GeoVision inc

The Vision of Security

GV-Control Center V4

User's Manual

Scan the following QR codes for product warranty and technical support policy:

[Warranty]   [Technical Support Policy]

Contents

Naming and Definition

GV-Software	GV-Software refers to all GeoVision applications that can be connected to and managed by GV-Control Center, which includes GV-DVR / NVR / VMS, GV-Recording Server, GV-ASManager, GV-AI FR and GV-Live Streaming mobile app. See *1.1.2 Compatible GeoVision & USAVision Products.*
IP Devices	IP devices refer to all GeoVision IP video devices, including GV-IP Camera, GV-Video Server, GV-Compact DVR, GV-IO Box and GV-SNVR. See *Compatible GeoVision & USAVision Products.*

GDPR Practice

For details on how GeoVision Inc. is committed to helping users become GDPR (General Data Protection Regulation) compliant, visit the [GDPR Consent Request](#).

GPU Decoding Specifications

GPU (Graphics Processing Unit) decoding is added to lower the CPU loading and to increase the maximum frame rate. GPU decoding can be performed on onboard and/or external GPU under the following specifications.

Onboard GPU: GPU decoding is only supported when using the following Intel CPU:

For **H.264** Video Compression
- 2nd~ 8th Generation Intel Core i3 / i5 / i7 Desktop Processors
- 9th~ 13th Generation Intel Core i3 / i5 / i7 / i9 Desktop Processors

For **H.265** Video Compression
- 6th~ 8th Generation Intel Core i3 / i5 / i7 Desktop Processors
- 9th~ 13th Generation Intel Core i3 / i5 / i7 / i9 Desktop Processors

External GPU: GPU decoding is only supported when using the NVIDIA graphics card with compute capability 3.0 or above and memory 2 GB or above. To look up the commute capability of the NVIDIA graphics cards, refer to: https://developer.nvidia.com/cuda-gpus

Note:
1. Only one external NVIDIA graphics card is supported to perform GPU decoding.
2. GeForce GTX1060 is not supported.

Onboard GPU + External GPU: To have both the onboard and external GPU to perform GPU decoding, the GPUs must follow their respective specifications listed above.

Note:
1. If you have both onboard and external GPUs installed, the onboard GPU must be connected to a monitor for activating H.264 / H.265 GPU decoding.
2. CUDA compute capability 5.0 or higher is required to ensure optimal performance.

Note for Upgrading GV-Control Center

To upgrade GV-Control Center, run the **Installer** (setup.exe) included in the latest software downloads from our website. Select **Reinstall / Upgrade** to start.
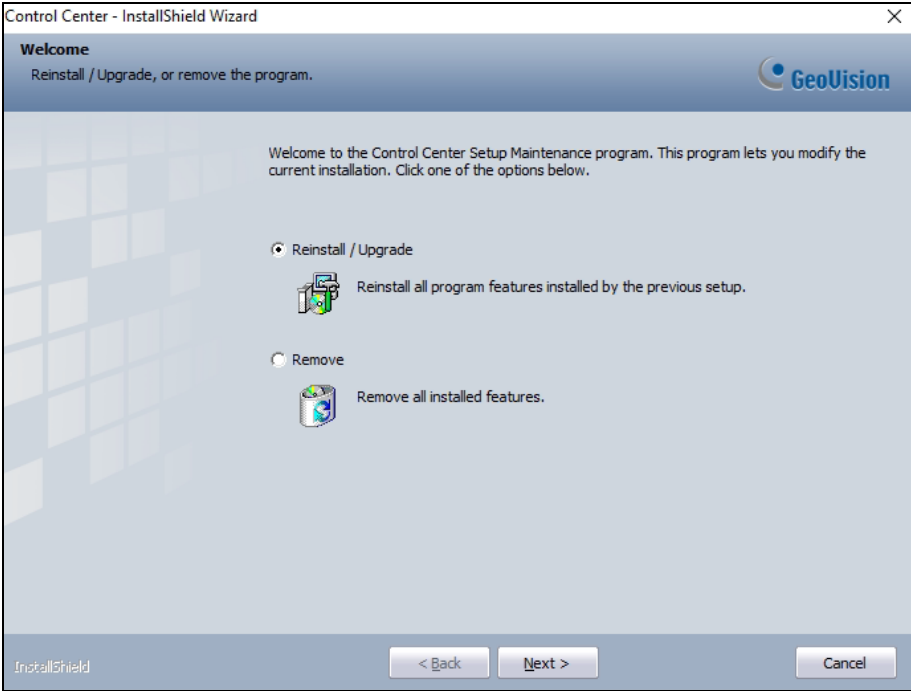
Software Specifications for H.264 and H.265

GPU decoding is only supported under the following operating system, resolution, and codec.

		2nd Gen	3rd ~ 4th Gen	6th Gen	7th Gen	8th ~ 13th Gen
OS	**64-Bit**	Windows 8 / 8.1 / 10 / Server 2012 R2 / Server 2016 / Server 2019 / Server 2022			Windows 10 Server 2016 / Server 2019 / Server 2022	Windows 10 / 11 Server 2016 / Server 2019 / Server 2022
Resolution		1 MP / 2 MP	1 MP / 2 MP / 3 MP / 4 MP / 5 MP / 8 MP / 12 MP			
Codec		H.264		H.265	H.264 / H.265	
Note: Make sure your PC meets the system requirements before installing or upgrading to Windows 11. See *Microsoft's website* for details.						

Chapter 1 Introduction

GV-Control Center is a central monitoring station solution (CMS) that provides the CMS operator with these major features:

- Popup video alerts upon motion detection, input trigger, critical temperature and many more (See *4.7 VMD Monitoring)*
- Remote playback (See *Chapter 5 Playback*)
- Access client GV-DVR / NVR (See *6.1 Remote DVR*)
- Access the desktop of client GV-DVR/ NVR / VMS and the operating system (See *6.2 Remote Desktop*)
- Central management of I/O devices from different hosts (See Chapter 7 *I/O Central Panel*)
- Display of 9 Live View windows, 100 camera channels for each Live View (See *8.2 Setting up Multiple Live Views*)
- Video Wall (See *8.4 Video Wall*)
- Remote E-Map (See *9.1 Remote E-Map*)
- Support for 31 languages on the user interface

1.1 Minimum System Requirement

Before installation, make sure your computer meets the following requirements.

OS	64-bit	Windows 10 / 11 / Server 2016 / Server 2019 / Server 2022
CPU		Corei7 2600K, 3.4 GHz
RAM		16 GB Dual Channels
Hard Disk		500 GB
Processor Graphics		Please see GPU Decoding Specifications above.
DirectX		9.0c
LAN Card		Gigabit Ethernet x 2

Note:

1. It is not recommended to install GV-Control Center and GV-Center V2 Pro on the same PC. Running the two software together may result in CPU overload error or system failure.
2. To display a megapixel IP channel across monitors, make sure the external graphic cards on a server are of the same brand, model and driver version, and the capacity of graphic cards are of NVIDIA GTS 450 or higher to ensure maximum efficiency.
3. When you find CPU usage is high or live view is unsmooth (dropping frames), you may need to increase CPU threads and memory, or decrease the number of connected cameras to improve the system performance.
4. For GV-Control Center to support up to 9 Live Views, with 100 camera channels for each Live View, higher PC specifications are required than the minimum requirements.

1.1.1 License

Free License	N/A
Maximum License	Unlimited number of hosts
Optional Combination	1. Control Center 2. Control Center + Video Wall (1 to 200 license) 3. Control Center + Vital Sign Monitor 4. Control Center + Vital Sign Monitor + Video Wall (1 to 200 licenses) *No. 3 ~No. 4 are **not** supported by *software licensing*
License Type	GV-USB dongle or software license

Note: For using Video Wall functions, you need two licenses, Control Center and Video Wall, to be activated on GV-Control Center.

IMPORTANT:

1. To upgrade to V4.0.0 or later, a purchased initial license is required to start GV-Control Center software.

2. The license comes in two forms: *GV-USB dongle* and *software license.* The two are incompatible. Before using software licensing, make sure to remove GV-USB dongle if inserted on the PC.

3. GV-USB dongle has two types: Internal and External. Internal dongle is recommended for the Hardware Watchdog function, which restarts the PC when Windows crashes or freezes.

4. Software licensing:

   - Not support the following software currently: GV-AI Guard, GV-DVR / NVR.

   - Support the following products: GV-AI FR V1.2 or later, GV-ASManager V6.0.1 or later, GV-Recording Server V2.0 or later, GV-SNVR series, GV-VMS V17.4.2 / V18.3.0 or later, UA-HD DVR series, UA-SNVR series, IP devices.

1.1.2   Compatible GeoVision & USAVision Products

Software

- GV-DVR / NVR: V8.5 or later
- GV-VMS: V14.1 or later
- GV-ASManager: V4.3 or later
- GV-Recording Server: V1.4 or later
- GV-AI FR: V1.2 or later
- GV-AI Guard: V1.1 or later

Mobile App

- GV-Live Streaming app: V1.0.2

SNVR

- GV-SNVR0400F / 1600: FW V1.1 or later; GV-SNVR0411: FW V2.0 or later;
  GV-SNVR0412: FW V1.13 or late; GV-SNVR0811: FW V2.73 or later; GV-SNVR0812:
  FW V1.03 or later; GV-SNVR1611: FW V3.03 or later, GV-SNVR1612: FW V1.01 or later,
  GV-SNVR3203: FW V1.00 or later; GV-SNVR6403: FW V1.00 or later

HD Video Encoder

- GV-VS11 / 12 / 14 / 2400 / 2420 / 2800 / 2820: FW V1.01 or later
- GV-VS2401 / VS21600: FW V1.00 or later

USAVision Products

- UA-HD DVR series: UA-XVL810: FW V1.02 or later, UA-XVL1610: FW V1.02 or later,
  UA-XVR810: FW V1.02 or later, UA-XVR1620: FW V1.00 or later
- UA-SNVR series: UA-SNVRL810-P: FW V1.01 or later, UA-SNVR1620-P: FW V1.01 or
  later, UA-SNVR3240-N: FW V1.00 or later

Note: Make sure to meet the remote connection criteria of the following hosts before
building the connection:

- **GV-VMS / NVR:** The maximum remote connection is subject to the CPU specification
  and usage and the available bandwidth. See *Step 3~4, 2.3.3 Connecting to GV-DVR /
  NVR / VMS* in *GV-Edge Recording Manager User's Manual* for details.
- **GV-SNVR0412/0812/1600/1611/1612:** The maximum remote connection varies for
  different models. See the column of *Remote Monitoring* in *GV-SNVR Comparison
  Chart* for details.
- **GV-SNVR3203/6403:** The maximum remote connection is subject to the total output
  bandwidth. See the column of *Max. Bandwidth* in *GV-SNVR Comparison Chart* for
  details.
- **GV-Recording Server:** A maximum of 600 channels of remote connection is
  supported. See the *GV-Recording Server datasheet* for details.

- **UA-SNVR/HD DVR:** The maximum remote connection is subject to the total output bandwidth. See the columns of *Max. Output Bandwidth* in *UA-SNVR Comparison Table* and *UA-HD DVR Comparison Table* for details.

1.2 Options

Optional devices can be purchased to assist your surveillance management.

Device	Description
GV-Joystick V2	GV-Joystick V2 facilitates PTZ camera control. It can be either plugged into the GeoVision surveillance system for independent use or connected to GV-Keyboard to empower the operation.
GV-IO Box Series	GV-IO Box series provides 4 / 8 / 16 inputs and relay outputs, and supports both DC and AC output voltages, with optional support for Ethernet module and 4E additionally supporting PoE connection.
GV-IP Speaker	GV-IP Speaker plays audio data received from the network. When integrated with GV-Control Center, its live speak can be used to deter unwanted visitors, prevent potential crimes, and provide directions. It can also play prerecorded messages for business or security purposes, such as important announcements, safety instructions, and emergency alerts.

1.3   Overview

1.3.1   The Main Screen
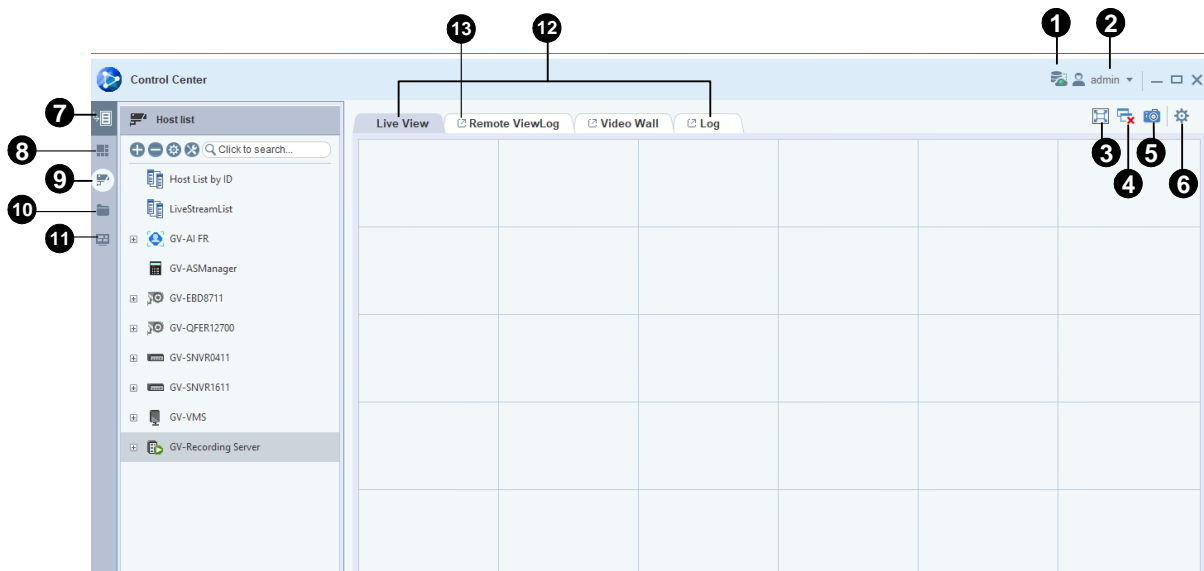
No.	Name	Description
1	Log Database Status	Display whether the log database is connected or not.
2	Login Account	Log out the current account, switch to another account, create accounts and manage account privileges.
3	Full Screen	Diminish all application windows, toolbars and display only the main screen.
4	Close All Videos	Close all channels on the main screen.
5	Snapshot	Take a snapshot of all the channels on the Live View.
6	Configure	Access the general settings of the Control Center and other tools, import / export data, apply the current settings to other users, search for bookmarked videos. See *4.1 Live View Window.*
7	List Mode	**List Mode-Tile** hides the 4 buttons of Layout, Host List, Group List and Video Wall while **List Model-Cascade** displays the 4 buttons under the List Mode.
8	Layout	Open / hide the Layout list. See *1.3.4 The Layout.*
9	Host List	Open / hide the Host List. See *1.3.2 The Host List.*
10	Group List	Open / hide the Group List. See *1.3.3 The Group List.*

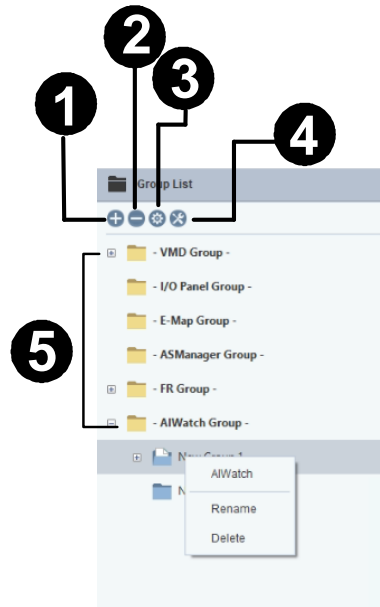| No.	Name	Description
11	Video Wall	Open / hide the Video Wall layout list. See *8.4 Video Wall.*
12	Live View, Remote ViewLog, Video Wall, Log	Display the live view, play back recordings, access Video Wall settings and log data.
13	Move Tab to New Window	Move a tab to another window.

