

SSM Virtual Matrix

User Manual

VER 2.13

SSM Virtual Matrix

User Manual

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Introduction to SSM Virtual Matrix

WHAT IS SSM-VM?

SSM-VM(SSM Virtual Matrix) S/W is an SSM add-on program which interconnects with SSM to control the Video Wall.

The SSM-VM function requires SSM to be installed.

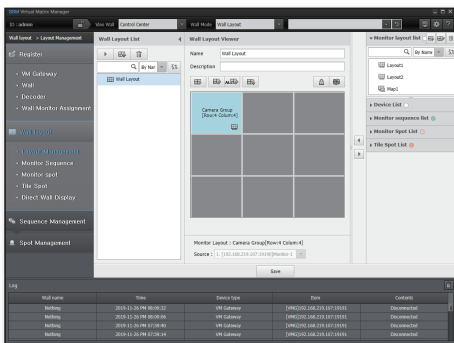
- SSM Virtual Matrix is provided with multi-monitors. Users can manage all monitors fully, and respond to accidents promptly through immediate video monitoring and event image switching.
- This product is an important add-on to a large scale enterprise and expert system.
- For the occurrence of critical events, the administrator may set the monitor to automatically display images in the wall spot, monitor spot or tile spot mode.



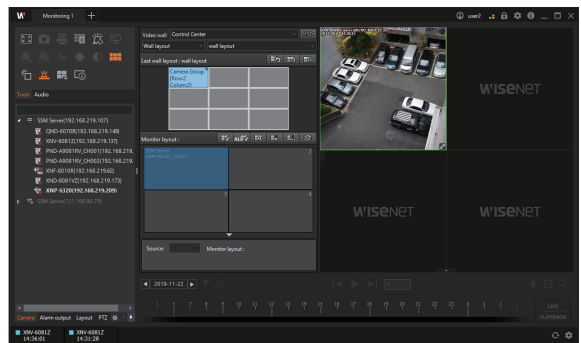
■ Please refer to "**SSM Console Client Administrator Manual**" for details on the installation of SSM.



Event-based net monitoring



VM Manager
(VM Gateway & Decoder control)

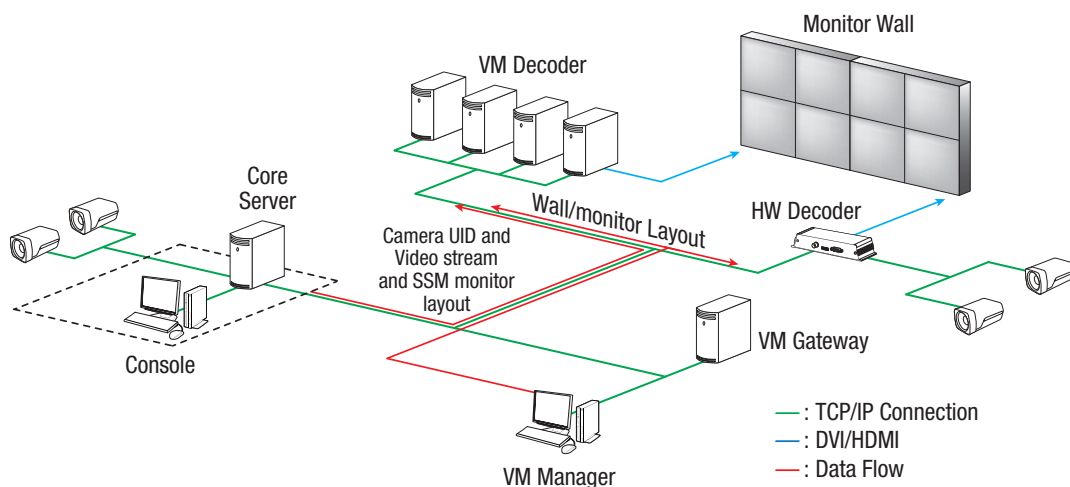


Console functions
(The console can transmit the video stream from the console to the wall monitor.)

SYSTEM ORGANIZATION

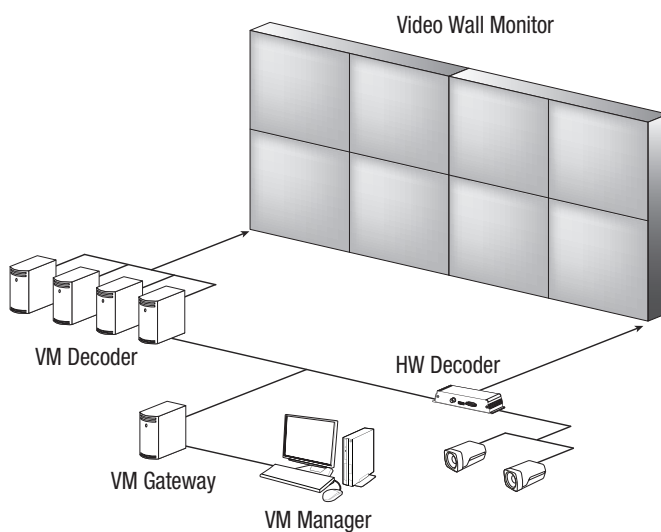
The SSM-VM(SSM Virtual Matrix) is an add-on program used to perform video Wall control in the SSM. The SSM-VM cooperates with each component of the SSM to control the video wall.

- Core Server: Software that manages SSM data and accounts, and stores videos shot by cameras on the network
- Console : Software program used to view saved images and to monitor images in real time.
- HW Decoder : Inter-operable with separate HW Decoder equipment.



The above figure shows the communication wiring for each component and the flows of information through each line. Network should be implemented to ensure communication between the SSM (Core Server / Console Client), the VM Manager, the VM Gateway, and the Decoder (VM Decoder, HW Decoder).

VM CONFIGURATION



Introduction to SSM Virtual Matrix

S/W COMPOSITION

The SSM-VM consists of the following 5 applications.

- VM Decoder : This program displays video.
- VM Gateway : Program used to control the wall and the VM decoder.
- VM Manager : This program is used to control the wall.
- VM Service Manager : Program to manage the running status of VM gateway and VM decoder, Program for server configuration.
- SSM License Manager : Program used to register SSM software license.

SYSTEM REQUIREMENTS

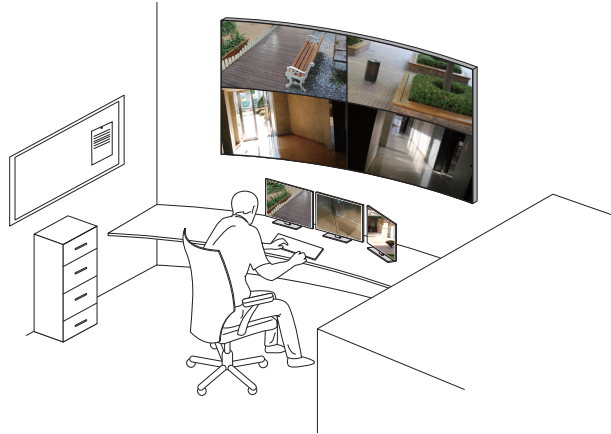
SSM-VM installation should satisfy the following specifications.

System	Recommended specifications	CPU : Intel Core i7 or more (i7-4770@3.40GHz) Xeon E3-1275 v5 (8M Cache 3.6GHz) VGA : Geforce GTX 1050 (RAM 2 GB) or above when using CUDA H/W Decoder HD Graphics P530 or above when using Intel Quick Sync H/W Decoder Supports DirectX 11 RAM : 16GB or more HDD : 20 GB or more free disk space is required after OS and SSM-VM installation
	Minimum specifications	CPU : Intel Core i5 or more (i5-4670@3.40GHz) VGA : Geforce GTX 740(RAM 1GB) 6th gen. Intel Processor Graphics Supports DirectX 11 RAM : 8GB or more HDD : 20 GB or more free disk space is required after OS and SSM-VM installation
	Operating system	VMM : Win7 Service Pack 1 32/64bit Professional/Enterprise Win8 32/64bit Professional/Enterprise, Win8.1 32/64bit Professional/Enterprise Win10 32/64bit Professional/Enterprise VMD : Win7 Service Pack 1 64bit Professional/Enterprise Win8 64bit Professional/Enterprise, Win8.1 64bit Professional/Enterprise Win10 64bit Professional/Enterprise VMG : Windows Server 2008 R2 32/64bit, Windows Server 2012 32/64bit Win7 Service Pack 1 32/64bit Professional/Enterprise Win8 32/64bit Professional/Enterprise, Win8.1 32/64bit Professional/Enterprise Win10 32/64bit Professional/Enterprise

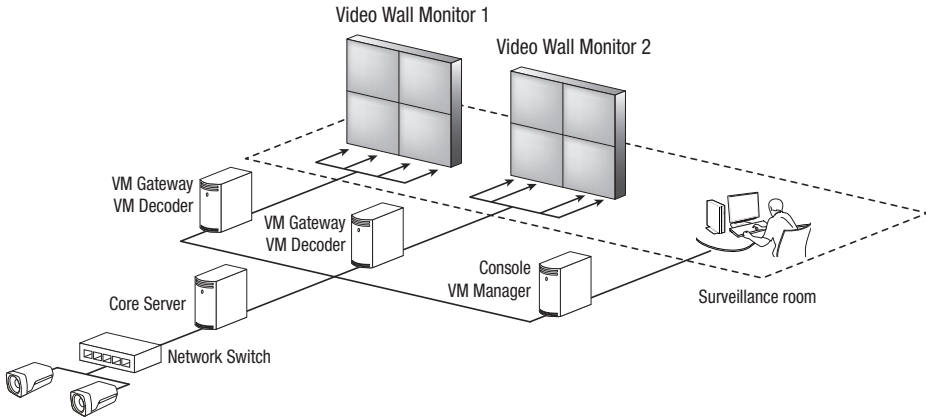
SECURITY SURVEILLANCE OF SSM-VM APPLICATION

Small space

Used in spaces such as commercial buildings, schools, and public institutions (city hall, library, museum, etc.).



Configuration



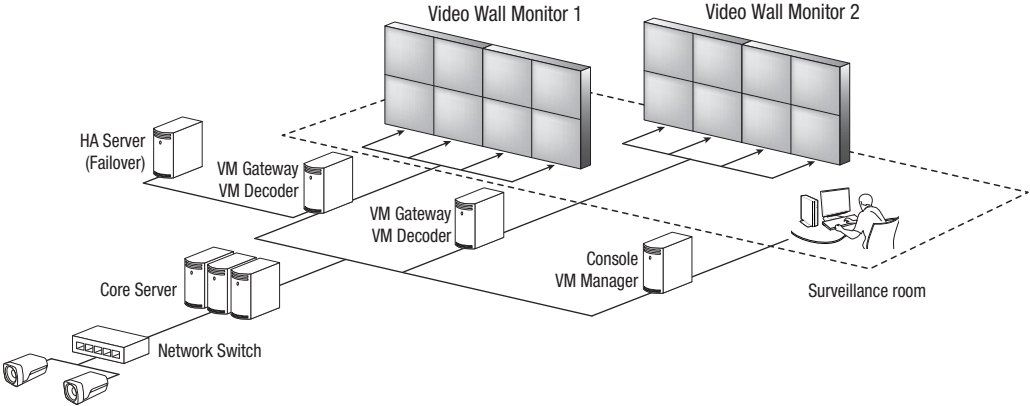
Introduction to SSM Virtual Matrix

Medium space

Used in spaces such as factories, power plants, medical institutions, prisons, and stadiums (baseball stadium, football stadium, sport complex, etc.).



