VWC2 User Guide

Introduction

DigiBird Video Wall Controller Gen-2 (referred as VWC2 hereafter) is a newly released highly stable video wall processor, which fully supports 4K UHD inputs and outputs.

The VWC2 adopts DigiBird's blade, modular components design and hardware based FPGA technology. Bandwidth of the VWC2 is doubled than that of Video Wall Controller Gen-1 (referred as VWC1 hereafter). VWC2 is able to make the contents more smooth and switching seamless by powerful 4K UHD processor.

The control method are also upgraded to be Web-based and the operation becomes more flexible and intuitive. User is able to check the real-time operating status, hardware temperature, warning hints and the auto-adjusted fan speed information via the GUI web-based software.

The VWC2 series have several sizes ranging from 4U, 6U, 14U to 19U, that supports 32 to 148 HD inputs or 16 to 74 4K UHD inputs and 12 to 80 4K UHD outputs. For more hardware information and new features, please refer to the <VWC2 specification and datasheet>.

Diagram
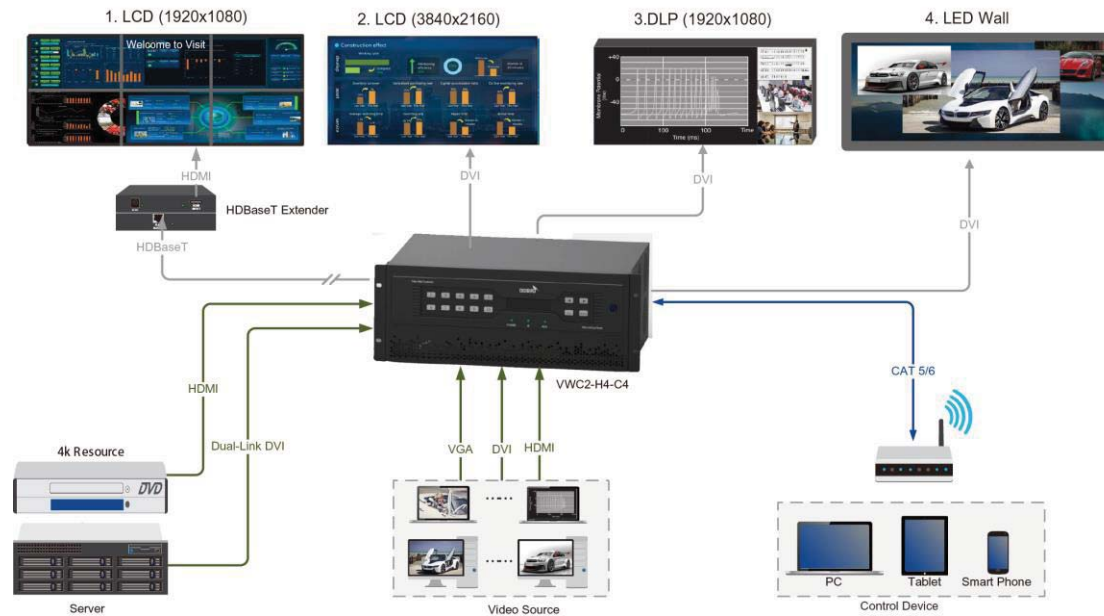
The DigiBird® Video Wall Controller product family provides highly expandable and flexible solutions for video walls, particularly for large-scale multi-screen systems. Capable of integrating any type of video and data source on any display wall configuration. Our products and solutions are widely used in areas as diverse such as Video Conference Rooms, Public Utility Control Centers, Intelligent Traffic Management Centers, Security and Surveillance Facilities, Military Command and Control Centers, Energy Management Rooms, Process Control Rooms, Call Centers, Board Rooms, Network Operation Centers (NOC), Financial Management Control Rooms and high-end Residential Market (for example high-end home theaters).

Front and rear panels

Front panel

H4 Series

4U Front Panel:
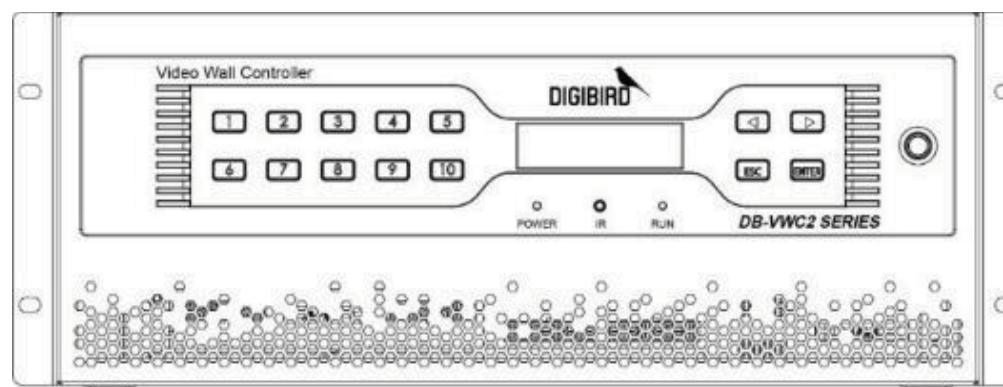
Note: VWC2 by default IP address is 192.168.1.200.

Status indicators

1	POWER	Power indicator: illuminated when power on.
2	IR	IR indicator: reserved for future use.
3	RUN	Run indicator: flicker when operating well.

Rear Panel

1.Input Slots

2.Output Slots

3.CPU Slots

4.CMC Slots

5.PSU Slots

6.Fan Slots

Slots introduction:

1	Input Slot	Populated with DVI, Dual-Link DVI, HD HDMI, 4K HDMI, CVBS, DP,VGA, SDI, etc. input cards.
2	Output Slot	Populated with DVI, Dual-Link DVI, HD HDMI, 4K HDMI, CVBS, DP,VGA and SDI, etc. output cards.
3	CPU Slot	Populated with primary and redundant control cards.
4	CMC Slot	Populated with Confidence Monitoring Card.
5	PSU Slot	Populated with primary and redundant PSUs.
6	Fan Slot	Populated with auto-adjusted fan modules.

Note*:
NPC (Network Preview Card) would occupy one output slot.

Software

The software is Web-based, it's operation is flexible and intuitive. The user is able to check the real-time operating status, hardware temperature, warning hints and the auto-adjusted fan speed information via the GUI web-based software.

Note: Support Google Chrome only.

Login

Prior to connect your VWC2, make sure the VWC2 IP address is in the same network segement with your PC. You are able to change the VWC2 IP address via the buttons on the front panel or can also change by your PC IP settings.

Connect your PC with the VWC2 via LAN or WLAN, make sure the VWC2 and your PC are within the same LAN.

1. ÁLaunch the Google Chrome web browser and input the VWC2 IP address. For installing Google Chrome, please refer to www.google.com.

- Change the VWC2 IP address via the front panel buttons to 192.168.0.93 (This manual adopts 192.168.0.93 as an example, user is able to change the IP address according to the network environment. The VWC2 default IP address is 192.168.1.200.)

- Input the IP 192.168.0.93 and press <Enter> to access.

2. The login interface is shown as below, the default user name is "admin" and password is "123", the password can be changed after login. For Editing account please refer to <Users> section.
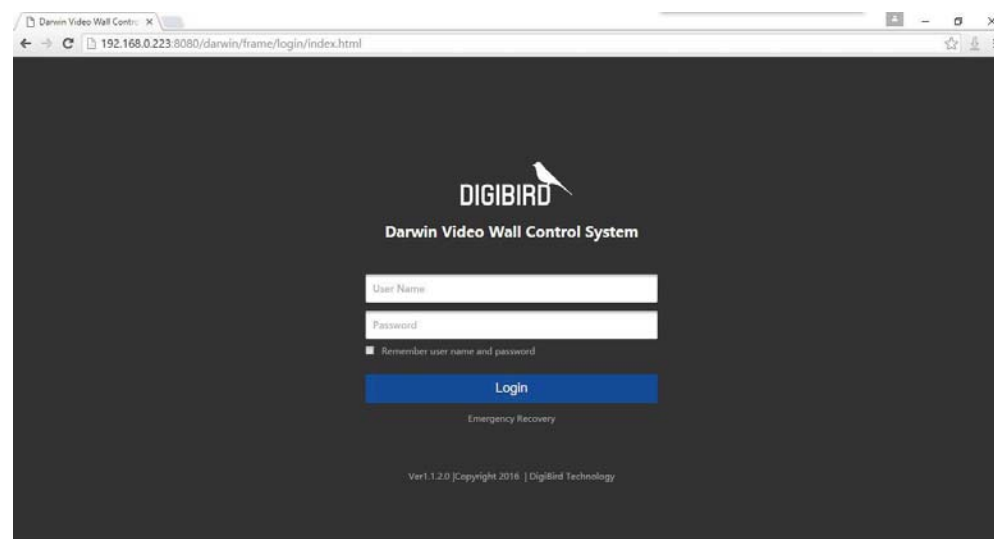
Operation Interface

