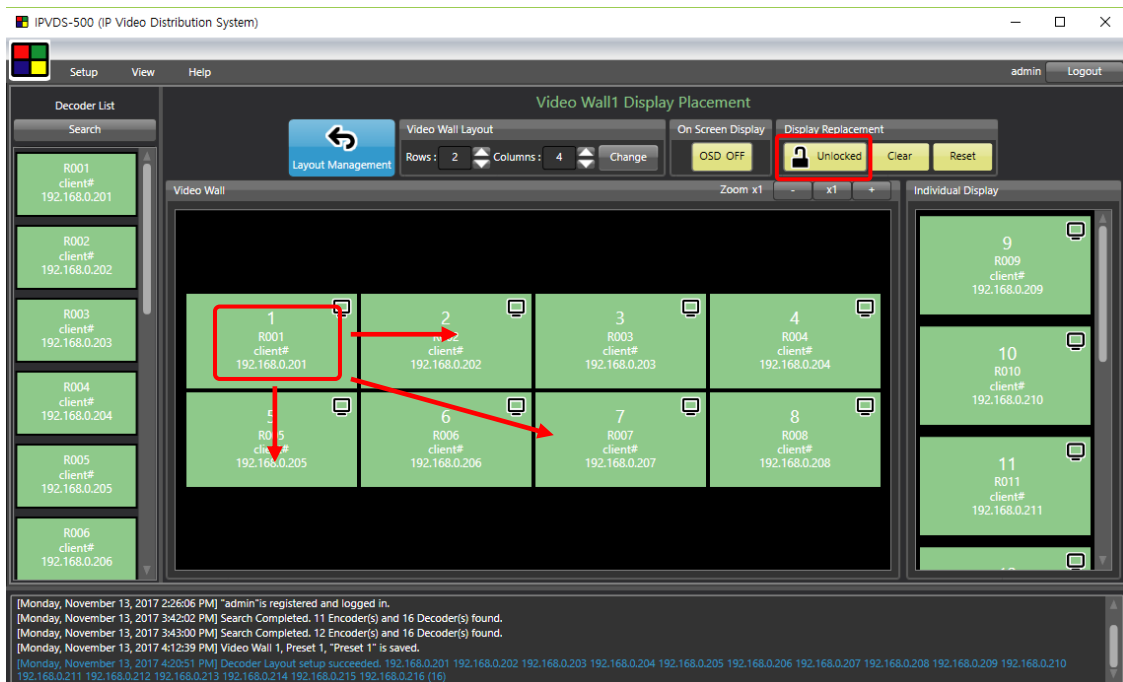


Figure. 26 Change Decoder Placement

Assigned decoder can be removed separately or entirely with mouse right click, and listed decoder under search button can be place with drag and drop.

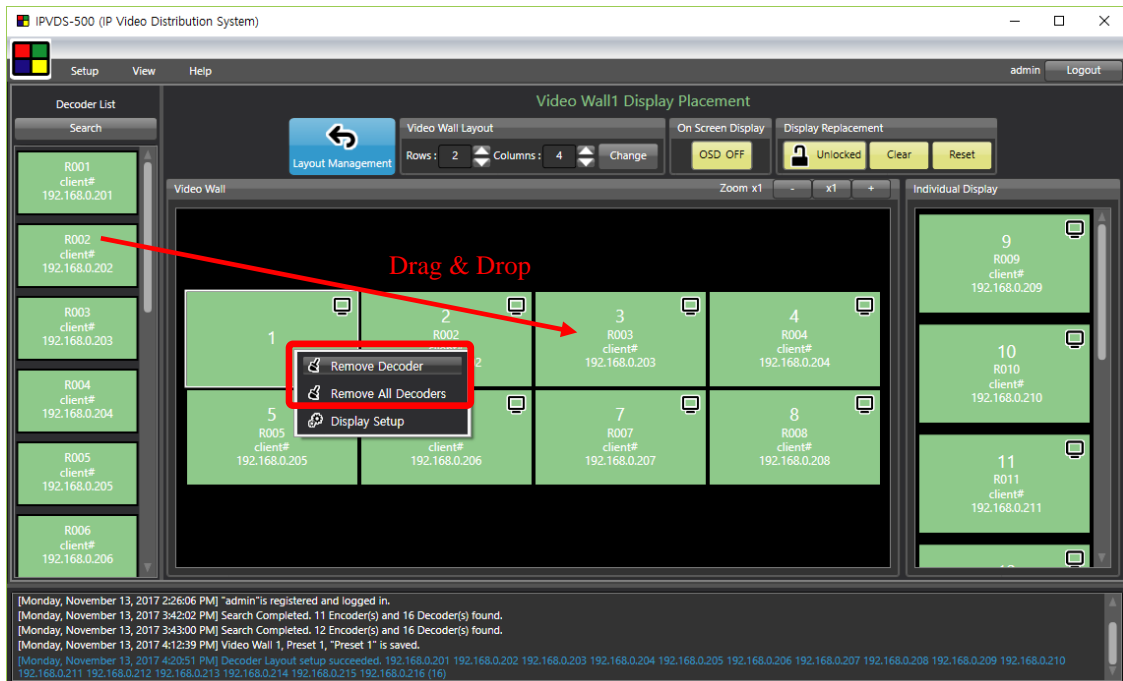


Figure. 27 Remove Decoder

'Clear' button will empty all decoder which has assigned to layout, and 'Reset' button will automatically place decoders with 'serial number' or 'IP address' as environment setup.

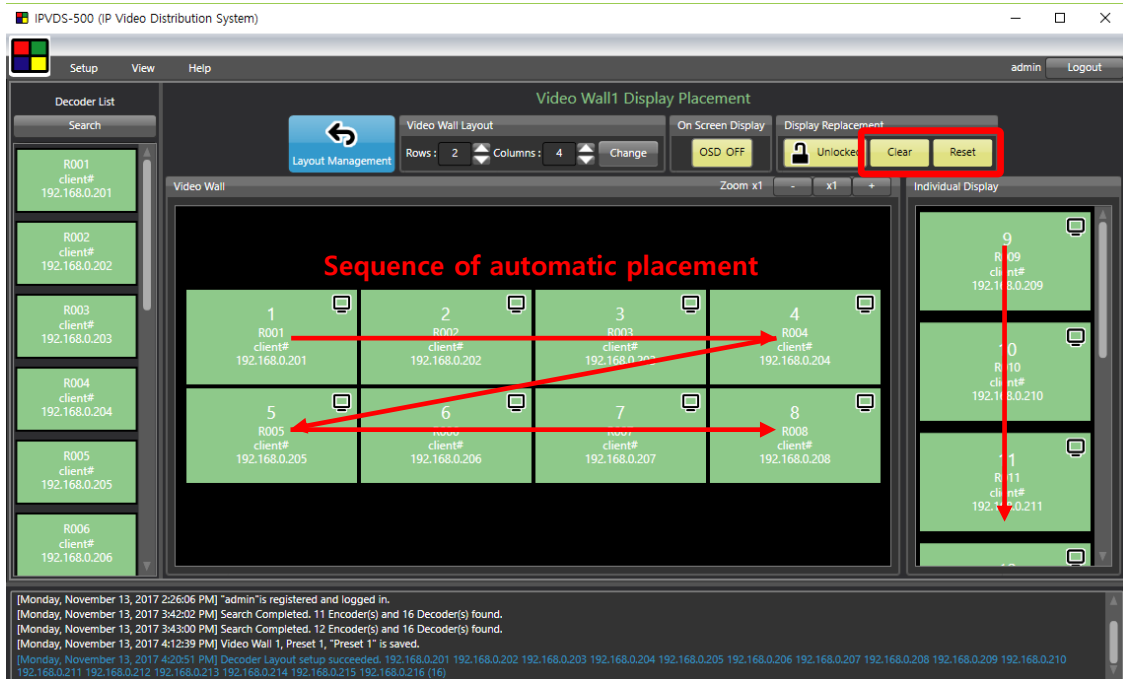


Figure. 28 Display Replacement

Step 3

With clicking Display rotation button on upper right hand corner, display will be rotated clockwise. One click will rotate 180°, and one more click will rotate 270°.

- 180°: For separate display. Display will rotate 180°
- 270°: For entire display. Entire display on the layout will rotate 270°

Monitor need to be rotated 90° for normal screen output

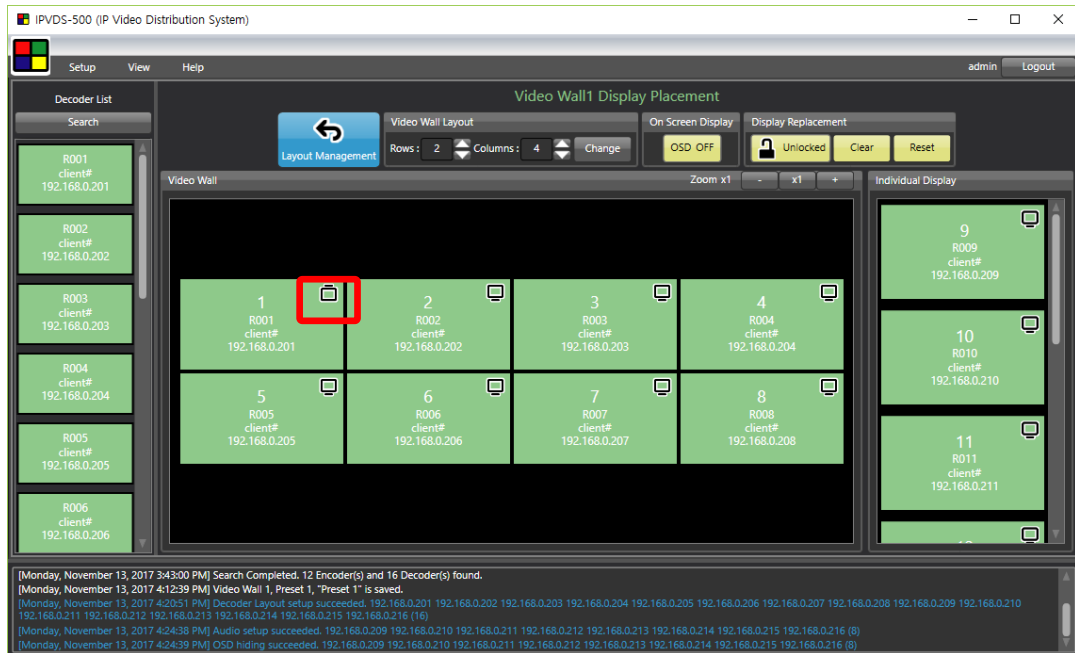


Figure. 29 Separate Display – 180° Clockwise Rotation

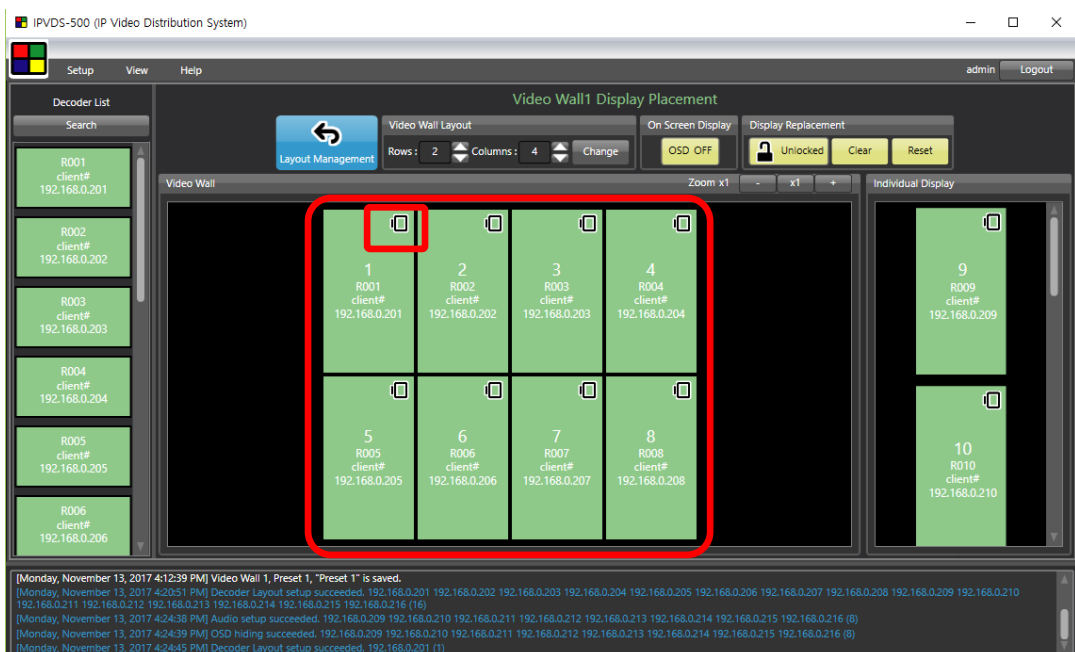


Figure. 30 Entire Display – 270° Clockwise Rotation

Step 4

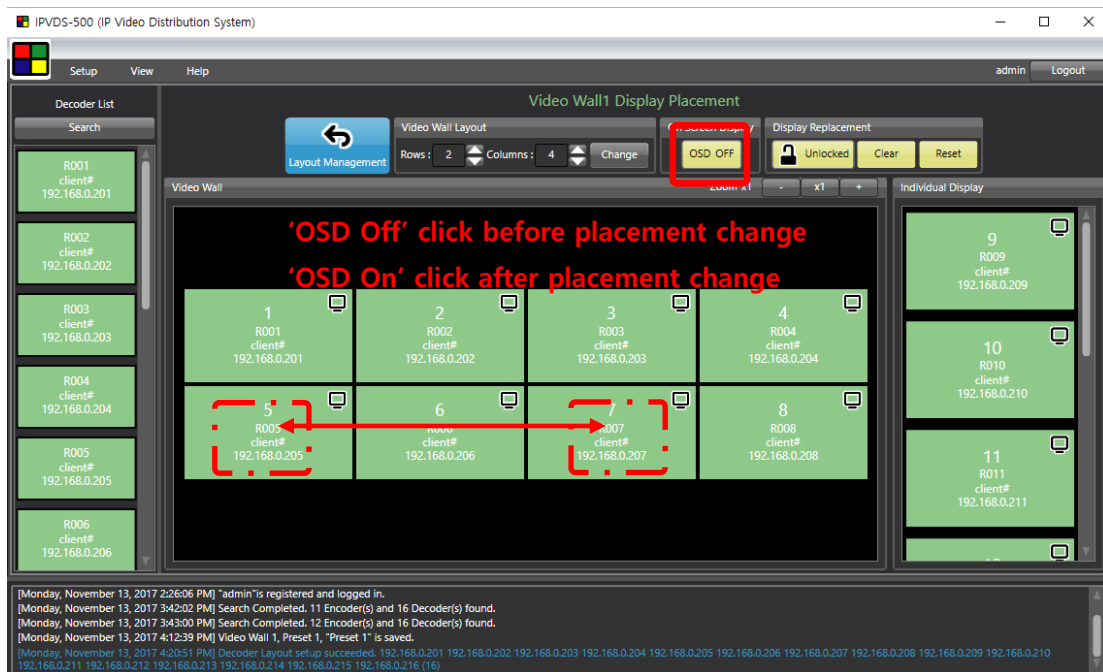
Current number of display can be indicated when clicking 'OSD ON' button.

