

# **Smart Security Manager** User Manual

VER 1.60 / Professional

# overview

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## INTRODUCTION ON SMART SECURITY MANAGER

Smart Security Manager is an application software that enables the accessing and controlling network devices from a remote PC.

Using this program, you may access and control your network devices via the Internet from anywhere, as well as monitoring connected camera.

It provides users with remote access and playback/search an environment for remote monitoring that employs ease and effectiveness.

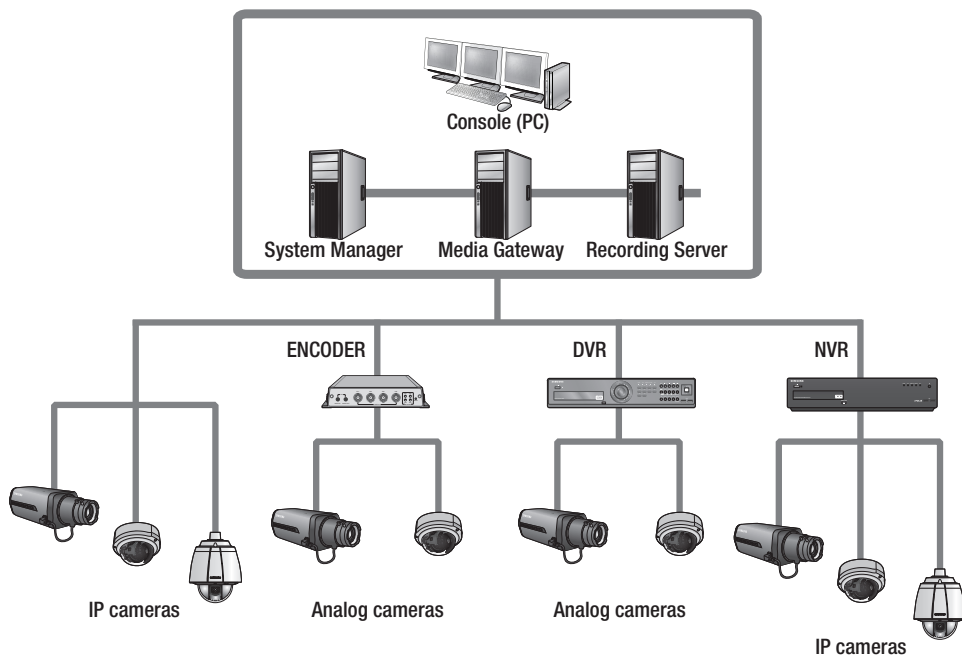
### Smart Security Manager Structure Overview

Smart Security Manager consists of the Console program in the client area and System Manager, Media Gateway and Recording Server in the server area.

- Console : Console provides monitoring and controlling user interface.
- System Manager : System Manager provides administration on all devices and users of the system.
- Media Gateway : Media Gateway's role is as the centralized relay server for the transmitting of video, PTZ control and events.
- Recording Server : It acts as a server that saves and broadcasts video from a camera.

### Standalone type

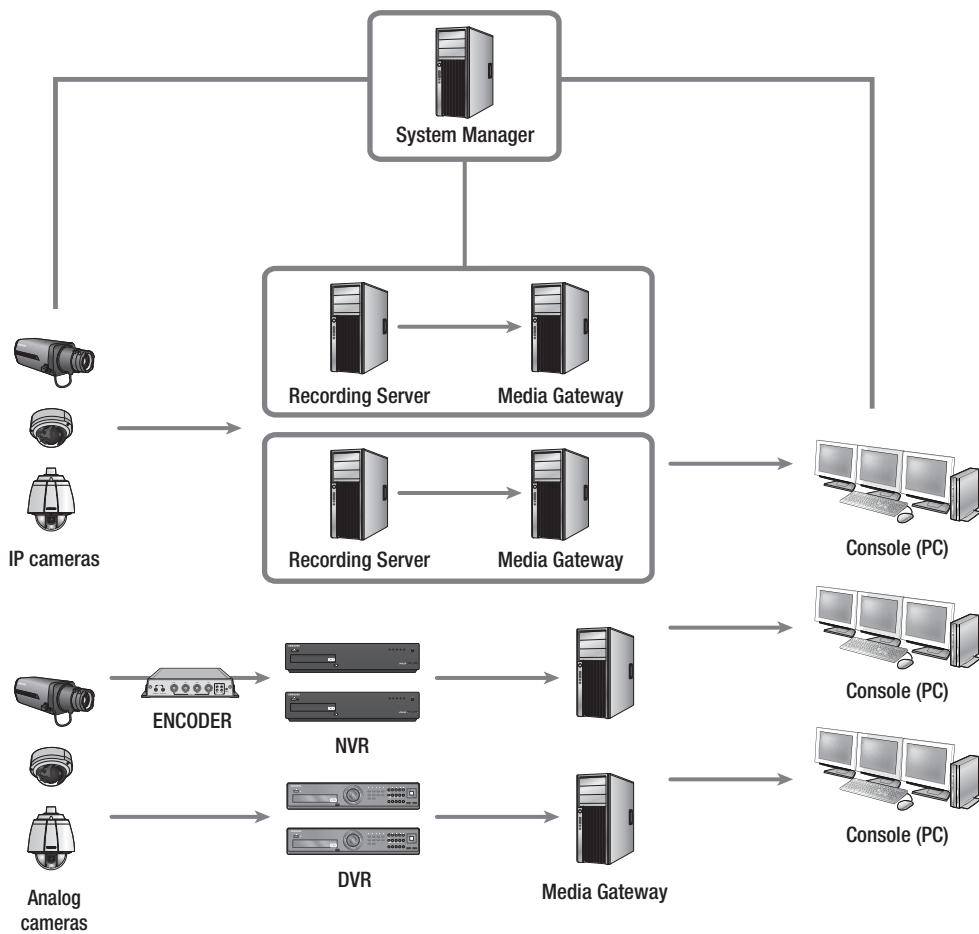
All server components Installed onto one computer.



# overview

## Multi type

In case of distributed installation of the System Manager, Media Gateway and Console on multiple computers.



## Supported Products

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### DVR

SRD-1670(D/DC)/1650(D/DC)/870(D/DC)/850(D/DC)/470(D)/440, SRD-1630(D)/1610(D)/830(D), SRD-1652D/852D, SRD-480D, SVR-1670/3200/1680(C)/1660(C)/1645/960(C)/945/480, SHR-2000/5000/6000/7000/8000 series, SVR-1650E/1640A/950E, SRD-1640/840/1641P/841P, SRD-442, SRD-1653D/1673D, SRD-1654D/854D, SRD-473D, SRD-443, SRD-1676D/1656D, SRD-876D/476D, SRD-1673DU, SRD-445, SRD-856/456, SRD-1680D/880D, SRD-482

### Network Camera

SNB-7000/5000/3000/2000/1000/1001/3002, SNZ-5200, SNO-7080R/5080R/1080R, SNC-B2335/B2331/M300/1300/550/570, SNB-7002/7001/5001, SNO-7082RV, SNB-6004/6003, SNV-6084R, SNO-6084R, SNB-5004 / SNB-5003, SNO-6011R, SNV-6012M, SNV-5084, SNB-7004, SNO-7084R, SNV-7084/7084R, SNV-6013, SNB-6010

SND-7080/5080(F)/3080(F)/3080C(F)/1010/1080/1011/3082, SNV-7080/5080/3080/5010/3120/5080R/3082/1080/1080R, SND-560/460V, SNC-B5368/B5399, SNV-7082V, SND-7082V/7082FV, SND-6084/6083, SND-6084R, SND-7084/7084R

SNP-5200(H)/3430H/3370, 3371(TH)/3301(H)/3120(V/VH)/3302(H), SNC-C6225/C7225/C7478, SNP-3300A/1000A/3750/3350, SNP-6200/H, SNP-5300/H, SNP-6201/H, SNP-6200RH, SNP-6320/ 6320H

SNF-7010, SNF-7010V, SNF-7010VM

SNP-6321/H, SNP-5430H, SNO-5084R, SNB-8000, SNV-8080, SNF-8010

SNO-L5083R, SNO-L6013R, SNO-L6083R, SNP-6320RH, SNP-5321H

SNO/V-8081R, SNB-9000, PNO-9080R, PNO/V/D-9081/9080, SNF-9010R

### NVR

SRN-6450/3250, SNR-6400/3200, SRN-1670D/470D, SRN-1671, SRN-1000, SRN-4000, SRN-472S, SRN-1673S/873S/473S, XRN-2010/2011, PRN-4011, XRN-3010, VPM-4800/4400/5400/6400

### Encoder

SPE-400/100/101, SPE-1600R, SNS-400/100

### Controller

SPC-2000, SPC-7000

### Panomorph Lens

IMV1-1/3 Panomorph CS mount (SNB-5000 compatible)

### SW NVR

NET-i ware\_SNS\_SF064/SNS\_SF032/SNS\_SF016/SNS\_SF008/SNS\_SF004, SSM-RS20/SSM-RS10/SSM-RS00, SSM-RS30

## System Requirements

Item	Minimum	Recommended
<b>CPU</b>	Intel Core i5-4670 @ 3.40GHz	Intel Core i7-4770 @ 3.40GHz
<b>RAM</b>	4 GB or more	8 GB or more
<b>Video Card</b>	At least 512MB of memory (GeForce GT240)	At least 1024MB of memory (GeForce GTX760 GPU, GTX960 or higher and Driver version 368.69 or higher when CUDA decoder is used)
<b>HDD</b>	More than 20 GB of free space for installation - For operation, the system log database requires 10 GB or more free space.	
<b>OS</b>	1. Console, Configuration Manager - Windows 7 32bit/64bit - Windows 8 32bit/64bit - Windows 8.1 32bit/64bit - Windows 10 32bit/64bit 2. System Manager / MediaGateway - Windows 7 32bit/64bit - Windows 8 32bit/64bit - Windows 8.1 32bit/64bit - Windows 10 32bit/64bit - Windows Server 2008 R2 64bit - Windows Server 2012 32bit/64bit	



▪ For the recording server system specifications, refer to the annex. (Page 191)

### Configurable monitoring systems according to the system performance

- Minimum Specifications : Allows access to 16 channels, with monitoring 16 channels at CIF resolution.
- Recommended Specifications : Allows access to 64 channels, with monitoring 64 channels at 4CIF resolution.

## MAIN FEATURES SMART SECURITY MANAGER

- Live Viewer
  - Supports simultaneous video display of up to 64 monitoring tiles per monitor, maximum 4 monitors for 100 monitoring tiles
  - One footage file can save up to 1 hours worth of video
  - Supports full-screen mode
  - Place video feed at any desired tile using drag-n-drop
  - A simple double-click adds a video feed to the video screen
  - Supports sequenced automatic source switching



- Event Viewer
  - Provides search function for events and real-time logs
  - Provides 1-channel playback for events
  - Provides methods of acknowledging, recording, and search on an event
- Search Viewer
  - Up to 16 videos can be played simultaneously
  - Supports periodic backup (self-executable footage)
  - Search for and play the data for each event stored in the storage device
- Configuration Manager
  - User login and restrictions according to privilege
  - Equipment registration and allocation
  - Layout setting and allocation
  - Scheduled backup setting
  - Schedule setting
  - Easy guide
  - Device configuration file
  - SSM configuration file
  - Recording Server Schedule Setting
- Console setting
  - SSM console local setting
  - Screen and event local setting
- Updating
  - Supports remote updating of software using update server

## TERMS FREQUENTLY USED

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- Tree : Display area that shows a list of registered objects and their hierarchy.
- Context Menu : Pop-up menus that appears when right mouse button is clicked.
- Device : Includes DVR, NVR, Video Server, and Network Camera.
- Tile : Unit screen cell that displays video.
- Object : Object is an overall term for the device, camera, site, layout, sensor, etc.
- SSM : Abbreviation of Smart Security Manager.

# installation

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## INSTALLATION

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### Before Starting

#### Setting SSM Password

The user inputs the password when installing SSM (recording Server) or registering the recording server in SSM. The password is used for authentication to register the recording server in SSM and can be changed.

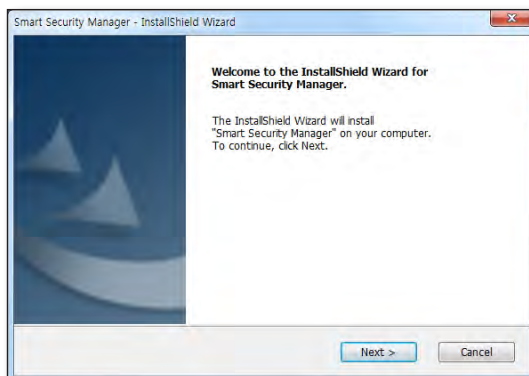
[Mandatory]

- The ID and password should not be the same.
- The password should be at least 8 digits and at most 32 digits.
- If the password is smaller than 10 digits but at least 8 digits, it should be a combination of letters, numbers and special characters (no limitation on special characters).
- If the password is 10 digits or more, it should be combination of letters and number at the minimum.
- 4 or more contiguous characters cannot be used. (ex. abcd or dcba).
- 4 or more repeated characters cannot be used (ex. 1111, qqqq)
- A password that violates the mandatory criteria cannot be set.
- The user inputs the password twice, and the password is set only when two inputs are identical.
- The password is used for authentication to register the recording server in SSM and can be changed in Service Manager after the installation.

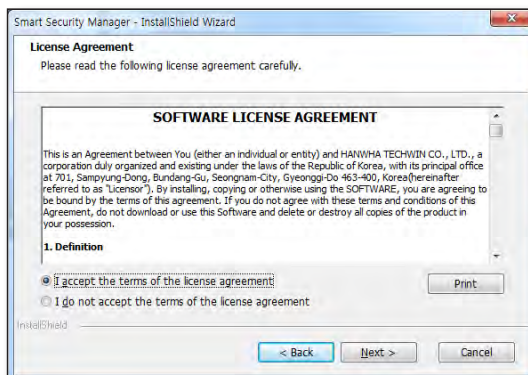
### Installing the SSM

Run the Smart Security Manager installer program on a local PC to install the Smart Security Manager. Software installation requires about 20 minutes, depending on installation conditions.

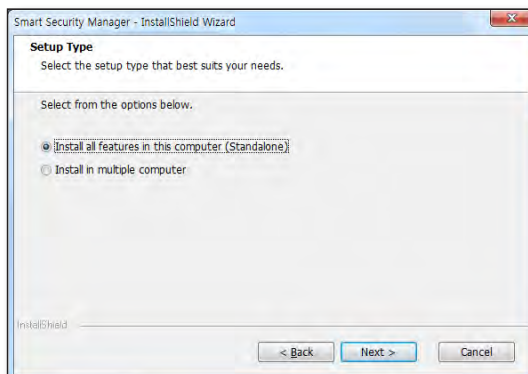
1. Use provided CD or download and run Smart Security Manager installer, "**SSM\_vx.xx\_xxxxxx.exe**".
2. When the installation screen appears, click [**Next >**] button.



3. Check license agreement and then click **[Next >]** button to proceed to the next step.



4. Choose whether to install all or partial components.
  - Install all features in this computer (Standalone) : System Manager, Console and Media Gateway are installed on a single computer.

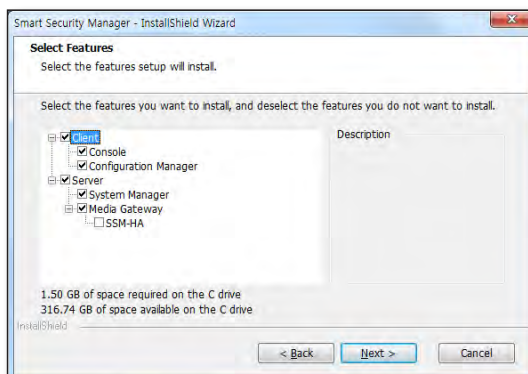


# installation

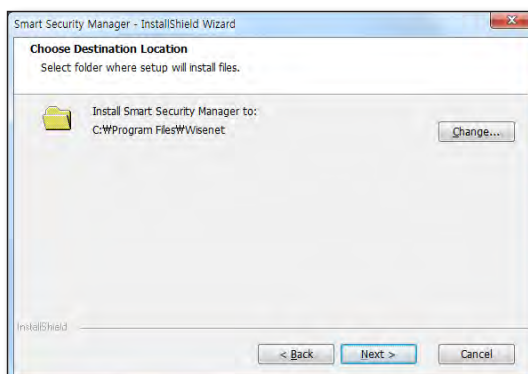
- Install in multiple computer : Installs only selected components of System Manager / Console / Media Gateway onto the PC.



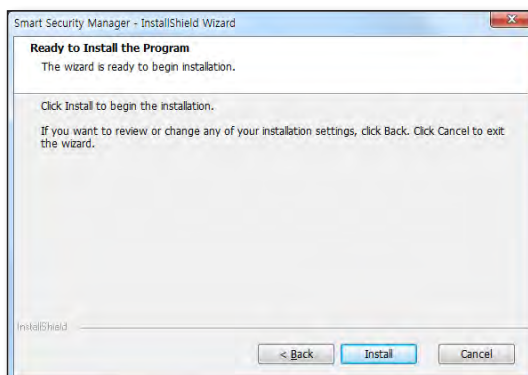
- For information on complete structure according to the installation type, refer to "**Smart Security Manager Structure Overview**". (Page 5)



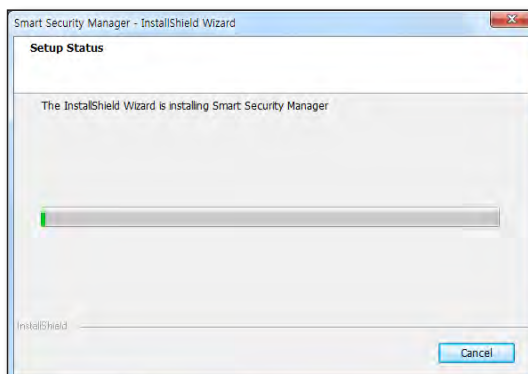
5. Specify the folder path to save the installation program. By default, it is set to "**C:\Program Files\Wisenet**".
  - To change the path, click **[Change...]** button and enter the desired path directly or browse to select one.
6. To proceed to the next step, click **[Next >]** button.



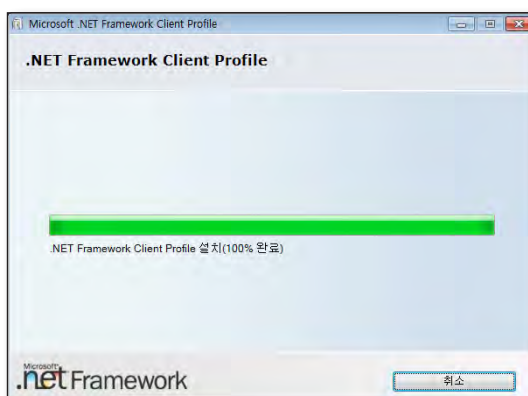
7. Click **[Install]** button to begin installation.



8. Smart Security Manager begins its installation.

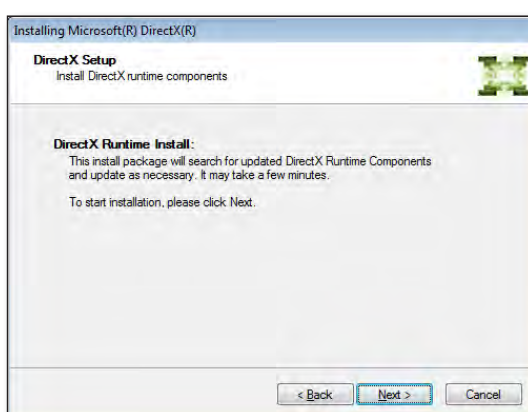


9. When prompted with .NET Framework license agreement, agree and proceed to the next step.



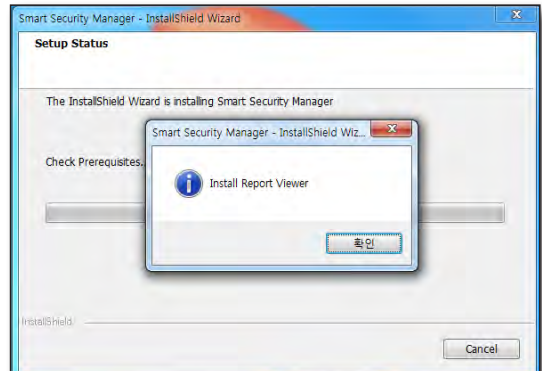
10. DirectX installation package, agree to the license agreement and click [Next >] when prompted with license agreement.

11. Upon completion of DirectX installation, click [Finish] to proceed.



# installation

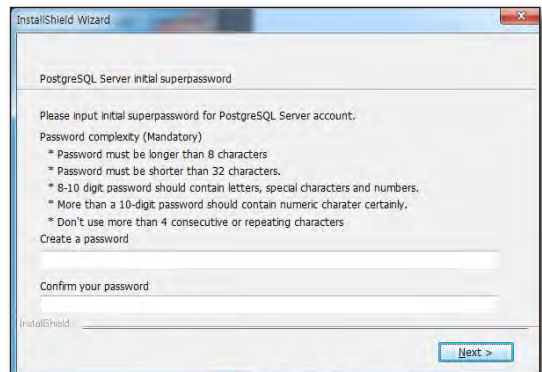
## 12. Install PostgreSQL.



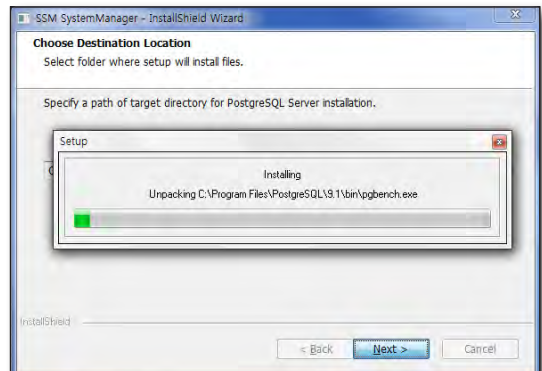
## 13. Enter the initial password for PostgreSQL.



- For more information about how to set the password, refer to the "Setting SSM Password" section. (page 10).

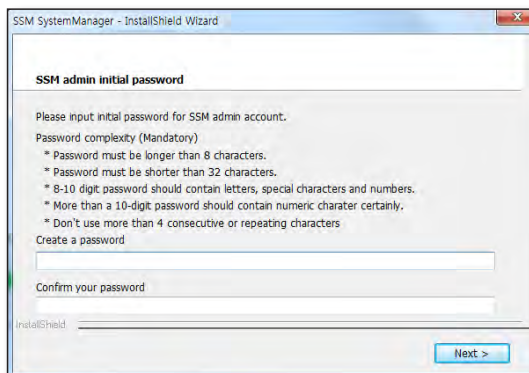


- ## 14. Continue the PostgreSQL installation.
- When installation is complete, the SSM administrator password input window is displayed.



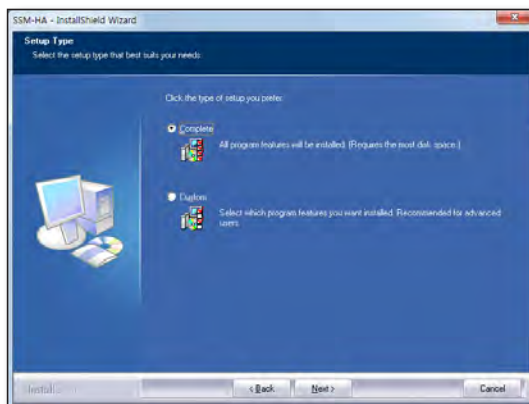
15. Enter the password.

- 
 For more information about how to set the password, refer to the "Setting SSM Password" section. (page 10).



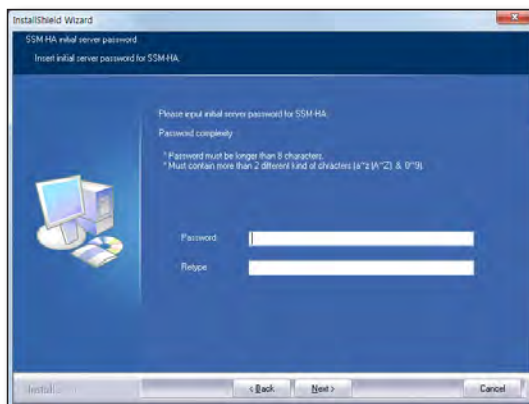
16. The HA installation process is displayed. Select an installation type and click the [Next >] button to proceed to the next step.

- Complete selected : All programs are installed.
- Custom selected : The user can custom select only the programs to be installed.



17. Enter the initial SSM-HA password.

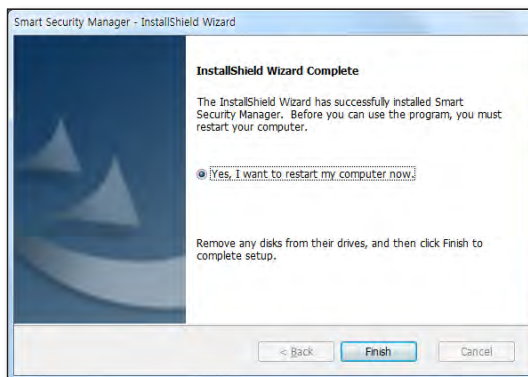
Click the [Next >] button to proceed to the next step.



# installation

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

- If installed with required prerequisites, no further installation popup will appear.

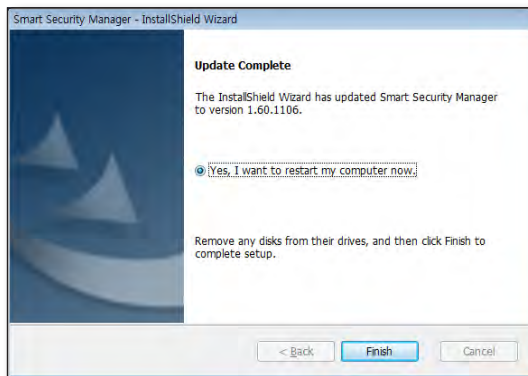


## Updating

If Smart Security Manager is already installed, you may update the application by running the update program to the latest version.

1. Run the update installer "**SSM\_vx.xx\_xxxxxx.exe**". The Update dialog should appear.
2. Click **[Next >]** button to proceed.

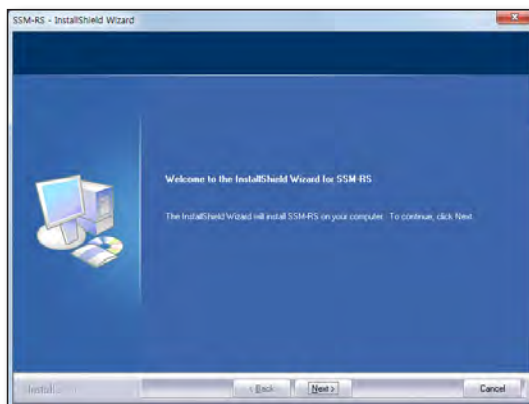
- After updating the software application, restart the PC.





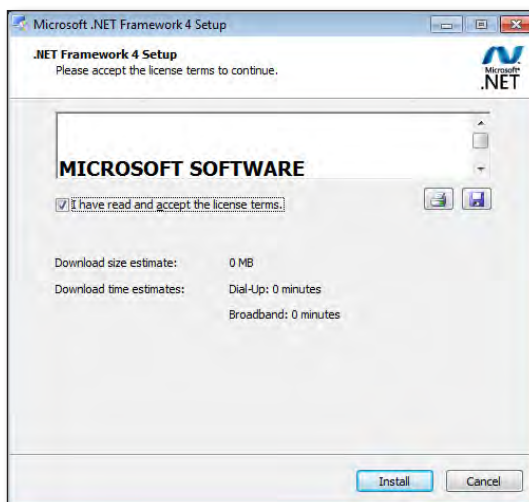
## Installing the SSM Recording Server

1. Run SETUP.EXE the Recording Server installation program included in the DVD or user's PC.
2. Click the **[Next >]** button to move to the license agreement step.



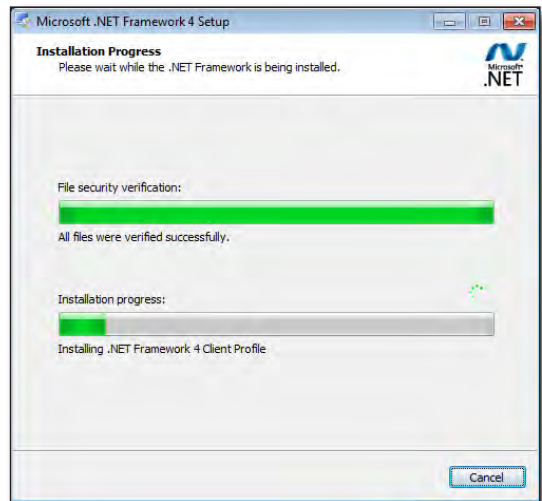
3. If .NET Framework 4.0 is not installed on the user's PC, installation of .NET Framework 4.0 will begin.
  - If NET Framework 4.0 is not installed the Recording Server will not operate properly.
  - .NET Framework can be downloaded and installed at the MS download center.

① In the A NET Framework S/W installation window click on the **[I have read and accept the license terms.]** button.



# installation

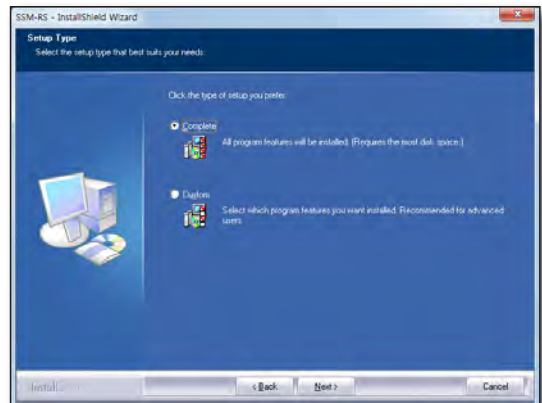
- The installation indicator will be displayed in the window while NET Framework is being installed.
  - After finishing installing - .NET Framework 4.0, you can restart the system depending on the PC conditions.



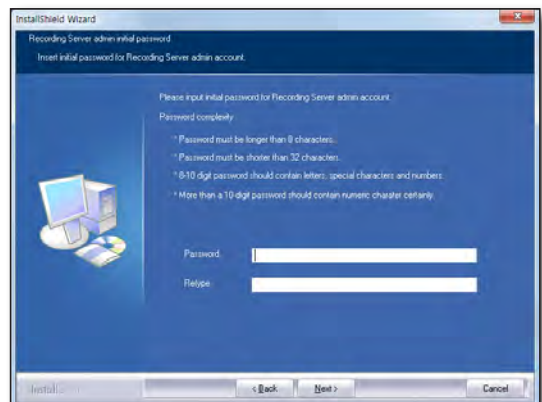
- Installation of Sentinel Runtime begins when the dongle key driver is not installed in the user PC.
  - The recording server does not run properly if Sentinel Runtime is not installed.
  - The Sentinel Runtime Installation program can be downloaded from <http://www.safenet-inc.com> for installation.

- Click the **[Next >]** button in Sentinel Runtime Installation.

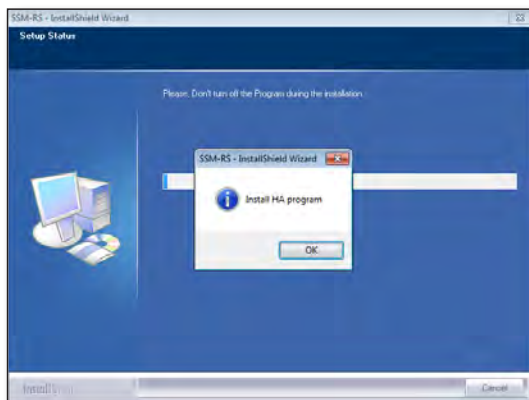
- Select a SSM-RS configuration type and click the **[Next >]** button to proceed to the next step.
  - You can decide whether to install HA by selecting 'Custom' installation.



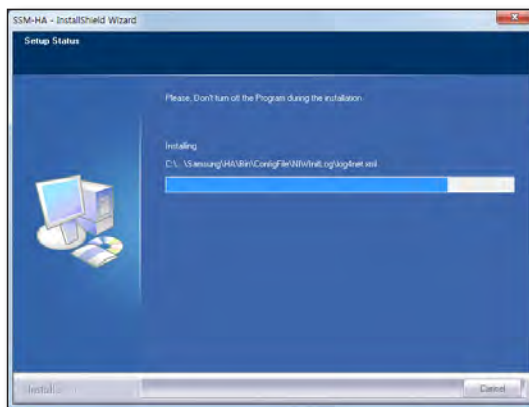
- Input the initial SSM-RS password.
  - Click the **[Next >]** button to proceed to the next step.



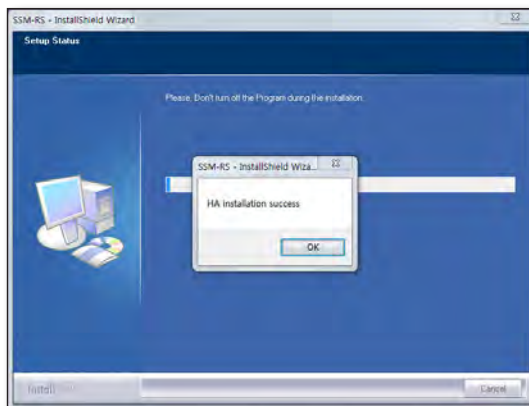
7. Click the <OK> button in the "Install HA program" dialog box to install the HA program.
  - HA Server and Client can be selectively installed during the HA installation step.



8. The HA program installation begins.

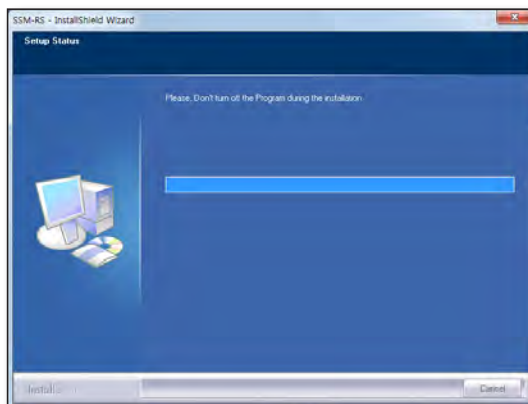


9. The completion confirmation dialog box is displayed after the HA program is successfully installed. Click the <OK> button.



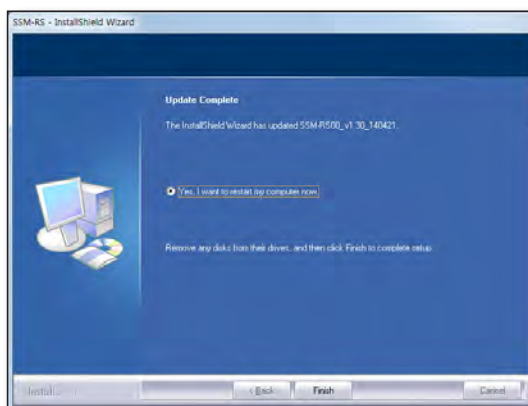
# installation

10. Preparing to install the Recording Server.



11. When the installation has finished successfully, click on the **[Finish]** button to terminate.

- After installation is finished, the PC will restart.

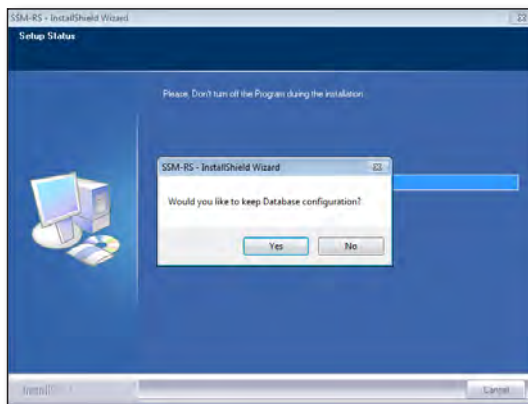


## Upgrade

If the Recording Server is already installed on the PC. You can run the upgraded program file or use Update Manager to perform upgrades.

Click the **<Yes>** button to maintain the existing database during updating.

- After updating software applications, restart the PC to prevent malfunctions.



# getting started

## CHECKING INSTALLED INSTALLATION

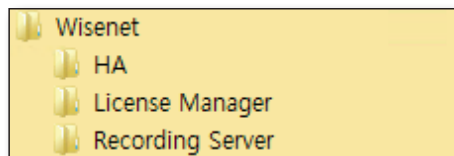
### SSM

Check whether the Smart Security Manager installation has been successfully installed.

1. Click <Start> Windows menu.
2. When Smart Security Manager is properly installed, you can see the <HA>, <License Manager> and <Recording Server> items in the Wisenet submenu.

You can find the <License Manager> item in the <License Manager> submenu.

In the Recording Server submenu, you can find the <Service Manager> and <Uninstall> items.

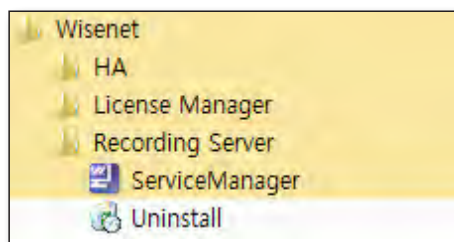


- For distributed installation, only those menu items selected in installation will appear. Refer to the "Installation" section. (Page 10)

### Recording Server

After finishing the installation, check if the Recording Server is installed properly.

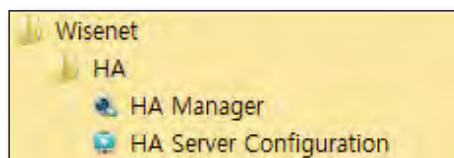
1. Click <Start> Windows menu.
2. If the Recording Server is installed properly, you will see the 2 items, <ServiceManager> and <Uninstall> below the Recording Server.
  - When you run the program for the first time, the language for the Recording Server is automatically set to the OS language.



### HA

Check if HA Manager was successfully installed after the installation is completed.

1. Move to the <Start> menu.
2. If HA is successfully installed, <HA Manager>, <HA Server Configuration> sub folder is displayed under the 'HA' folder.



# getting started

## GETTING STARTED WITH SMART SECURITY MANAGER

### In case of Standalone installation

1. Click <SSM Service Manager> shortcut icon or expand and click "Start > Wisenet > SSM > SSM Service Manager".

- SSM Service Manager : A software program that manages server software products. To use SSM Console, the server should be ready.



2. Double click <SSM Service Manager> icon on the task tray or click right mouse button on it to open context menu and click <View Service Status>.

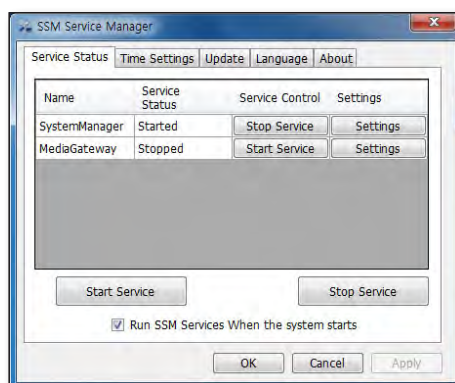
3. Click <Start Service> button.

If successfully installed, each installed program component should show its <Service Status> as <Started>.

4. Run the SSM Configuration Manager to utilize the SSM Console program after the initial installation.



- If the program is already set, Start SSM Console right away.



### In case of multi installation

A Media Gateway server computer can connect to only 1 System Manager. A System Manager accepts connections from multiple Media Gateway servers. A System Manager accepts connections from multiple Console clients.

1. Run the Service Manager on the computer installed with the System Manager. (Page 169)

2. Click <Start Service> button.

- If successfully installed, the System Manager should show its <Status> as <Started>.

3. Run the Service Manager on the computer installed with the Media Gateway. (Page 169)

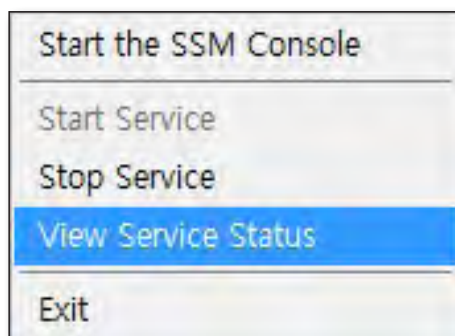
4. Run the Service Manager on the computer installed with the Media Gateway and click <Start Service> button.

- If successfully installed, the Media Gateway should show its <Status> as <Started>.

5. Run the SSM Configuration Manager to utilize the SSM Console program after the initial installation.



- If the program is already set, Start SSM Console right away.



## USING SSM LICENSE MANAGER

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The program manages the licenses of all SSM products.

SSM License Manager supports activation, deletion and transfer of SW licenses.

It also supports the license activation of the HW dongle key used by SSM-RS and SSM-VM v1.0.

### License Type

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The SW license and HW dongle key license are supported.

- SW license : Supported by SSM v1.3 or higher
- HW dongle key license : License used by SSM-RS and SSM-VM v1.0 to maintain backward compatibility
  - If the SSM-RS v1.0 promotion (16ch) is used, the license activation is not needed when the update is installed.

### License Activation

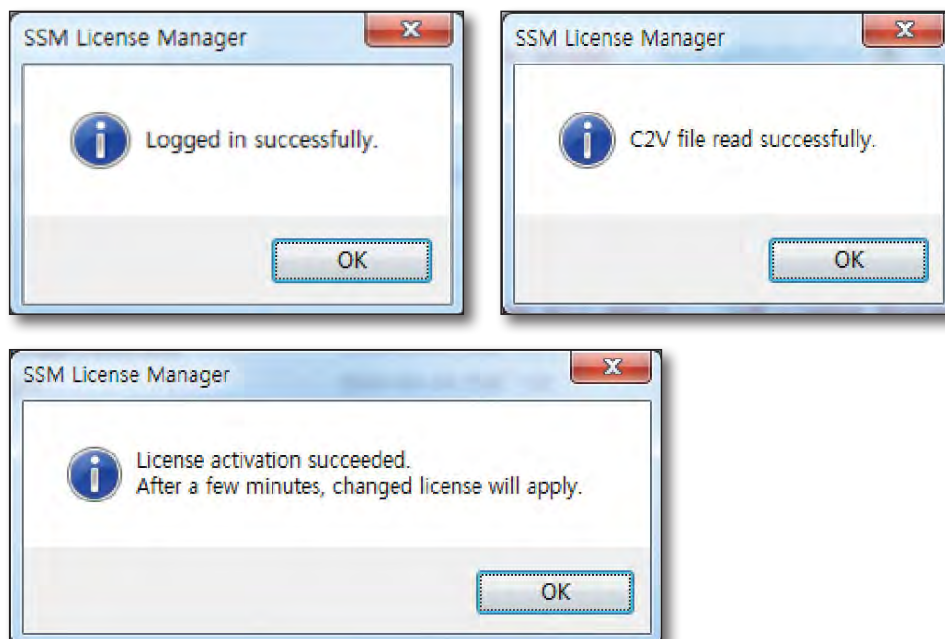
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#### Online SW Activation

The online SW activation menu allows the user to activate the license if the user can access the EMS server (license server) through a Web page.

#### Procedure

1. Select the [**Online SW Activation**] menu of License Manager.
2. Input the product key and click the [**Activation**] button.
  - 3 messages are displayed when the license is activated.



# getting started

## License Server Data

<https://ems.samsungsecurity.com/ems/customerLogin.html>

## Cases of Failed License Activation

1. When a 'Trust Failure' pops up while a user is verifying a license online: Please check the time and the system will synchronize the Internet time. (Server : time.windows.com)
2. Failed login to the license server online: Check if Internet is connected.
3. Attempt to authenticate the license of already authenticated product key: Check if the license key was already authenticated. An authenticated license key cannot be authenticated again.
4. Terminated license module service: Check if the ACC page can be accessed.  
If not, check if the Sentinel LDK License Manager service in the service menus is stopped and start the service.
  - ACC page : <http://localhost:1947>

## Offline SW Activation

Offline SW activation allows the user to activate the license when the user cannot access the EMS server (license server) through the Web page.

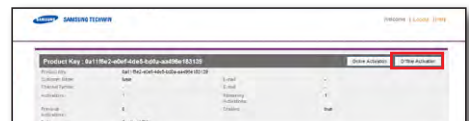
Create a C2V file in the PC to authenticate the license and create a V2C file in the PC that has access to the license server then authenticate the license.

## Procedure

1. Select [**Offline SW Activation**] in the License Manager.
2. Click the [**Collect information**] button in the Collect Status Information menu to collect the PC data to activate the license.
  - Create a C2V file with the [**Collect Information**] button (to collect the PC data to authenticate the license).
3. Connect to the license server Web page (EMS) from a PC that has online access to the license server.
  - Address : <https://ems.samsungsecurity.com/ems/customerLogin.html>
4. Log in with the product key provided.
5. Click the [**Register Later**] button in the upper right corner.



6. Click the [**Offline Activation**] button in the upper right corner.

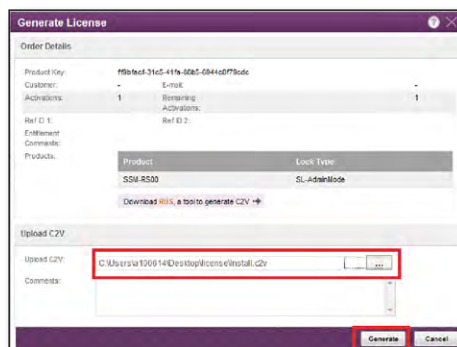




7. In the Generate License popup dialog box, upload the C2V file run in Step 1 and click the **[Generate]** button. Download the generated V2C file.

- Create a V2C file (license file) using the C2V file containing the collected PC data.

8. Retrieve the downloaded V2C file from **[Apply License File]** of the **[Offline SW Activation]** menu of the License Manager. Then click 'Apply Update' to register the license in the PC.



## HW Dongle Activation

This section describes the activation of HW dongle key license.

- HW dongle key : A license key supported by SSM-RS and SSM-VM v1.0

Run **[HW Dongle Activation]** menu of the License Manager.

To activate a HW license, the current service must be stopped before the license is activated.

After the HW license is activated, the use must restart the service manually.

### Procedure

1. Stop service of the product to activate the license.
2. Select the **[HW Dongle Activation]** menu in the License Manager.
3. Click the **[Check Hardware license information]** button to check the dongle key information.
4. After checking the HW dongle key information, click the **[Activation]** button to activate the license.
5. Restart the stopped service.
  - The HW dongle key license cannot be activated remotely.

# getting started

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## License Removal

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This function is applicable only to the SW license. The menu is used when a customer demands a refund after purchasing a product.

Upon a demand for a refund, the key ID of the purchased product is sent to the seller to delete the license.

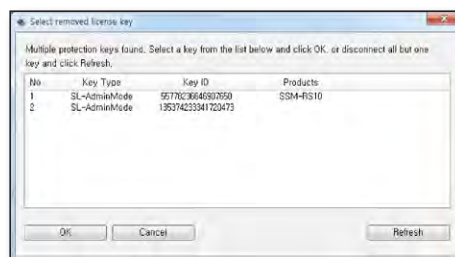
### Checking the Product Key ID

Select the feature of the key in Options > Products in the left hand side of the ACC page.