Dashboard

After login, the operation interface is shown as below. By default a 2x2 video wall had been created by the software(without outputs mapping between the Displays and Outputs ports). You can configue the setting of the video wall as per your requirement by entering the <Settings> to change, please refer to <Video Wall> section.
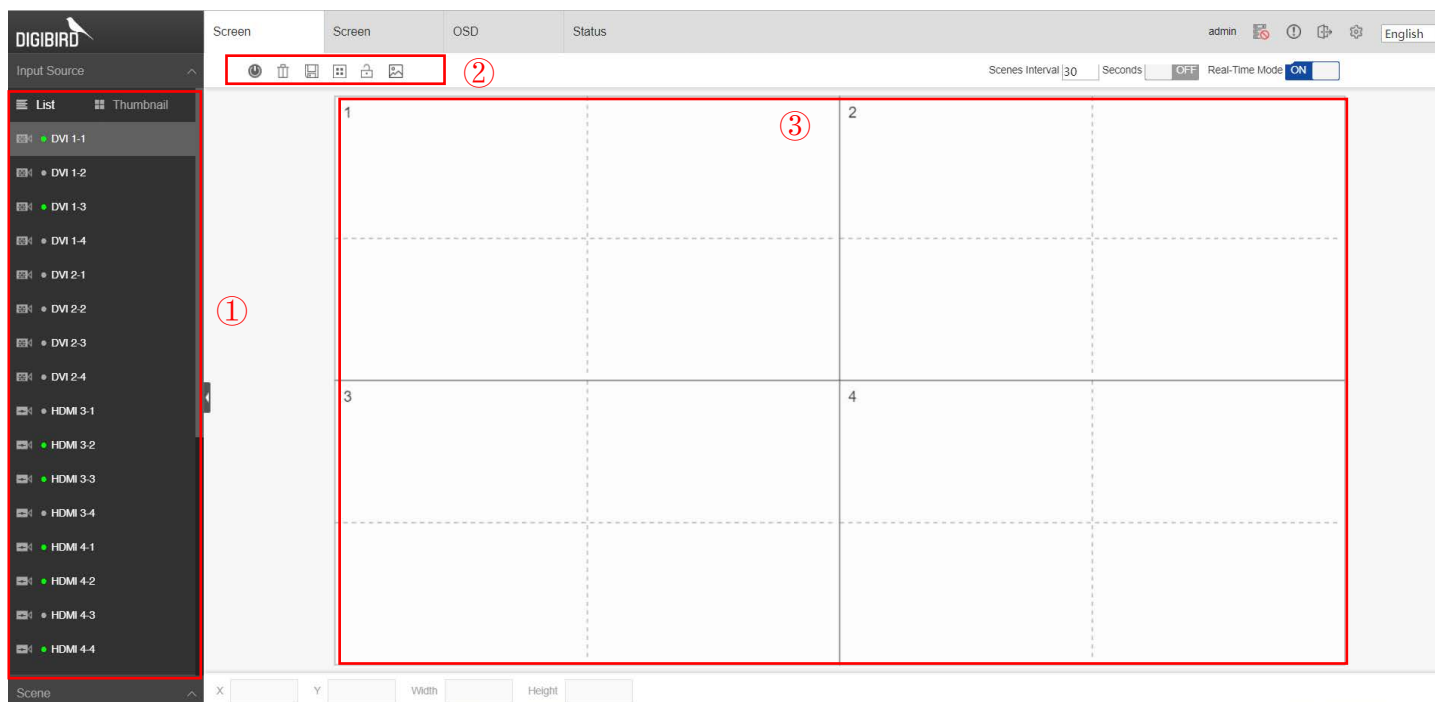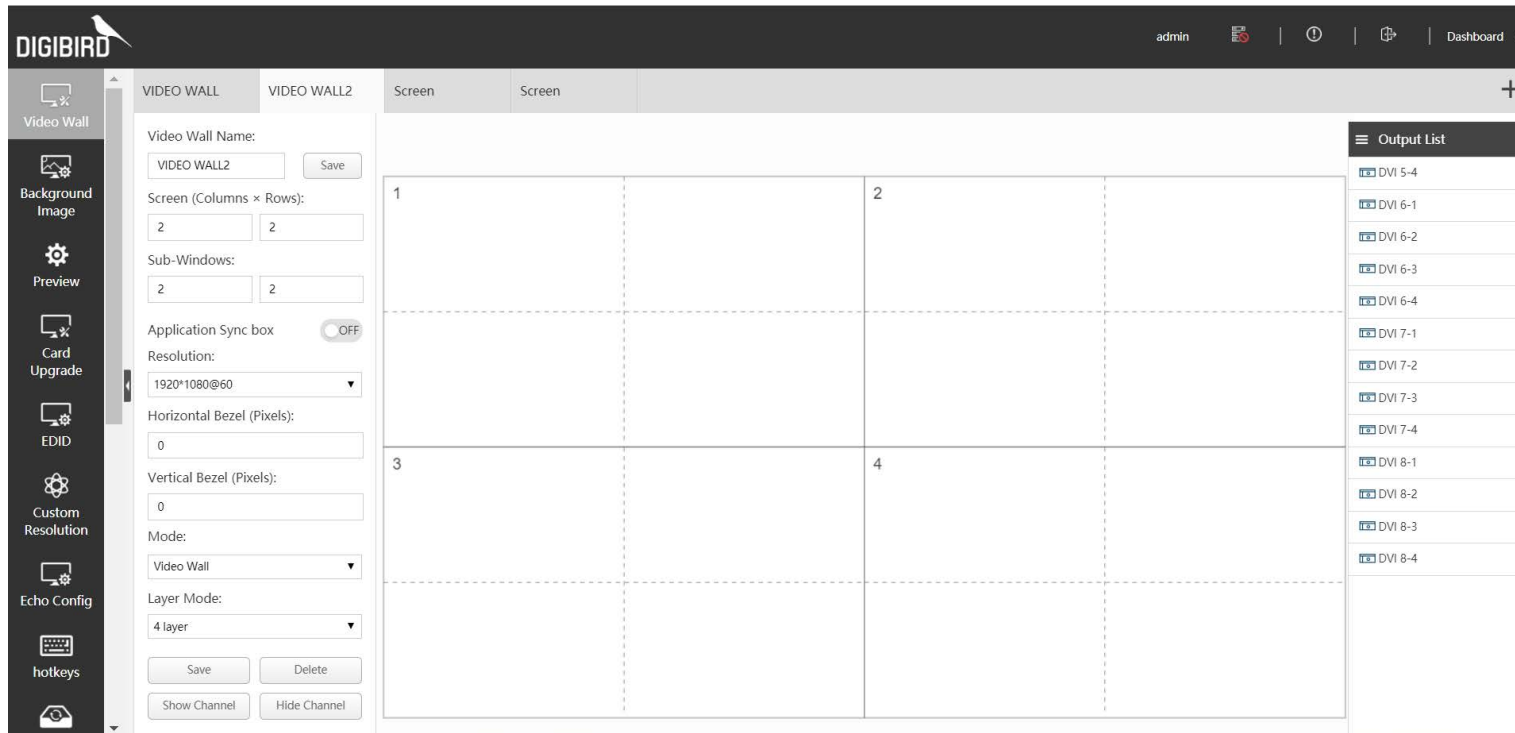
1	Input resources list	The inputs resources list with status indicators, support tree mode and thumbnail mod. Thumbnail mode has preview features.
2	Manual bar	Including Scrolling Text, Power Off/ ON (Standby/ Wakeup), Scene (Preset), Scenes carousel, Settings and Exit, etc..
3	Video Wall	Main operation interface: including video windows management, layouts, movingzooming, overlapping, etc.

Settings

Click the button ⚙ to enter the settings interface including Video Wall, Background image, Preview, EDID, Custom Resolution, Video Wall Layout, Users, Backup and Upgrade settings.

Video Wall

Single group video wall

1. Click ⚙ to enter the settings interface
2. Click <Video Wall>, the setting bar will be shown as below with a default 2x2 video wall and you can change the configuration accordingly.

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1   Video Wall Name   User-defined video wall name.

2	Screen (Columns x Rows)	The video wall displays layouts.
3	Sub-Windows	The grids of video windows layouts, 2x2 as default.
4	Resolution	The output resolution can be selected from the dropdown list.
5	Horizontal &Vertical Bezel	Setup the display bezel for bezel correction.
6	Mode	To select the video wall types, including LCD, LED, Edge Blender, Matrix, etc.
7	Show Channel	Display relevent output channel ID on each display device.

3. Output mapping

You can select, then drag and drop the output from the right-side list to the display in order to setup the mapping relationships between the displays and the output channels/ ports.
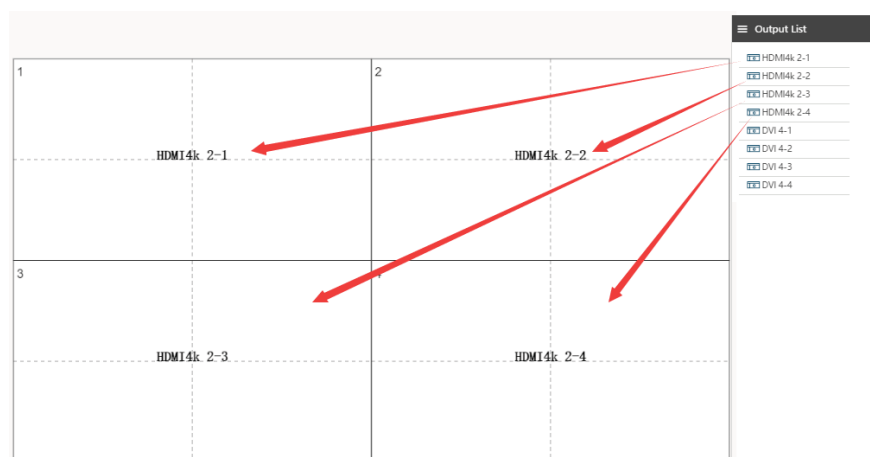
4．Save

Click ＜Save＞ to save the video wall settings and check your new configured video wall at the dashboard.
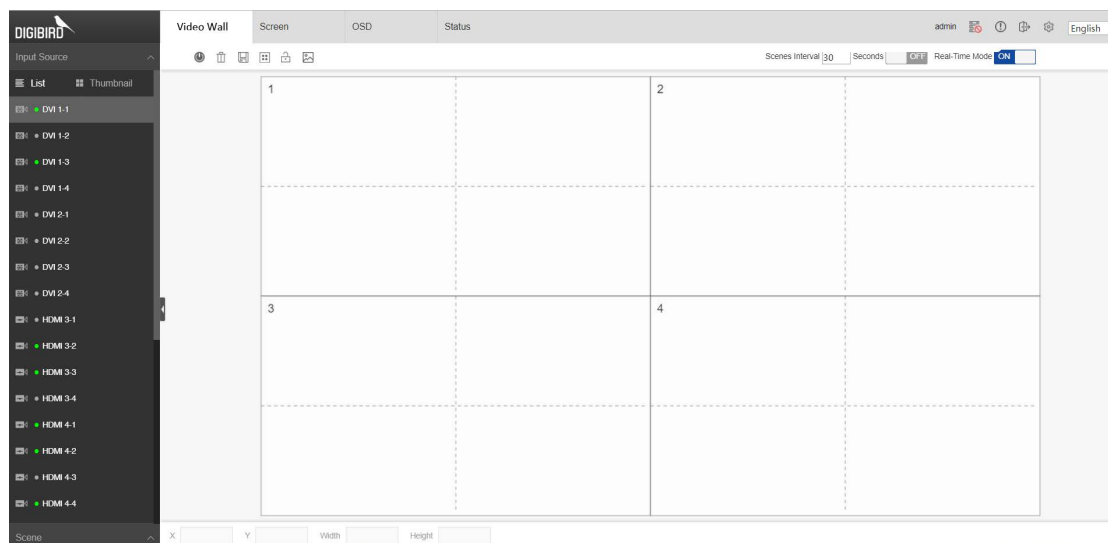
Multi-group video wall

The VWC2 is able to control multiple video wall groups with up to 4x different display resolution.