User can change their sequence by automatic replacement or manual replacement

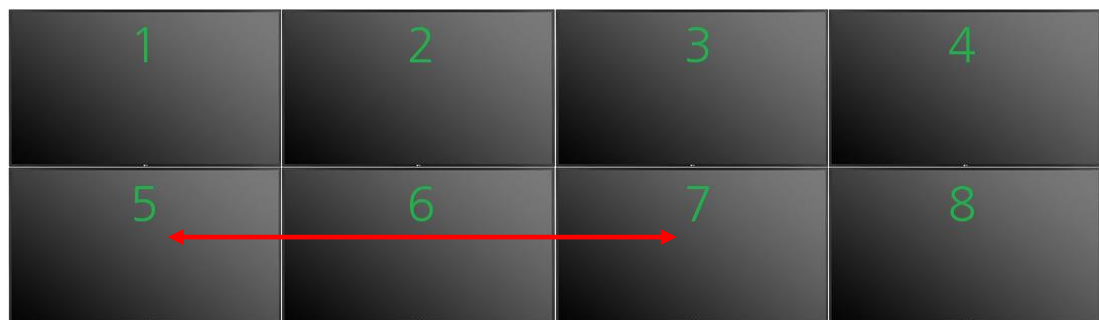
Using OSD is recommended to use when video source is not connected to decoder.



Display Output



PC App. Placement Change



Display Output after Placement Change

Figure. 31 OSD Placement Check and Change

Step 5

Display placement is disabled when it is Display replacement is 'Locked'

'Layout management' button will lead user to main screen for layout management.

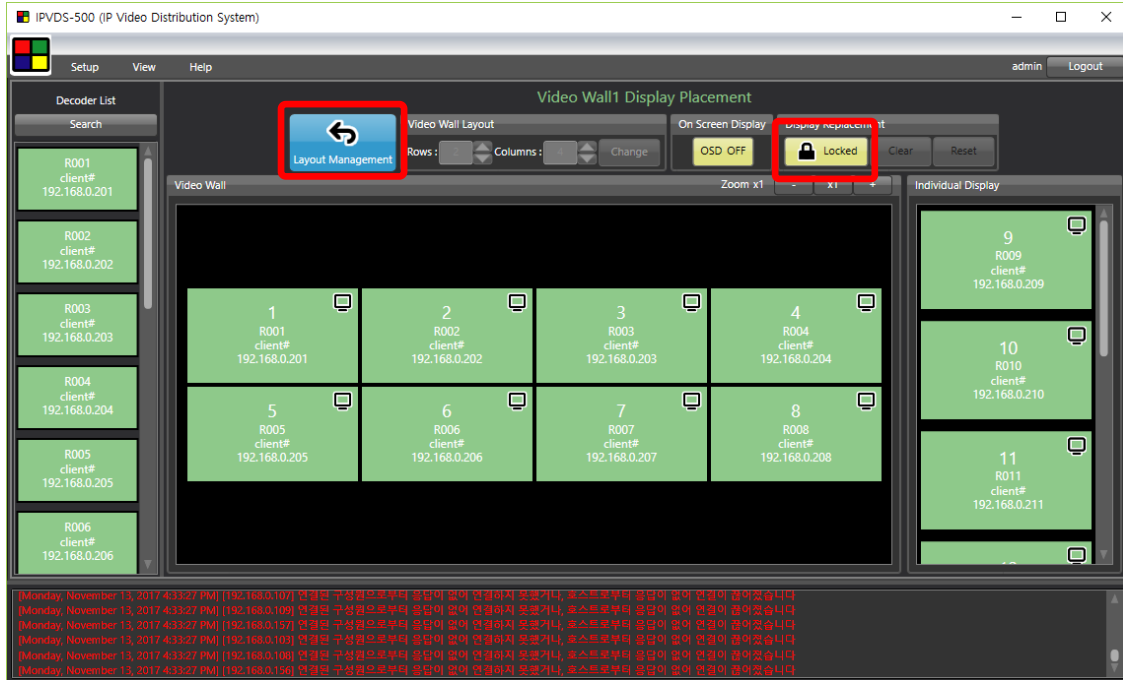
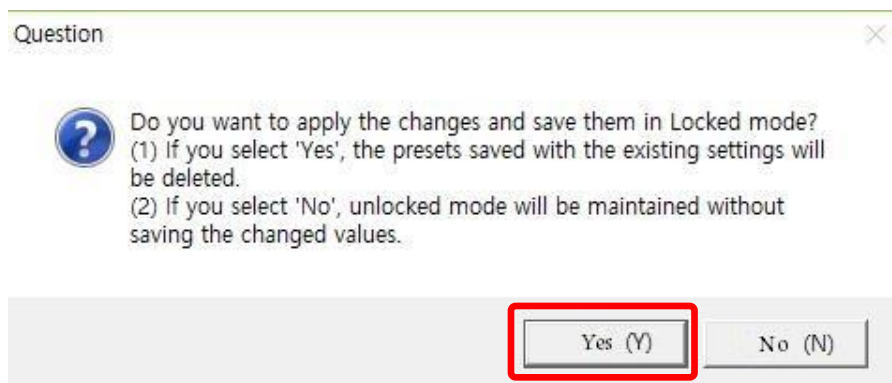


Figure. 32 Layout Locked

Step 6

When coming back to layout management page after changing display placement, following window will pop up. If click no, change from display placement will not be applied. If click yes, change will be applied



Step 7

After Step 6, decoder placement and connection is done. Check **6.3 Layout Management** and connect video sources.

7. Context Menu

7.1 Layout Management Context Menu

7.1.1 Encoder List Context Menu

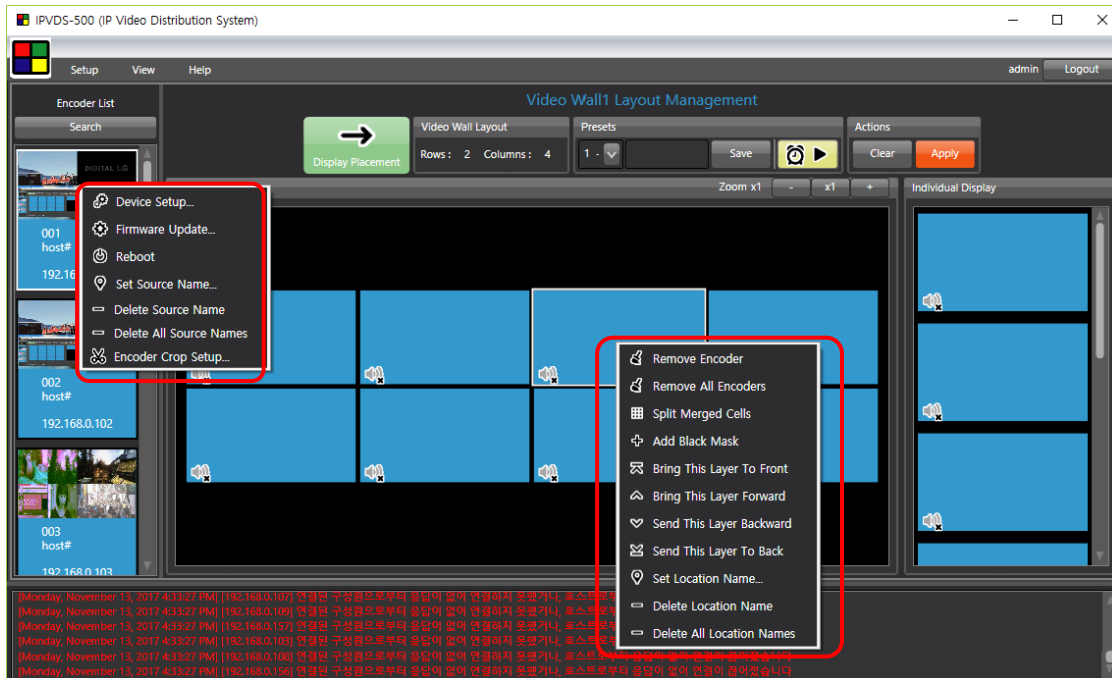


Figure. 33 Layout Management Context Menu

(1) Device setup.

a) Network information setup

- 🔧 DHCP IP(dynamic) / STATIC IP(static)
- 🔧 Device name : Set the name of encoder device
English (No Korean), Special symbol(+, -, _, #), maximum 20 character
- 🔧 Will be applied after save and restart.

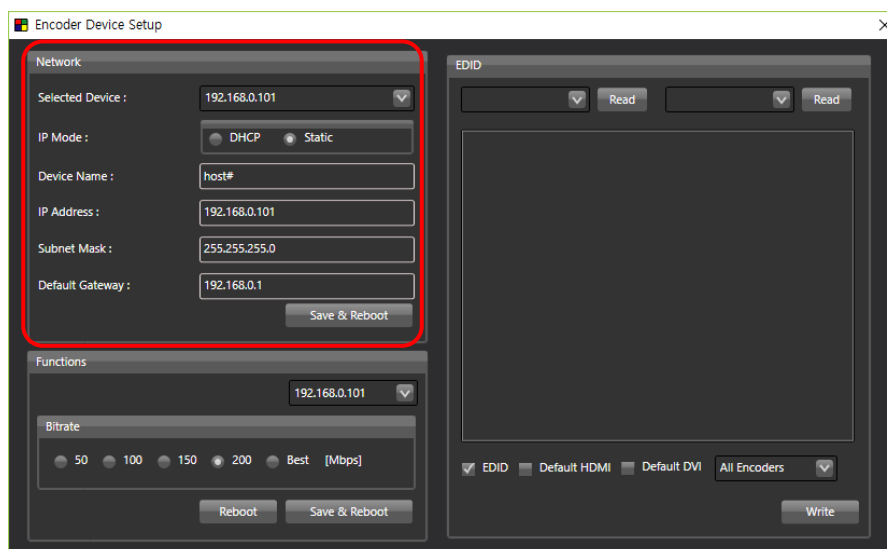


Figure. 34 Encoder Device Setup – Network Management

b) Bitrate Setup

- ✚ Transmission speed : Image quality and network condition
50/100/150/**200(Default)**/Best [Mbps]
- ✚ It is recommended to set all encoders have same Bitrate
- ✚ Apply Save & Reboot

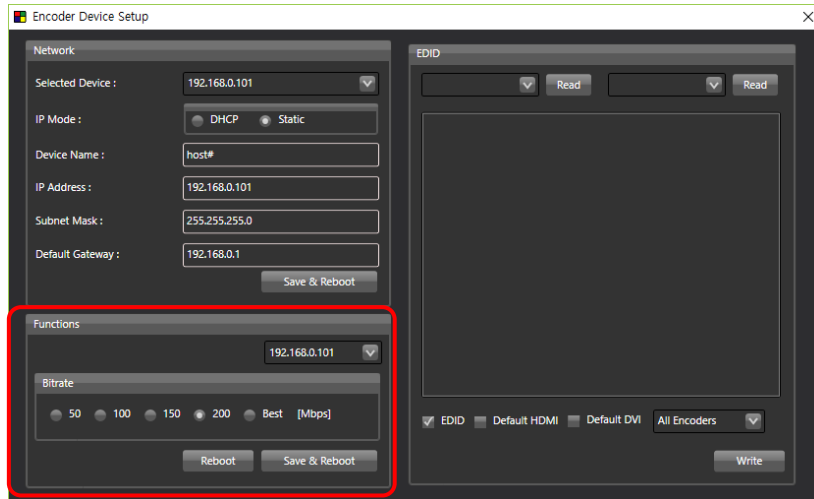


Figure. 35 Encoder Device Setup – Bitrate Setup

c) EDID Read/Write

- ✚ **1** Select IP address for Encoder(left) / Decoder(right) and click 'Read' button to load EDID information from display that has connected to the device (Encoder: local display / Decoder: HDMI Out).
- ✚ EDID information will be addressed on **2**
- ✚ **3** Select all Encoders or desired encoder device and click 'Write' button.
- ✚ EDID of Encoder will be changed and it will be applied after rebooting
- ✚ By checking Default HDMI/DVI box, EDID can be changed instead of reading and writing EDID from display.