Configuration

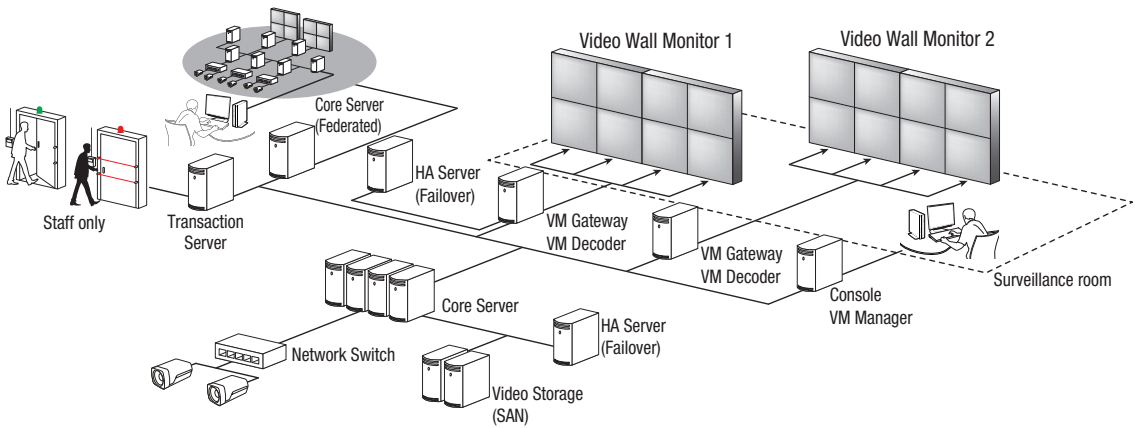


Large space

Used in spaces such as airports, convention centers, railways, ports, and casinos.



Configuration

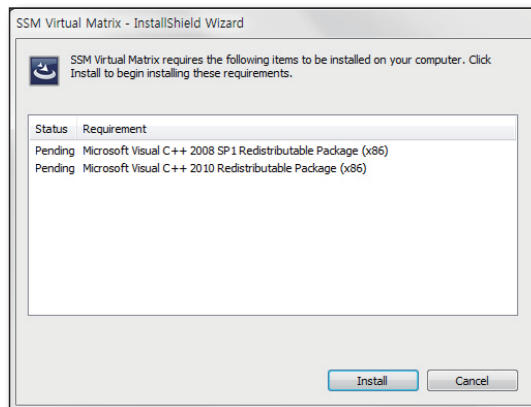


Getting Started with SSM Virtual Matrix

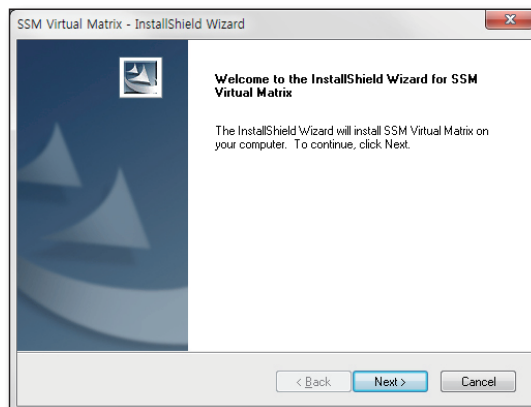
INSTALL

1. Run the installation file.

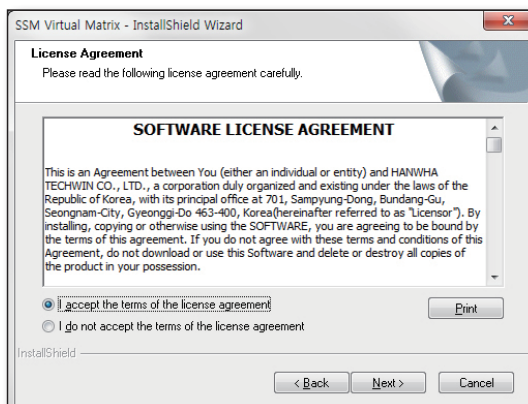
- If a program component is missing, you will see the component installation screen as shown in the image on the right. Before installing the SSM Virtual Matrix, you have to install all of the components.
- During the installation of the components, rebooting may be required. In this case, after rebooting, the installation file will start automatically.



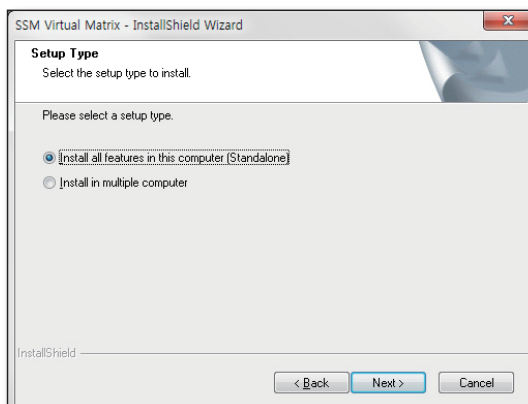
2. When the installation screen pops up, click the [Next >] button.



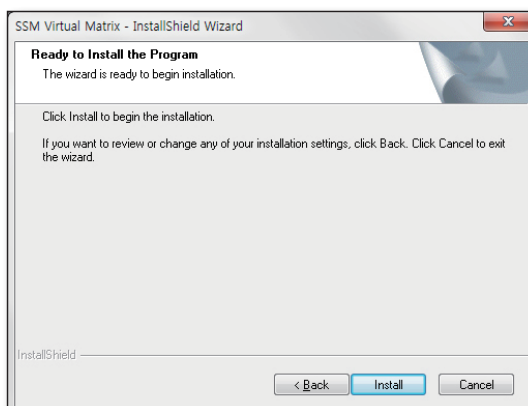
3. Agree to the license policy and click the [Next >] button to proceed to the next step.



4. Select a Setup Type.
 - If you have chosen "Install in multiple computer" you can specify which modules to install.

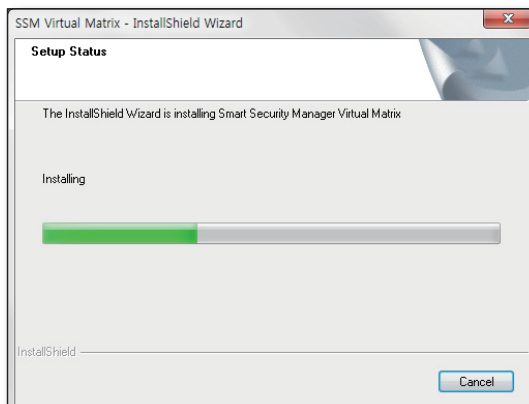


5. Click [Install] to begin installation.

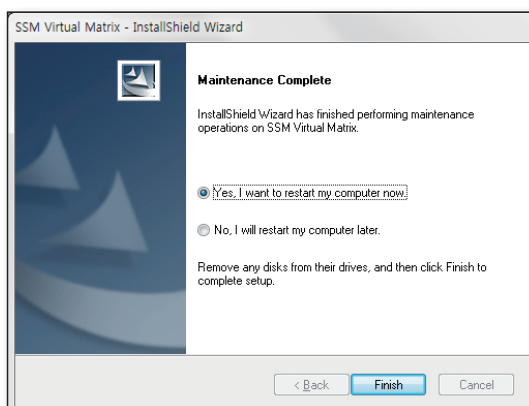


Getting Started with SSM Virtual Matrix

6. Installation is in progress.



7. Upon completion, click **[Finish]** button.



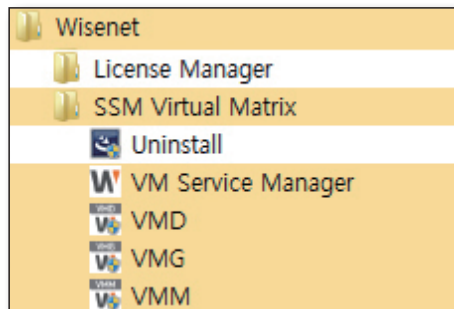
CHECKING FINISHED INSTALLATION

After installation is completed, check that the SSM Virtual Matrix installation has been finished successfully.

1. Click the <Start> menu.
2. When SSM-VM is installed normally, <License Manager> and <SSM Virtual Matrix> items are shown under the <Wisenet>. Under the <SSM Virtual Matrix>, <VM Service Manager>, <VMD>, <VMG> and <VMM> are displayed.



- For non-default installation of SSM Virtual Matrix, only those menu items selected during installation will appear. Refer to "Install".
- Refer to "SSM Console Client Administrator Manual" for information on registering the license.



STARTING THE SSM-VM (SSM VIRTUAL MATRIX)

Each module uses various network ports for auto search and communication. When using a firewall, you should allow these ports.

- If you don't change network ports additionally, you should allow the following ports by module:
 - VM Decoder : 4510, 9057, 9999, 19190, 19192
 - VM Gateway : 9058, 9066, 9999, 19190, 19191, 19193
 - VM Manager : 9067, 9999, 19191

VMG execution

1. Click the VMG execution file to run the VMG. When VM Service Manager is running, it will be automatically executed.
 - Execution may take about 10 sec depending on the PC specifications.
2. When execution is completed, the task bar will show the VMG icon. When you want to terminate it, right click on the VMG icon in the task bar, launch the context menu and click <Exit>.



Getting Started with SSM Virtual Matrix

VMD execution

Click the VM Decoder execution file to run the VM Decoder. When VM Service Manager is running, it will be automatically executed.

- A screen on the right hand side appears when the VM Decoder is run properly.
After that, using the VM Manager, you can register the VM Decoder to see video on the VM Decoder.



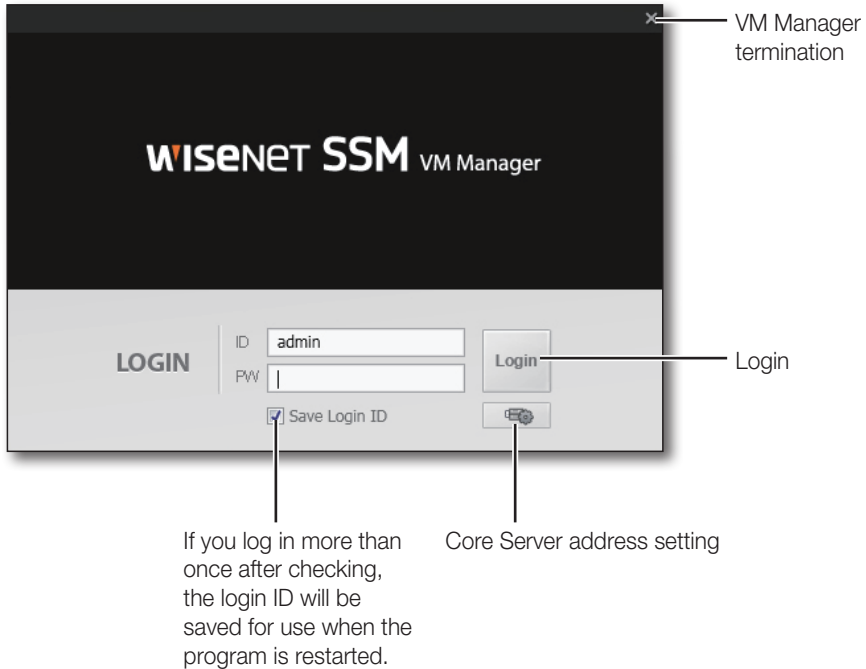
VMM execution

1. Click the VM Manager execution file to execute the VM Manager.
2. If you run the VM Manager, as shown on the right, the Login screen will appear.