1.3.2 The Host List

No.	Name	Description
1	Add	Add hosts and groups. To add GV-IP Speaker as a host, see *GV-IP Speaker User's Guide*.
2	Delete	Delete hosts and groups.
3	Configure	Modify host connection settings.
4	Tools	Access the following options: ■ **Auto Set IP Address:** See *3.1 Configuring the IP Address*. ■ **Upgrade Device Name**: See *3.2 Renaming Devices*. ■ **NAS Setup:** See *3.5 Configuring NAS*. ■ **Storage Information:** See 3.*5.4 Viewing Storage Information*. ■ **Change Host ID and Password:** See *3.3 Connecting to Hosts with Identical Credentials*. ■ **Face Manager:** See *GV-Face Manager User Guide*. ■ **Broadcast Service:** See *4.9 Audio Broadcast*. ■ **Host Monitor:** Enable to display the camera connection status under GV-VMS hosts.
5	Search	Search for cameras in the list.

1.3.3 The Group List

No.	Name	Description
1	Add	Add groups.
2	Delete	Delete groups.
3	Configure	Access the following option: ■ **Display Host Name in the Group List** ■ **Sort the Group List by Names**
4	Tools	Access the following option: ■ **Broadcast Service**: See *4.9 Audio Broadcast*.
5	Default Group	■ **VMD Group:** See *4.7 VMD Monitoring*. ■ **I/O Panel Group:** See *Chapter 7 I/O Central Panel*. ■ **E-Map Group:** See *9.1 Remote E-Map*. ■ **ASManager Group:** See *4.11 ASManager View*. ■ **FR Group:** See *4.9 Face Recognition Watch*. ■ **AI Guard Group:** You can access AI Watch under AI Guard Group. See *4.10 AI Watch.*

Note: For GV-VMS to send face recognition events to GV-Control Center, you need to enable **Notify App** in GV-VMS ahead: On **Face Manager** (**Home** 👁 > **Toolbar** 🛠 > **Configure** ⚙ > **Face Manager**), click **Configure** ◉ and select **Camera and Alert Settings**.
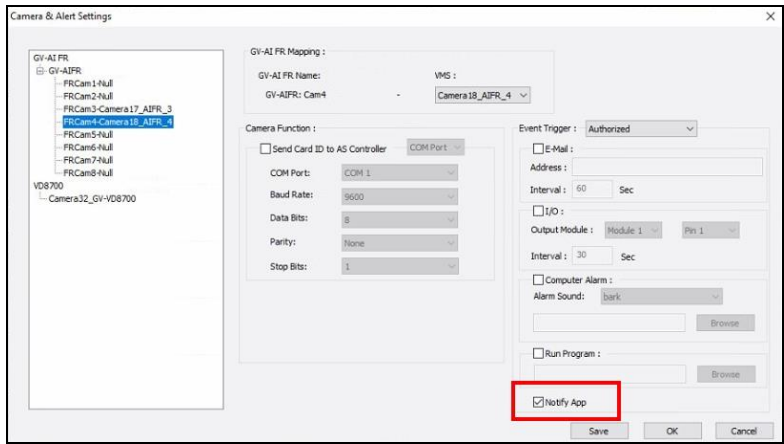
1.3.4   The Layout List
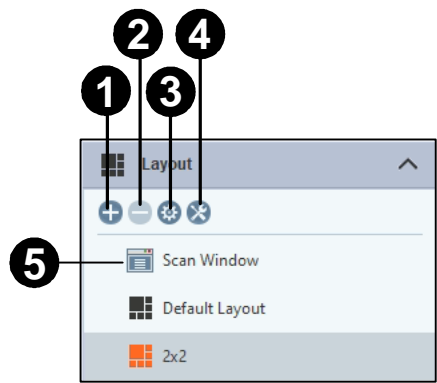
No.	Name	Description
1	Add	Add layouts or groups.
2	Delete	Delete layouts or groups.
3	Configure	Configure the text overlay and image ratio of live view.
4	Tools	Access the following option: ■ **Live View Quick Zoom:** Display a camera view on the primary monitor when multiple monitors are used. See *8.3 Quick Zoom.*
5	Scan Window	Drag the Scan Window to a live view grid and then cameras to the grid to display the cameras in sequence. See *4.2.3 Setting up Scan Window.*

Chapter 2   Getting Started

2.1   Installation

Follow the steps below to install GV-Control Center.

1. Go to the Download page of <u>GeoVision Website</u>

2. To install GV-Control Center, select **Primary Applications** from the dropdown list to download the software.
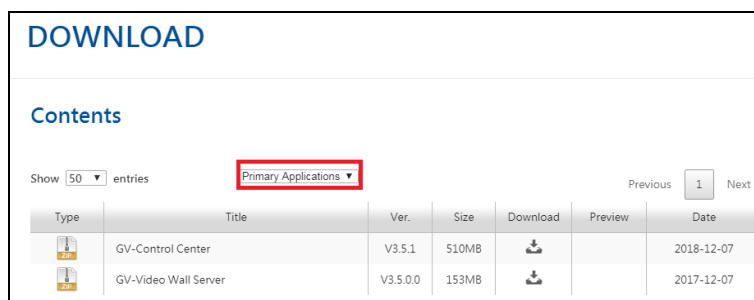
3. If you are using a GV-USB Dongle for licensing, insert the dongle to your computer.

   ● To install the USB device driver, select **Driver, F/W, Patch** from the dropdown list and download **GV-Series Card Driver / USB Devices Driver**.

   ● To verify the driver is installed correctly, go to Windows Device Manager and expand **DVR-Devices**. You should see **GV-Series USB Protector**.

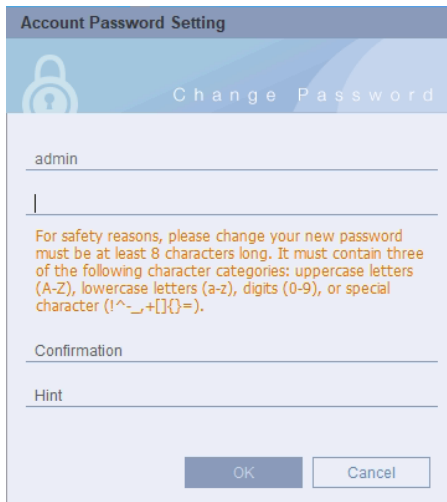4. If you are using software license, click **Windows Start** > **Control Center** > **Register GV-Control Center Platform** to register the serial number purchased from GeoVision. For details, see *First-Time Licensing* in <u>*GV-Software Licensing*</u>.

2.2 Login

Follow the steps below to launch GV-Control Center for the first time.

1. Run GV-Control Center. You are prompted for an Administrator's ID and Password.

2. Type the default ID **admin**.

3. Type your desired password. The password must be at least 8 characters long and contain at least 3 of the following types of characters: uppercase letters, lowercase letters, numbers and special characters. Click **OK**.

4. Optionally activate or skip the SQL settings at this step. You are logged in GV-Control Center now.

Note:

1. By default, GV-Control Center contains an Administrator account with the login ID **admin.** First-time users need to set up a password for the admin account in order to log in.

2. Users can choose to run GV-Control Center with the **Microsoft SQL Server Database,** which is suggested to be installed on a separate server. The log data (see the Log tab in No. 12, *1.3.1 The Main Screen)*, however, is only available when the SQL Server is properly configured and connected to GV-Control Center. For details on installing and configuring the SQL Server, see the technical notice.

Tip: To access the SQL settings after logging in GV-Control Center, click **Configure** ⚙ (top right of the main screen) > **Setup** > **System Configure** > the **System Log** tab.

2.2   Hosts and Groups

You need to create hosts or groups before starting GV-Control Center services. To create hosts, you can use the **Search Host** function (**Add** button on the Host List > **Add Host**) to detect GV / UA devices and compatible third-party IP devices on the same LAN and add them to the Host List, or you can follow the steps in the following section.

Note:

1. To use the **Search Host** function to locate GV devices, it is required to open TCP port 5201 on the client DVR / NVR / VMS, TCP port 5202 on the Video Server and Compact DVR, and UDP port 5200 on GV-Control Center.

2. If antivirus software is installed, the **Search Host** function may be interfered and unable to detect any hosts. In this case, turn off the antivirus software and try again.
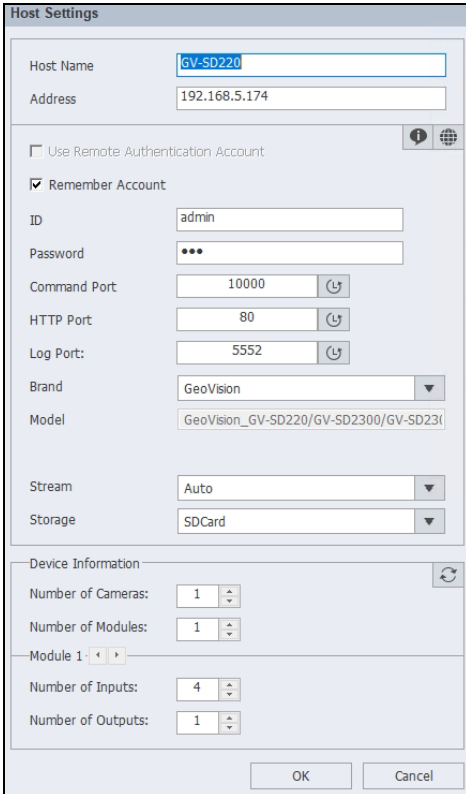

IMPORTANT:

If you are using software licensing, every time when you add a new host, you need to update the licensing by clicking the **Configure** button ⚙ (top right of the main screen) > **License Request Generator** > **Adjust registered license** > **OK** > **Agree License Agreement**.

2.2.1 Creating a Host

Create hosts for GV devices and software you like to monitor in GV-Control Center. The Host Settings dialog box may differ depending on the devices and software. The following steps demonstrate how to add an IP camera host.

1. On the Host List, click the **Add** button > **Add Host** > **Search Host**.

2. On the Host Settings dialog box, type the name, IP address, login ID and password of the host. Keep the communication port as default, unless otherwise necessary.

3. Click the **Update Information** button [icon] to request the number of cameras, I/O devices of the host.

4. Optionally select **Stream 1** or **Stream 2** for live view display. By default, the Stream is set to **Auto** and the received streaming is based on the streaming setting of the host. Select **Single Auto** for the received streaming to adapt when the live view sizes vary.

5. Click **OK**.

6. If you are using software licensing, every time when you add a new host, you need to update the licensing by clicking the **Configure** button [icon] (top right of the main screen) > **License Request Generator** > **Adjust registered license** > **OK** > **Agree License Agreement**.

Tip:

1. To access the Web interface of the camera / GV-Recording Server, click [icon] on the Host Settings dialog box.

2. To access the live view of the camera, drag and drop the camera from the Host List to any live view grids.

Note:

1. To add a GV-DVR / NVR / VMS host, it is required to enable **Control Center Service** in the host; otherwise the message "Unable to Connect" will appear when accessing the live view. See *2.3 Connecting to GV-DVR / NVR / VMS*.

2. To add a UA-IP camera / UA-HD DVR / UA-NVR host, click the **Add** button > **Add Host** > **Add USAVision IP camera** / **Add USAVision HD DVR/NVR** on the Host List.

3. GV-Control Center supports IP video devices using RTSP, ONVIF and PSIA standards. To connect the IP device compatible with any of the standards, select **Protocol** from the **Brand** dropdown list. For details, see *RTSP Streaming, Appendix C*.

4. To add a camera channel from GV-Live Streaming app, right-click **Live Stream List** > **Add Live Streaming Account**, type **Account** e-mail and **Binding Code** of GV-Live Streaming account. For details, see *Connecting to GV-Software* in *GV-Live Streaming Installation Guide*.
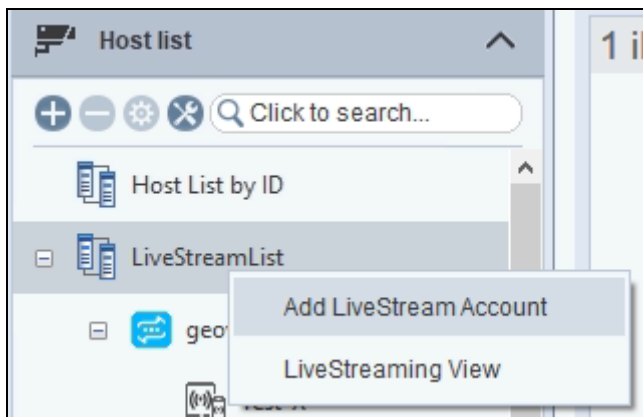
2.2.2 Creating a Group

You can group different hosts or cameras, by location or purpose, under the Host List or the Group List.

On the Group List, default group folders have already been created for specific functions such as **VMD** (Video Motion Detection), **I/O Panel**, **E-Map**, **ASManager** and **FR**. You can also create additional groups to apply Remote ViewLog, Panorama Setting and Privilege Setting to the cameras within the group collectively.

To create a group:

1. On the Host List / Group List, click the **Add** button > **Add Group**.
2. Name the created group.
3. On the Host List, drag the desired hosts to the group.