- ACC page URL: <http://localhost:1947/>

### Procedure

1. Send the product key ID to the licenser server administrator and request the removal of the license. Send the license key data issued upon the demand for refund. (Refer to the product key ID checking.)
2. Delete the license using the V2C file (license removal file) received from the license server (EMS). It is run in [1] of the [Remove SW license] menu of the License Manager.
  - When the V2C file (license removal file) is updated, the product information of the product is deleted.
3. Create a C2V file to confirm that the license was successfully deleted. Click the [Collect information] button in [2] of the [Remove SW license] menu of the License Manager.
  - If there are multiple authenticated licenses, a license list popup window is displayed. Select the deleted product key and create the C2V file of the selected key.
  - If only one license was authenticated, the license list popup window is not displayed, and the C2V file of the deleted product key is automatically created.
4. Send the created C2V file to the license administrator.




## License Transfer

---

This menu is used to transfer the license due to the PC problem or upgrade.

- Source PC : PC of the authenticated license
- Recipient PC : PC to receive the new license

### Procedure

1. Create the ID file to collect the PC data in the recipient PC.  
Run [1] in the [**Transfer license**] menu of the License Manager.
  2. Create a transfer license file in the source PC.  
Run [2] in the [**Transfer license**] menu of the License Manager.
    1. Configure the ID file created in the recipient PC in the 'Read the recipient information file'.
    2. Configure the name of the transfer license file.
    3. Select the license key to transfer from the license list.
    4. Click the [**Generate License Transfer File**] button to create a transfer license file (H2H file).
      - When a license key is transferred, the license key to be transferred is removed from the list.
  3. Apply the transfer license file (H2H file) to the recipient PC.
    - The transferred license key can be checked in the license list after the H2H file is uploaded.
    - The transferred license can be checked in the ACC page also.
-  **Caution when Using the SW License**
- The license activation is not needed after upgrading or re-installation after removal.  
The license exists in the PC until the hard disk is formatted.
  - Transfer the license to a new PC first when replacing a PC.
  - When OS is reinstalled (after HDD format), transfer the license to another PC temporarily and then retrieve it.
  - Actual PC instead of VMWare is recommended.  
The SW license may not run properly in VMWare (ex., after duplication of VMWare).

# SSM configuration manager

This function is used to register the SSM console users and devices, configure the screen layout, and set up the schedule and backups.

Use <**Standard Setup**> to set up the whole system, or <**Easy Guide**> to setup only the basic guide for monitoring.


## LOGIN/LOGOUT

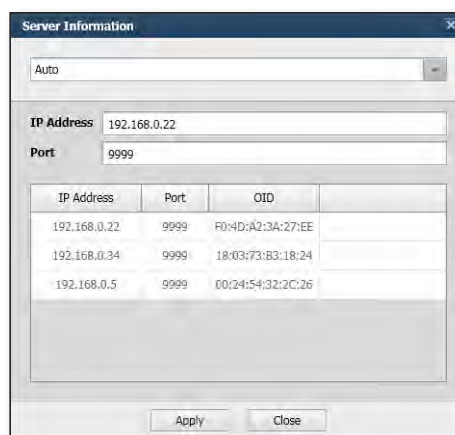
### Login

SSM Configuration Manager requires the user to log in after the program is started for normal operation.

1. Click the SSM Configuration Manager icon.  
The login authentication window is displayed.
2. Enter the user ID and password in the login window.
  - Default ID: admin
  - Password: Enter the password registered during the installation step.



- If the SSM is installed in distributed mode and you need to start a program installed in another server, click the [  ] button located below the login button in the login window to register the server to either <Auto>, <Manual> or <DDNS>.
- If it is set to <Auto>, SystemManager is automatically selected. If it is set to <Manual>, System Manager can be selected from the list, or IP address and Port information can be set.
- If it is set to <DDNS>, then the DDNS input field will be activated.



3. The selection menu is displayed when the program is started for the first time.  
Select a menu option according to the desired configuration.
  - After the initial run, the program will be started in <**Standard Setup**> mode.



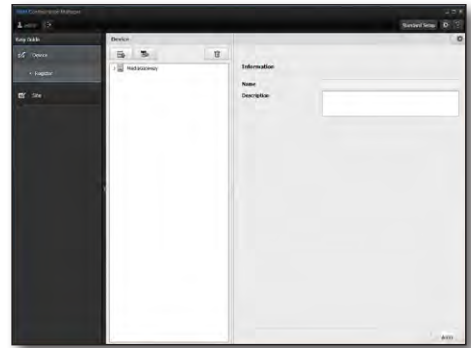
## Easy Guide

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This only shows the minimum menu options needed for monitoring, such as device registration and allocation.

Only device, user group, user, and site registration and allocation are enabled in this mode.

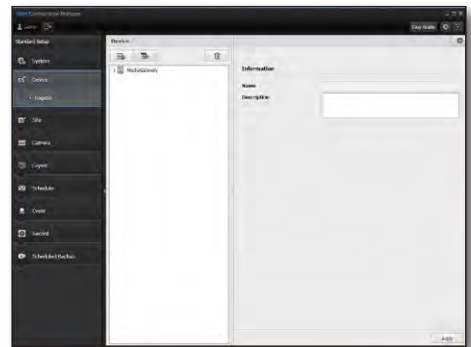
When a device is registered, it is automatically assigned to a site and user group separately by EasyGuide.



## Standard Setup

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All functions of Configuration Manager can be set up.

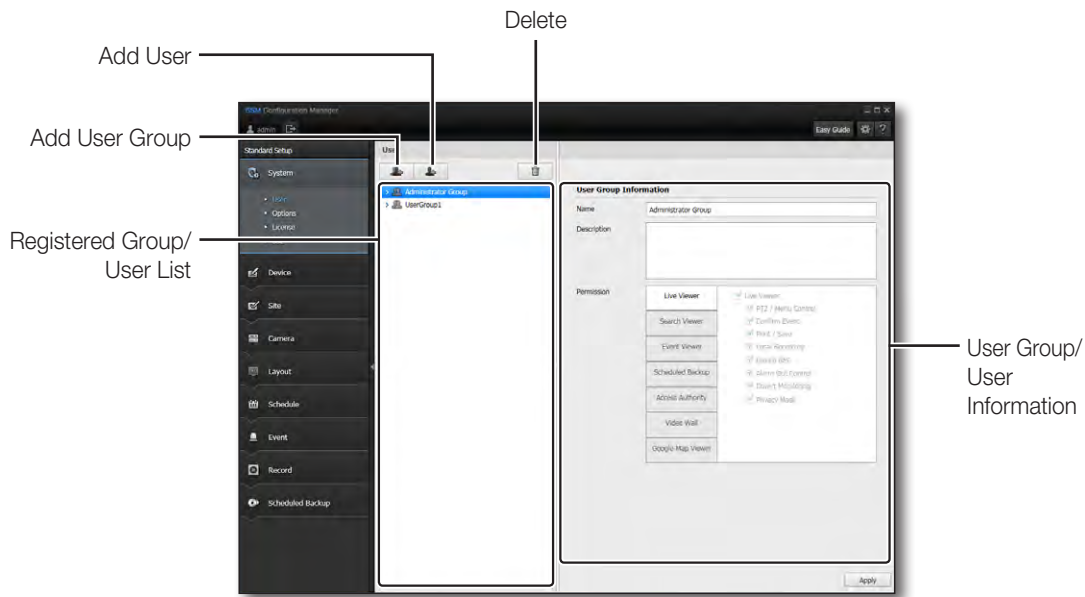


# SSM configuration manager

## SYSTEM SETTINGS


### User

This function is used to generate the user group, set up the privilege of each user group, and add users to the group.

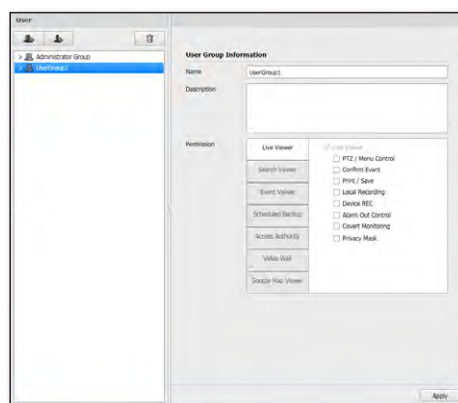


### Setting a User Group

#### To add a User Group

1. Click the [  ] button.
2. After a user group is generated, enter the name and description in the info field on the right hand side and configure the privilege.
3. When done, click [Apply] button.

- ! The default "**Administrator Group**" is created in program installation process, which is not to be deleted.



### To edit User Group privilege

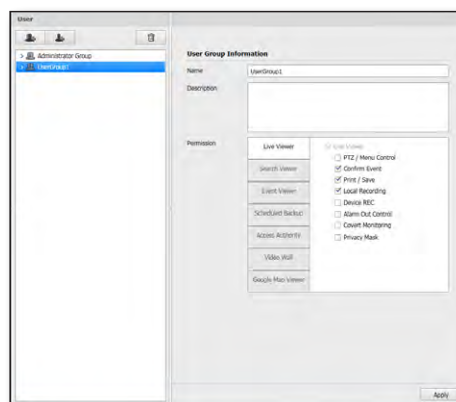
1. Select a user group under a site from the tree.
2. Edit the user group's information on the right pane.
3. Select allowed privileges by checking checkboxes.
  - Live Viewer : Privileges can be set for each item selected to the Live page.
  - Search Viewer : Privileges can be set for each time selected to the Search page.
  - Event Viewer : Privileges can be set to the generated event.
  - Schedule Backup : Schedule backup privileges can be set.
  - Access Privilege : Accessible setting menu can be selected and set. The users in a group can access only the set menu.
  - Video Wall : Video wall privileges can be set.

- !**
- For "Administrator Group", changing privilege is not allowed.
  - Setting privilege is only available in user group information.
  - Live Viewer is allowed by default, and cannot be disallowed.

4. When done, click **[Apply]** button.


### To delete a User Group

Select a user group to be deleted, and click [  ] button.

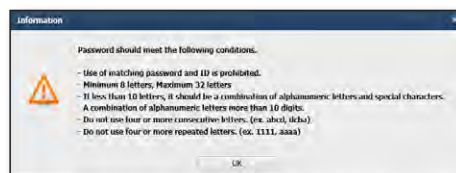
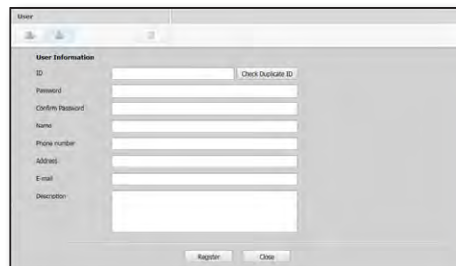


# SSM configuration manager

## To add a User

1. Select a user group from the tree.
2. Click the [  ] button.
3. Enter the user information.
4. When done, click **[Register]** button.

- ! ■ The default **"admin"** account is created in program installation process, which is not to be deleted.
- When setting a password, if the password does not satisfy the basic criteria, another password satisfying the criteria must be input again.




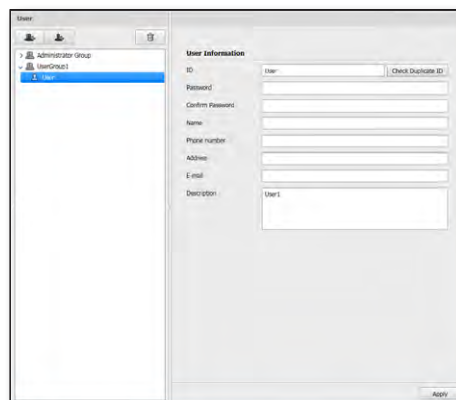
## To edit user

1. Select a user from a user group in the tree.
2. Edit user ID, password, name and other fields on the right pane.
3. When done, click **[Apply]** button.

- ! ■ The **"Administrator Group"** has all privileges, and users in the **"Administrator Group"** are allowed with all privileges accordingly.

## To delete a user

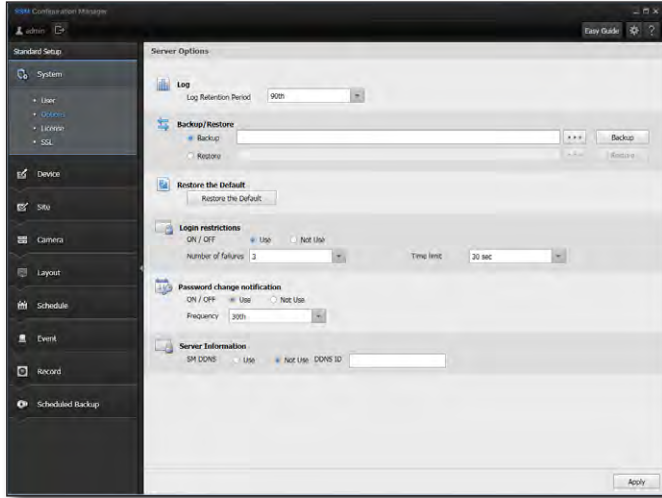
You can select users registered to a group to delete. Select a user to be deleted, and click [  ] button.





## Option

You can configure and manage all settings for the system items.



### To Set up Option

#### 1. Configure each option item.

- Log  
You can set the log retention period, which sets to delete expired log files automatically.
- Backup/Restore  
You can back up the current settings or restore the SSM Configuration Manager setups from a saved file.
  - Backup : Selecting this item disables the button. Set the backup file path and click [**Backup**] button to start backup into the specified file path.
  - Restore : Selecting this item disables the button. Set the restoration file path and click [**Restore**] button to load setup from the specified backup file.
- Restore the Default  
Initializes SSM Configuration Manager program's setup to the default settings.
- Login Restrictions  
Login restrictions can be specified.
  - Number of Failures : Login is restricted when the specified number of login attempts is exceeded.
  - Time Limit : Login is restricted for a specified time after a login failure.

# SSM configuration manager

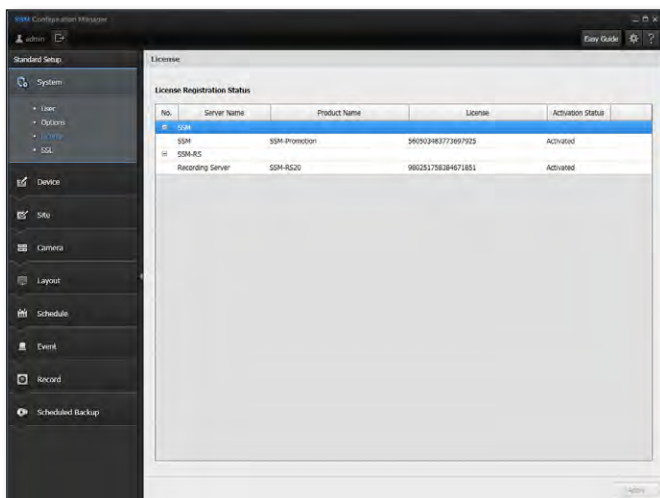
- Password Change Notification  
Password change notification can be sent.  
After it is turned **<Use>**, the notice is sent at the interval specified in **<Frequency>**.
- Server Information
  - SM DDNS Use/Not Use : This option specifies whether the DDNS login function will be used by the system manager in Mobile Viewer and Web Studio.
  - DDNS ID : Enter the ID to be used for DDNS login.

2. When done, click **[Apply]** button.

## License

You can view the registered license information.

- A license is displayed for each module in the SSM.  
(SSM, SSM-RS, SSM-MG)

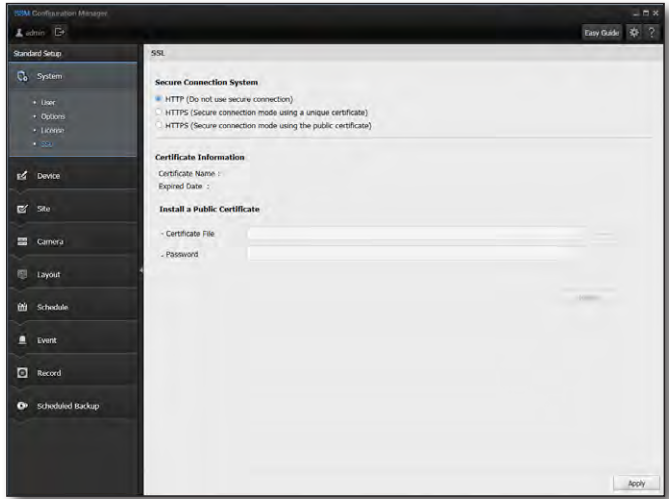


The screenshot shows the SSM Configuration Manager interface. On the left is a navigation menu with categories like System, Device, Site, Camera, Layout, Schedule, Event, Record, and Scheduled Backup. The main area displays the 'License Registration Status' table.

No.	Server Name	Product Name	License	Activation Status
1	SSM	SSM-Princeton	56093483773697923	Activated
2	SSM-RS Recording Server	SSM-RS20	960251758384671881	Activated

## SSL

You can select a secure access method or install a certificate.



1. Select a secure access method.
2. Search and register a certificate to install.
3. After completing the configuration, click the **[Apply]** button.

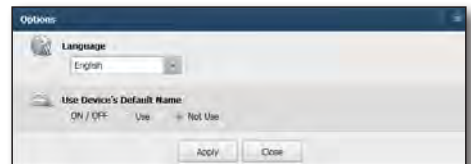
### To install a certificate

1. Select **<HTTPS (Secure connection mode using the public certificate)>** and click the [ ... ] button to choose a certificate to install.
2. Input the password for the certificate and click the **[Install]** button.
  - After installing the certificate, the **[Install]** button will be changed to the **[Delete]** button.

## OPTION SETUP

### To Set up Option

1. Click the [ ⚙ ] button at the upper-right section of the SSM Configuration Manager screen.
  - Language  
Display language can be specified.
  - Use Device's Default Name  
When it is checked, the name of the camera registered to the device is displayed in the list or the screen.
2. When done, click **[Apply]** button.



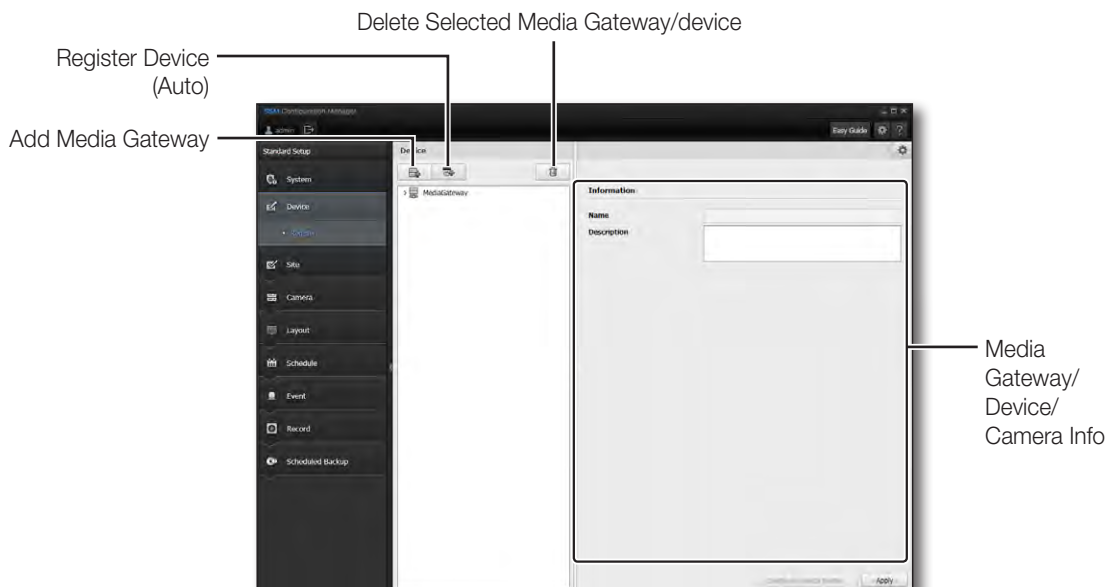
# SSM configuration manager

## DEVICE

### Register

You can register the Media Gateway and the Recording Server and a device below it.  
This lists the devices registered by the user.



A device can be added when <MediaGateway> is selected in the tree menu.

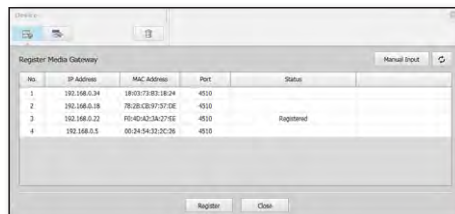


- A media gateway is a server which is connected to the camera, DVR, encoder or recording server to manage and relay the devices. Since the console communicates with the devices through the media gateway without being directly connected to the device, the media gateway must be selected first before the registration of devices.
  - The protocol supported in SSM are SUNAPI, SVNP and ONVIF.

## Setting the Media Gateway for Standalone Installation


### To add a Media Gateway

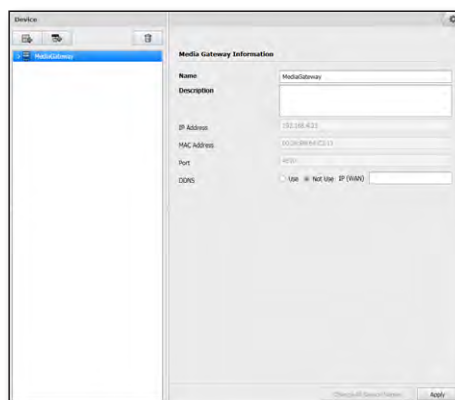
1. Click [  ] button in device setup page.
2. Select a desired Media Gateway from the list and click [Register] button.
  - If Media Gateway IP address is displayed as 0.0.0.0, be sure to check your PC's network settings.
3. If no MG information to register is displayed on the list, click the [  ] button and input the IP address and port manually.
4. To finish registration and close the window, click [Close] button.



### To edit Media Gateway information

The right pane shows information on the Media Gateway selected from the tree menu, which is available to edit.

1. Click on a desired Media Gateway to be edited.
  2. Edit name and description of the selected Media Gateway.
    - DDNS Use/Not Use : This is the setting used to remotely access the media gateway. Input the DDNS ID if the DDNS is used and IP (WAN) address if not.
      - IP (WAN) : Enter IP (WAN) generated for each media gateway.
-  ■ IP address, MAC Address, and port number are for display only and cannot be modified.
- Refer to '**Option**' for details of setting the DDNS of the System Manager. (Page 33)



### To delete a Media Gateway



Select a Media Gateway to be deleted, and click [  ] button.

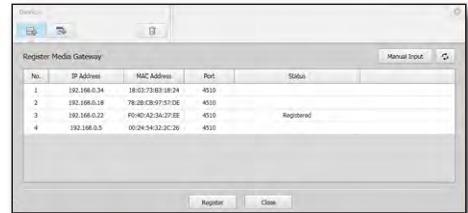
# SSM configuration manager

## Setting the Media Gateway for Distributed Installation

1. Run the Service Manager on the computer installed with the System Manager. (Page 169)
2. Run the Service Manager on the computer installed with the Media Gateway. (Page 169)
3. On the Media Gateway server, set the IP address and port number of computer installed with the System Manager.

### To add a Media Gateway


1. Click the [  ] button in the device setup window.
2. The list of media gateways that can be registered in System Manager that the console accesses will be displayed.
3. Select a desired Media Gateway from the list and click [Register] button.
  - If Media Gateway IP address is displayed as 0.0.0.0, be sure to check your PC's network settings.
4. If no MG information to register is displayed on the list, click the [  ] button and input the IP address and port manually.
5. To finish registration and close the window, click [Close] button.

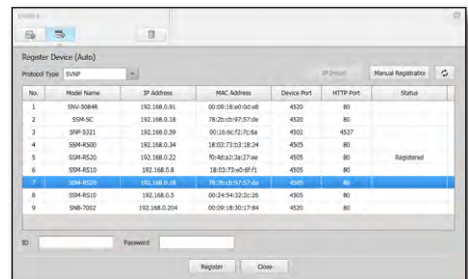


## Adding Devices

### To add a device automatically

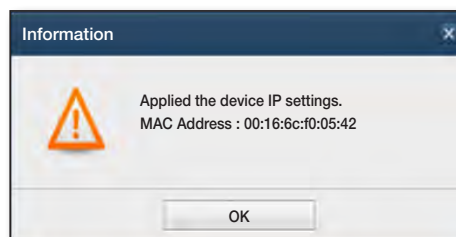
You can search add a device connected to your local network automatically.

1. Click [  ] button.  
All discovered devices or Recording Servers from the local network are shown in the "Register Device (Auto)" list.
2. Select a device or Recording Server to register from the list.
  - SVNP or SUNAPI can be registered as the protocol type. When the protocol type is set to SUNAPI, you can search for and register a SUNAPI supported device.
3. Enter the ID and password, and click [Register] button.





- The User ID and password should be the account registered to the corresponding device.
- If connection encounters error, corresponding message of cause is displayed in the status tab.
- Refer to "Installation of SSM Recording Server" for details of password setting.

4. Click the **[Register]** button. Once registered, it is marked as "**Registered**" in status tab, and added under the Media Gateway list.
5. To finish registration and close the window, click **[Close]** button.
- IP Install : The device network can be configured.  
Input the network data to change. If the device password matches, the network data of the device can be changed.



### If you want to add a camera to the Recording Server


You can automatically search for a camera registered in the Recording Server.

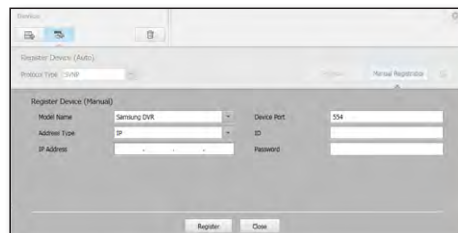
1. From the device list, select a Recording Server to register a camera for.
2. Click on the [  ] button.
  - <Wisenet> or <ONVIF> can be selected when registering a camera in the recording server. When <Wisenet> is selected, either SVN or SUNAPI can be registered as the protocol type.
  - If the vendor is set to <ONVIF> when registering a camera of the recording server, the <ONVIF> cameras can be searched and registered.
    - The registration for the ONVIF model only supports the SSM-RS10, SSM-RS20 and SSM-RS30 products.
  - If the vendor is set to <Wisenet> and the protocol type to <SUNAPI> when registering a camera of the recording server, the cameras supporting SUNAPI can be searched and registered.
3. Select a camera to register from the list of cameras.
4. Enter a user ID/password and click on the **[Register]** button.
  -  User ID and password are the ones saved in a camera that you want to register.
  - If connection problems are encountered, a corresponding message of the cause will be displayed in the status tab.
5. Once registered, it is marked as "**Registered**" in status tab, and added in the sub list of the Recording Server in the tree menu.
6. To finish registration and close the window, click **[Close]** button.

# SSM configuration manager

## To add device manually

Device can be registered manually by a user, by directly entering required information.

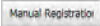
1. Click [  ] button.  
"Register Device (Manual)" window should appear.
  2. Select the model name for a device or Recording Server that you want to access.
  3. Select the address type.
    - Available types are static IP, URL, S1 DDNS, and Wisenet DDNS.
    - Available address type can be different depending on the device.
    - When selecting a model that can support the SUNAPI protocol at the time of selecting a model to register, a window to select a protocol type is added. When selecting the protocol type SUNAPI added, you can set the media protocol to TCP, UDP, Multicast or HTTP.
  4. Provide required information for connection to the device.
    - Required information is dependant to the set address type.
  5. Enter the ID and password.
    - The User ID and password should be the account registered to the corresponding device.
  6. Click [Register].
    - If connection encounters error, corresponding message of cause is displayed.
-  ▪ When a device is registered in Easy Guide mode, the site and administrator group are automatically assigned. In Standard Setup mode, the administrator group is automatically assigned after the device is registered and the site is assigned.





### If you want to manually add a camera to the Recording Server

You can directly enter the information of a camera registered in the Recording Server.

1. From the device list, select a Recording Server to register a camera for.
2. Click on the [  ] button.
3. Select the desired camera's model name.
  - <Wisenet> or <ONVIF> can be selected when registering a camera in the recording server. When <Wisenet> is selected, either SVNP or SUNAPI can be registered as the protocol type.
  - If the vendor is set to <ONVIF> when registering a camera of the recording server, the <ONVIF> cameras can be searched and registered.
    - The registration for the ONVIF model only supports the SSM-RS10, SSM-RS20 and SSM-RS30 products.
  - If the vendor is set to <Wisenet> and the protocol type to <SUNAPI> when registering a camera of the recording server, the cameras supporting SUNAPI can be searched and registered.
4. Select the address type.
  - The available address types are: IP Address, URL, Wisenet DDNS.
  - The available address types may vary depending on the camera model.
  - If a model type that SUNAPI can be registered with is selected in the manual camera registration, a protocol type combo box is output.
5. Set the necessary information for connecting a camera.
  - Different information is required for each address type.
6. Enter user ID and password.
  - User ID and password are the ones saved in the camera that you want to register.
7. Click on the [Register] button.
  - If connection issues are encountered, the corresponding cause message is displayed.

# SSM configuration manager

## How to set multiple passwords

Additional passwords can be set for systems that can set multiple passwords.

1. Select systems that can set multiple passwords in the device list window.

- When a device is registered, the protocol type should be selected as SUNAPI, and usable systems should be registered.
- Refer to the system specifications to find out whether or not multiple password setting is possible.

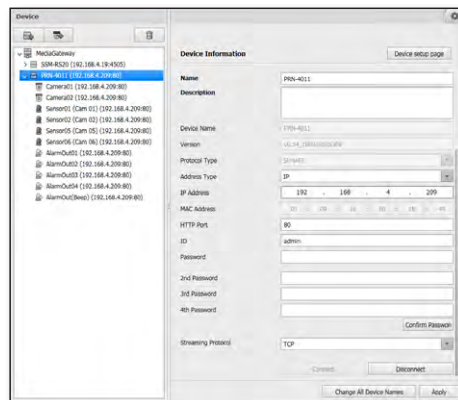
2. When a system is selected, an additional password input window pops up.

3. Enter a password to add in the input window.

- It is possible to certify only when all input passwords should coincide with passwords that were set additionally in the system. (If two passwords have been set, it is possible to certify only when two passwords should be entered.)

4. When multiple passwords are correct, recording is possible, and the system can be used during recording and playback.

- Multiple password items are displayed only when the logging is done by a user account.



## Editing Device Information

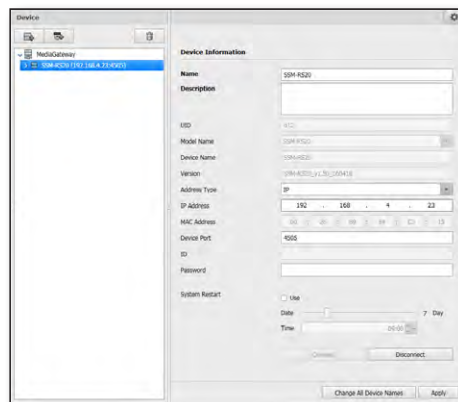
You can edit information of a device registered.

### To edit device information

1. Select a desired device to be edited.
2. In the right information pane, edit the device information.
3. When finished, click **[Apply]** button.
  - System Restart setting : You can set the period and the execution time to restart the system (PC) periodically.
    - This item is only supported in the RS.
  - Device Connect : Connects to the selected device.
  - Device Disconnect : Ends the connection to the selected device.



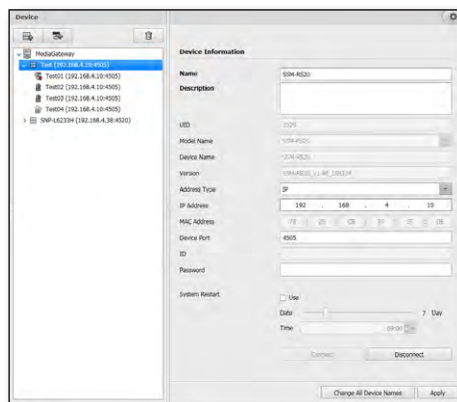
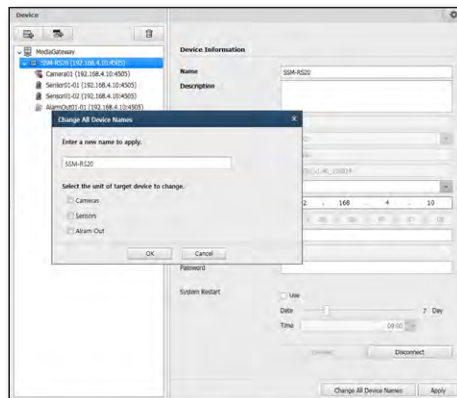
- The feedback of the change of device connection data is displayed in a popup window.
  - Connection successful, Already registered device, IP address crash, MAC address crash, Network error, ID error, PW error, Privilege error, Connection failed, Concurrent users exceeded, No response, S/W version mismatch, DDNS error, Number of allowable registered cameras has been exceeded, 5 times or more password errors with the ID, You can login only after 30 seconds. / Another user is already connected. Do you want to disconnect and login again?
- You can move the registered media gateway by dragging the device in the device tree with a mouse.
  - You can select only one device to move when moving the media gateway.
  - You can move a device registered under the Media Gateway in the device tree to a different Media Gateway by dragging and dropping it.  
When you move the device, the existing settings will be maintained.
- If the MAC address does not match after the device is replaced, a pop-up window prompting you to change the settings will open.
  - In the pop-up window, click **<Yes>** to replace the device.
  - Otherwise, click **<No>** to maintain the existing device settings.
  - Only a device with the same model name can be used as a replacement.



# SSM configuration manager

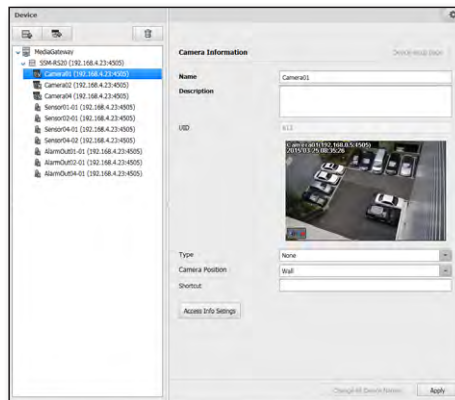
## To change the names of all registered devices at once

1. click the [  ] button at the bottom left of the screen.
  - The [  ] button is activated only for the devices registered under the media gateway.
2. Enter a name to change and select subordinate objects (Camera, Sensor or Alarm Out) to which the change will be applied.
3. After you have finished entering the new name, press the **[Apply]** button.  
The names of devices will be changed all at once to the name entered by the user, and each of the subordinate devices will be numbered.



## If you want to modify the camera access information registered in the Recording Server

1. Select a camera registered in the Recording Server.
2. Click on the **[Access Info Settings]** button in the device information menu on the right hand side of the screen.
3. Modify the camera information displayed in the bottom right of the screen.
4. When finished, click **[Apply]** button.
  - Connecting/Releasing connection : It connects/disconnects the connection to the selected camera.

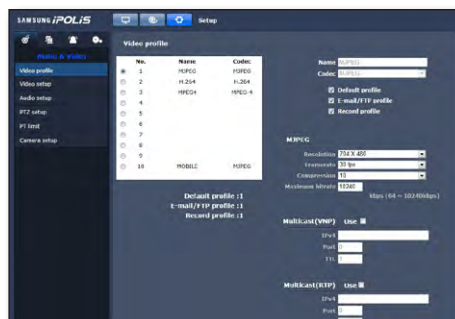


## Viewing the Device Settings

You can see the device related settings information on the Settings Page provided by each device.

### To edit device settings

1. In the right information pane, click **[Device setup page]** button.  
The selected device's settings page should appear.
2. Edit settings as required.
3. When finished with device settings, click **[Apply]** button of the device settings page.
4. To close the device's settings page, click **[X]** button on the top right corner.
  - Device settings page differs from devices connected. For further details, refer to the user manual of each device.



# SSM configuration manager

## Camera Info View

Select a device and then a camera under it to check the connected camera information and video.

### To Change Camera Info

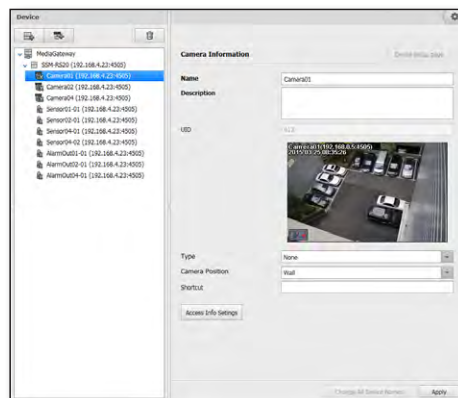
1. Select a camera under the selected device.
2. Enter the name and description in the camera info window.



- If the Panomorph lens is installed, specify the camera position and lens type.  
Check to ensure the camera model is compatible with the Panomorph lens.

3. When done, click **[Apply]** button.

- Type : The type of camera registered can be selected from "Box, Dome, PTZ, PT Driver, Panomorph, Fish-Eye". When a type is selected, its icon is displayed in the device tree of the Configuration Manager. In the case of Panomorph or Fish-Eye camera, the option must be set in advance to activate the dewarping function in the console.
- Camera position : Set the camera installation position.
- Shortcut : Only numbers are accepted for the shortcut to image output.

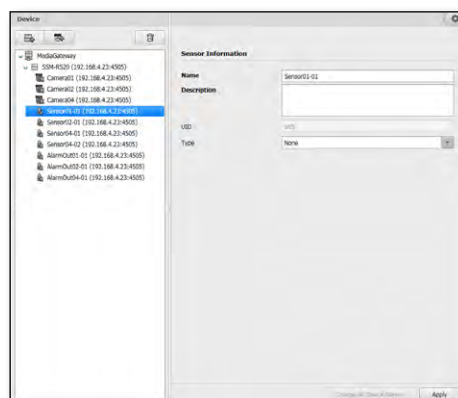


## Sensor Information

Select a device and the lower level sensor to check the connected sensor data.

### To change the sensor data

1. Select the lower level sensor of the device.
2. Input the name and description in the sensor information window.
3. Click the **[Apply]** button after setting.

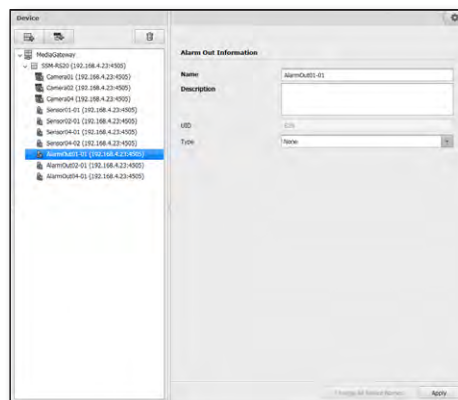


## Alarm Out Data

Select a device and select the lower level alarm to check the connected alarm data.


### To change the alarm out data

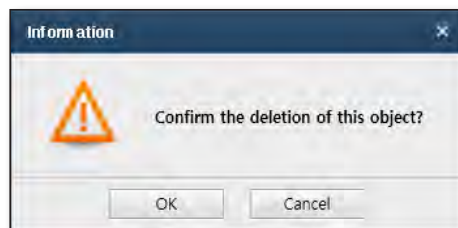
1. Select the lower level alarm of the device.
2. Input the name and description in the alarm out information window.
3. Click the **[Apply]** button after setting.



## Deleting a Device


A device can be selectively deleted.

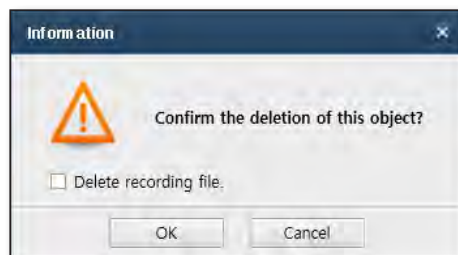
1. Select a device to delete from the tree.
2. Click [  ] button.
3. When confirmation prompts, click **[OK]**.
  - If the related camera is in playback or recording, it automatically aborts.
  - It is not possible to delete when a camera, sensor or alarm out object is selected.
  - Using the **<Ctrl>** or **<Shift>** key, select multiple devices in the device tree to delete them at the same time.



## Select a camera registered in the Recording Server

You can select and delete each camera.

1. Select a camera to delete from the tree.
2. Click on the [  ] button.
3. When the camera delete confirmation window appears, click **[OK]**.
  - When you want to delete a camera registered in the Recording Server, in the device delete popup window, you can select to delete the recording file.
  - If you chose to delete the recording file, the recording data will be also deleted.
  - Using the **<Ctrl>** or **<Shift>** key, select multiple cameras registered in the Recording Server to delete them at the same time.



# SSM configuration manager

## Recording Server Setting Information Management

You can import the Recording Server settings or export them as a .cab file or update the firmware for a registered camera.

### Initializing the Recording Server system

1. Select the Recording Server to initialize.
2. Select initialization and click on the **[Restore the Default]** button.

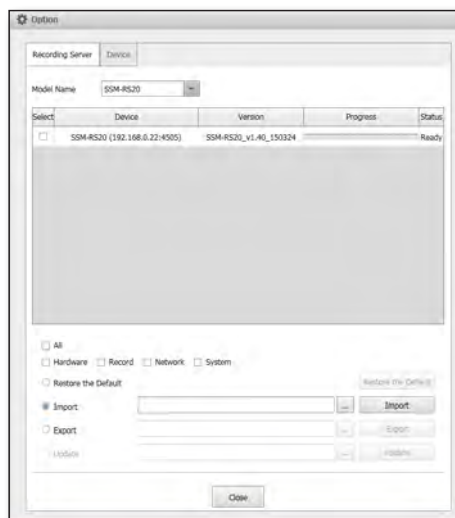
### Recording Server settings information management

You can import the Recording Server's settings information from a file.

1. Click on the [ ... ] button to select the setting to retrieve.
2. Select a saved file.
3. Click on the **[Import]** button.
4. Imports the settings from the selected file.



- If you select the **<All>** checkbox, then you can retrieve **<Hardware>**, **<Record>**, **<Network>** and **<System>** items from the Recording Server. You can check and select each set of information.
- You can import multiple Recording Servers at the same time, but only one Recording Server can be exported at a time.





## Importing the Recording Server settings

You can save the Recording Server settings as a file.

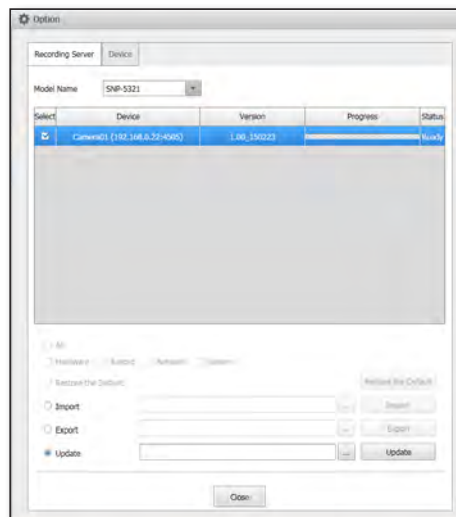
1. Select the Recording Server to be saved as a file.
2. Click [ ... ] button to browse and set the desired file path.
3. Click on the [Export] button.  
Settings are saved as a file and the result is displayed as a message.



## Updating camera firmware

You can update the firmware for a camera registered below the Recording Server.

1. Select a model to update.
2. Click on the [ ... ] button to select the new Firmware to update.
3. Click on the [Update] button.
4. While it is updating, the progress bar indicates the progress.



# SSM configuration manager

## Managing Device Settings

You can import device settings from a file, or export it in \*.dat format.

### Importing Device Settings

You can import device's settings information from a file.

1. Click [ ... ] button to browse and set the desired file path.
2. Select a settings file.
3. Click [Import] button.
4. Imports the settings from the selected file.

- If checked <Including Network Settings>, imports network environment settings too.
- Importing for multiple devices is allowed, where exporting limits to one device at a time.



### Exporting Device Settings


You can save your device's settings information as a file.

1. Select desired device to export its settings.
2. Click [ ... ] button to browse and set the desired file path.
3. Click [Export] button.  
The settings are exported into a file, and its result is displayed as a message.



## Updating the Device Firmware

1. Select a device to update.
2. Click [ ... ] button to select update software of newer version.
3. Click [Update] button.
4. During the updating, the progress bar shows the progress.

- 
 ■ Devices of the same model can be selected together from the list and updated at the same time.



# SSM configuration manager

## SITE

### Register a Site

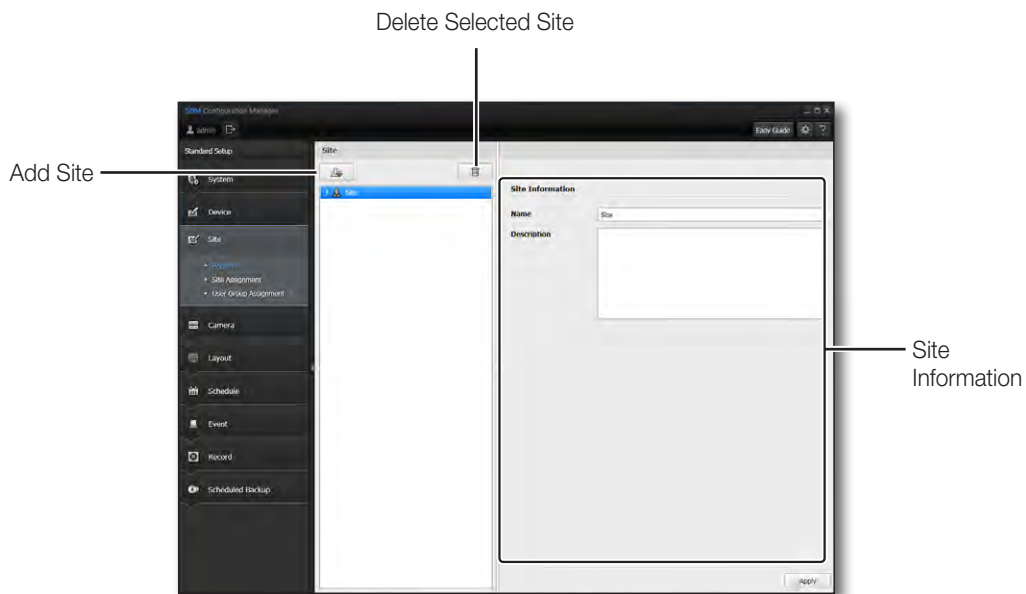
In SSM, user accounts are administered for each Site where a site is considered to be a physical administrative unit.

### Using Site

- Administration by locations grouped by Sites
- Permission management for viewer functions
- Site Management (Add / Edit / Delete)
  - Name, Description

### Managing Sites

In the logical tree, a site can group camera and alarm out by location and it can help easier locating desired camera if there are many camera devices.



- The default topmost site is created in program installation process, which is not to be deleted.