VM Manager

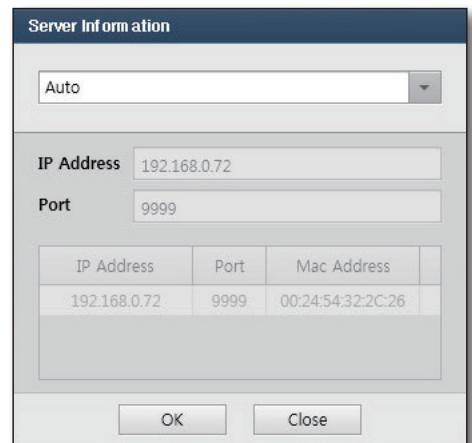
LOGIN



Core Server address setting

The SSM-VM is the SSM's add-on program. When you run the SSM-VM for the first time, you need to set the Core Server address first. Press the Core Server address setting button, to set the server address.

- If it is set to <Auto>, Core Server is automatically selected. If it is set to <Manual> Core Server or IP address/port information can be selected from the pull-down menu.



VM Manager

- If you select <Manual> and double click on the searched Core Server, the IP address and port number will be renewed. If the Core Server that you want to connect to is on another network, then the IP address and port number can be entered manually.

IP Address	Port	Mac Address
192.168.0.72	9999	00:24:54:32:2C:26

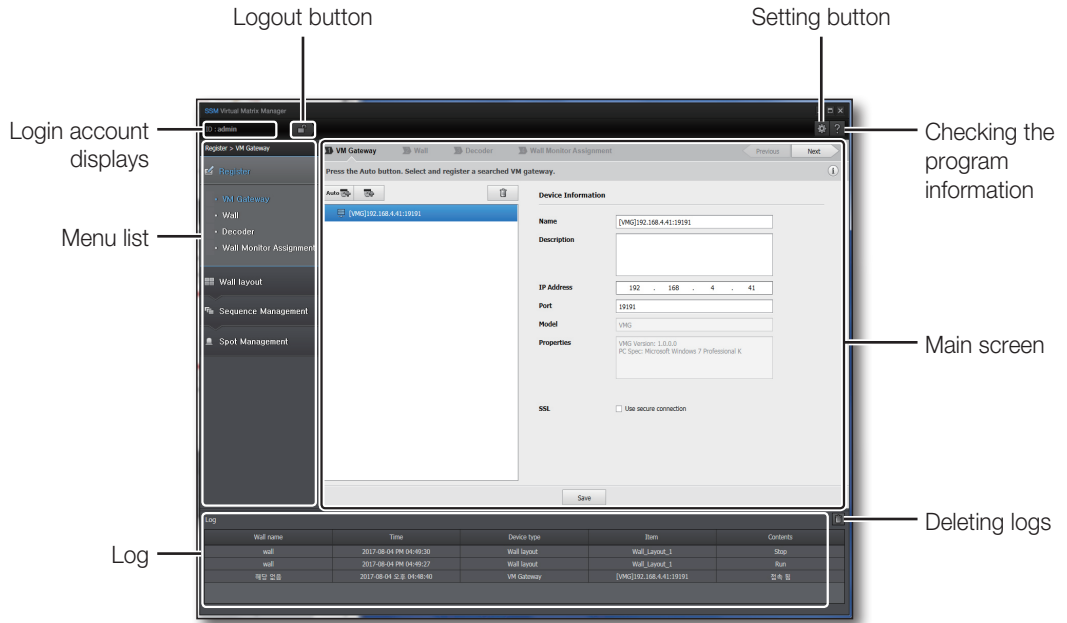
VM Manager login

Login into the account created in the SSM.

- For SSM user account settings, refer to "**Setting SSM User Accounts and Granting Rights To Use Equipment**".

VM Gateway	Type	Device Type	Port	Gateway
VM Gateway	VM Gateway	VM Gateway	VM Gateway	VM Gateway

VM Manager screen composition



VM Manager

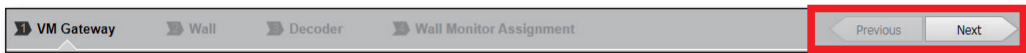
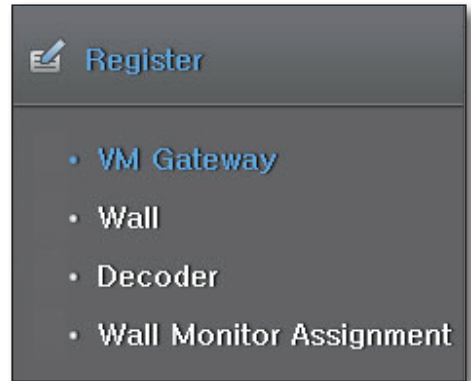
REGISTRATION

The **[Register]** menu is displayed only when you are logged in as a user within AdminGroup.

In the menu list, click **[Register]** to launch the bottom menu as shown on the right.

- VM Gateway : Register the VM Gateway.
- Wall : Register the monitor wall.
- Decoder : Register the decoder (VM Decoder, HW Decoder).
- Wall Monitor Assignment : Assign the decoder videos to each monitor on the monitor wall.

You should follow all 4 steps above to manage the Video Wall. These steps should be performed in the above order.



You can go back to the previous step or proceed to the next step by clicking the Pre or Next button at the top of the Registration menu.

- When the VM program is installed for the first time and no VM gateway is registered yet, the SSM and VM system configuration are displayed. Check and close the configuration diagrams, and start the program with registration of VM Gateway.

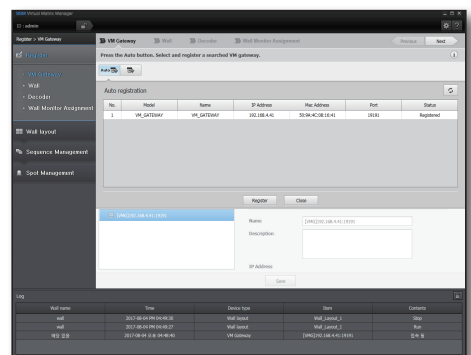
VM Gateway

From the menu list, click **[Register]** - **[VM Gateway]** to launch the VM Gateway registration screen.

VM Gateway it is necessary for the user to use a decoder and a wall. If you start the SSM-VM, you need to first register the VM Gateway.

Automatic registration

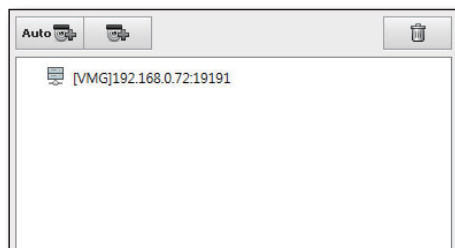
1. Click the **[Auto]** button to search for VM Gateway that are running in the same network.
 - Click the **[Refresh]** button to search for VM Gateway again.
2. Select a VM Gateway from the list to add, and click the **[Register]** button.



3. Click one of the searched VM Gateway and register it. If it is successful, the message box, as shown on the right, will appear.
4. To finish registration and close the window, click [Close] button.




5. The VM Gateway just registered will be added to the VM Gateway list.
 - Depending on network conditions, VM Gateway registration may take some time.

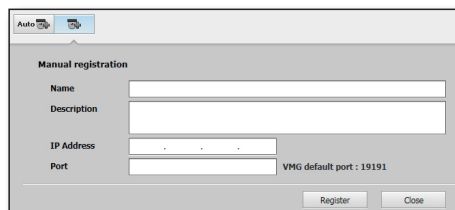


- A registered VM Gateway will be marked as <Registered> while performing searches.

No.	Model	Name	IP Address	Mac Address	Port	Status
2	VMG	VMG	192.168.0.121	78:2E:6:97:97:D8	19191	Unregistered
1	VMG	VMG	192.168.0.72	00:24:44:83:2C:26	19191	Registered

Manual registration

1. Click the [] button to manually register a VM Gateway.
 - If you use a VM Gateway not in the same network, manual registration may be required.
2. After entering VM Gateway names, descriptions, IP address and port number, click Register to register a VM Gateway in the same way as auto registration.
 - VM Gateway port should be set to 19191.



VM Manager

Editing a VM Gateway

In the device information menu, you can change the description of a VM Gateway.

1. Enter the content to change.
2. Next, click the **[Save]** button to save the changes.



- VM Gateway must be registered in a single Core Server. If VM Gateway is registered in multiple Core Server, it will cause operating problems.
- SSL is an option that enables encrypted communication among the modules included in the SSM-VM to protect user information. It operates only when the SSL option of the superordinate Core Server in which VM gateway is registered is enabled, and applies to all VM decoders under the WM gateway.

Device Information

Name: [VMG]192.168.4.41:19191

Description:

IP Address: 192 . 168 . 4 . 41

Port: 19191

Model: VMG

Properties: VMG Version: 1.0.0.0
PC Spec: Microsoft Windows 7 Professional K

SSL: Use secure connection

Wall

In the menu list, click **[Register]** - **[Wall]** to launch the Wall registration screen.

- The VM gateways registered in the previous step are displayed in the wall list. Because walls are controlled through the VM gateway, a VM gateway needs to be selected first.
- Monitor wall cannot be searched on the network. You must register it manually.

Device Information

Name: [VMG]192.168.4.41:19191

Description:

Device type: VMG

Model: VMG

Properties: 1.0.0.0

Manual registration

Click on [] to manually register a Wall.

Manual Registration of Monitor Walls

1. In case of manual registration, if you set the Device Type to Monitor Wall, the screen shown on the right will appear.
2. Enter name, descriptions, and vertical and horizontal lines of actually composed monitor wall and click **[Register]**.

Manual registration

Device type: MONITORWALL

Name:

Description:

Row: Column:

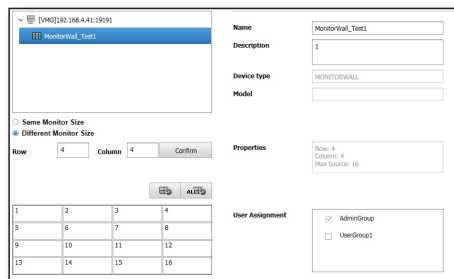
Register Close

Editing Walls

Editing Monitor Walls

1. Once the user clicks on a Monitor Wall to edit, the Monitor Wall information will be displayed.
2. You can change the number of vertical/horizontal lines, the descriptions and the wall monitor configuration.
3. The wall can be organized with monitors in the same or different sizes.

- !** The objective of changing the wall monitor configuration is to observe the same configuration of monitors in the S/W. Functionally, monitors do not co-operate with one another.



Ex) Arranging same size monitors.

Select "Same Monitor Size". This is used to organize the wall using monitors that are physically the same size. The "Screen Merge" function is available in the Layout setting tab.

- Refer to "**Layout Setting**" for more details.


Ex) A large monitor and a small monitor placed together.


Select "Different Monitor Sizes". This is used to organize the wall using monitors that are physically different sizes.

If you place your cursor between monitors, as shown in **<Figure 1>**, your mouse cursor will be changed.