Note: You can grant access to a group created in the Group List. By default, only Administrator has access. Log in with an Administrator account, right-click a group, select **Privilege Setting**, select **User** or **Power User** and select accounts to allow access to this group.
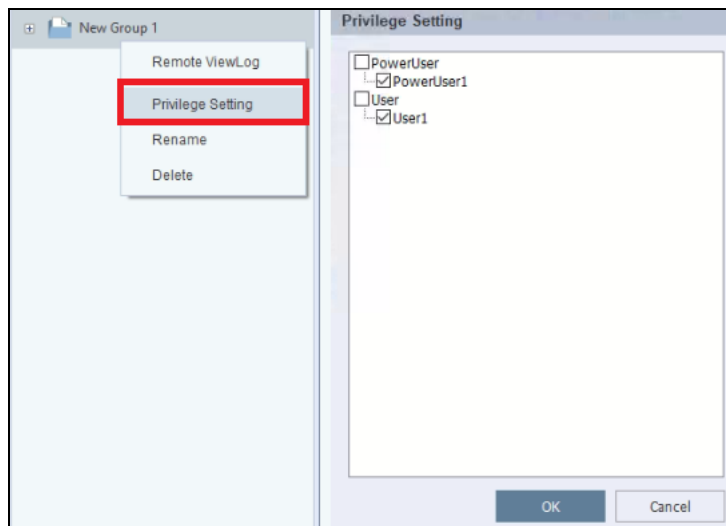
2.3   Connecting to GV-DVR / NVR / VMS

GV-Control Center supports several types of hosts. Only **GV-DVR / NVR / VMS** hosts need to be configured ahead to allow remote access from GV-Control Center. To configure GV-DVR / NVR / VMS, click the **Network** button on the main screen > **Control Center Server**, and select **Start Default Service** or **Start All Service** to connect.

2.3.1   The Control Center Server Window

When GV-DVR / NVR / VMS starts Control Center Server as described above, the server will be minimized to the system tray. Click the server's icon to restore its window.

GV-DVR / NVR
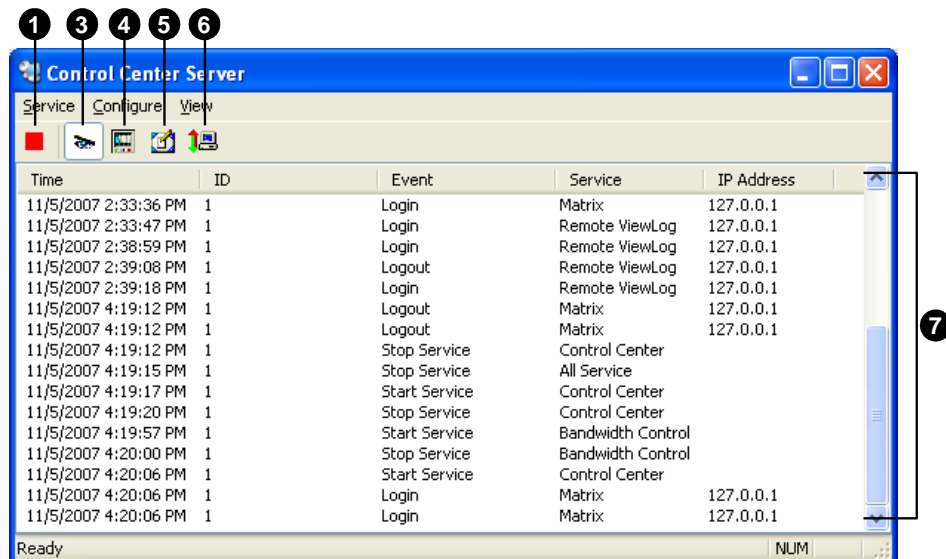
GV-VMS

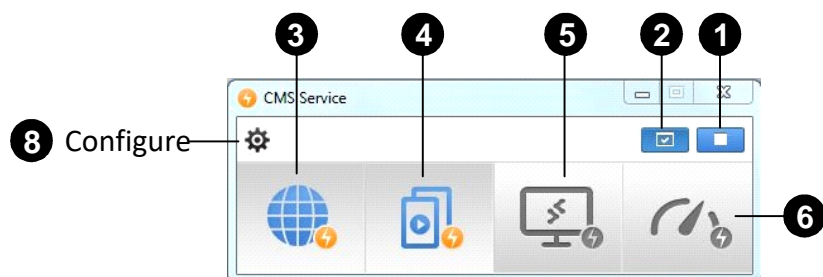| No.	Name	Description
1	Stop All Service	Stop all Control Center Server services.
2	Start Default Service	Start all default services.
3	Start / Stop Control Center Service	Start / stop the services: Live View, I/O Central Panel and Remote DVR.
4	Start/Stop Remote ViewLog Service	Allow / deny GV-Control Center to access the recordings.
5	Start/Stop Desktop Service	Allows / deny GV-Control Center to control the desktop.
6	Start / Stop Bandwidth Control Service	Allows / deny the Bandwidth Control Server to control the bandwidth. See *Bandwidth Control Applications, GV-DVR/NVR User's Manual or GV-VMS User's Manual*.
7	Event List	Indicate login ID, event type, event time, service activated and IP address.
8	Configure	See *2.3.2 Advanced Settings*.

Note:

1. By default, the live streams of GV-DVR / NVR / VMS are compressed for better bandwidth control at the cost of increased CPU usage. The number of remote connections allowed from a single GV-DVR / NVR / VMS depends on the specs and the CPU usage of GV-DVR / NVR / VMS.

2. For GV-VMS V17.1 or later, optionally enable the **Substream FIFO** function in the **Configure** button ⚙ of CMS Service (see No. 8 in the above figure) for reduced CPU usage of GV-VMS and improved streaming quality at the cost of increased bandwidth. The number of remote connections allowed from a single GV-VMS depends on the amount of bandwidth available.

3. To access one GV-VMS host from multiple Control Center servers under the same LAN, the Multicast function is recommended. For details, see *9.6 Multicast Setting*.
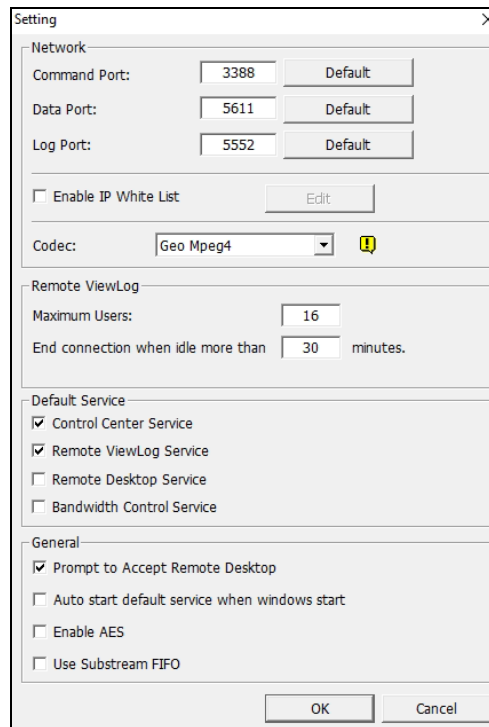
2.3.2 Advanced Settings

To configure Control Center Server, click the **Configure** button ⚙ on the window menu.

[Network Settings] Keep the four communication ports as default, unless otherwise necessary.
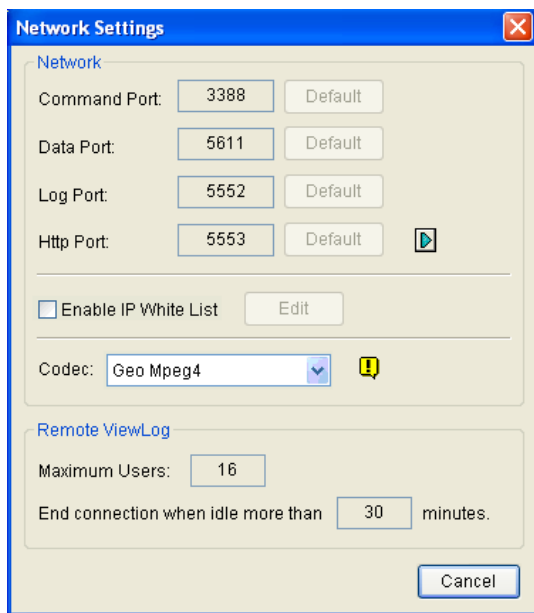
| GV-DVR / NVR | GV-VMS |

- **Enable IP White List:** Limit access to GV-Control Center Server by assigning IP ranges.
- **Codec:** Set video compression to Geo Mpeg4 or Geo H264. Note Remote Desktop does not support Geo H264 codec.
- **UPnP:** Only for GV-DVR / NVR. To automatically configure the three communication ports on your router, click the **Arrow** button beside Http Port for UPnP settings.
- **Remote ViewLog:** Set the maximum number of users to access the recordings for playback from 1 to 16, and also set the idle time after which to end the playback application.

[Event Log Settings] Set the log storage path and duration.

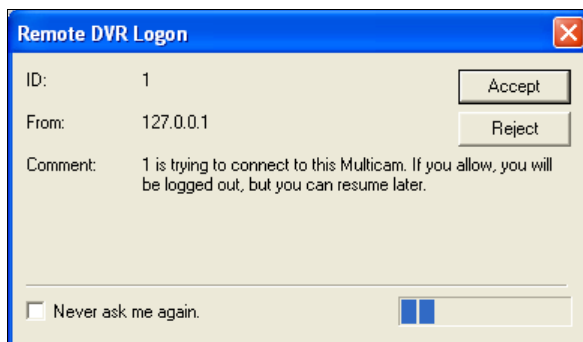**[Default Service]** Select the desired services to set as default.
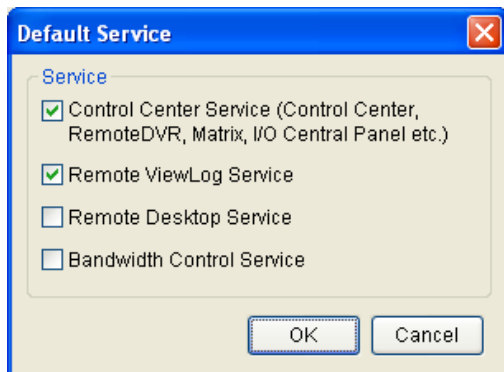
GV-DVR / NVR

[Prompt to accept] The client can be prompted to allow or deny the connection when GV-Control Center attempts to access the GV-DVR / NVR system (Remote DVR Service), or the client's desktop and OS system (Remote Desktop Service).

GV-DVR / NVR

[Auto start default service when Windows starts] Automatically run the default services at Windows startup.

[Hide when minimized] Only for GV-DVR / NVR. Hide the minimized Control Center Server window to the system tray.

[Enable AES] Only for GV-VMS. Enable to secure live view and playback transmission through AES encryption.

[Use Substream FIFO] Only for GV-VMS. Enable to reduce CPU usage of GV-VMS and improve streaming quality at the cost of increased bandwidth.
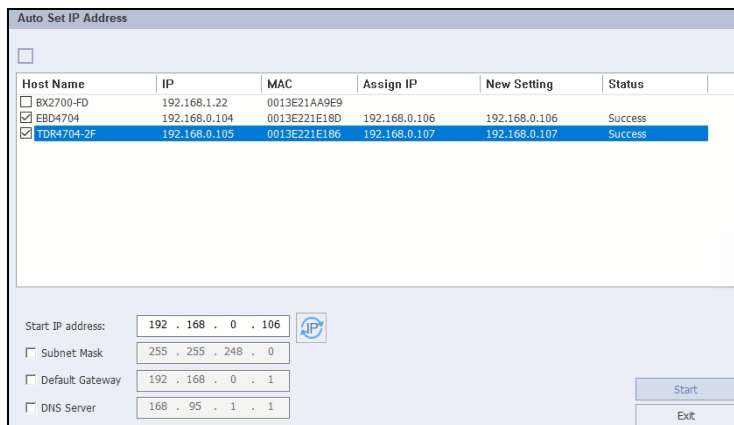
Chapter 3   Batch Management

The batch functions allow you to manage a mass number of hosts without the need to visit each host's interface. You can change IP addresses, rename devices, fill in identical login credentials, assign network storage devices to multiple hosts at a time.

3.1   Configuring the IP Address

You can set the IP addresses of multiple hosts at a time, or just change the IP address of a single host.

Note: The batch management function is only supported by GV-Video Server, GV-IP Cameras, and UA-IP Cameras.

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1.   On the Host List, click **Tools** ⊗ > **Auto Set IP Address**. The Auto Set IP Address dialog box appears.

2.   Select the devices to be configured from the **Host Name** column. To select all devices, click ☐.

3.   To

4.   To assign consecutive IP addresses to multiple GV-IP Devices:

      A.   Configure **Start IP Address**, **Subnet Mask**, **Default Gateway** and **DNS Server**.

      B.   Click the button 🔲 to preview the new IP addresses in the **Assign IP** column..

5.   To change the IP address of a single host, type the new IP address in the **Assign IP** field.

5.   Click **Start** to apply the changes.

3.2 Renaming Devices

You can modify the device names of multiple hosts at a time, or just the device name of a single host.

Note: The batch management function is only supported by GV-Video Server, GV-IP Cameras, and UA-IP Cameras.

---

1. On the Host List, click **Tools** ⚙ > **Upgrade Device Name**. The Upgrade Device Name dialog box appears.

2. Select the device(s) to be configured from the **Host Name** column. To select all devices, click the square ☐.

3. Type the new device name directly in the **Rename** field.

4. Click **Start** to apply the changes.

Host Name	IP	MAC	Rename	New Setting	Status
☑ GV-BX2700-FD	192.168.1.22	0013E21AA9E9	Entrance	Entrance	Success
☑ GV-SD220	192.168.5.174	0013E2FF13FC	Exit	Exit	Success

3.3 Connecting to Hosts with Identical Credentials

When you have a mass number of hosts using the same ID and password, use the following method to fill in the login ID and password in the Host Settings dialog box at a time.

1. On the Host List, click **Tools** ⚙ > **Change Host ID and Password**.

2. Select hosts, type a common **ID** and **Password**. After confirming the password, click **Start** to apply the changes.