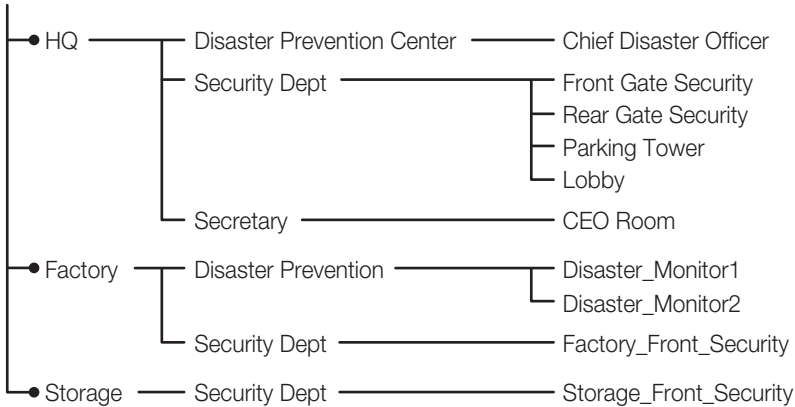
## Using Site/User Group

You can configure a site and user groups at your preference.

Ex.) Below sample construction shows sites of "HQ", "Factory" and "Storage", where each site includes user groups of "Disaster Prevention" and "Security Dept", and added with users of "Chief Disaster Officer", "Front Gate Security" and "Rear Gate Security", "Parking Tower" and "Lobby", "CEO Room", "Disaster\_Monitor1" and "Disaster\_Monitor2", "Factory\_Front\_Security" and "Storage\_Front\_Security".

### • Site

#### Administrator Group



## Setting a Site


### To add a site

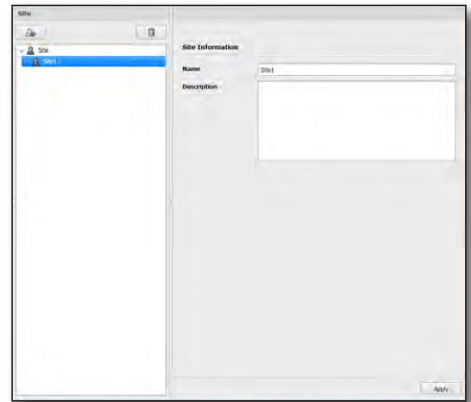
1. Click [  ] button.
2. Enter the site name and description in the right pane.

### To edit a site

1. Select a site from the tree.
2. Edit site name and information on the right.
3. When finished, click [**Apply**] button.

### To delete a site

1. Select a site from the tree.
2. Click [  ] button.

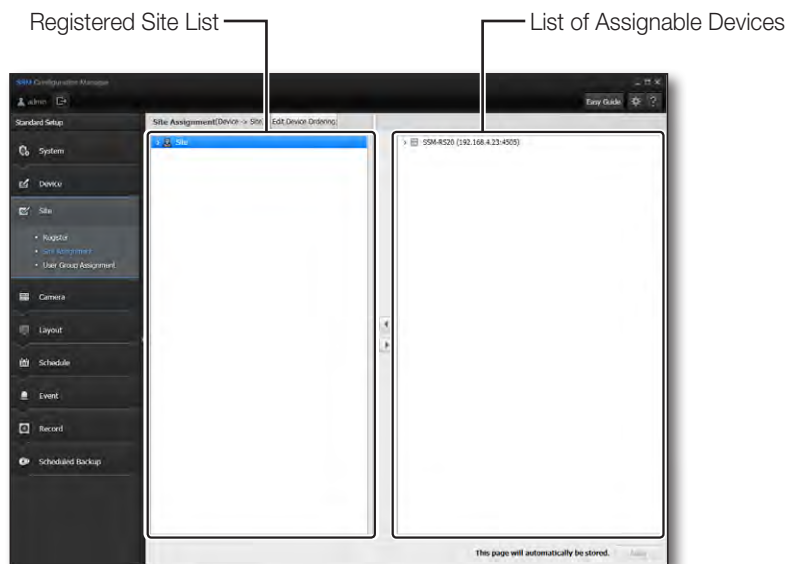


# SSM configuration manager

## Site Assignment

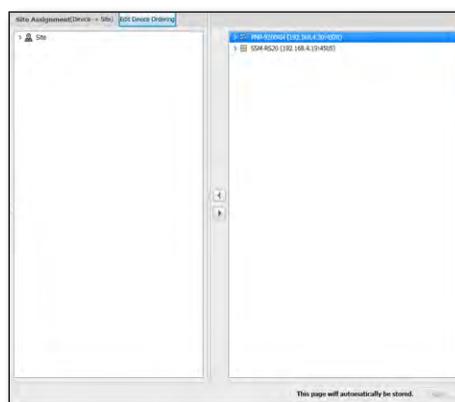
A device for the site is assigned.

A device can be selected and assigned to the site.



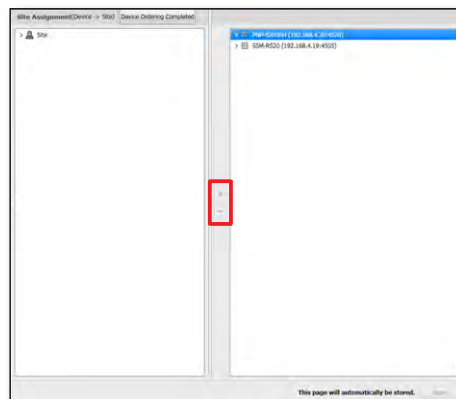
### To Assign Cameras to a Site

1. Select a site.  
The site must have been registered in "Register > Site".
2. Select a device and camera for the site.  
To select multiple cameras, press the [Ctrl]/[Shift] key and then select the cameras.
3. Click the [ ◀ ] button after the camera(s) is(are) selected.
4. Select the device and then click the [ ▶ ] button to release the assignment.



### To change the order of subordinate devices assigned for each site

1. Click the [ **Edit Device Ordering** ] button on the tree of the assigned page.
2. Select device(s) to change the order and adjust the order using the [▲] or [▼] buttons.
  - When you click [ **Edit Device Ordering** ], the [◀] and [▶] buttons are changed to [▲] and [▼] buttons.
3. After completing the settings, press the [ **Device Ordering Completed** ] button.

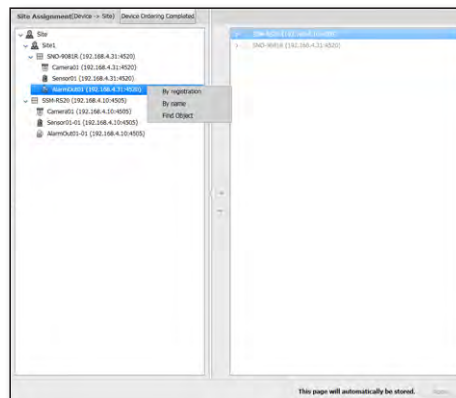


### To set Align Devices/Search Object

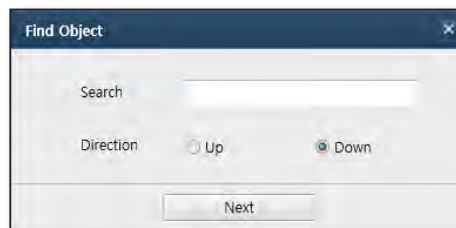
Right-click on the site assignment page, and a window allowing you to select Align Devices or Search Object will be launched.

Select a desired setting item.

- By registration : Devices on the applicable device tree are aligned in the order of registration.
- By name : Devices on the applicable device tree are aligned in alphabetical order.



- Find Object : Enter the name of a device to search and select the search direction. Click the [Next] button and the next device is searched in the selected direction.



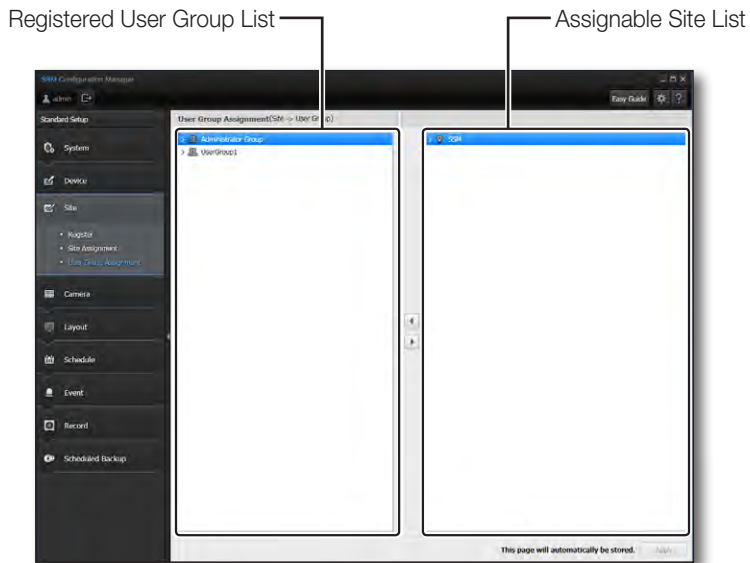
# SSM configuration manager

## User Group Assignment

A device registered in the site can be assigned to a user group.

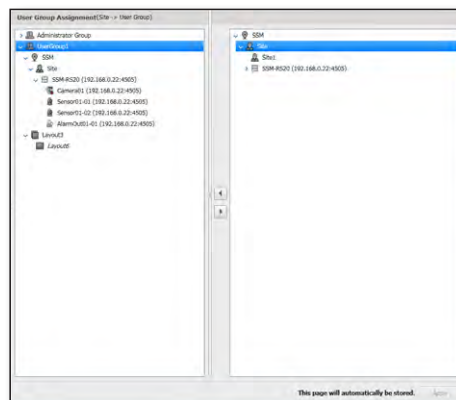
The list of devices assigned to the selected site is displayed.

A device can be selected and registered to the selected user of the group.



### To Assign a Device Registered in the Site to a User Group

1. Select a user group to assign the site.
2. Select a site or camera to be assigned from the site list. The list for selection displays only the cameras registered to the site, not all cameras connected to the device.
3. Click the [ ◀ ] button.
4. Select an assigned camera and then click the [ ▶ ] button to release the assignment.



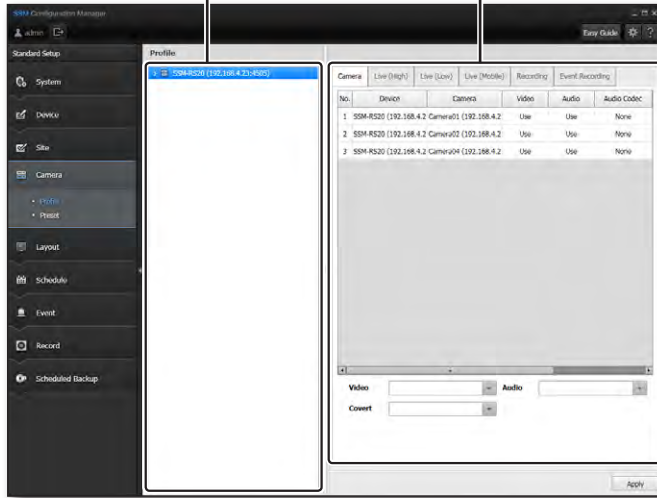


# CAMERA MANAGEMENT

## Profile

The profile of a camera assigned to the site can be checked and modified.

List of registered devices      Camera Profile List



## Camera

### Video

1. Click on the **<Video>** menu of a camera to change video settings.
2. Select either **<Use>** or **<Not Use>**.
  - If you set the video of the camera to **<Not Use>** and you can't watch the live video.  
If you set the video of the camera to **<Not Use>** and audio is also disabled automatically.

### Audio

1. Select the **<Audio>** menu of a camera to change audio settings.
2. Select either **<Use>** or **<Not Use>**.
  - If you set the audio of the camera to **<Not Use>** and you can't listen to the live voice.
  - You can set audio recording in **[Record] > [Recording Camera Setup] > [Camera]** tab.

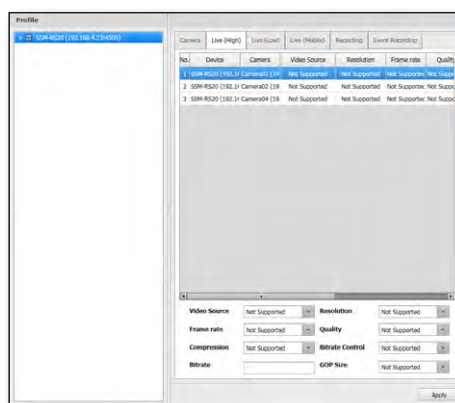
# SSM configuration manager

## Covert

1. Click on the <Covert> menu of a camera to change covert settings.
2. Check it.  
<Covert> will be turned <On>.
  - If you check <Covert> of a camera, you cannot view live/searched video or listen to voice, but you can still record video or voice.

## To change the camera profile, high resolution, low resolution, mobile and recording profile

1. Select the camera whose profile is to be modified from the list of cameras registered to the site.  
The profile of the camera under the device can be set up, or the camera can be selected individually.
2. Select a camera to change the settings of from the list and select a changed value from the change item at the bottom.
3. To change the profile of the cameras in the list across the board, select the cameras using the [Ctrl] or [Shift] key in the keyboard and select the change value from the change item at the bottom.
4. Click the [Apply] button after the setup is complete.



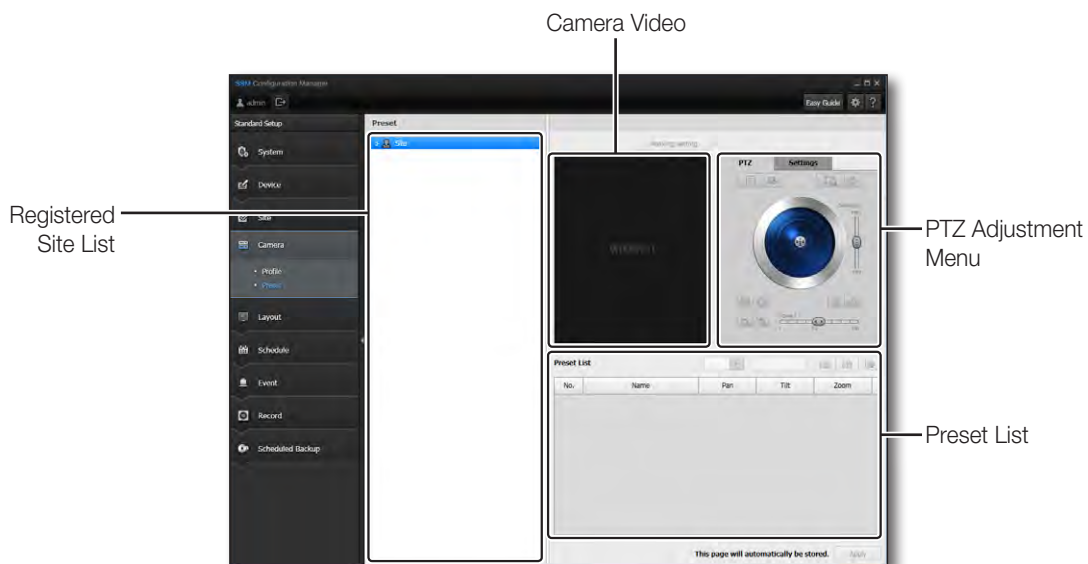
- You can set the recording profile for a camera registered in the recording server
- You can set the Live (High), Live (Low), Live (Mobile), Recording and Event Recording properties for each camera.
  - In Video Properties, there are Resolution, Quality, Frame Rate, Compression, Bitrate Control, Bitrate and GOP size.
  - You can set the recording profile at the time when a recording server subordinate camera event is generated in the event recording profile.
- A camera registered in DVR and NVR cannot be changed.

## Setting Presets

For PTZ control supporting cameras, you can add or delete preset positions for direct camera framing.





- The PTZ preset screen becomes available for settings, only when a PTZ supporting camera is selected.
- You can distinguish PTZ controllable cameras by icon appeared on the device list.
- According to the device, 20~255 presets are supported. Check the device specification for the maximum number of presets.
- A preset name can be set to a combination of letters and numbers up to 12 characters.



# SSM configuration manager

## If you want to add or delete a preset

1. Select a desired camera from the Device List to define a preset.
2. Use PTZ controller to set the camera framing to a desired point, and enter the preset name.
3. Click [  ] button.  
In the preset list, added one appears.
4. To delete a preset, select the preset to be deleted, and click [  ] button.


- In the case of cameras that support Homeposition, Fish Eye or Panomorph, the Homeposition item is automatically added to the preset list, and the preset position moves to the set home position when Homeposition is set.

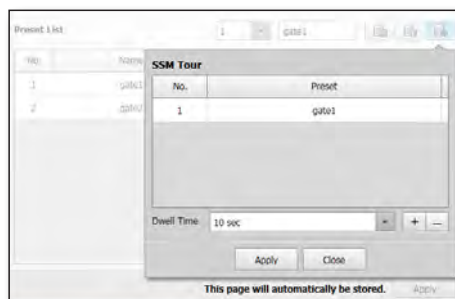


- For further information on PTZ controller, refer to "PTZ Control". (Page 115)



## To set preset touring

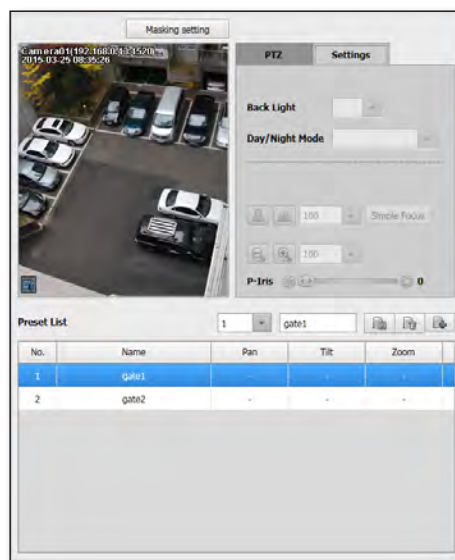
1. Click the [  ] button.
2. Add a preset to apply to a tour.
3. Set the touring time intervals.
4. After fully configuring the settings, click the [Apply] button to save and then click the [Close] button.



## Setting

This section describes the camera image compensation. This setting is enabled only for the cameras registered with the SUNAPI protocol.

- Backlight compensation : the backlight compensation mode supports the level setting only when the WDR mode is set.
- Daytime/nighttime mode : Color, BW, auto, external BW and schedule can be selected.
- Simple focus : The auto focus is activated whenever the button is clicked.
- Focus : The focus is adjusted by setting the speed with the combo box. It can be set to 1, 10 or 100.
- Zoom in/out : A ratio is set from a combo box to enlarge or reduce the display by the set ratio. It can be set to 1, 10 or 100.
- P-Iris : The iris is opened by the set value to adjust the light exposure in the box or dome camera.  
The level can be set by adjusting the slide or inputting a specific value.  
The amount of light increases and the screen becomes lighter as the level increases.



### To set the Masking

1. Move to SSM Configuration Manager > Camera > Preset.
2. Click the Masking setting button and set the masking on the screen.
  - Click the beginning point and end point of the masking rectangle to set the mask rectangle.
  - Up to 8 masking settings are allowed.
3. Move to SSM Configuration Manager > System > User.
4. Set the authority for the output of mask in the live viewer or search viewer.
5. A mask configured in the live viewer or search viewer is output according to the authority configured.

# SSM configuration manager

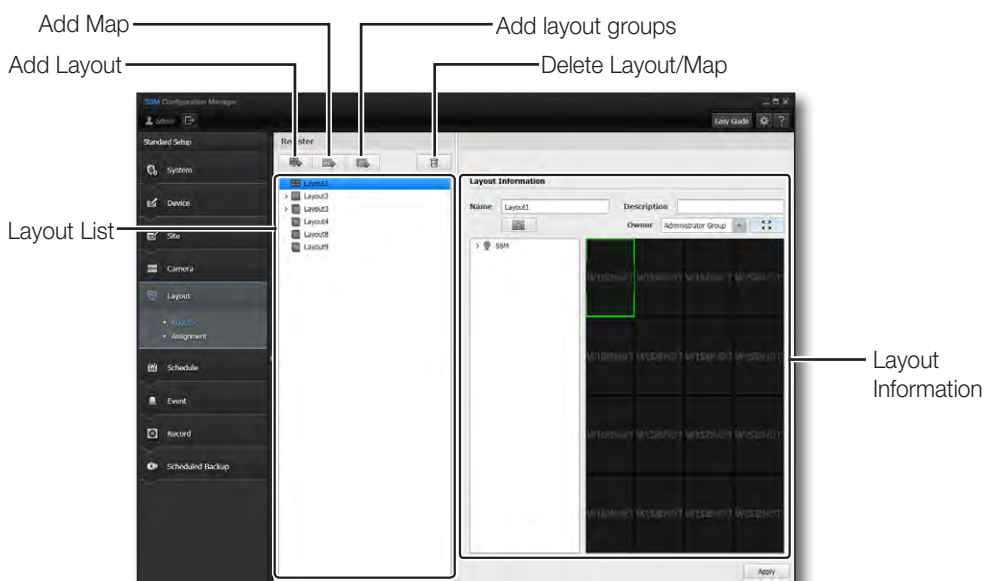
## LAYOUT SETTING

Users can select the camera videos to be displayed on one screen.

A layout is generated, and the camera and site configuration included in the layout can be checked.

User can configure the screen specifically for a region, and select it for viewing whenever needed.

- When the layout is created, the ownership of the group with which the logged user is affiliated is created in the Configuration Manager.
- Layouts can be edited only when the user that has ownership logs in.

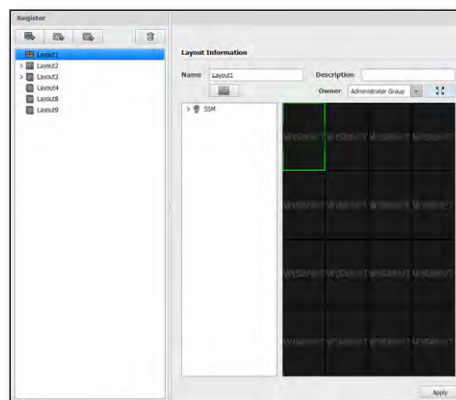


## Registration


### Camera Layout

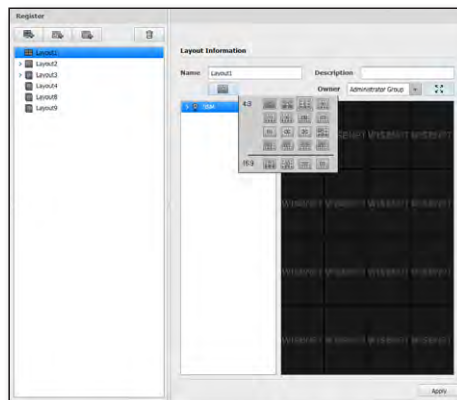
Create a Camera Layout, and place the cameras in the desired tile of split screen to compose various layouts.

The device list only shows devices available for adding to the layout currently being edited, in a tree format.



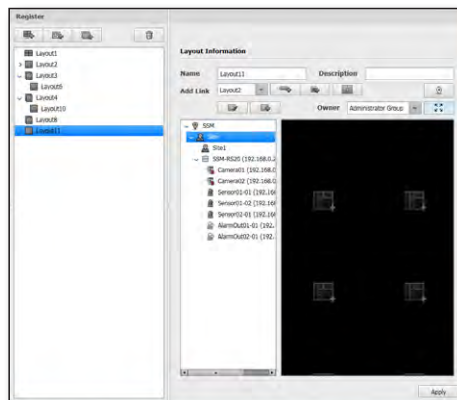
### To add a camera layout

1. Click the [  ] button to generate the camera layout.
2. Click [Split Screen] button and select a desired layout split mode.
3. Drag a desired device from the device list, and drop in onto a tile.  
Double-click a camera to add it to the layout. Double-click a system to add all cameras in the system to the layout.
4. When done, click [Apply] button.




### Map Layout

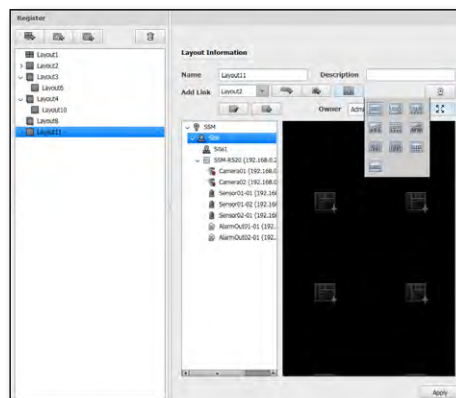
Place the camera and sensor icon in the position on the image of the registered map to complete the layout.





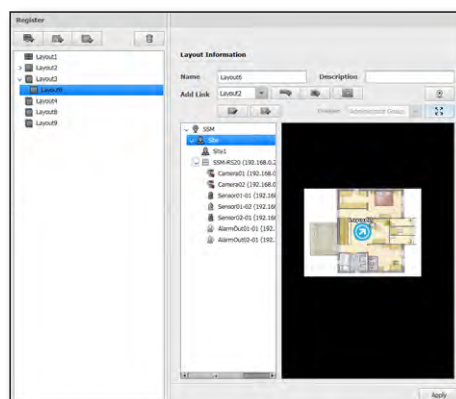
# SSM configuration manager

## To add a map and place links

1. Select a user group to be added with a map layout, and click [  ] button to create one.
2. Select a newly-generated map.
3. Click [Split Screen] button and select a desired layout split mode.
  - In the split screen selection pane, the tile marked with sky blue is the destination tile of added map image.



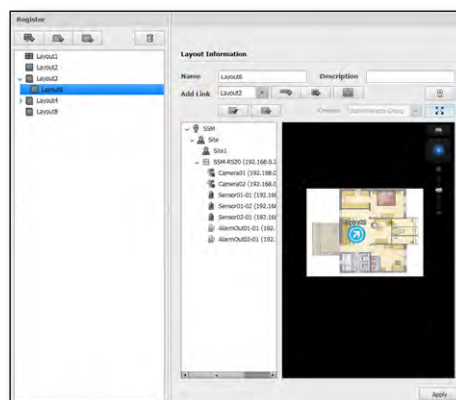
4. Click [  ] button to browse and set the desired map image file.
5. Select a layout in <Add Link> and click the [  ] button.




6. The link icon is registered in the map. Click the icon in the map layout of live viewer to move to the selected map link.




- Place mouse cursor on the top right corner of the map layout to display screen adjustment dialog. For further details screen adjustment on map layout, refer to "Layout". (Page 102)

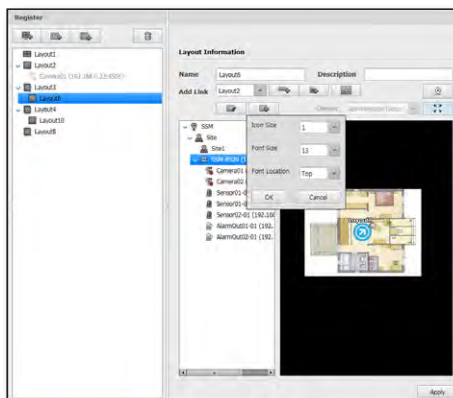




7. If you want to change the size/location of an icon, click on the [  ] button.

You can change the icon size and the font size and location.

8. If you want to add a user icon, click on the [  ] button.
- You can set the icon name. (32 Korean letters, 64 Roman alphabet letters)
  - You can designate the file to be used for the icon. (jpg, bmp or png format and size of less than 50Kbytes.)
  - Click the right side of the icon and select "Image change" to change the image of the icon.



### To add devices to a map

1. Once completed with adding a map, click devices to be added from the device list.

- In the device list, devices included in the group to where the layout is registered.

2. Click a device and drag it onto the desired position on the map, and release the mouse.

You can add any device of camera, alarm or sensor.

- Camera

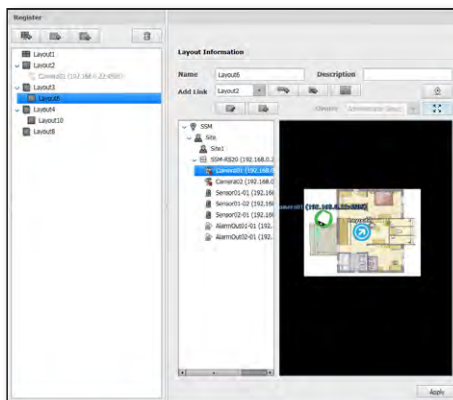
- You can distinguish cameras, and identify whether the camera is connected to the network.
- You can identify cameras with events.
- The camera name is identified in the live viewer.
- The camera information is displayed in the live viewer.

- Alarm Out

- You can distinguish alarms, and identify whether the alarm device is connected to the network.
- You can identify alarm device names.
- You can turn on or off Alarm Out in the live viewer.

3. Click device icon with your left mouse button.

Green ball that controls camera framing appears.

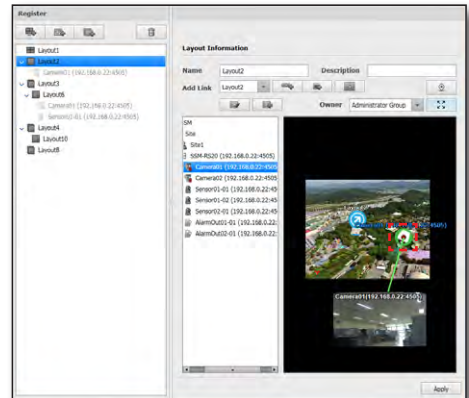


# SSM configuration manager

- Click the green ball, and it turns red. While in red, drag and drop the ball to adjust camera's viewing direction.
  - Click a camera, drag and drop while holding to move the camera's position.


 "Refer to "Using Map Layout" on how to use the arrow keys." (Page 107)


- When done, click **[Apply]** button.



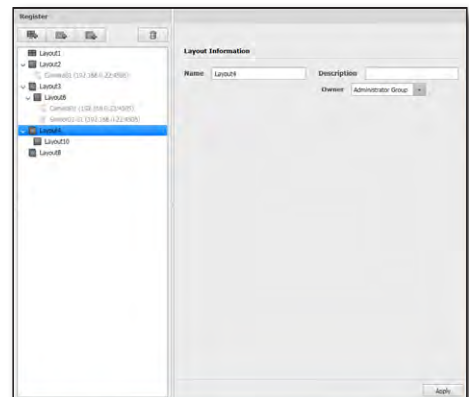
## If you want to add a layout group

Add a layout group that can be used to group map layouts.


- Click on the  button.
- Enter the name and description in the layout information filled on the right side.

 A map layout group can be added regardless of the existence of camera/map layout, but an existing map layout cannot be moved to the lower level of a map layout group. When a map layout is created after a created map layout group is selected, the map layout is located at the lower level of the map layout group.

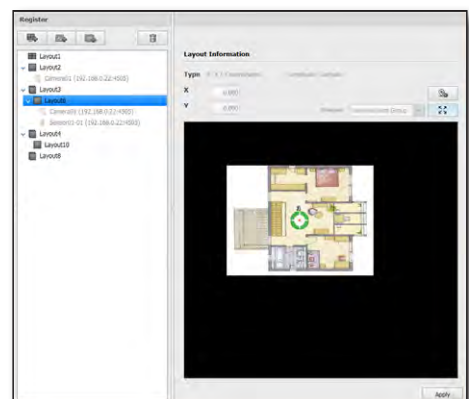
- You can add a map layout below a layout group. If a layout group is deleted, its sub map layouts will be also deleted.



## Layout coordinate settings

Click on the  button to set the layout coordinates.

- A coordinate is displayed as three points on the map. When you set a coordinate, enter the reference coordinate value for each point.
- The range of layout coordinate input is shown as follows.
  - X/Y coordinate system  
X : 0 ~ 10000, Y : 0 ~ 10000
  - Longitude/latitude coordinate system  
Longitude - East/West, deg: 0 ~ 180, min : 0 ~ 59, sec : 0 ~ 59 (first decimal point)  
Latitude - North/South, deg: 0 ~ 90, min : 0 ~ 59, sec : 0 ~ 59 (first decimal point)

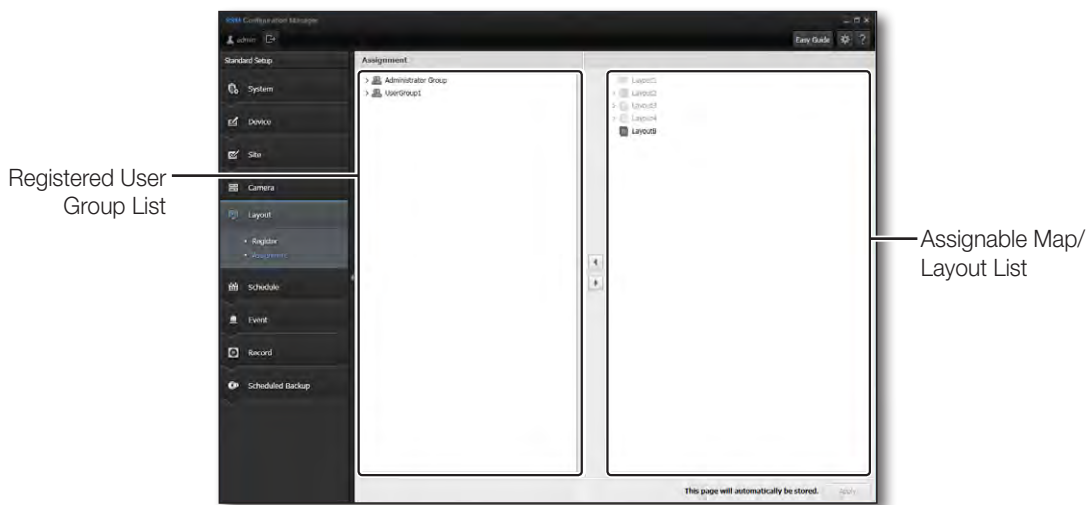


## Deleting Layouts

Select layout to be deleted, and click  button.


## Layout Assignment

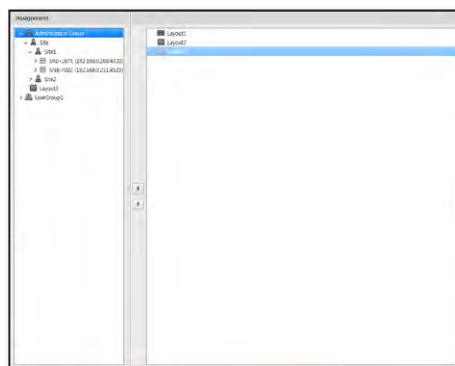
A layout is assigned to the user group.  
 A list of layouts available to the selected user group is displayed.  
 Select a layout and register it to the user group.



### To Assign Cameras

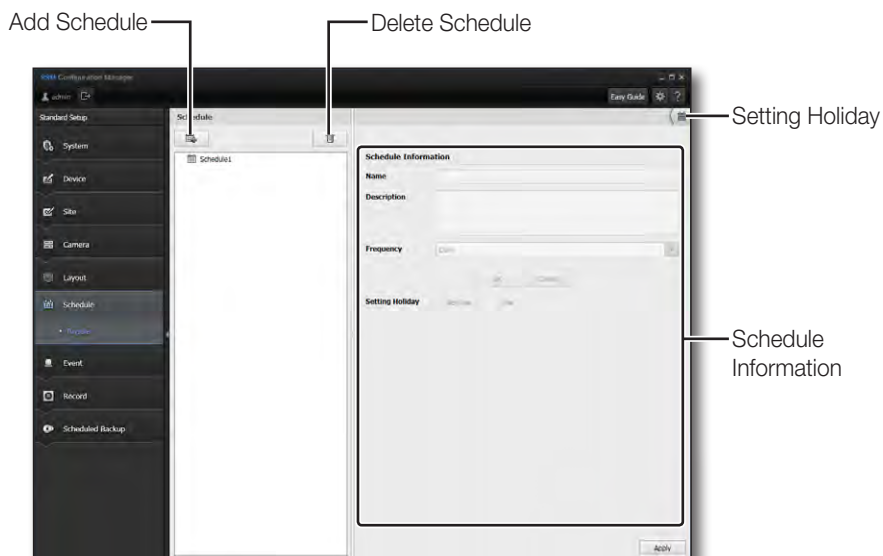
1. Select a user group to assign the layout.
2. Click to select a layout to assign from the layout list.
3. Click the [ ◀ ] button.
4. Click the [ ▶ ] button to release the assignment.

- 
  - After a layout assigned to the user group has been selected, another layout under it can be assigned.
  - The layout can be allocated only when a user who has ownership logs in.




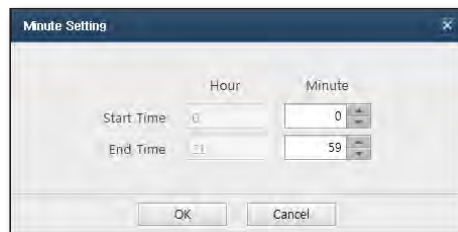
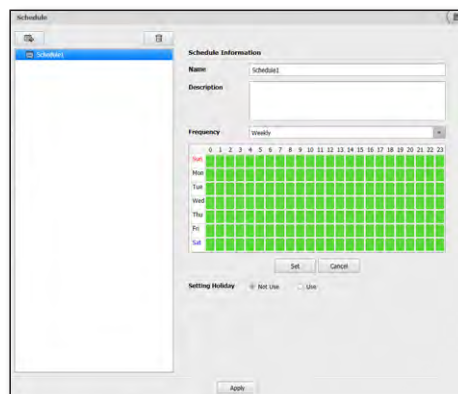
# SSM configuration manager

## SCHEDULE SETUP





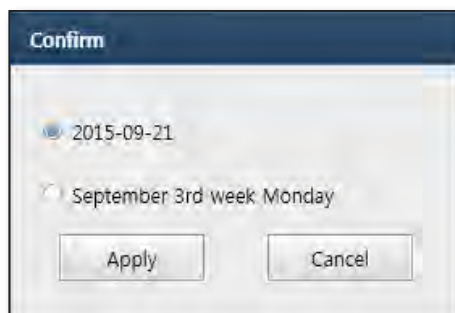
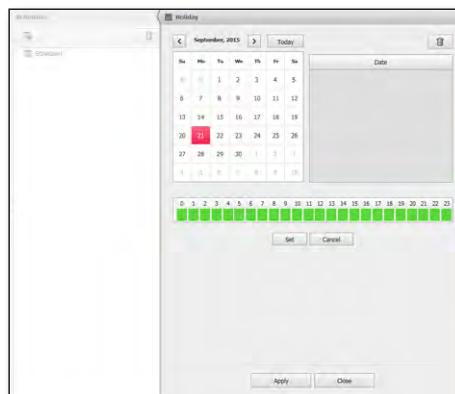
### To Set up a Schedule

1. Click the [  ] button.
2. Select the generated schedule.
3. Enter the <Name> and <Description> in the list on the right hand side.
4. Select <Frequency>.
  - Daily : The schedule is set up in one-day units.
  - Weekly : The schedule is set up in one-week units.
5. Select a schedule area from the time selection cell, drag it with the mouse, and click the [Set] button. To cancel the schedule, drag the area and click the [Cancel] button.
  - Multiple time cells can be selected by using the [Ctrl] key.
6. Double-click the time selection cell and then select the minutes of <Start Time> and <End Time>.
7. Select whether the holidays will be used.
8. Click the [Apply] button after the setup is complete.




### To Set up Holidays

1. To use holidays, select <Use>.
  2. Click [  ] in the upper-right corner.
  3. Select the dates that are holidays, and indicate the type of holiday.
  4. Click the schedule area in the time selection cell, drag it with the mouse, and click the [Set] button.  
To cancel the schedule, drag the area and click the [Cancel] button.
  5. Double-click the time selection cell and then select the minutes of <Start Time> and <End Time>.
  6. Click the [Register] button after the setup is complete.
-  ■ Holiday setting is set at higher priority when <Setting Holiday> is set to <Use> in schedule setup.



### To Delete Schedule

1. Select the schedule to delete from the schedule list.
2. Click the [  ] button.
3. Click the [Apply] button after a schedule is deleted.

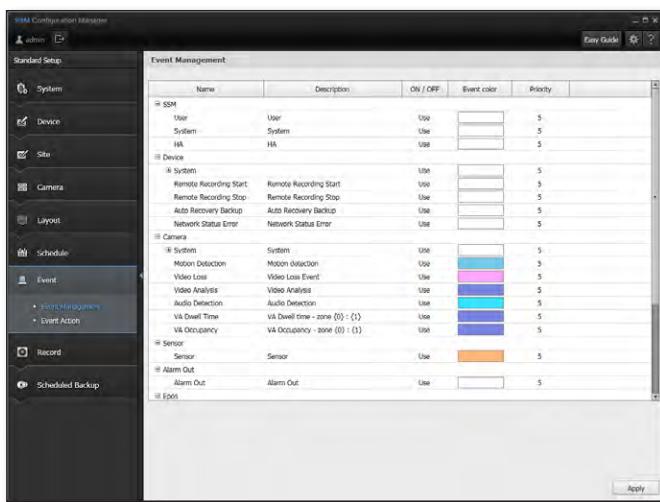
# SSM configuration manager

## EVENT

The event action defines how the system acts (output) upon a specific event (input).

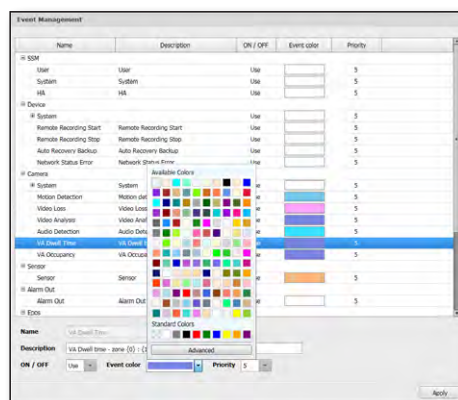
### Managing events

You can select to display events that occur, and set the color for an event that occurs.

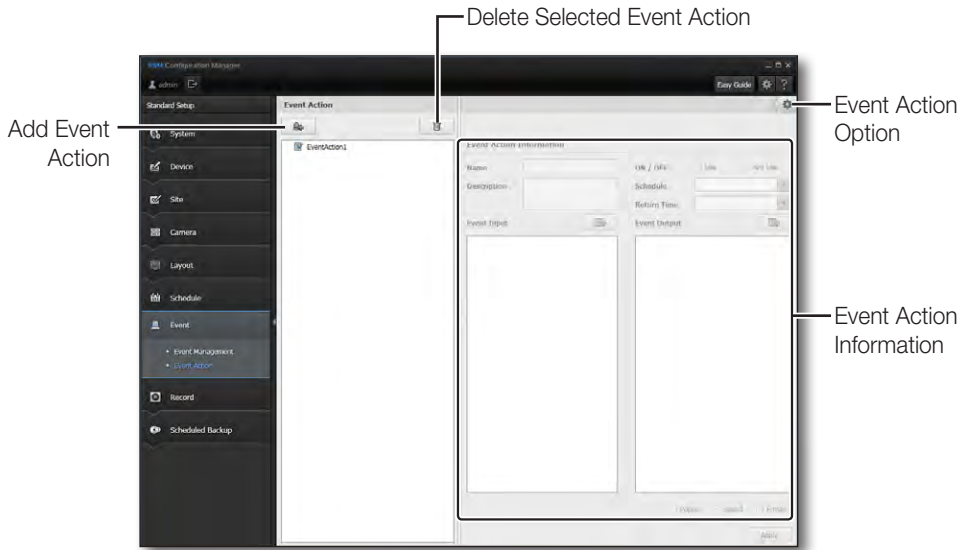


#### To set the event color

1. Select an event to set the color for.
2. Select whether to use the information displayed in the bottom.
3. Click on the <Event color> menu.
4. Click on the desired color in the color chart displayed.
5. After finishing settings, click on the [Apply] button.
  - If the event color is set, it is applied to the event log of the viewer and border of the camera image window.





## Setting Event Action



- Event Action
  - Event Action Management (Add / Edit / Delete)
    - Name, Description, Event (Input), Action (Output)
  - You can define various system actions (output) for events (input) from devices.
    - Event (input) types: Device connection release, Motion Detection, Video Loss, Video Analysis, Audio Detection and Sensor
    - Action (output) types: Instant Viewer, Preset, Alarm Out, Pop-up, Sound and E-mail notification

### To add an event action

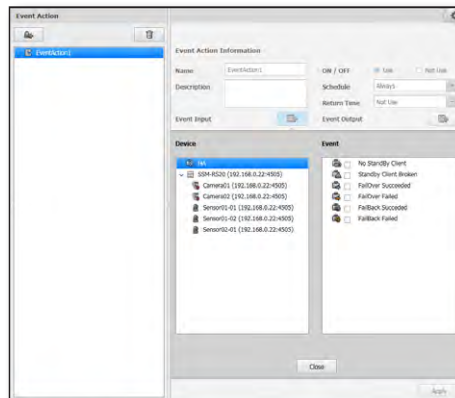
You can add/edit event actions.  
Select event type, device of action, and specify action details accordingly.

1. Click the [  ] button to add an event action.
2. Selecting an event button that is added prompts the event action information.
3. Use <ON/OFF> to determine the use of this function.
4. Enter the name and description of the event action added.
5. Select the usage and event action schedule.
6. Select the return time.
7. Click the [  ] button to select a device to configure in <Event Input>, then select a check box for each event type.

# SSM configuration manager

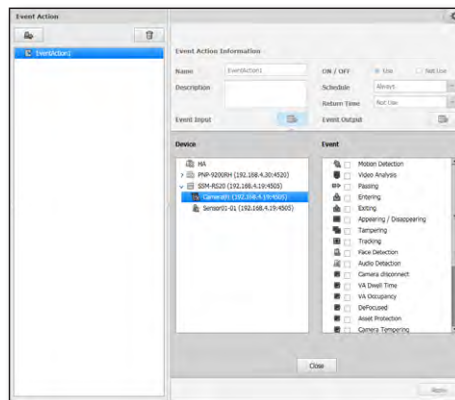
## HA Event

- No Standby Client : The HA client (standby) does not exist at the time of fail-over request.
- Standby Client Broken : The HA client (standby) is in an error condition at the time of fail-over request.
- Fail-over Successful : The fail-over is established successfully.
- Fail-over Failed : The fail-over failed.
- Fail-back Successful : The fail-back is established successfully.
- Fail-back Failed : The fail-back failed.




## Device Event

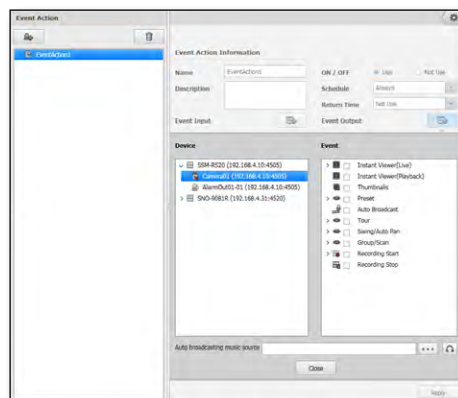
- Motion Detection : If the device detects a motion, an event is generated.
- Video Loss : If the video recording is interrupted, an event is generated.
- Video Analysis : Intelligent video analysis is recognized as an event.
- Passing : An object passing through the area specified by the user is recognized as an event.
- Entering : An object entering the area specified by the user is recognized as an event.
- Exiting : An object exiting the area configured by the user is recognized as an event.
- Appearing/Disappearing : Object appearing in or disappearing from the specified area is recognized as an event.
- Tampering : A situation hindering the video monitoring is recognized as an event.
- Tracking : Recognize the situation of tracing moving objects on the screen as an event.
- Face Detection : Recognize the situation of sensing a face in the user selected area as an event.
- Audio Detection : If the device detects sound, an event is generated.
- Camera disconnect : When a camera is disconnected, it is recognized as an event.
  - This is activated only for cameras that are registered to sub-RS.
- DeFocused : Arbitrary control of the device's zoom focus is recognized as an event.
  - If you selected an upper ranked device that you registered a camera for, events related to device operation will be displayed.