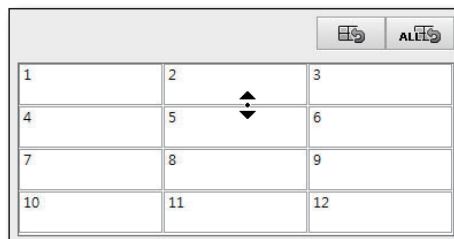
Once this happens, if you drag your mouse and select a cell to merge, then you can create a single large monitor. This function is used to adjust the size to actual configuration. **<Figure 2>** illustrates the case where cells 2, 5, and 8 in **<Figure 1>** are merged to create a single monitor.

After merging cells, the monitor number is restored as shown in **<Figure 2>**.

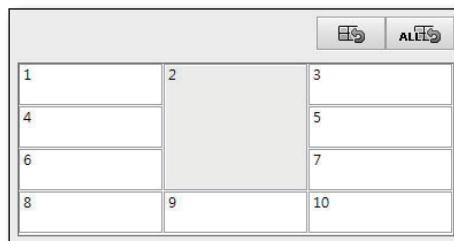
If you want to separate merged cells, right click on the areas to separate and select [] from the options.

Press the [] button to separate all the merged cells.

After editing, press the [**Apply**] button in the bottom to save the changes.



<Figure 1>



<Figure 2>

Assigning the user group

A registered Wall can be assigned to the desired user group.

- When a Wall is registered, it is automatically assigned to Admin Group.
- A user group to which the Wall is assigned is checked and assigned.
- A Wall can be assigned to multiple user groups.

A user who has been assigned a Wall has the right to control that Wall.

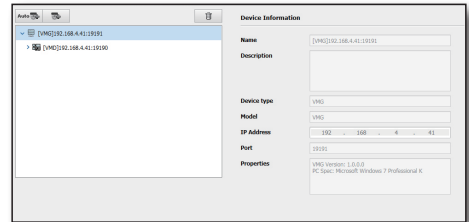
VM Manager

Decoder

In the menu list, click **[Register]** - **[Decoder]** to launch the decoder registration screen.



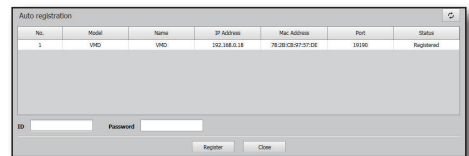
- The VM gateways registered in the previous step are displayed in the decoder list. Because decoders are controlled through the VM gateway, a VM gateway needs to be selected first.
- SSM-VM supports the following decoder types.
 - SW Decoder : Software-based decoder (VM Decoder) installed on PC.
 - HW Decoder : Hardware-based decoder, old decoder type (SPD-400)
 - SPD-1600 : Hardware-based decoder, ODM-based decoder type (SPD-1600)
 - Wisenet Decoder : Hardware-based decoder, new decoder type (SPD-1660 and derivative model)



Automatic registration

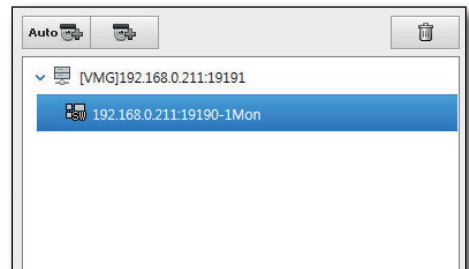
1. Click the **[Auto]** button to search for and register decoders running in the same network.

- Click the **[Refresh]** button to search for decoders again.

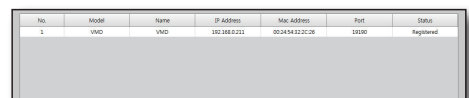


2. If you click on one of the searched decoders to register it, it will be added to the decoder list.

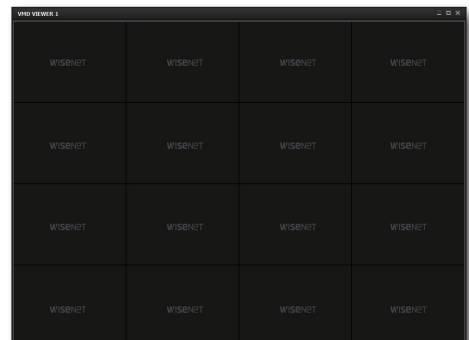
- A VM Decoder can be registered without any ID or password.
- Depending on the network environment, decoder registration may take some time.




- The registered decoder is marked as **<Registered>** while performing searches.

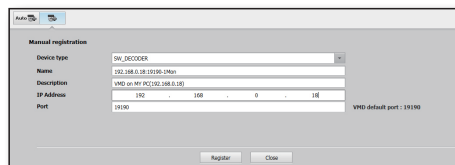


- If you register a VM Decoder out of decoders, the status of VM Decoder is changed to video outputs in the log in screen as shown on the right.
- Permission for video output of VM Decoder follows AdminGroup permission.



Manual registration


1. Click the [] button to manually register decoders.
 - If you want to use decoders not in the same network, manual registration may be required.
2. After entering decoder name, descriptions, IP address and port number, click Register to register a decoder in the same way as automatic registration.

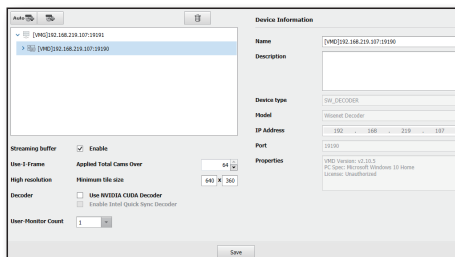


-  ▪ If you register a VM Decoder out of decoders, the port number should be set at 19190.

Decoder editing

In the Device information, you can change the name, description, streaming buffer, use of I-Frame, high resolution, decoder, and the number of monitors.

1. Enter the content to change.
 - Streaming buffer: This function prevents video stuttering through video buffering. Video delays equivalent to the buffering time may occur.
 - Use-I-Frame : This function is used to prevent system overload during multi-channel video monitoring. When the number of tiles displayed on a single monitor exceeds the configured value, only the I-Frame will playback.
 - High resolution : When either the width or height exceeds the configured value, the video will be output in high resolution. Otherwise, the low resolution video will be output.
 - Decoder : The hardware accelerator function can be used when decoding videos. The relevant options will only be activated in environments that support each function. (Influenced by CPU, GPU and graphic drivers.)
 - User-Monitor Count : The maximum number of monitors provided by the selected decoder is displayed. The user can select the number according to the usability.
2. After making changes, click the [] button to save them.

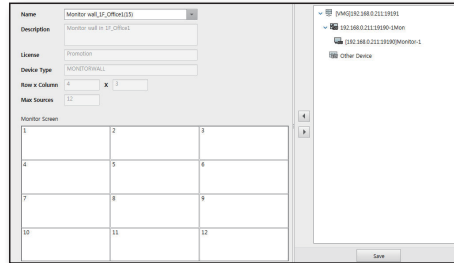


-  ▪ For the decoder monitor under the decoder, you can only change the name and explanation.



VM Manager

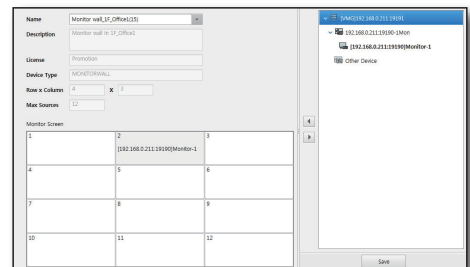
Assignment

Each monitor on the wall is assigned a decoder for video outputs.



Device list

1. The VM Gateway and the decoder registered in the device registration screen will be displayed.
Other Device is an icon used for External Sources.
 - External Source does not indicate a decoder but a TV, internet or PC.
2. Decoder assignment can be done by using Drag&Drop or pressing the [] button.
To cancel, press the [] button again.
3. The assigned decoder is highlighted in bold in the device list.



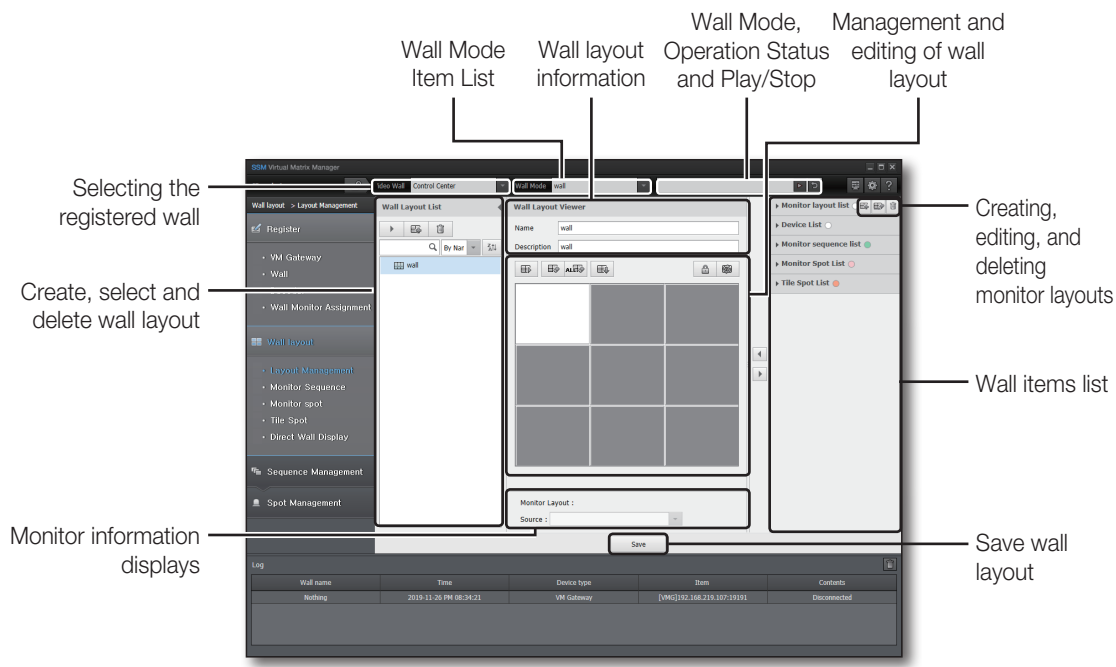
- If you assign a decoder already assigned to another monitor, the previous assignment information will be automatically replaced.
- A decoder monitor cannot be assigned to multiple wall monitors.

Other Device

1. If you want to assign the External Source to a monitor, you should assign 'Other Device' to a monitor.
2. Now, the message box will appear to prompt you to enter the name of the External Source.
3. Other Device is not highlighted in bold even after assignment.











LAYOUT SETTING






- ✎
 - Wall items can be authorized in each monitor of the wall layout. Wall items include Monitor Layout List, Device List, Monitor Sequence List, Monitor Spot List and Tile Spot List.
 - Monitor Layout List : Multiple videos can be displayed on a single monitor according to the layout provided by SSM. You can save the video and layout as the monitor layout.
 - Device List : The recorders and cameras registered in SSM are displayed. The devices accessible may be restricted according to the authority given by SSM. Refer to the appendix for details of device access authority given by SSM.
 - Monitor Sequence List : If you allocate this function to a specific monitor of the wall layout, you can change the monitor layout periodically for the monitor.
 - Monitor Spot List : When a specific event occurs, the predefined monitor layout (including the event video) is displayed on the selected monitor.
 - Tile Spot List : When a specific event occurs, the event videos are displayed one after another in the predefined tile pattern on the selected monitor.