3. The common ID and Password are filled in the Host Settings of the selected hosts, as illustrated below.
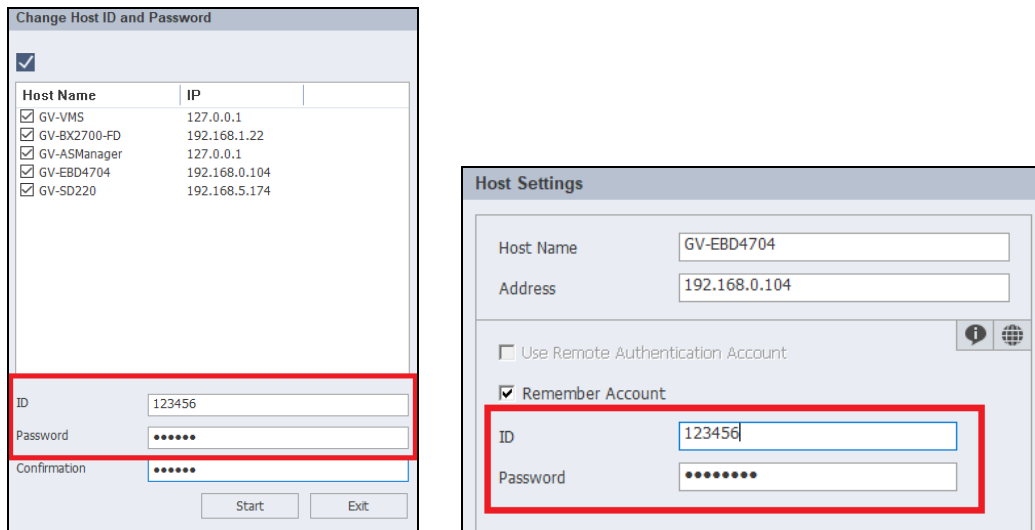
3.4 Updating Host Information

You can update the information of multiple hosts at a time, such as the connection status, the total number of cameras, input and output modules installed, and their names.

1. On the Host List, use the Shift key to select multiple hosts, then right-click and select **Update**.
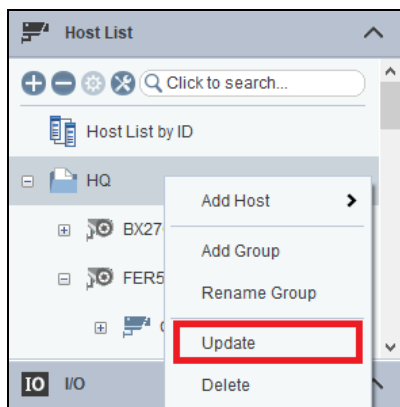
2. The Update Host Information window appears, with the selected hosts listed and selected.

3. Click **Update Information** to start updating the information from hosts.

3.5   Configuring NAS

You can set GV-IP Camera to record to NAS (Network-Attached Storage) devices.

To see whether your camera models can record to NAS devices, check the NAS feature in from this table.
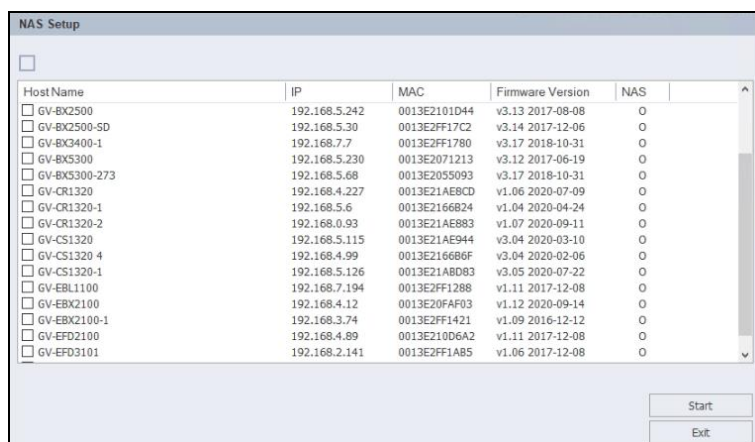

IMPORTANT:

1.   For the NAS application, it is required to use GV-IP Cameras (firmware V3.00 or later), GV-Target Cameras (firmware V1.02 or later), GV-EFD2101 / EFD3101 / EVD2100 / EVD3100 (firmware V1.00 or later).

2.   For system performance and compatibility, it is highly recommended to use GV-NAS Systems for recording.

3.   Make sure the computer installed with GV-Control Center is under the same LAN with the NAS devices.

3.5.1   Assigning NAS Storage for Recording

**IMPORTANT:** For system performance and compatibility, it is highly recommended to use GV-NAS Systems for recording.

---

1.   On the Host List, click **Tools** 🛠 > **NAS Setup**. The cameras that support NAS devices appear in the NAS Setup window.


Host Name	IP	MAC	Firmware Version	NAS
GV-BX2500	192.168.5.242	0013E2101D44	v3.13 2017-08-08	O
GV-BX2500-SD	192.168.5.30	0013E2FF17C2	v3.14 2017-12-06	O
GV-BX3400-1	192.168.7.7	0013E2FF1780	v3.17 2018-10-31	O
GV-BX5300	192.168.5.230	0013E2071213	v3.12 2017-06-19	O
GV-BX5300-273	192.168.5.68	0013E2055093	v3.17 2018-10-31	O
GV-CR1320	192.168.4.227	0013E21AE8CD	v1.06 2020-07-09	O
GV-CR1320-1	192.168.5.6	0013E2166B24	v1.04 2020-04-24	O
GV-CR1320-2	192.168.0.93	0013E21AE883	v1.07 2020-09-11	O
GV-CS1320	192.168.5.115	0013E21AE944	v3.04 2020-03-10	O
GV-CS1320 4	192.168.4.99	0013E2166B6F	v3.04 2020-02-06	O
GV-CS1320-1	192.168.5.126	0013E21ABD83	v3.05 2020-07-22	O
GV-EBL1100	192.168.7.194	0013E2FF1288	v1.11 2017-12-08	O
GV-EBX2100	192.168.4.12	0013E20FAF03	v1.12 2020-09-14	O
GV-EBX2100-1	192.168.3.74	0013E2FF1421	v1.09 2016-12-12	O
GV-EFD2100	192.168.4.89	0013E210D6A2	v1.11 2017-12-08	O
GV-EFD3101	192.168.2.141	0013E2FF1AB5	v1.06 2017-12-08	O

Start
Exit

2.   Select cameras for NAS management and click **Start**. The NAS Setup window appears.

24

3. Click **Search for network host** to detect the NAS installed under the LAN. The detected network hosts are listed.
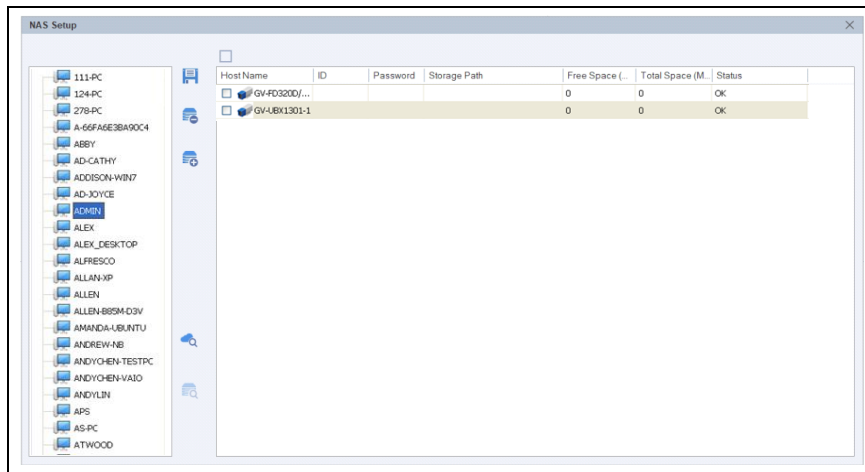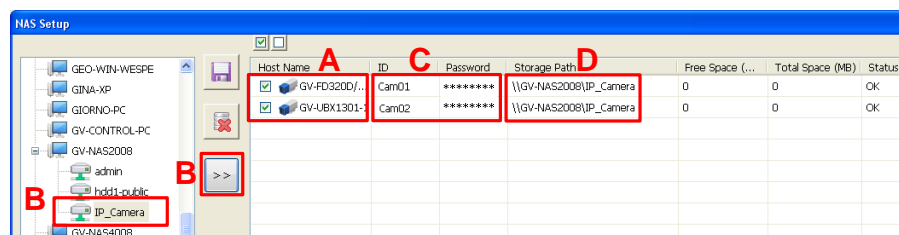

4. Select a NAS from the list and click the **Search the host's network storage** button to detect its shared folder(s). This dialog box appears.
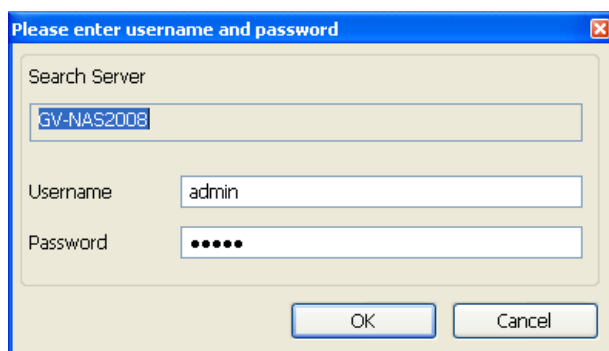
5. Type the administrator username and password of the NAS device that allows for highest level of access. The server's folders are detected and shown.

6. Expand the sever to show its folders.

![GeoVision inc logo]
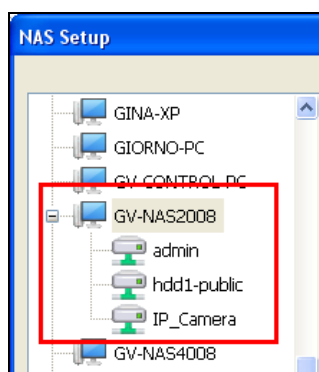
7.   Assign storage paths for the cameras.

A. On the NAS Setup window, select at least one camera to assign the storage path.

B. Select a NAS folder from the list and click **Select this storage path for the device** >> to assign this storage path. The storage path appears in the Storage Path column immediately.

C. In the ID and Password column, type the ID and password of an established account of the NAS server.

D. In the Storage Path column, you can manually change the IP address of a NAS.

8.   Click **Save** 📁 to store the settings.

Note:

1. Be sure that you assign each IP camera to record to a different user account in GV-NAS System to avoid disrupting the recycling process.

2. For GV-NAS2008 / 4008, the default user name is **Cam01** up to **Cam08** for each of the 8 user accounts; for GV-NAS2016 / 4016, the default user name is **Cam01** up to **Cam16** for each of the 16 user accounts. The default passwords are all **12345678**. For details, see *GV-NAS System Quick Start Guide* and *User's Manual*.

3.5.2   Changing the NAS Storage for Recording

In the NAS Setup window (Figure under step 3 in section 3.5.1), select a camera, select a NAS folder and click >> . The new storage path is immediately assigned. Alternatively type the storage path, ID and password of a NAS folder. Click **Save** 📁 to apply the settings.
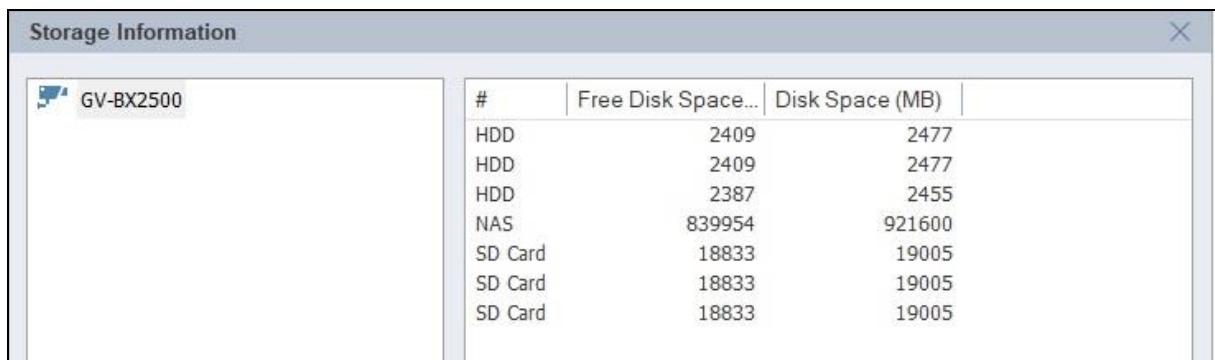
3.5.3   Deleting the NAS Storage for Recording

1. In the NAS Setup window (Figure under step 3 in section 3.5.1), select a camera and its storage path, and click the **Delete the selected storage path** ⬛ button.

2. Click **Save** 💾 to store the settings.

3.5.4   Viewing Storage Information

You can view storage information such as the storage type, free space and the overall disk space of GV-IP Cameras supporting the recording to NAS devices.

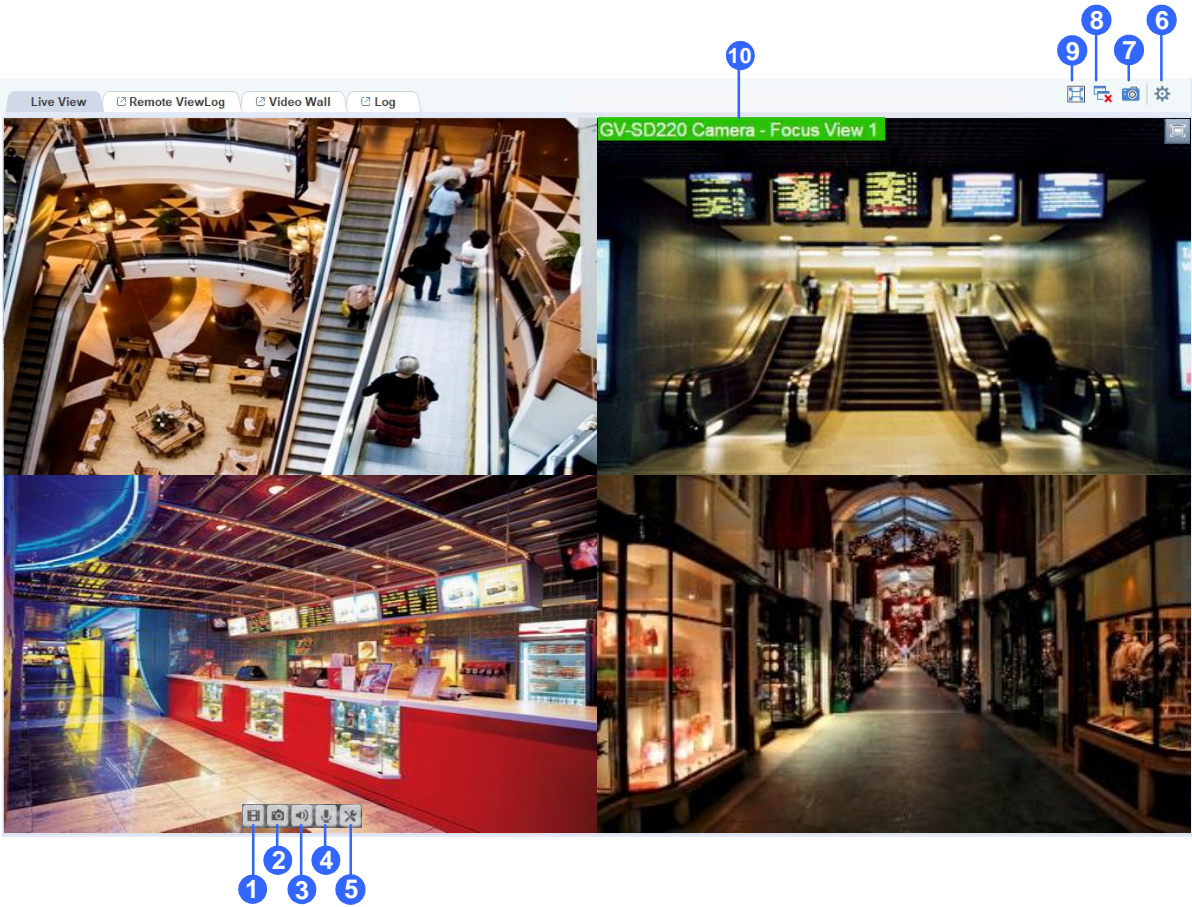On the Host List, click **Tools** ⚙ > **Storage Information**.

| Storage Information			✕
📷 GV-BX2500			
	#	Free Disk Space...	Disk Space (MB)
	HDD	2409	2477
	HDD	2409	2477
	HDD	2387	2455
	NAS	839954	921600
	SD Card	18833	19005
	SD Card	18833	19005
	SD Card	18833	19005

Chapter 4 Live View

4.1 The Live View Window

The Live View window displays live streams and give you access to the displayed camera channels. You can monitor up to **100** channels simultaneously. To display live view, drag and drop cameras from the Host List to any live view grids.