8. Click the [  ] button to select a device to set in <Event Output>, and select a device and action to take when an event type is generated.

- Instant Viewer : Opens the "Instant Viewer" window in the Live Viewer, which shows the occurred event's video.
- Thumbnail : Executes the thumbnail screen when an event is generated.
  - Activated only in the camera registered under the RS.
- Preset : Runs selected preset on the selected camera.
- Auto Broadcast : Runs the auto broadcast file when an event occurs.
- Tour : The tour of the selected device is performed in the case of an event.
- Swing/Auto Pan : The swing/auto pan of the selected device is performed in the case of an event.
- Group/Scan : The group/scan of the selected device is performed in the case of an event.
- Recording Start : Recording of the device selected when an event occurs is started.
- Recording Stop : Recording that is started when an event that occurs is stopped.
- Auto broadcasting music source : Search for and select and preview the music file to be played when an event occurs.
- Popup : Automatically selected along with Instant Viewer option. If selected individually without selecting Instant Viewer, an empty Instant Viewer having no video displayed upon an event only for reacting to the occurred event.
- Sound : Generates sound alarm upon events.
- E-mail : Sends out event notification e-mail upon events.



9. To finish settings and close the window, click [Apply] button.


### To delete an event action

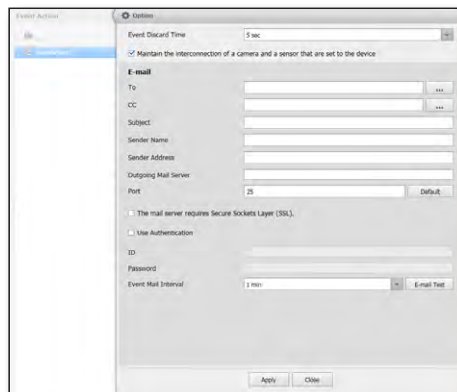
Select an event action to be deleted, and click [  ] button.

# SSM configuration manager

## To Set up Event Option





The ignore time and e-mail send time options of the event action can be set.

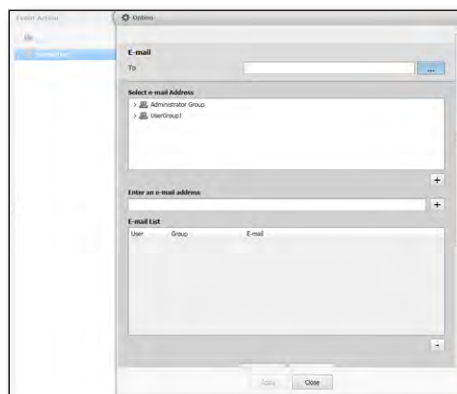
1. Click the [  ] button.
2. Specify the event ignore time.
3. Specify whether the device event action setting will be used.
4. Enter the recipient and sender e-mail addresses and e-mail sending interval when an event is generated.
5. Click the [Apply] button after the date input is complete.



## To Select an e-Mail Recipient or CC

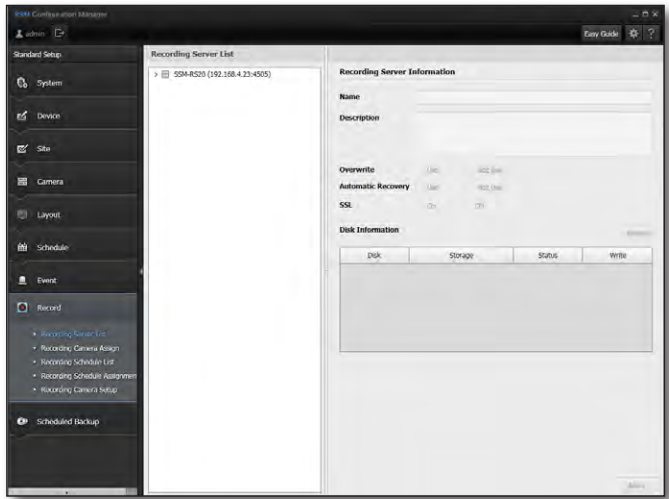
Recipient and CC of the event e-mail can be selected from the user group list, or their e-mail addresses can be input.

1. Click the [  ] button.
2. Click the [  ] button to the right of the <To> or <CC>.
3. Select the recipient of the e-mail from the users in the user group.
4. Click the [  ] button.  
The e-mail address of the recipient selected from the e-mail list is displayed.
5. To register the e-mail address of the user not in the user group, enter the address in <Enter an e-mail address>.
6. Click the [  ] button.
7. Click the [Confirm] button after the recipient and CC are selected.



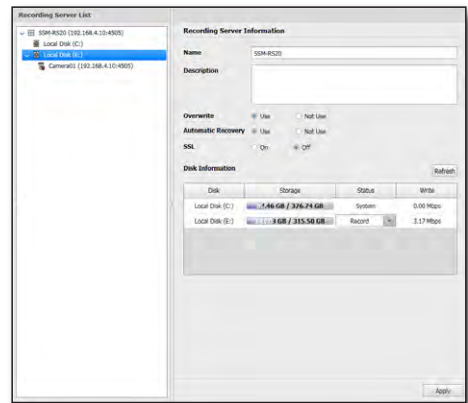
# RECORD

## Recording Server list



### To set the Recording Server information

1. **Overwrite** : If there is no extra disk space, select whether or not to overwrite the recording file.
2. **Auto recovery** : If you record it in network external storage (iSCSI), select whether to auto recover the recording when a storage connection is cut off and stored again.
3. **SSL** : Sets whether to use SSL On/Off for each server.
  - If set to use in the "System > SSL" item, the applicable item is displayed.
4. **Recording Server disk information settings** : Shows the disk information of the selected Recording Server.
  - **Record** : When the disk status is set to **[Record]**, you can search for and play the recording.
  - **Restore** : If the disk status is **[Restore]**, the recording data can be restored in the case of HA fail-back.
  - **Released** : When the disk status is set to **[Released]**, you can search or play only but cannot record. Any ongoing recording will be stopped.
  - You cannot allocate a **[System]** disk where the OS is installed.
  - You cannot record if there is no **[Record]** disk as well as the **[System]** disk.
5. **Refresh** : Click on the **[Refresh]** button to update the local disk information with the latest information.



# SSM configuration manager

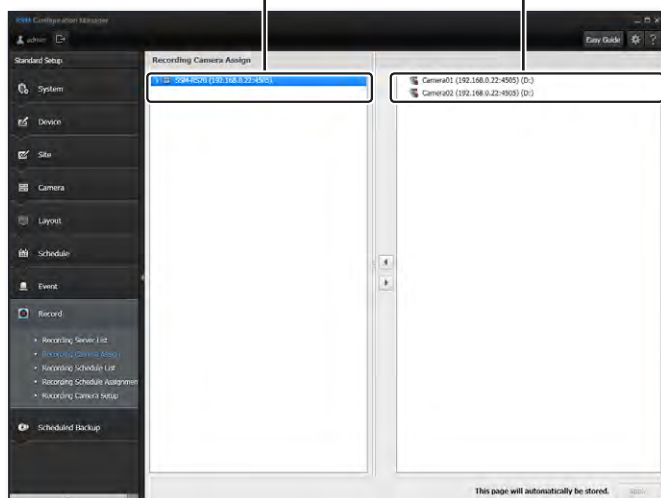
- ① When it is necessary to format a disk on which recording is already in progress as it is set to a **[Record]** state in the recording server
  - ① Change the disk state to **[Released]** before formatting the disk.
    - If the disk state is changed to **[Released]**, recording on the applicable disk is suspended.
  - ② Format the disk.
  - ③ After you finish formatting the disk, change the disk state to **[Record]**.
  - ④ Reset the camera's disk allocation information and schedule allocation information after formatting the disk.

## Recording Camera Assign

You can distribute camera to each **[Record]** disk of the Recording Server.

List of registered recording disks

List of allocatable cameras

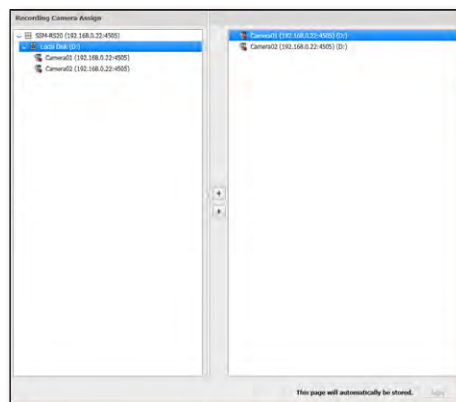


### To assign a record camera to the **[Record]** disk

1. Select the Recording Server to initialize.
2. Select the **[Record]** disk to assign a camera to.
3. In the list of cameras registered in the Recording Server on the right, select a camera to be assigned to the disk.
4. Click on the [ ← ] button.  
The selected camera will be copied below the **[Record]** disk.  
You can assign the same camera to multiple disks.
  - You cannot record with a camera not distributed to the disk.

### To release a record camera assigned to the **[Record]** disk

1. Select the Recording Server from the list on the left..
2. Select an item to cancel from the list of cameras registered within the **[Record]** disk.
3. Click on the [ → ] button.  
The selected disk will be deleted from the **[Record]** disk.

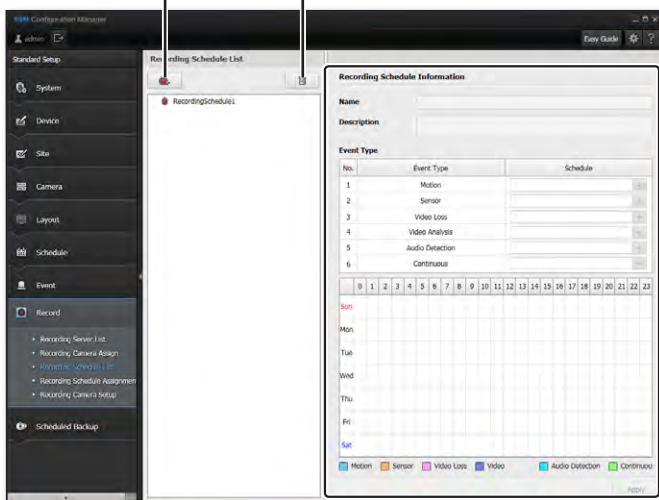


## Recording Schedule List

You can create, modify or delete the recording schedules.


Add a recording schedule

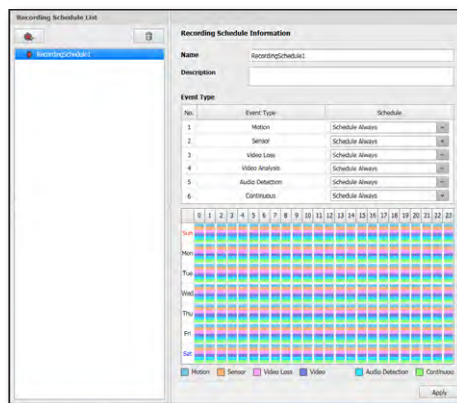
Delete a schedule




Recording schedule information

### If you want to set the schedule

1. Click on the [  ] button.
2. Select a created schedule.
3. In the list on the right of the screen, enter <Name> and <Description>.
4. Select a schedule for each event type.
  - Schedule Always : Recording will be done on every day/time.
  - For more detailed information on schedule setting, refer to "Schedule Setup". (Page 68)
5. Click the [Apply] button after setup is completed.



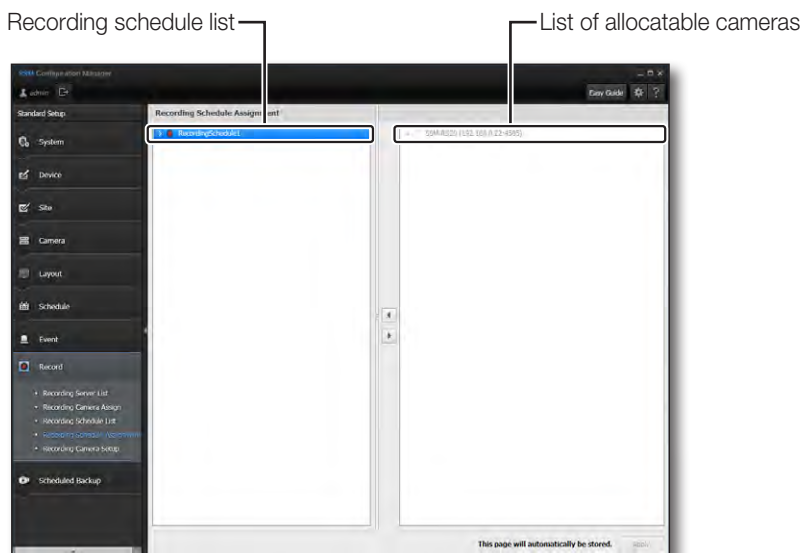
### If you want to delete a recording schedule

1. Select a schedule to delete from the schedule list.
2. Click on the [  ] button.
3. Click the [Apply] button after deleting it.

# SSM configuration manager

## Recording Schedule Assignment

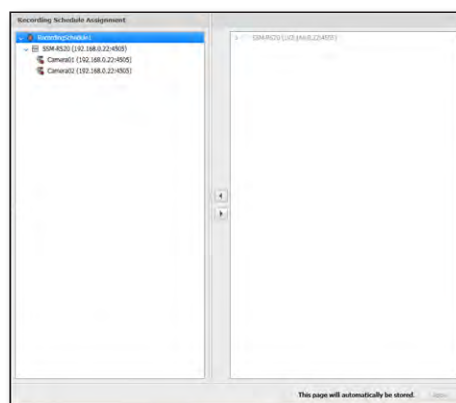
You can distribute a camera for each Record disk of the Recording Server.



### If you want to assign a camera to the recording schedule

1. Select a user recording schedule to which a camera will be assigned.
2. Select the Recording Server or camera to assign from the list of camera/Recording Servers on the right side of the screen.
  - If you select a Recording Server, the list of cameras below it will be shown on the right side of the screen.
3. Click on the [ ◀ ] button.
4. Click on the [ ▶ ] button to cancel assignments.
5. If you want to set all cameras in the list at once, press the [Ctrl] or [Shift] key to select cameras.

- ✎ ■ Only the cameras assigned to the recording disk can be assigned to a recording schedule.

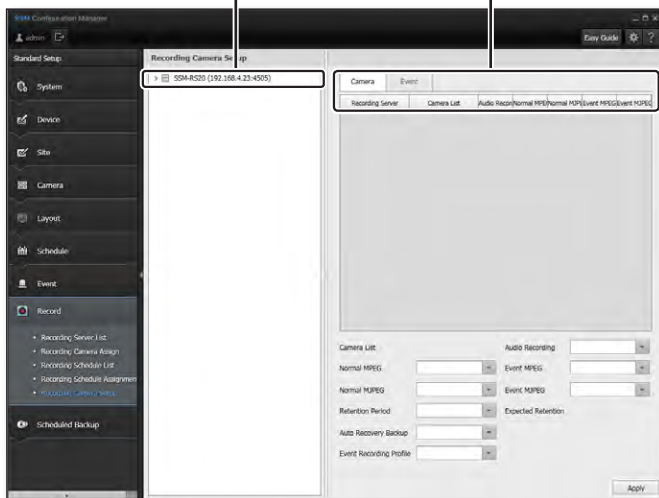


## Recording Camera Setup

You can check or change the settings of cameras assigned to the server.

List of available camera settings

Displaying the camera settings information

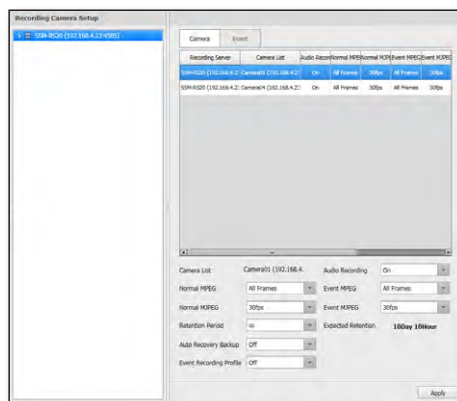


### To change the record camera settings

1. Select a camera registered in the Recording Server that you want to change the setting for.
2. Press the **[Ctrl]** or **[Shift]** key to select the camera to change the setting for.
3. Select a camera to change the setting of from the list and select a change value from the change item at the bottom.
4. To change the setting of the cameras in the list across the board, select the cameras using the **[Ctrl]** or **[Shift]** key in the keyboard and select the change value from the change item at the bottom.
5. Click the **[Apply]** button after setup is completed.

- You can set the fps used for each camera and recording type (general/event) registered in the Recording Server.

- You can turn the audio recording on or off.  
If you set the camera's Audio Recording to **<Off>**, you cannot record voices.
- General recording types includes manual recording and continuous schedule recording.
- Event recording type includes : motion/alarm/video loss/intelligent video analysis/audio.  
You can set the recording file storage period for each camera activated.
- A recording file that exceeds the storage period will be automatically deleted.  
You can check the recording file storage period for each camera activated.
- Press the Refresh button to renew the available storage period that is displayed.



# SSM configuration manager

- The Auto Recovery Backup function can be set to On/Off.  
If set to <On>, the camera with the function is regarded as 2 cameras (if there are 16 actual cameras, they are regarded as 32 cameras when the function is set to On).
- You can set the event recording profile to On or Off.

Video settings	Options	Descriptions
MPEG	ALL FRAMES	Saving all frames received.
	KEY FRAMES	Only saves the I-frame received.
MJPEG	1 ~ 30	Uses the selected fps to save.

This setting will not overwrite the device video setting.

The actual frame rate used to receive and save data from a device may differ from the frame rate set here. If a smaller amount of data is received, only that much will be saved.

- The max throughput is 400Mbps.
- For recording stability, using HDD with SATA2 7200rpm or higher is recommended.  
(Each HDD's max recording processing should not exceed 100Mbps.)
- The recording data can be searched or played by using the SSM console.

## Auto Recovery Backup

Video that is not recorded due to disconnection from the equipment can be backed up after the connection with the equipment is re-established.

### To use the auto recovery backup function

1. The camera and the recording server should be time synchronized and the time zone information should also be identical.
2. The recording should proceed on the camera's SD card.
  - It is possible to configure record settings after inserting a micro SD card into the camera.
  - As you can check the SD card recording status on the Playback page of the equipment web viewer, check first whether the equipment SD card contains the recording data if the Auto Recovery Backup function does not work.

### To configure the auto recovery backup function

1. Register the camera in the recording server as a SUNAPI protocol.
2. Assign the camera to the [Record] disk.
3. Assign the camera to the recording schedule.
  - For a section in which recording is not possible due to the settings, the Auto Recovery Backup function will not work.
4. In the recording camera settings, set the Auto Recovery Backup function to <On>.

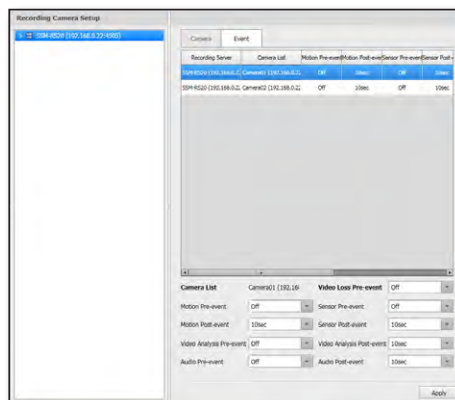
### To check the Auto Recovery Backup results

When running the Auto Recovery Backup function, the timeline for the section backed up by the equipment is displayed as an [Auto Recovery Backup] item in the search viewer.



### To change an event setting

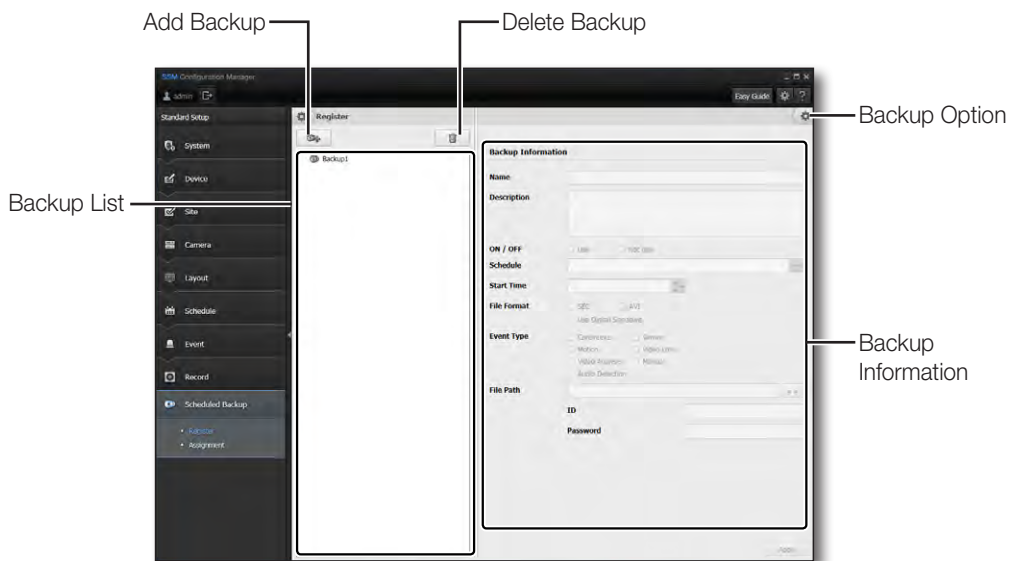
1. Select an event item camera registered in the Recording Server that you want to change the recording setting for.
2. Select a camera to change the setting of from the list and select a change value from the change item at the bottom.
  - If you turn off the time setting, nothing will be recorded.
3. To change the setting of the cameras in the list across the board, select the cameras using the **[Ctrl]** or **[Shift]** key in the keyboard and select the change value from the change item at the bottom.
4. Click the **[Apply]** button after the setup is completed.
  - You can set pre/post recording time with respect to the time the event occurs so that users can easily understand the situation when an event occurs. Video during the pre/post time set based on the time the event occurs will be recorded.
    - Motion, alarm, intelligent video analysis, audio event : You can set both the pre/post time.
    - Video loss event : As there is no video to record after an event occurs, you can only set the pre time.
      - A video loss event only occurs in an encoder.



# SSM configuration manager


## SCHEDULED BACKUP

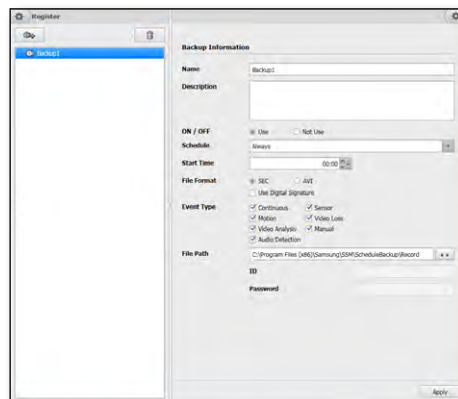
The data of a specific period can be saved in the PC running the program.



### To Set up Video Backup

The specified event backup can be set up to run at the specified time.

1. Click the [  ] button.  
A new backup is added to the list.
  - Only the connected devices can be backed up.
2. Click a backup from the list to select it.
3. Enter the name and description of the backup to set up.
4. Select whether the backup will be used.
5. Select a schedule.  
One of the schedules registered in schedule setup can be selected.
6. Set up the backup time.
  - If the schedule is set to <Weekly>, the day of the week selection menu is displayed.
  - If the schedule is set to <Daily> and the backup schedule is set up for within 24 hours from the time selected as the backup start time, the backup begins with the data of the previous day.



### 7. Select the format of the saved file.

“\*.sec” and “\*.avi” are available as the backup file format.

- AVI : General purpose format. This can be played by Window Media Player.
- SEC : Samsung's own format. Player is provided with the video data.



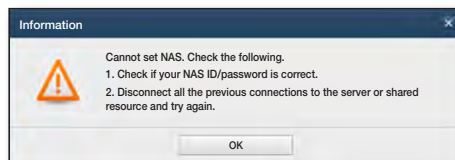
- Window Media Player does not support avi files with a resolution of 3 megapixels or higher. SEC backup is recommended for high-resolution videos of 3 megapixels or more.
- A new AVI backup file is created in the following cases.
  - When you change the video's resolution
  - When you change the audio or video codec
  - When the file size is greater than 2GB
- When the Digital Signature check box is selected when backing up the SEC, you can register a digital signature in the backup file.

### 8. Select the event type to run a backup.

### 9. Click the [ ... ] button to select the path of the backup file.

- Input the ID and password to login to the NAS drive.
  - If the following popup window is displayed, check the input NAS account or disconnect the previous network connection and try again.

### 10. Click the [Apply] button after the setup is complete.

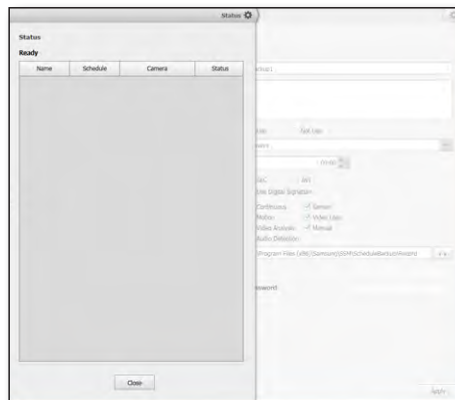


## To Delete a Scheduled Backup

1. Select the scheduled backup to delete from the backup list.
2. Click the [ ] button, and then click the [OK] button in the confirmation window.
3. Click the [Apply] button after the scheduled backup is deleted.


## To Check Scheduled Backup Status

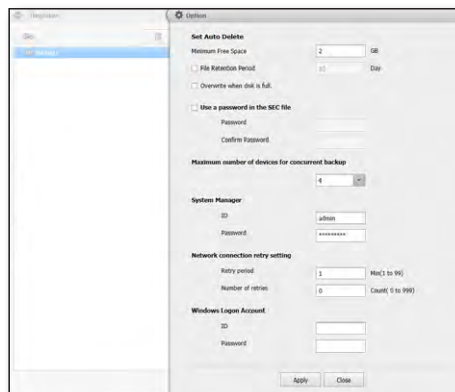
1. Click the [ ] button in the upper-left section of the screen.
2. Check the progress of the registered backup.



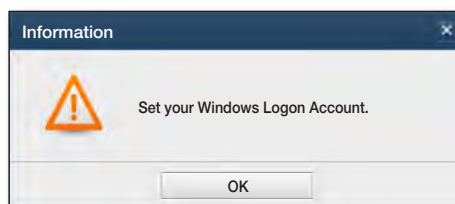
# SSM configuration manager

## To Set up a Backup Option

1. Click the [  ] button in the upper-right section of the screen.
2. Specify the automatic backup file delete capacity and period.
  - Minimum Free Space : Configure the minimum free space.
  - File Retention Period : Configure the automatic delete period.  
Data recorded prior to the specified period are automatically deleted.
3. Check to use the password in the **<Use a password in the SEC file>** menu.  
Set or check the password after checking use.
4. Select the number of devices to be backed up at the same time in **<Maximum number of devices for concurrent backup>**.
5. Set the interval and count in **<Network Connection Retry Setting>**.
  - It specifies how many times the reconnection will be attempted and the interval (min.) when the connection to a NAS drive is cut.
6. Enter the Windows login account (configured when backing up the NAS).
7. Click the [Apply] button after the setup is completed.



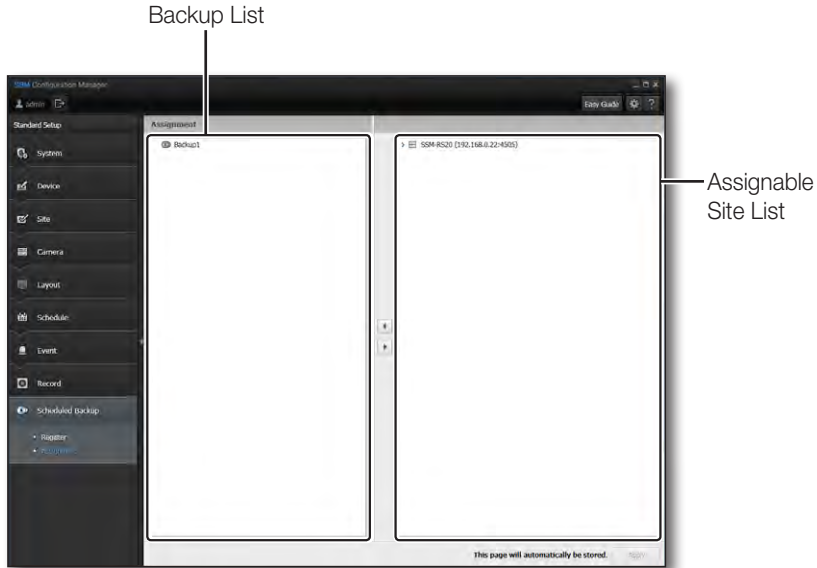
-  ▪ The following popup window is displayed if the Windows login account is not set.




8. Configure the Configuration Manager login ID and password.
  - Only equipment assigned to the user of the ID entered is available for backup.
  - Only the ID with the scheduled backup privilege can use the scheduled backup.

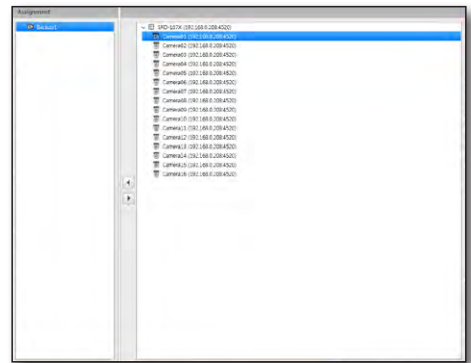
## Device Assignment

A device is selected and assigned to the scheduled backup.  
 A device can be selected to be assigned to a scheduled backup.



### To Assign a Device

1. Select the backup schedule to assign to the camera.
  2. Click to select a device to be assigned from the device list.
    - Cameras connected to the device can also be individually assigned.
  3. Click the [ ◀ ] button.
  4. Click the [ ▶ ] button to cancel the assignment.
-  Only the devices assigned to the account set up in the scheduled backup option can be backed up.




# SSM console

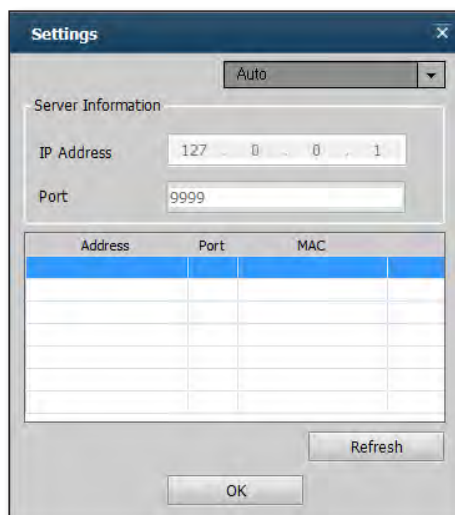
This is a program to monitor the camera images registered and assigned to Configuration Manager, check the event, and search the data stored in the device.

## LOG IN / OUT

### Logging In

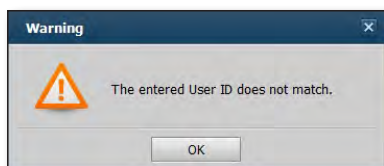
Once the program is started, a user must log in for correct use of the SSM Console.

1. Click SSM Console icon.  
The Login dialog should appear.
  2. <LIVE>, <EVENT> and <SEARCH> viewer types are shown when viewer selection tab is clicked. Select one and log in to start the selected viewer.
  3. Enter the user ID and password in the login window.
    - Default ID : admin
    - Password : Enter the password registered during the installation step.
- ! ■ If SSM is installed in distributed mode and you need to start the program install in another server, click the [  ] button located below the login button in the login window to register the server to either <Auto> or <Manual>.
- If it is set to <Auto>, SystemManager is automatically selected. If it is set to <Manual>, SystemManager can be selected from the list, or IP and Port information can be set.

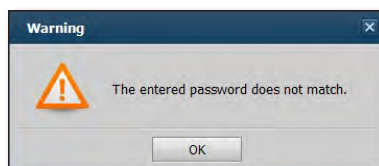




- Select <Save Login ID> to avoid account input from the next login.
- Set <Auto Login> in Settings to log in automatically upon starting the program.
- In the cases below, login will fail and the user will be prompted with login information.



< If entered unregistered user ID >




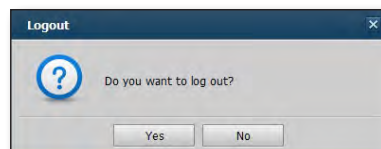
< If entered password does not match >

## Logging Out

For safer use of SSM Console, please log out when the work period is finished.

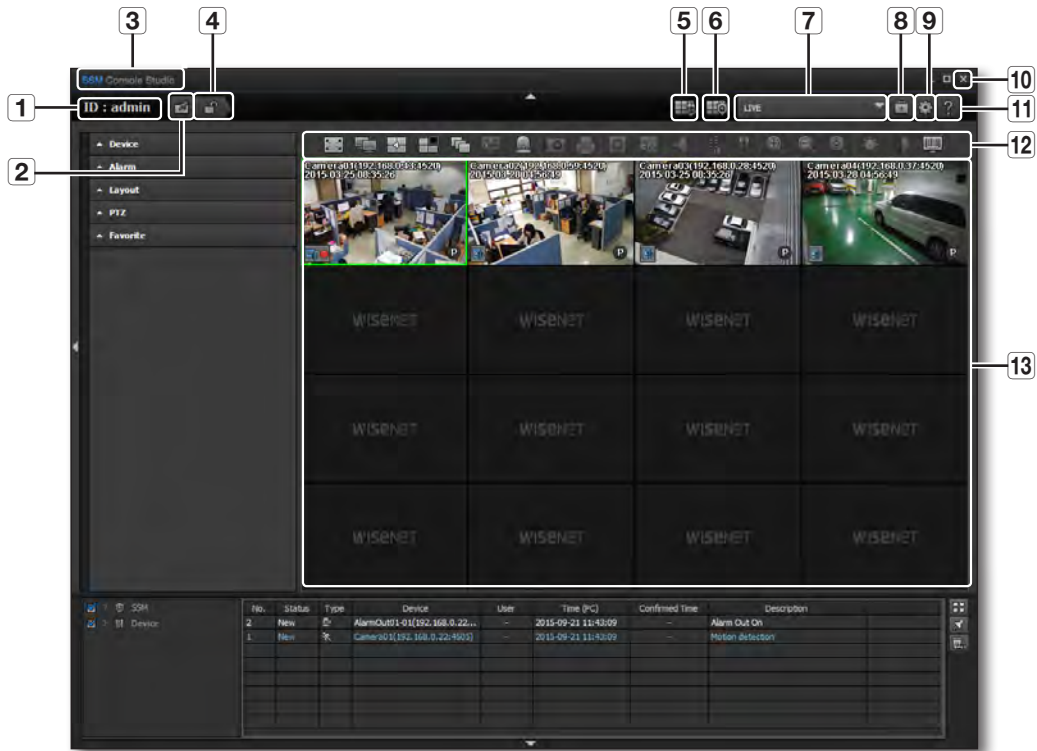
Logging out saves the last screen composition and then closes all windows, and returns to the login prompt.

1. On the main window, click [  ] button.  
The Logout dialog should appear.
2. On the dialog, click [Yes] button.  
It logs out.  
Terminating SSM Console automatically logs out the user.



# SSM console

## SSM CONSOLE SCREEN COMPOSITION



Item	Description
1	ID Shows the User ID currently logged in.
2	UI LOCK Locks the user interface. When attempted to use the program while locked, password dialog appears to unlock.
3	S/W Title Shows the software title.
4	Logout Logs out and exits.
5	Audio Broadcasting Registered cameras can be grouped for simultaneous broadcasting.




Item	Description
6	<b>Virtual matrix Controller</b> Run or terminate Virtual Matrix Controller.
7	<b>Selecting the Viewer</b> You may select and run a desired viewer from <LIVE>, <EVENT> and <SEARCH>, or you can add a shortcut link to external program. Added external shortcut is shown in a list.
8	<b>Check the System Status</b> You may check the system status of computers installed with each program component.
9	<b>Settings</b> Opens the system settings menu screen.
10	<b>Close</b> Exits the program.
11	<b>Help</b> Shows the SSM Console application's information.
12	<b>Menu Bar</b> Loaded with executable menu buttons.
13	<b>Display Pane</b> Shows the screen according to the selected viewer.

# SSM console

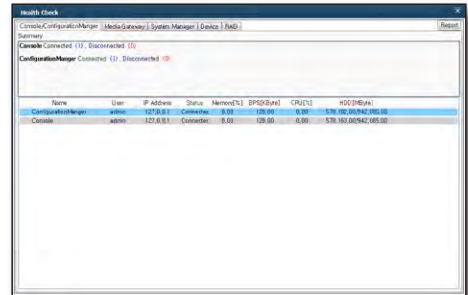
## Check the System Status

You may check the status of the computers installed with each program component.

1. Click [  ] on the top side of SSM Console.
2. Check each component's IP address and its status from the popped Health Check window.



- The device status in the health check window is displayed only for systems supporting SNMP.
- You can save the content of each item in a CSV file.
- Click the <Report> button at the top right of each item to select a path to save a file.



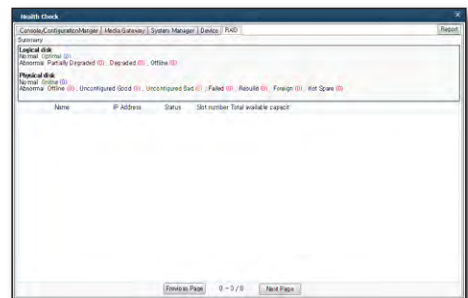
## Health Check

The health check shows the summary of each item.


- Console/Configuration Manager/Media Gateway/System Manager shows the number of connected devices and the number of disconnected devices of all items.
  - IP address : IP data
  - Status : Connection status data
  - Memory : Memory utilization rate
  - BPS : Total network utilization of the PC in which the item is installed
  - CPU : CPU occupation rate
  - HDD : HDD capacity in use / Total HDD capacity
- The device shows the number of connected devices, the number of disconnected devices and the number of devices without SNMP setting.
- RAID shows the following information.
  - Number of virtual disks in normal condition (Optimal condition = normal.)
  - Number of virtual disks in abnormal condition (Partially Degraded, Degraded or Offline condition = abnormal.)
  - Number of physical disks in normal condition (Optimal condition = normal.)
  - Number of physical disks in abnormal condition (Offline, Unconfigured Good, Unconfigured Bad, Failed, Rebuild, Foreign, or Hot Spare condition = abnormal.)



- If the list of devices/RAID items exceeds 50, you can move by clicking the Previous/Next button.

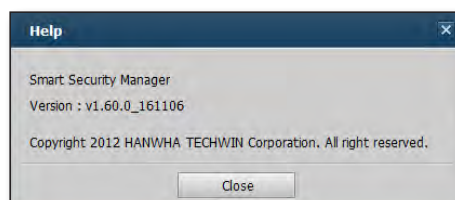


## RAID Status Checking

1. Logical disk: {Optimal, Partially Degraded, Degraded, Offline}. Optimal is the normal condition and others are the abnormal conditions.
    - Optimal : The member disk is online.
    - Offline : One or more member disks have failed, and the data cannot be accessed.
    - Degraded : One or more virtual disks set to the redundant RAID level failed, and the virtual disks cannot be maintained if there are any more errors.
    - Partially Degraded : One or more virtual disks set to the redundant RAID level failed, but the virtual disks can be maintained even if there are any more errors.
  2. Physical disk: {Unconfigured Good, Online, Failed, Rebuild, Unconfigured Bad, Foreign, Hot spare, Offline}. Online is the normal condition and others are the abnormal.
    - Online : The RAID controller can access the virtual disks.
    - Failed : The disk is a virtual disk but is no longer usable.
    - Unconfigured Good : The RAID controller can access the disk, but the disk is not a virtual disk.
    - Unconfigured Bad : The disk failed but is replaced by the hot-spare disk and thus is no longer a virtual disk.
    - Rebuild : This disk is used to restore the redundancy of a virtual disk.
    - Foreign : A disk is displayed as foreign until the user changes its configuration after it is added to another RAID controller.
    - Hot spare : The disk is set to hot-spare.
    - Offline : The disk is a virtual disk and displayed in invalid data. It may be in the middle of a status change.
-  RAID data are displayed only for the recording servers installed in a PC/server using the RAID controller supplied by Intel/LSI.

## Help

Click Help button to display program version and date information window.



# SSM console

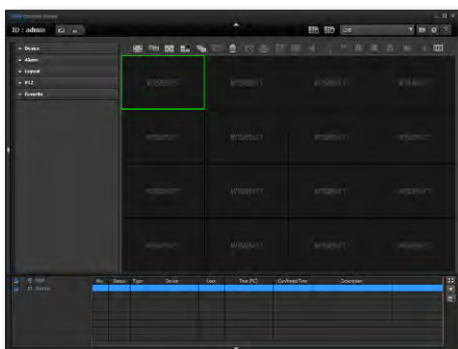
## Checking up Console Configurations

The Console consists of Live, Search and Event Viewer.

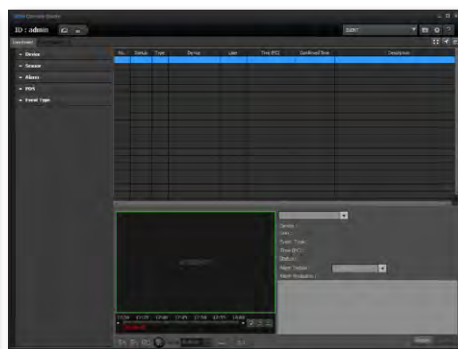
Understand the role of each component and run the appropriate one as required.

### Console Structure

- Live Viewer : Provides real-time video and event information for monitoring, as well as PTZ control interface.
- Event Viewer : Provides viewing of real-time events and the searching / playing of device's events.

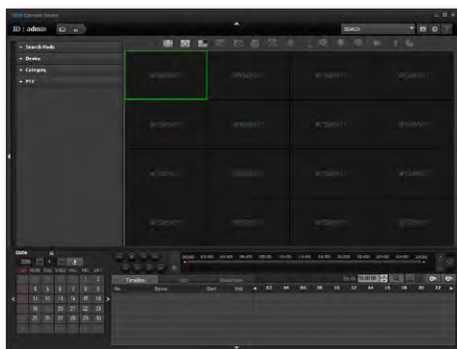


< Live Viewer >



< Event Viewer >

- Search Viewer : You can search and play video footage stored in your local computer or in the device.

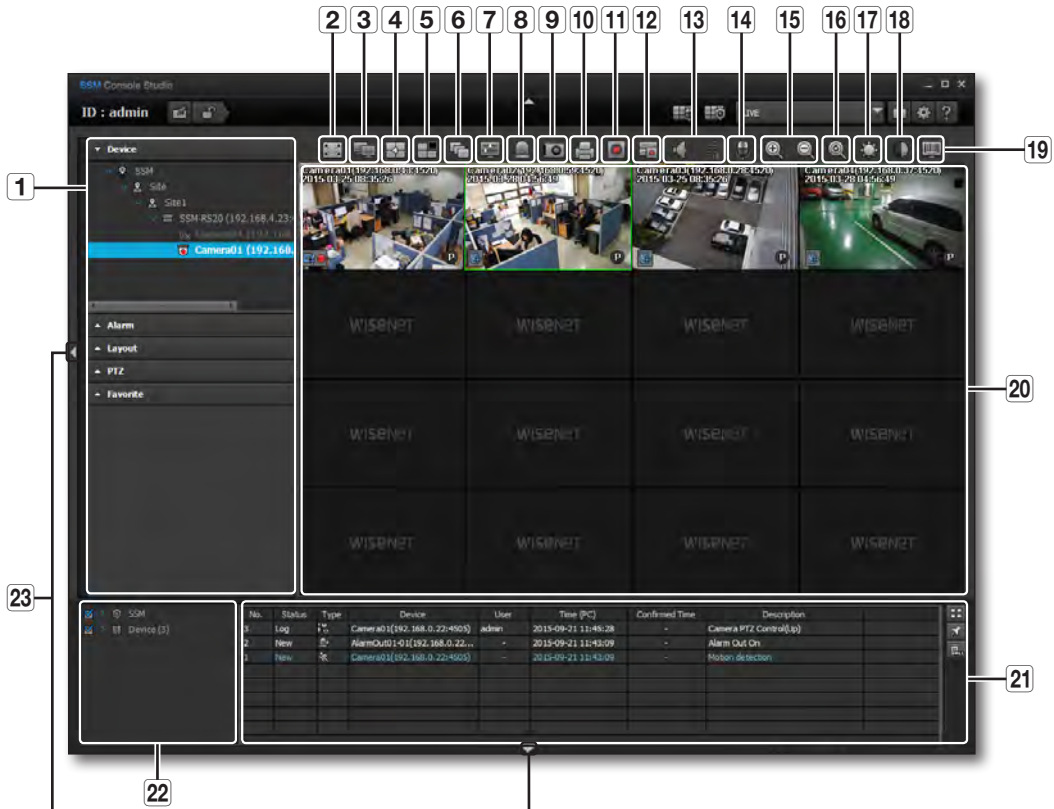


< Search Viewer >

# live viewer

Provides real-time video and event information for monitoring, as well as PTZ control interface. Select **[LIVE]** menu of the viewer selection tab on the top right side of SSM Console. Initially, SSM Console's default viewer is set to the Live Viewer.

## NAMES AND FUNCTIONS OF LIVE VIEWER



Item	Description
<b>1</b> List Menu	Shows registered devices and their connection status.
<b>2</b> Full Screen	Fills the monitor's full area with video screen.
<b>3</b> Multi Monitor	Enables expanded monitor configuration for monitoring.
<b>4</b> Change Tile Pattern	Selects the split screen mode of the live viewer's video area.
<b>5</b> Deletes the video tile.	Deletes all open video tiles.
<b>6</b> Sequence	Screen switches its display layout mode automatically in order and interval defined in <b>"Settings &gt; Screen &gt; Monitor &gt; Sequence"</b> .