1. In the settings, click ＋ to add more video wall groups of which the configuration is the same as the above "Single group video wall".
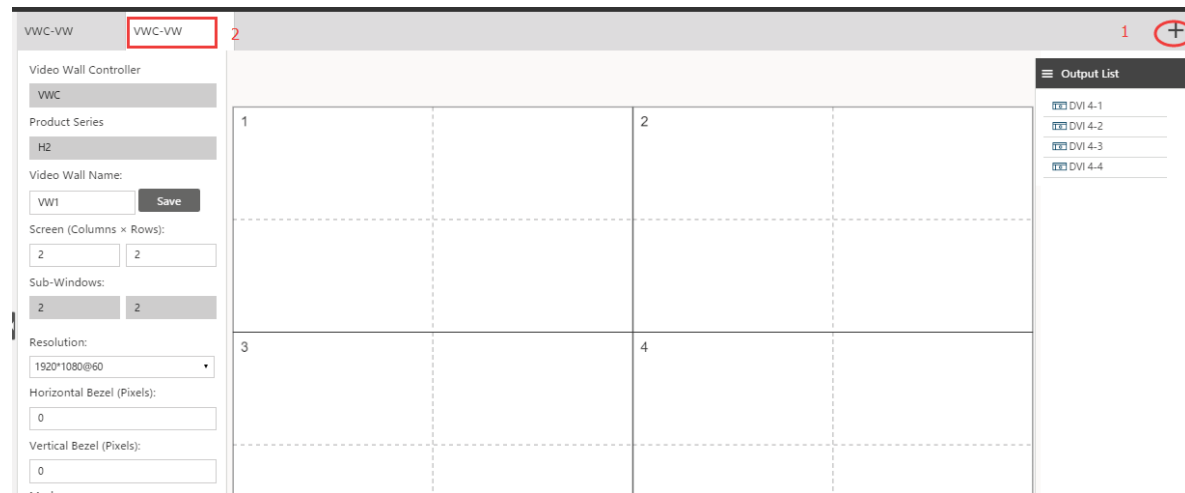
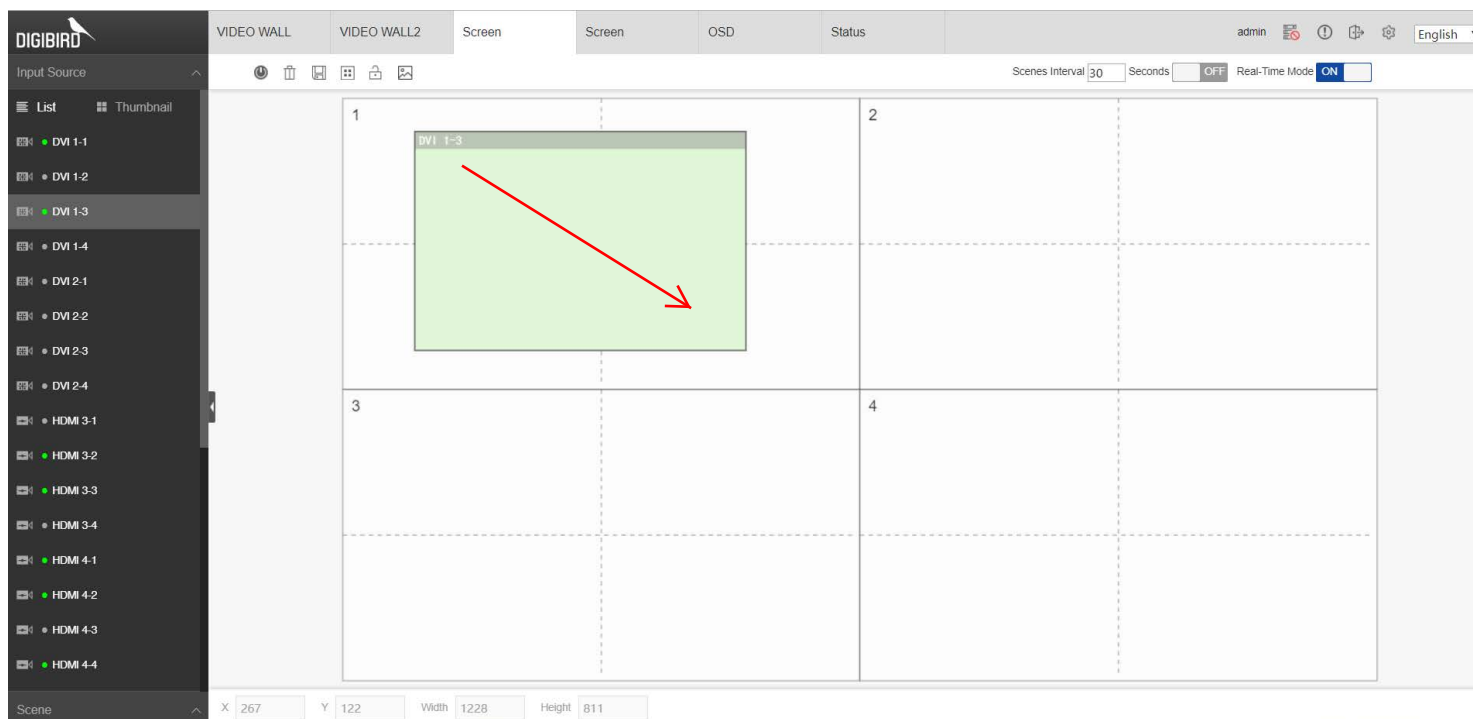2. Back to dashboard to operate each video wall group.
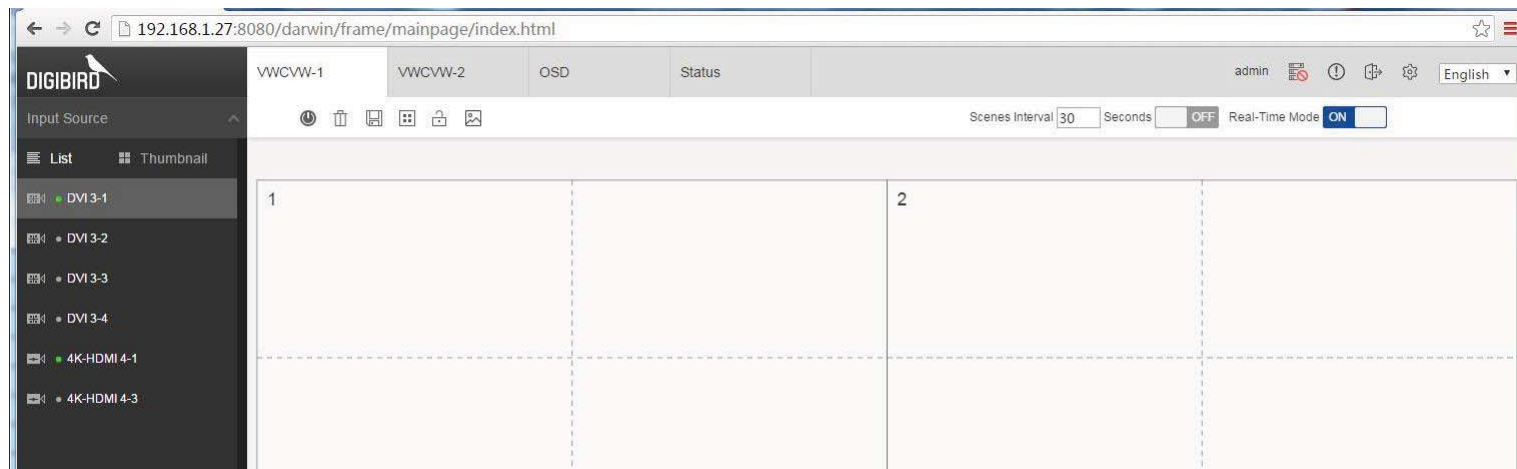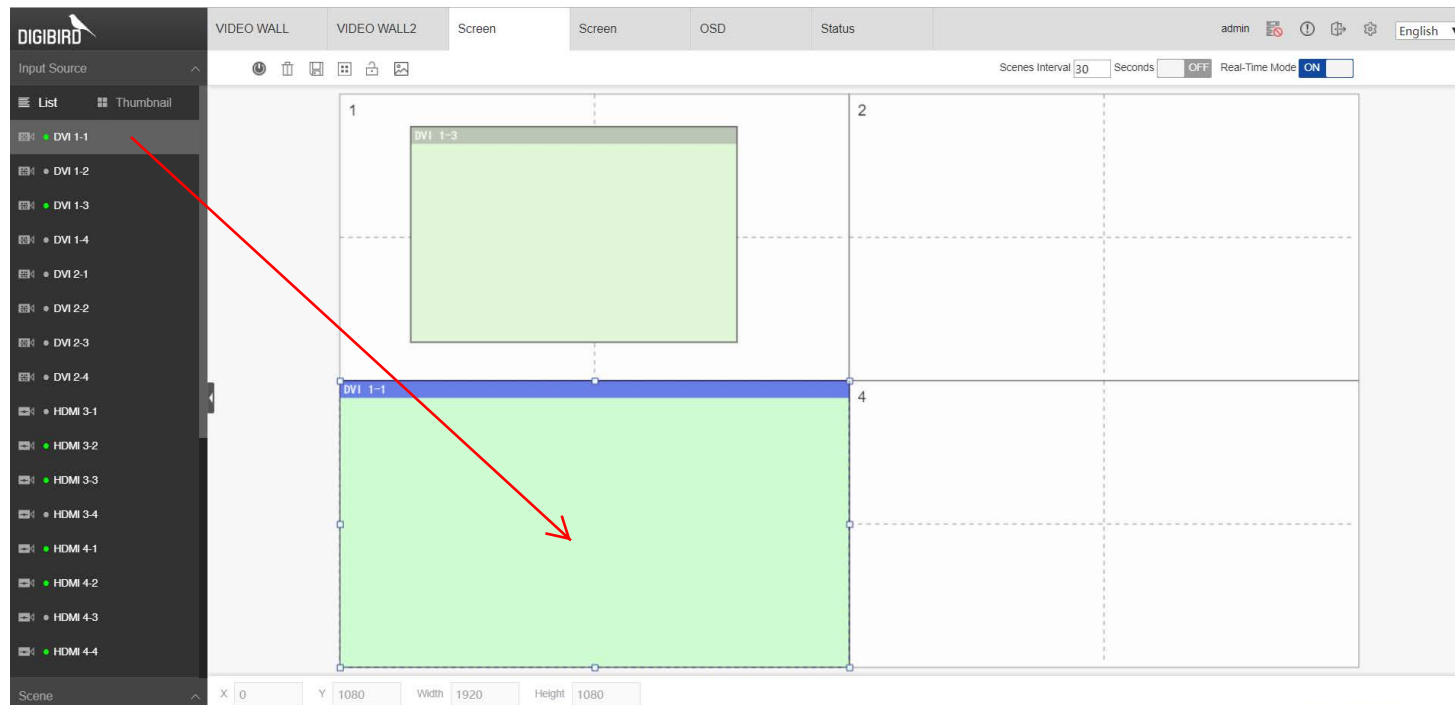
Video windows layouts

Windows

Create a New Window

- Rectangle drag

  Select an input resource from the left side inputs <List>, hold and drag a rectangle at any position on the video wall workspace to create a video window.

• Drag and drop

 Select an input resource from the left side inputs <List>, then drag and drop to any display on the video wall workspace to create a full screen video window.

Windows layout

It supports arbitrary moving, zooming in/ out, overlapping of multi video windows.
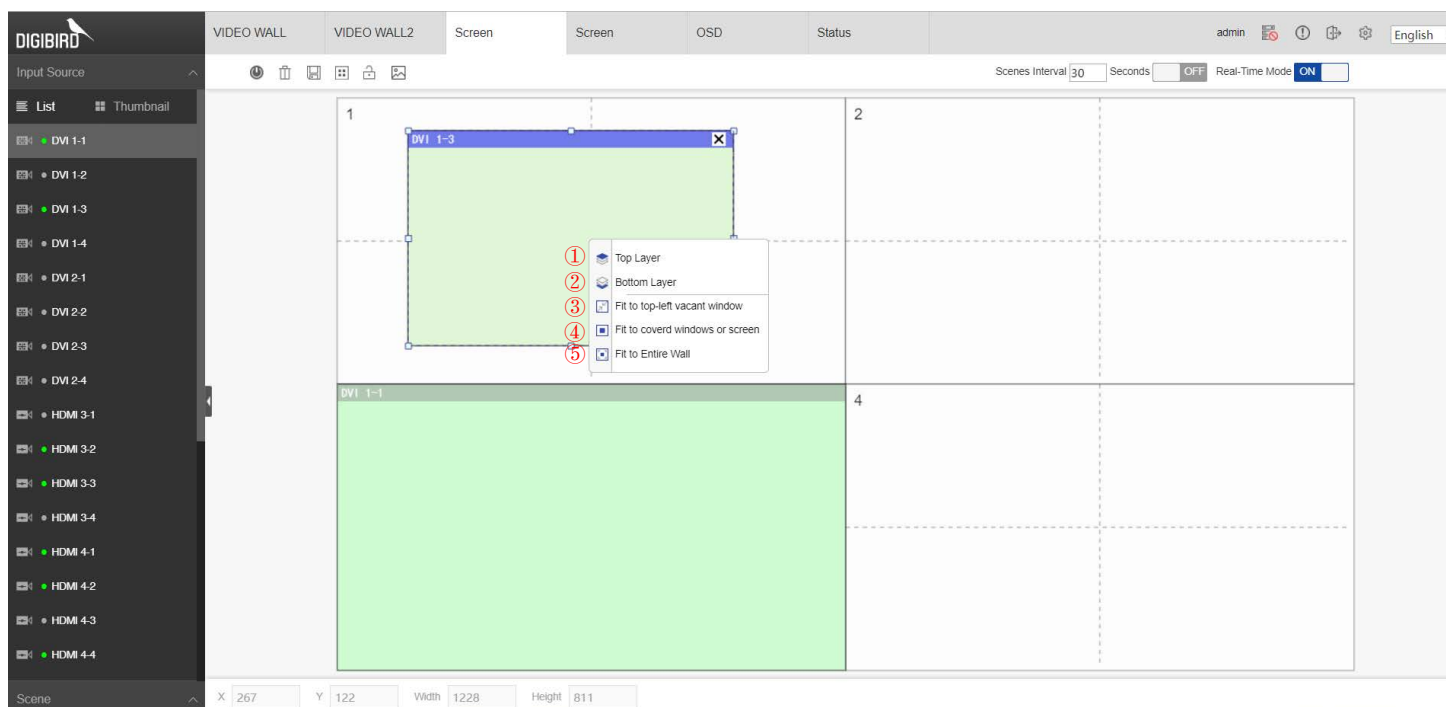
1 Top Layer	Put the window to the top layer.	
2 Bottom Layer	Put the window the bottom layer.	
3 Fit to top left vacant window	Fit the window to the top left vacant sub window. Double click on the window area can perform the same function.	
4 Fit to covered windows or screen	Fit the window to the window or screens which are covered by it.	
5 Fit to entrie wall	Fit the window to full screen on the whole video wall. Double click the caption bar can perform the same function.	