No.	Name	Description
1	Instant Play 🎞	Play back the recordings.
2	Snapshot 📷	Capture a snapshot of the selected channel.
3	Wave Out 🔊	Receive live audio from the selected channel.
4	Microphone 🎤	Talk to the surveillance site.
5	Configure ⚒	■ **Monitor:** Enable / disable monitoring of the camera. ■ **Wide Angle Lens Dewarping:** Enable the dewarping setting. See *4.5 Adjusting the Distorted View*. ■ **Face Enroll:** Enroll faces to a GV face recognition camera from any live views. The settings are similar to those on GV-VMS. See *Enrolling Face Data from Live View / ViewLog*, Chapter 3, *GV-VMS User's Manual*. ■ **Storyline:** Record a sequence of different camera views of a specific incident. On a camera view, select **Storyline** to start recording; to add another camera view, drag the camera view to the recording channel. To view the storyline clip, access **Log** > the **Record** tab. ■ **PTZ:** Only available for PTZ cameras. Enable PTZ functions. ■ **Apply object detection rectangles:** Select to display the detection rectangles to highlight the detected objects. ■ **Add to Bookmark:** Bookmark an image to watch later in the Remote ViewLog player. The function only works when the channel is recording. To search for and **play** back bookmarked videos, select the **Configure** button ⚙ (top right of the main screen) > **Bookmark**. ■ **Advanced Video Attributes:** Adjust the brightness, contrast, saturation and hue of live images. ■ **Location on Host List:** Highlight the camera of the current live view on the Host List. ■ **IMV1 Panomorph:** Dewarp the fisheye view. Note this option is only available for GV-IP Cameras installed with ImmerVision lenses and when the camera resolution is set to 1280 x 1024 or higher.

		■ **VR360:** Pan around the 360º image of GV-VR360. Click or to adjust the speed of the auto pan and click to zoom in.
		■ **Properties:**
		• **Caption:** Show the channel ID, host name or camera name on the live view.
		• **Keep Image Ratio:** Lock aspect ratio of the camera image.
		■ **Close:** Remove the camera from the layout grid.
6	Configure ✿	■ **Setup:** Access System Configuration and Application Position settings.
		■ **Import Data / Export Data:** Export / import preference settings and user account data. The **preference settings** include configurations in Host List, Group List, System Configuration, Live View, Virtual PTZ, GV-Keyboard, E-Map and Video Wall.
		■ **Save Configure to Other User:** The Administrator can apply the current configurations to Power User and User accounts, including the live view layout, Privilege Setting (see the Note in section 2.2.2), System Configuration (Chapter 10) and Application Position (section 8.1).
		■ **Bookmark:** Search for and play back bookmarked videos.
		■ **GV-Keyboard / Joystick:** See *Appendix B. PTZ Control Using GV-Joystick and/or GV-Keyboard.*
		■ **IP Device Utility:** Access GV-IP Device Utility.
		■ **License Request Generator:** Access License Activation Tool.
		■ **Version Information:** Display the version number of GV-Control Center.
7	Snapshot	Take snapshots of all the live views displayed. The images are saved to the default path **C:\Control Center\Snapshot**. To change the storage path, click **Configure** ✿ (top right of the main screen) > **Setup** > **System Configure** > the **Live View** tab.
8	Close All Videos	Close all the live view channels.
9	Full Screen	Extend the Live View window to full-monitor display.
10	Monitoring Status	Channel color (gray) : Not monitoring Channel color (green) : Monitoring but not recording Channel color (red) : Recording

Note for Monitoring Status (No. 10):

1. This function is only supported by GV-DVR / NVR / VMS, GV-IP Cameras (**except** GV-ABL / ADR / AVD / EBD / TBL / TDR / TVD series, GV-SD2322-IR / 2722-IR / 3732-IR, GV-QSD series).

2. For GV-DVR / NVR / VMS, make sure of the account used for connecting to GV-Control Center having the privilege to enable monitoring.

Note for GV-VR360:

1. To view the dewarped image of GV-VR360, the graphic card must support DirectX 10.1 or above.

2. Up to 2 GV-VR360 can be connected to one GV-Control Center with a total frame rate of 24 fps.

4.1.1　Quick Access to other Functions on Live View

The live view screen can be controlled using the actions below.

Actions	Functions
Mouse scroll	Zoom in or out on the live view.
Double-click	Display the live view in full screen.

In the **Host List**, right-click a **camera channel**, from a host, to access the following options, when enabled or supported:
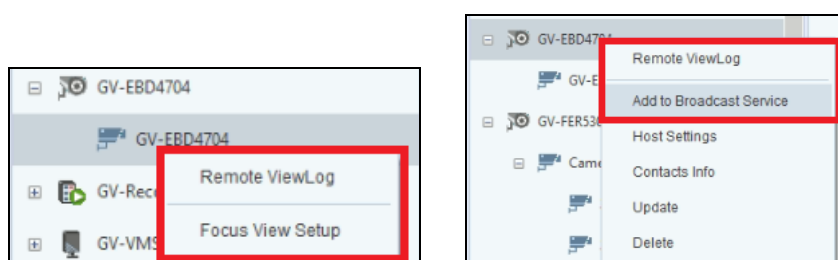
Option	Functions
Focus View Setup	Create up to 7 close-up views for the camera. See *4.2.1 Setting Focus View*.
PTZ Setup	Enable PTZ functions. See *4.4 Panoramic PTZ View*.
Fisheye Option	Access fisheye dewarping settings. See *4.3 Fisheye View*
Remote ViewLog	Access the recordings of host. See *Chapter 5 Playback*.
Broadcast Service	Accesses Audio Broadcast settings. See *4.8 Audio Broadcast*.

In the **Group List**, right-click a **group**, to access the following options, when enabled or supported:
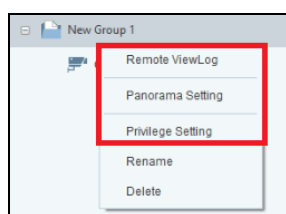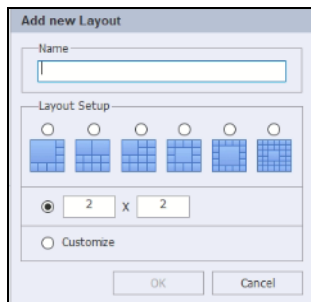

Option	Functions
Remote ViewLog	Access the recordings of grouped cameras. See *Chapter 5 Playback*.
Panorama Setting	Access Panorama View settings. *See 4.7 Panorama View*.
Privilege Setting	See the Note in *2.2.2 Creating a Group*.

4.2　Live View Layouts

4.2.1　Arranging Layouts

1.　In the **Layout** list, click **Add** ➕ > **Add New Layout**. This dialog box appears.

2.　Name the new layout and select one of the three available methods under Layout Setup to define a layout and click **OK**.

3.　If you select **Customize** in the step above, the Customize Layout dialog box appears.

　　a.　Click **Reset** 🖼 to specify a dimension for the grid if needed.

　　b.　To create a large grid, select multiple rectangles and click **Merge** 🔲.

　　c.　Click **OK** when you are done.

4.　To create multiple layouts, repeat steps 1-3. Once done, you can switch to the desired layout by double-clicking it on the Layout list.

4.2.2 Setting up Focus View

You can create up to 7 close-up views per camera and drag the created close-up views to the live view grid.
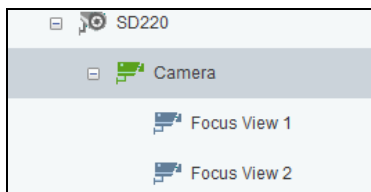
1. In the Host List, right-click a camera from a host > **Focus View Setup**. This dialog box appears.
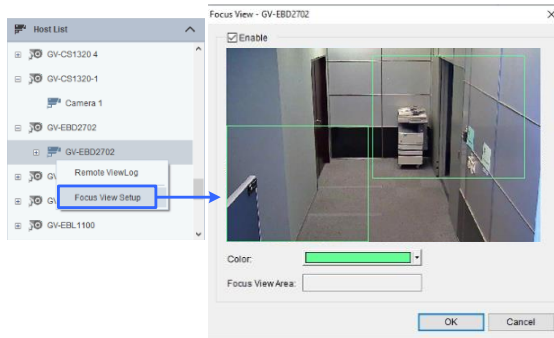
2. Click **Enable** and draw boxes on the camera view to create focus views. You can change the color of the box if needed.

3. Click **OK**. The created focus views are listed under the camera channel.

4. You can now drag the focus views to live view grids.

Note: This function is not supported by fisheye and PTZ cameras.

4.2.3 Setting up Scan Window

You can assign multiple cameras to a Scan Window, and each camera will be shown in sequence for the scan interval specified.

1. Drag **Scan Window** from the Layout list to a live view grid.

2. Drag the desired cameras / hosts into the Scan Window.
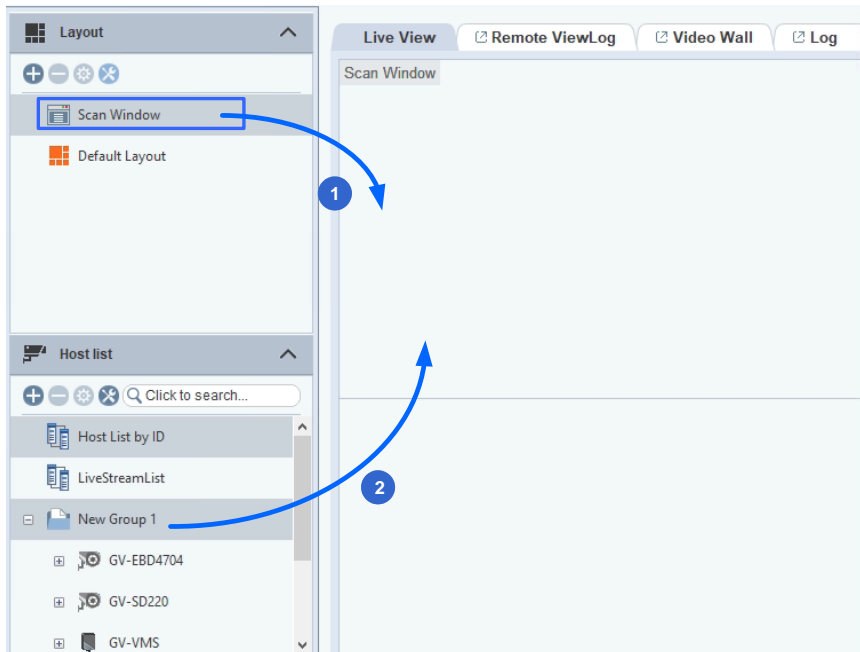
3. Move the cursor to the Scan Window, click **Tools** > **Properties**. This dialog box appears.
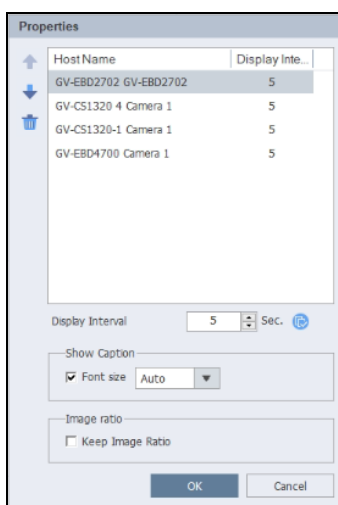
4. To adjust the order of a camera, select a camera and click the Up and Down arrows.

5. To specify how many seconds to show the live view of each camera, set up the **Display Interval** for each camera. Optionally click to apply the display interval to all cameras.

6. To show camera names on live view, select **Show Caption**.

7. To lock the original aspect ratio of the camera image, select **Keep Image Ratio**.

8. Click **OK**.

4.3   Fisheye View

The circular fisheye view can be dewarped into the following four view modes, and you can drag PTZ views to different angles.

Quad view: 4 PTZ views

360 degree: 2 PTZ view & 1 360⁰ view

Dual 180 degree: 2 180⁰ views

Single view: 1 PTZ view

Note:

1. This function requires a graphic card supporting DirectX 10.1 or later.

2. The following camera types are supported:

   • GV-Fisheye Camera

   • GV-IP Camera installed with an ImmerVision IMV1 Panorama Lens

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4.3.1   Setting up Fisheye View

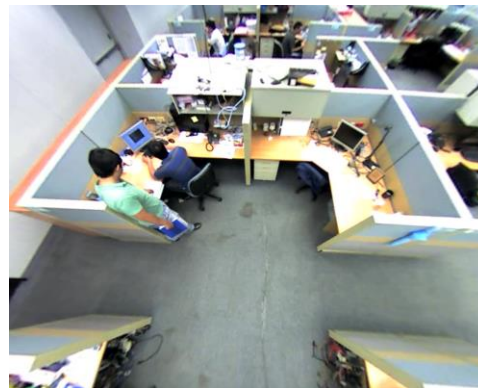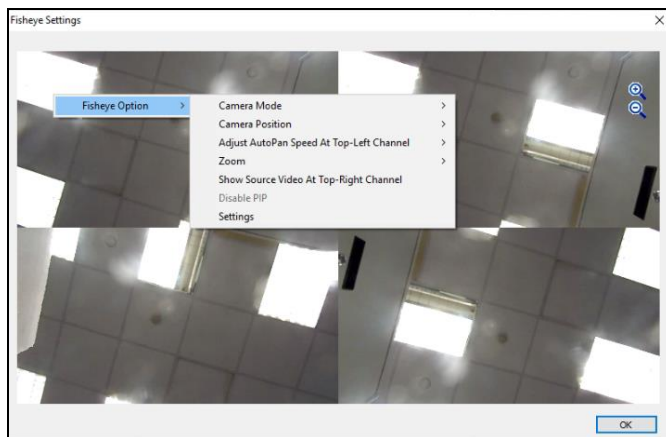1. To enable the dewarped view, right-click a fisheye camera from the Host List > **Fisheye Option**. By default, the fisheye view is dewarped into Quad View.