Default HDMI (4K HDMI), Default DVI (1080P DVI)

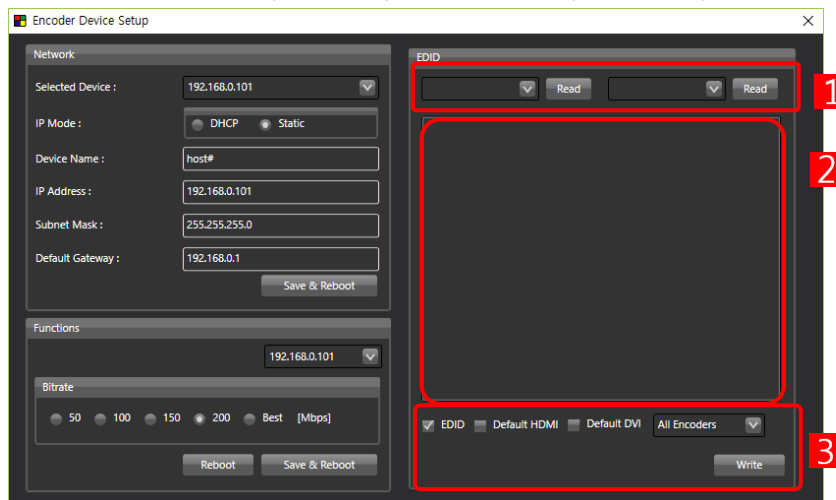


Figure. 36 Encoder Device Setup – EDID Setup

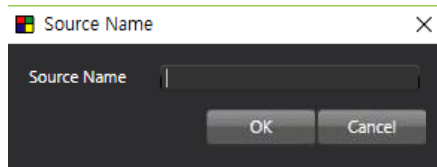
(2) Firmware Update

6.2.2 Refer to **Ribbon menu (7) Firmware update** (page 14).

(3) Source Name Setup

Set the video source name

- English, Korean, Special symbol, maximum 20 characters



- Source name will be appeared on the upper right corner of each display

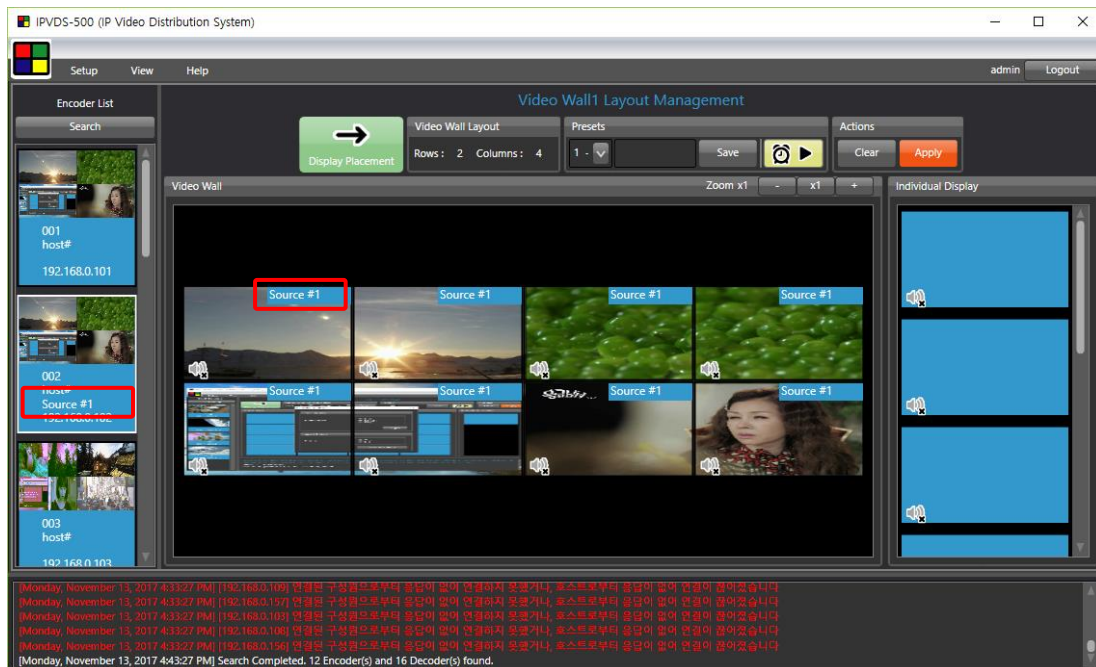


Figure. 37 Source Name Setup

(4) Source Name Remove / All Source Name Remove

Remove source name separately, or entirely

(5) Encoder Crop Setup

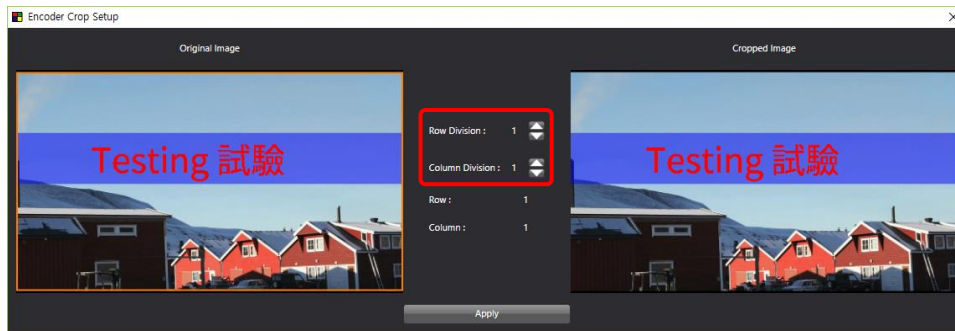
- Crop an image in rows and columns (max 256, 16x16 ~ 4x64 ~ 1x256) and select
- Transmit selected image from display source

Note 1. Crop setup requires **IPVDS-500 Pro version update** to use.

Note 2. Crop setup will not apply to local display.

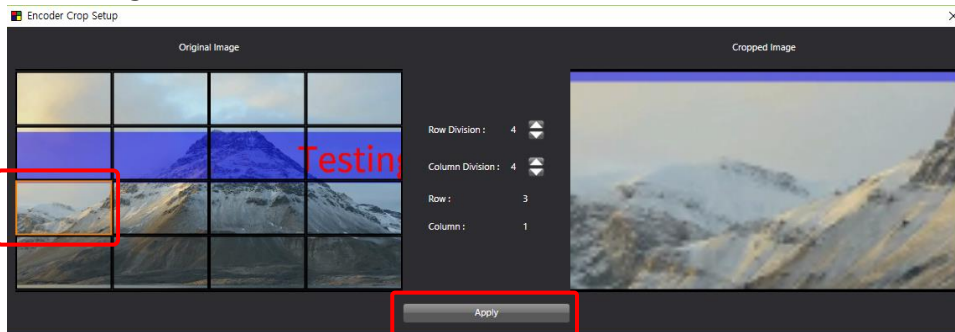
Step 1

Set rows and columns for the desired size.




Step 2

Select cropped image which will appear on the display. Selected image will be placed on the right display on the window. Click 'Apply' button and close Encoder Crop Setup window to go back to main screen.



Step 3

Crop Icon () will appear on upper right corner of source under encoder list. Crop setup window will pop up when click crop icon.

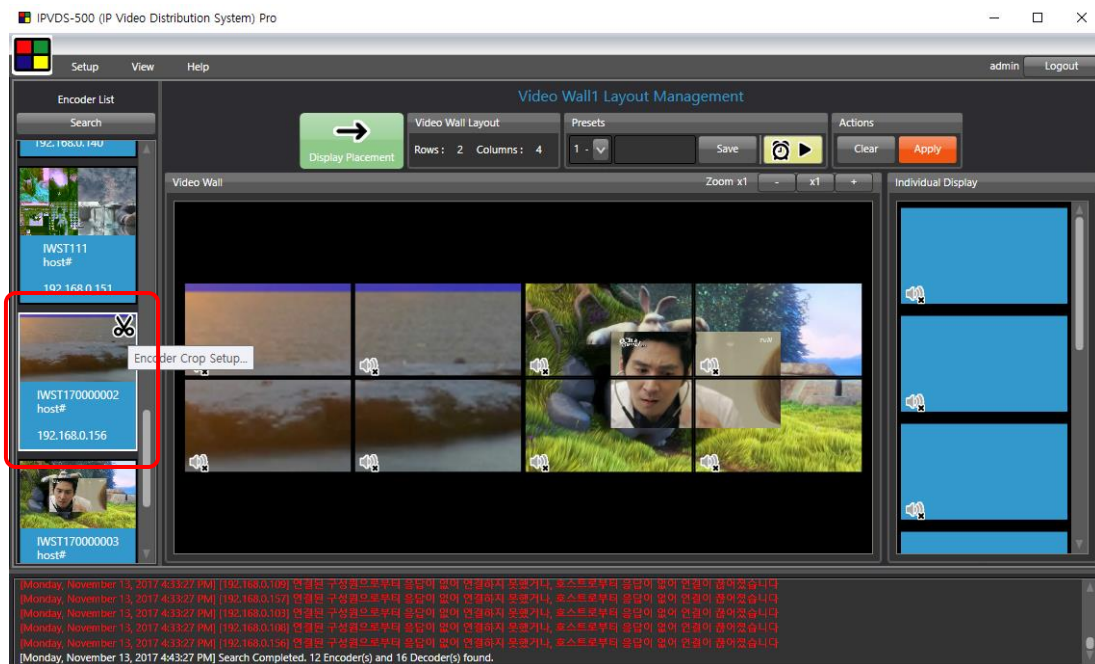


Figure. 38 Encoder Crop Setup

7.1.2 Video Wall Context Menu

(1) Remove Encoder

Remove selected video source from video wall layout. All of encoder sources will be discarded from video wall layout when click 'Remove All Encoders'.

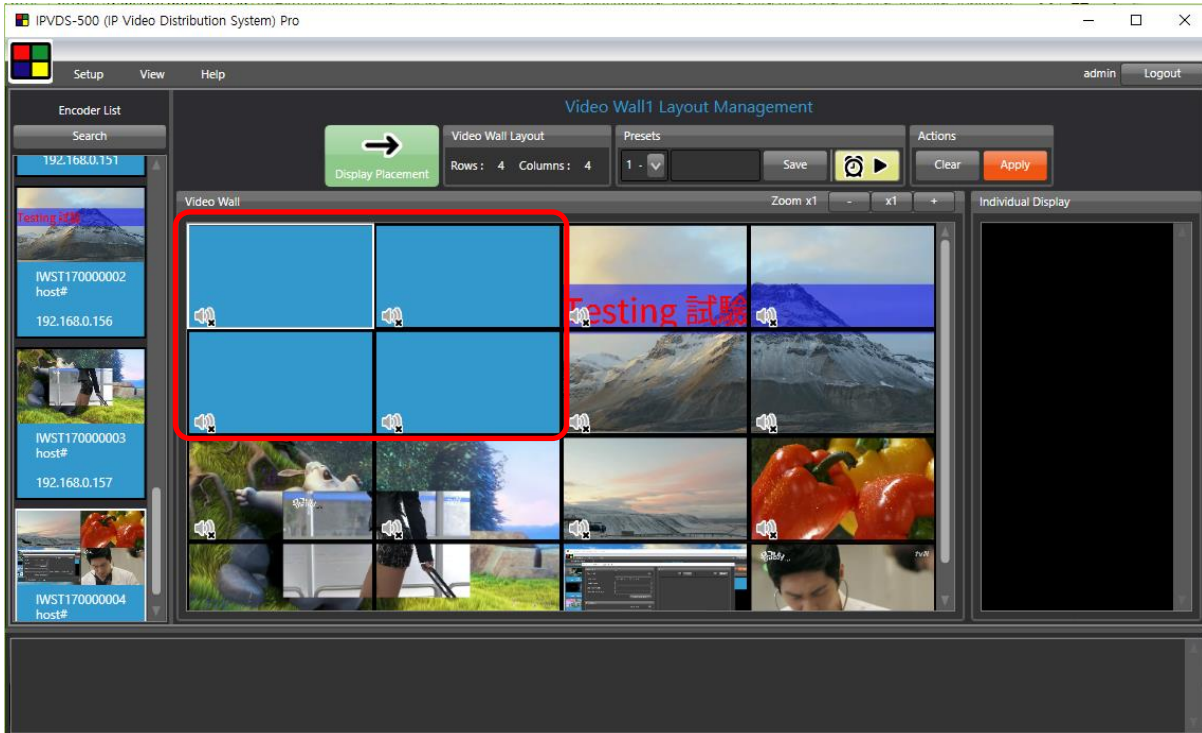
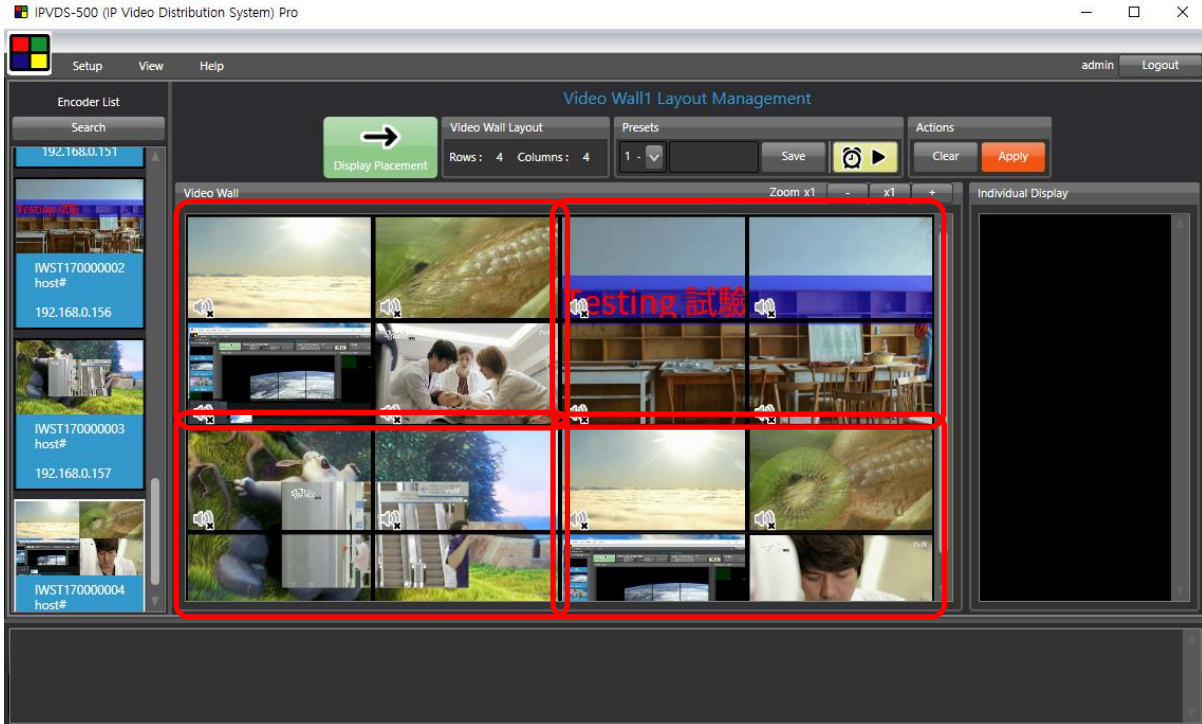


Figure. 39 Encoder Remove

(2) Split Merged Cells

Change stretched video wall source (M x N) to 1 x 1 video source.