Switch inputs

Select any input resource and drag to any video window to switch the input resource.
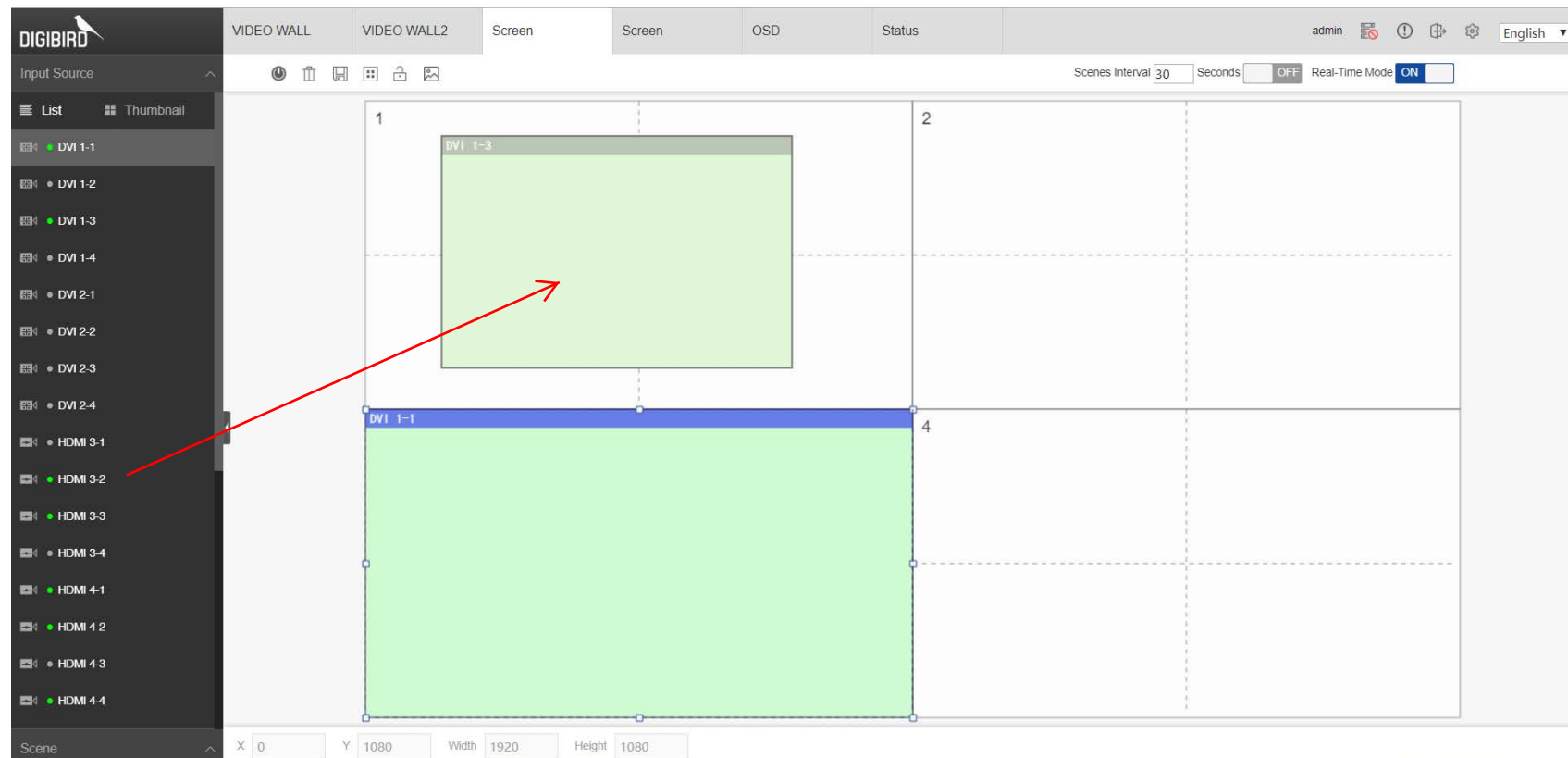
Lock

Click ⌸ to lock positions and contents of all video windows layouts to prevent misoperation. Click 🔒 to unlock.
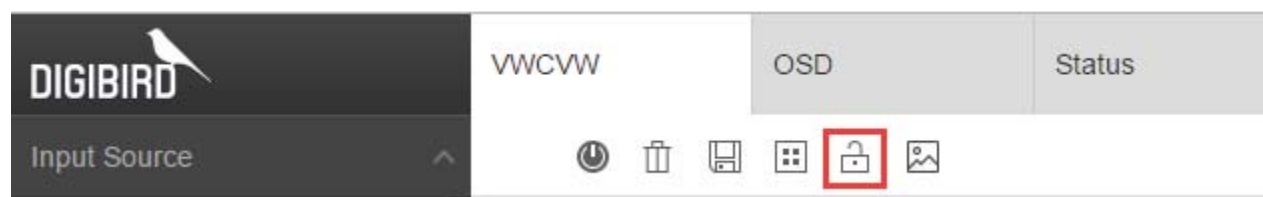
Pre-edit

The pre-edit means editing the scene/preset without changing the current video wall display contents before apply, so that any changes do not result in interruption of the current video wall displaying.
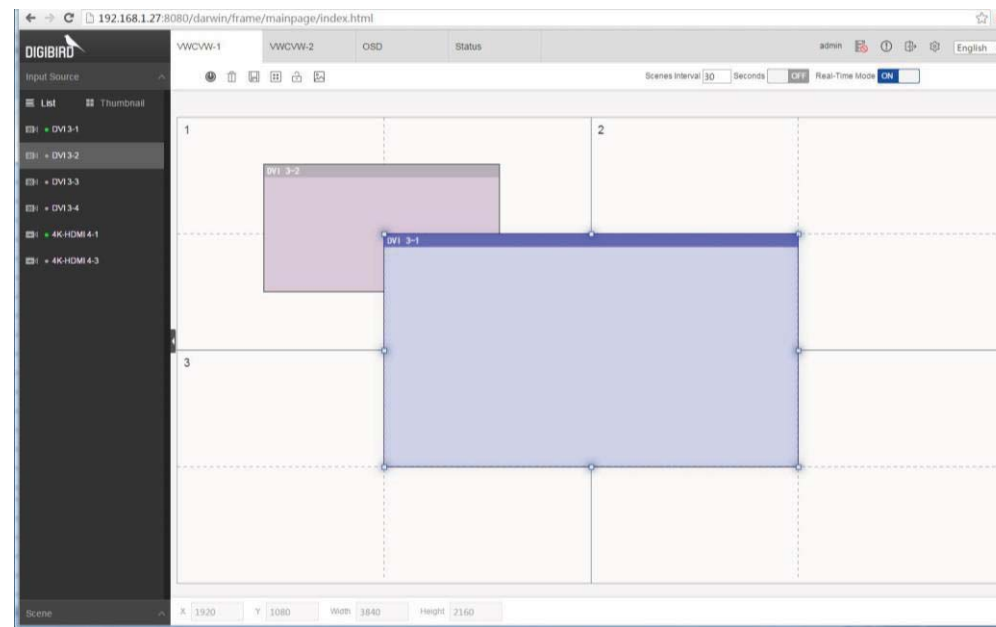
1. Disable the real time mode

   Disable the real time mode to enter pre-edit mode.
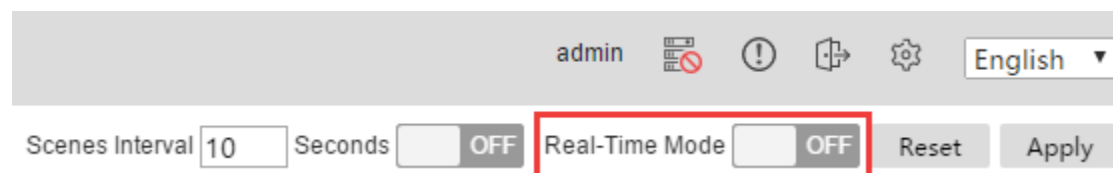
2. Pre-edit

   Change the layouts and inputs as your requirements.

3. Apply

   Once the pre-editing done, click <Apply> to display the pre-editing scene on the video wall.
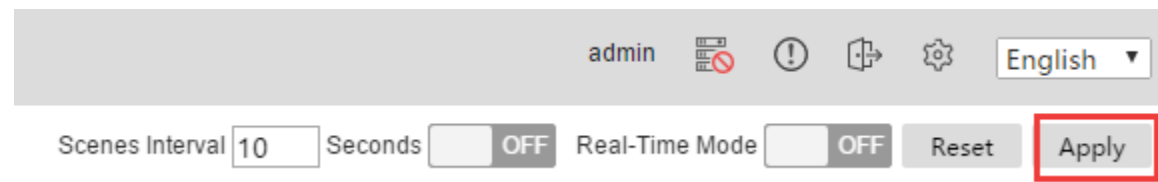
Note: under pre-edit mode, the user is also able to click the save button to save the pre-edit scene for future use.
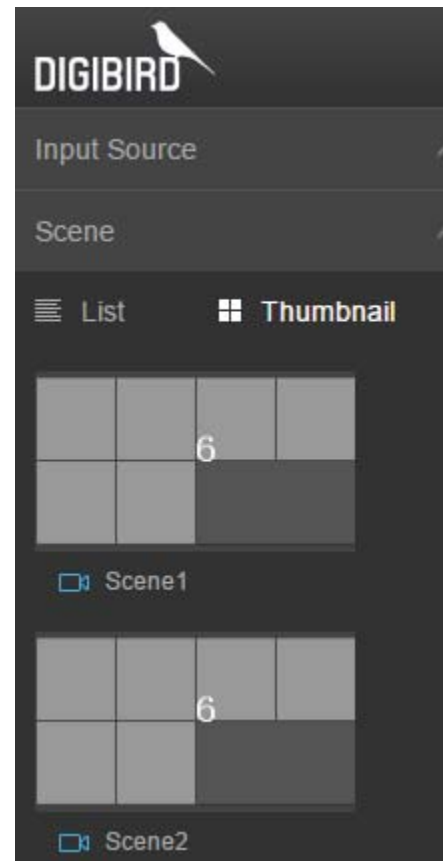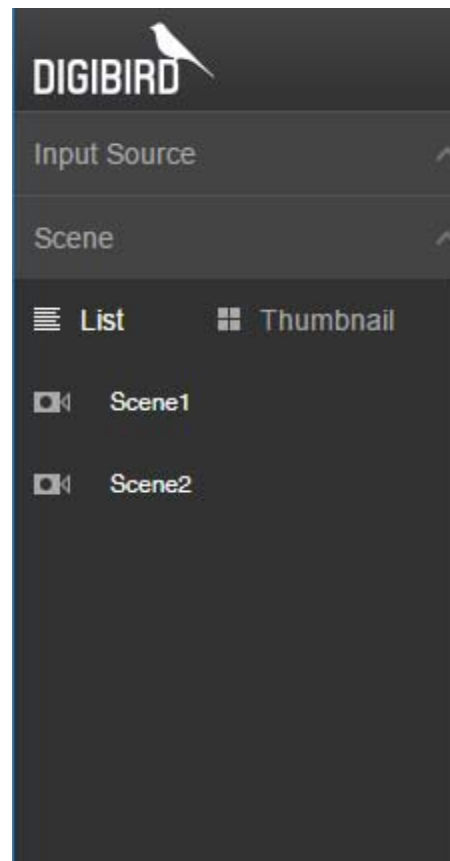
Scene and carousel

Scene

Scene means the preset saved by the user and can be recalled quickly.

Save the scene

1. Click ⊟ to save the scene.

2. Setup the scene name and click <OK> to save.
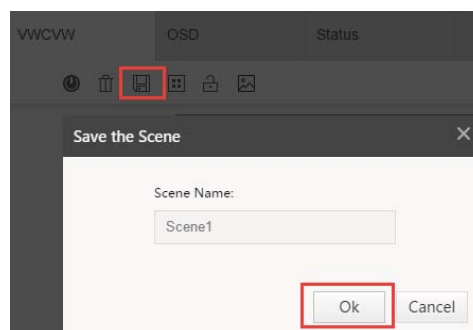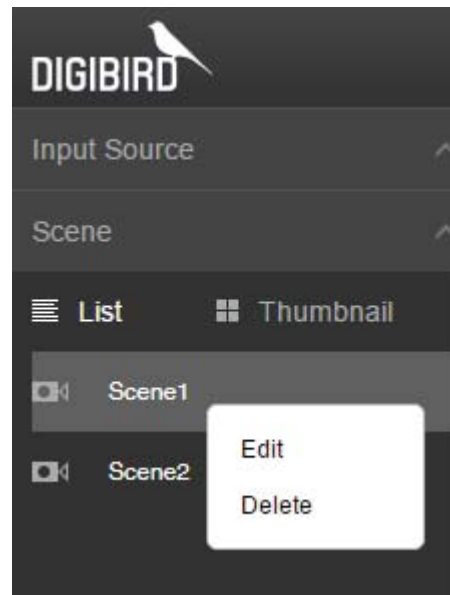

3. The saved scenes are shown at the left side by list or thumbnail views.

Recall

Select a scene, then drag and drop to the video wall to recall the saved scene.

Scene management

Right click on the scene list, you can edit or delete the saved scene.