2. To change the dewarped settings, right-click the fisheye view on the Fisheye Settings window > **Fisheye Option** to access the following options.

- ■ **Camera Mode:** You can choose among the following four view modes.

  - • **Quad view:** Composed of four PTZ views.
  - • **360 degree:** Composed of two PTZ views and one 360º panoramic view.
  - • **Dual 180 degree:** Composed of two 180º views.
  - • **Single view:** Composed of one PTZ view. Click on the inset window to watch a close-up view on the Live View window.

- ■ **Camera Position:** Select **Ceiling**, **Wall** or **Ground** according to installation scenarios.

- ■ **Adjust Auto Pan Speed at Top-Left Channel:** Select **low**, **medium**, or **high speed** to enable Auto Pan for one PTZ view at the rotation speed of your choice. This option is only available in **Quad view**, **360 degree** and **Single view**.

- ■ **Zoom:** Select **Zoom In** or **Zoom Out** and then click on the image.

- ■ **Show Source Video at Top-Right Channel:** You can display the circular source image in the top-right quadrant when **Quad view** is selected.

■ **360 Degree Object Tracking:** Only available in **360 degree** mode. Track and highlight detected motion in live view.

- **Tracking:** Enable the 360 Degree Object Tracking function.
- **Advanced Settings:** Define the mask region, object size, dwell time and schedule for object tracking. For details, see *4.3.2 Object Tracking*.

■ **Guard Tour Setting:** Only available in **Single View** mode. Enable to set up a virtual PTZ tour using the defined preset points on live view. For details, see *4.3.3 Virtual PTZ*.

■ **Settings:**
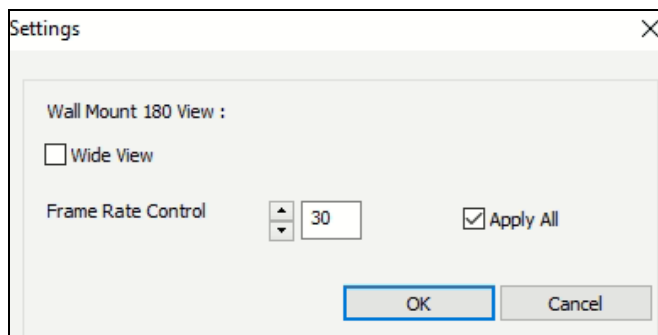
- **Wide View:** Increase the height of the 180-degree view when camera position is set to wall mount.
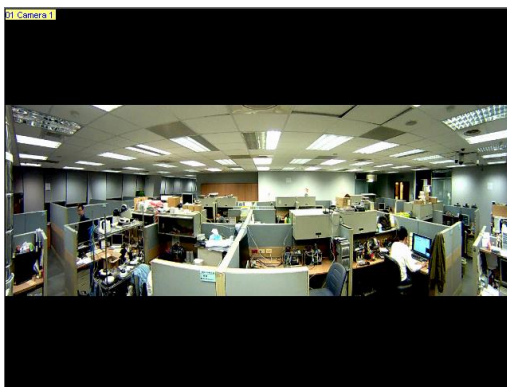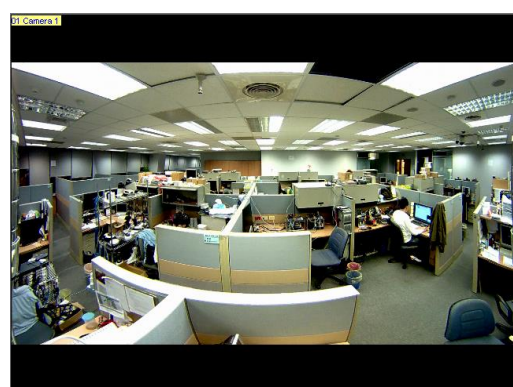
Wide View Disabled   **Wide View Enabled**

- **Frame Rate Control:** Limit the frame rate of fisheye view to the number specified. Select **Apply All** to apply the frame rate setting to all fisheye views.

3. Drag the dewarped fisheye views from the Host List to live view grids for display. And you can drag any PTZ view or 180-degree view to adjust the viewing angle.

4.3.2　Object Tracking

You can set up object tracking in the fisheye view to track a moving object. The function is only available when the view mode is set to **360 degree**. When motion is detected in the fisheye view, the top-right channel will start tracking the moving object, which is highlighted in the 360-degree view at the bottom.
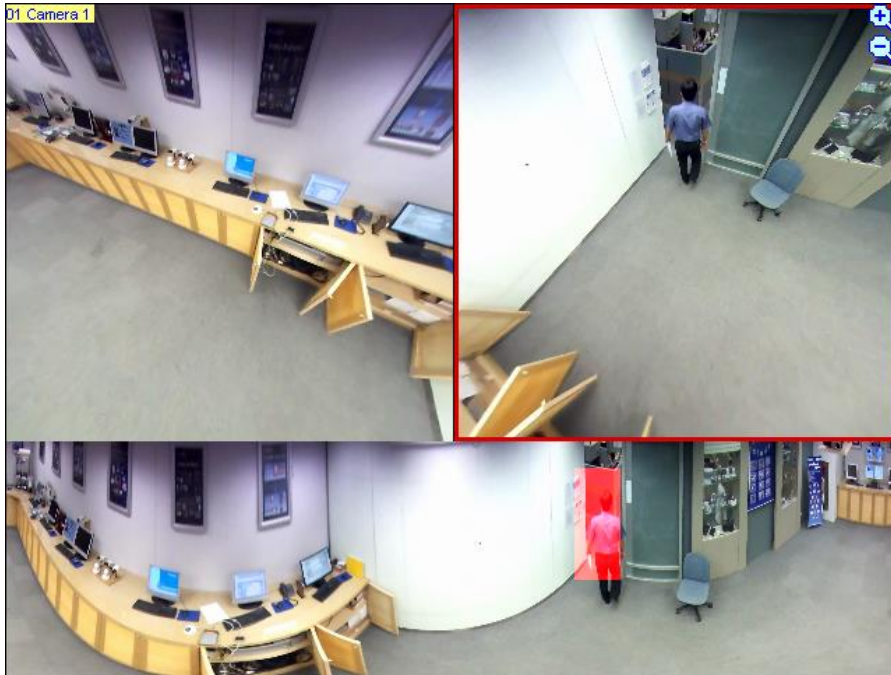
1. Set the fisheye view to **360 degree** by following steps 1- 2 in *4.3.1 Setting up Fisheye View*.

2. On the Fisheye Settings dialog box, right-click the fisheye view > **Fisheye Option** > **360 Object Tracking** > **Advanced Settings**. This dialog box appears.
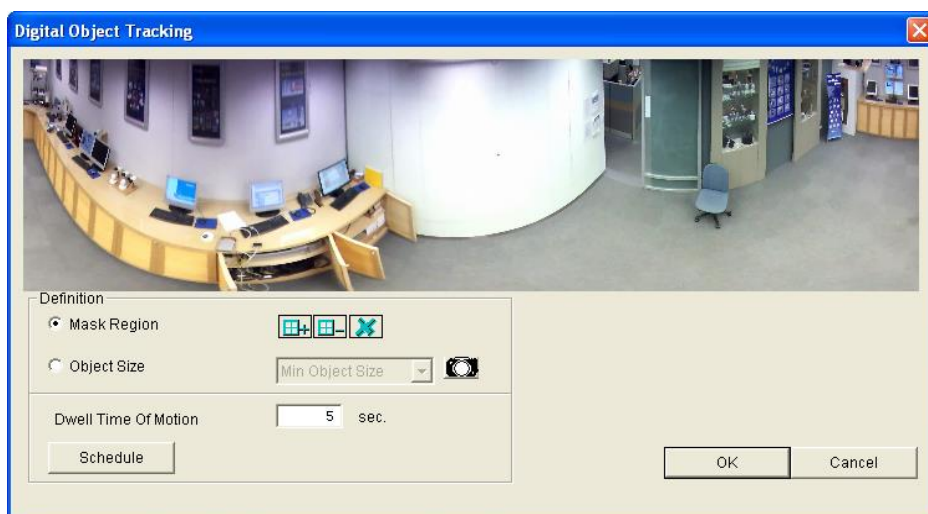
 ■ **Mask Region:** Use the mouse to outline a region where motion is ignored.

- ■ **Object Size:** Click the button to pause the live view and then use the mouse to outline the maximum and minimum size of the target object.

- ■ **Dwell Time of Motion:** When the target object stops moving, the highlighted region and the top-right channel will remain fixed for the number of seconds specified. Any new motion detected during the dwell time is ignored to prevent the camera view from frequently jumping from one region to another.

- ■ **Disable automatic zoom adjustment during 360 Object Tracking:** When disable, the zoom ration will be kept constant as configured

3. To enable object tracking, on the Fisheye Settings window, right-click the fisheye view > **Fisheye Option** > **360 Object Tracking** > **Tracking**.

4.3.3   Virtual PTZ Tour

You can set up a virtual PTZ tour to monitor important spots of your surveillance site. Before you start, make sure your fisheye camera has been set to **Single View** mode. For setting up the view mode, see the Camera Mode option, *4.3.1 Setting up Fisheye View*.

1. Set the fisheye view to **Single View** by following steps 1 - 2 in *4.3.1 Setting up Fisheye View*.

2. On the Fisheye Settings window, right-click on the fisheye view > **Fisheye Option** > **Guard Tour Setting**. The Guard Tour Setting dialog box appears along with the Fisheye Settings window.

3. On the Fisheye Settings window, move the live view to a desired starting point for the PTZ tour by clicking on the inset window at the bottom right.

4. Enable the settings, type a name for the current view and click **Add**. This view point (preset point) appears under Preset ID.
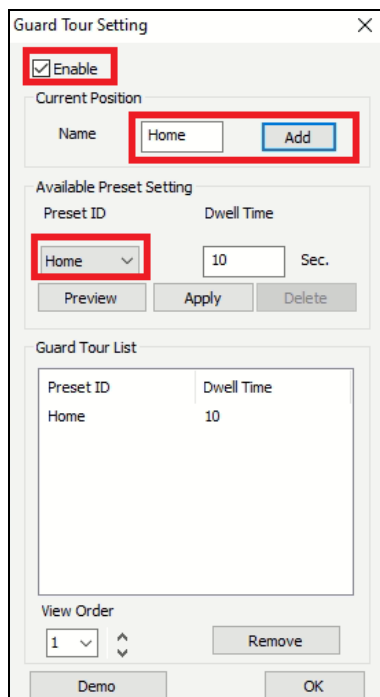
5. Specify the duration for the live view to stay at the preset point under **Dwell Time**. The default is **10** seconds.

6. Optionally click **Preview** to see a preview of the preset point.

7. Click **Apply**. The preset point is added to Guard Tour List.

8.   To add more preset points, repeat the steps above.

9.   To change the order of the preset points, use the **View Order** dropdown list to move a preset point up or down the list.

10.   Optionally, click **Demo** to watch a preview of the PTZ tour.

11.   Select **OK** to start the PTZ tour. To stop the PTZ tour, disable the function on the Guard Tour Setting.

4.4   Panoramic PTZ View

With GV-Panoramic PTZ Camera, you can manually track a moving object on its dome view while monitoring all angles of a location through its fisheye view.

To do this:

1.   Drag both the fisheye and PPTZ camera channels from the Host List onto the Live View window.

2.   Click on any place on the fisheye view. The speed dome will automatically point to the designated area.

![GeoVision Inc logo]
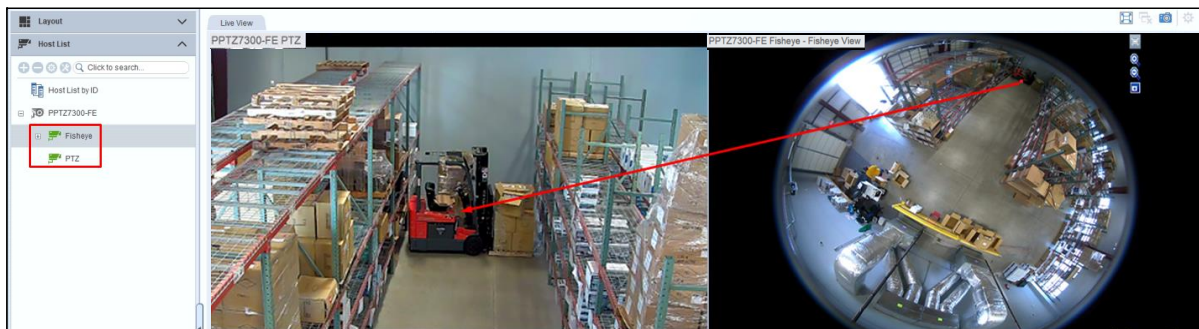
4.5   Adjusting Distorted View

Live images may be curved near the corners. You can use the Wide Angle Lens Dewarping feature to adjust image distortion.

1. Click **Configure** ⚒ on the camera's live view, and enable **Wide Angle Lens Dewarping**.

2. Once enabled, click **Configure** ⚒ again > **Wide Angle Lens Settings**.

3. Move the slider at the bottom to correct the degree of dewarping.

4.6   Enabling QView Display

When having more than one monitor connected to your computer, you can click and project a live view onto another monitor as full screen, using the QView function.

Click one live channel to be displayed on another monitor.

The selected channel is displayed on another monitor.

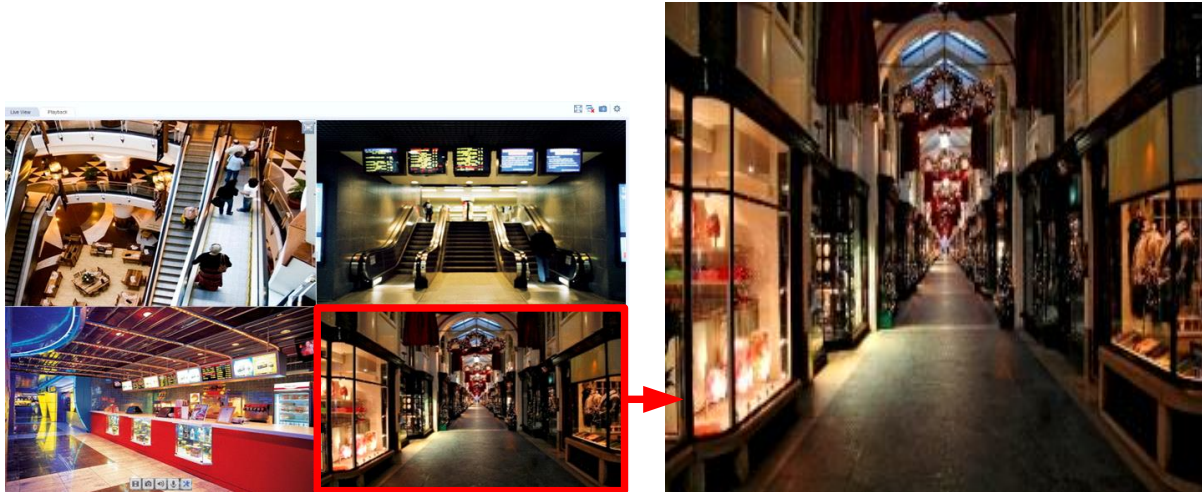1. On the top right of the main screen, click **Configure** button ⚙ > **Setup** > **System Configure**. The System Configure dialog box appears.