After change, 1 x 1 video source will be placed on upper left corner of existing cells.

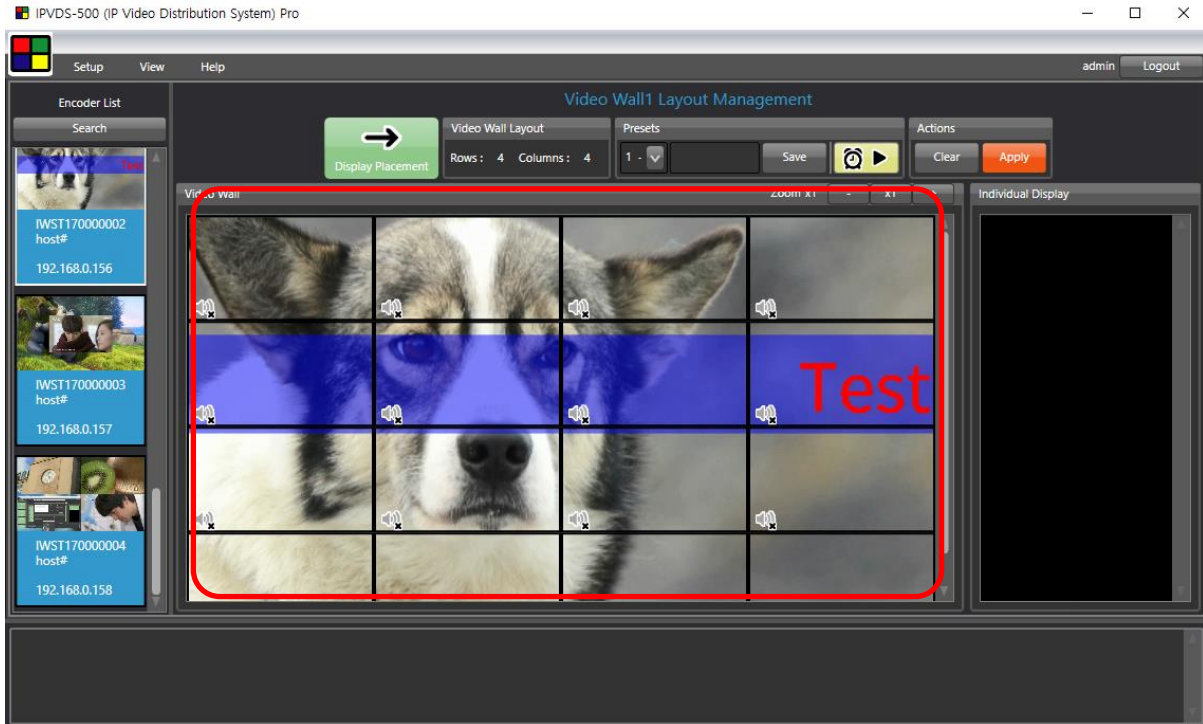


Figure. 40 M x N Merge

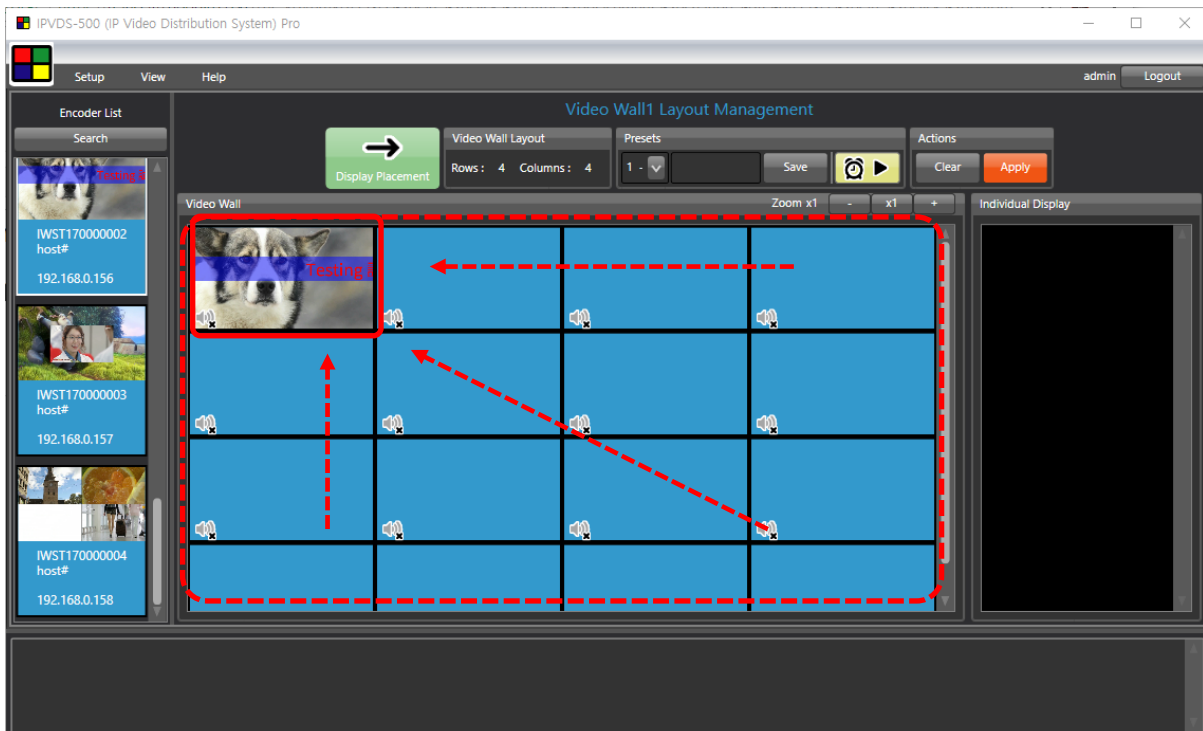


Figure. 41 Split Merged Cell

(3) Add Black Mask

Replace selected cell to black mask.

When applied, selected display will switch over to black-out state.

Black mask can be removed with 'Encoder Remove' button.

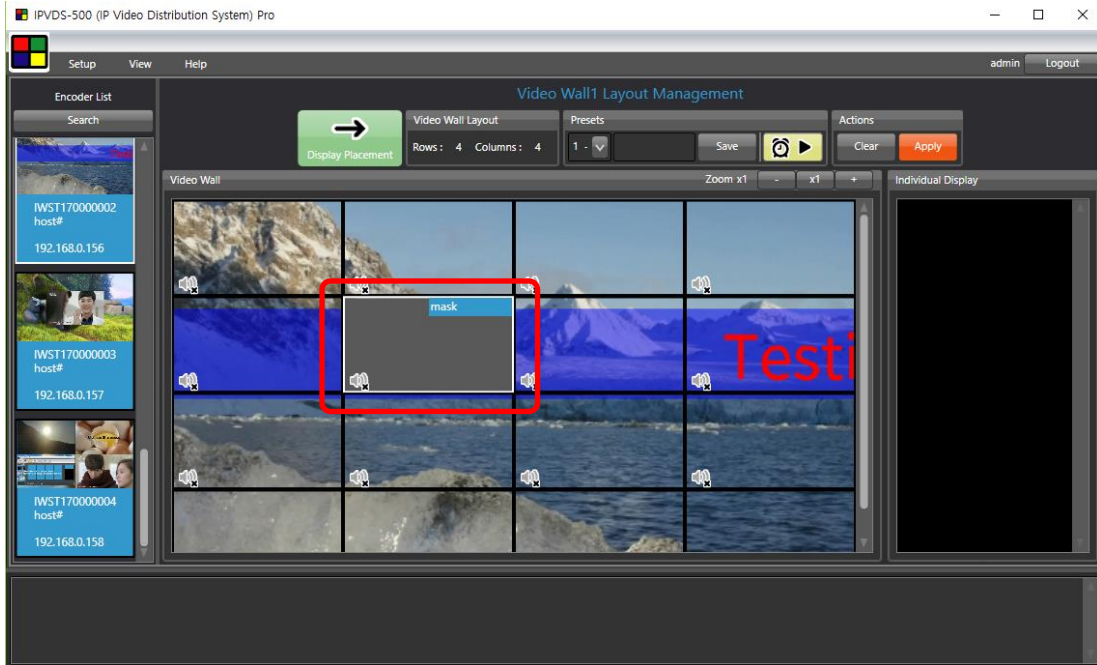


Figure. 42 Add Black Mask

(4) Bring/Send Layer

Bring and send overlaid layer to front and/or back.

Foremost source will appear on the display.

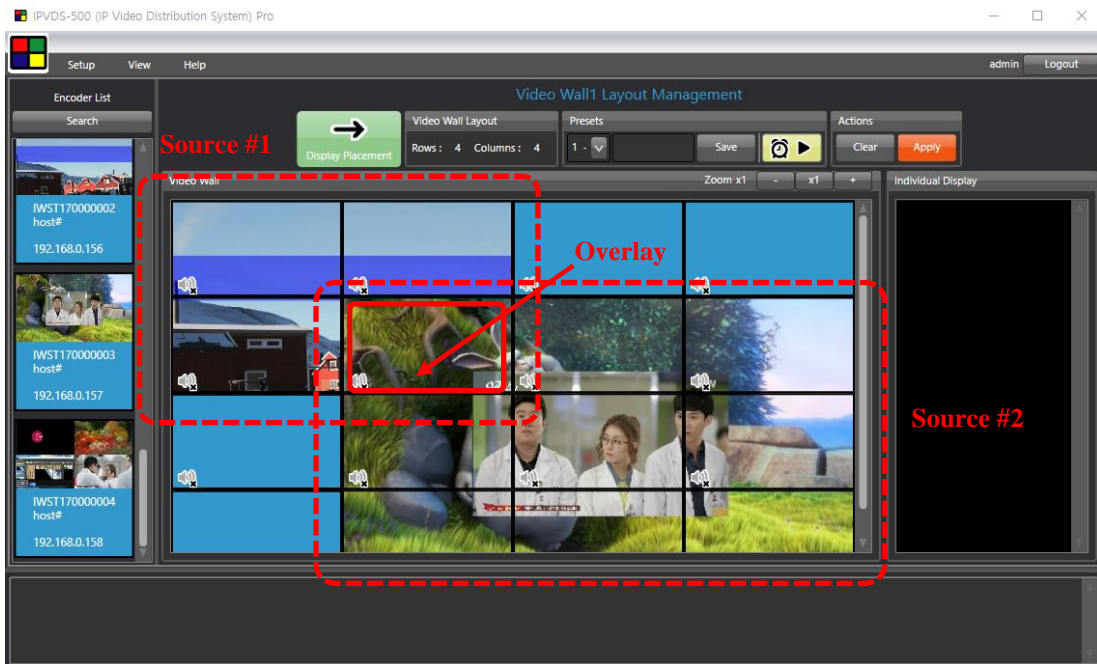


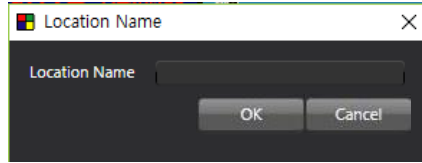
Figure. 43 Layer Overlay

(5) Set Location Name

IPVDS-500 PC application allows user to set location name for display.

With this function, user can manager installation site, location for the display.

English, Korean, Special symbol, maximum 20 characters.



Location name will be appeared on the upper left corner of each display.

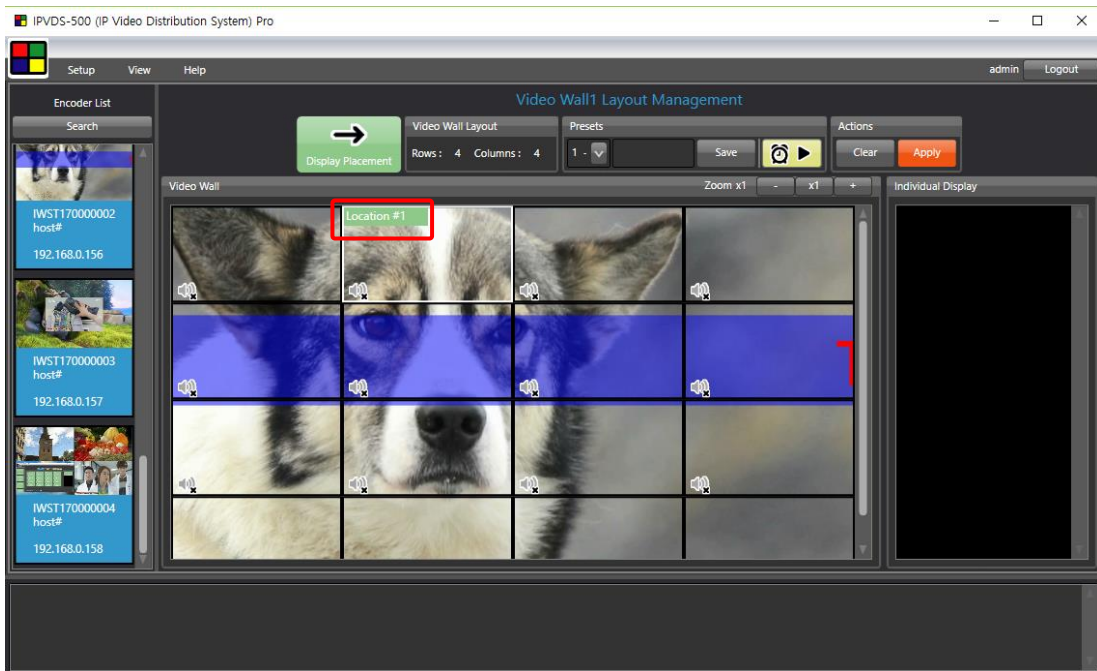


Figure. 44 Set Display Location Name

(6) Remove Location Name / Remove All Location Name

Remove location name separately, or entirely.