Carousel

Carousel means auto cycle of multi saved scenes by user defined intervals.
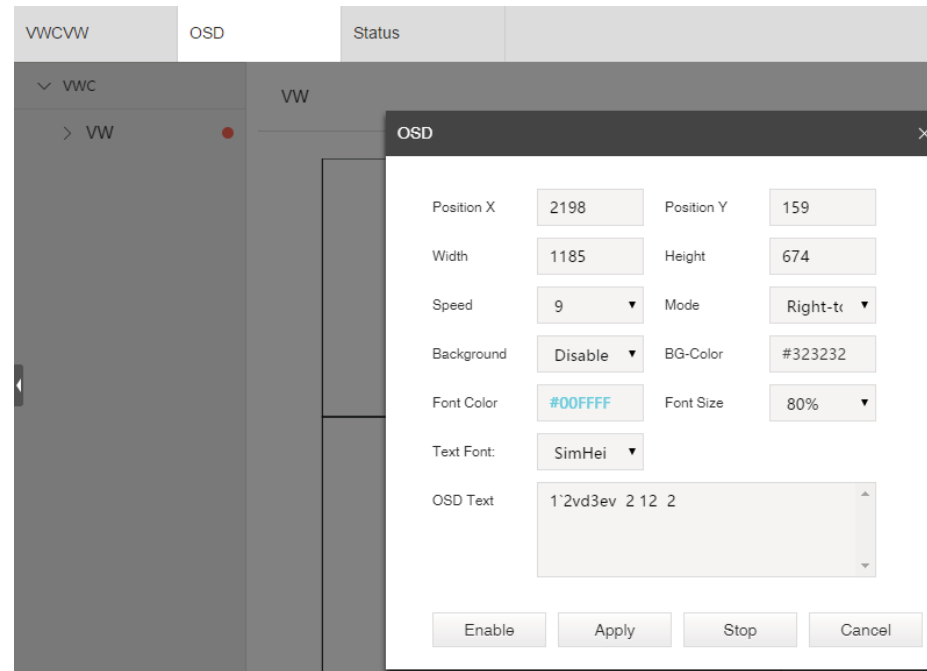
1. Intervals

2. Enable the carousel

Advanced Feature

Scrolling text

Enable

1. Click <OSD> on the dashboard to setup.
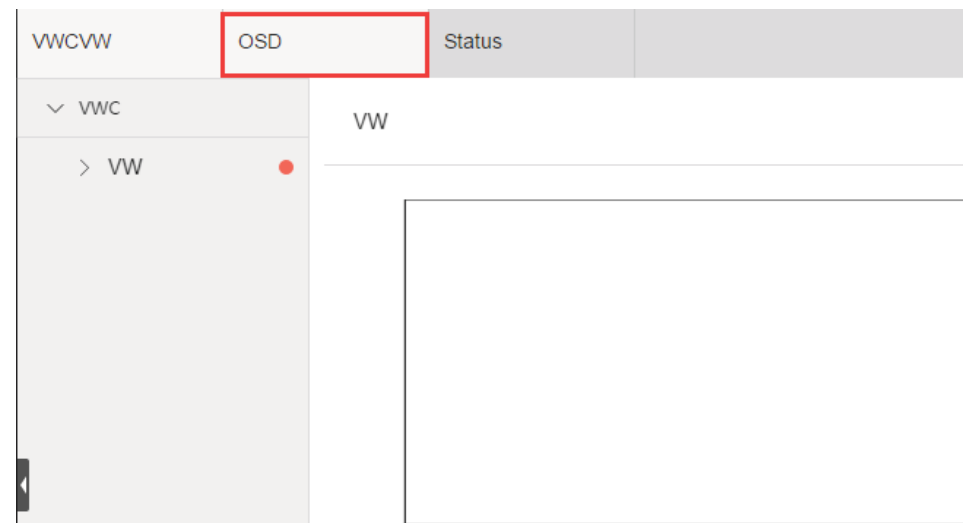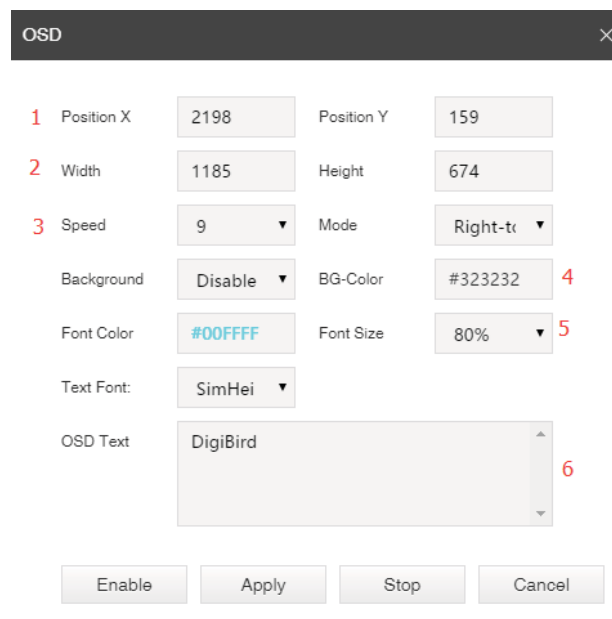
2. Drag a rectangle at the area you want to display the scrolling text to enter the setting menu. (The rectangle is the area the scrolling text be displayed.)

3. You are able to setup the position, width, height, scrolling speed, scrolling direction (right to left direction supported only now), background color, font color, size，type, etc.

1	Position	The coordination of the top left corner of the whole video wall is X-0 and Y-0. You are able to setup the precise position by input the XY position in pixels.
2	Width/ Height	To setup the width and height of the scrolling area.
3	Speed/ Mode	To setup the text scrolling speed and direction.
4	Background	Enable or disable the background and setup the background color.
5	Font	To setup the font color and size. (The size is the relative height of the scrolling area.)
6	Text	The content of scrolling text.

4. Click <Apply> to enable the settings.

Stop

Click any position of the scrolling area to open the setting menu and click <Stop> to disable the scrolling text.

Bezel compensation

1. Enter into the Video Wall settings menu.

2. Input the bezel width by pixels and the VWC2 will perform bezel compensation.

Resolution:

1920*1080@60

Horizontal Bezel (Pixels):

0

Vertical Bezel (Pixels):

0

Mode:

Video Wall

Save

Delete
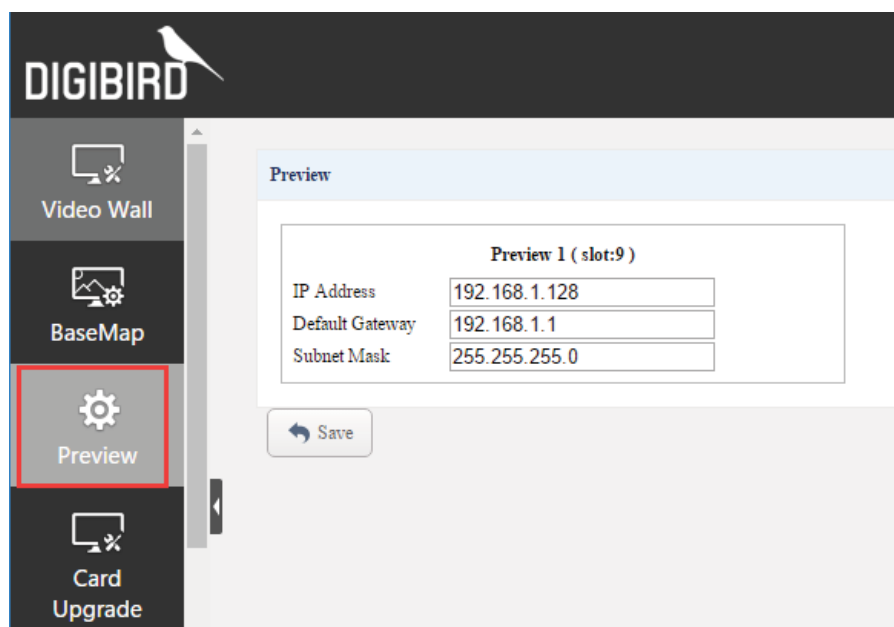
Show Channel   Hide Channel

Preview

The NPC (Network Preview Card) is used to display the real-time preview image of all input signals on the software interface, in order to manage the contents easily and precisely.

1. Install the NPC and connect to your LAN switch.

2. Enter into the <Preview> setting, input IP, Gateway and Subnet Mask for the NPC and save.

3. In the dashboard, you are able to perview real-time display.
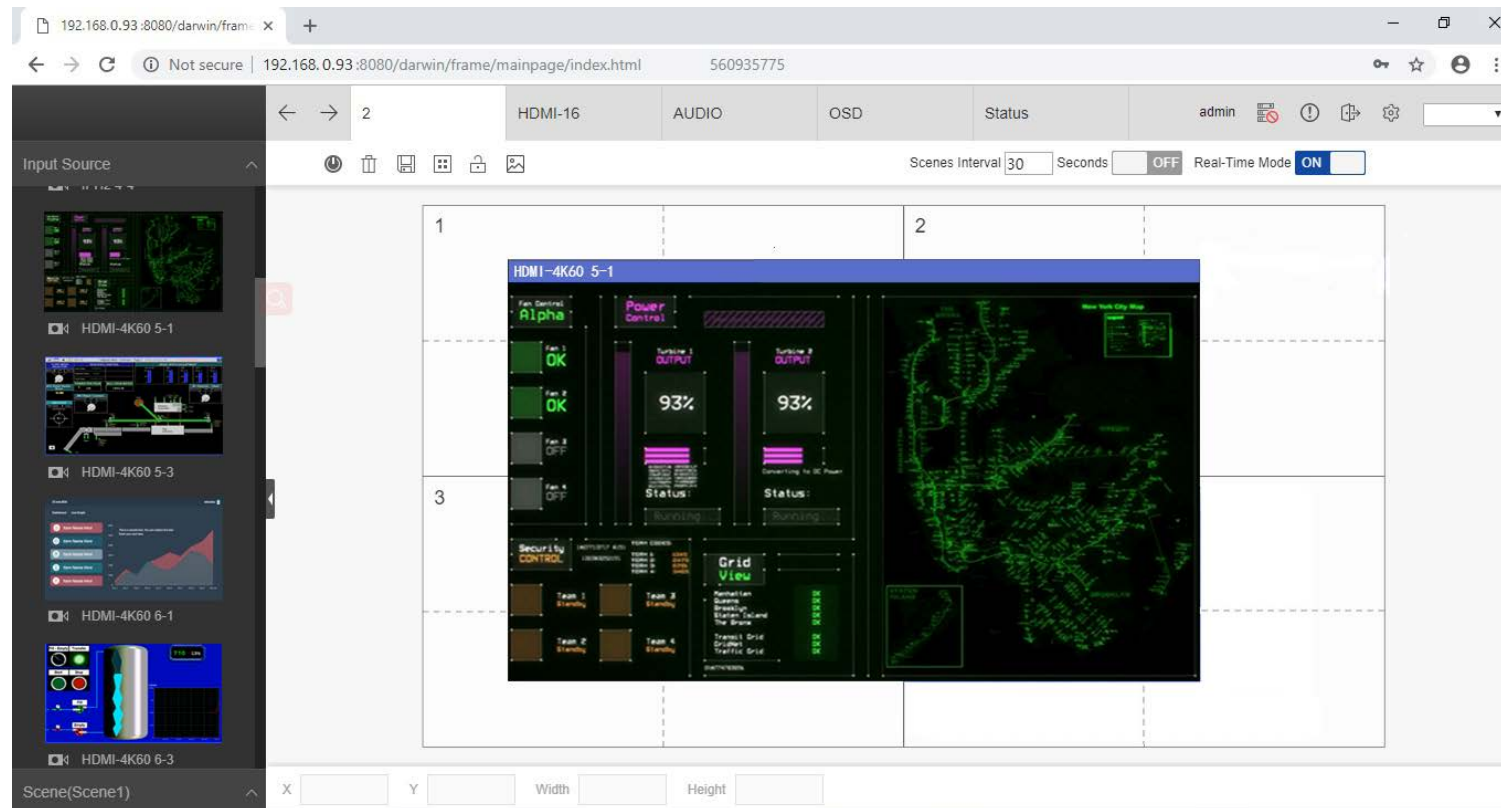
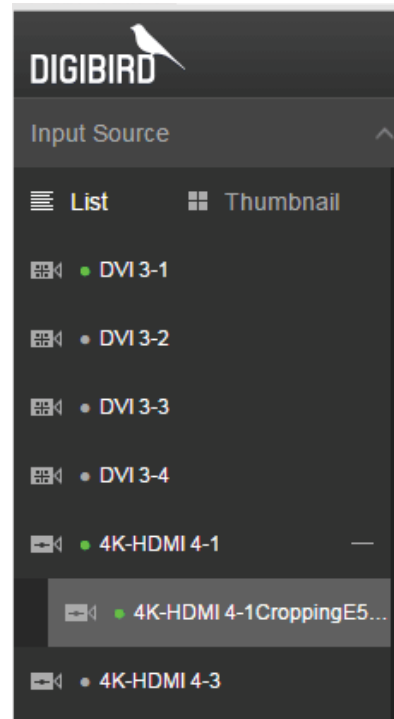## Crop

This function is used to cut off the black edges or zoom in details to emphasize.