2. Under the **Live View** tab, select **QView**, select one monitor, and click **OK**.
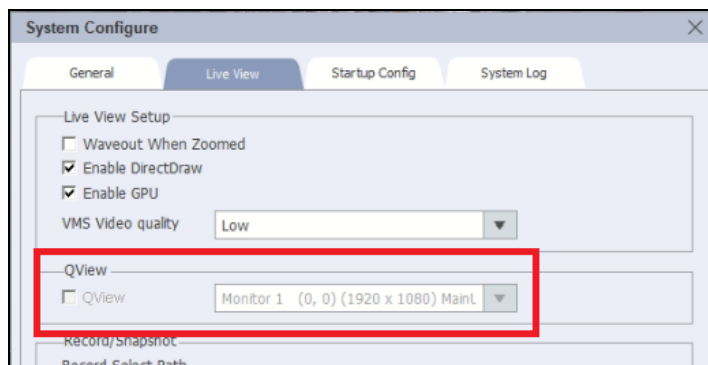
3. Click on the camera view you wish to project onto another monitor. The live view is displayed onto the monitor selected.

4. To switch to other channels, simply click on another channel.

4.7 VMD Monitoring

With the VMD (Video Motion Detection), the operator can be alerted with a popup display of live view when any of the following events occur: Motion, Temperature Alarm, Input Trigger, Face Detection, Crowd Detection, Advanced Unattended Object Objection, Advanced Scene Change Detection, Advanced Missing Object Detection, Intruder, Cross Line, Leave Area, Enter Area.

Note: The VMD function does not support third-party IP cameras.

4.7.1 Running VMD

1. Drag and drop the desired cameras from the Host List to the **VMD Group** in the Group List.
2. To select the event type for a popup alert, right-click the **VMD Group** > **Video Analysis**, and select the event type that has been configured for the cameras. Motion Detection is selected by default.
3. To open the VMD window, right-click the **VMD Group** > **Execute VMD System**. When motion or the selected event is detected within the camera view, the live view will pop up on the VMD window.

4.7.2 The VMD Window

No.	Name	Description
1	Page Up & Down	Scroll the page up and down.
2	Refresh	Refresh the camera view. The feature is unavailable when the **Camera pops up in the user-defined position** option is enabled (right-click the **VMD Group** > **VMD System Configuration**).
3	Select Quad	Set the screen division.
4	Show System Menu	■ **Image Quality:** Change the display quality to Best, Normal or Low. ■ **Host List:** Display the hosts added to the VMD group in tree view. ■ **Pop-up Viewer:** Display a popup event on another monitor, along with the primary monitor. When the event is undetectable, the popup view on the primary monitor will close, but the popup view on the other monitor will last for the specified Play Time. ■ **System Configure** • **Enables DirectX:** Enable the DirectDraw function. • **Dwell Time:** Define the duration of popup view remaining on the screen. • **Minimum Duration:** Define the interval of each event trigger. • **Invoke Alarm:** Enable the computer alarm upon each event. • **Temperature Monitoring:** Define the critical temperature upon or beyond which the camera view will pop up.

| 4	Show System Menu	■ **Event Popup:** Define the duration of popup view remaining on the screen. By default each popup remains for 60 seconds.
		■ **Sound Scheme:** Define the alarm sound for different events.
		■ **Keep Image Ratio:** Display the video proportionally to its source.
		Face Event Filter: Filter and display face recognition events from GV-AI FR and GV-VMS based on the option of Show All / Show Identified Persons Only / Show Unknown Persons Only.
5	Minimize	Minimize the VMD window in Windows taskbar.
6	Exit	Close the window.
7	Popup View	Right-click a popup view to have these settings:
		■ **Advanced Live View:** Open a separate window for further control.
		■ **Instant Playback:** Access the recordings of camera view.

Note for Temperature Monitoring:

1. The critical temperature refers to the interior temperature of the device, but not its operating temperature.

2. This feature is only supported by GV-DVR with GV-3008 Card and certain GV-IP Cameras.

4.7.3   Dual-Monitor Display

You can set up two monitors for VMD popup display.

Note: For monitor resolution of 1280 x 1024 and above, up to **42** popup views can be displayed on a VMD window. For monitor resolution lower than 1280 x 1024, up to **36** popup views can be displayed on a VMD window.

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1. In the Group List, right-click the **VMD Group** > **VMD System Configuration**. This dialog box appears.
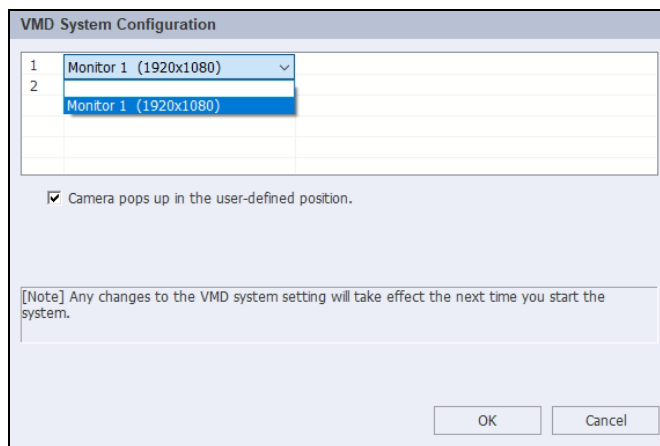
2. Select two monitors from the dropdown lists as Monitor 1 and Monitor 2. Click **OK**.

3. To run the VMD, right-click the **VMD Group** > **Execute VMD System**.

4. To set the screen division of the two monitors, click the **Select Quad** button on the VMD window and select a screen division.
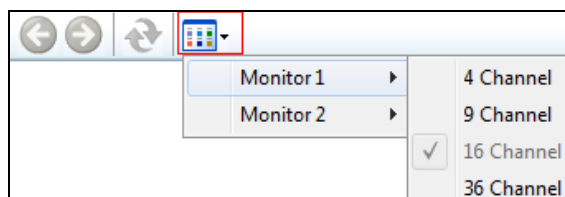
When the first monitor is full of popup camera views, the next popup camera view will go to the second monitor.

Applications of two VMD windows:

The position of popup camera views on the VMD windows varies when you enable or disable the **Camera pops up in the user-defined position** option in the VMD System Configuration dialog box (right-click **VMD Group** > **VMD System Configuration**).

- **When the option is disabled:** When multiple camera views are triggered simultaneously, the position of popup views on the VMD windows is based on the sequence order of events detected. When the first monitor is full of popup views, the next popup view will go to the second monitor.

  Example:

  Both Monitor 1 and Monitor 2 are set to 4 screen divisions. When 5 camera views are triggered simultaneously, the first 4 camera views will pop on Monitor 1 and the last camera view will appear on Monitor 2.
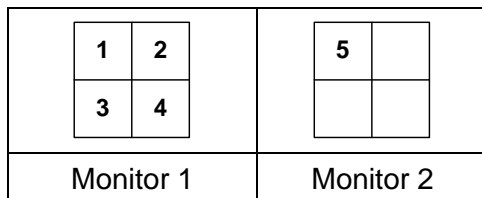
- **When the option is enabled:** The position of popup views on the VMD windows is based on the order of cameras in the VMD Group.

  Example:

  In the VMD Group, Camera A is listed as the third camera and Camera B is the fifth. Both monitors are set to 4 screen divisions. When the two camera views are triggered simultaneously, Camera A images will pop up on the third square of Monitor 1 and Camera B images will appear on the first square of Monitor 2. Note the order of popup views is from left to right on the VMD window.
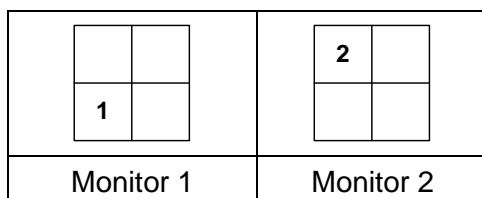
4.8 Audio Broadcast

The GV-Control Center operator can use the Audio Broadcast function to speak to multiple hosts at one time.


Note:

1. The Audio Broadcast function supports both GV and third-party IP devices with speaker functions.
2. The Audio Broadcast function is also applicable to GV-IP Speaker models with GV-Control Center V4.2.0 or later. See *2. Adding to GV-Control Center* in *GV-IP Speaker User's Guide* for details.

4.8.1 Starting the Audio Broadcast

1. On the Host List or the Group List, click **Tools** 🔧 > **Audio Broadcast**. The Audio Broadcast window appears.
2. On the Host List, right-click a host and select **Add to Broadcast Service**.
3. To start audio broadcasting to the hosts, click the **Start/Stop Broadcasting** button 🎤, and talk to the microphone connected to the computer of GV-Control Center.

4.8.2 The Audio Broadcast Window
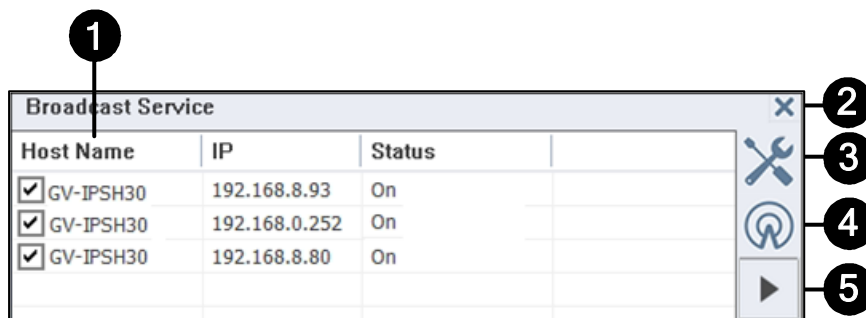
No.	Name	Description
1.	Host	Enable / disable the audio broadcasting with the host.
2.	Close	Close the window.

		■ **Select Audio File**: Locate a .wav file to play.
		■ **Repeat Play File**: Select to repeat playing the selected audio.
3.	Setup	■ **Always on top:** Always display the window on top of the screen.
		■ **Opacity:** Select the opacity level of the window from 20% (fully transparent) to 100% (fully opaque).
4.	Start/Stop Broadcasting	Start / stop audio broadcasting.
5.	Play File	After selecting an audio file, click the button to start/stop playing.

4.9 Face Recognition Watch

With the FR Watch, the operator can monitor the face recognition (FR) events from GV-AI FR and GV-VMS hosts, as well as searching for event logs of the host.

1. Create a group under the **FR Group** in the Group List.
2. Drag and drop the desired cameras from GV-AI FR host and GV-VMS host to the created group.
3. Right-click the created group > **FR Watch**. The following window appears.
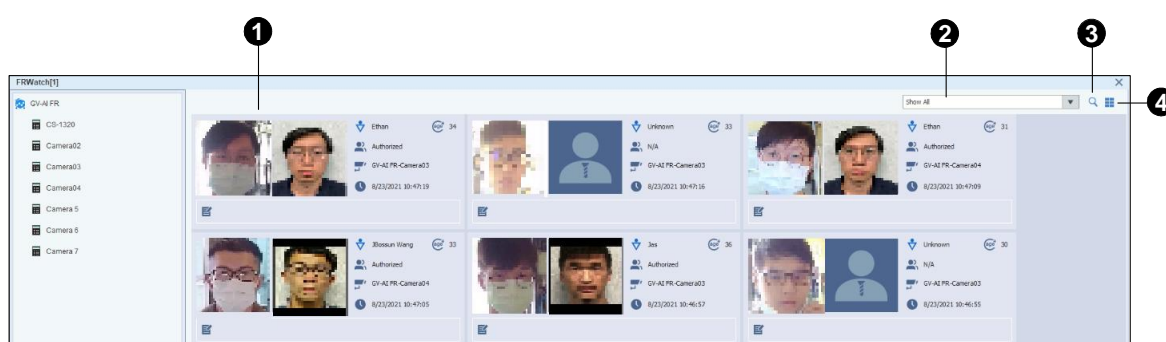
No.	Name	Description
1	FR Event	Display the live FR events from the host.
2	Filter	Filter the live FR events based on the criteria of Identified, Unknown or predefined group on the host.
3	Search Log	Search for the event logs of the host by defining a time range, camera name, person's name, group and gender.
4	View Mode	Include three display modes for FR events: **FD View Mode**, **FR View Mode** and **Detail View Mode**.

4.10   AI Watch

With the AI Watch, the operator can monitor AI events from GV-VMS hosts and UA-IP cameras with AI functions on UA-SNVR hosts, as well as searching for the host's event logs.