7.2 Display Placement Context Menu

7.2.1 Decoder List Context Menu



Figure. 45 Display Placement Context Menu

(1) Device Setup

a) Network Information Setup

- ✚ DHCP IP(dynamic) / STATIC IP(static)
- ✚ Device name : set decoder device name
English (no Korean), Special symbol (+,-,_,#), Maximum 20 characters
- ✚ Will be applied after save and restart

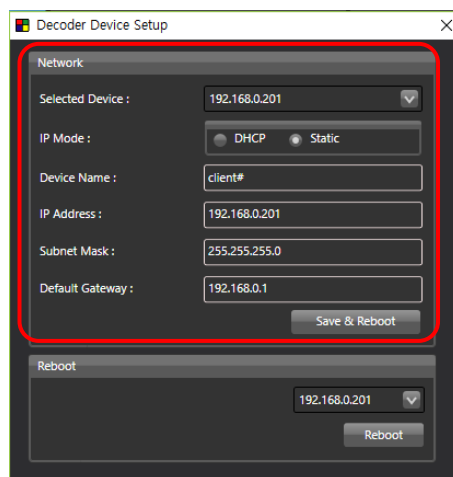


Figure. 46 Decoder Device Setup – Network Setup

b) Restart

- ✚ Restart of selected or entire decoder

(2) Firmware Update

6.2.2 Refer to **Ribbon menu (7) Firmware update** (page 14).

7.2.2 Video Wall Context Menu

Video wall context menu will be activated when display placement is 'Unlocked'
Error window will pop up if try in 'Locked'.

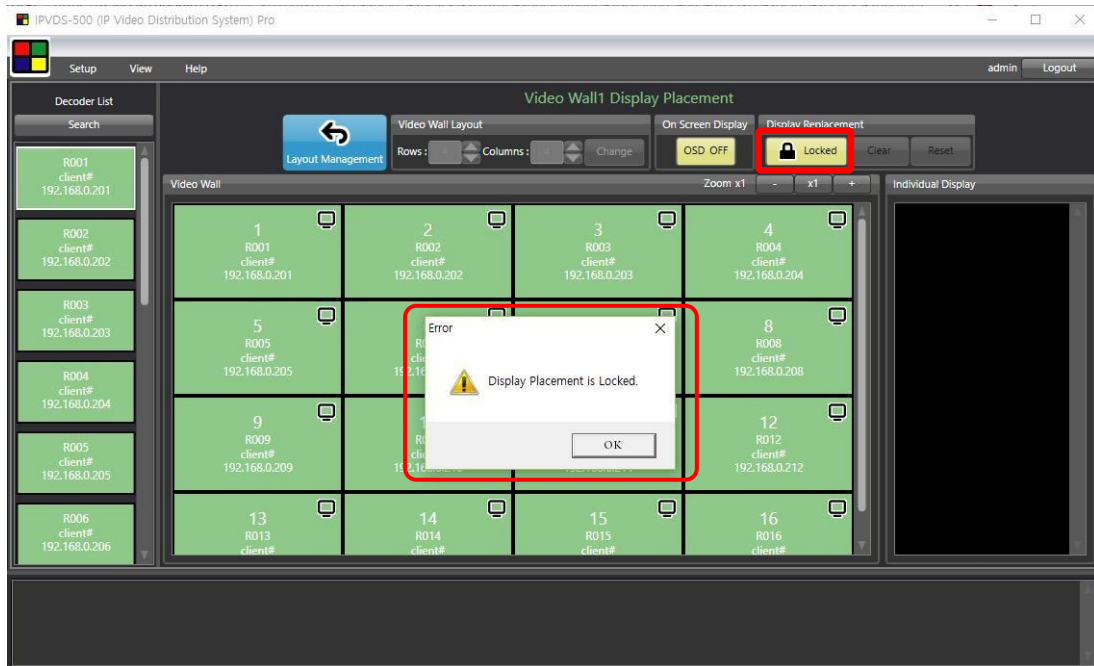


Figure. 47 Context Menu Error Window – Display Placement 'Locked'

(1) Remove Decoder

Remove selected decoder when click remove decoder.

Remove all decoders on the layout when click remove all decoder.

Note: Video wall context menu will only work when Display placement 'Unlocked'.

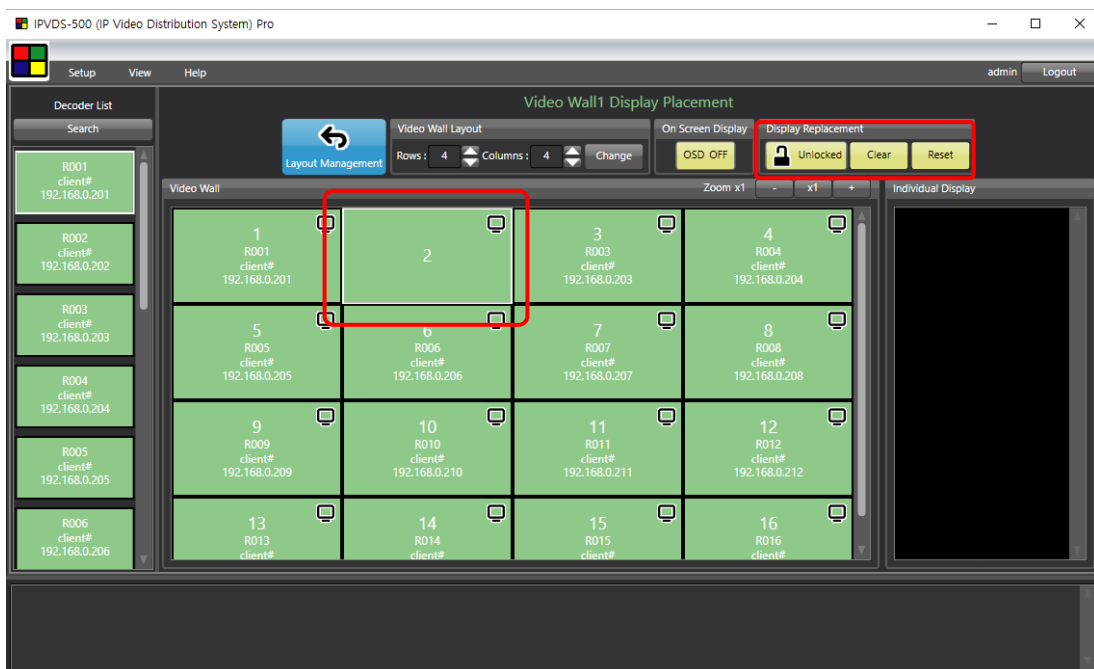






Figure. 48 Remove Decoder

(2) Display Setup

a) Bezel and Gap Compensation

As compensate bezel which surround display panel, IPVDS-500 enables to show natural screen.

Select 'All Decoders', 'All Encoders' or IP address of designated device, then type bezel value in 0.1mm unit. Click 'Change' to apply.

-  Original Width : General width of display (OW)
-  Original Height : General height of display (OH)
-  Bezel Width : Width of bezel
-  Bezel Height : Height of bezel

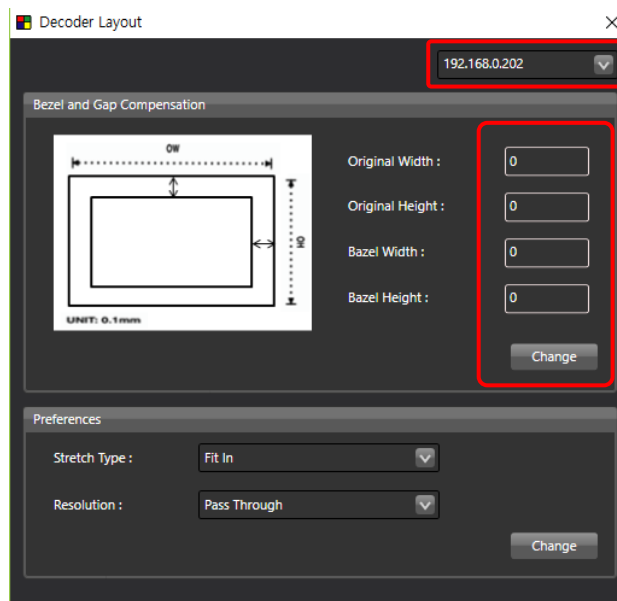


Figure. 49 Display Setup(Decoder Layout) – Bezel and Gap Compensation

b) Resolution setup

Set resolution preference of decoder as 'pass through' or fixed resolution.

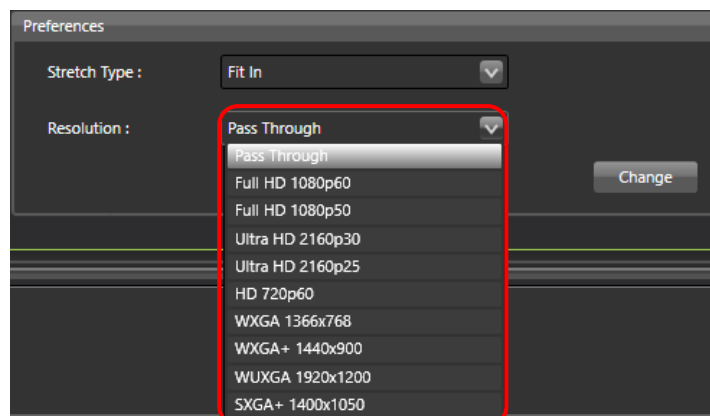


Figure. 50 Display Setup(Decoder Layout) – Resolution Setup

c) Display Fit in/Stretch out

Use 'Fit it' and 'Stretch out' feature for atypical ratio on decoder layout setup.

📏 'Fit in' : Reduce or increase size of original source to fit in to the display

📏 'Stretch out' : Maintain original ratio as cutting video source to the display

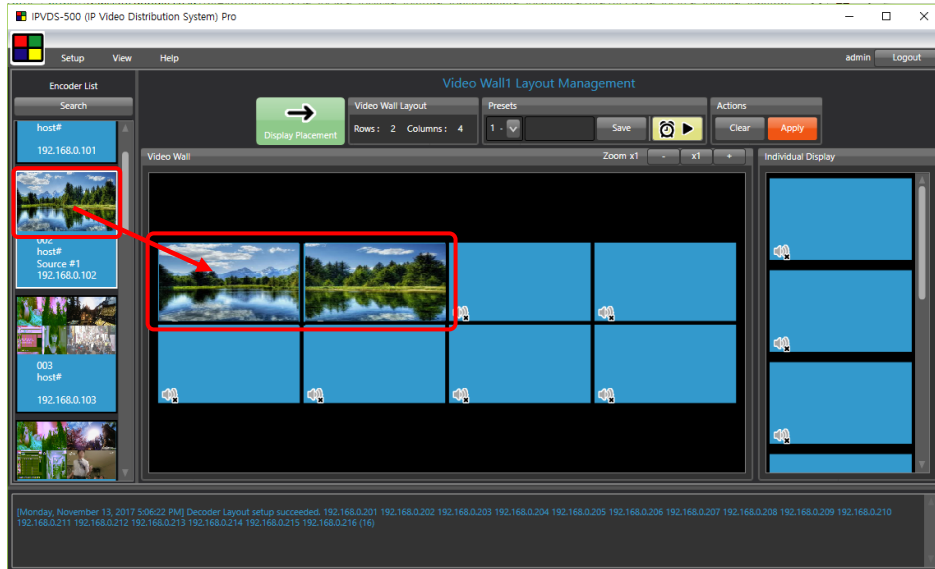


Figure. 51 Placing Video Source to 1 Row 2 Columns



Original Video Source



'Fit In' Setup – Display Source Fit into the Display



'Stretch Out' Setup – Cut Out of Bottom Part of Display Source

Figure. 52 Display Output Screen

8. Additional features

8.1 Scheduling feature

IPVDS-500 can automatically operate as saved preset schedule. There are two different preset schedule options; Sequence Preset Schedule, Weekly Preset Schedule.