Crop

1. Right click on the input resource to crop the source.
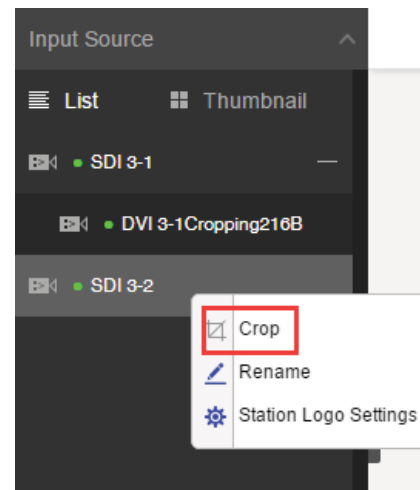
2. You can crop the signal on the preview image (preview card must be installed) or input cropping pixel in the menu.
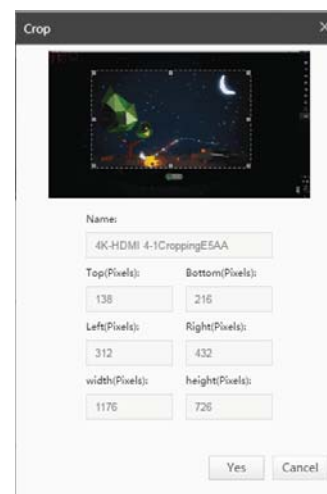
3. The cropped video source will be listed below the original one, you are able to rename it.
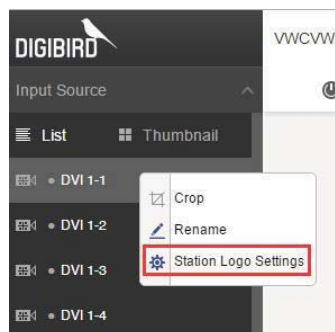

Display the cropped signal

Select and drag the cropped signal list to the video wall area to display.

The minimum cropping area is 32x32 pixels.

Station Logo Settings

The Station Logo means the indicator or name displayed on the video image to indicate the resource or content ID.

1.   Right click on the input source and enter the Station Logo Settings.

2. Setup the Station Logo and click <Yes> to save.
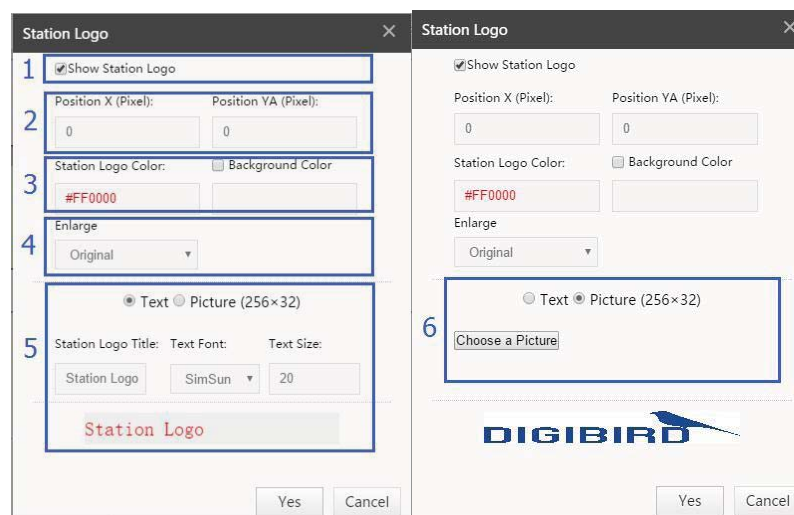
1	Status	To enable (display)/ disable (Hide) the Station Logo.
2	Position	To setup the position by pixels.
3	Color	To setup the text or background color.
4	Enlarge	To enlarge the Station Logo, the minimum is 256x32 pixels.
5	Text	To setup text as the Station Logo.
6	Picture	To setup picture as the Station Logo.

Echo Config

The CMS cards can output the video wall contents to one single screen which makes easier for operators to view remotely. Each CMC card can monitor 4 sets video walls at the same time.

1) Select <Echo Config>
2) User can select video wall by drag-down menu, choose original aspect ratio or full screen, border color and background color.
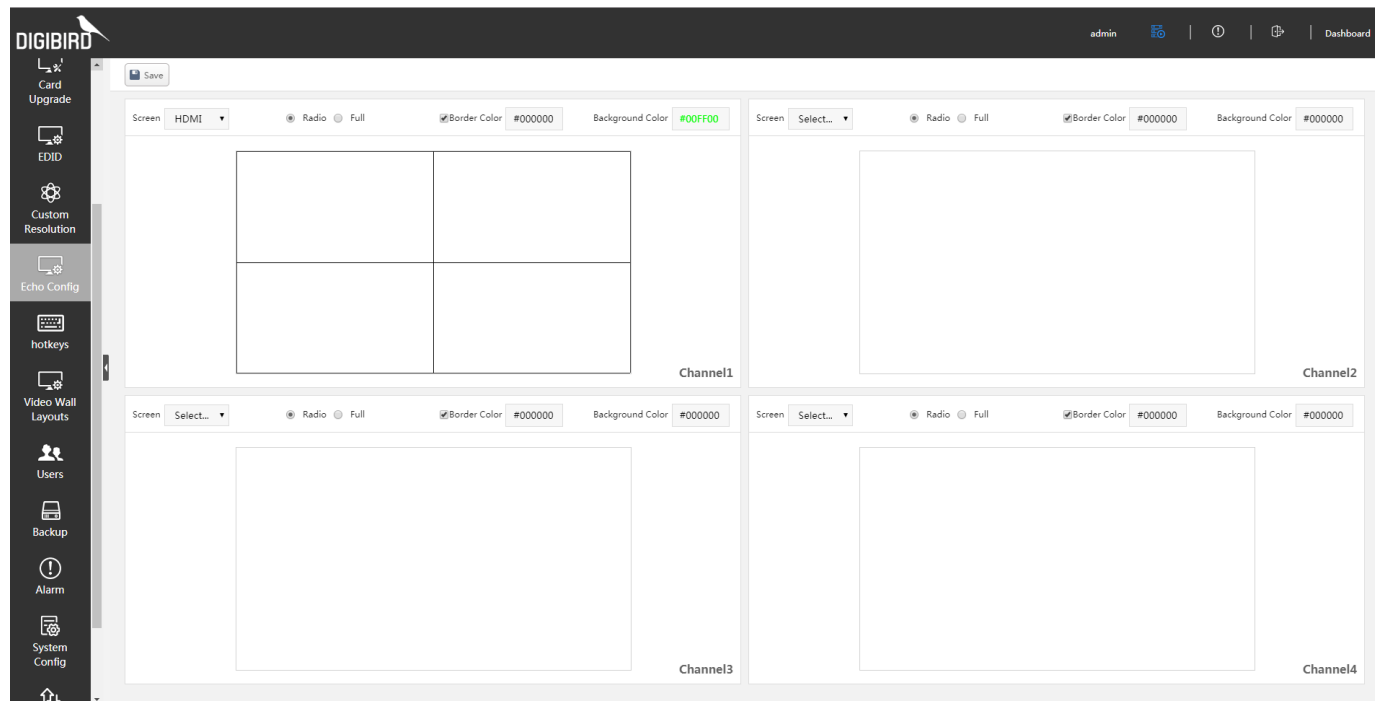
Background Image

A User-Defined image can be added as background image of video wall.

1. Click <Background Image> to enter setting page, click ╋ to add a background image.

2. After uploading your image, select which video wall you want to display the background image and click <config>.

3. You can turn on or turn off the background image by clicking 🖼 at dashboard interface.
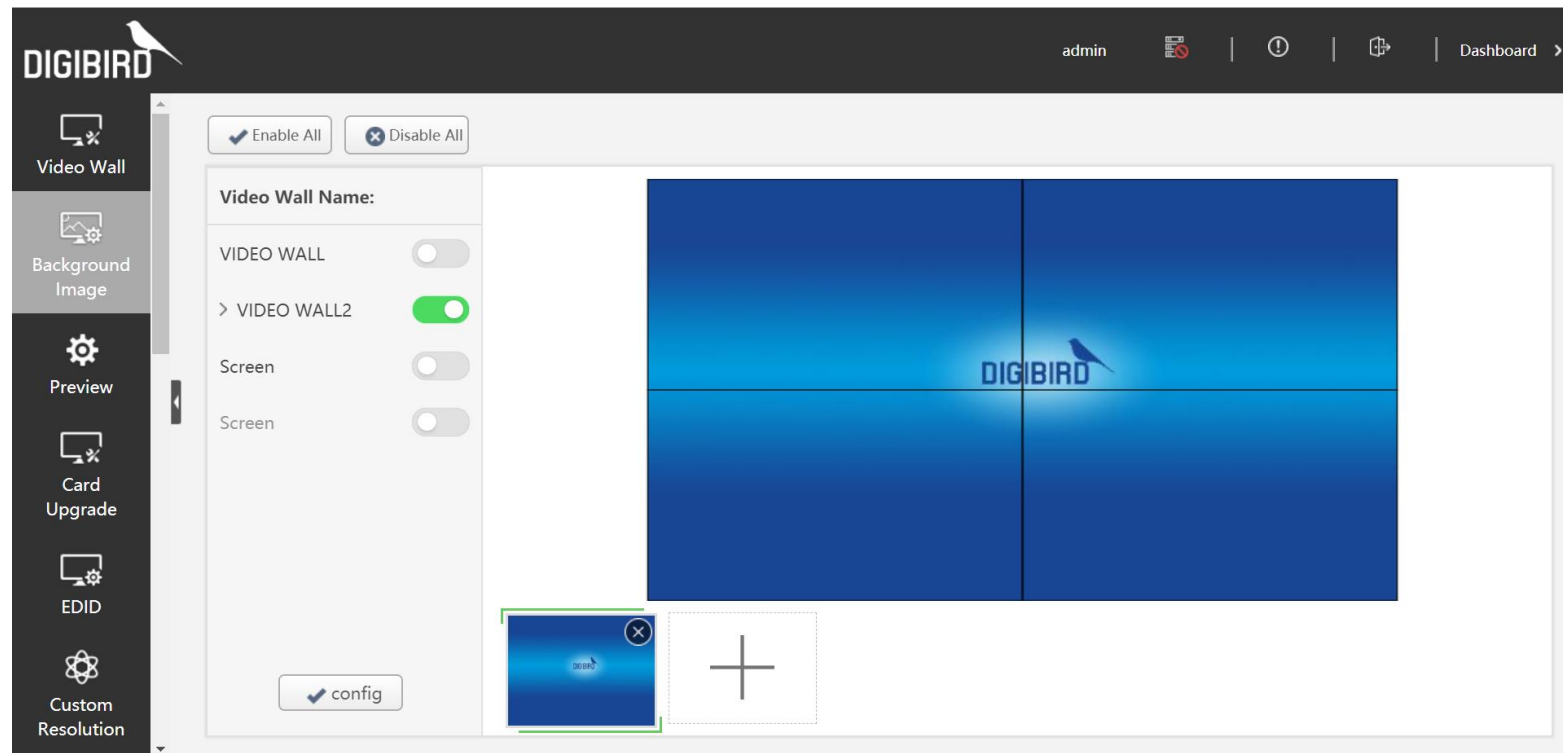
Note: The max resolution of background image is 8192*4095, support JPG and BMP format.

Maximum 8 background images can be uploaded.

User Management

Administrator can create several users and allocate different access to them to work on different part of the video wall.

1. **Create User account**

   1) Click <Users> to enter the user settings page.

   2) Click [⊕ Add] to add a new user account.

Input the user's information and click <Yes> to save as new user account. (Account ID, Password, Availability are required information, others are optional)

2. **Authority Management**

   1) administrator can allocate authority for each user.

   2) Select a user account and click [👤 Authorities] to allocate authority.