VM Manager




Management and editing of Wall Layout

	The current wall layout is displayed in the wall.
	Removes the event displays from the selected wall monitor.
	Removes the event displays from all of the wall monitors.
	Retrieves all the camera configuration information displayed in the wall and synchronizes it into the format of wall layout.
	The selected monitor is partitioned if it was merged.
	The monitor is partitioned into basic status when all monitors on the wall were merged.
	Lock the selected monitor. If you click this option, then the monitor selected will have a lock icon. Even if you make multiple selections of cameras or monitor layouts, they will be ignored.
	Return to the last Wall Layout saved.



Creating and deleting wall layout

	Execute the wall layout in the wall mode, and disable editing until it is stopped. You can edit other wall layouts which are not executed. See "Controlling Wall Mode" for a further description on the wall mode.
	Add a wall layout.
	Delete the selected wall layout.









Creates, edits, and deletes monitor layouts.

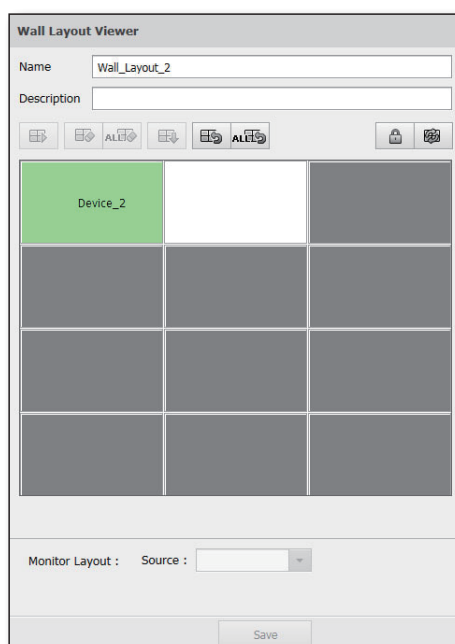
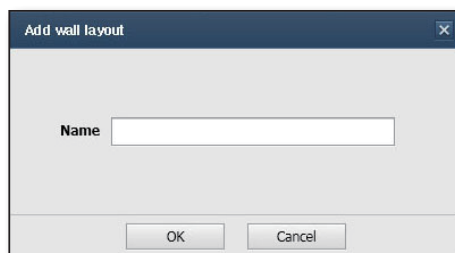
	Add a monitor layout.
	Edits a selected monitor layout. <ul style="list-style-type: none">Only monitor layouts created in VMM can be edited.
	Delete the selected monitor layout.



- The functions [] and [] can be set when the user selects "Same Monitor Size" in the Wall tab.
- Wall Mode: In the wall mode, videos are played by wall. Wall modes include Wall Layout, Wall Sequence and Wall Spot.
- Only layouts created in the logged-in user group can be deleted.
- If it is not a layout that was created in the logged-in user group, it can be saved under a different name.

Creating a Wall layout

1. For wall control, first of all, you need to create a wall layout.
To create a wall layout click [].
 2. After clicking, a message box will appear to ask you for the name of the wall layout.
 3. After entering the name and clicking on [OK], the wall layout control monitor will be activated.
 - In the bottom, the monitor layout source number is the source number for the monitor and can be selected by clicking the mouse button.
- The status of the monitor in the wall layout is classified as follows, depending on the previous wall monitor assigned and also depending on the layout item assigned.
 -  : Monitor selected by clicking the mouse button.
 -  : External Source (displayed if a non decoder device is registered.)
 -  : Decoder or External Source not assigned to a monitor.
 -  : Decoder assigned to a monitor.
 -  : Monitor Sequence assigned to a monitor.
 -  : Monitor Spot assigned to a monitor.
 -  : Tilt Spot assigned to a monitor.

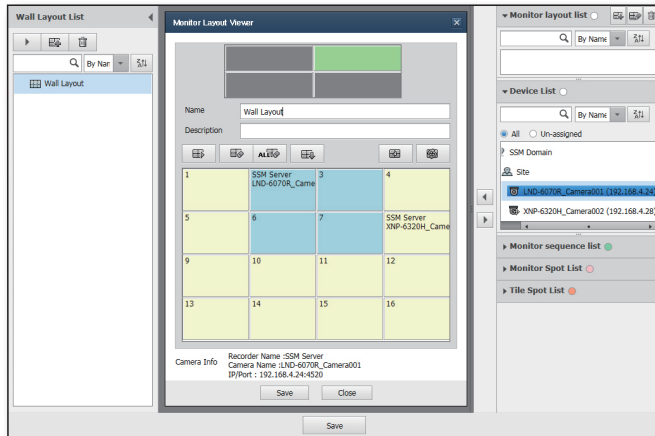


VM Manager

Wall Layout Editing

Wall Layout Editing

Double-click a monitor in the Wall Layout Viewer to go to the Monitor Layout Viewer screen, where you can change the layout pattern and camera assignment for the monitor.



Monitor layout viewer button functions

	Display the current monitor layout.
	Removes the event displays from the selected tile.
	Removes the event displays from the current monitor.
	Imports an image displayed in the wall monitor into the program.
	Change monitor layout pattern.
	Reverting to the last saved monitor layout.



- Tile is an image displayed on the single monitor.
- At the top of the Monitor Layout Viewer, the currently selected wall layout type and the selected monitor are displayed.
- If you want to edit another monitor while editing the layout of a specific monitor, you can click the monitor you want to edit to import the layout of that monitor.
- If you change the monitor selection, content that has not been saved will disappear. You can save your changes by clicking the Save Wall Layout button at the bottom.

Merging monitors



The wall set for same monitor size can use the "Screen Merge" function in wall layout editing.

"Screen Merger" combines the monitors on the wall so that they display the screen image in various wall layout patterns much larger than the size of an individual monitor.

- A merged monitor cannot be merged with another monitor until it is partitioned to original.

1. The mouse cursor changes when the user hovers the mouse cursor over the monitor border in wall layout.
2. Drag the monitor and drop it in the monitor to merge to create a larger monitor.





3. To partition a merged monitor to its original sizes, select Wall Layout Monitor and click the [] button.
4. Use the [] button to quickly partition all wall layout monitors to original size.



VM Manager

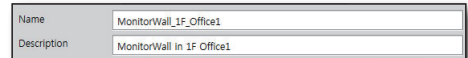
Adding and editing monitor layouts

- Click the [] button to add a monitor layout.
- Click the [] button to edit the currently selected monitor layout.
 - When the above button is clicked, the monitor layout viewer pops up, and the monitor layout can be edited and saved.

If you want to save the monitor layout

1. Enter the name and description of the monitor layout.

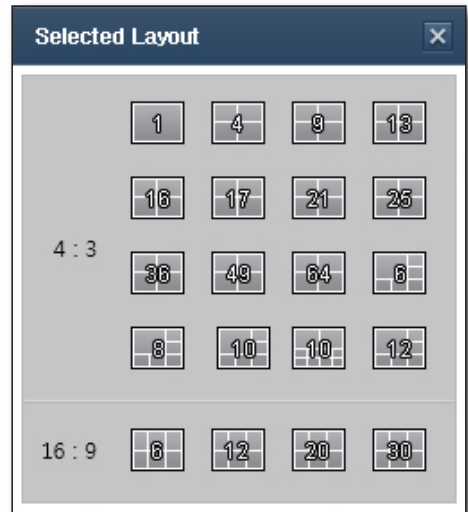
- Inputting the "Name" is mandatory.




Name	MonitorWall_1F_Office1
Description	MonitorWall in 1F Office1


2. Press the [] button to select a pattern to use.

- A pattern supported by your decoder will be activated and displayed.
- A user-defined layout pattern created by Configuration Manager cannot be selected.

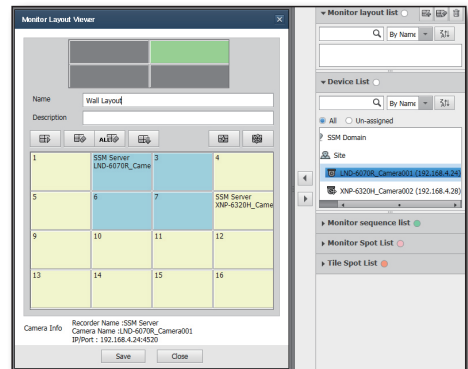


3. After you choose a layout, you need to decide which image of which camera should be sent to each tile.

To assign a camera to a tile, you can use Drag & Drop or press the left arrow button ().

To cancel, you can press the right arrow button ().

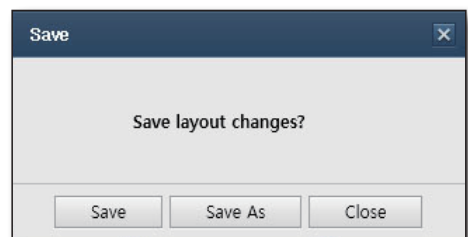
- After assigning a camera to a tile, click on the assigned tile to see the Device Name/Camera Name displayed in the camera information in the bottom.
- It is possible to multiple-assign all cameras on the lower layer by assigning sites or devices.



4. In the bottom of the monitor layout viewer, click the [Save] button to add an item saved in the monitor layout.

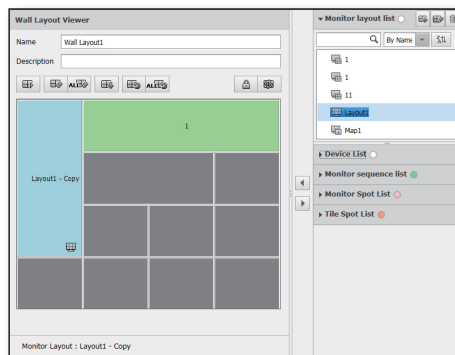
If you click the [Save As] button, the name input window will appear. A new monitor layout for the new name will be created.

5. Click on [Close] to close the monitor layout viewer and go back to the wall layout viewer.



Monitor layout assignment

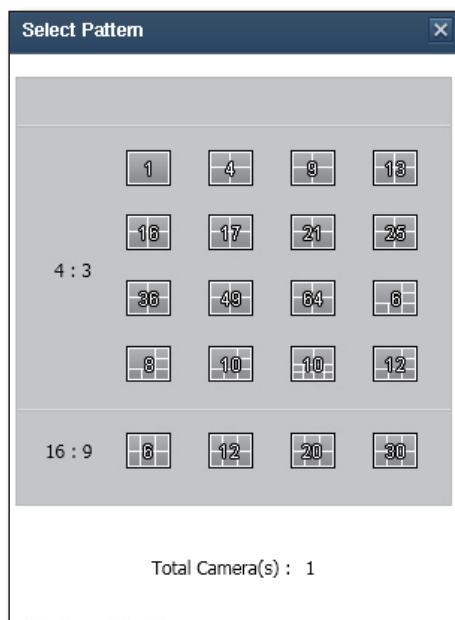
- Once you've created a monitor layout, you can assign a monitor layout to each monitor. The contents of the assigned monitor layout are copied to the Wall layout, and subsequent changes in one do not affect the other. To assign a monitor layout to the Wall Layout monitor, you can use Drag & Drop or press the left arrow button (◀). To cancel, you can press the right arrow button (▶).
- When you edit the selected monitor in the Navigator and save the Wall layout, your edits are saved in the Wall layout.
- In the Wall Layout viewer, you must press the **[Save]** button if you want to save the information of the monitor layout assignment to the wall layout.