8.1.1 Sequence Preset Schedule

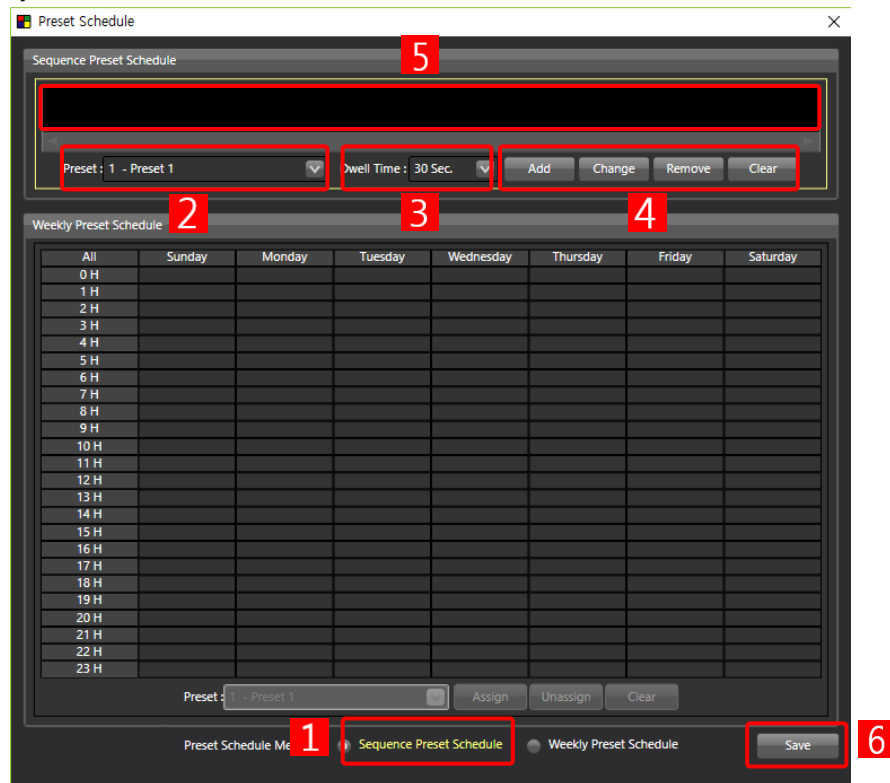


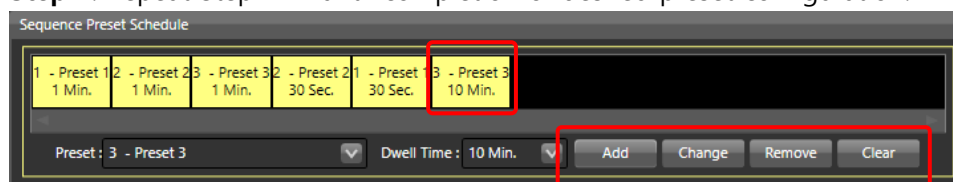
Figure. 53 Setup of Sequence Preset Schedule

Step 1. Click 'Sequence Preset Schedule' on Preset Schedule Menu **1** to activate Sequence Preset Schedule **5**.

Step 2. Select saved preset from **2** and set dwell time on **3**.

Step 3. Click Add button on **4**, then selected preset will be set on **5**.

Step 4. Repeat Step 1~4 until completion of desired preset configuration.



Step 5. To change or modify preset sequence, click desired preset from **5** and move, or change its sequence with mouse drag and drop, then click 'Change' on **4**. To remove preset from the list, select preset that need to be removed on **5**, and click Remove button on **4**.

Step 6. Click 'Save' **6** and close the window.

8.1.2 Weekly Preset Schedule

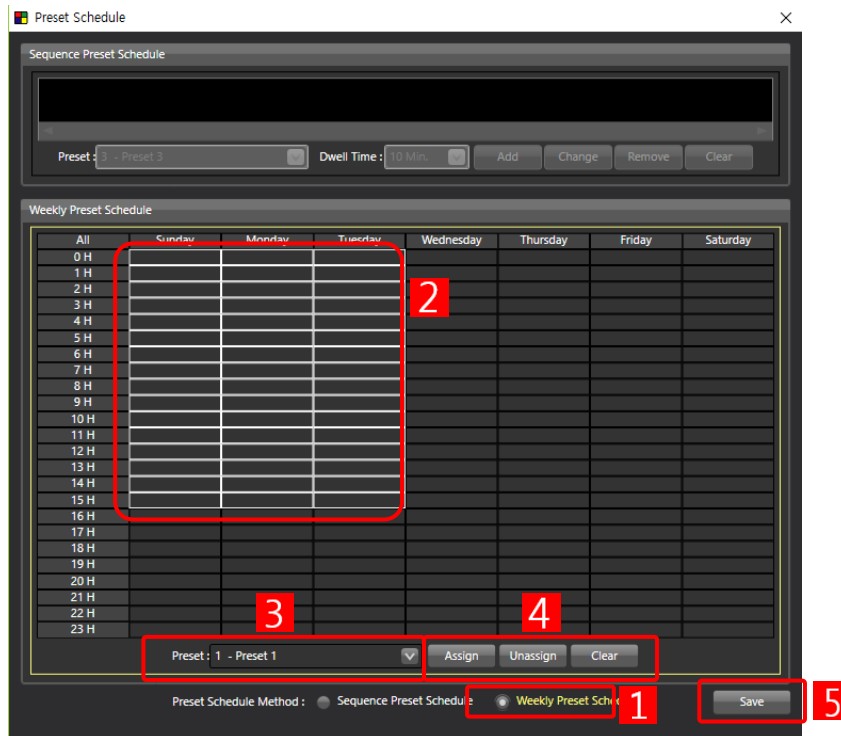
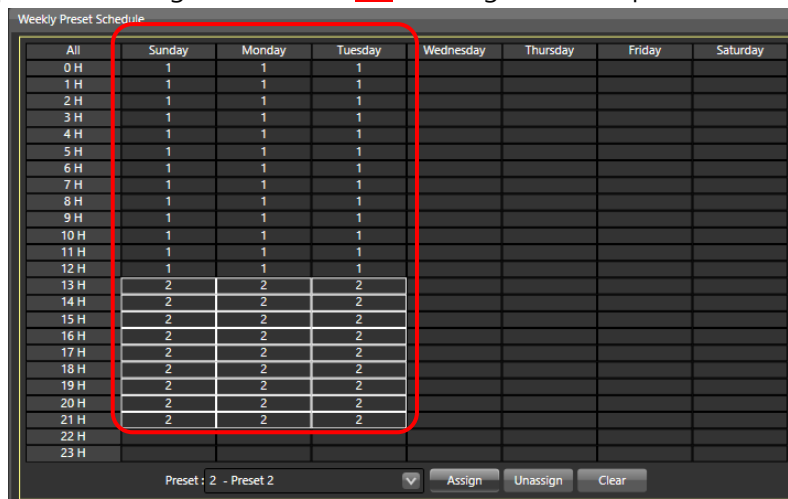


Figure. 54 Weekly Preset Schedule

- Step 1.** Click 'Weekly Preset Schedule' on Preset Schedule Menu **1** to activate Weekly Preset Schedule.
- Step 2.** Click designated time schedule or drag and select region on **2**.
- Step 3.** Select saved preset from **3**.
- Step 4.** Click 'Assign' button on **4** to assign selected preset on that region.



- Step 5.** To change or modify, click 'Unassign' on **4** to empty selected region, or click 'Clear' to empty the entire region.
- Step 6.** Repeat Step 2~4 to make desired weekly schedule and click 'Save' **5** and close the window.

8.1.3 Operate Scheduling

Once 'Sequence Schedule' or 'Weekly Schedule' setup is done, user can operate scheduling feature with 'Start Preset Scheduling' button on layout management.

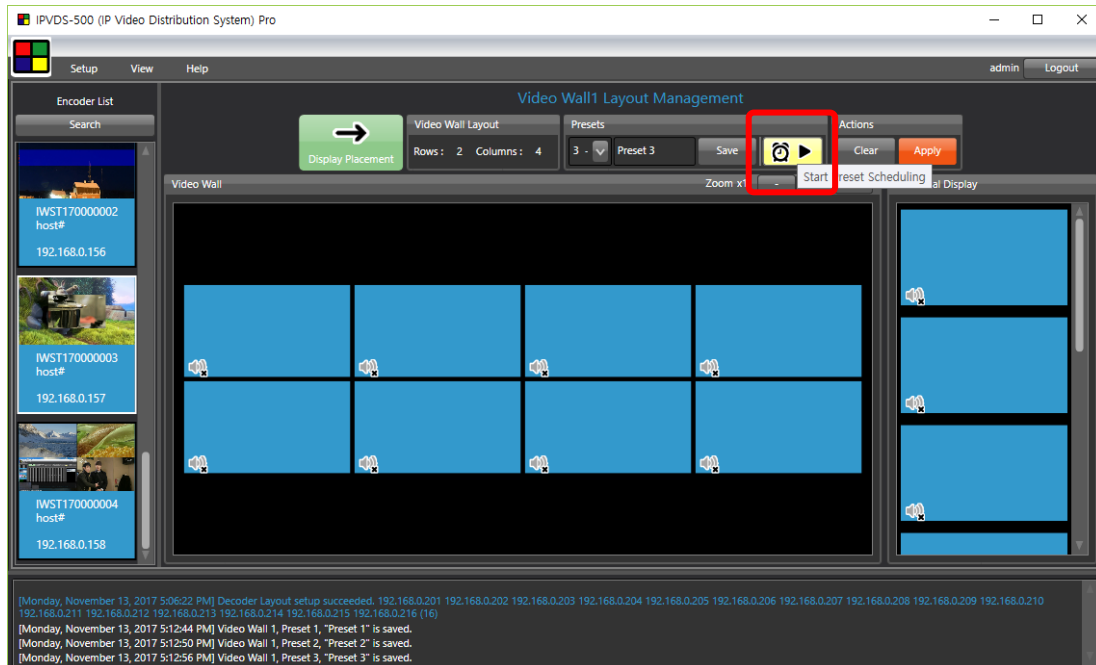

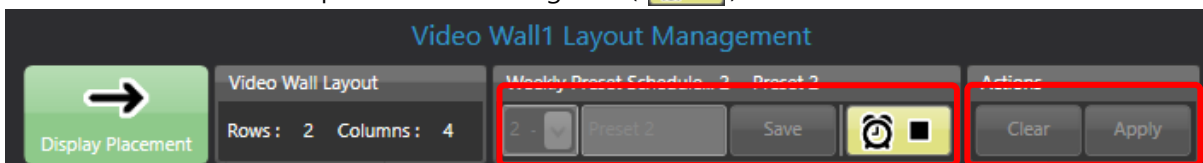


Figure. 55 Start Preset Scheduling

Once Preset Scheduling is activated, 'Start Preset Scheduling' icon will be changed, And click 'Stop Preset Scheduling' icon() to deactivate.



Note: All other function is disabled when using Preset Scheduling.

Important: Control PC has to be connected to the network to use Preset Scheduling.

8.2 Multiple Video Wall

IPVDS-500 Multiple Video Wall feature enable to control isolate control of each video wall when various video walls are installed in different site. Multiple Video Wall feature only operate with **IPVDS-500 Pro** PC application.

Step 1.

Ribbon Menu > Setup > Environment Setup > Video Wall Type

Select Multiple Video Wall and click 'Apply' button.

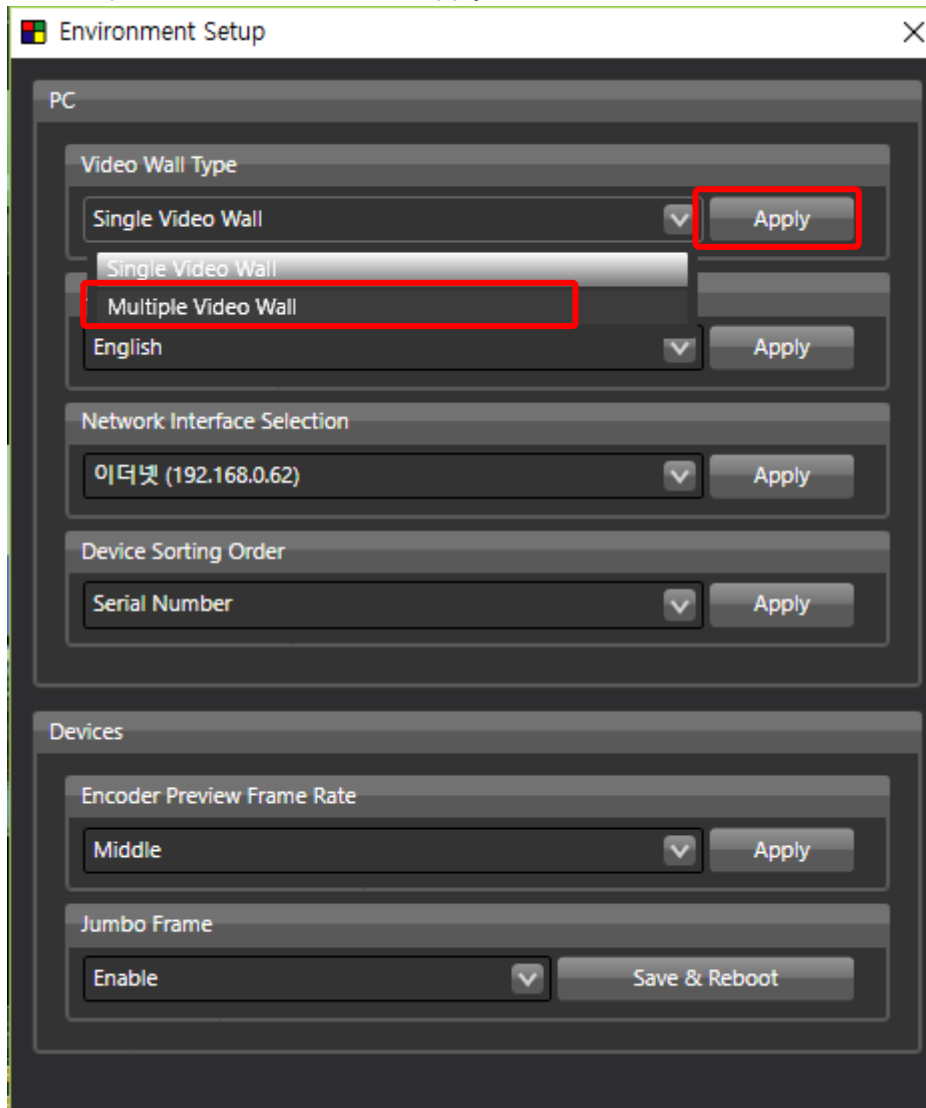


Figure. 56 Apply Multiple Video Wall

Step 2.

Register license key.