# live viewer

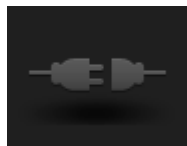
Item	Description
7	<b>OSD On/Off</b> Show or hide displayed indicators.
8	<b>Initialize Events</b> Clears out all event indicators from all video tiles.
9	<b>Capture</b> Saves the entire split screen windows.
10	<b>Print</b> Prints the entire split screen windows.
11	<b>Record</b> Starts or stops recording of the selected video tile.
12	<b>Device REC</b> Starts or stops recording with connected device remotely.
13	<b>Speaker</b> Turns on or off the speaker.
	<b>Volume</b> Adjusts audio volume.
14	<b>Talk</b> If supported by the connected device, activates microphone to talk.
15	<b>Zoom In/Out</b> Enlarges or reduces video size using digital zoom.
16	<b>Original Size</b> Resizes zoomed screen to its original 100% size.
17	<b>Brightness</b> Adjusts the current video tile's brightness.
18	<b>Contrast</b> Adjusts the current video tile's contrast.
19	<b>View Receipt</b> Turns the receipt information of the POS device connected On or Off.
20	<b>Display Pane</b> Shows the Live Viewer screen.
21	<b>Event List</b> Shows events occurred on connected devices.
22	<b>Event Filter</b> You can select event types to be displayed on the event list.
23	<b>Show/Hide Tools</b> Use these buttons to show or hide menu pane and control buttons.

## Camera status indicator

Indicators shown on the video tile tells the connected camera's input status.



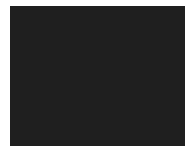
< Video Loss >



< Disconnected >



< Exceeded max  
user >

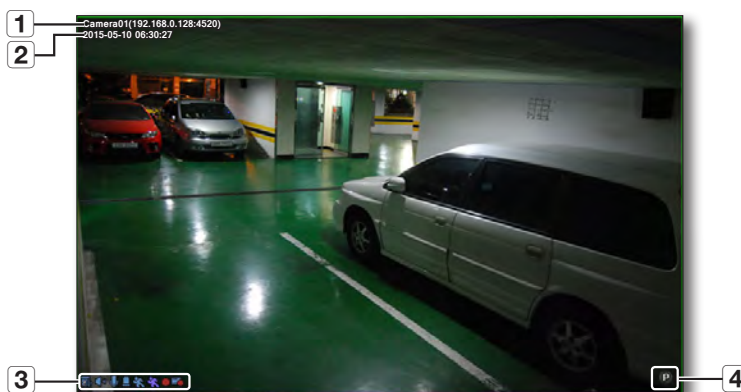











< Camera Off or  
Covert >



< Disconnected  
state >

## NAMES AND FEATURES OF SCREEN INDICATORS



Item		Description
1	Camera Name	Shows the name and IP address of camera connected to the corresponding video tile. If <b>&lt;Use Device's Default Name&gt;</b> is set, the name registered to the device is shown as the camera name.
2	Date & Time	Shows the video's date and time information.
3	Icon	 Shows the device supports PTZ control.
		 Display the status of audio output.
		 Display the status of using the microphone.
		 Appears when a sensor event is generated.
		 Appears if motion event is detected by the corresponding camera.
		 Appears if a video analysis event has occurred on the corresponding camera.
		 Appears if audio event is detected by the corresponding camera.
		 Shows that recording is in progress on the computer running SSM Console.
		 Shows that recording is in progress on a remotely connected device.
4	Live Playback	<p>When the video is selected, a live playback button is displayed at the bottom right of the video screen. In <b>&lt;Event pre playback time (Seconds)&gt;</b> under <b>"Setup &gt; Event &gt; Playback time for event"</b> the recorded video goes backwards by a specified period of time in seconds then is played automatically in a forward direction.</p> <ul style="list-style-type: none"> <li>Multi-channel Playback Function: When switched to playback mode, you can play back the video by selecting a different channel.</li> </ul>

## DEVICE

Add a networked device and allocate a registered camera to the user's device list. Select the device to view the in a tile.

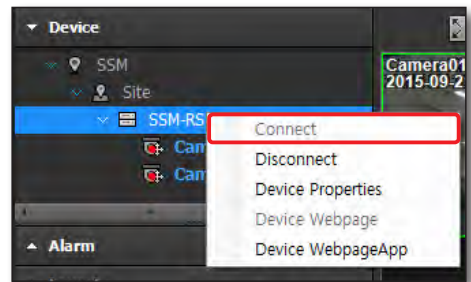
In registration step, set to **<Connect>** to display the device in the list as connected.

### Connecting Devices

1. Select a site to monitor.
2. Select a device to be connected to.
3. Right mouse click on it.  
Upon the context menu, select **<Connect>**.

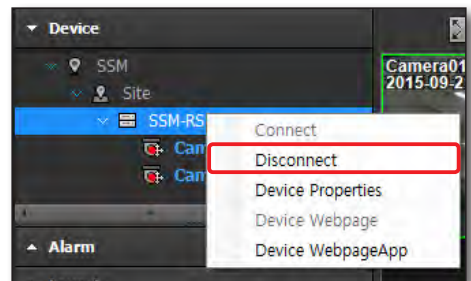


- For further information on adding devices, refer to "**Device > Register**". (Page 36)
- If logged out while connected to a device, logging in again revives previously connected devices and groups automatically.
- If you select a list and enter text (keyword), only those groups and devices that contain the text will be displayed in the search result. This is useful if you do the search for a long list of devices or groups.



### Disconnecting Devices

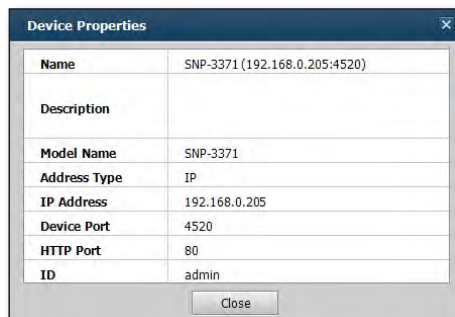
1. Select a device to be disconnected.
2. Right mouse click on it.  
Upon the context menu, select **<Disconnect>**.





## Device Properties

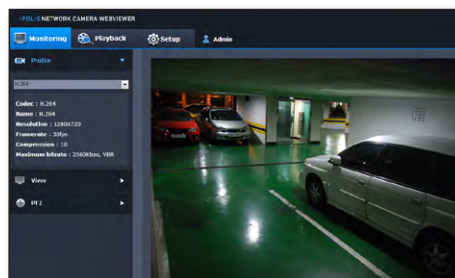
1. Select a device.
2. Right mouse click on it.  
Upon the context menu, select <Device Properties>.
3. Check the device information.



## Device Webpage

Runs the device on a web viewer.

1. Select a device.
2. Right mouse click on it.  
Upon the context menu, select <Device Webpage>.
3. Enter the access information to the device, ID and password.
4. Moves to the connected device's web viewer starter page.



## Device WebpageApp

---

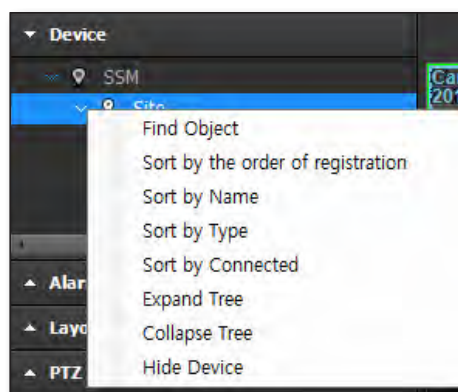
Runs the device on the mobile app.

1. Select a device.
2. Right-click on the device.  
When the contextual menu appears, click <Device WebpageApp>.
3. The list of apps installed on the device is displayed.
4. Select an app from the app list, and the website of the selected app is opened.

## Device Context Menu

---

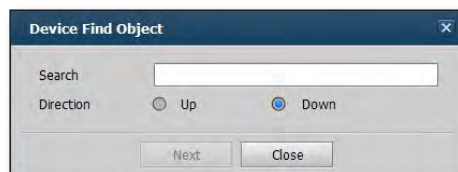
Right mouse click on an empty area within the device list to open device context menu.



## Find Objects

You may find a device by name from the registered devices.

1. From the context menu, select **<Find Object>**.
2. Once the Find Object window appears, select the searching direction.
3. Enter the keyword for name and click **[Next]** button.



- **[Ctrl]+[F]** also brings the find object window.
- Find object opens only when the object tree has the focus (highlighted).
- The **[Next]** button is activated only if a keyword exists.

## Sort by the order of registration

Click **<Sort by the order of registration>** in the contextual menu, and then the devices registered are sorted in the order of date of registration.

## Sort by Name

From the context menu, select **<Sort by Name>** to sort devices by name.

## Sort by Type

From the context menu, select **<Sort by Type>** to sort devices by type, while the device tree collapses.

## Sort by Connected

From the context menu, select **<Sort by Connected>** to sort devices by the order of connection establishment.

## Expand / Collapse Tree

From the context menu, select **<Expand Tree>** or **<Collapse Tree>** to show or hide tree list of registered devices.

## Show / Hide Devices

From the context menu, select **<Hide Device>** to hide registered devices.









If hidden, the menu switches to **<Show Device>** automatically, and selecting it reveals the hidden devices.

## CAMERA LIST

If connecting to the device was successful, a list of connected cameras appears.

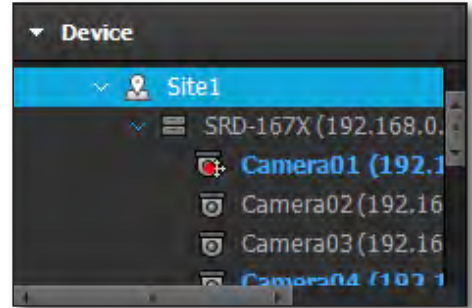
### Camera Indicators

Indicators that appear by each camera in the list show the camera's status information.

-  : General camera
-  : Camera supports PTZ control
-  : In recording
-  : Camera disconnected by a user
-  : Camera is disconnected / unreachable
-  : Box Type
-  : PT Driver Type
-  : Fish-Eye/Panomorph Type



Refer to "**Camera Info View**" for details of camera type selection. (page 46)



### Camera Context Menu

From the device list, select a camera and right click on it to open the camera context menu.

#### Locate Tile

Highlights the selected camera's video tile.

#### Add Video

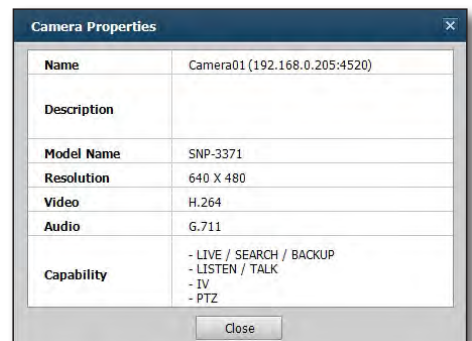
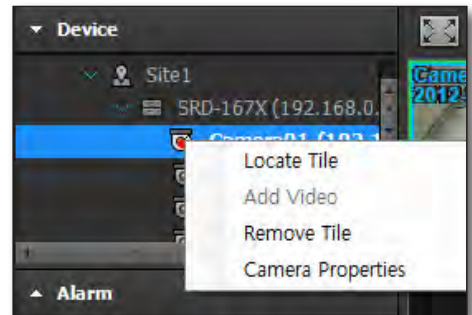
Selected camera's video is displayed on an unoccupied tile.

#### Remove Tile

Select a camera and open context menu to select **<Remove Tile>** to remove the corresponding tile.

#### Camera Properties

Select a camera and open context menu to select **<Camera Properties>** to display the camera's properties.

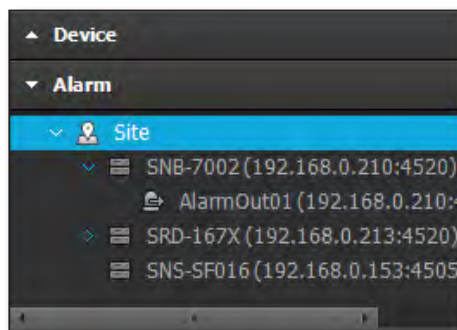


## ALARM OUT AND CONTROL

Once a device's connection is established successfully, the device appears in the Alarm Out list. You may turn on or off each device's alarm.

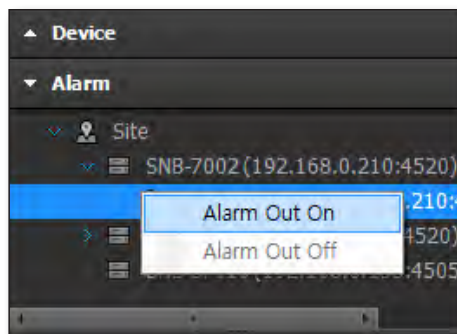
### Alarm Out Context Menu

Select an alarm and right click on it to open its context menu that enables alarm control.



### Turning On Alarm Out

Select an alarm and open context menu to select <Alarm Out On> to turn on the selected alarm's alarm output.



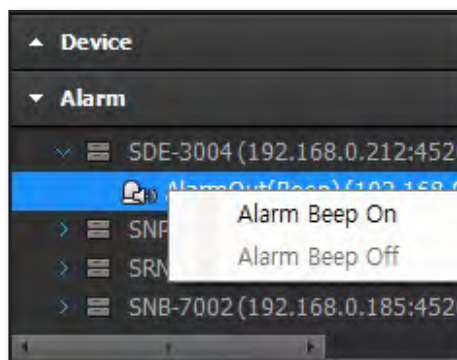
### Turning Off Alarm Out

Select an alarm and open context menu to select <Alarm Out Off> to turn off the selected alarm's alarm output.

### Turning On / Off Alarm Beep

For devices supporting Alarm beep speaker, <Alarm Beep On> or <Alarm Beep Off> menu appears.

Upon such device's alarms, you can turn on or off beep sound output.



## SELECTING TILE PATTERN

You can set the video pane's split-screen mode.

- 4:3 screen modes : 1/4/6/8/9/10/12/13/16/17/21/25/36/49/64



- 16:9 screen modes : 6/12/20/30




- While in multi-monitor environment, layouts and split modes for less than 100 channels will be available. Other modes will be disabled.

- Modes having more splits than the number defined in **<Split Screen>** will be disabled. (Page 164)




## LAYOUT

You can configure SSM software to display in multiple monitoring devices with defined layout.

From the top side menu, select [  ] button then select a desired multi monitor type, and configure the layout as preferred on the expanded monitor.

### Apply a layout for the multi monitors

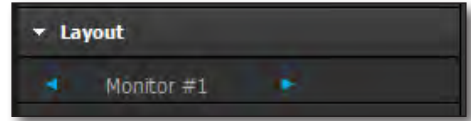
#### Selecting the multi monitors

1. From the top side menu, click [  ] button.
2. Select the number of monitors.  
As many monitors as specified are displayed on the screen.
3. Select a monitor to be applied with the layout settings by clicking arrows beside the monitor name.






- Monitor #1 is the default monitor, and Monitor #2 and others are expanded monitors.
- You can set expanded monitor in "**Screen > Monitor**". (Page 164)
- The extended monitor (subsidiary Live Viewer) is applied to the monitor specified in "**Screen > Monitor**". Full screen is also applied to the specified monitor.
- Since the monitor 1 is set to the extended monitor by default, the monitor setting must be changed to change the location of the extended monitor execution.
- You can share the layout of the live viewer through the expanded monitor.

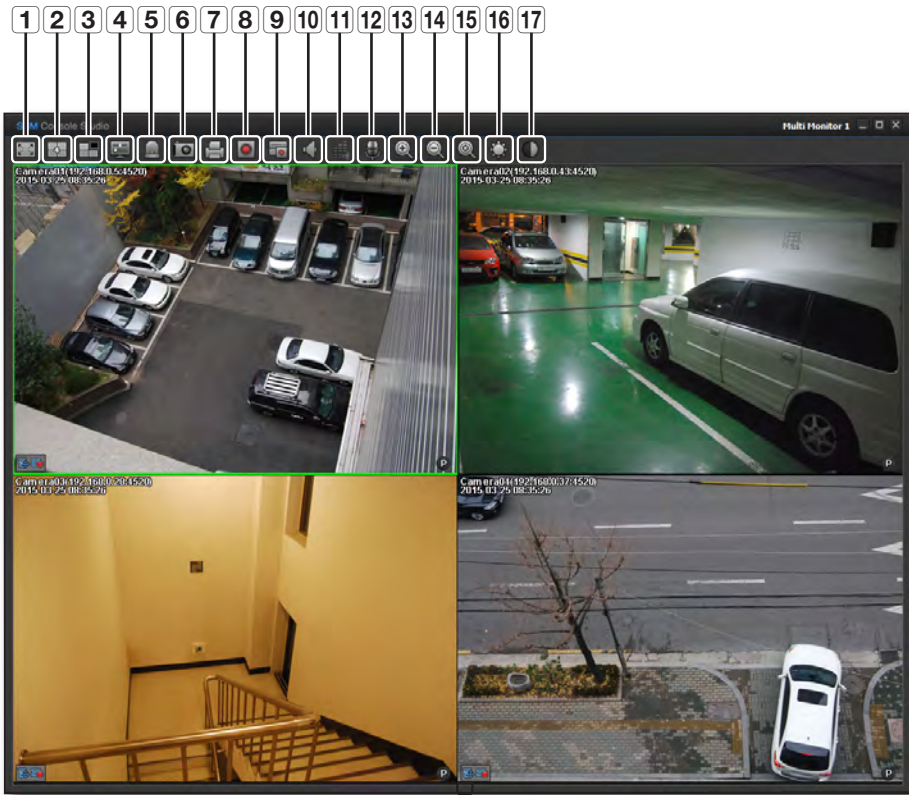


## Setting the Tile Pattern for the expansion monitor

1. Click a tile of an expansion monitor to activate the corresponding monitor.
2. From the top side menu, click [  ] button.
3. Select a desired tile pattern to apply it.

# live viewer

## Use Expanded Monitor Menu



Item	Description
<b>1</b> Full Screen	Expands the video screen to the full screen size
<b>2</b> Change the Tile Pattern	Selects the split screen.
<b>3</b> Delete a Video Window	Deletes the full-size video window.
<b>4</b> Turn OSD On/Off	Selects whether to turn the OSD information On or Off in the full-sized video window
<b>5</b> Initialize Events	Turns off the event indicator displayed in the video window
<b>6</b> Save the Screen	Saves the full-size split window image in a .jpeg file format

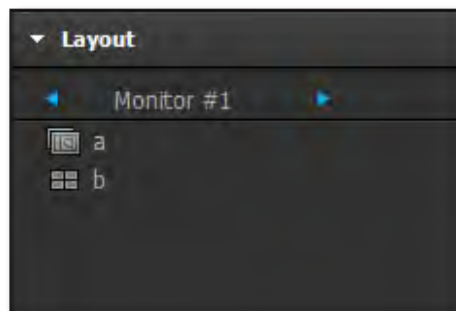


Item	Description
7	<b>Print Screen</b> Prints the full-size split window image
8	<b>Record</b> Starts/Stops recording the video of the selected channel.
9	<b>DVR Recording</b> Starts/Stops recording the videos of all channels.
10	<b>Speaker</b> You can hear the sound from the selected video.
11	<b>Volume</b> Controls the volume of the selected video using the Up/Down button.
12	<b>Speak</b> Delivers a sound to the selected video.
13	<b>Zoom In</b> Increases the digital zoom.
14	<b>Zoom Out</b> Decreases the digital zoom.
15	<b>Original Size</b> Returns to the default value of the digital zoom.
16	<b>Brightness</b> Adjusts the brightness of a video.
17	<b>Contrast</b> Adjusts the contrast of a video.

# live viewer

## Applying Layout

Select a monitor and then double click the desired layout. The selected monitor is applied with the layout.

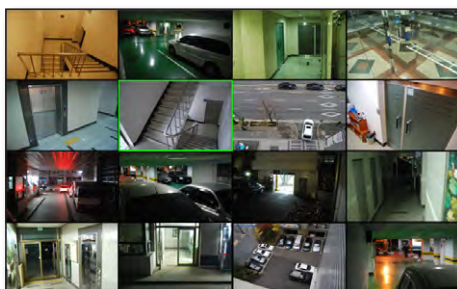


## To add a layout

You can add multiple layouts to a desired monitor.

The layout can be registered in "**Layout > Register**" of SSM Configuration Manager.

For further information on adding layouts, refer to "**Layout Setting**". (Page 62)



< Camera Layout >

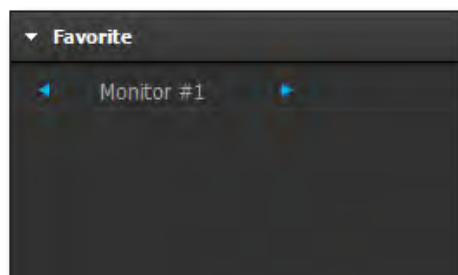


< Map Layout >

## Favorites

The camera layout of the selected monitor can be added to Favorite (32 Korean characters or 64 letters).

- The Favorites are stored separately for each user.



## Using Map Layout

### Selecting Split View Mode for Map Layout

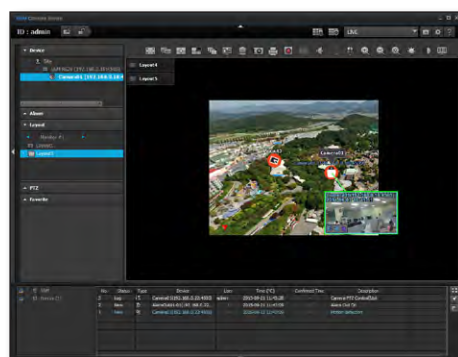
When selecting a Map Layout, up to 10 split view modes are available for the corresponding.




### Utilizing the Map Layout

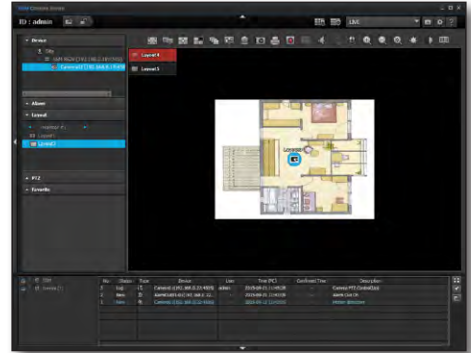
In the split view mode, a desired layout can be applied quickly.

- The Free mode places the video right upon the camera icon when the icon on the map layout is clicked.
- The other 9 modes place the camera's video on the first unoccupied tile when clicked the camera icon.
- To delete the selected video, press the **[Delete]** key on the keyboard.
- Map tile link line : When a camera icon or image window is clicked, the image window and camera are connected by a line.
- Icon tool tip : Place the mouse pointer on a camera icon on the map layout to display the description input in "**Device > Register**" of Configuration Manager.



# live viewer

- Mini map : Double click the Map Link button or layout group link to display the mini map page.
- To exit Map Layout mode, click [  ] button.
- If you select a layout group in the layout tree, the first map that belongs to it will be displayed. Also, the screen will display the button you can press to move to the map that belongs to the group.
- Camera
  - Tile search : It finds the tile showing the camera image.
  - Tile delete : It deletes the tile showing the camera image.
  - Attribute : It shows the information of the connected camera.
  - Instant Player : It runs the Instant Player.
- Alarm Out
  - Alarm Out On : It turns on the alarm output setting.
  - Alarm Out Off : It turns off the alarm output setting.



## To initialize the angle

Click on the [  ] button and then the Move to Map button to initialize the angle.



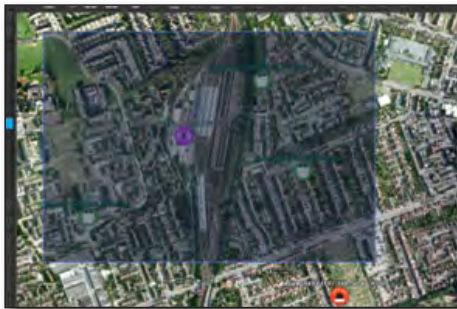
- Refer to "**Layout Setting**" for more details of layout. (Page 62)
- Refer to "**OSD Display**" for further information on setting the mini map. (Page 165)

## To move around the map

- While holding down the mouse's right click, move your mouse to change the map angle.  
While holding down the mouse's left click, move your mouse to change the map location.



- Press the 'Shift' key and drag the mouse to draw a rectangle and select all camera icons within the rectangle. Drag the selected icons to the map to display the image tiles of the selected cameras on the map, to the multi-monitor to display the images of the selected camera, and to the view matrix setting screen to set the selected cameras in the view matrix.



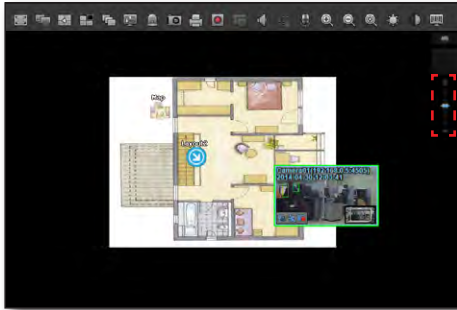
- If the mini map is checked in the console setup, the mini map is displayed when the Map Link / Layout Group Link icon is double clicked.



**To zoom in/out**

Use zoom control bar to zoom in/out the current map screen. To zoom in/out, click the control bar in the middle and drag. Mouse wheel button zooms in/out the map too.

- When the image tile on the map is double clicked, the size is changed in the sequence of 1X, 2X, 3X → 1X, 2X ....

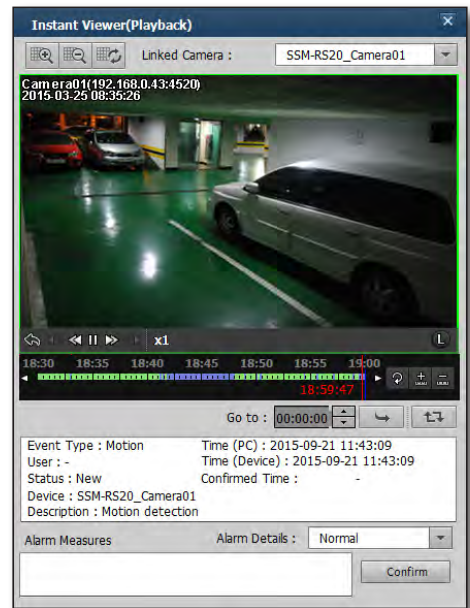


## Play Instant Viewer (Playback)

The camera icon on the map layout blinks if an event occurs. Double click the camera icon to display "**Instant Viewer(Playback)**".


It enables checking the event and digital zooming on the video screen.

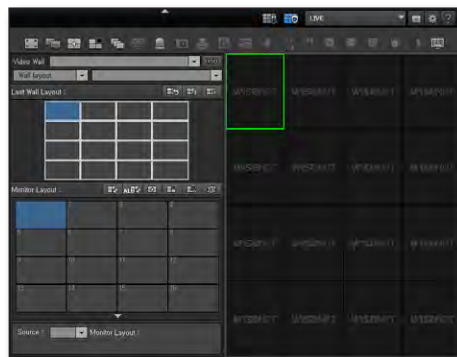
- For further information on using the Instant Viewer, refer to "**Instant Viewer**". (Page 121)







## VIRTUAL MATRIX CONTROLLER

Virtual Matrix Controller is used to control the SVM (Smart Virtual Matrix) S/W and it requires installation of the SVM. Virtual Matrix Controller can only retrieve the settings in the SVM and apply or edit them. It cannot save the modifications. If you want to save the changed settings, you need to use the SVM.







1. Click on the [  ] button in the top of the SSM Console screen.
2. In the right hand side of the video window, the Virtual Matrix control screen will be displayed.



### Functions of the monitor layout viewer button

-  : Returns to the mode previous to wall spot.
-  : Loads the video displayed on the wall monitor into the program.
-  /  : It starts or stops the Advanced Wall Layout mode when the Wall Layout is selected.

It starts or stops the Wall Sequence/Wall Spot when the Wall Sequence/Wall Spot is selected.

- Advanced Wall Layout mode : This refers to changing the monitor layout, monitor sequence, tile spot and monitor spot in the wall layout to be in a run ready condition.
-  : Removes the event displays from the selected tile.
-  : Removes the event displays from the selected monitor.
-  : Changes the monitor layout pattern.
-  : Deletes the displayed content from the selected tile.
-  : Deletes the displayed content from all the tiles.
-  : Reverts to the last saved monitor layout.



- A tile is a single unit of video displayed in the monitor.
- While editing the monitor layout, if you want to work on another monitor layout, then click on it to move to it immediately.
- The information display window in the bottom of the monitor layout will display the <Wall Layout> if you click on it and will display the <Monitor Layout> if you click on it.

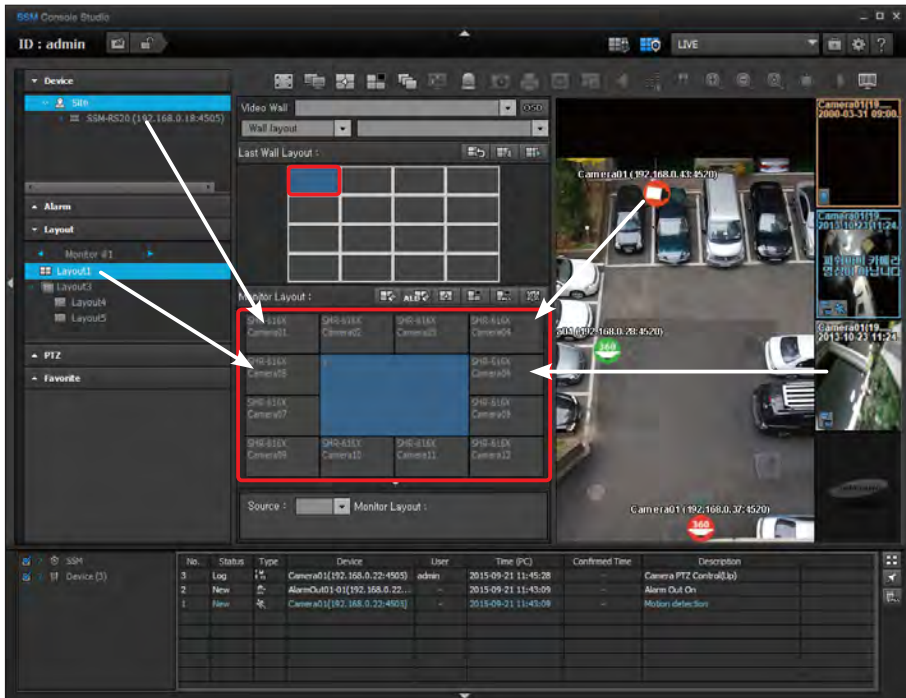
### To apply a Wall Layout

1. Select a registered wall.
2. Set the wall mode to Wall Layout.
3. Select a wall layout to use.  
The wall layout will be immediately applied to the wall.
4. The selected Wall Layout name will be displayed.



# live viewer

## To edit the Monitor Layout



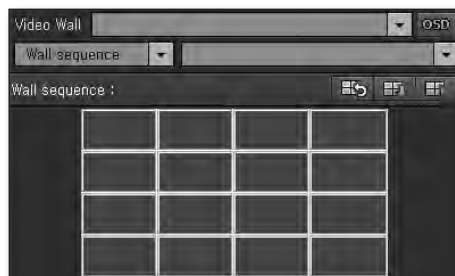
1. Double click a tile in the wall layout to display the information of the selected tile.
  - The information of the selected tile : Monitor layout, map layout, monitor sequence, tile spot and monitor spot data are displayed. Although the monitor layout data include the details of the layout, other items only display the object name.
2. Drag and drop the device/layout/map icon/live video to the monitor layout. It will be reflected in the wall on a real time basis.
  - Video that can be assigned by dragging and dropping
    - Drag a device and assign it to the monitor layout
    - Drag a layout and assign it to the monitor layout
    - Drag an event and assign it to the monitor layout
    - Drag the icons in the map layout to allocate them to monitor layout. (Multiple icons can be selected using the <Shift> key.)
    - Drag video played in the SSM and assign it to the monitor layout
3. However, it is not reflected on the wall right away if the wall mode is active.



### To run a wall sequence

A wall sequence is a function to shift multiple wall layouts in order to view multiple layouts on a single wall.

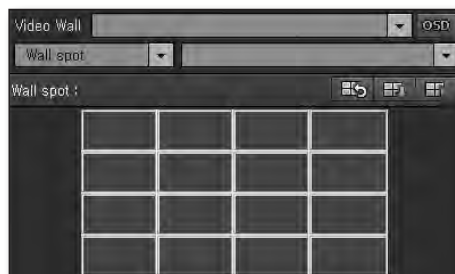
1. Select the wall mode to Wall Sequence.
2. Select a specific wall sequence from the wall sequence list.
3. If you press it once, a wall sequence will appear. Press it one more time to terminate it.



### To Run Wall Spot

The wall spot is a function to change the wall image when an event is generated in a device. A spot is a function to change the wall video when an event occurs on a specific device.

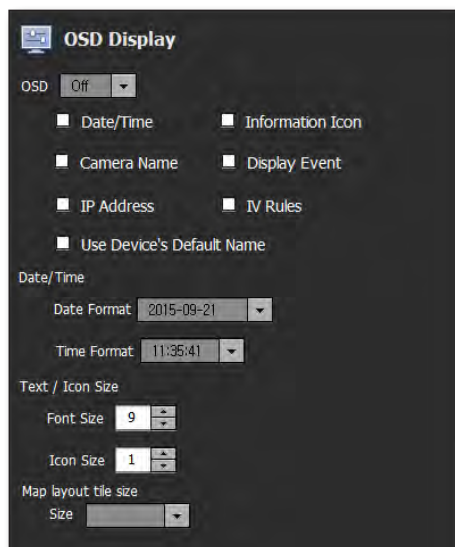
1. Select the wall mode to Wall Spot.  
The wall spot added in SVM is displayed.
2. Select a wall spot from the wall spot list.
3. Click once to start the wall spot and click again to stop the wall spot.



### If you want to set the OSD on the wall

Set the OSD to be displayed on the video wall.

1. Click on the [OSD] button.  
The OSD settings screen will be displayed.
2. Select an OSD item to be displayed in the video.
3. Click on the [OK] button after settings are completed.  
Click on the [Cancel] button to return to the previous screen.

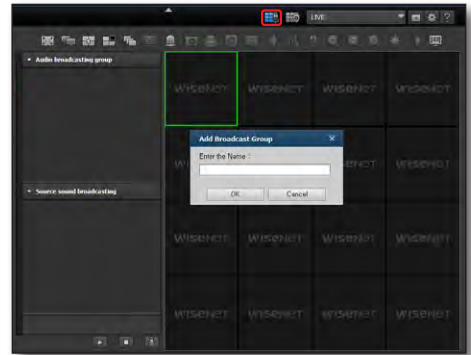


## AUDIO BROADCASTING

### To Add/Delete an Audio Broadcasting Group

A broadcasting group can be added and a camera can be registered for audio broadcasting.

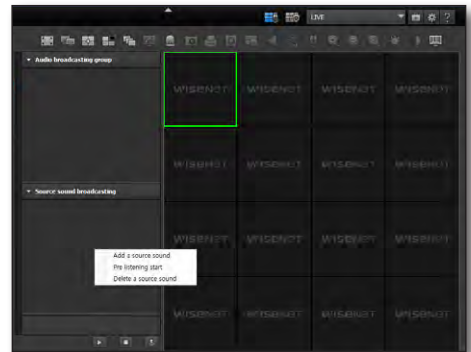
1. Click the right mouse button on an audio broadcasting group and select **<Add Broadcasting Group>**.
2. Enter the name in the name input box and click the **<OK>** button.
  - The name can be changed after the broadcasting group is added.
3. Register a camera by dragging and dropping under the added broadcasting group.
  - There is no limitation on the number of broadcasting groups to be added, but up to 16 cameras can be registered.
4. To delete an added item, select the item and right click the mouse and select **<Delete Item>**.




### To Add/Delete the Source of Audio Broadcasting

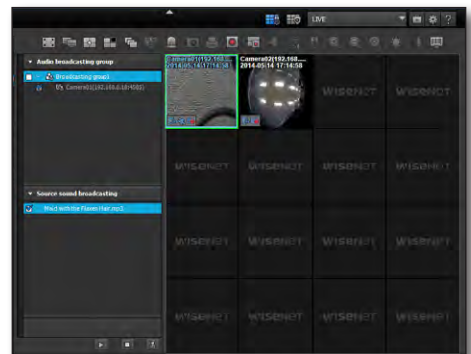
The sound files in the PC can be selected for broadcasting.

1. Select 'Audio Broadcasting', right click the mouse and then select **<Add Sound Source>**.
2. Select a sound file to add.
  - Only mp3 and wav format sound files are supported.
3. Right click the mouse to preview or stop preview of the added sound file.
4. To delete an added sound file, select the file and click the right mouse button then select **<Delete Sound Source>**.



- The registered cameras can be grouped for simultaneous broadcasting.

- User's voice can be transmitted using [  ].
- Up to 16 cameras can be selected at once for broadcasting.

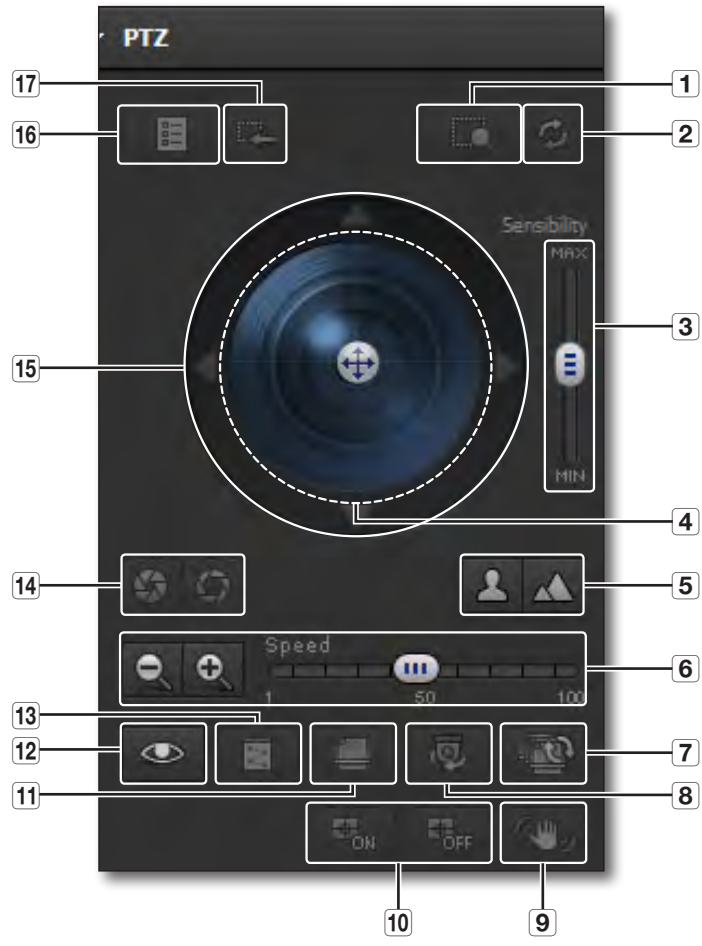


# PTZ CONTROL

If the connected device supports PTZ functions, you can control PTZ camera remotely.

- ☑
  - Even the box cameras without the PTZ function can use some function of <Panomorph Lens> or <Fish-Eye>.
  - Depending on camera model used, PTZ control may not be supported. For further information, refer to the camera's user manual.
  - If the camera supports Fish-Eye or SUNAPI, the home position can be set.
  - Select the PTZ camera and click the arrow key to move the PTZ camera in the selected direction.





## Names and Functions of PTZ Control Window



# live viewer


Item	Description
<b>1</b> Area Zoom	Controls PTZ to fill in tile with the dragged area on the video.
<b>2</b> Go to 1x Zoom	Restores the original 1x zoom from Area Zoom screen.
<b>3</b> PTZ Sensitivity Controler	Adjusts the PTZ ball control sensitivity to faster or slower.
<b>4</b> PTZ Ball	While operating PTZ, click and hold the ball and drag to desired direction to adjust the camera's framing.
<b>5</b> Focus Adjustment	Adjusts the camera's focus manually. <ul style="list-style-type: none"> <li>▪ Focus Near : Adjusts the focus range to closer distance.</li> <li>▪ Focus Far : Adjusts the focus range to farther distance.</li> </ul>
<b>6</b> Zoom Adjustment	Zooms in / out with controllable zooming speed. Zooming activates only if clicked at the speed set by speed slider. <ul style="list-style-type: none"> <li>▪ Zoom Speed Slider : Sets the zooming speed out of 1 – 100 range.</li> <li>▪ Zoom In : Zooms in to enlarge the image.</li> <li>▪ Zoom Out : Zooms out to reduce the image.</li> </ul>
<b>7</b> Tour	This is to call a group and its presets in order for monitoring.
<b>8</b> Swing/Autopan	Sets the camera to repeat swinging from a certain position to another. According to the configuration, you can set to rotate or swing. You can only activate or deactivate <Autopan> option of the camera.
<b>9</b> DIS On/Off	DIS function can be turned on or off.
<b>10</b> Auto Tracking On/Off	It is possible to turn the Digital Auto Tracking/Auto Tracking functions on or off.
<b>11</b> Group/Scan	Controls the camera according to the added preset groups in order, where a preset group can be of multiple presets. You can only activate or deactivate <Scan> option of the camera.
<b>12</b> Trace/Pattern	Moves and zooms the camera with a predefined settings automatically. You can only activate or deactivate <Pattern> option of the camera.
<b>13</b> Preset	You can save specific camera's view as a preset, or recall a preset to set camera framing.
<b>14</b> Iris Control	Controls the amount of light travels through the lens. <ul style="list-style-type: none"> <li>▪ Close Iris : Sets to bigger F number for less light exposure, resulting in darker image.</li> <li>▪ Open Iris : Sets to smaller F number for more light exposure, resulting in brighter image.</li> </ul>
<b>15</b> Camera Menu Traversal	While opening the camera menu, adjust the selected position.
<b>16</b> Switch to the Menu Mode	Moves to the connected camera's settings menu screen.
<b>17</b> Exit the Menu Mode	Exits the menu setup.

## Auto Tracking

1. Click [  ] to run auto tracking.
  2. Press <Alt> key to select the object to auto track in the image.  
When the movement of the selected image is detected, the camera moves in the detected direction.
    - [  /  ] is enabled only for models that support Auto Tracking.
-  ▪ DAT is usable only when a SUNAPI camera is registered.

## Using the Camera Menu


Click Camera Menu button to toggle display of the connected camera's menu on the screen.

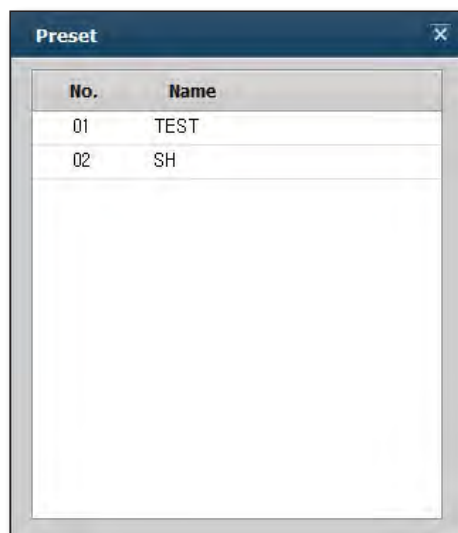
1. Using the PTZ Ball up/down/left/right control button, move to a desired menu.
2. To select the menu, click PTZ ball control.
3. To exit camera menu mode, click [  ] button.

## Preset Control

Click [  ] button to display saved list of presets.

Select one from the list to set the camera's view to the saved location.

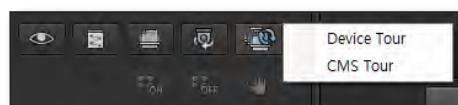
-  ▪ Presets can be saved in Settings menu.  
For further information on preset, refer to "Setting Presets".  
(Page 59)



## Run Tour

Click the [  ] button to run the tour function.

1. Device Tour : Runs the tour function on the settings page of the equipment.
2. CMS Tour : Runs the tour configured in "SSM Configuration Manager."

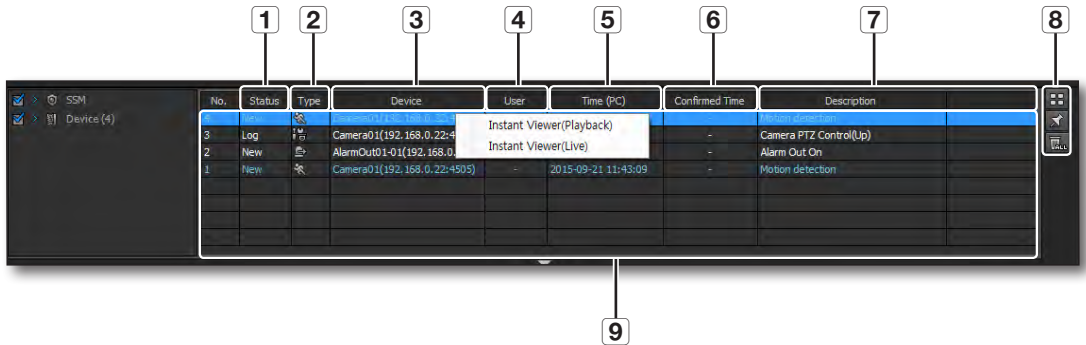





## EVENT LIST

Lists up device events in real-time.

### Viewing Real-time Events

You can check device events from all connected devices in the list.  
Filter the events by selecting type of events for the Event List.

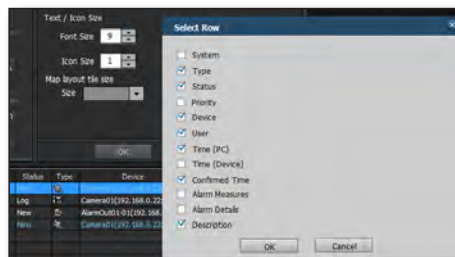


	Item	Description
1	Status	Shows the event status.
2	Type	Shows occurred event's type as icon.
3	Device	Shows the device type.
4	User	In SSM system, it shows the current SSM user's account information. For general device-related events (motion detection, sensor, etc.), the user ID who acknowledged the event is shown.
5	Time (PC)	Shows the event time.
6	Confirmed Time	Shows the time acknowledged.
7	Description	Describes the meaning of the event.
8	View Thumbnail Image	 Displays a thumbnail view at the top of the log list when an event occurs.
	Scroll Lock	 Locks the list not to automatically scroll.
	Clear List	 Fully clears out the event list.
9	Event List	Shows real-time events of the device selected in the left pane. Double click a listed item to open "Instant Viewer" pop-up window. Right mouse clicking on an item opens context menu of "Instant Viewer (Playback)" and "Instant Viewer (Live)".

## Selecting displayed items


You can select items to be displayed in the event list.

1. Select the title on top of the event list, and right click on it.
2. Select event items to be displayed in the list, by checking the checkbox.
  - Items such as event time (Device), measures taken and alert history can be listed additionally.
  - Event priorities are additionally displayed. Double click the event priority column to sort the events according to the priority.



## View Thumbnail Image

Displays a thumbnail view at the top of the log list when an event occurs.