Camera group assignment

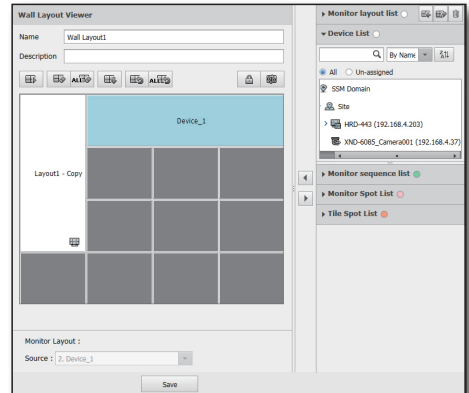
In the wall layout viewer, you can assign devices by using drag and drop or by pressing the left arrow button (◀). To cancel, you can press the right arrow button (▶). At that time, it is possible to move various Recorders and Cameras at once by multiple-selecting sites or devices. While pressing down the Ctrl key, click on the recorders or cameras in the device for multiple selections.

- If you move a selected recorder or camera to a specific monitor by using drag and drop or using the arrow button, the monitor layout pattern selection screen will appear.
 - If you make multiple selections, in the bottom, the total number of selected camera(s) will be displayed.
 - In addition to the camera, you can assign the Video In video of the decoder to the Wisenet decoder.
- If you select the desired pattern in the layout pattern window, the camera group having the Wall Layout name (Wall Layout name_monitor number) will be assigned.
 - Camera Group has a monitor layout format but it belongs to the selected Wall Layout and it cannot be shared by another Wall Layout.
 - If a pattern that is not supported by the decoder is selected, the video is displayed in a different pattern that can be displayed.






VM Manager

3. After assigning Camera Group, you need to press the **[Save]** button to save the wall layout's camera group.

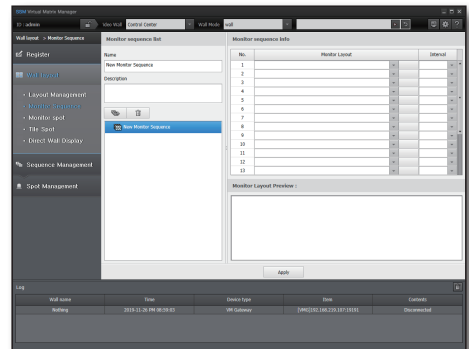


Creating a monitor sequence

In the left tree menu, select Wall Layout > Monitor Sequence, and the monitor sequence setting screen is displayed.

-  : Add a monitor sequence.
-  : Delete the monitor sequence.
-  : Save the changed monitor sequence.

The new monitor sequence is named “New Monitor Sequence”.



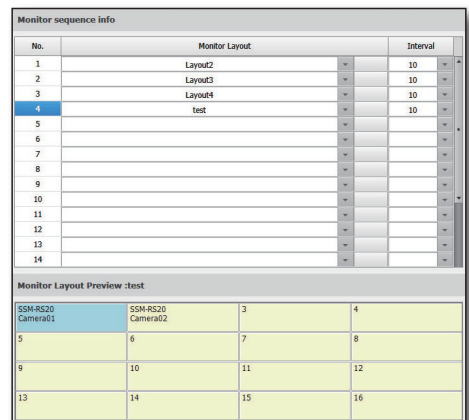
Editing monitor sequence

Click a created monitor sequence, and Monitor Sequence Viewer is displayed on the right of the screen. If you click Monitor Layout, the list of the monitor layouts created is displayed. You can select one in this list.

You can designate up to 20 monitor layouts, which are displayed in the order shown in numbers.

You can select the time each layout is displayed in 10-second scale. Select Time in the right of the Monitor Sequence Viewer, and adjust the time.

The selected monitor layout is displayed on the Monitor Layout Overview at the bottom of the screen.



You can edit the name of a monitor sequence and add a description on the left of the Monitor Sequence Viewer. A newly created monitor sequence is named “New Monitor Sequence”, which should be renamed.

Click the [] button to save changes and finish editing.

Name

New Monitor Sequence

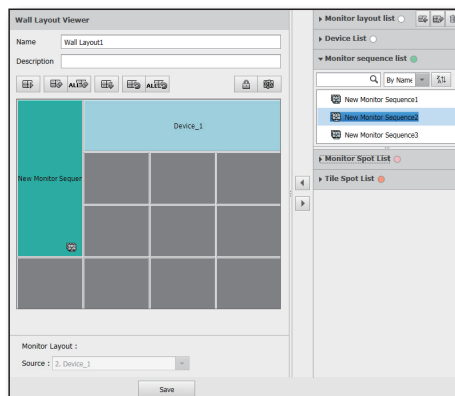
Description

Allocating monitor sequence

You can check the monitor sequences created on Wall Layout > Layout Management screen.




You can allocate monitor sequences by dragging & dropping or by using the left arrow button. Use the right arrow button to deselect a monitor sequence.

The monitor to which a monitor sequence is allocated is indicated in .

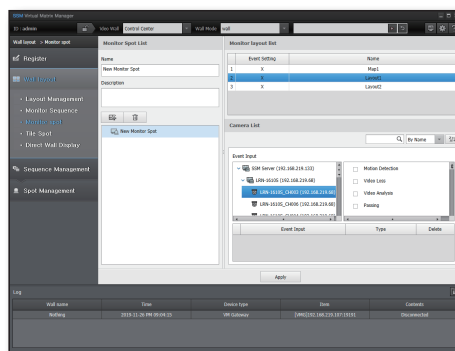


Creating monitor spot

In the left tree menu, select Wall Layout > Monitor Spot to display the monitor spot setting screen.

-  : Add a monitor spot.
-  : Delete the selected monitor spot.
-  : Save the edited monitor spot.

The new monitor spot is named “New Monitor Spot”.



VM Manager

Editing monitor spot

Click a created monitor spot, and the monitor layout list and the camera list are displayed on the right of the screen.

Monitor Layout List displays monitoring layouts that have been generated thus far, and the Camera List displays cameras and sensors that can be set by event inputs.

When monitor layout is selected, the Event List that is interworked with the corresponding layout is displayed in the lower section.

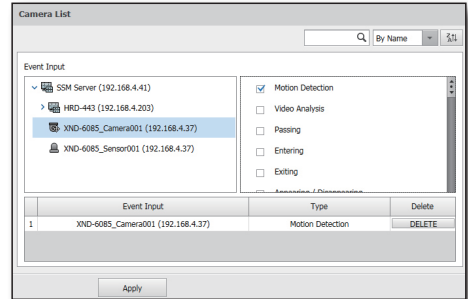
When cameras or sensors are selected, the Event List is displayed on the right-hand side.

If the corresponding event is selected, when the event occurs, it means that the selected monitor layout is displayed on the upper side.

- Refer to "Event" in "SSM Console Client Administrator Manual" for detailed descriptions of all events.
- External systems and alarms should be set using the SSM Configuration Manager in advance. Refer to "Event" in "SSM Console Client Administrator Manual" for detailed descriptions.

You can edit the name of a monitor spot and add description on the left of the Monitor Layout List. A newly created monitor spot is named "New Monitor Spot", which should be renamed.

Click the [] button to save changes and finish editing.




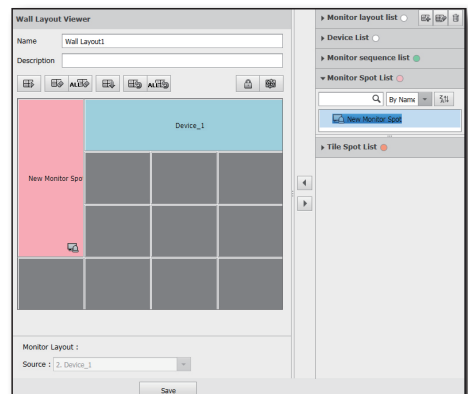
Name
New Monitor Spot
Description

Allocating monitor spot

You can check the monitor spots created on Wall Layout > Layout Management.



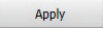
You can allocate monitor spots by dragging & dropping or by using the left arrow button. Use the right arrow button to deselect a monitor sequence.

The monitor to which a monitor spot is allocated is indicated by .

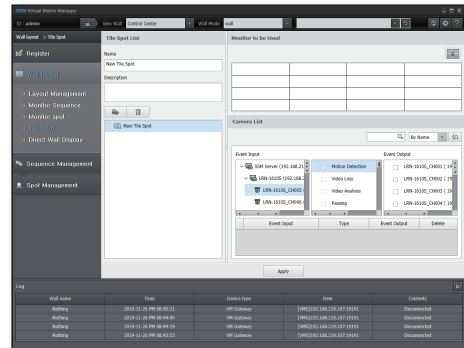


Creating tile spot


In the left tree menu, select Wall Layout > Tile Spot to display the tile spot setting screen.

-  : Add a tile spot.
-  : Delete the selected tile spot.
-  : Save the edited tile spot.

The new tile spot is named "New Tile Spot".



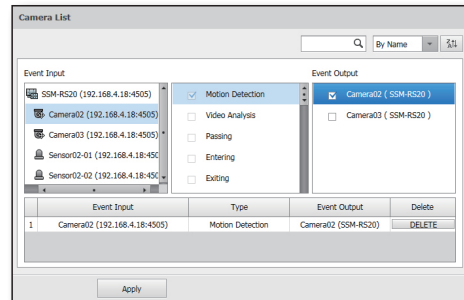
Editing tile spot

Click a created tile spot, and the monitor pattern selection screen and the camera list are displayed on the right of the screen. You can change the monitor pattern for event image with the  button below the monitor.

When cameras or sensors are selected, the Event List is displayed on the right-hand side.

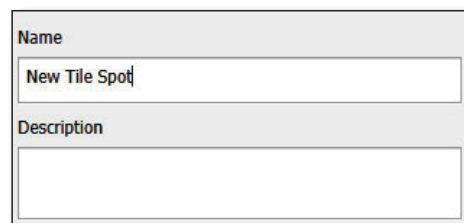
If you select an event, the monitor pattern selected at occurrence of the event is displayed.

- Refer to "**Event**" in "**SSM Console Client Administrator Manual**" for detailed descriptions of all events.
- External systems and alarms should be set using the SSM Configuration Manager in advance. Refer to "**Event**" in "**SSM Console Client Administrator Manual**" for detailed descriptions.



You can edit the name of a tile spot and add description on the left of the screen. A newly created tile spot is named "New Tile Spot", which should be renamed.

Click the  button to save changes and finish editing.




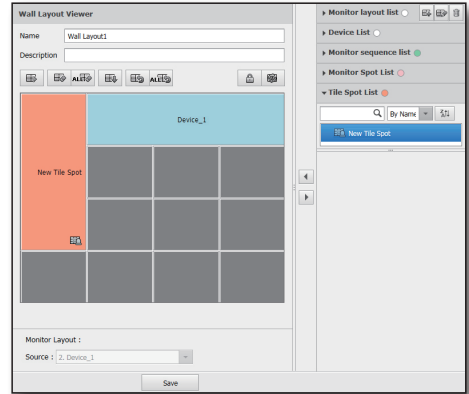
VM Manager

Allocating tile spot

You can check the tile spots created on Wall Layout > Layout Management.