Note: Multiple Video Wall feature require to use IPVDS-500 Pro PC application and license key to use. Please contact regional distributor or tosales@optics.com to obtain license key.

Step 3.

Now, IPVDS-500 PC application will be changed to IPVDS-500 Pro, and user can select and set different video wall on **1**.

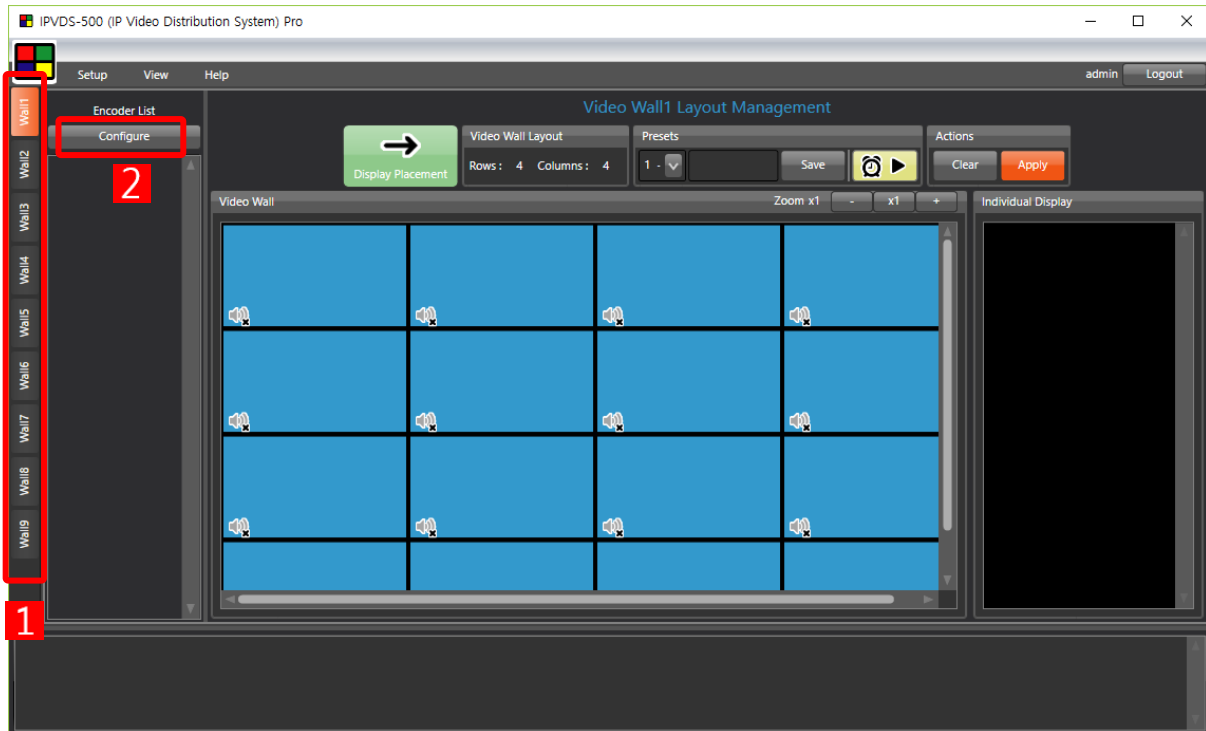


Figure. 57 Pro Version Start-Up Page

Step 4.

Click 'Configure' button **2** to load device assignment window. Click 'Search' button to load all the encoder and decoder device on the network.

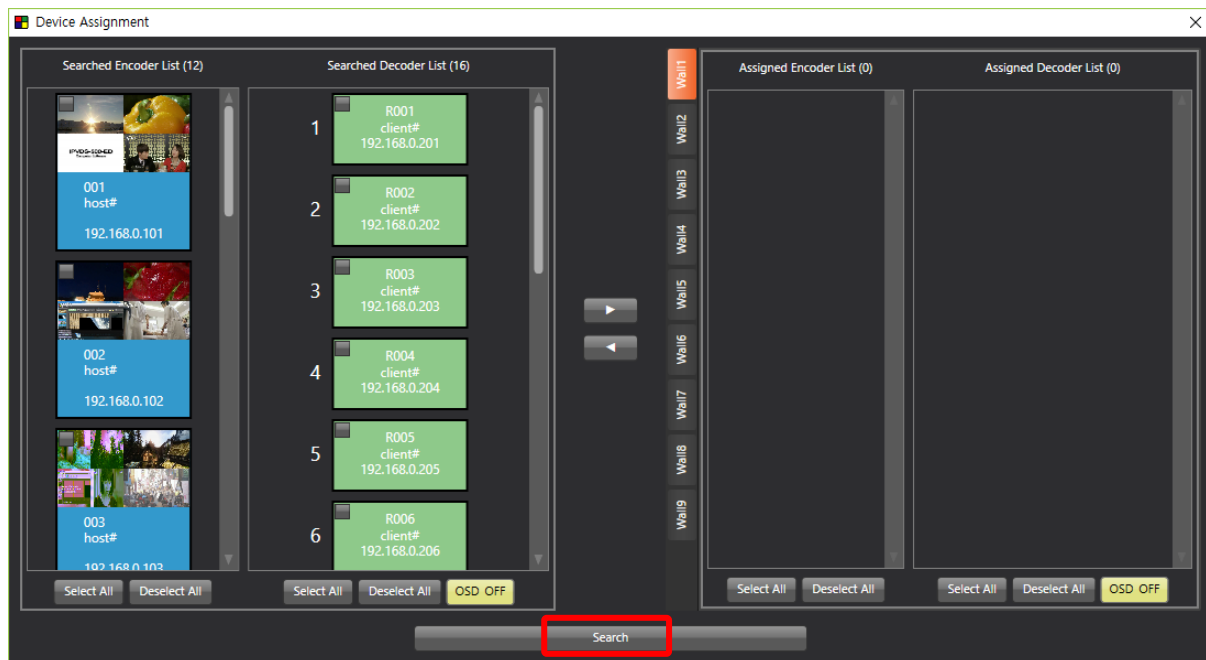


Figure. 58 Device Assignment Window

Step 5.

Select devices as clicking boxes on the upper left corner from Searched Encoder List and Searched Decoder List, and click assign button (▶).

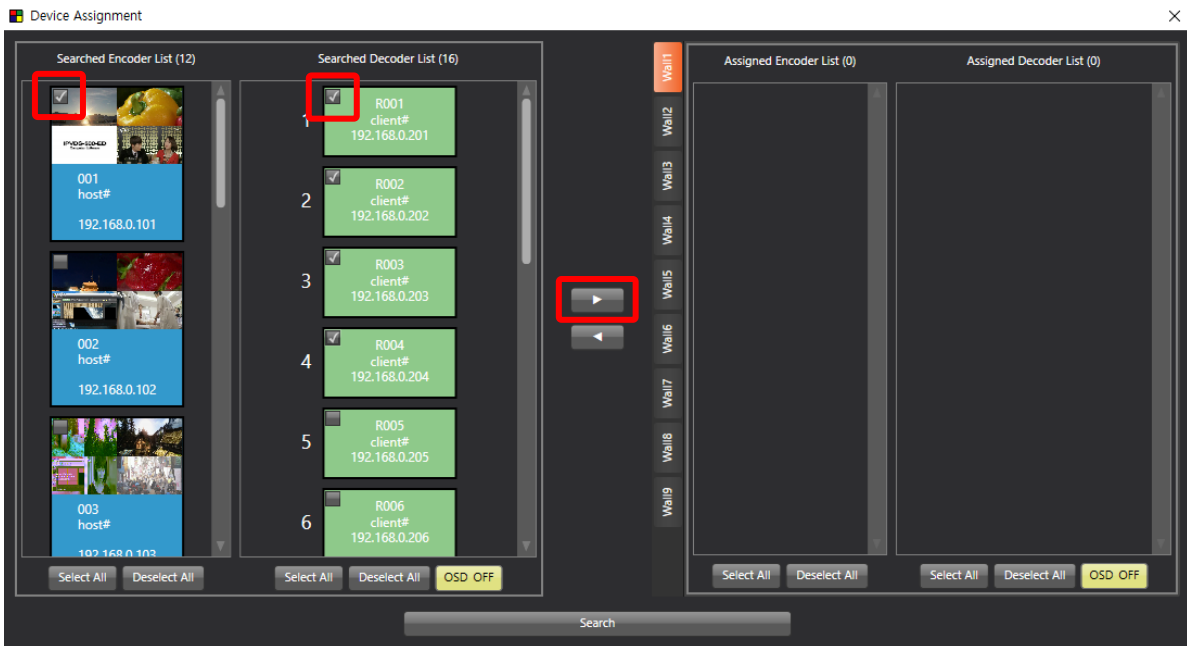


Figure. 59 Device Select and Assign on Wall 1 Tab

Step 6.

Assigned devices can be checked on the Assigned Encoder List and Assigned Decoder List on the right, and use can un-assign device with using 'Unassign' button (◀).

Note: Encoders can be assigned in duplicate for all of multiple video wall tabs.
Decoder can be assigned for single video wall, and it will be deleted from Searched Decoder list after assigned for particular video wall.

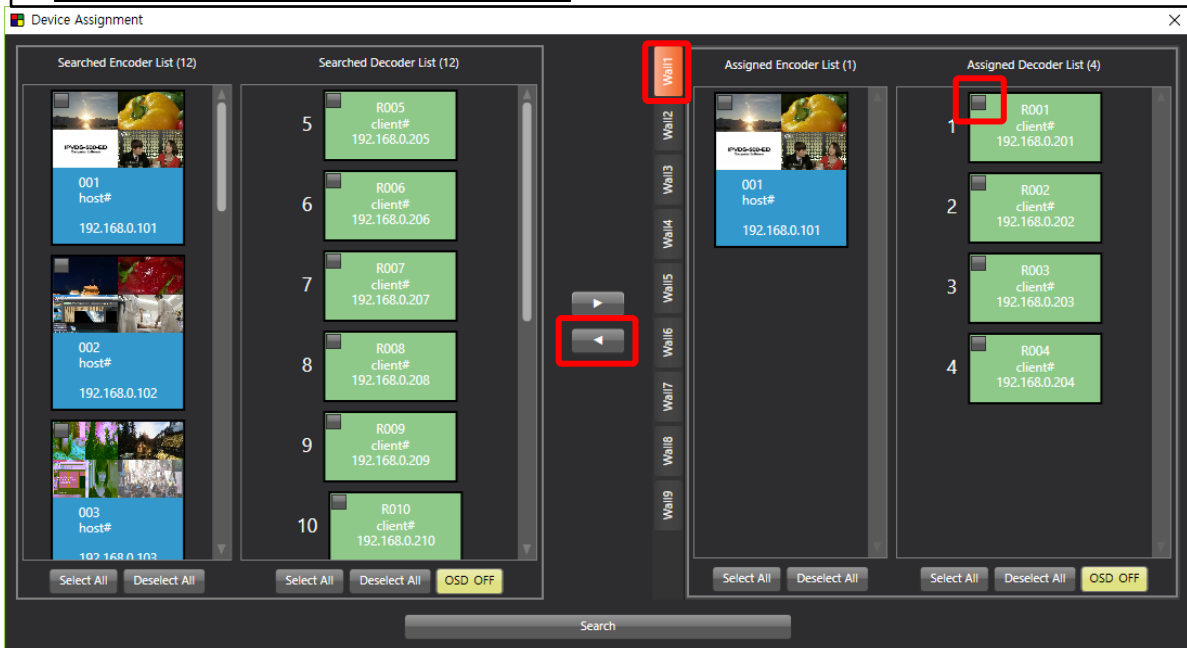


Figure. 60 Un-assign Device

Step 7.

Select Video wall (#2~9) and repeat Step 5~6 to assign devices, and then close window.

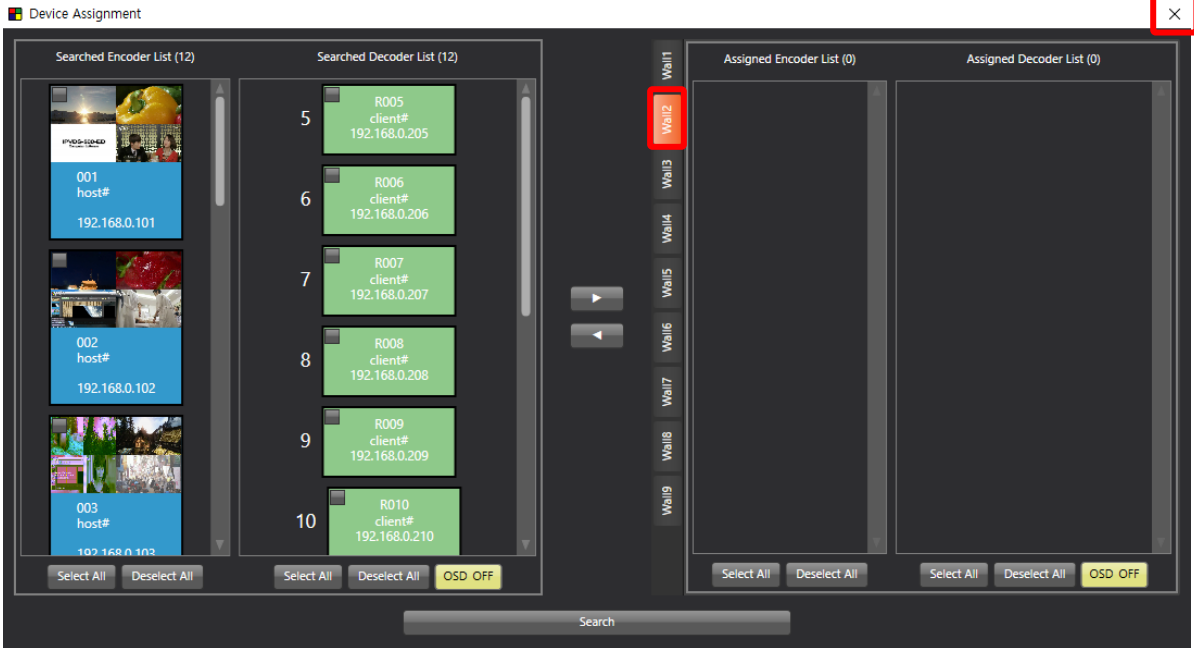


Figure. 61 Change Video Wall Tab

Step 8.