1. Click the [  ] button.  
The log list is minimized to the bottom and a thumbnail view appears at the top.
2. If there are too many thumbnail images of events generated to display in a single screen, you can scroll down to view more images.
  - Thumbnail images are displayed in the order of occurrence.
  - Up to 500 thumbnail images can be saved, and the oldest thumbnail will be deleted first.



## Use the Thumbnail Contextual Menu

1. On the thumbnail screen selected, right-click the image and a selectable contextual menu will be displayed.
2. Select an item to check the event.
  - Instant Viewer(Playback) : A pop-up window to play the recorded event is launched.
  - Instant Viewer(Live) : A pop-up window to show a live image of the camera that is shooting the scene of an event generated is launched.
  - Delete : Deletes the corresponding thumbnail.



▪ For more information about how to use the instant viewer, please refer to the "**Instant Viewer**" section (page 121).

## PLAYING RECORDED EVENTS

---

Select an event item from the list and right click on it to open context menu of <**Instant Viewer (playback)**> and <**Instant Viewer (Live)**>.

Select either one of them to check the video.

No.	Status	Type	Device	User	Time (PC)
3	Log	⚙️	Camera01(192.168.0.224)		
2	New	🔔	AlarmOut01-01(192.168.0.224)		
1	New	🔔	Camera01(192.168.0.224)		2015-09-21 11:43:09

The context menu is open over the first row (No. 3) and contains two options: "Instant Viewer(Playback)" and "Instant Viewer(Live)".



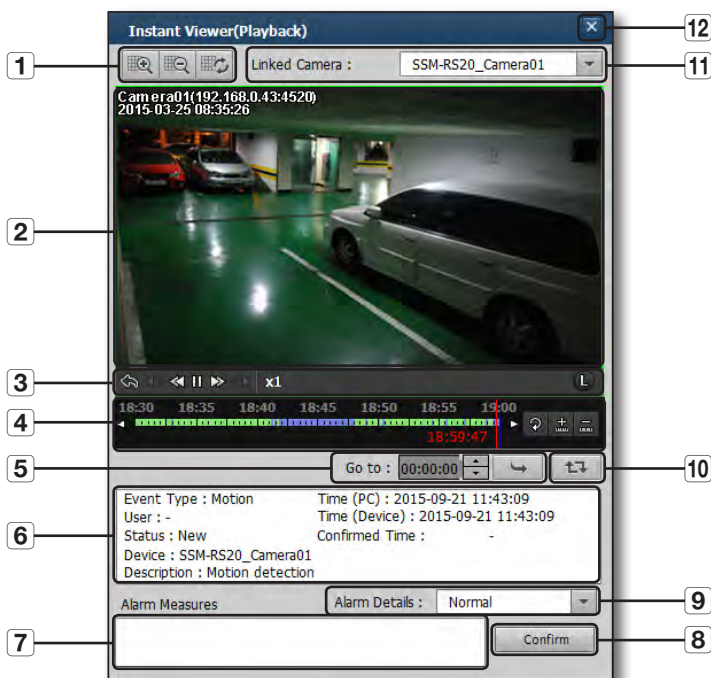
▪ The <**Instant Viewer (playback)**> is playable only if the corresponding device contains saved data.



## Instant Viewer

Select an event displayed in the event list, right-click the selected event and click on the <Instant Viewer (Playback)> in the contextual menu to view the recorded video of the event location, or click on the <Instant Viewer (Live)> to view the live image of the event location.

### Names and Functions of Instant Viewer



Item	Description
1	<b>Video Control</b> Controls digital zooming of the player screen.
2	<b>Display Pane</b> Shows the video.
3	<b>Video control buttons</b> Controls the current event playback.
4	<b>Timeline</b> Moves to a specific time in the current video or expands/shrinks the timeline.
5	<b>Select Time/Play</b> Plays the video at a designated time.
6	<b>Event Information</b> Shows the event information.
7	<b>Input field for remarks</b> Enter the measures taken or remarks regarding the occurred event.
8	<b>Confirm</b> Confirms and acknowledges the event.

# live viewer

Item	Description
<b>9</b> Alarm Details	You can selectively record alarm event's type when confirming the event.
<b>10</b> Repeat Play	Plays the video from the pre-play time (seconds) to the post-play time (seconds) based on the time at which the event occurs. Repeat playing the section from the pre-play time to the post play time. <ul style="list-style-type: none"> <li>You can configure the event pre-play time (seconds) and the event post-play time (seconds) in "Setup &gt; Event &gt; Playback time for event".</li> </ul>
<b>11</b> Connected Camera	For a sensor event, the video of the camera connected to the camera video/sensor specified as the action (output) type in event action can be selected for viewing. For a camera related event, the camera image specified as the action (output) type in the camera video/event action of the generated event can be selected for viewing.
<b>12</b> Exit	Closes and exits the Instant Player. If [Confirm] button is not clicked, exiting the player does not confirm the event.



- Multiple password certification is needed for NVRs that support the multiple passwords function. (Refer to the specifications of the device being used for details.)
- Recorded video footage can be played with Event Viewer, Search Viewer and Instant Player. Note that one saved footage cannot be played with multiple viewers at the same time.

## Names and Functions of Video Control Buttons

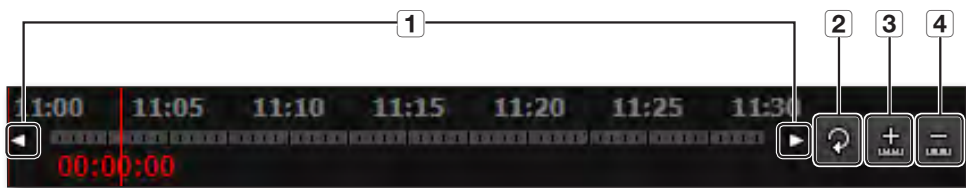


<b>1</b>	Play the video 30 seconds ahead of the occurrence of the event
<b>2</b>	Step by frames
<b>3</b>	Forward/backward fast play
<b>4</b>	Pause/Play
<b>5</b>	Play Speed
<b>6</b>	P: Playback mode L: Live image mode



- When you select an event and run the instant viewer (playback), the video is played a designated number of seconds (event pre-play time) ahead of the time at which the event was generated; alternatively, when running the instant viewer (playback) on the video window, the video is played a designated number of seconds (pre-play time) ahead of the current time.

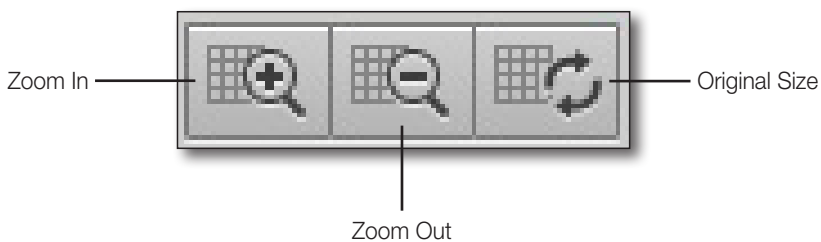
## Names and functions of timeline



1	Adjust the time intervals of timeline
2	Refresh the timeline
3	Expand the timeline
4	Shrink the timeline

 Only activated in playback mode.

## Video Control / Zoom In / Zoom Out Buttons



## LIVE VIDEO SCREEN

Live feed from the connected device is displayed in the selected tile.

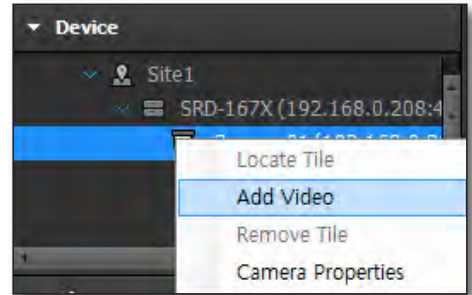
### Monitoring by Selecting Cameras

#### To display video feed from a camera on an unoccupied tile

- Double click a camera from the device tree to display its video feed on the first unoccupied tile.
- Select a tile, and open the context menu to select **<Add Video>**.



- In case of using multiple monitors, it is added to the monitor which is activated.
- When there's no empty tile, the video is displayed on the focused (selected) tile.




#### To display video feed from a camera on a specific tile

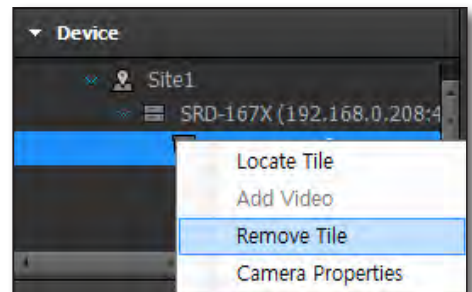
1. Select a camera from the device tree.
2. Drag it and drop on a desired tile.

#### To change the video tile

1. Select a tile.
2. Drag it and drop on a desired tile.  
Selected two tile's video display swaps each other.

#### To remove video feed from a tile

1. Select a tile or camera to delete and right click on it.
  - Or, press the **[Delete]** key of the keyboard to promptly delete.
2. From the context menu, select **<Remove Tile>**.  
The selected camera's video is removed from the tile and it becomes unoccupied.
3. To remove all video feeds from every tile, click [  ] button on top of video pane.  
Entire tiles become unoccupied.



## Using Shortcuts

Shortcut keys make SSM even more more user-friendly.

- To open videos using a shortcut key

- 1) Press the <Alt> key. (Keep the 'alt' key pressed before pressing the <Enter> key.)
- 2) Input a number key.
- 3) Press the <Enter> key to open the selected video.

- 
 Check the shortcut key definition in "**Configuration Manager**".

## Using the Tile Context Menu

Select a video tile from the video pane and right click on it to open the context menu.

Click to select desired ones from the appeared list of available menu items.

### Remove Tile

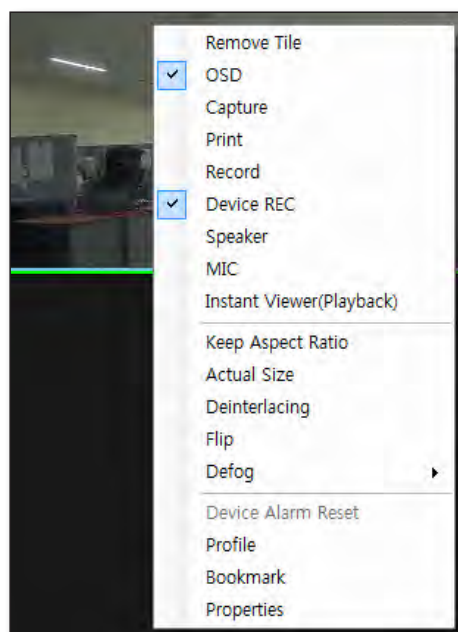
Removes the video from the selected tile.

### OSD

Sets whether to display on-screen display menu and icons on the video screen, such as date, camera name and other information.

It acts the same to that of the [  ] button on top side of video pane.

- 
 For OSD information selection, check the item in the <OSD Display> selection menu of <Screen>. (Page 165)




## Capture

Saves the video of a selected tile or all registered videos in a designated path. You can select a file type when designating a path.

### To save the captured screen

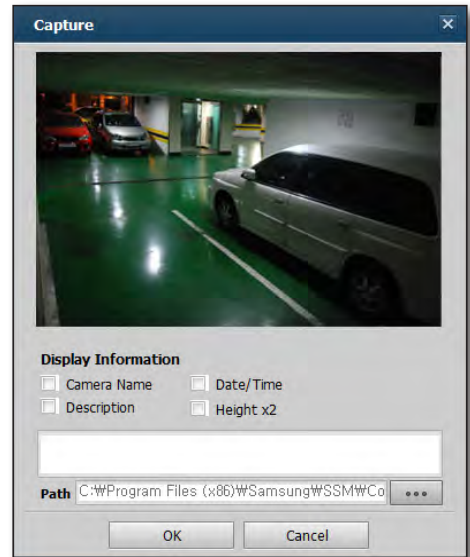
#### 1. Select the <Capture>.

Right-click the window of a video to save and save the video of a selected screen only, or click the  button at the top of the video screen to save the videos of the entire split screens.

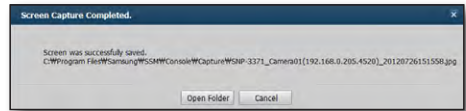
- Depending on system configuration, saves immediately without displaying the screen capture setup step.

#### 2. In <Display Information>, check to select information items to be saved with the captured image.

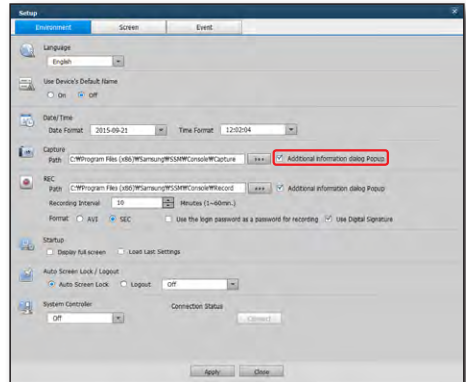
- Camera Name : If checked, saved capture contains the camera name at the top of the image.
- Date/Time : If checked, saved capture contains the time captured at the top of the image.
- Description : If checked, saved capture contains the description recorded in the Description text field.
  - Up to 50 characters can be entered.
- Height x2: Saves the captured image with a height that is twice the height of the original image.
- Path: Selects the path to save the captured image. You can choose the file type when selecting the path. (JPG or BMP file format is available)
  - You can designate the save path in "Environment > Capture" in the Settings menu.



3. When done with setup, click **[OK]** button.  
A popup saying save completed appears.
4. To check saved capture file, click **[Open Folder]** button.




- If **<Additional information dialog popup>** option in **"Environment > Capture"** is selected, every capturing prompts with file path and image information on the popup dialog.
- If not selected, capturing directly saves the captured image without prompting with additional information dialog and completion dialogs appears.



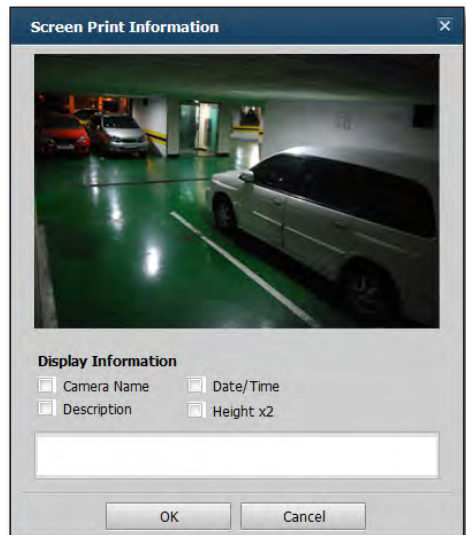
## Print

Outputs the image of a selected tile or all registered images to a printer connected to the PC.


### To print the screen

1. Select the **<Screen Print Information>**.  
Right-click the window of a video to print and print the image of only a selected screen, or click the [  ] button at the top of the video screen to print the image of the entire split screens.
2. In **<Display Information>**, check to select information items to be printed with the screen image.
3. Click **[OK]**.  
Print window of the printer connected to your computer appears.

- For further details on **<Display Information>**, refer to **"Capture"**. (Page 126)



## Record

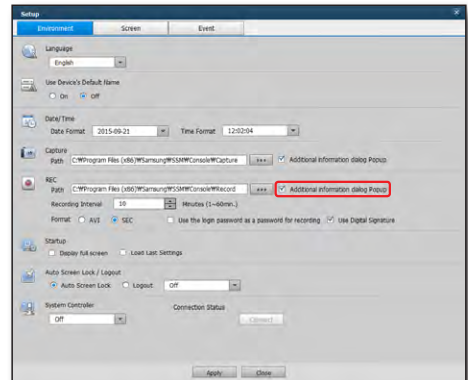
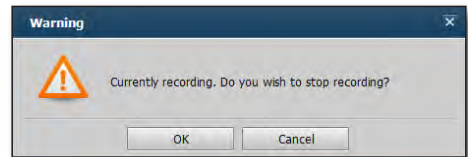
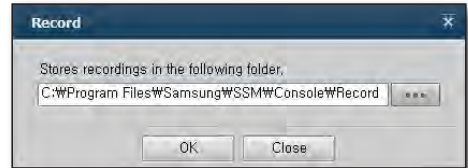
Starts and stops recording of the currently selected tile.  
It acts the same as the [  ] button on top side of video pane.

### To start recording

1. Click **<Record>**.  
The "Record" window appears.
  - Depending on system configuration, records immediately without displaying the record setup step.
2. Set the file path and click **[OK]** button.  
The record indicator appears on the tile and starts recording.
3. To stop recording, click **<Record>** again.  
A "Warning" dialog appears.
4. Click **[OK]**.  
Unchecking the checkbox in front of **<Record>** stops the recording.



- If **<Additional information dialog popup>** option in "Environment > REC" is selected, every recording prompts with file path on the popup dialog.







## Device REC

Starts or stops recording onto the device connected to the tile's camera. It acts the same as the [  ] button on top side of video pane.

## Speaker


Transmits or stops Transmitting sound from the selected camera. It acts the same to that of the [  ] button on top side of video pane.

## Microphone

Produces sound through the microphone at a remote device. It acts the same to that of the [  ] button on top side of video pane.

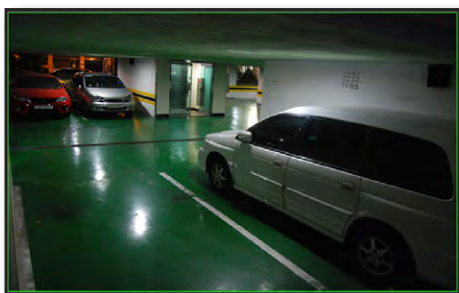
## Instant viewer (Playback)

An instant viewer (playback) pop-up window for the selected channel is launched.

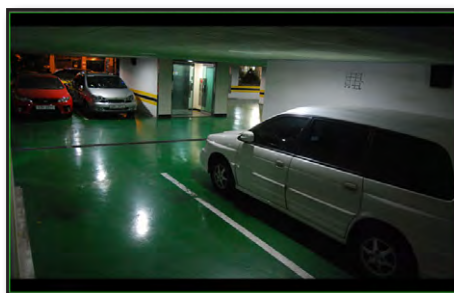
-  ■ Only playable if the device contains recorded footage data.
- For further use of the Instant Player, refer to "Instant viewer". (Page 121)

## Keep Aspect Ratio

Keeps original video's aspect ratio. If not selected, the video is filled into the video pane.



< Variable Aspect Ratio >



< Keep Aspect Ratio >

## Actual Size

If selected, the video is reset to the original size. If the video's size is bigger than the screen, you can move it with mouse dragging.

# live viewer

## Deinterlacing

Sets or cancels deinterlacing of the tile's video.

## Flip

Flips the video vertically.

## Fog Removal

The fog removal menu is displayed for cameras supporting the fog removal function.

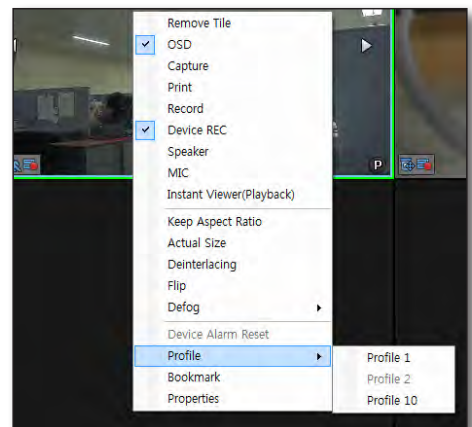
- You can select Off / Auto / 1~10.

## Device Alarm Reset

Initialize the alarm settings.

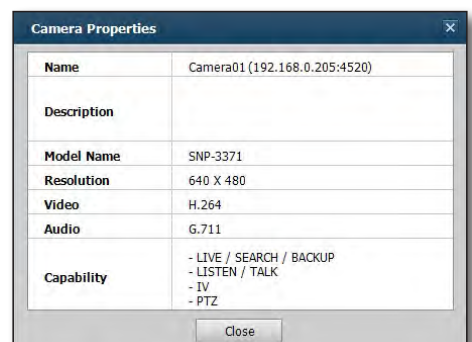
## Profile

In the camera settings page, a list of profiles configured is displayed in order. You can select a profile to output. The profile currently in the process of output is displayed as inactive.



## Properties

Shows the selected camera's property information in a pop-up window.




## DIGITAL ZOOM

---


Digital zooming allows the enlarging of the video as if using a magnifier. It works on the displayed image by enlarging it digitally, which is different than optical zooming of lens. Digital zooming provides magnification up to 16 times of the original.

### Setting Digital Zoom Area

1. From the top side menu, click [  ] button.  
It switches to digital zooming mode, and every clicking magnifies the image by 50%.
2. Click a desired video and then drag it or click Zoom In button for further zooming.  
Enlarged image is centered by the point you clicked.  
When an area is selected by dragging, the selection fills the screen.




### Digital Zooming Out

1. From the top side menu, click [  ] button.
2. Click a video.  
Reduced image is centered by the point you clicked.  
Every clicking of Zoom Out button reduces the image by 50%.



### Exiting Digital Zoom

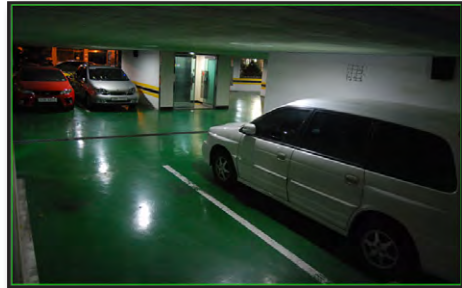
1. From the top side menu, click [  ] button.
2. Digital zooming ends, and the video is reset to the original.

## Moving Video Area with Pan Cursor


1. While in digital zooming, click on the zoomed area marker shown near the bottom of digital zoom screen.
2. While holding mouse button, drag to move it to a desired area.




< In Digital Zooming >



< Released Digital Zooming >

-  If clicked Zoom In/Out button, it resizes by 50%.
- Restoring to the Original Size exits digital zooming.



## Switching to Full Screen Mode


1. From the top side menu, click [  ] button.  
Only the video pane fills the screen.
2. To exit the full screen mode, press [Esc] on the keyboard.

## Running Sequence

This function enables an automatic sequence display of channels in a pre set time.

Used when there are more connected channels than the current screen splits. It switches to the next set of channels according to the current screen split mode.

1. From the top side menu, click [  ] button.  
Runs sequenced display in the current split screen mode.
2. To exit sequence mode, click [  ] button again.

-  While in sequence mode, Map Layout becomes unavailable.
- The Sequence mode supports split screen mode up to 16-splits. If you configure Sequence mode to include a layout having more than 16 splits, actual Sequence mode operation limits playback to 16-split mode.
- You can define the order of layouts and their dwell time for sequence mode in "Setup > Screen > Monitor". (Page 164)

## Fish-Eye View Mode

For Fish-Eye cameras, the Fish-Eye View mode context menu is available.

- Over View : Original image
- Panorama : The panorama image split to top and bottom can be moved independently.
- 4-way split screen : Each part of the 4-way split screen can be moved independently.
- Single View : Default view. The image is displayed in a single view.
- 1 Over View + 3Rectangles : The screen is organized into an over view and 3 way split images. Each part can be moved separately.

## Use of Panomorph Lens

The function supports a viewing angle of 360° using the mouse in the video tile of the camera on which the Panomorph lens is enabled.

1. Pan/Tilt Operation: Click on a tile and drag it to move the camera along the mouse drag.
2. Zoom Operation: Right-click and drag the mouse up or down to zoom in or out.
3. The PTZ panel can be used like a conventional PTZ camera.
4. It supports the Area Zoom and Preset functions like a conventional PTZ camera.
5. It supports the zoom function using the mouse wheel like a conventional PTZ camera.
  - Perimeter : This is a panorama image split into top and bottom.
  - 4-way split screen : Each part of the 4-way split screen can be moved independently.
  - Single View : Default view. The image is displayed in a single view.



- When printing the Panomorph or Fish Eye image, the position set as the home position in CM is printed in single view by default.

## Using Shortcuts

Shortcut keys make SSM even more more user-friendly.

- To open videos using a shortcut key
  - 1) Press the <Alt> key. (Keep the 'alt' key pressed before pressing the <Enter> key.)
  - 2) Input a number key.
  - 3) Press the <Enter> key to open the selected video.




- Check the shortcut key definition in "**Configuration Manager**".

- Controlling PTZ Camera with Keyboard

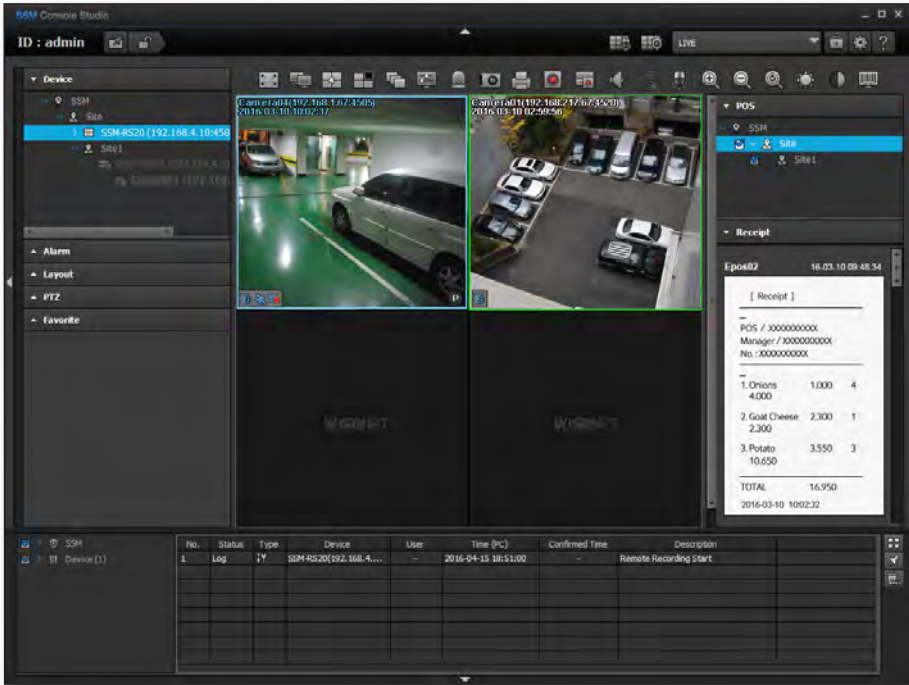
Select a PTZ camera and press an arrow key to move the PTZ camera in the selected direction.

## POS


You can check the list of receipts of the connected POS device.

When you click the [  ] button at the top of the video window, the list of POS and receipts is displayed on the right side of the live screen.

- Function that is supported by NVR.



### View list of POS devices

1. Click the [  ] button at the top of the video window.
2. The list of POS devices connected is displayed.

### View List of Receipts

1. Select a POS you want to print out on the list of POSs connected.
2. The receipts of the POS selected are displayed in consecutive order.



- Up to 50 receipts are displayed in the order of payment time.
- Select a specific POS in the POS device list and double-click or drag to the live screen, and the live video of the camera connected to the POS is displayed.
- When POS payment is completed, the applicable information is output on the event log screen.
- The name of the POS is displayed on the screen of a camera connected to the POS.

## View POS Instant Viewer (playback)

When you double-click the receipt/receipt event on the right side of the live screen, an "Instant viewer (playback)" window will launch.

- For more information about the instant viewer, please refer to "Instant Viewer". (Page 121)

Shows the list of devices connected to the POS device.

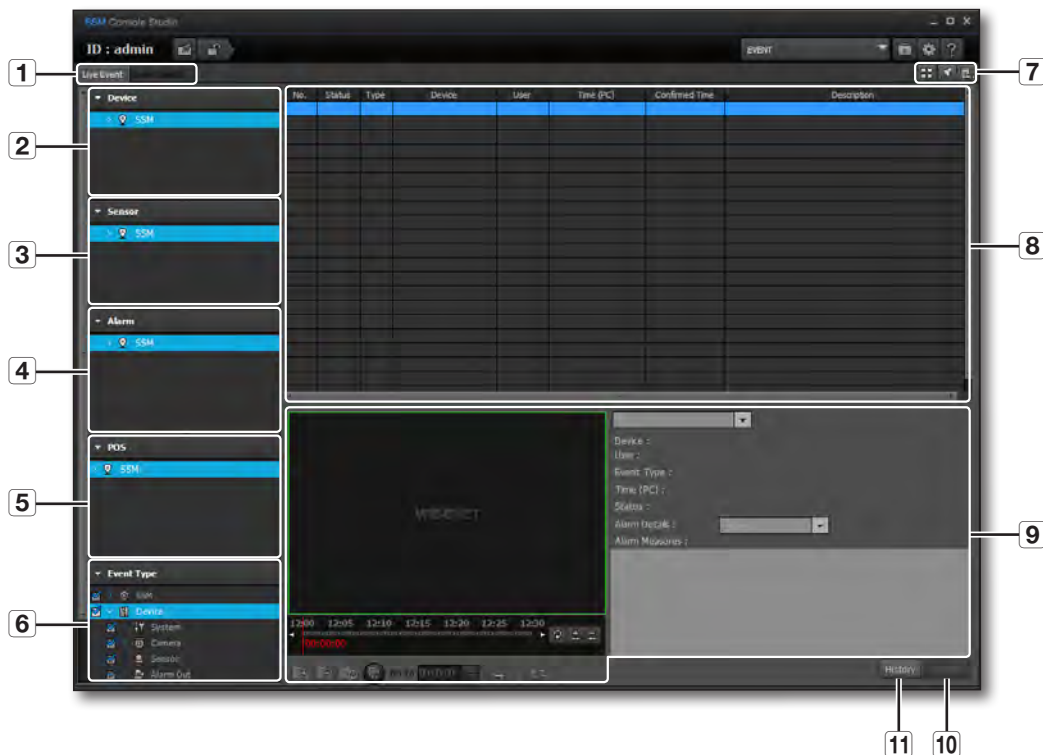
The screenshot shows the 'Instant Viewer(Playback)' window. On the left, a video feed displays a silver car in a parking garage. The video player includes a timeline from 18:30 to 19:00 and a play button. On the right, a receipt for 'Epos01' is displayed, dated 16-04-27 09:26:09. The receipt lists items: Onions (1.000 @ 4.000), Goat Cheese (2.300 @ 2.300), and Potato (3.550 @ 3.10.650), with a total of 16.950. Below the receipt, event details for 'EPOS' are shown, including device information and a 'Confirm' button.

Shows the POS information and the receipt information.

# event viewer

It provides viewing of real-time events and searching / playing events of devices.  
 Select [EVENT] menu of the viewer selection tab on the top right side of SSM Console.  
 Or, select [EVENT] viewer on login screen of SSM Console.

## NAMES AND FUNCTIONS OF EVENT VIEWER



Item	Description
1	<b>Live Event / Event Search Tabs</b> Select either one of real-time event and event search.
2	<b>Device List</b> Select a device to display events of the selected device in the event list.
3	<b>Sensor list</b> Select a sensor to be displayed in the event list window.
4	<b>Alarm list</b> Select an alarm to be displayed in the event list window.
5	<b>POS list</b> When you select a POS, only the information of the POS selected is displayed on the event list window.
6	<b>Event Type</b> Shows selected type of events only in the event list.
7	<b>View Thumbnail Image, Scroll Lock, Clear List</b> A thumbnail view of a camera-related event is launched. Locks the list not to scroll, and clears all events listed.



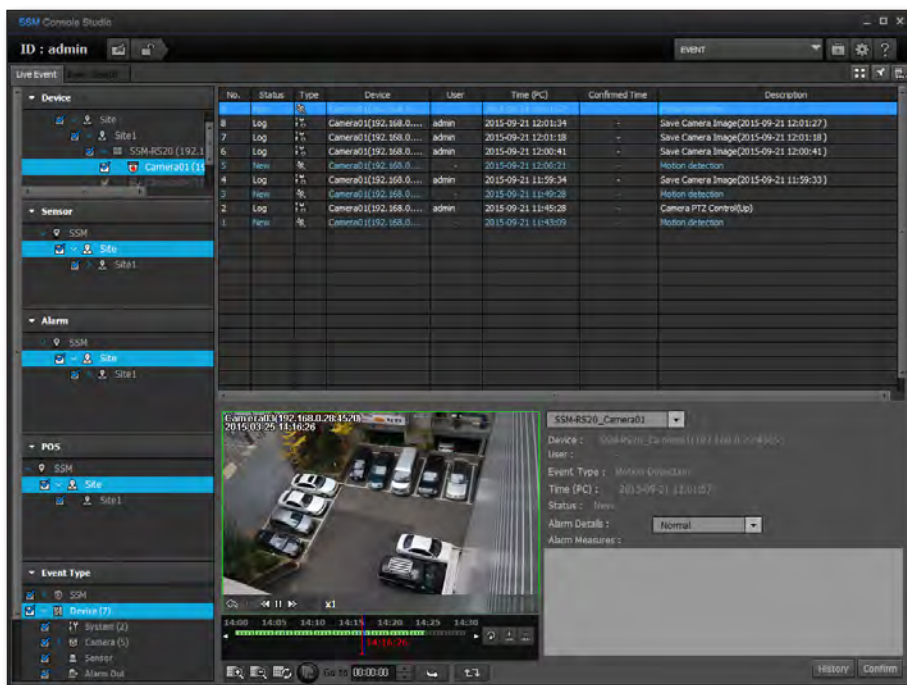
Item	Description
<b>8</b> Event List	Shows events, click column header to sort events by the selected one.
<b>9</b> Event Details	It displays the detailed information and video of the selected event. <ul style="list-style-type: none"> <li>It displays the information of all events.</li> </ul>
<b>10</b> Confirm	When clicked after confirming the event searched, acknowledges the event. All events other than log, SSM (User, System) and Device (System, Alarm Out) can be confirmed as cleared event.
<b>11</b> History	Shows the event history of the selected.

-  The event viewer maintains the tree selection setting and applies it to the tree.

## EVENT SEARCH


### Viewing Live Events

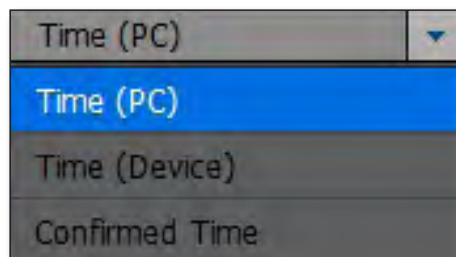
You can check real-time events in the event list.




-  For further details on checking events, refer to "Searching Events". (Page 138)



2. Filter by time to search logs.
  - Time (PC) : You can search for occurred time.
  - Time (Device) : You can run event search based on the device time.
  - Confirmed Time : You can run event search based on the confirmed time.
3. Use calendar to specify search date.
4. Specify the start time and end time.
5. Click the [  ] button.  
Events match the search criteria are listed.

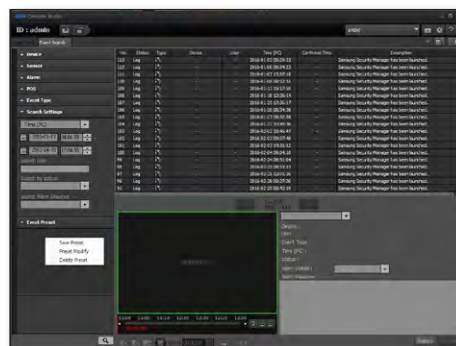


-  Recorded video footage can be played with Event Viewer, Search Viewer and Instant Player. Note that one saved footage cannot be played with multiple viewers at the same time.
- Maximum of 10,000 event search results are displayed.

## Event Preset

Save the event search condition and select a saved search condition to search the events.


1. Right click the mouse in the <Event Preset> section and select <Save Preset>.
2. Input the name of the preset of search condition and time of search then click the <Save> button.
3. You can change or delete the saved event presets.



# event viewer

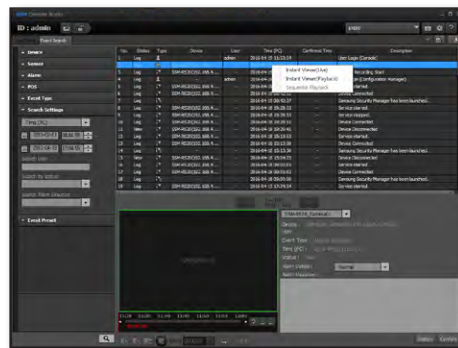
## Consecutive playing of events

Select events in the list to be played consecutively.

1. Select events for consecutive playing from the list of searched events.
2. Select an event and right click on it to select **<Sequential Playback>**.
  - You can click the [  ] button on the event playback control to play the video in order.
3. The selected events will be consecutively displayed on the window.







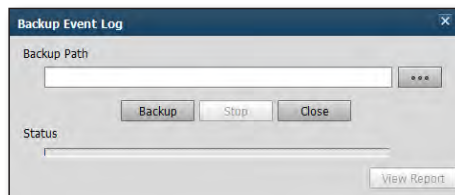
- For more information about how to use the event playback control, refer to the **"Instant Viewer"** section (page 121).



## Backing up event logs

You can backup all the events searched in the list.

1. Press the [  ] button.
2. When the <Backup Event Log> window appears, press the [  ] button to set the backup path and then press the [  ] button.
3. When the backup is finished, press the [  ] button to check the full event details and a stat report.
4. As needed, use shortcut buttons on the top side of the report to print, or save the report as an Excel, PDF or Word file.

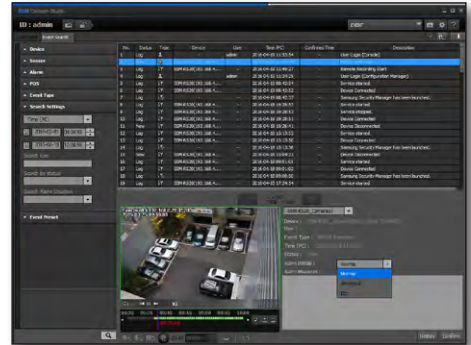


# event viewer

## Confirming Events

You can check details of event searched in the list, and confirm it to end the event situation.

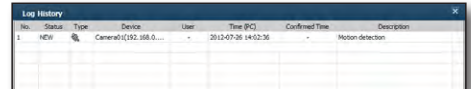
1. Double click an event to see its details from the list.  
In the event details pane, the event video is played as well as its details.
  - Or, select an event and right click on it to open **<Instant Viewer>**.
  - For further information on playback control, refer to **"Instant viewer"**. (Page 121)
2. Check event details and set **<Alarm Details>** to either one of **<Normal>**, **<Abnormal>** and **<Etc>**.
3. Describe the measures taken.
4. Click **[Confirm]** button.  
Once confirmed, it is marked in the list.



## History

For confirmed events, you can see the confirmed details of the selected event from the list.

1. Select an event to see its history from the list.
2. Click **[History]** button.
3. Check event confirmation details.



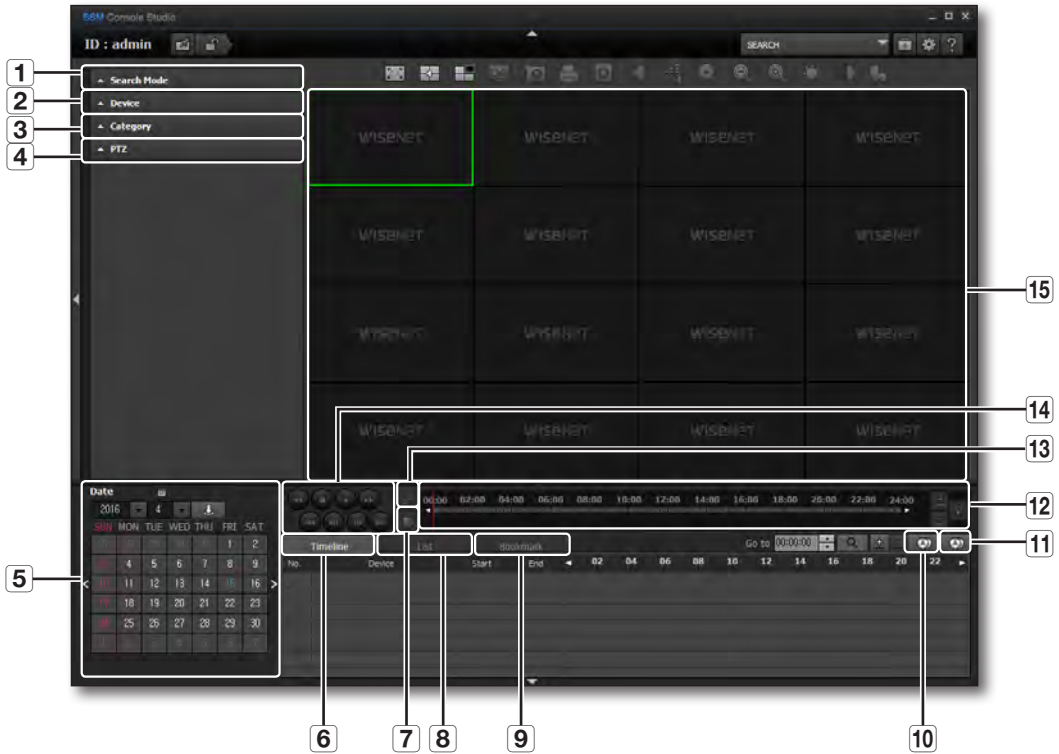
- If user A described intrusion path in the Alarm Measures for an event, and user B added notes on further details of taken measure and confirmed that event, such process of alarm measure can be checked afterwards with History function.

# search viewer

You can search and play footages stored in your local computer or in the device. Select **[SEARCH]** from the Viewer selection menu in the upper-right section of the SSM Console main window.

It is possible to start by selecting **[SEARCH]** Viewer from a login window of the SSM Console startup stage.

## NAMES AND FUNCTIONS OF SEARCH VIEWER



Item	Description
<b>1</b> Search mode	You can select Basic, Advanced, Masking, Folder or POS as the search mode.
<b>2</b> Device List	Shows devices that can be searched over.
<b>3</b> Category	Shows available event types for search.
<b>4</b> PTZ	The PTZ panel is enabled to use PTZ when replaying the recorded file on a camera set up to use the Panomorph lens. The PTZ, AreaZoom, and preset functions can be used. <ul style="list-style-type: none"> <li>Refer to "<b>Use of Panomorph Lens</b>" for more details. (Page 133)</li> </ul>
<b>5</b> Date/Time	Dates with found matches from the selected device is marked on the calendar.

# search viewer

	Item	Description
6	Timeline	Sets the search result list to timeline format.
7	Add a Bookmark	Adds a bookmark for the currently played screen.
8	List	Sets the search result to a list of events sorted by events.
9	Bookmarks	Shows the bookmarks added to the bookmark list.
10	Backup	Sets the time period for backing up searched data.
11	View Onetime Schedule Backup Status	You can check the onetime schedule backup settings configured in the backup window.
12	Detailed Timeline	Use this timeline slider to move selected search result's specific moment, or zoom in/out the timeline.
13	Simultaneous Play	Plays multiple channels at the same time.
14	Playback Control	Playback controls for playing back search result.
15	Display Pane	Shows the video of searched result.



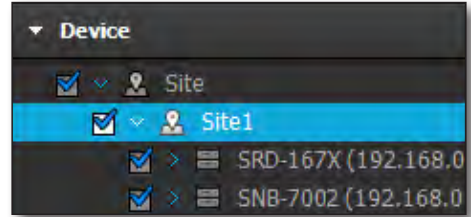
- The context menu displayed when you right-click on the device list and video window has the same contents as the live viewer.
- On the context menu of the video window, you can directly move to **<Advanced Search>** and **<Masking Backup>**. **<Advanced Search>** is used to search the currently selected device with more detailed search options than are available in the **<Basic Search>** function.



## Device List

From the device list, you can select desired device for your search.

1. Search desired device from registered devices.
2. Click a website to search or the check box of the device to select.



3. Multiple password certification is needed for NVRs that support a multiple passwords function.



- When a device that is set for multiple passwords is selected, a popup window is displayed.
- Multiple password setup can be performed from the device web viewer.
- Refer to the specifications of the device to use for details.




# search viewer

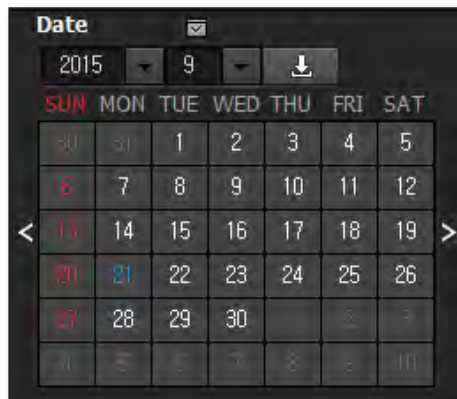
---

## Date Search

---

If selected device contains recorded data on a date, it is marked on the calendar.

1. Select a device and click [  ] button.
2. Select year and month for your search.  
If a date has recorded data, it is marked in color.
3. Click to select a date to be searched.  
Detailed time period of recorded data is shown in the search result area.

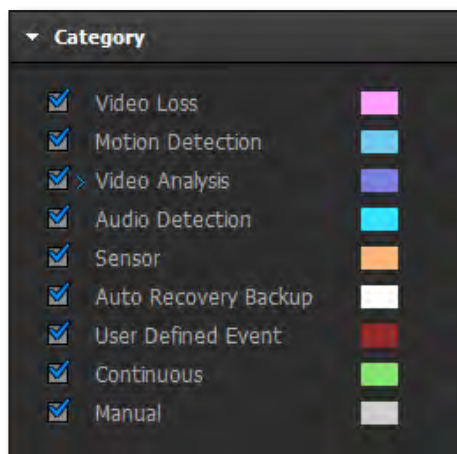


## Category

---


You can set the search criteria with event types.

1. Click Category.  
Category items appear.
2. Select desired search category items.
  - Video Loss, Motion Detection, Video Analysis, Audio Detection, Sensor, Auto Recovery Backup, User Defined Event, Continuous, Manual : Search is performed based on the screen highlighted on the video screen.
3. Search results matching selected items are shown in timeline.
  - Displayed in the timeline in a color designated for each item.



## Digital Zoom

Digital zooming provides enlarging the video as using a magnifier.

1. Click a desired camera's video.
2. Use digital zoom button to magnify/reduce desired portion of the video.
3. Brightness and contrast can be adjusted too.
  - Click [  ] button to reset to the original.




- For further details on using digital zoom, refer to "Digital Zoom". (Page 131)



## Playing Searched Data

### Setting the playback point of time

In the timeline of search result, the red vertical line means the current playback point of time.

1. Set the time to play.
2. Click [  ] button on the right.  
The point of time for your playback is set to the chosen time.

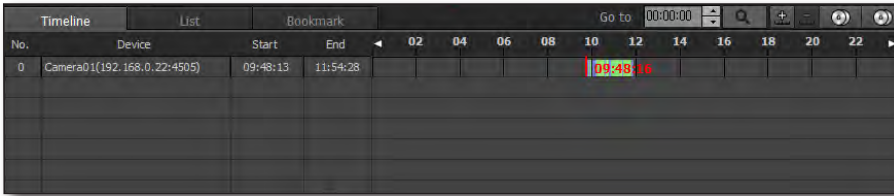


- Or, drag the red strip or click on a desired point in the timeline to set playback point of time.
- The time display shows the current playback's record time.