You can allocate tile spots by dragging & dropping or by using the left arrow button. Use the right arrow button to deselect a monitor sequence.

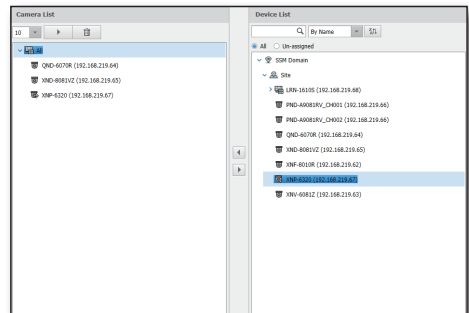
The monitor to which a tile spot is allocated is indicated by .



Video Wall Automatic Display Setting

This function allows users to choose multiple cameras and playback a video wall sequence with ease.




1. From the device list on the right, select a camera and either drag & drop or use the arrow button on the left to assign it to the camera list on the left.
2. Configure the dwell time of the video wall. (Unit: Seconds)
3. Click the video [▶] button to start. The list of cameras will be displayed on the video wall layout in the order designated and according to the set dwell time.
4. To stop, click the Stop Wall Mode [■] button at the top right.

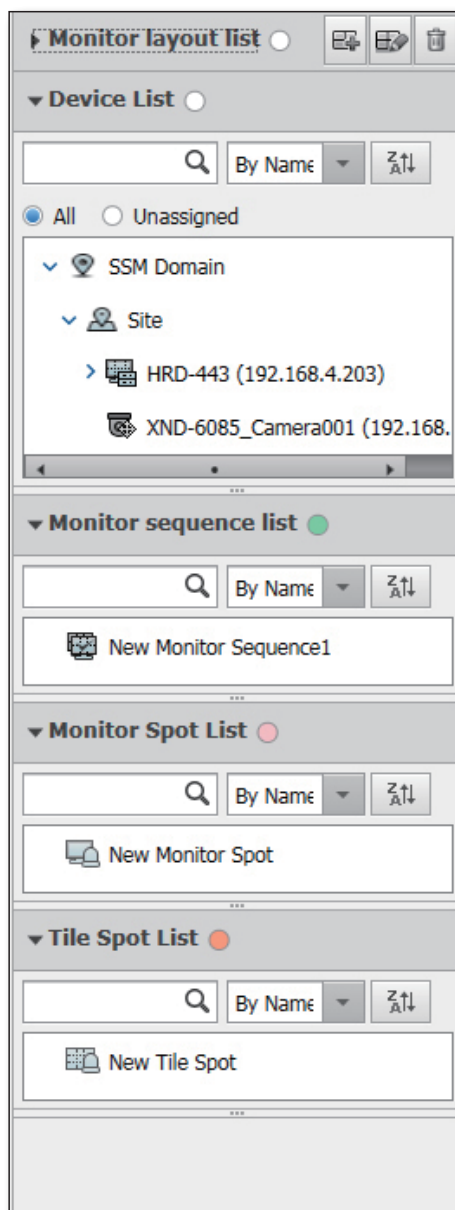


- The Video wall automatic display is a one-time function, and configurations will not be preserved for the next program execution.
- The wall layout displayed will be based on the most recent layout configured for the video wall.
- To modify the order of the cameras on the camera list, select the desired camera, then move it to the desired location via drag & drop to change the order.

Searching and sorting wall items

Wall Item List is displayed on the right of Layout Management. Every wall item provides the search and sort function.

-  : Enter a name and click the search button or press the "Enter" key on the keyboard to search the matching items.
- **By Name**  : You can sort items by name or by order of registration.
-  : You can sort items in ascending or descending order.
- All Unassigned : This menu is meant for devices only, and lists the devices not allocated to the selected wall.



VM Manager

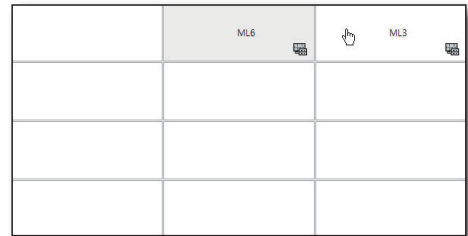
Event Clear

When the Video Wall displays images, if an event occurs from an image of a specific tile, the borderline of that specific tile will become colored. Press the button to clear the colored tile within a specific monitor. Press the button to clear events in all tiles in the Wall Layout.

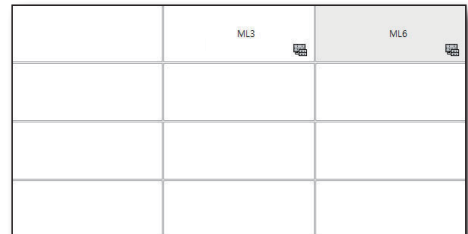
Monitor switching

In the wall layout viewer, you can exchange monitor layouts (+ Camera Group) assigned to different monitors.


1. If you place the mouse cursor in the middle of the screen, its shape will change to a hand shape.



2. If you drag and drop it to the monitor that you want to change the layout of, the layout will be changed accordingly.




Loading the wall status

In the wall layout edit screen, click on the [] button to load the current wall settings into the VM Manager.

The monitor layout applied to each monitor in the actual wall is loaded into the currently selected wall layout. It is useful when a single wall controls multiple VM Manager.

Loading the monitor status

In the monitor layout edit screen, click on the [] button to load the current monitor settings into the VM Manager.

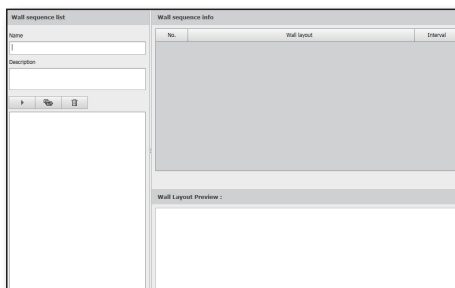
The equipment and layout shapes applied to each tile in the actual monitor are loaded into the currently selected monitor layout.



- When you run the spots, if you control a wall in the layout settings, an event can occur and the screen set in the spot could be forcefully displayed in the wall.

WALL SEQUENCE SETTING

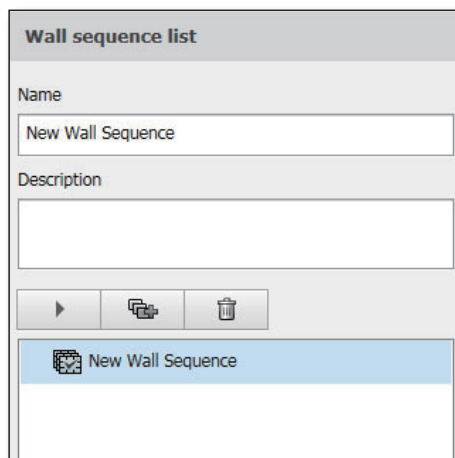
Wall sequence is the function used to display multiple wall layouts on a single wall over some time periods.





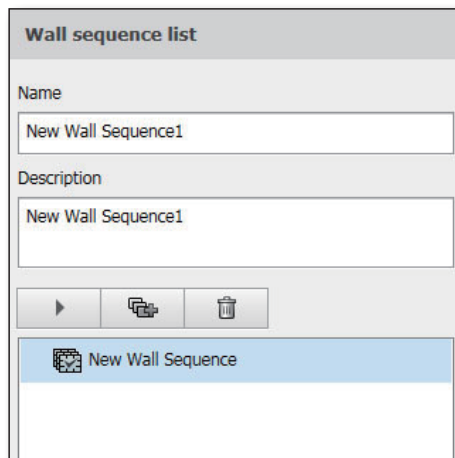
Creating Wall Sequence

Press the [] button to create a wall sequence.

1. The created wall sequence is automatically named "New Wall Sequence".



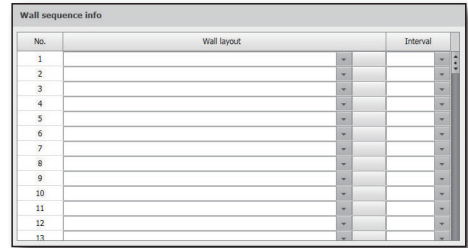
2. After creating it, you can change the name and descriptions that you want for a wall sequence.
3. Click on the created wall sequence in the list in the bottom of the wall sequence list, and press the [] button to delete it.
 - Only Wall sequences created in the logged-in user group can be deleted.
 -  : Saves the changes made to the selected wall sequence.



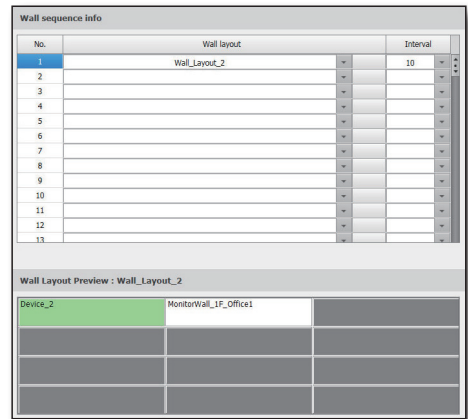
Wall sequence editing

After creating a wall sequence, you must specify how it will actually operate.

1. If you click on the created wall sequence, the wall sequence information window will be changed as shown on the right side.
2. Change the wall layout items and the time interval to compose a desirable sequence.
3. If you select a wall layout saved in the wall layout item, the wall layout will be displayed in the preview screen in the bottom of the screen.
4. Wall Layout 1 is displayed for 10 seconds, Wall layout 2 is displayed for 20 seconds and Wall layout 3 is displayed for 30 seconds and then finally Wall layout 1 is displayed for 10 seconds in this wall sequence example. Since Wall layout 1 is your final choice wall layout 1 will be displayed in the wall layout preview screen in the bottom of the screen.
 - Wall sequence switching interval can be adjusted from 10 seconds to 180 seconds in intervals of 10 seconds.
5. If you are finished with editing, press the **[Save]** button to save the changed wall sequence.
 - If it is not the Wall sequence created in the logged-in user group, it can be saved under a different name.



No.	Wall layout	Interval
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		



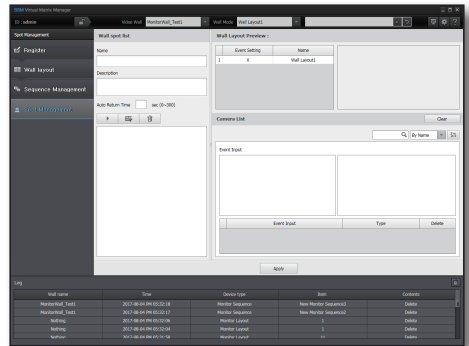
No.	Wall layout	Interval
1	Wall_Layout_2	10
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Wall Layout Preview : Wall_Layout_2


Device_2	MonitorWal_1F_Office1

WALL SPOT SETTING

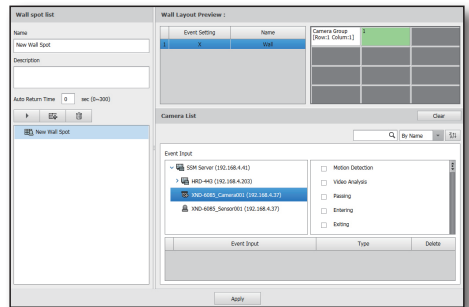
Wall Spot is the function which changes the entire wall layout when a specific event occurs.