   3) Input & output access
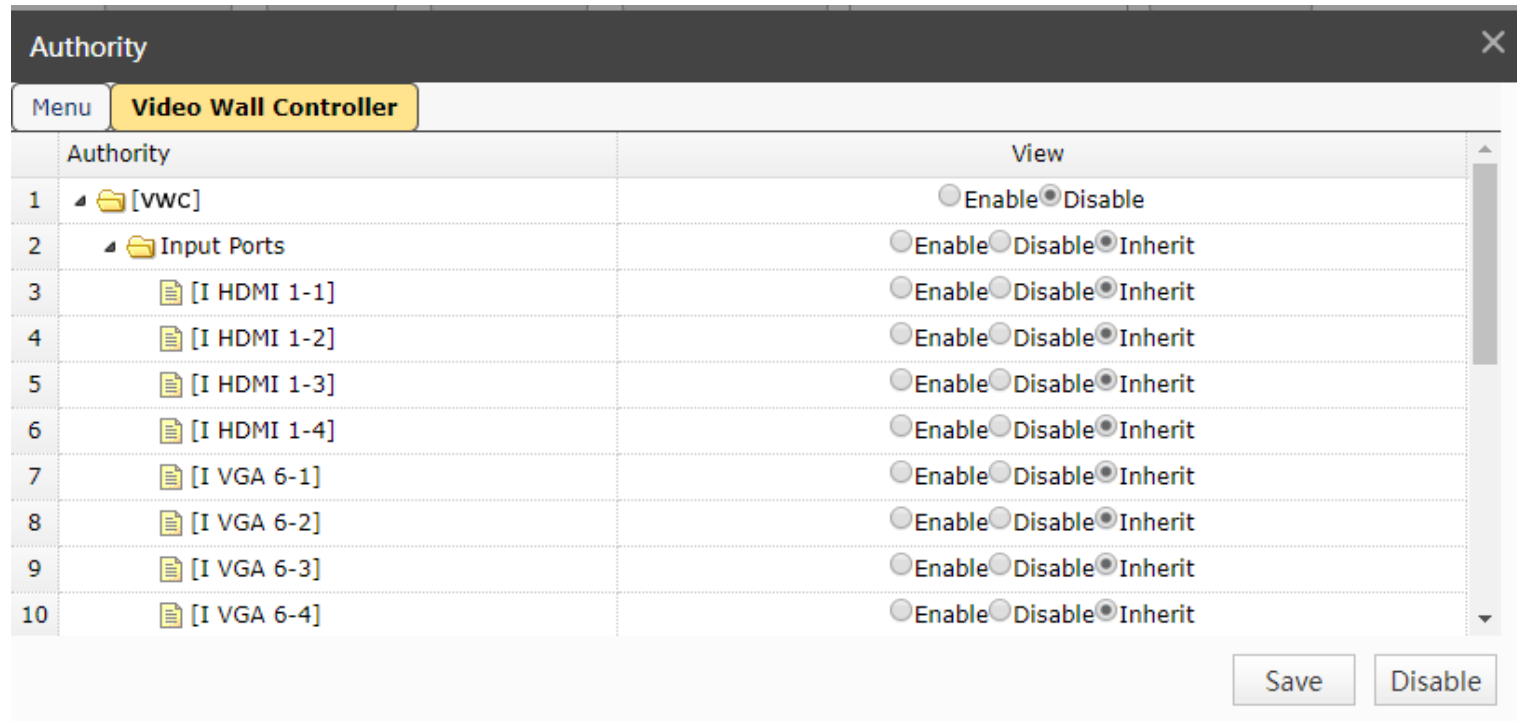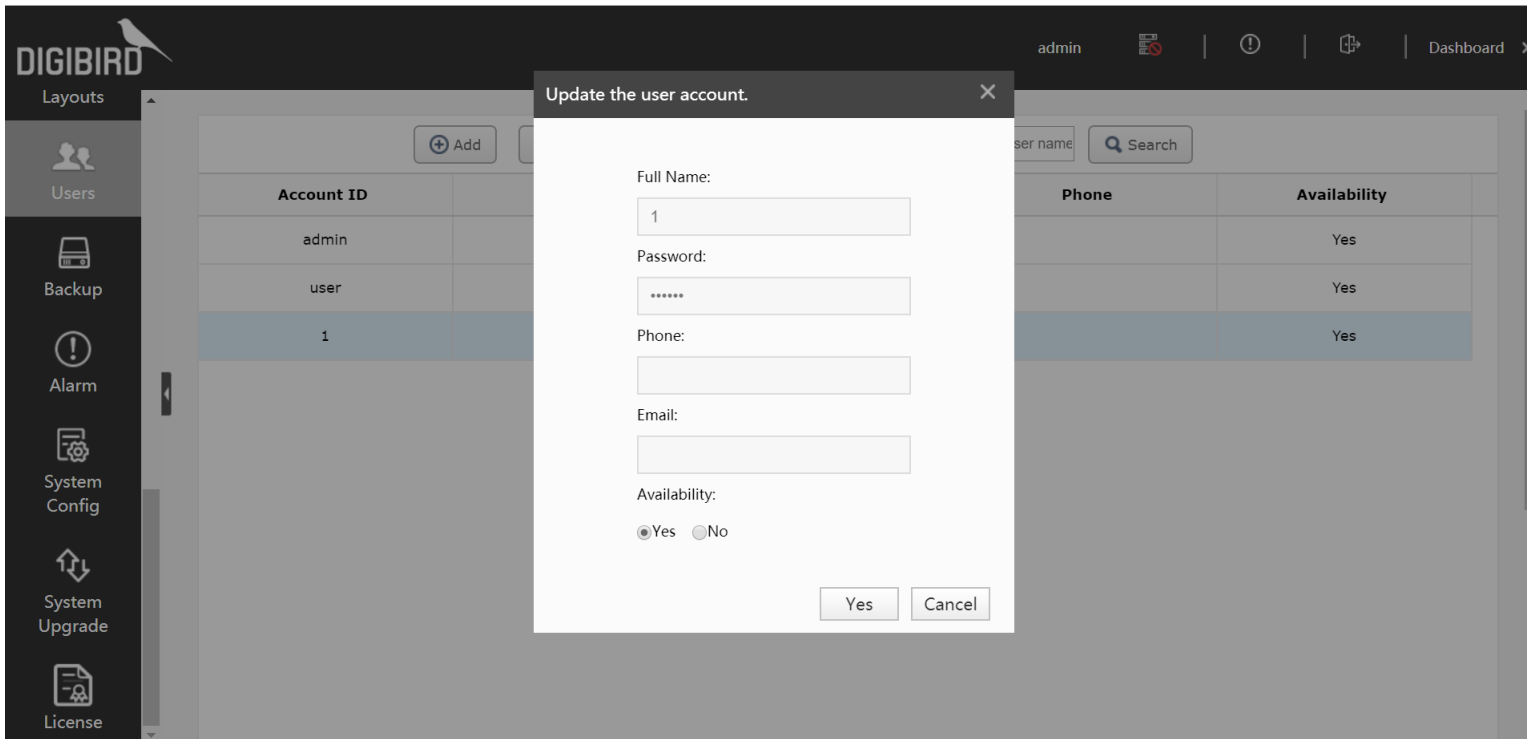
4) Select <Video Wall Controller>, each input/output port authority can be managed individually. "Enable" means enable the user to access this port while the "Disable" means the user can't access.

Note: "Inherit" means follow the same status of upper level. i.e. when [I HDMI 1-1] status is 'Inherit' and [VWC] status is 'Enable' then User can view [I HDMI 1-1] port. If [VWC] status is 'Disable', [I HDMI 1-1] will not be shown on <Input Source List>

Edit Account

Select the account and click **✏ Edit** to edit account information.

Delete Account

Select target account, click [⊖ Delete] to delete.
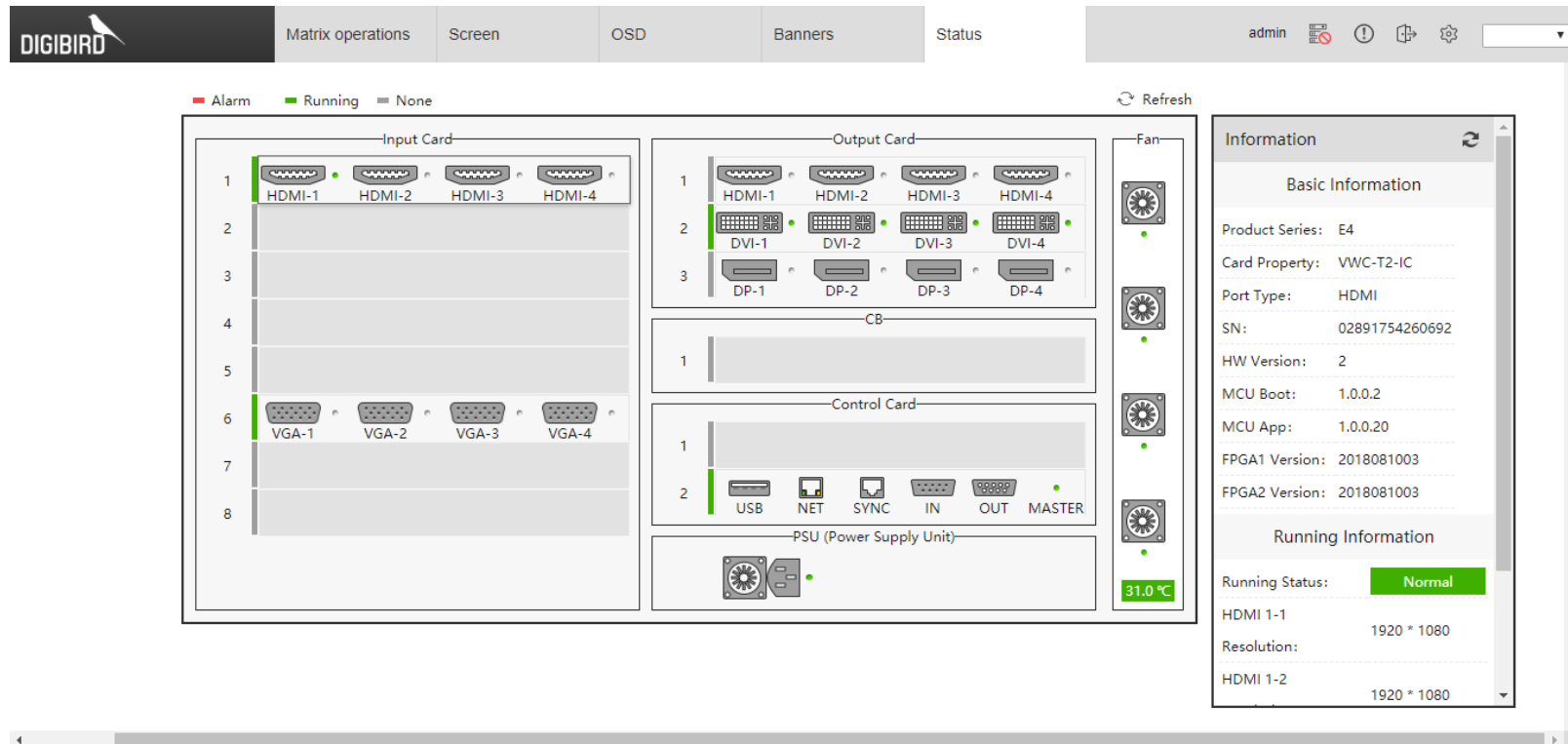
Firmware Management

In the dashboard page, click <Status> to check the firmware's information.

Status introduction

1. System will auto detect chassis size and configuration.

2. System will auto detect I/O cards and function cards in the Chassis.

3. Green bar in front of card indicates running normal.

4. Red bar in front indicates running abnormal.

5. Grey bar indicates no cards or inserted cards non-configured yet.

6. Green indicator in I/O cards stands for available input or output, grey indicator stands for un-available input/output or output port not configured yet.