Set layout and assign source for video wall #1~9 and save preset.

When click Apply button (**Apply**), change command will be delivered to particular video wall, and decoders in other tabs will not be changed and maintain existing connection.

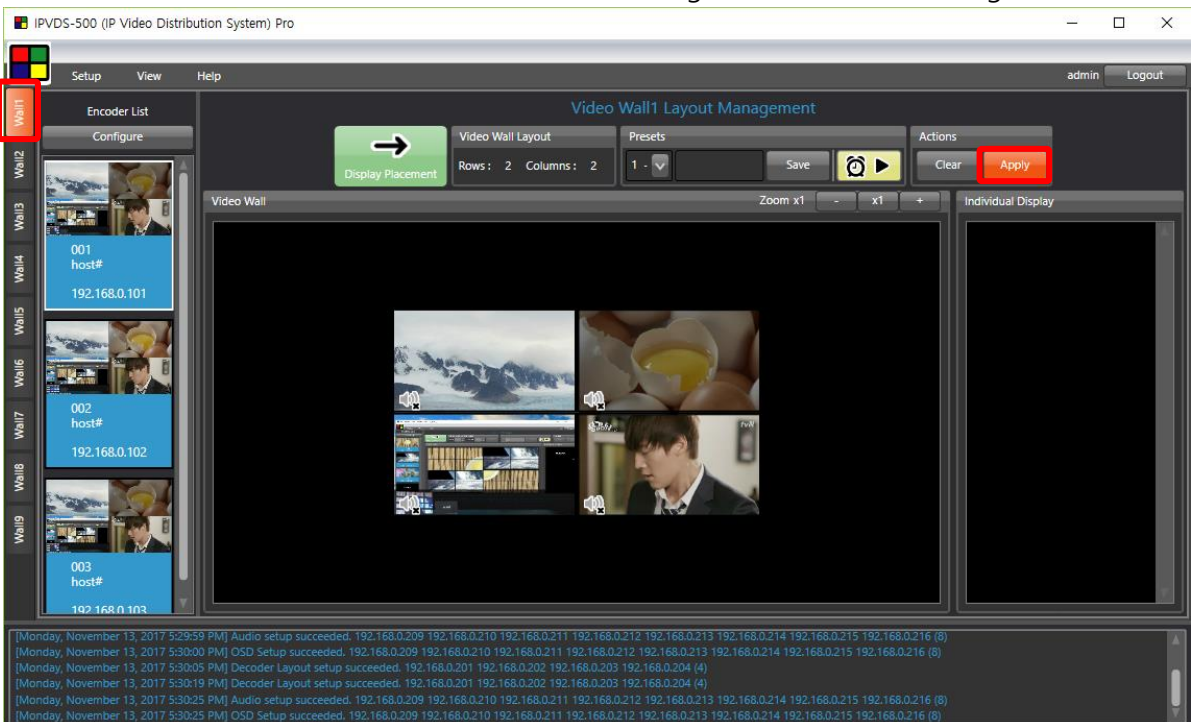


Figure. 62 Wall Tab #1

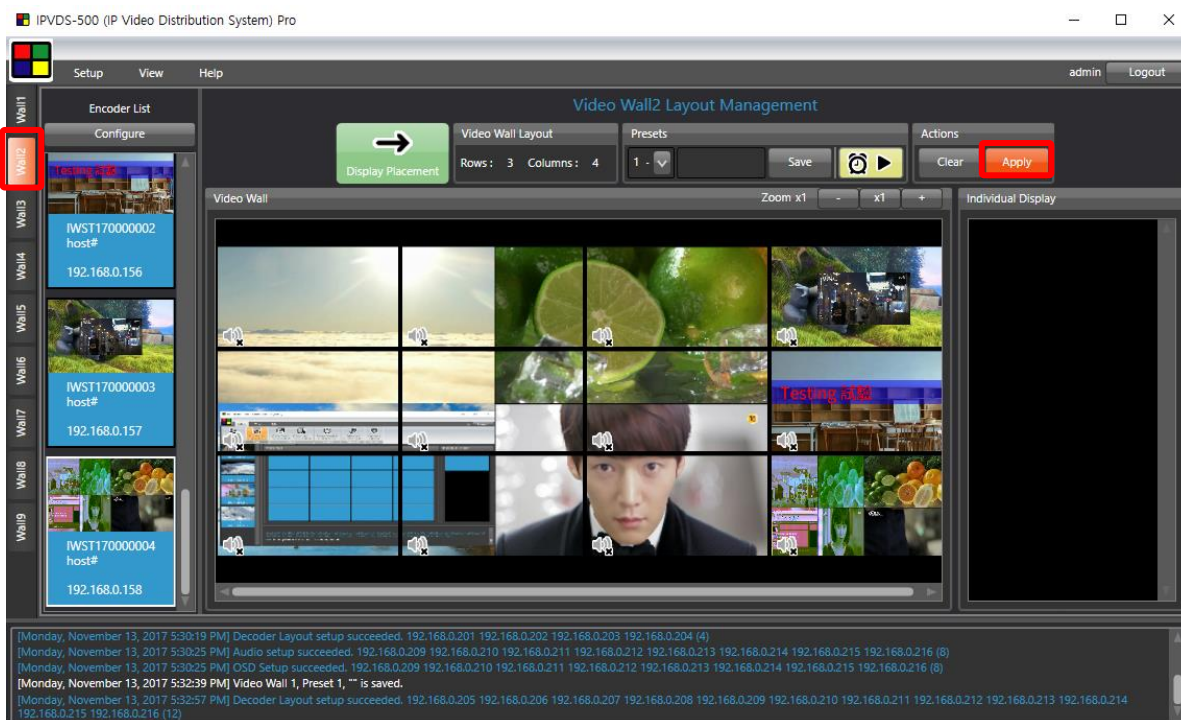


Figure. 63 Wall Tab #2

8.3 Plug-in Feature

8.3.1 Integrated Control Program (ICP)

Control power of displays with RS-232 port of decoder.

ICP (Integrated Control Program) requires separate installation of control program.

Contact tosales@opticis.com or techsupp@opticis.com for additional support.

8.3.2 Product Linkage Control

Product Linkage Control enables integrated control of Opticis products such as HDMI IP Decoding Converter (IPDC), HDMI IP Media Player (MPDS) on one PC application.

Contact tosales@opticis.com or techsupp@opticis.com for detailed information.

9. Product Specification

	Description	
Network	TCP/IP based IP network: 100/1000 Base-T Ethernet with CAT5e/ CAT6 Cables	
Resolution	Up to 4K resolution (3840x2160 at 30Hz) or 1080p at 60Hz	
Video Wall	Up to 256 (16x16, 4x64, 1x256, etc.) Video Wall with multi-sources	
Virtual IP Matrix	Supports Rows by Columns Virtual Matrix with individual displays	
Multicast streaming	1 to N (up to 200 RXs)	
Video latency	< 1 frame	
Fast switching	< 2 seconds	
Bit rate (changeable)	50, 100, 150, 200Mbps(default) and Best At Best bit rate, IPVDS-500-EDs are in 'Visually lossless'.	
Video Wall Control PC Program for users	<ul style="list-style-type: none"> - Video Wall Controller SW Apps for Video Wall and Individual Displays - Provides device configuration, connection, preview, layout editing, and apply action - Drag and Drop operation of Mouse for Host Allocation and Preview - Allocation, merge, split, overlay and clear on Layout management - Provides preview scene before to apply it to real monitors. - Provides 99 Presets for user defined layout (Save and Loading) - Provides Pre-set Scheduling function with sequential and weekly mode. - Bezel Compensation in 0.1mm units 	
HDCP	HDCP 1.4 and 2.2	
TX Video Interface	Input: 1 HDMI Input, Output: 1 HDMI Output (Loop-Through)	
RX Video Interface	Output: 1 HDMI Output	
Keyboard/Mouse (TX)	1 x mini USB B type to PC	1 x USB A type (for Local HID Keyboard/Mouse)
Keyboard /Mouse (RX)	2 x USB A type (for Remote HID Keyboard/Mouse)	
Audio Input (TX)	HDMI Audio or Analog Line-in	
Audio Output (RX)	HDMI Audio and Analog Line-Out (Dual output)	
RS- 232 Port (optional)	3 Pin Terminal Block for Knob & alarm interface	
Digital I/O Port (optional)	3 Pin Terminal block for Control Authority (Externally)	
Reset Switch	SW reset & Factory reset	
EDID	Built-in EDID & EDID Read/Write	
Dimension	TX: 112 x 28 x 104mm (WHD), RX: 112 x 28 x 104mm (WHD)	
Power	100-240VAC, 50-60Hz / 5V/2A Adaptor	
Power Consumption(TBD)	TX < 5W	RX < 5W
Operating Temperature	0 ~ 50°C	
Storage Temperature	-20 ~ 60°C	
Certification	FCC, CE, KC	
1U Rack	Provides 1U rack (model: OPSCR-1U), Optional	
Mounting bracket	Provide Mounting bracket (model: OPSCB): VESA 75,100 standard, Optional	

10. Troubleshooting

Problem	Remedy
Image drop (All decoder output)	<ul style="list-style-type: none"> - Check Jumbo Frame specification of network switch. Change Jumbo Frame 'Disabled' on Environment Setup(Ribbon Menu) when network switch doesn't support Jumbo Frame - Check IGMP, IGMP Snooping setup of network switch. If network switch doesn't support IGMP, there is limit of multicast operation, thus new network switch is needed. - Check port speed of network switch. 1G support required. - Check port speed of encoder. Change LAN cable for 1G connection - Check bandwidth when configured network with multiple switchers. - Change EDID
Image drop (Partial decoder output)	<ul style="list-style-type: none"> - Check port speed of network switch. 1G support required. - Check port speed of decoder. Change LAN cable for 1G - Check HDMI cable - Change EDID
No video output (All decoder output)	<ul style="list-style-type: none"> - Check condition of every cable (HDMI / UTP) - Check IP address of all devices are in same network class (Ex : 192.168.0.xxx) - Check OSD (On Screen Display) <ol style="list-style-type: none"> 1) Change resolution from Decoder Layout Setup 2) Change resolution of display source. When display source resolution is high than display (Ex; source: 4K, display: 1080p) 3) Check input setup of display and power if can't check OSD number - Change EDID
No video output (Partial decoder output)	<ul style="list-style-type: none"> - Change resolution of display source. When display source resolution is high than display (Ex; source: 4K, display: 1080p) - Check IP address of all devices are in same network class (Ex : 192.168.0.xxx) - Change HDMI cable - Reboot corresponding decoder

<p>No video output (Local Display output)</p>	<ul style="list-style-type: none"> - Up to 1920x1200p 60Hz for Local display resolution 1) Change resolution less than 1080p 2) Change EDID - Change HDMI cable
<p>Unable to search device on PC App.</p>	<ul style="list-style-type: none"> - Check LAN cable condition of Control PC - Check network setup of Control PC (IP bandwidth) - Setup > Environment Setup > Network Interface Select interface and apply. Retry search. - Re-start PC Application - Reboot encoder/decoder - Reboot L2/L3 Network Switch
<p>No Preview</p>	<ul style="list-style-type: none"> - Check source output(encoder) - Use local display output - Preview not supported interlace resolution (1080i) - Change EDID
<p>Mismatch of Layout from PC App. and actual display output</p>	<ul style="list-style-type: none"> - Place Decoders in serial order (refer to page 25) - Check OSD(On Screen Display. Change their placement if not in order
<p>Slow switch speed (over 5 seconds)</p>	<ul style="list-style-type: none"> - If not in same condition, it can cause slow switch speed and flickering 1) Different device Firmware version (Encoder/Decoder) 2) Different resolution of connected host 3) Different frame speed of connected host 4) Different video input signal of connected host (HDMI/DVI)
<p>Slow mouse speed, recognition when using KVM function</p>	<ul style="list-style-type: none"> - Set Preview Frame Speed as 'Low' on Environmental Setup of Ribbon Menu for slow mouse speed and recognition.
<p>Problem with USB device operation</p>	<ul style="list-style-type: none"> - Certain time is required for PC to recognize USB device and install driver when first connected. - Maximum 6 USB devices can be connected per PC (including local USB devices) - If more than 2 users try to connect to TX at the same time, priority to work on USB device goes to first user who try to connect (about 3 seconds) - Check USB cable between PC and encoder and replace if there is any problem - Change USB port from PC and check if it recognize.

11. Warranty

1 (One) Year Warranty

Opticis warrants IPVDS-500-ED, HDMI IP Video Wall controller to be free from defects in workmanship and material, under normal use and service, for a period of one(1) year from the date of purchase from Opticis or authorized resellers.

To request repair or service from Opticis, customer shall not open the product, nor place any part of IPVDS-500 without assistance from Opticis. Keep serial number sticker on the device.

Opticis has no responsibility for any software, firmware, information or memory data of customer contained in, stored on, or integrated with any returned to Opticis for repair (Under warranty or not)

1. Free Repair

- Faulty IPVDS-500 under normal use in warranty in period

2. Customer Paid Repair

- Faulty IPVDS-500 but out of warranty period
- Faulty caused by negligence and/or intention of customer
- Faulty caused by voluntary alternation or repair without approval from Opticis
- Faulty caused by natural calamities
- Faulty caused by connection with other faulty device

If a product does not work as warranted during applicable warranty period, Opticis shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item refund to purchase price for the defective product.

All products that are replaced will become the property of Opticis. Replacement products may be new or reconditioned.

Dispose of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate systems)



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



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if you need any technical support or additional support.