Creating Wall Spots

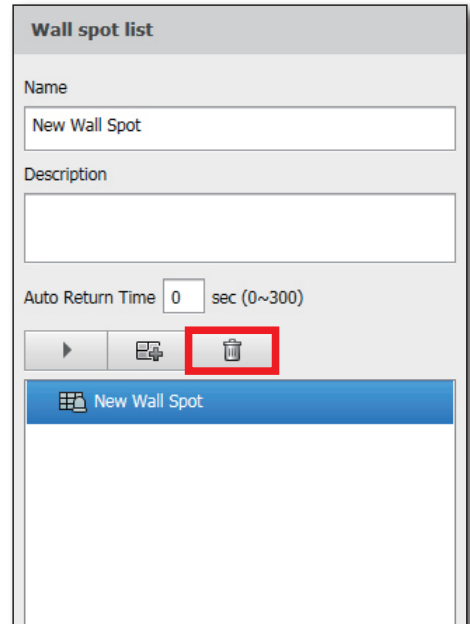
Press the [] button to create a wall spot. Its name is automatically set as "New Wall Spot" and can be changed later.

1. Enter name and descriptions and press the [Apply] button in the bottom right to reflect changes.



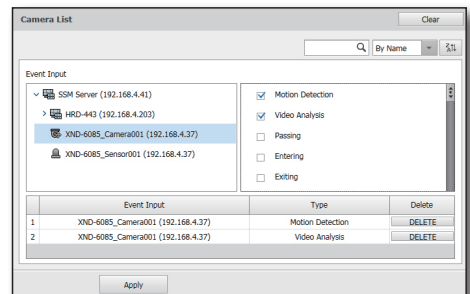
VM Manager

2. Click on the wall spot created in the wall spot list and press the [] button to delete it.
 - Only Wall spots created in the logged-in user group can be deleted.



Editing wall spots

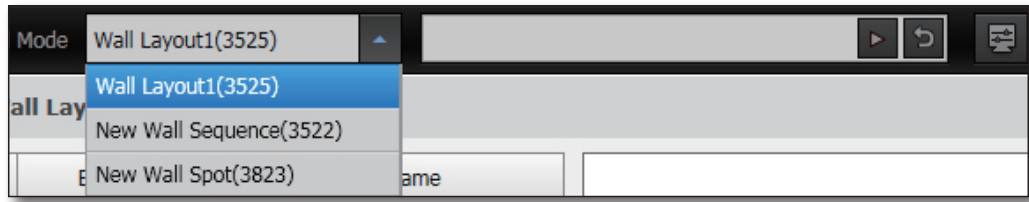
1. Click on a wall spot from the wall spot list you want to edit. The wall layout list will display the currently created wall layout list.
2. Click on the wall layout list to view the wall and the monitor layout (or Camera Group) assigned to each monitor on the preview screen.
3. The camera list shows all cameras and sensors that can be set by event input.
4. When the camera or sensor is selected, the event list appears to the right. Selecting that event means that the selected Wall layout will be displayed at the top when the event occurs.
5. You can set the time to automatically return to the previous video after wall layout switches by the wall spot by entering a reset time value.
6. After completing the configuration of all settings, press the [Apply] button to save the changes.
 - If it is not a Wall spot created in the logged-in user group, it can be saved under a different name.



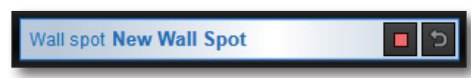
- By clicking the [Clear] button, you can release all events that are currently selected on the Wall layout.

CONTROLLING WALL MODE

Wall Mode changes the entire wall. There are 3 wall modes: Wall Layout, Wall Sequence and Wall Spot. You can manage wall modes with the menus on the top of VM Manager.






You can select one of the wall modes registered, and manage the selected wall mode with the control bar on the right. Click ► to change the control bar status as below. You can stop the wall mode with the ■ button. If you click the [↶] button, you can manually return to the previous state to the wall layout switch by the wall spot.



VM Manager

OPTION

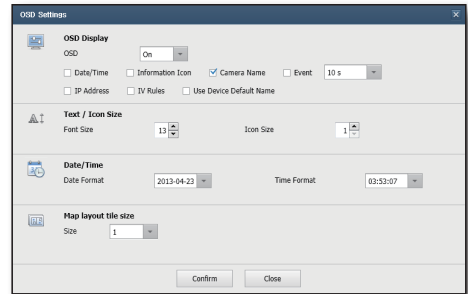
In the top right of the VM Manager, the Option menu is provided.

-  : Adjusting the OSD on the decoder screen.
-  : Designates camera display method in VM Manager language and layout settings.
-  : Information button.

OSD change

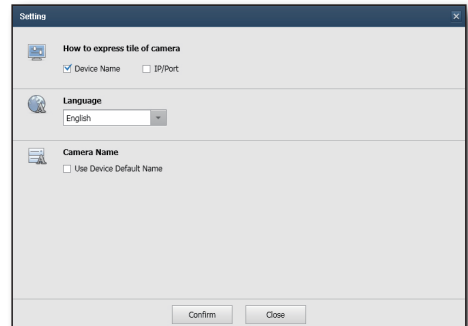
The user can edit the information displayed on the decoder screen in the OSD Setup menu. The parameters to be set are OSD display, text/icon size and date/time.

The user can also set the size of image tile included in map layout to be displayed by VMD.



VM Manager setting changes

- How to express tile of camera : In the layout setting menu, select the camera information to be displayed in each tile of the monitor layout viewer.
- Language : VM Manager language is changed to the selected language.
- Camera Name : The camera name designated in the device will be displayed in the layout/sequence/spot settings.



Software information

You can check the actual version of VM Manager installed.




VM service manager

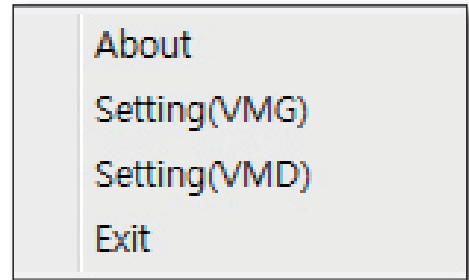
VM SERVICE MANAGER

It is possible to maintain the execution status of the VM Gateway and VM Decoder, which are sub-modules of SSM-VM, and set the Core Server address to connect.

When you boot the PC where VM Gateway or VM Decoder are installed, they will automatically run and an icon will be displayed in the task bar.

Select an icon and right click to launch the menu.

- About : Check the version of VM Service Manager.
 - Setting (VMG) : Set the Core Server address to be accessed by the VM Gateway.
 - Setting (VMD) : Set the Core Server address to be accessed by the VM Decoder.
-  ■ You can check if any Core Server connection information is changed in the settings window.



appendix

PRODUCT SPECIFICATIONS

Item	Description		
	SW Decoder (VM Decoder)	HW Decoder	
Interworking software	SSM v2.0		
Max. number of monitors controlled	48		
SSM Virtual Matrix Server License	Required	Not required	
No. of walls managed by package	3		
Function			
Video stream	Received from SSM (media gateway module) and according to equipment setup	Refer to the specifications for each HW decoder	
Live monitoring	Wall layout (multi monitor)	According to VM Manager setup, Monitor layout configuration	
	Monitor merge (screen enlargement)	Supported	
	Monitor layout (split screen mode)	(VM decoder) 4:3 mode : 1/4/6/8/9/10/13/16/17/21/25/36/49/64 16:9 mode : 6/12/20/30 Full screen mode * Up to 100 channels are possible for layout and split screen under the multi-monitor environment. The number of video tiles that can be displayed simultaneously is limited to 132.	Refer to the specifications for each HW decoder (SPD-400) - Up to 4 split screens, *Refer to specifications of SPD-400. (SPD-1600) - Up to 16 split screens, *Refer to specifications of SPD-1600
	Sequence mode	Wall layout group sequence (setting scales: 10 sec ~ 180 sec) Up to 5 settings, Up to 20 layouts are registered per sequence	
	Map monitoring	Map layout split screen, 2D/3D view, Zoom in/out, Showing camera/sensor/alarm icon on the map	N/A
	Other functions	OSD On/Off, Wall/Monitor setting synchronization, NVIDIA CUDA decoder is used	N/A
Event monitoring	Wall spot, Monitor spot, Tile spot		
Wall Spot	Up to 5 settings per month, Up to 20 layouts are registered per month		
Monitor / Tile Spot	Up to 5 settings per month		

Item	Description	
	SW Decoder (VM Decoder)	HW Decoder
Setting		
Max. number of walls managed at the same time	Up to 3 walls	
Wall management	Registering and allocating decoders on the wall monitor Registering wall layouts and wall sequences	
Event management (including spot setting)	Auto wall layout / monitor layout / tile layout switching, and wall spot / monitor spot / tile spot if a designated event occurs	
	Event setting (V-Loss, MD, Passing, Entering, Exiting, Appear/Disappear, Tampering, Tracking, Face Detection, Audio Detection, depending on equipment setting, Alarm-in, external event)	N/A
Other functions	I-Frame on/off, low resolution setting, buffering time setting	N/A
General		
Modules	VM Manager, VM Gateway, VM Decoder	VM Manager, VM Gateway, HW Decoder
VM Manager	Virtual Matrix setting tool, Manage up to 3 walls at the same time	
VM Gateway	Controls the management module of the VM decoder and the HW decoder and commands	
VM decoder	Video decoding (S/W decoding) module, Up to 4 monitors per PC with VM decoder, Up to 64 channels (4CIF 25fps) or 100 channels (CIF 25fps), based on the recommended spec.	N/A
Language support	Korean, English, Chinese, Croatian, Czech, Danish, French, German, Greek, Hungarian, Italian, Japanese, Polish, Portuguese, Romanian, Russian, Serbian, Spanish, Swedish, Turkish, Dutch, Norwegian, Finnish	

appendix

Item		Description	
		SW Decoder (VM Decoder)	HW Decoder
System	Recommended spec.	CPU : Intel Core i7 or more (i7-4770@3.40GHz) Xeon E3-1275 v5 (8M Cache 3.6GHz) VGA : Geforce GTX 1050 (RAM 2 GB) or above when using CUDA H/W Decoder HD Graphics P530 or above when using Intel Quick Sync H/W Decoder Supports DirectX 11 RAM : 16GB or more HDD : 20 GB or more free disk space is required after OS and SSM-VM installation	
	Min. spec.	CPU : Intel Core i5 or more (i5-4670@3.40GHz) VGA : Geforce GTX 740(RAM 1GB) 6th gen. Intel Processor Graphics Supports DirectX 11 RAM : 8GB or more HDD : 20 GB or more free disk space is required after OS and SSM-VM installation	
	Operating system	VMM : Win7 Service Pack 1 32/64bit Professional/Enterprise Win8 32/64bit Professional/Enterprise, Win8.1 32/64bit Professional/Enterprise Win10 32/64bit Professional/Enterprise VMD : Win7 Service Pack 1 64bit Professional/Enterprise Win8 64bit Professional/Enterprise, Win8.1 64bit Professional/Enterprise Win10 64bit Professional/Enterprise VMG : Windows Server 2008 R2 32/64bit, Windows Server 2012 32/64bit Win7 Service Pack 1 32/64bit Professional/Enterprise Win8 32/64bit Professional/Enterprise, Win8.1 32/64bit Professional/Enterprise Win10 32/64bit Professional/Enterprise	

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