7. Click on any cards i.e PSU, Fan etc, user can get real time running status.

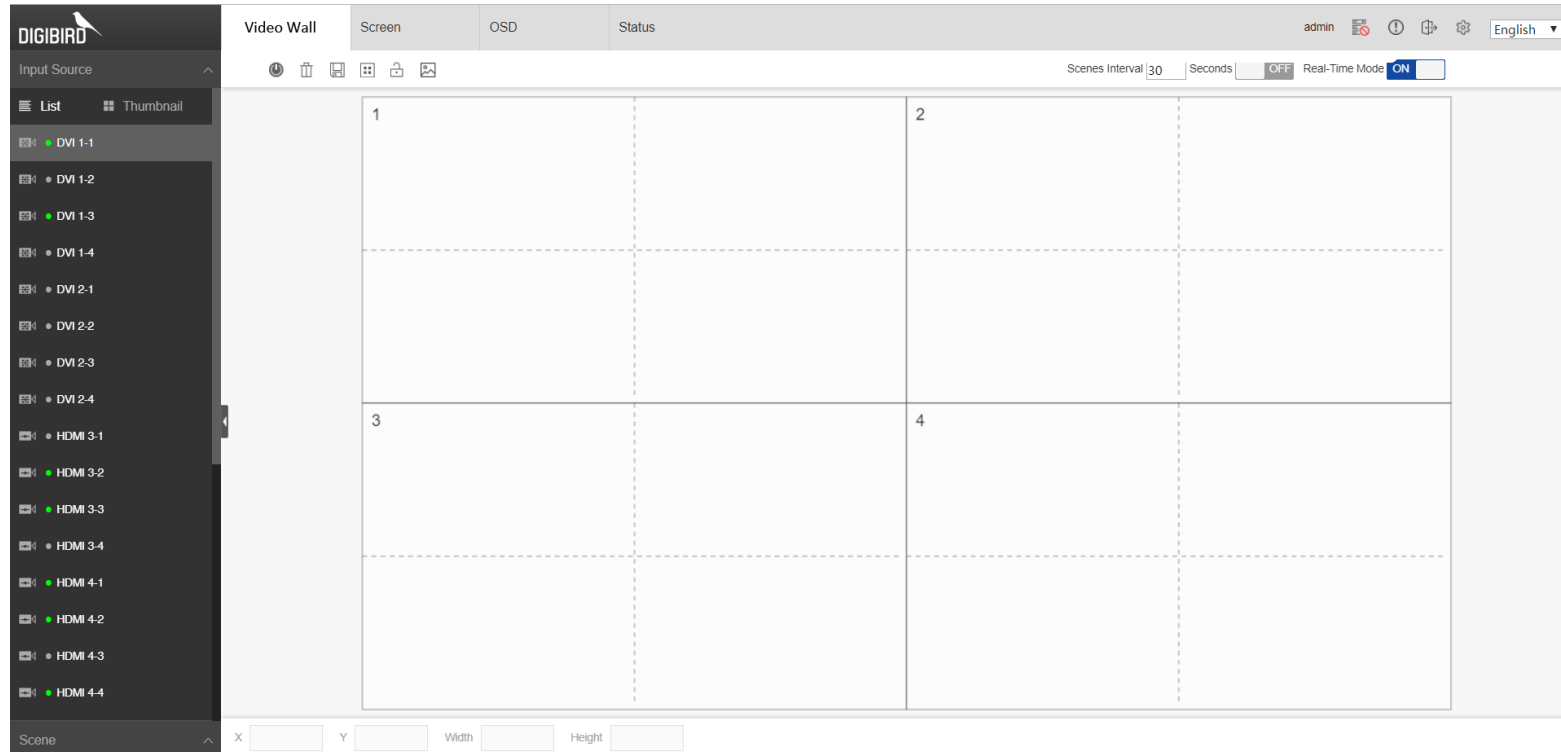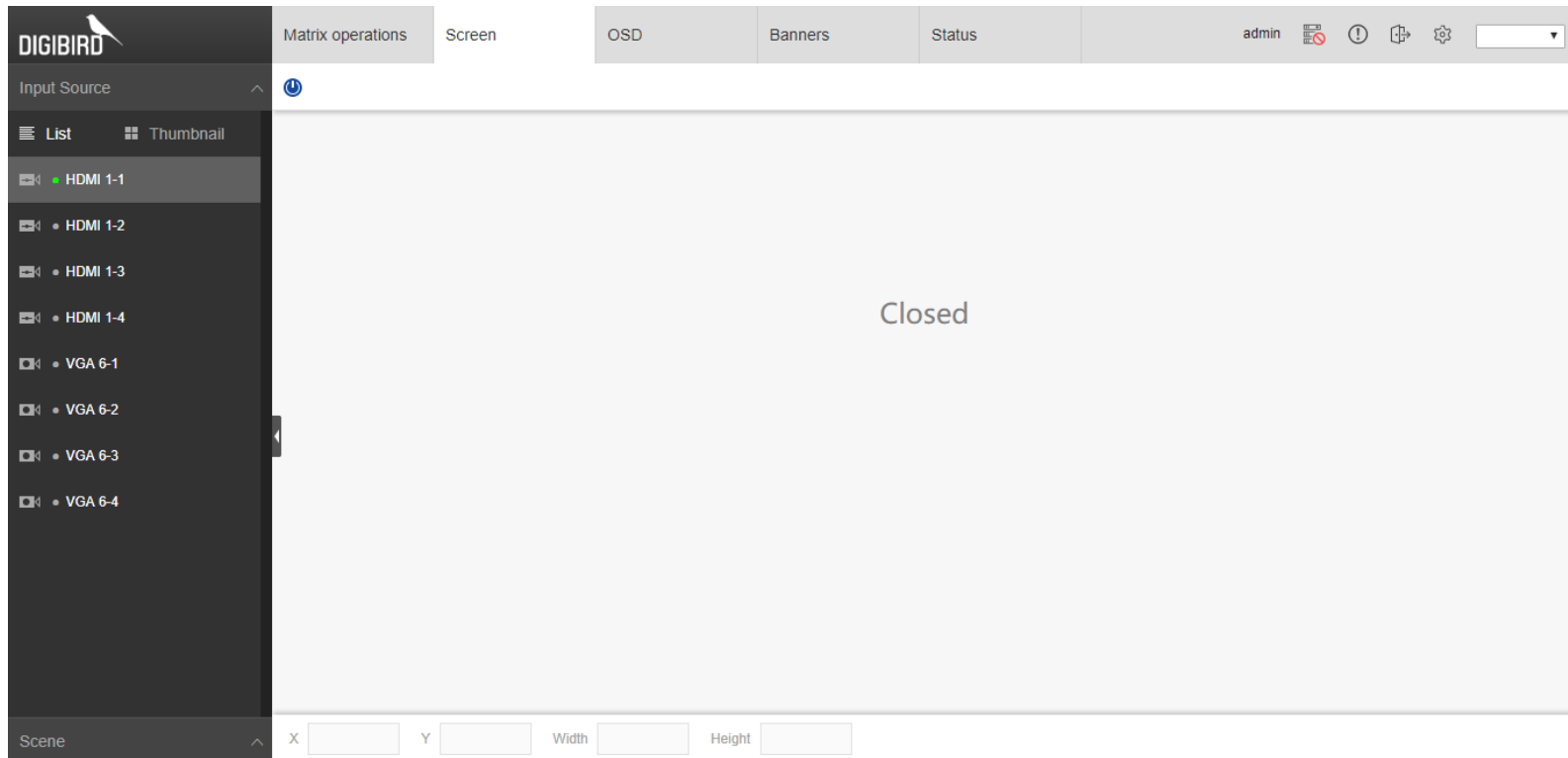|	
Refresh	Refresh device status.
Manufacturing Info	Manufacturing information including hardware version, serial number etc.
Running Status	Display normal or abnormal running status.
Temperature	Display card ambient temperature and chips temperature.
Input resolution	Display actual input resolution.
Fans	Display fans rotation speed in real time.
PSU	Display current power consumption.
Alarm	Alarm should be any abnormal.

Turn off and Turn on

1.Turn off

In dashboard page, click ⏻ to turn off the VWC.

2.Turn on

In dashboard page, while the VWC is in 'Turn off' status, click ⏻ to turn it on.

Custom Resolution

If the video wall screens are not regular resolution, we can set up 'Custom Resolution' to output to the video wall screen.

1) Select <Custom Resolution>, click [⊕ Add] to add a new resolution.

2) Input the resolution you need and save.

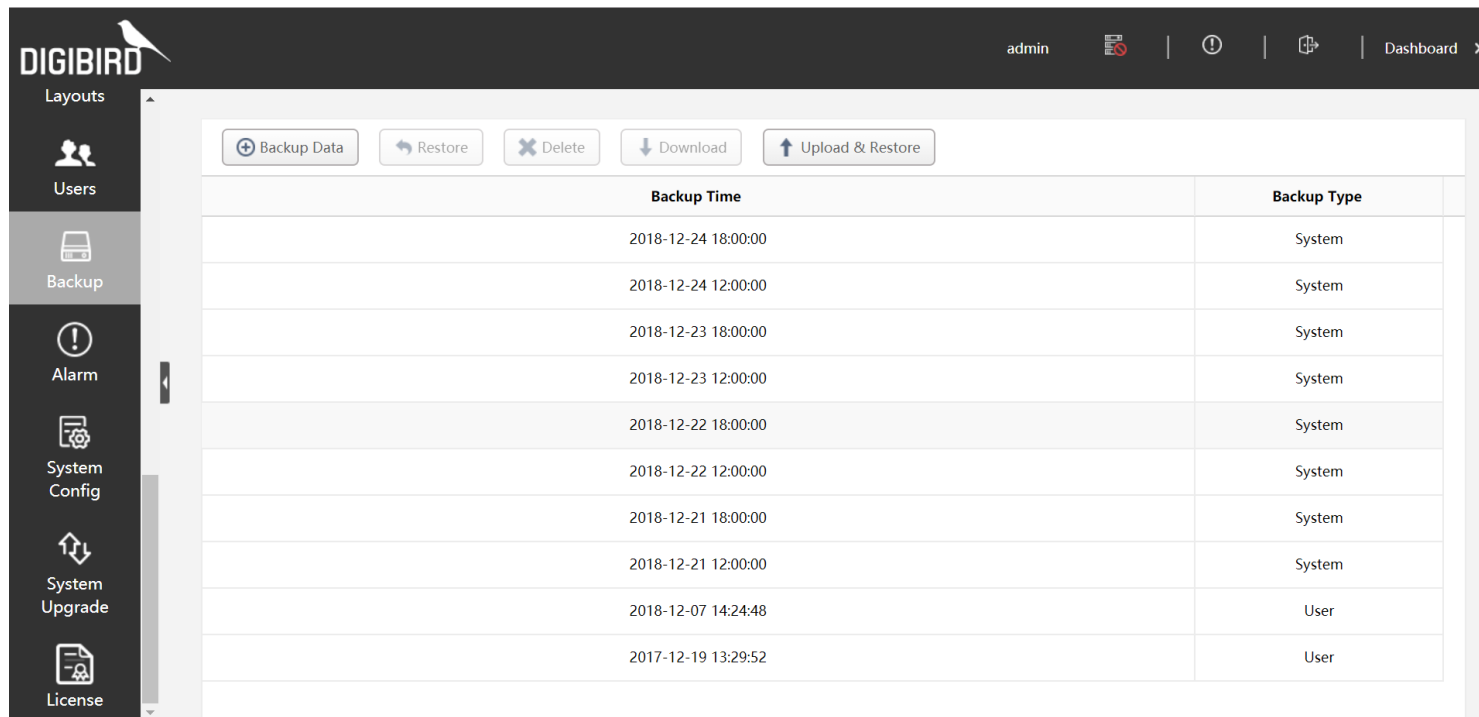3) After adding the new resolution, go to the video wall page and select the resolution you added.

Name	Horizon	Horizon	Horizon	Horizon	Active P	VSYNC I	Vertical Total (V	Vertical Polarity	Vertical Sync Wi	Vertical Front Po	Active Lines	Custom Resoluti
640*480@75	840	1	64	16	640	75	500	1	3	1	480	Yes
720*480@60	858	0	28	57	720	60	525	0	6	5	480	Yes
720*483@60	858	0	28	57	720	60	525	0	6	5	483	Yes
720*576@25	864	0	28	57	720	25	625	0	6	5	576	Yes
720*576@50	864	0	28	57	720	50	625	0	6	5	576	Yes
800*600@60	1056	0	128	40	800	60	628	0	4	1	600	Yes
960*1080@60	1100	0	22	44	960	60	1125	0	5	4	1080	No
960*2160@25	1100	0	22	44	960	25	2250	0	10	8	2160	Yes
960*2160@30	1100	0	22	44	960	30	2250	0	10	8	2160	Yes
1024*768@60	1344	1	136	24	1024	60	806	1	6	3	768	Yes

Custom Resolution

Name	
Horizontal Total (H.Total)	
Horizontal Polarity	0
Horizontal Sync Width	32
Horizontal Front Porch	48
Active Pixels	
VSYNC Frequency	
Vertical Total (V.Total)	
Vertical Polarity	0
Vertical Sync Width	10
Vertical Front Porch	3
Active Lines	

[Yes] [Cancel]

Backup

Users can save the current system configuration as a backup file to local PC or upload the previous backup file to restore.

1) Select <Backup>, click <Backup Data> to save the current configuration as a new backup.

2) Select one backup and click <Restore> to restore the system configuration.

3) Select one backup and click <Download> to download the backup file to local.

4) Click <Upload & Restore>, choose a previous backup file from local and upload to restore.

DIGIBIRD

Layouts

Users

Backup

Alarm

System Config

System Upgrade

License

admin | Dashboard >

| Backup Data | Restore | Delete | Download | Upload & Restore |

Backup Time	Backup Type
2018-12-24 18:00:00	System
	System
	System
	System
	System
	System
2018-12-21 18:00:00	System
2018-12-21 12:00:00	System
2018-12-07 14:24:48	User
2017-12-19 13:29:52	User

Upload & Restore ✕

Please choose a file.

Upload

0%

System Config

Change the IP address of the VWC

Select <System Config>, enter the new IP address and click <Save>.