# search viewer

## Selecting Camera for Playback

By default, the search result shows 5 channels in the list. You can resize it to show more or scroll down it. Video playback supports up to 16 simultaneous channels.



1. Double click desired camera in the search result.
2. Selected camera's video fills the first unoccupied video tile.

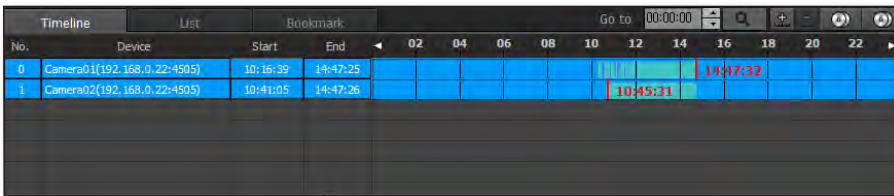


- Or, drag a camera from the search result to a tile and drop in the video display pane to add the selected channel's video to the tile.

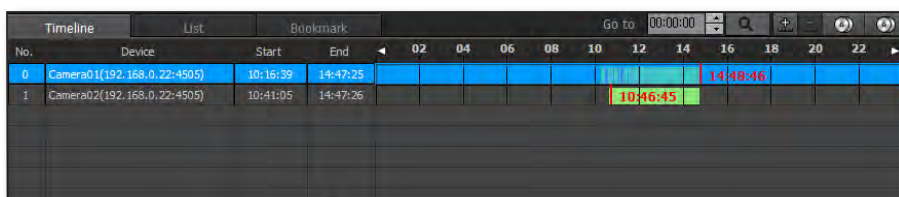
## Select Multiple Timelines

Select multiple devices in the timeline, and drag and drop them on the video window at the top to play the video that has been searched.

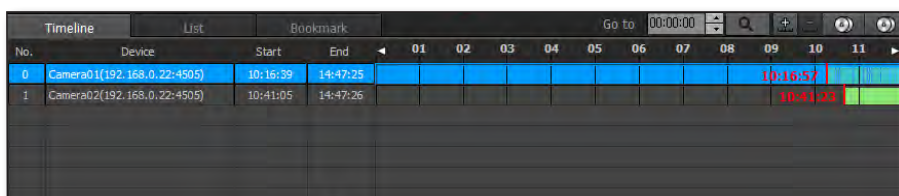
- When the screen is split into 16 sub screens, you can choose up to 16 channels.




## Enlarging the Timeline Scale




< 24 Hours >



< 1 Hour >

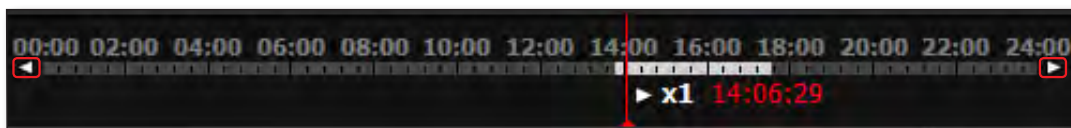
1. Click [  ] button in the top right corner of the search result area.
2. It enlarges the timeline scale of searched data from 24 hours to 5 minutes, the button becomes disabled when the maximum limit is reached.



## Reducing the Timeline Scale

1. Click [  ] button in the top right corner of the search result area.
2. It reduces the timeline scale of searched data from 5 minutes up to 24 hours, the button becomes disabled when the minimum limit is reached.

## Moving the playback point

When a search result is found, the playback point is set to the time currently selected.



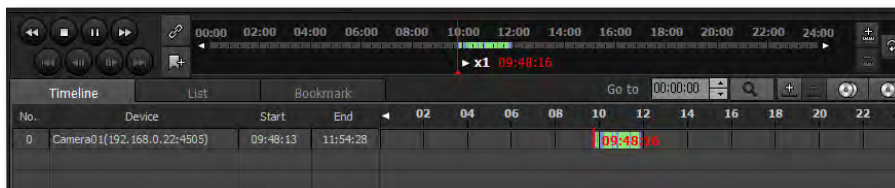
1. Select a search result.  
The playback point is set to the time currently selected, marked with a red vertical line.
2. Drag the red vertical line to a desired point of time in the timeline.  
When in enlarged timeline, you can use < ,  > arrows on both ends of the timeline to move backward/forward.

# search viewer

## Playback Control

Pause or control playback speed.

## Playback

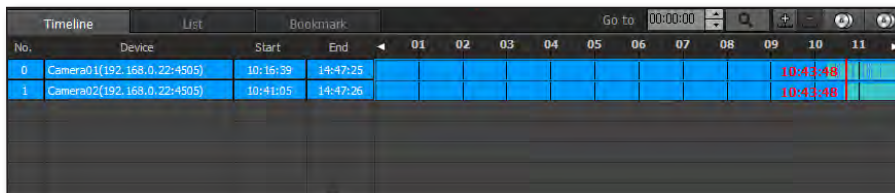


1. Select a search result and click [▶] button.  
In the playback progress bar, the current playback speed is indicated.
2. Use playback control buttons to control playback faster or slower.

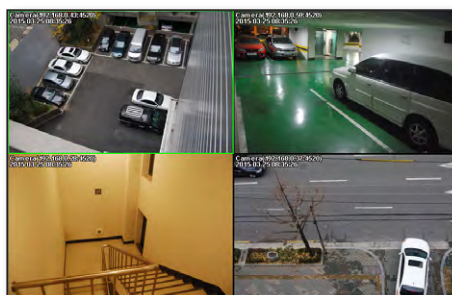
## Simultaneous Play

You can play channels that have been searched at the same time.

- Simultaneous Play function is only available on a recording server.



1. Select a reference video from the multiple videos being played and click the [🔗] button.
2. Then, the rest of the videos will be played at the same time and speed as those of the selected video.
  - Simultaneous Play is available only in "Basic Search" mode.




## Control Bookmarks

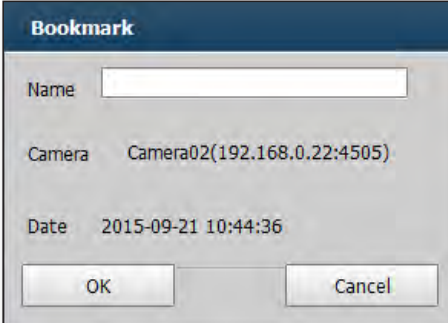
You can set a specific start point of a searched data video with a bookmark.

- ✎ This function is only available on a recording server.

### Add a Bookmark

1. Select a video and time to bookmark and click the [  ] button.  
The Add a Bookmark pop-up window is launched.
2. Set the bookmark name.
3. Click <OK> to add the bookmark to the bookmark list.

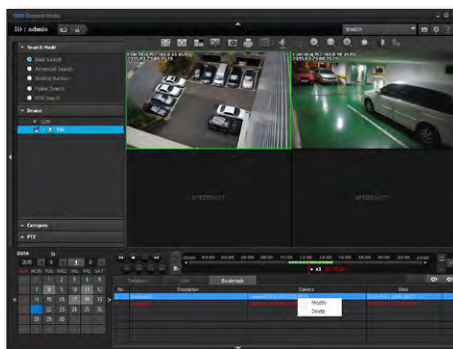
- ✎ Up to 512 bookmarks can be added. If you exceed 512 bookmarks, the oldest one will be deleted first.



### View the Bookmark List

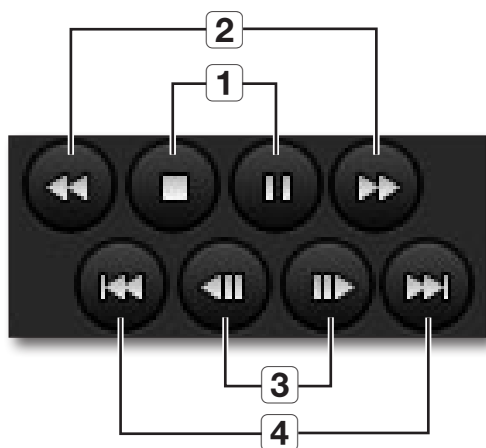
The timeline and the bookmarks added to the bookmark list will be displayed.

1. Bookmarks set in the bookmark list will be displayed.
    - Bookmark is indicated with a red triangle at the bottom of the timeline.
  2. You can move to the corresponding video by double-clicking the value on the bookmark list.
  3. Right-click on the bookmark list to change the name of a bookmark or delete a bookmark.
- ✎ The closest bookmark while playing the video will be marked in red 30 seconds ahead in the list.



# search viewer

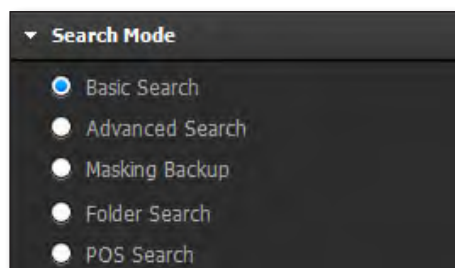
## Names and Functions of Playback Controls



<b>1</b>	Start / stop playback, Pause
<b>2</b>	Faster forward / backward playback Sets the forward/backward playback speed to x1, x2, x4, x8, x16, x32, x64, and then x1 again on every click. <ul style="list-style-type: none"><li>When in paused, it switches to slower forward / backward playback button.</li></ul>
<b>3</b>	Step Forward / Backward Moves the video frame by frame. While in playback, these buttons are disabled.
<b>4</b>	Skip Forward / Backward Skips to previous or next event. While in playback, these buttons are disabled.

## Selecting the Search Mode

Click a radio button to switch to the Basic, Advanced, Masking, Folder or POS search screen.






## ADVANCED SEARCH

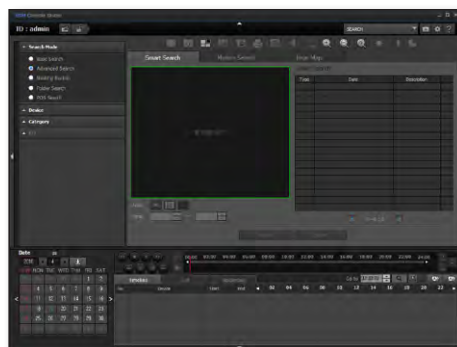
If there are recorded data, they can be searched according to the search condition.

### Smart Search

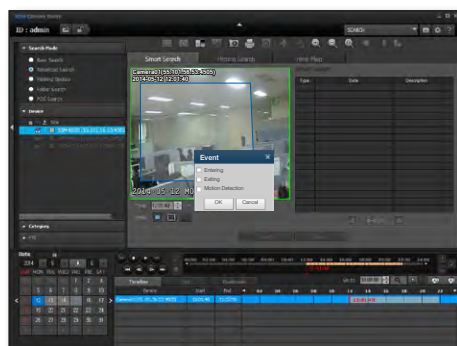
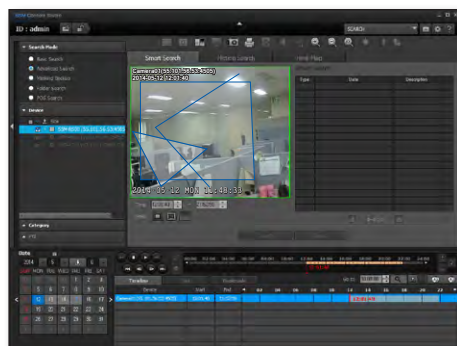
A specific section of the image is selected as ROI, Exclusive Zone, or Virtual Line to search the events that have occurred during a specific time band.

1. Switch to the <Smart Search> model of <Advanced Search> and select the device to search in the <Device> list.
  - SUNAPI camera should be registered as a function that is supported at SUNAPI NVR or Recording Server.
2. Select the year and month to search and click the [  ] button.
 


Dates containing data are displayed. When a date is selected, the data are displayed in the time-line list.
3. Select the data from those displayed in the time-line list.
4. Adjust the time-line bar to set the preview image.

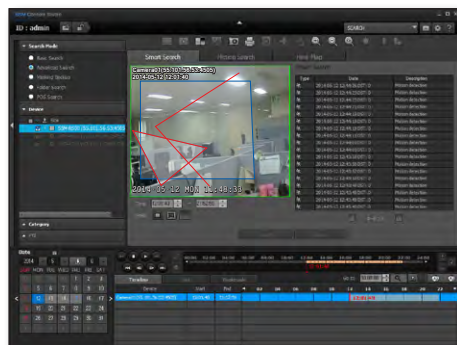


- Time : Select the beginning and end time for the search.
  - The difference between the beginning and end time can be up to 24 hours.
- Setting the Search Region
  - ROI (Region of Interest) : Designate ROI on the image window to detect the events within the region. Specify a point on the image window with the mouse and draw a line to specify the region. Up to 11 vertices are allowed within an interior angle of 180 degrees. (Up to 32 ROI's can be specified.)
    - Click the right mouse button to complete specification of ROI. (ex.: To draw a rectangle, specify 4 points and then right click the mouse)
    - After a region is set, the event setting window is displayed. Select the event type to detect of three events (multiple selections allowed) and click the <OK> button. The region setting is canceled when <Cancel> is clicked.



# search viewer


- Exclusive Zone (Region of Non-interest) : Specify the exclusive zone on the image window to exclude the events within the region in the search result. Specify a point on the image window with the mouse and draw a line to specify the region. Up to 11 vertices are allowed within an interior angle of 180 degrees. (Up to 32 ROI's can be specified.)
    - Right click the mouse to complete specification of ROI.  
(ex.: To draw a rectangle, specify 4 points and then click the right mouse button.)
  - Virtual Line : Draw a virtual line on the image window. Motion is searched when a movement from the line to the set direction is detected.
    - Select Left or Right. They can be selected simultaneously to detect motion in both directions.
-  ▪ For the ROI, exclusive zone and virtual line, place the mouse on the drawn region and right click the mouse to change or delete the region.
5. Click the **[Search]** button.
  6. Check the result of smart search and double click the search result to replay the selected image.
    - Up to 500 smart search lists can be checked. Click the **[◀/▶]** button to navigate between pages.
  7. Click the **<Export>** button to save the search results in an excel file.

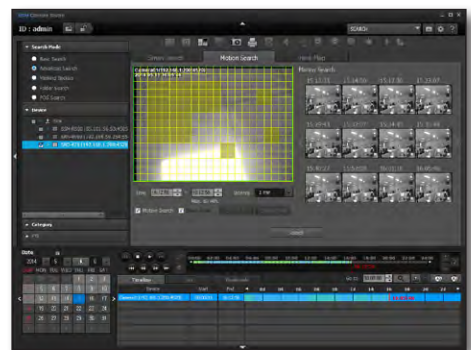
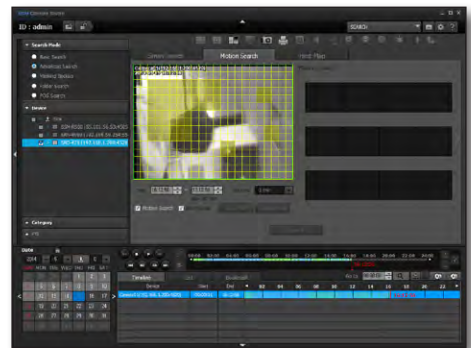
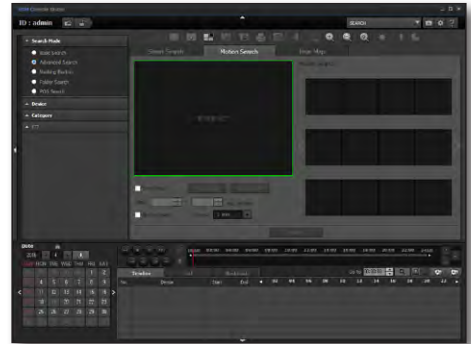


## Using Smart Search

1. SUNAPI camera should be registered to SUNAPI NVR or Recording Server. (Refer to SUNAPI supporting camera specification.)
2. Set the motion event of the camera to **<On>**.
  - The camera event can be set in the camera Web page.
    - Motion event On, no region setting (detection of motion in all regions.)
    - Accessing the camera Web page : Select a camera in the Registration > Device menu of the Configuration Manager and click the **[Device Setting Page]** button of the device information.

## Motion Search


1. Switch to the **<Motion Search>** mode of **<Advanced Search>** and select the device to search in the **<Device>** list.
2. Set search year and month, and click [  ] button. Dates with recorded data are marked in the calendar. Select one to display data in timeline list.
3. In the timeline list, select a desired data item.
4. Use timeline bar to control preview display.
5. Specify the start time and end time for thumbnail view.
  - Up to 60 minutes can be assigned with start and end times.
6. Set the time interval.
  - Search Region Setting
    - Specify the search region by dragging the mouse to the right and down. Cancel the selection by dragging the mouse in the reverse direction.
    - The region can also be specified by clicking each cell.
    - All regions are selected or canceled by clicking **<Select All>** or **<Cancel All>**.
    - In case the selected device supports motion detection, check **<Motion Search>** checkbox for motion search. For other devices not supporting motion search, the button is disabled.
7. Click [ **Search** ] button.
8. Select a searched thumbnail to start playback in preview screen automatically.






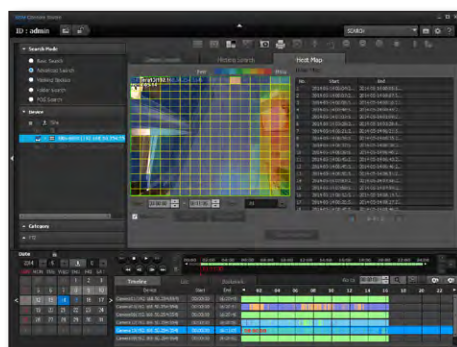
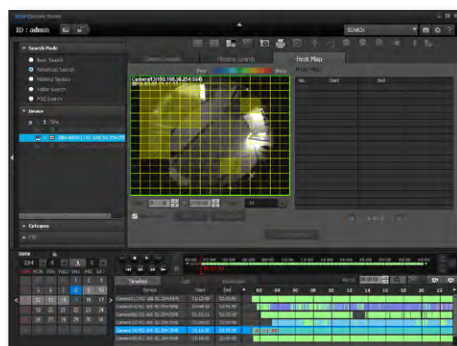
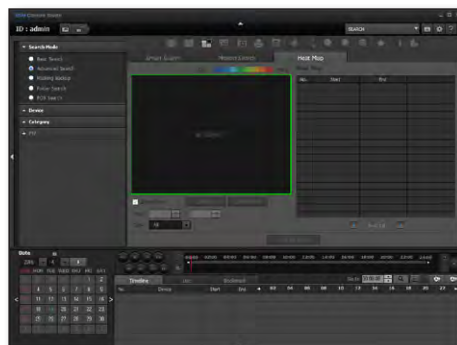
# search viewer

## Heat Map Search

Select a region on the image to detect the motion of an object in a specific time band and display how many movements were detected in each region.

 This is a function that is supported at SUNAPI NVR.

1. Switch to the **<Heat Map>** mode in **<Advanced Search>** and select the device to search from the **<Device>** list.
2. Select the year and month to search and click the [  ] button.  
Dates containing data are displayed. When a date is selected, the data are displayed in the time-line list.
3. Select the data from those displayed in the time-line list.
4. Adjust the time-line bar to set the preview image.
5. Select a search region and specify the search time and search format.
  - Setting the Search Region
    - Specify the search region by dragging the mouse to the right and down. Cancel the selection by dragging the mouse in the reverse direction.
    - The region can also be specified by clicking each cell.
    - All regions are selected or canceled by clicking **<Select All>** or **<Cancel All>**.
6. Click the [ **View Heat Map** ] button.
  - After the heat map search is completed, different colors are displayed according to the number of movements detected.
    -  : Redder colors means more movements detected.
  - Check the results of the smart search and double click the search results to replay the selected image.
  - Up to 500 smart search lists can be checked. Click the [  ] button to navigate between pages.

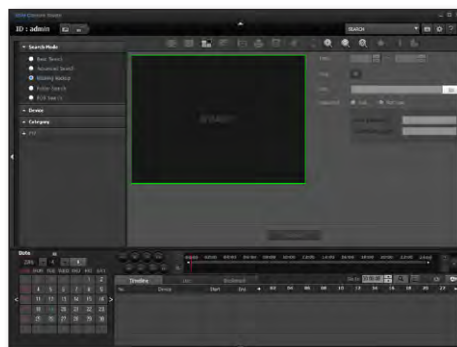


## MASKING BACKUP


The mask operating for a specific period is added to the image to back up the image and audio.

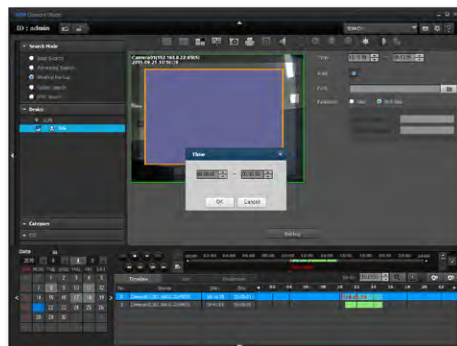
### Masking Backup

1. Select <Masking Backup> mode in the search mode.
2. Set the search condition.
  - Time : Enter the time for backup.
  - Region : Set the mask region to back up.
  - Path : Specify the backup path.
  - Password : Select whether the password will be used and set the password.  
If password is to be used, set the password and confirm it.
3. Click the [Backup] button.



### To Set the Mask Region

1. Click [  ].
2. To set the mask region, click the position of the upper left vertex of the rectangle on the image window, move the mouse then click the point of lower right vertex of the rectangle.
3. Set the mask operating time and click the <OK> button.
  - When the mask region and mask operating time are set, the recording of the selected region for the selected time is not saved.
  - Up to 32 masks can be set.



# search viewer

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## FOLDER SEARCH

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Search for the data in the folder which contains the data that were saved as SEC files in the PC used for SSM Console execution.

### Searching Folders


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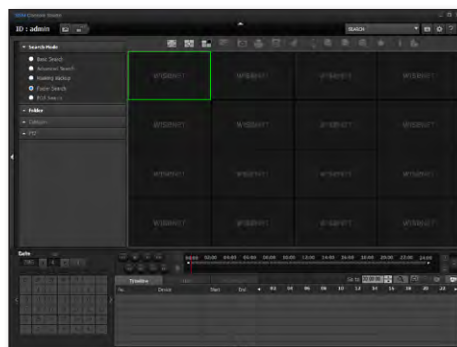
1. Set to Folder Search mode and select a folder from <Folder> list.  
Resulting footages are automatically listed in the timeline list.

2. Select a desired data from the timeline list.

3. Use playback control to play selected data.



- If the selected folder has more than 64 SEC files, then the popup window will ask you to select the files to be played. But if you double click on the timeline, you can play a maximum of 16 sets of video at a time.
- If the SEC file you want to play video for has a password, then the popup will prompt you to enter the password. You must enter the correct password before you can play the video.
- Select a video to check the digital signature and click the [  ] button to validate the digital signature.



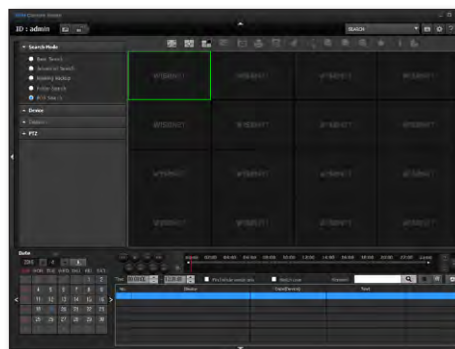
## POS SEARCH


You can search POS records based on time and text keyword.



- 
  - The Search function is available only for the device supporting the POS function.

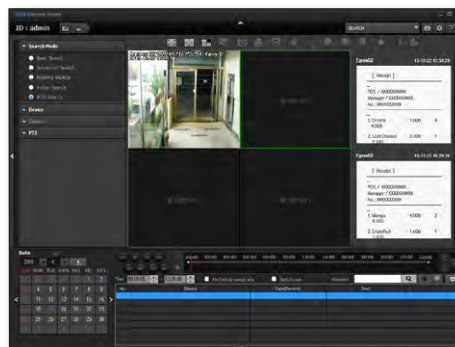
### Searching POS data

1. Set to POS Search mode and select date and time for your search.
2. Enter a search <Keyword>.
3. Set the search condition.
  - Find whole words : If not selected, blanks between keywords act as AND operator.  
Ex) If entered "Cash 2500", finds data contains both "Cash" and "2500" from the database.
  - Match case : If selected, the search becomes case sensitive, distinguishing upper and lowercase letters.



4. Click [  ] button.
5. When you click a search result on the list of POS search results, a stop screen of the first camera is displayed.
6. When you double-click a search result on the list of POS search results, a video in which a POS event is generated is played.
7. When you play a POS keyword search result item, the content of the applicable receipt in addition to the video is displayed. (Function that is supported by NVR.)

- 
  - When you choose to fast play the video, the receipt is played fast as well.  
Up to 64 times fast play is supported; reverse direction is not supported.
  - If the video playback is stopped, the content of the receipt is stopped as well.
  - You can save the POS research results in an Excel file format by pressing the [  ] button.



# search viewer

## BACKUP

You can back up the search data onto the computer that is running the program.

### Backing Up Search Data


You can back up searched footage of selected period into a desired folder.

1. Click [  ] button.

The backup pop-up appears.

- Backup is only available for devices currently connected.

2. Select a channel from the backup window.

3. Click [  ] button to browse and set the desired backup storage path.

4. Specify the start time and end time.

5. Set the backup file format.

Backup supports "\*.sec" and "\*.avi" formats.

- AVI : A general video format. Can be played with Windows Media Player.

- A new AVI backup file is created in the following cases.
  - When you change the video's resolution
  - When you change the audio or video codec
  - When the file size is greater than 2GB

- SEC : Samsung's proprietary format. Embeds self-executable video player with data.

- Check <Use a Password in the SEC file> to set the password.



- The Microsoft Windows Media Player does not support AVI files having resolutions higher than 3Mega pixels. For high-resolution videos of more than 3 Mega pixels, SEC backup is recommended.

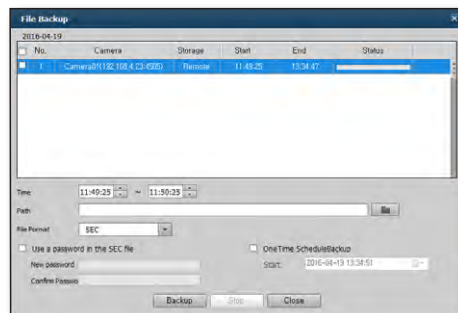
- You can back up the video at a designated time by selecting the <OneTime ScheduleBackup> check box.

6. Click [Backup] button to start backing up.

7. Click [Stop] button to stop backup in the middle.


8. To end backup, click [Close] button.

The backup stops and saves the file backed up at the moment, and closes the backup window.



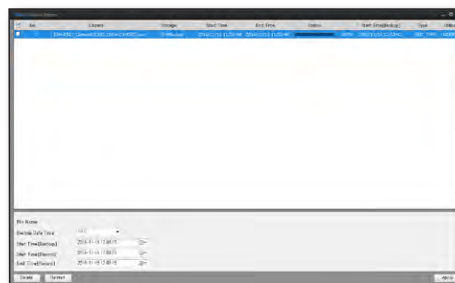
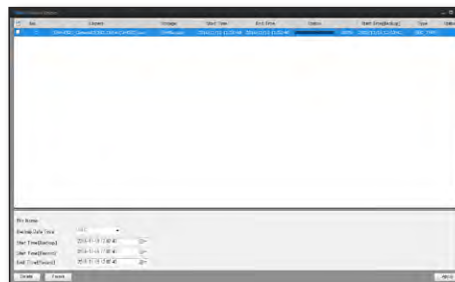


### To use the onetime schedule backup function

1. Set the channel and path to back up and the format of a file to save in the backup window.
2. Select the "OneTime ScheduleBackup" check box and set the backup start time.
3. Click the [Backup] button and a onetime schedule backup status window will launch.
4. Click the [  ] button and you can check the onetime schedule backup status.



- When the [ Pause ] button on the lower left section is clicked, the Backup process is stopped temporarily. When the [ Restart ] button is clicked, the Backup is restored.
- Before the time at which the initially set onetime schedule backup is run, you can change the settings such as backup data type, date, time, etc.
- You can select and delete an item that has not been backed up yet in the list of <View OneTime ScheduleBackup Status>.



# setting console

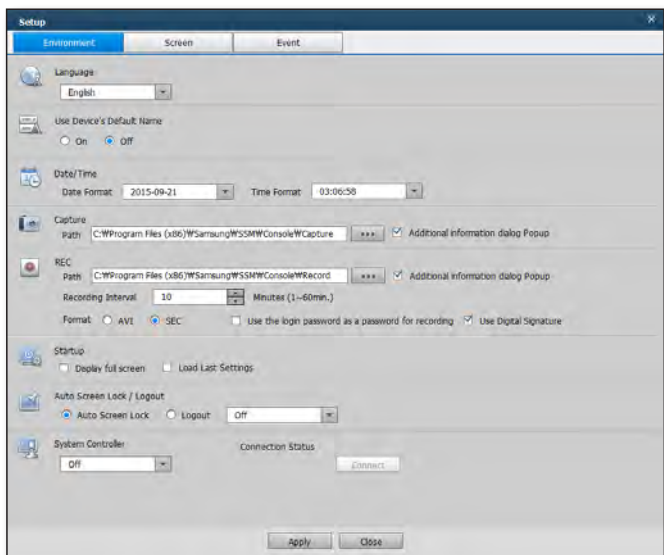
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## SETTING SSM CONSOLE

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### Environment

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#### Language

Sets the language used for Smart Security Manager's user interface.

#### Use Device's Default Name

When it is checked, the name of the camera registered to the device is displayed in the list or the screen.

#### Date/Time


Set the date and time format displayed on OSD.

Date / Time indication is based on the time of running the pop-up window.

- Date formats
  - 2010-04-19 (yyyy-mm-dd)
  - 04-19-2010 (mm-dd-yyyy)
  - 19-04-2010 (dd-mm-yyyy)
- Time formats
  - 08:06:04 (hh:mm:ss)
  - 08:06 (hh:mm)


## Capture

You can set the captured image file's path.

- Path : Shows the current file path, click [  ] button to set to another file location.
  - Click <Additional information dialog popup> to display saved path and additional capturing information on a popup window separately when capturing a monitoring window.

## REC

Set the selected recording data's file path and recording interval.

- Path : Shows the current file path, click [  ] button to set to another file location.
- Recording Interval : Sets how long the recording will continue.
- Format : Sets the file format for recording.
  - Click <Additional information dialog popup> to display saved path and additional recording information on a popup window separately when recording a monitoring window.
  - If you check <Use the login Password as a password for recording>, you can use the login password for recording.
  - When the <Use Digital Signature> check box is selected, a digital signature is applied to the recorded backup file to prevent falsification.

## Startup

Configures the screen display and its settings when the program is started.

- Display full screen : On the program's startup, it fills the entire screen automatically.
- Load Last Settings : When restarting, it loads the last displayed camera's video layout.

## UI Auto Lock / Logout

- UI Auto Lock : If there is no keyboard or mouse action for the specified period, it locks user interface automatically which prevents unintended access.
- Logout : If there's no keyboard or mouse action for the specified period, it logs out automatically to prevent unintended access.

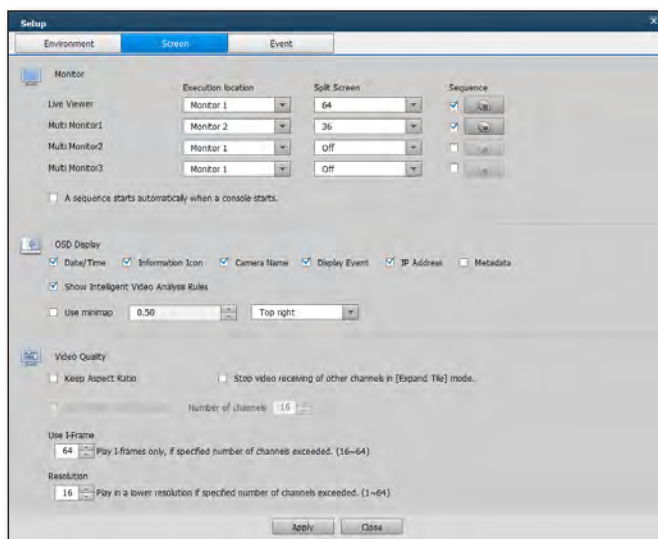
## System Controller

You can connect the SPC-2000, SPC-7000 to use it.

Click the [**Connect**] button to check the connection status.

# setting console

## Screen



### Monitor

The monitor layout can display up to 100 channels on a maximum of 4 monitors.

### Execution location

Select the number of monitors to connect. Up to 4 monitors can be connected.

### Split Screen

Sets the split screen mode for each viewer / monitor.

The available split screen modes differ by maximum number of channels and connected monitors.







- The default settings may not be appropriate to your configurations; user must configure the system appropriately for proper operations.

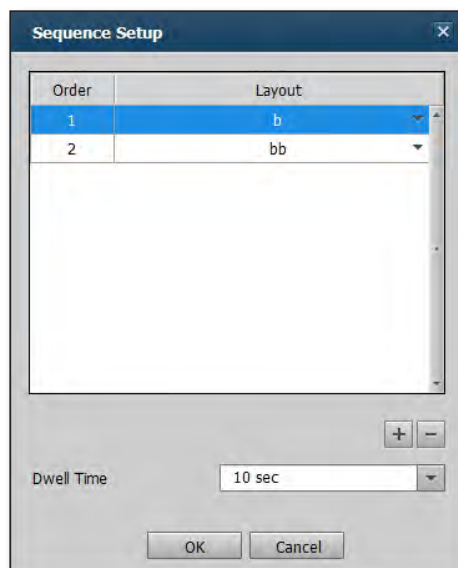
## Sequence

Distributes camera feeds to fit the selected split screen mode in sequenced order automatically, at the specified duration.

- ✍ ■ Sequenced mode is available only for a camera layout.
- Up to 256 sequences can be configured.

### To define sequence

1. Click [  ] button on the top right corner of the target monitor.
2. To add a layout, click [  ] button. To delete a layout, click [  ] button.
3. Click <Dwell Time>'s [  ] button and set the dwell time of each layout added.
4. When done with setup, click [OK] button.
5. To apply the sequence mode, check the checkbox in front of the sequence setup button.
  - To start the sequence function automatically when the console is started, click the check box.



## OSD Display

You can select the information (OSD) displayed on the monitor.

- Check the checkbox of <Use mini map> to specify the use of mini map.
  - Adjust the value between 0.3~1.0 to set the size of the mini map.
  - Select upper right/lower right/upper left/lower left to set the position of the mini map.

## Video Quality

### Use I-Frame

Set the number of channels, the I-Frame mode will be applied for more than the specified channels. It is applied to each monitor of each viewer. It is used to avoid system overload of multi-channel video monitoring.

- ✍ ■ **What is I-Frame?**  
Video compression methods hiring H.264 and MPEG4 codecs produces compressed video of one base frame (Intra-frame) and multiple predictions (predicted frames) only containing differences between each frame's previous one.

# setting console

---

## **NVIDIA CUDA decoder is used**

When CUDA decoder is supported, whether it is used or not and the number of applied channels should be set. When the number of applied channels is exceeded, the basic SW codec is used.



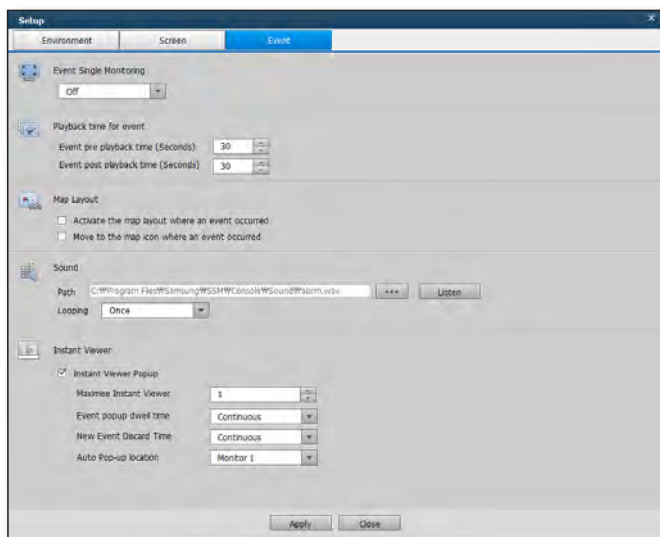
- A 64 bit OS environment is recommended for CUDA decoder usage.

## **Resolution**

Set the number of channels, low-resolution will be applied for more than the specified channels for better communication.

It is applied to each monitor of each viewer.

## Event



### Event Single Monitoring

Upon an event, the Live Viewer monitoring screen automatically switches to Single mode with the event-generating channel for the specified period, which returns to previous mode afterwards.

### Playback time for event

You can set the event play time by event pre-play time (seconds), event post-play time (seconds) and pre-play time (seconds).

- Event pre playback time (Seconds)
  - Specifies the start point of the video to be played on the instant viewer (Playback) by designating a specific length of time in seconds before the current position.
  - Specifies the start point of the video to be repeatedly played on the instant viewer (Playback) by designating a specific length of time in seconds before the current position.
  - Specifies the start point of the video to be sequentially played on the instant player by designating a specific length of time in seconds before the current position.
- Event post playback time (Seconds)
  - Specifies the start point of the video to be repeatedly played on the instant viewer (Playback) by designating a specific length of time in seconds after the current position.
  - Specifies the start point of the video to be sequentially played on the instant player by designating a specific length of time in seconds after the current position.

# setting console

---

## **Map Layout**

If this option is set and an event occurs while viewing a map layout, the view automatically switches to the corresponding map which contains the event-generating device's icon on it.

## **Sound**

Set the sound device for the event, and how the sound repeats.

## **Instant Viewer**

Selects whether to launch a pop-up window when an event occurs, and sets the number of instant viewers to run when a pop-up window is launched, as well as the duration of the pop-up window to be displayed. Sets the duration of time during which the occurrence of a new event is ignored after an instant viewer is launched.



# SSM service manager

You can check SSM related services, and stop them.  
The Service Manager should run while the Smart Security Manager is running at the same time, and an icon appears in the task tray.

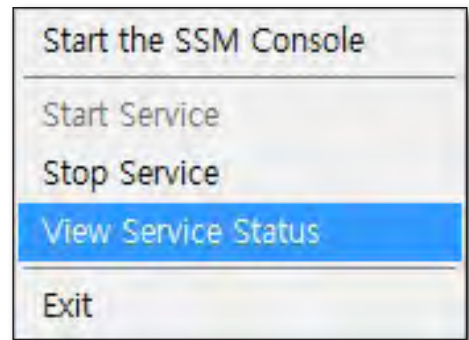
## SERVICE MANAGER

Resides in the task tray, and provides access to Smart Security Manager services.

### Managing the Services

Select the icon and right mouse click.  
Service menu should appear.  
You can start or stop services.

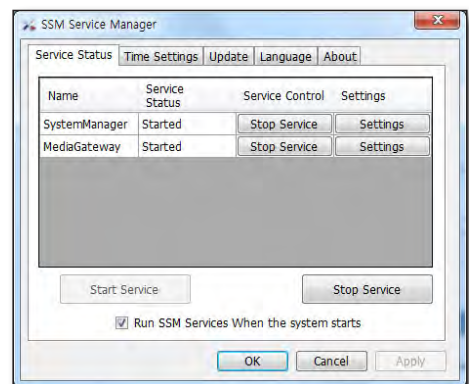
- Start the SSM Console : Runs SSM Console program.
- Start Service : Starts Media Gateway and System Manager services.
- Stop Service : Stops Media Gateway and System Manager services.



### Service Status

Click [Service Status] to open SSM Service Manager information dialog.

- Start Service : Disabled if the service is running.
- Stop Service : Disabled if the service is stopped.
- OK : Applies the changes, and closes the window.
- Cancel : Does not applies the changes, and closes the window.



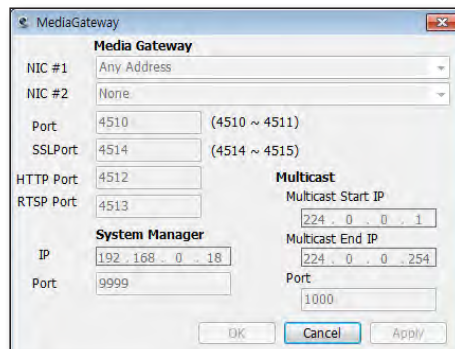
### SystemManager

- Port : The port of the system manager is changed.

# SSM service manager

## Media Gateway

- NIC #1 : The media gateway IP, console, CM, etc. saved in SM DB are connected to this NIC.
- NIC #2 : If it is set, the equipment is connected to the NIC.
- Port : It is the port used for connecting the client.
- SSLPort : Port to be used for SSL connection
- HTTP port : This port provides the CGI Web service to the mobile viewer.
- RTSP port : The rtsp port provides the image to the mobile viewer.



## System Manager

- IP : SM IP for the connection to MG.
- Port : SM port for the connection to MG.

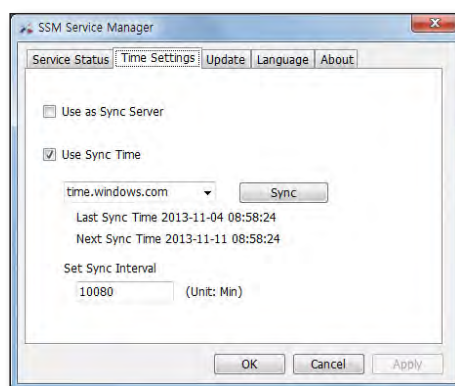
## Multicast

- Multicast Start IP : Start IP of multicast
- Multicast End IP : End IP of multicast
- Port : Multicast port of a device to which the MG is to be connected

## Time Settings

You can set the computer installed with SSM to be the NTP time server, and its checking frequency.

- Use as Sync Server : Other PCs or devices are synchronized with the time of this PC.
- Use Sync Time : This PC tries synchronization to the input address at the specified interval.

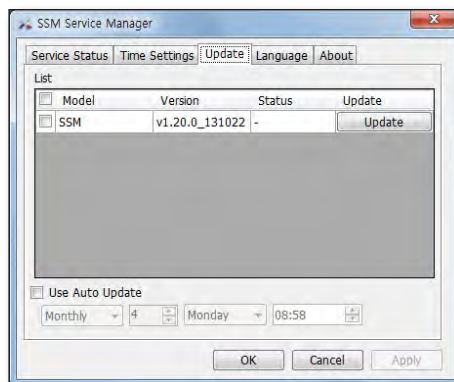


## Updater

If the server has the latest version, the update list will appear. A user can check the release note and the content of the latest updates before deciding whether to proceed with the updates.

Click on the <Use Auto Update> and set the auto update settings.

- When "Automatic Updates" is selected or the 'Update' button is clicked, the updates are automatically performed and patches are executed when the updates are needed.



### Automatic Update Setting

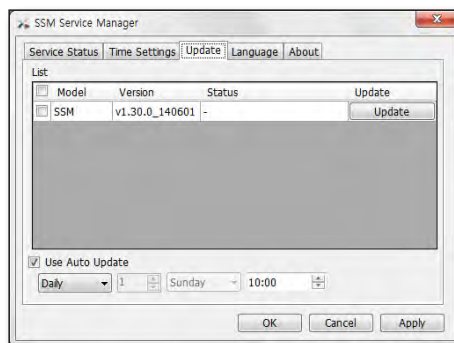
Updates can be checked automatically by setting the update checking period.

- Select [Update] in [SSM Service Manager].
- Change the setting in the setting window and click the [Apply] button.

### Selecting the Automatic Checking Interval

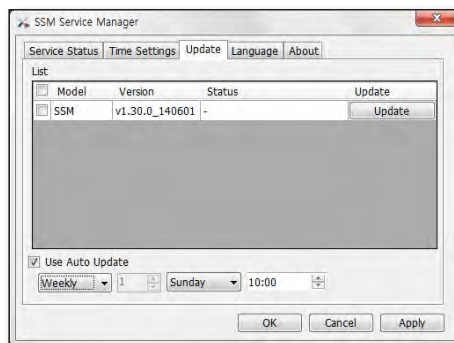
- Updates can be checked for daily.

- Select Daily.
- Select the automatic update time.  
ex.) The figure in the right shows the update set for 10:00 am each day.



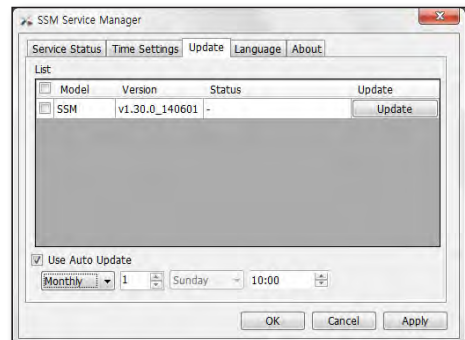
- Updates can be checked for weekly.

- Select Weekly.
- Select the day of the week for automatic updates.
- Select the automatic update time.  
ex.) The figure in the right shows the update time set for 10:00 am on each Sunday.



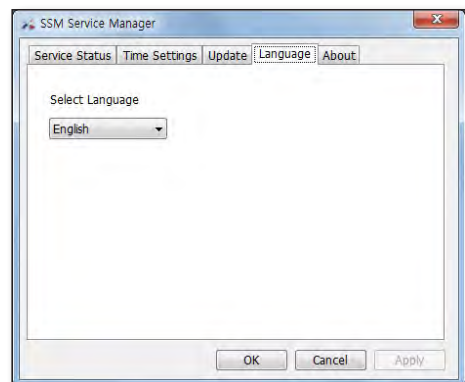
# SSM service manager

- Updates can be checked for monthly.
1. Select Monthly.
  2. Select the date for automatic updates.
  3. Select the automatic update time.  
ex.) The figure in the right shows the update time set for 10:00 am on the first day of each month.



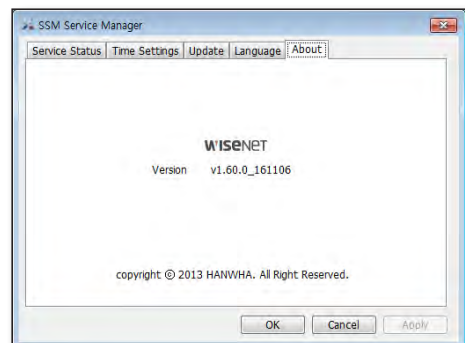
## Language

You can set the program language.



## About

Shows the Service Manager's version information.



# SSM Recording Server

## SSM RECORDING SERVER SERVICEMANAGER

You can check the execution status of the SSM Recording Server related service and terminate it if you want to. You can change the SSM Recording Server related settings.

As soon as the SSM Recording Server runs, the service manager program will run. The task bar will automatically show the icon.

### Service manager

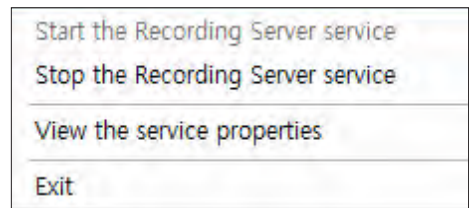
It is in the task bar and manages the SSM Recording Server service.

### Service management

Select an icon and right click with your mouse button on it. Service menu will appear.

You can start or stop the service.

- Start the Recording Server service : Starts the service.
- Stop the Recording Server service : Stops the service.



### Service starts

Click on the [View the Service Properties] to launch the Recording Server Service Properties window.

You can check the current status of the Recording Server service.

- Start the Recording Server service : Starts the service.
- Stop the Recording Server service : Stops the service.
- Unregister MediaGateway : Cancel registration of the Media Gateway and initialize the Media Gateway information box.
  - Recording Server can be registered and accessed in a single Media Gateway.

If the Recording Server is already registered and connected to the Media Gateway, and if you want to register in another Media Gateway, you need to delete (cancel registration) the Recording Server in the SSM.

When registration is cancelled, the Media Gateway information is initialized. So, you can register in another Media Gateway.

If the registered Recording Server is not connected to the Media Gateway, you need to delete the Recording Server from the SSM and click on the [Unregister MediaGateway] button in the Recording Server Service Manager to initialize the registered information.

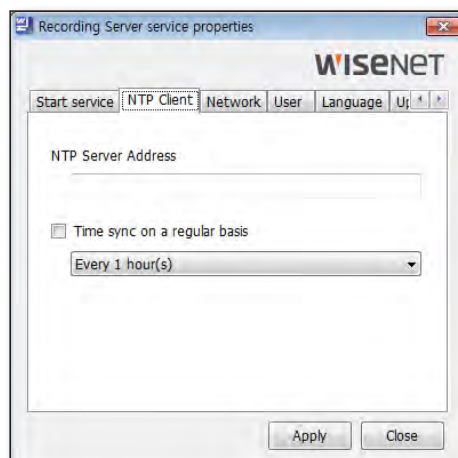


# SSM Recording Server

## NTP Client

You can set the NTP server to synchronize the time of the PC where the Recording Server is installed.

You can change the setting to make sure time synchronization is performed periodically.



## Network

You can retrieve the Recording Server setting information from a file.

### Setting the number of networks used

You can set the number of networks used.

1. Check the network to be used.
  - 1 used : Uncheck network 1 used.  
If one network is used, it means that a single network will communicate with the SSM and the device.
  - 2 used : Check network 2 used.  
If two networks are used, it means that network 1 will communicate with the SSM and network 2 will communicate with the device to evenly distribute the communication load.
2. Click on the [Apply] button to save changed settings.

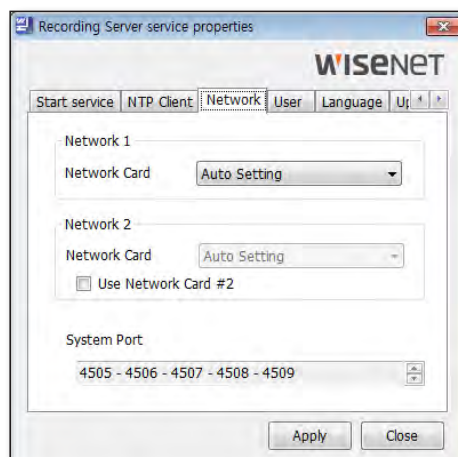
### Network selection

Select network 1/2 from the list of available networks on the PC.

- If you want to change the network setting, the Recording Server service will resume.

### Port setting

You can set the system port range that the Recording Server will use.



## User

You can change the password for a user who will access the Recording Server.

- Password changes : Click on the **[Change pwd]** button to switch to a new password.



## Language

You can select the language to display the program (SSM Recording Server service manager and update manager).

- Basically, it is automatically set to the OS language. If not available, it is set to English.



# SSM Recording Server

## Update

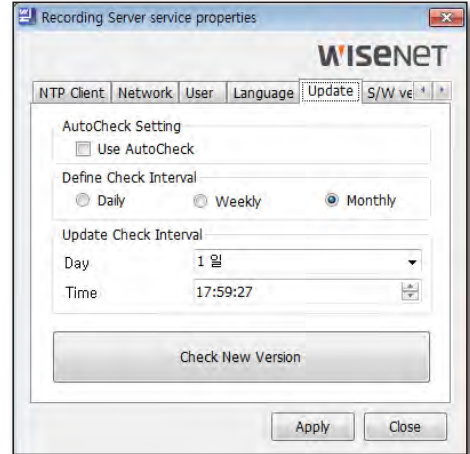
You can set the updates of the recording server.

You can configure automatic update settings.

1. Select the <Use AutoCheck> check box.
2. Select an interval (daily, weekly, monthly).
3. Enter a date and time to check.

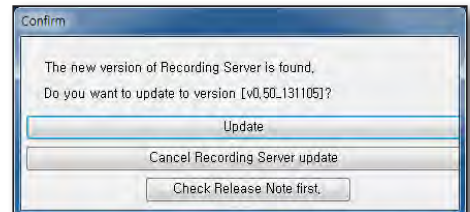


- You can check updates manually by clicking the <Check New Version> button.

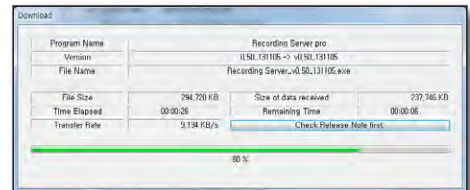


### To run the update

1. Check the update either manually or automatically and a download window will open if there is a new update.

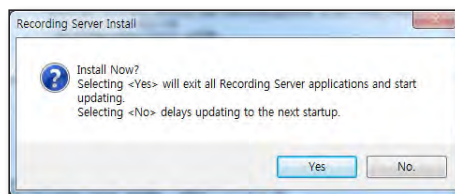


2. Select the [Update] button to download the installation file.



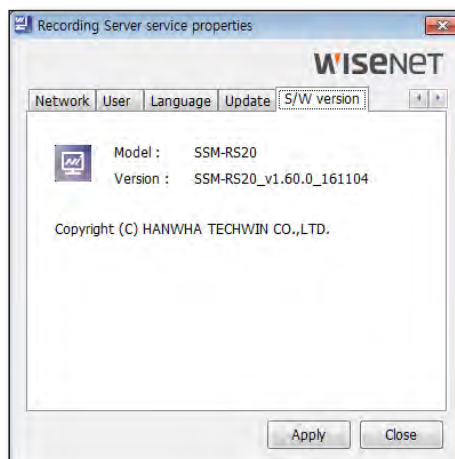


3. When downloading is complete, you will be asked whether you wish to install the downloaded file now.
  - If you choose **[No]**, the installation window will launch at the time of the next update check.
  - If you choose **[Yes]**, all the recording server applications are automatically closed and the installation process will start.



## S/W version

Shows the latest version information for the SSM Recording Server.



# SSM HA

## SSM-HA DESCRIPTION

SSM-HA is a program to perform the failover function of SSM.

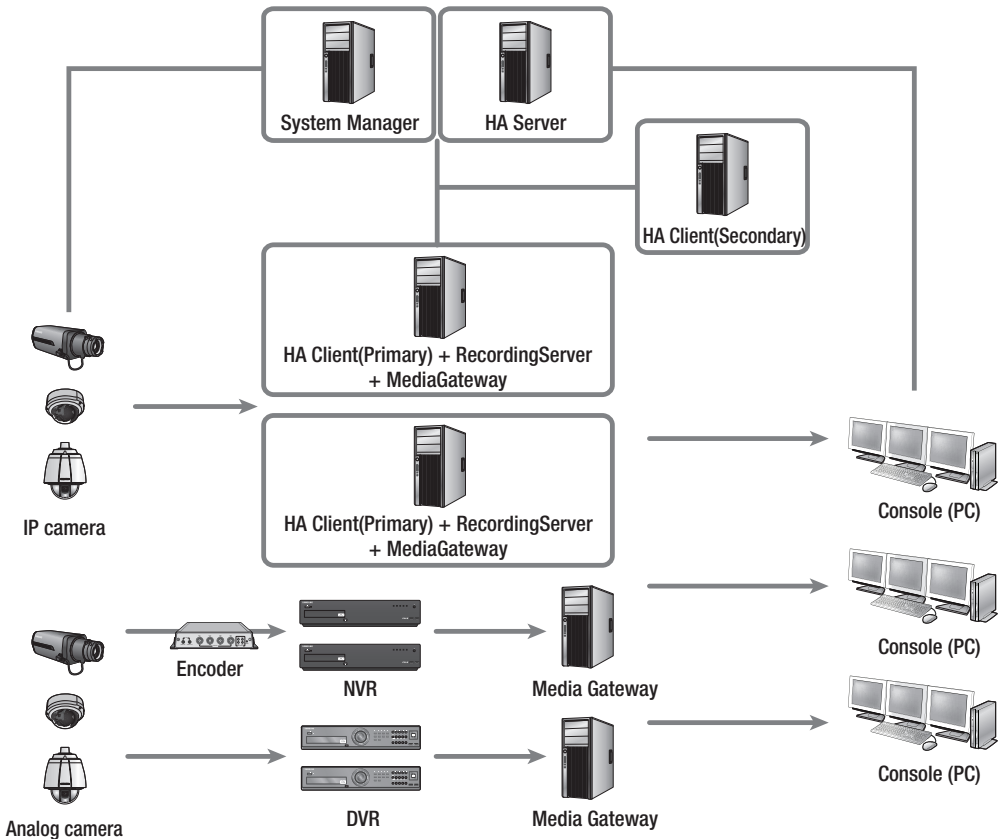
When the media gateway, recording server or VMG of the PC in operation cannot be operated properly due to network failure, it is replaced with a media gateway, recording server or VMG that is operated in Secondary(Standby) mode and copies the information of the target PC for recovery.

When the problematic operating PC is recovered, the information and videos saved in the Secondary(Standby) is restored to the Primary(Active) PC system via the fallback function to get it back on track.

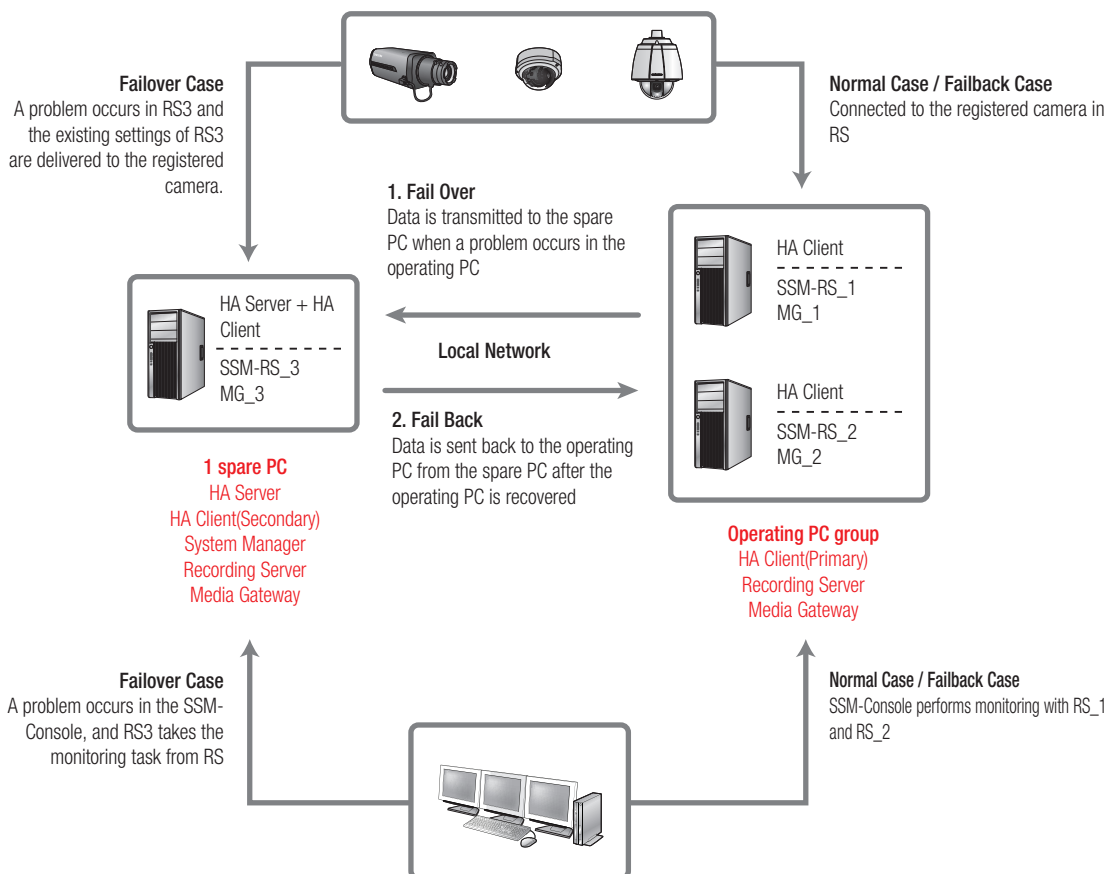
- Coverage range
  - When disconnection occurs between the Primary(Active) client and the network
  - When the Primary(Active) client PC is out of order (power fail)
- Status check
  - Signal is received from the Primary(Active) client at intervals of 1 second.
  - If no signal is received for more than 20 seconds, the Primary(Active) client is deemed to be abnormal.

## HA System Configuration

In SSM, HA is comprised of the following.

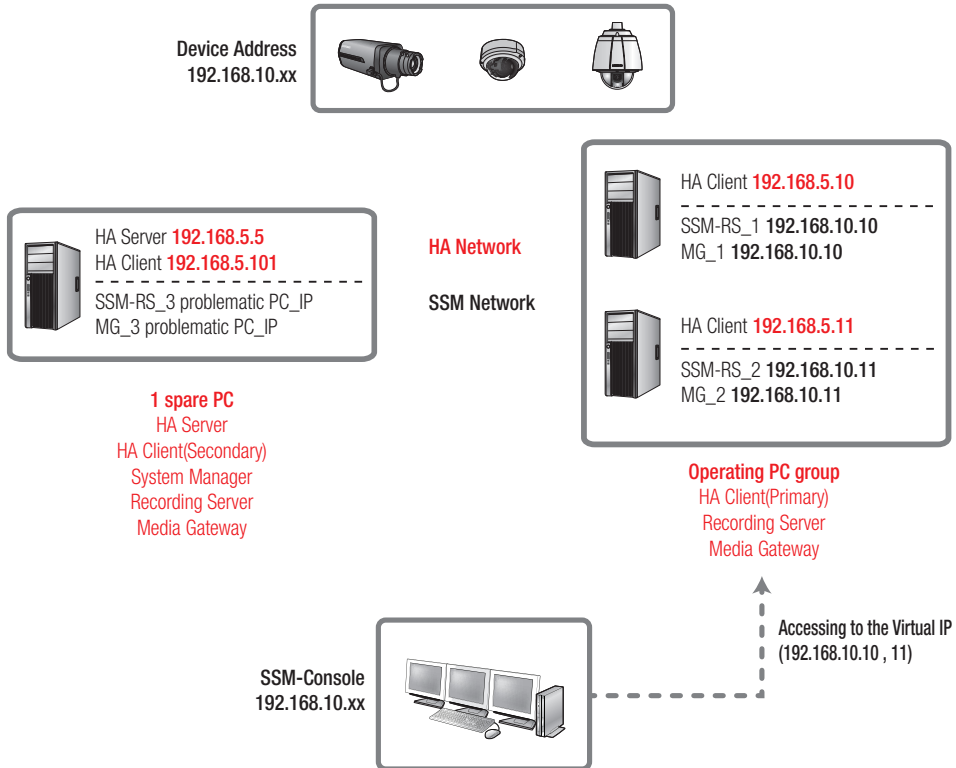


## Example of configuring with 2 Primary(Active) units and 1 Secondary(Standby) unit

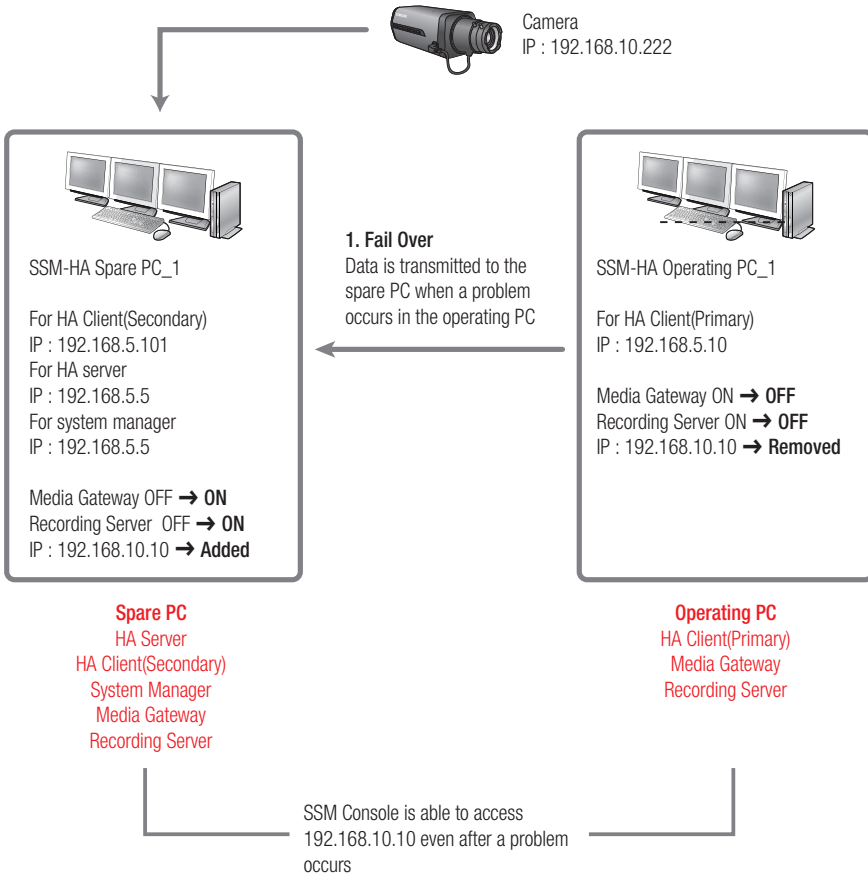


# SSM HA

Example of configuring an actual IP with 2 Primary(Active) units and 1 Secondary(Standby) unit

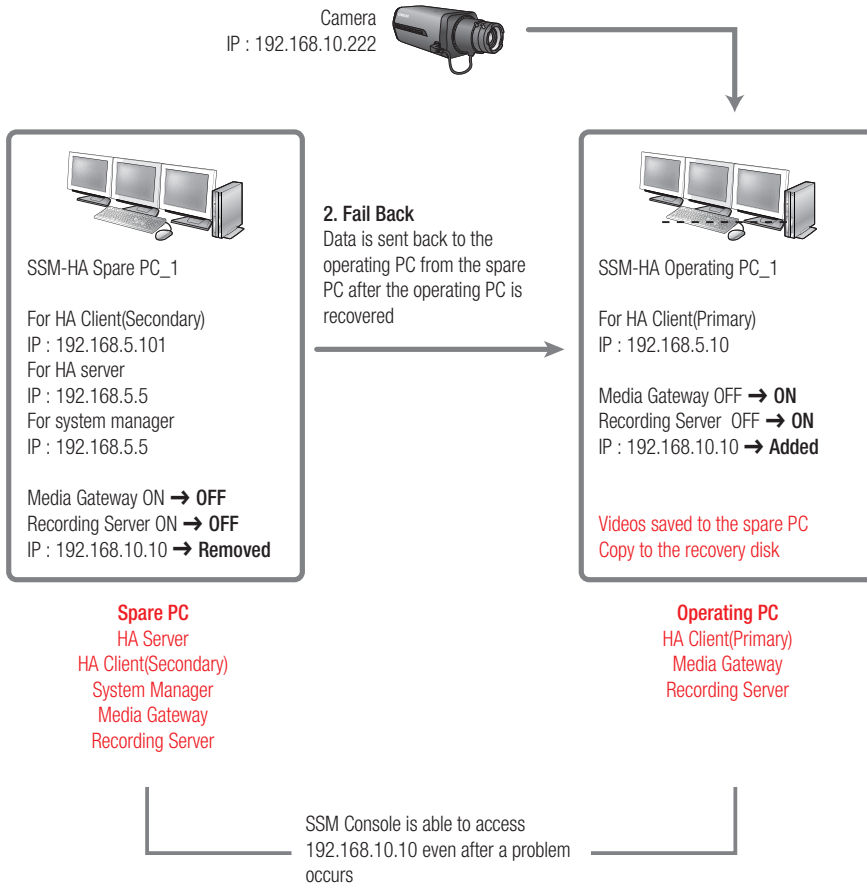


# Operation at the time of failover



# SSM HA

## Operation at the time of failover



## HA TERMINOLOGY AND INSTALLATION

### Terminology

Term	Description
<b>HA Server</b>	Server module that manages the HA client It decides the fail-over or fail-back and transfers the event to SSM.
<b>HA Client</b>	A module actually executing the HA function in each PC. HA client has a Primary(Active) mode and a Secondary(Standby) mode.
<b>Target Service</b>	Refers to the service managed by the HA client. * Target Service : <ul style="list-style-type: none"> <li>- Recording Server</li> <li>- Recording Server + Media Gateway</li> <li>- Media Gateway</li> <li>- VMG (VMD is configured as a separate PC)</li> </ul>
<b>Virtual IP</b>	IP address to be used by the target service managed by HA
<b>Failover</b>	Procedure in which the HA Secondary(Standby) client substitutes for the HA Primary(Active) client when the HA Primary(Active) client is out of order
<b>Failback</b>	Procedure in which the HA Primary(Active) client returns to the original operation when it recovers from the failure
<b>HA Client(Primary)</b>	HA client that is operated in Primary(Active) mode
<b>HA Client(Secondary)</b>	HA client that is operated in Secondary(Standby) mode

### HA Installation

#### Checking of Installation Environment

PC performance : CPU : Intel Core i5-4670 @ 3.40GHz, RAM : 8GB or higher  
 Hard Disk Drive : At least 2 SATA II 7200rpm hard disk drives (1 for the operating system and 1 for recording)  
 Operating system : Windows Server 2008 R2, Windows Server 2012, Windows 7, Windows 8, Windows 8.1


- The hardware specifications of the Primary(Active) client and the Secondary(Standby) client (including the number of disk drives and network cards) as well as their OS specifications should be identical.
- If the target service is not SSM-RS, a recording disk is not necessary.

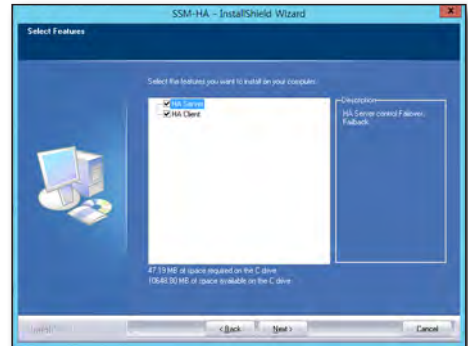
# SSM HA

## SSM-HA Installation

Install **SSM-Version\_Date.exe**.

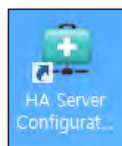
- Select the Install HA option from among the SSM installation options and the HA installer will be run. When installing an HA, you can select either **<HA Server>** or **<HA Client>**.
- When an HA has already been installed and is operated, you are required to perform installation in a disabled state.
- Manual Execution of HA Manager (Automatically Executed during Reboot)
- Start - Program - Samsung - HA - HA Manager

-  HA Manager runs the HA Server and HA Client installed in the system, and prepares for the operation of web console.



## Confirm HA Server installation

You can run the HA Server settings program using the icon generated on the screen.



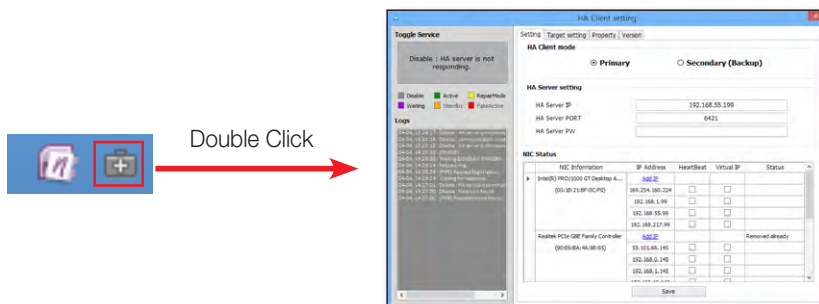
Double Click





## Confirm HA Client installation

You can run the HA Client settings program by double-clicking the tray icon for HA Client.



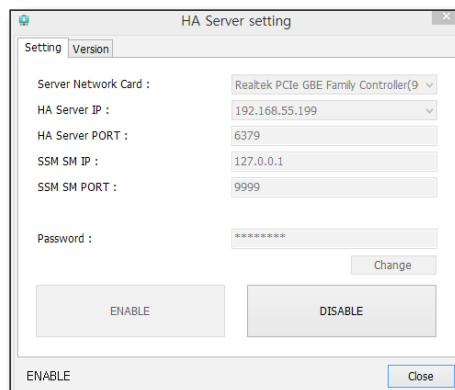
## HA Setting

### HA Server settings

#### 1. HA server settings

- Server Network Card / IP / Port : Network access information to operate with the HA Server
- SSM SM IP / Port : Network access information to access to SSM System Manager
- Password: Password for the HA Server set at the time of installation (required when HA clients access the HA Server)

Enter information in all input fields and click the <ENABLE> button.

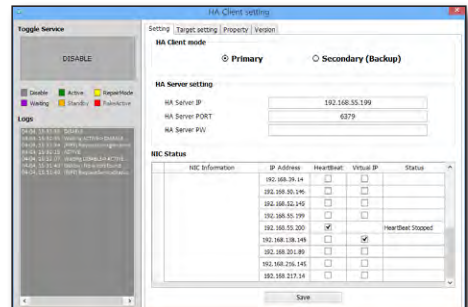


# SSM HA

## HA Client - Primary settings

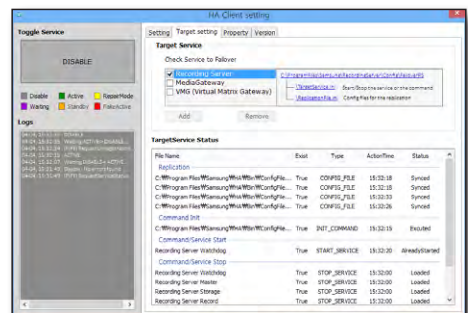
### 1. Settings tab configuration

- On the Settings tab, select Primary.
- Enter an IP and port of the HA Server.
- In NIC Status, select an IP to be used for HeartBeat.
- Select a virtual IP of the target service (required to use an NIC that is same as the HeartBeat IP).
- Click the <Save> button to save the settings information.



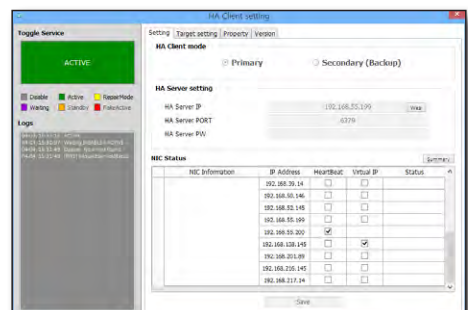
### 2. Target settings tab configuration

- Select a target service to use.
- Check whether the files used for the target service are loaded.
- Refer to information on how to configure network settings for each service, and configure settings so that the IP selected as a virtual IP is used by the target service.



### 3. Enable

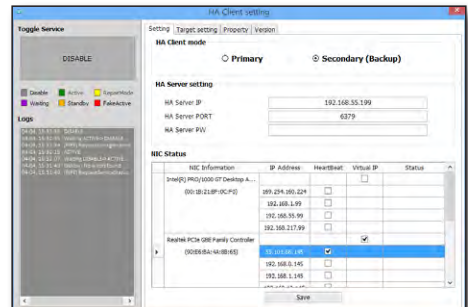
- Return to the settings tab.
- Enter the password of the HA Server.
- Click the <DISABLE> button and wait for a while to check whether the button changes to <ACTIVE>.



## HA Client - Secondary settings

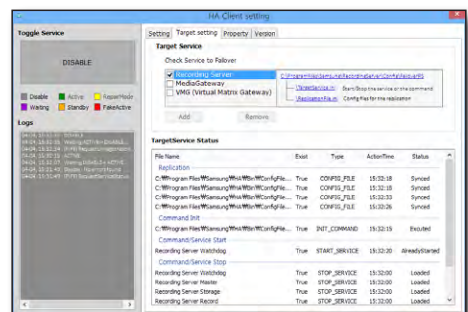
### 1. Settings tab configuration

- On the Settings tab, select Secondary.
- Enter an IP and port of the HA Server.
- In NIC Status, select an IP to be used for HeartBeat.
- For the virtual IP, select what is marked in the blank.
- Click the **<Save>** button to save the settings information.



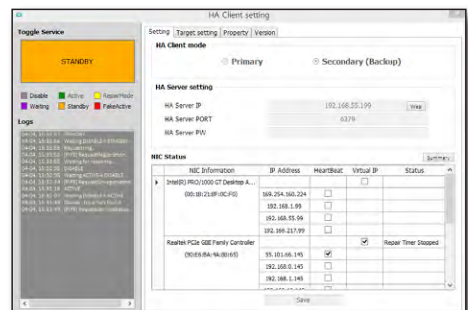
### 2. Target settings tab configuration

- Select a target service to use.
- Check whether the files used for the target service are loaded.



### 3. Enable

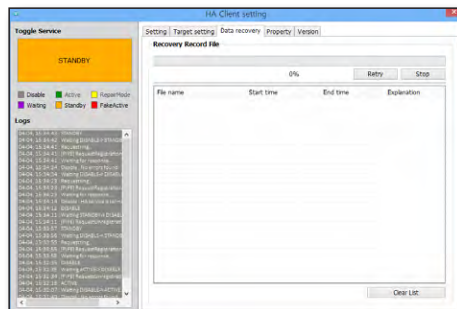
- Return to the settings tab.
- Enter the password of the HA Server.
- Click the **<DISABLE>** button and wait for a while to check whether the button changes to **<STANDBY>**.



## Recording File Recovery

### 1. Data Recovery Tab

- When failback succeeds, if there is a recorded file in the secondary agent, the recorded file is transmitted from the secondary to the primary.
- User can cancel or retry the transmission while the file is being transmitted.
- To start the recovery, a restore disk (with at least 2GB of storage space) for the recovery needs to be assigned in advance in the recording server through the SSM configuration manager.



## HA Web Viewer

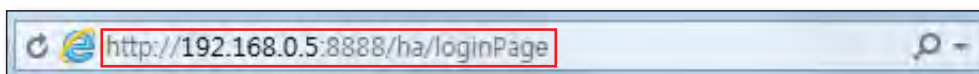
### 1. Accessing HA Web

Desktop Icon in the Local PC



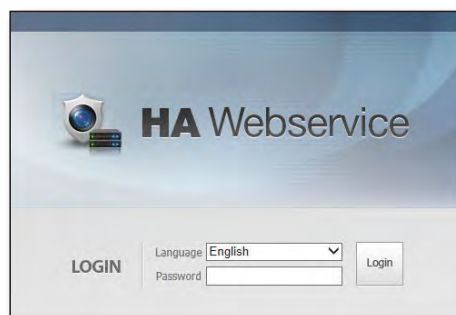
- Double click the HA Web Viewer icon on the desktop.

Input the URL ([http://\(HAServerIP\):8888/ha/loginpage](http://(HAServerIP):8888/ha/loginpage)) in the address box of the browser in a remote PC.



### 2. HA Web Server Login

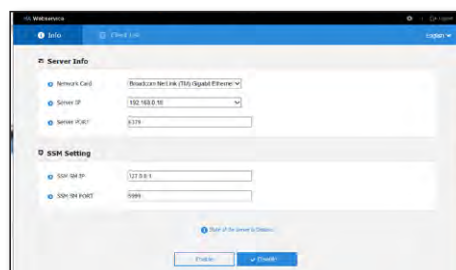
- Select a language.
- Enter the password set during the HA installation and click the 'Login' button.



### 3. HA Web Server Setting

HA Server Setting and status informaton

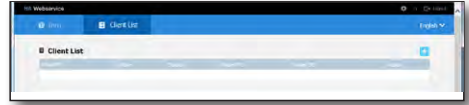
- The setting of HA server in Web is the same as the above setting.



# SSM HA

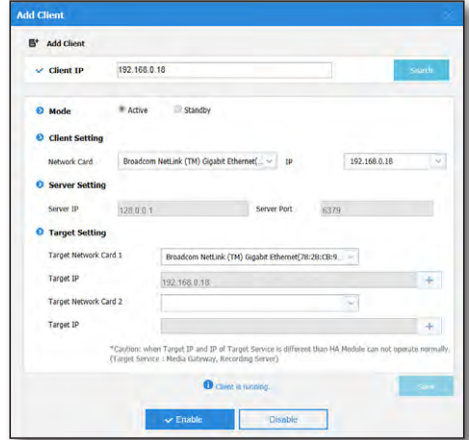
## HA Client Login Information

- Click an IP address in the list to view the details of HA client.
- The data of the connected HA client are listed, and each client can be enabled or disabled.



## HA Client Details

The setting of HA client in Web is the same as the above setting.



## HA Status Checking (Tray Icon)

### Server Status

Status	Server Icon	Description
Disable(default)		The HA server is not used.
Enable		The HA server is operating.

### HA Client Status

Status	HA Client Icon	Description
Disable(default)		The HA function is not used. It can be set to use the HA function. Error status.
Primary(Active)		State in which HA is in operation with the HA Primary(Active) client logged in
Secondary(Standby)		State in which HA is in operation with the HA Secondary(Standby) client logged in
FakeActive		State in which HA Secondary(Standby) client substitutes for HA Primary(Active) client that is out of order

# appendix

## PRODUCT SPECIFICATION

Features		
Video	Supported Video Compression Format	H.264, MPEG-4, MJPEG
	Supported resolution	Depending on the device
Audio	Supported Audio Compression Format	G.711 $\mu$ -law (PCM), G.723, G.726 (ADPCM), AAC codec
	Functions	Bi-directional audio (Listen/Talk)
Live Monitoring	Multi-monitor	Up to 4 monitors (Follow the recommended system requirement)
	Screen-split mode	4:3 screen modes : 1/4/6/8/9/10/13/16/17/21/25/36/49/64 16:9 screen modes : 6/12/20/30 Full screen mode * While in multi-monitor environment, layouts and split modes for less than 100 channels will be available.
	Sequence mode	up to 16-splits per monitor
	PTZ Control	Area Zoom, Go to 1x zoom, PTZ Sensitivity, Focus, Zoom, Patrol, Swing/Autopan, Group/Scan, Trace/Pattern, Preset, Iris control
	Map monitoring	Split View Mode for Map Layout, Zoom in/out, video popup(Instant viewer), Camera/Sensor/Alarm Out icons on the map
	Simple Recording	Recording of the selected video tile during 1hour
	Functions	OSD On/Off, Snapshot / Prints Image, Brightness/Contrast control, Keep Aspect Ratio/Original size, Deinterlacing, Flip, Digital zoom
Search & Playback	Search mode	Date, Event, Smart Search, POS Search based on DVR, NVR, Local folder
	Screen-split mode	Up to 16 footages can be played simultaneously
	Video Control	Start/stop, Pause, Faster/Slower forward/backward, Step Forward/Backward, Skip Forward/Backward
	Functions	Snapshot / Prints Image, Digital zoom
	Backup	Local storage, back up format(AVI, SEC) Configurable schedule for backup (*supported model only)

# appendix

Features		
Event Monitoring	Real-time event list	Shows real-time event list of the device(event status, type, device, user, time(PC)), Viewing instant video image
	Searching events	<ul style="list-style-type: none"> <li>- SSM : User, System</li> <li>- Device : System, Camera, Sensor, Alarm Out</li> <li>- Camera : Video Loss, Motion, Passing, Entering, Exiting, Disappearing (Appearing), Tampering, Tracking, Face Detection, Audio Detection</li> </ul>
	Reporting	Manual report (show events and statistics) print & Save function, format(excel, PDF, word)
	Confirming	set alarm details Normal/Abnormal/Etc, confirm action
	History	the confirmed details of the selected event from the list
	Instant Viewer	Display the selecting camera. Confirm the event, record event remarks and end the event status.
	Instant Player	Plays the corresponding camera's video image
	Event Action	Define various system actions (output) for events (input) from devices, action (output) types: Instant Viewer, Preset, Alarm Out, Pop-up, Sound and E-mail notification
Configuration		
Site/User management		Site/User group/User account management, Permission management for viewer functions
Device management		Automatic device IP scanning, Viewing the device settings(Device webpage), Exporting/Importing devices settings, Updating the device firmware
Screen management	Layouts	Setting/Adding/Deleting Layouts, Map/Video Layout
	Monitor	Multi Monitor, Split Screen, Sequence, Using I-Frame, Using low-resolution
Environment		OSD display, Date/Time, Capture, Recording, Sartup, Language, UI auto lock, Log
System settings		Backup/Restore SSM setups, Restore the devault settings
Time synchronization		NTP Server, Client
Update		Automatic self upgrade(Connection to Hanwha Techwin upgrade server)
General		
Supported devices		Hanwha Techwin's N/W Camera, Encoder, DVR/NVR
Maximum number of Media Gateways per system		Default 4 Media Gateway
Maximum number of Free NET-i ware/Recording Server per system		1 NET-i ware/Recording Server



Configuration	
Maximum number of cameras per Media Gateway	N/W Camera 72channels or DVR/NVR 288channels(36)
Maximum number of clients per Media Gateway	5 Clients
Modules	System Manager, Media Gateway, Console, Service Manager, Configuration Manager
Language	Total 23 languages support English, French, German, Spanish, Italian, Russian, Chinese, Japanese, Korean, Turkish, Polish, Czech, Serbian, Romanian, Portuguese, Dutch, Croatian, Hungarian, Greek, Swedish, Danish, Finnish, Norwegian, Bulgarian
System Requirement	Recommended <ul style="list-style-type: none"> <li>- System manger, media gateway and console : CPU Intel Core i7-4770 @ 3.40GHz, RAM 8GB or more, Video Memory 1024MB or more (Geforce GTX760 GPU), 20GB or more available space in HDD (10GB or more available space to save the log DB for operation after installation), GTX960 or higher for CUDA decoder usage, and Driver version 368.69 or higher for CUDA decoder usage</li> <li>- Recording Server : CPU Intel Core i7-4770 @ 3.40GHz, RAM 16GB, SSD (for OS disk), 4 or more HDD SATA 7200rpm 64MB (for recording disk)</li> <li>* RAID specification : RAID5, 8Bay, HW RAID controller (AF support)</li> <li>* iSCSI specification : Including RAID specification above, NIC bandwidth 2G or higher, 2 or more NIC's (NIC Teaming)</li> </ul>
	Minimum <ul style="list-style-type: none"> <li>- System manger, media gateway and console : CPU Intel Core i5-4670 @ 3.40GHz, RAM 4GB or more, Video Memory 512MB or more (Geforce GT240), 20GB or more available space in HDD (10GB or more available space to save the log DB for operation after installation)</li> <li>- Recording Server : CPU Intel Core i5-4670 @ 3.40GHz, RAM 8GB, 2 or more HDD SATA2 7200rpm 64MB (1 OS disk and 1 or more recording disks)</li> <li>* RAID specification : RAID5, 8Bay, HW RAID controller (AF support), Windows Server 2012 64bit</li> <li>* iSCSI specification : Including RAID specification above, NIC bandwidth 2G or higher, 2 or more NIC's (NIC Teaming)</li> </ul>
	Operating System <ul style="list-style-type: none"> <li>- Console : Windows7 32bit/64bit, Windows8 32bit/64bit or Windows8.1 32bit/64bit, Windows 10 32bit/64bit</li> <li>- System manager and media gateway : Windows7 32bit/64bit, Windows8 32bit/64bit, Windows8.1 32bit/64bit, Windows Server 2008 R2 64bit, Windows Server 2012 32bit/64bit, Windows 10 32bit/64bit</li> <li>- Recording Server Recommended Specifications : Windows Server 2008 R2 64bit, Windows Server 2012 R2 64bit, Windows 10 32bit/64bit Minimum Requirements : Windows Server 2008 R2, Windows Server 2012 R2, Windows 7, Windows 8, Windows 8.1, Windows 10 32bit/64bit</li> </ul>

## LIST OF PORTS USED IN SSM

Name	Port	Protocol
System manager	9999, 61616	TCP for Web Service (9999), Active MQ (61616)
Media Gateway	4510, 4511, 4512, 4513	TCP (4510, 4511) HTTP(CGI) for Mobile (4512) RTSP for Mobile (4513)

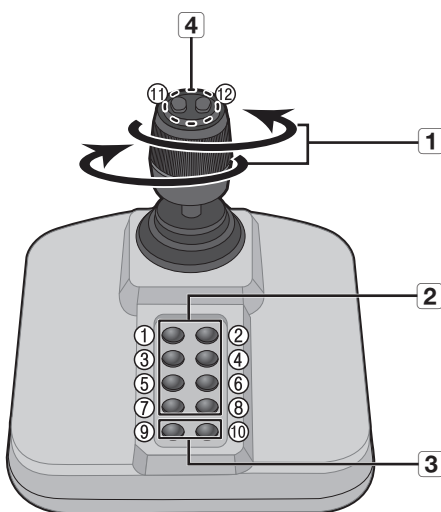
## USE JOYSTICK

You can check the connection settings and connection status in "**SSM CONSOLE Settings > Environment > System Controller**".

### SPC-2000

The SPC-2000 joystick is operated as follows:

- SPC-2000 must be connected to the PC before the console is launched in order to be recognized.
- SPC-2000 can run in PTZ or Screen mode.
- In Screen mode, the layouts assigned to the console are numbered 1~8 in the order of assignment.



Name		Function
1	Up/Down/Left/Right	In PTZ mode, the camera can be panned, tilted, and controlled in 8 directions. In Screen mode, the top/bottom/left/right tile can be selected.
	Rotation	In PTZ mode, the screen is zoomed in when it is rotated clockwise and zoomed out when it is rotated counterclockwise.
2	1 ~ 8	In PTZ mode, presets number 1~9 are run. In Screen mode, the layout corresponding to the button number is run.
3	9~10	PTZ mode and Screen mode are switched.
4	11, 12	In PTZ mode, Focus Near/Far operation is run. In Screen mode, multiple monitors can be selected and changed.



- To set the correct image, the axis calibration is needed.

Select **[Start]** → **[Set]** → **[Control Panel]** → **[Game Controller]** → **[Property]** → **[Set]** via the PC, click the **[Compensation]** button to run the "**System Compensation Wizard**" and then follow the guide on the screen to complete axis compensation.

## SPC-7000

The operating specifications with SPC-7000 joystick connected are as follows.




- SPC-7000 displays each operating status of the system controller on the LCD monitor, and allows the user to easily select a menu with a touch screen, or using a joystick.
- It operates in the following 5 modes; PTZ/Screen/Mouse/Console/VM



Name		Function
1	Joystick	Up/Down/Left/Right In PTZ mode, you can control the Pan and Tilt motion. In Screen mode, you can change the Up/Down/Left/Right tile selection. In Mouse mode, you can move the mouse cursor.
		Rotation In PTZ mode, the screen zooms in when turning in the WIDE direction, and zooms out when turning in the TELE direction.
2	PTZ control	[FOCUS N/F] + [←] Runs the Focus Near/Far motion. - [FOCUS N/F] + [←] : Focus Near
		[FOCUS N/F] + [→] - [FOCUS N/F] + [→] : Focus Far
		[IRIS C/O] + [→] Runs the IRIS Open/Close operation. - [IRIS C/O] + [→] : IRIS Open
		[IRIS C/O] + [←] - [IRIS C/O] + [←] : IRIS Close
		[PRESET] When you click a number + [PRESET] button, the preset corresponding to each button number is activated.
		[GROUP] When you click a number + [GROUP] button, Group/Scan corresponding to each button number is activated.
		[TRACE] When you click a number + [TRACE] button, Pattern/Trace corresponding to each button number is activated.
		[ZOOM] + [→] Runs the zoom in motion.
[ZOOM] + [←] Runs the zoom out motion.		

# appendix

	Name	Function
<b>3</b>	Mouse control	[T. LOCK(L)]/ [TRACK(R)] Uses the left/right button of the mouse in mouse mode.
<b>4</b>	Screen control	[MON.(CON.)] You can change the multi monitor selection by clicking a number + [MON. (CON.)] button in the screen mode (previous/next according to the monitor number).
		[LAYOUT(SEQ.)] When you click a number + [LAYOUT (SEQ.)] button, the layout corresponding to each button number is activated.
		[CAM] When you click a number + [CAM] button, the camera corresponding to each button number is activated.
		[ENTER] Clicking once will display a single screen on the live viewer. Clicking once again will return to the original screen. When you click a number + [ENTER] button in the live viewer, the screen is split into the number input.
		LCD SnapShot Button Captures the video of the current tile.
		LCD UI Alarm Off Button Initializes the event.
		number + [TILE(VM)] Moves to the tile corresponding to the number.
<b>5</b>	Mode Change	[PTZ(MENU)] Changes the PTZ mode. Click the [PTZ (MENU)] button while in PTZ mode and the screen mode will be changed.
		[SHIFT] + [MENU(Mouse)] Changes the mouse mode. Click the [SHIFT] + [MENU (Mouse)] buttons while in mouse mode and the screen mode will be switched.
		[SHIFT] + [Mon.(Con.)] Changes the console mode.
		[SHIFT] + [TILE(VM)] Runs the VMD control.

Name		Function
6	[SEARCH]	Outputs the video of the current tile through live/search.
		The video will be stopped.
		Plays and pauses the video.
		Starts/Ends manual recording of the video.
	Shuttle wheel	Fast plays in the forward direction when the wheel is turned clockwise, or fast plays in the reverse direction when the wheel is turned counter-clockwise.
	Jog wheel	Performs frame search.
7	0 ~ 9	Button to input a number.
	[ESC(SETUP)]	Initializes the input number.
	[FAVORI.(MACRO)]	Performs the motion as a key value designated to SPC-7000 is automatically generated. Example) When the [FAVORI.(MACRO)] key is pressed, the same motion that is activated when the user presses a number + [MONITOR] + number + [TILE (VM)] is carried out.

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- Code Project - WPF TreeListView Control (2012, Andrey Gliznetsov)
- Code Project - Creating an XML file based on XSD (2006, jebaron)
- Code Project - A reusable, high performance, socket server class - Part 1 (2002, Len Holgate)
- Code Project - Install Windows Service using Custom Action (2010, lata07mah)

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### JAVA(TM) INTERFACE CLASSES

#### JAVA MESSAGE SERVICE (JMS), VERSION 1.0.2

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