1.   Create a group under **AI Guard Group** in the Group List.
2.   Drag and drop the desired UA-IP cameras from UA-SNVR hosts and GV-VMS hosts to the created group.
3.   Right-click the created group > **AI Watch**. The following window appears.
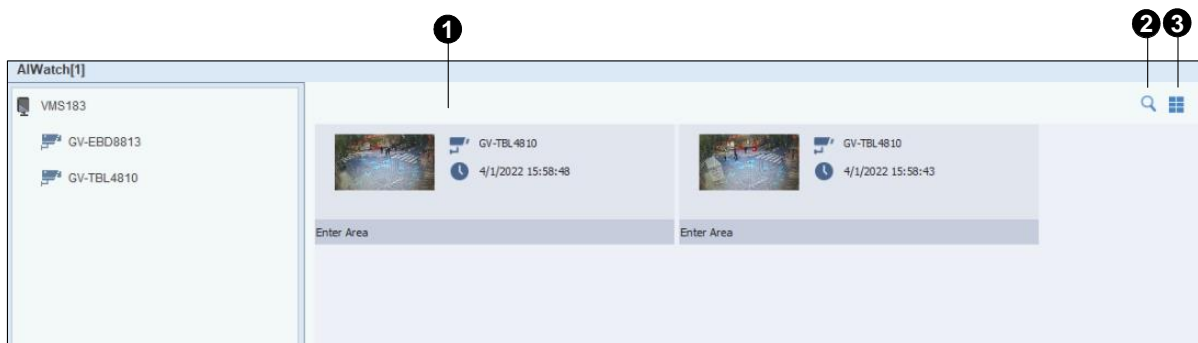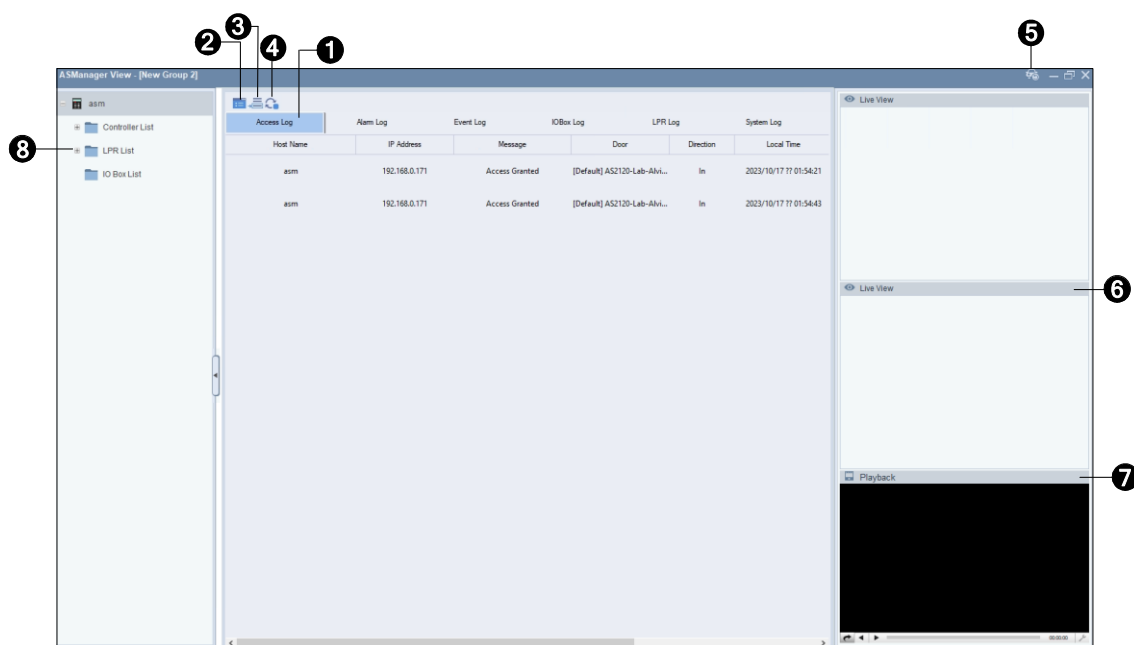

No.	Name	Description
1	AI Event	Display the AI events from the host.
2	Search Log	Search for the host's event logs by defining the camera name, event note, event type, and time range.
3	View Mode	Include two display modes for AI events: **FR View Mode** and **Detail View Mode**.

4.11 ASManager View

4.11.1 Overview

With the ASManager View, the operator can monitor access control and LPR events from the GV-ASManager host, as well as lock/unlock a door, force LPR recognition, trigger an output device, and access LPR logs.

1. Create a group under the **ASManager Group** in the Group List.
2. Drag and drop the desired GV-ASManager host to the created group.
3. Right-click the created group > **ASManager View**. The following window appears.

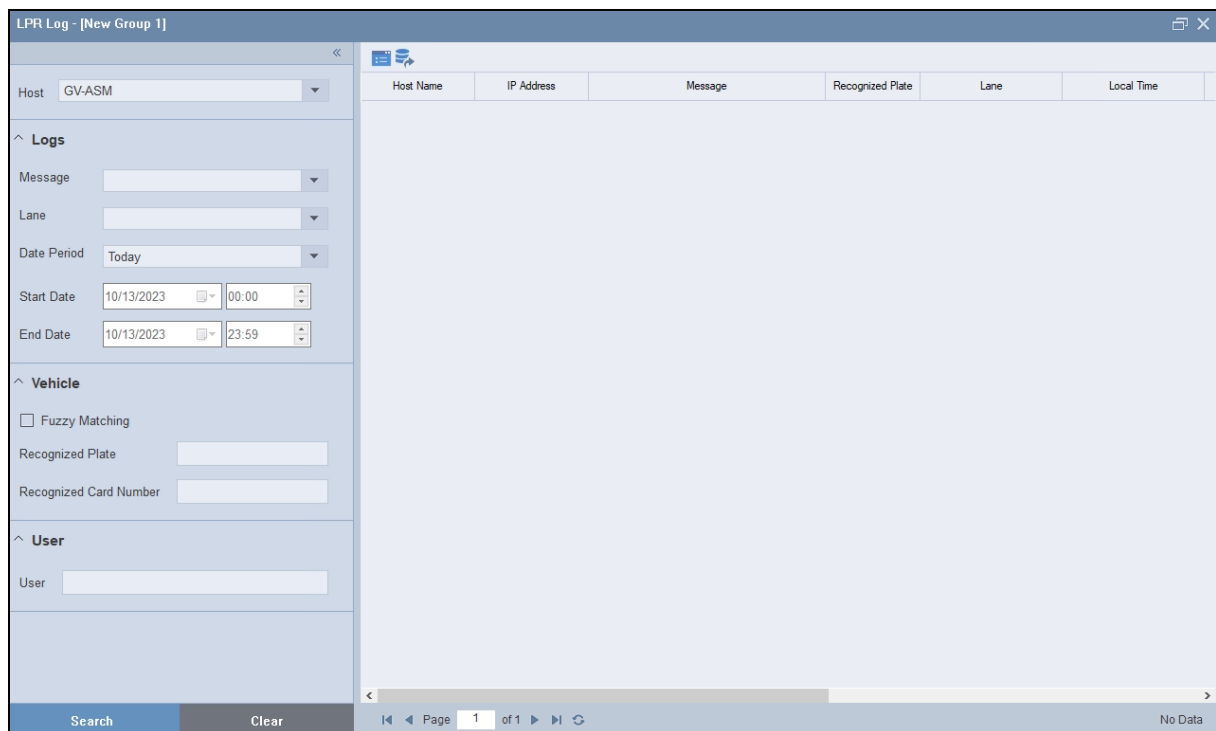| No.	Name	Description
1.	Event Log	Display the event logs of the connected GV-ASManager.
2.	Filter	Filter the event logs by defining criteria.
3.	Auto Select List	Focus on the latest data display.
4.	Freeze List	Suspend the current data display.
5.	LPR Log	Query for LPR logs by defining criteria. See *LPR Log* below for details.
6.	Live View	Display up to 2 Live Views from the cameras mapped to a door / lane.
7.	Playback	Play back the videos attached to the events if available.

8.	Tree List	Right-click a Controller / door / lane, an input device to access more functions, such as locking/unlocking a door, forcing LPR recognition and triggering an output device

4.11.2   LPR Log

Using LPR Log, you can look up a record, see snapshots or recognized license plates, track the locations of vehicles and play back recorded videos.

Defining Search Criteria

Click the LPR Log icon 🚗 (No. 5, *4.11.1 Overview*) and the following page appears. You can narrow down the search results by setting search criteria such as LPR lanes, date, license plates, and card number. Once the search criteria are set, click **Search** to see the results.

Chapter 5   Playback

You can remotely play back recordings from the connected hosts in GV-Control Center.

There are two ways to play back recordings:

● **Instant Playback:** To play back at a predefined duration, select **Instant Play** ⊟ on a live view.

● **Remote ViewLog:** To play back from any time period within the host's timeline, use the Remote ViewLog player by selecting the **Remote ViewLog** tab on the main screen.

Note:

1. **Remote playback from SD card** is not supported for the following models: GV-ABL / TBL Series, GV-ADR / TDR Series, GV-AVD / TVD Series, GV-EBD Series, GV-FER5702, GV-QFER12700, GV-QSD5730 / 5731-IR, GV-SD2322-IR / 2722-IR / 3732-IR, and UA-IP cameras.

2. For the GV-DVR / NVR / VMS host, make sure **Remote ViewLog Service** (under Control Center Service) is enabled to grant permission for remote playback.

3. A maximum of 16 channels playback is supported by the following SNVR models: GV-SNVR3203 / 6403, UA-SNVRL810-P, UA-SNVR1620-P, UA-SNVR3240-N.

Note for GV-SNVR:

1. The Instant Playback and audio recording backup are not supported by GV-SNVR.

2. Only one channel of the following SNVR models can be backed up: GV-SNVR3203, GV-SNVR6403.

3. When using Remote ViewLog, you cannot play back the recordings of GV-SNVR with other hosts together in one layout.

5.1   Starting Playback

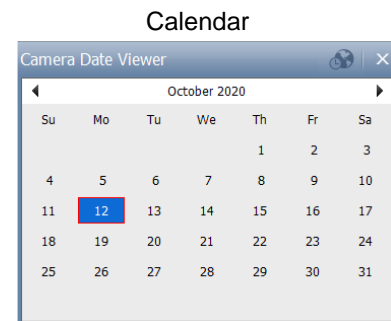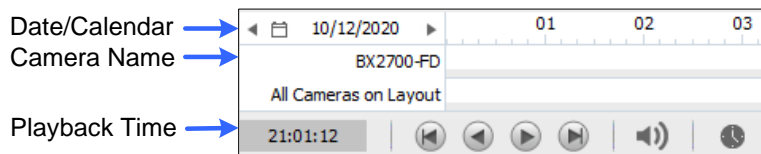To start the remote playback:

1. Select the **Remote ViewLog** tab on the main screen.
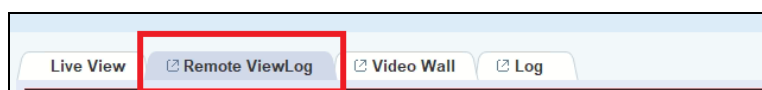
2. Right-click a host / camera / group from the Host List or the Group List, and select **Remote ViewLog**. Or just drag and drop your desired camera / group to the Remote ViewLog window.
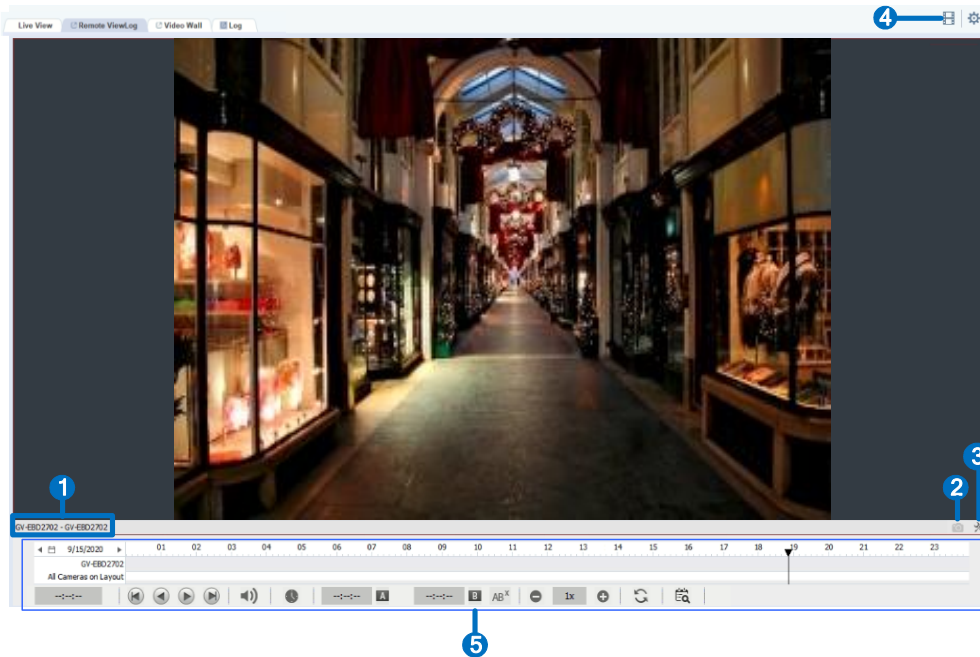

Tip: To customize the screen division of the Remote ViewLog window, use the Layout list (see *1.3.4 The Layout List*) and drag the defined layout to the Remote ViewLog window.

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3. On the timeline, click the arrows or click on the date to select a date with recordings, which are highlighted in blue, from a popup calendar.

Calendar

Date/Calendar →
Camera Name →

Playback Time →

4. Click **Play**.

5.2　The Remote ViewLog Window

No.	Name	Descriptions
1.	Camera Name	Indicate the host and camera names of the channel.
2	Snapshot 📷	Take a snapshot of the recordings.
3	Configure ✂	Access the following options when supported: ■ **Close Channel:** Close the playback channel. ■ **Video Effects:** Apply video effects to the recordings. ■ **Heat Map Settings:** Search for and display the heat map videos recorded on GV-VMS. ■ **Add to Bookmark:** Create a bookmarked video. ■ **Keep Image Ratio:** Lock the camera view to its original ratio. ■ **Web POS Search:** Search for recordings of POS events.
4.	Playback Menu	Access the following options: ■ **Search Object Index:** Search for Object Index videos recorded in GV-DVR / NVR / VMS. ■ **Bookmark:** Search for and play back bookmarked videos. To create a bookmark, click the **Configure** button ✂ on a playback view (No. 3) and select **Add to Bookmark**. ■ **Print:** Print the current camera view. ■ **Backup:** Back up recordings.

- **Display Merging List:** Display the merging events of recordings.
- **Play Setting:** Access audio de-noise and GPU decoding.
- **Display Options:** Adjust the display settings.
- **Path for Cache:** Display the cache directory.

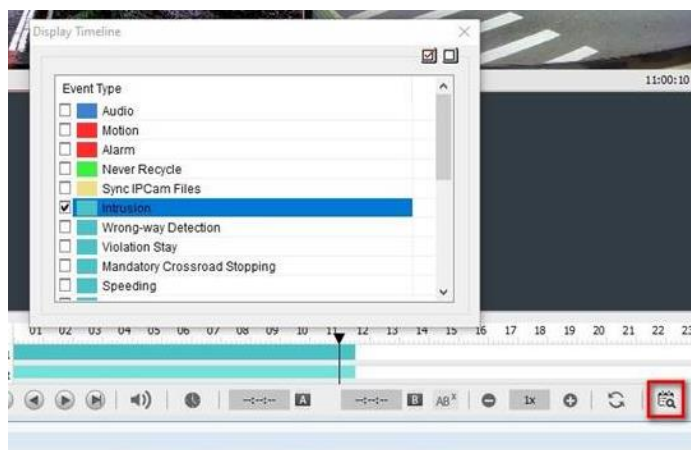| 5. | Timeline Player | See *Timeline Player* described below. |

Timeline Player
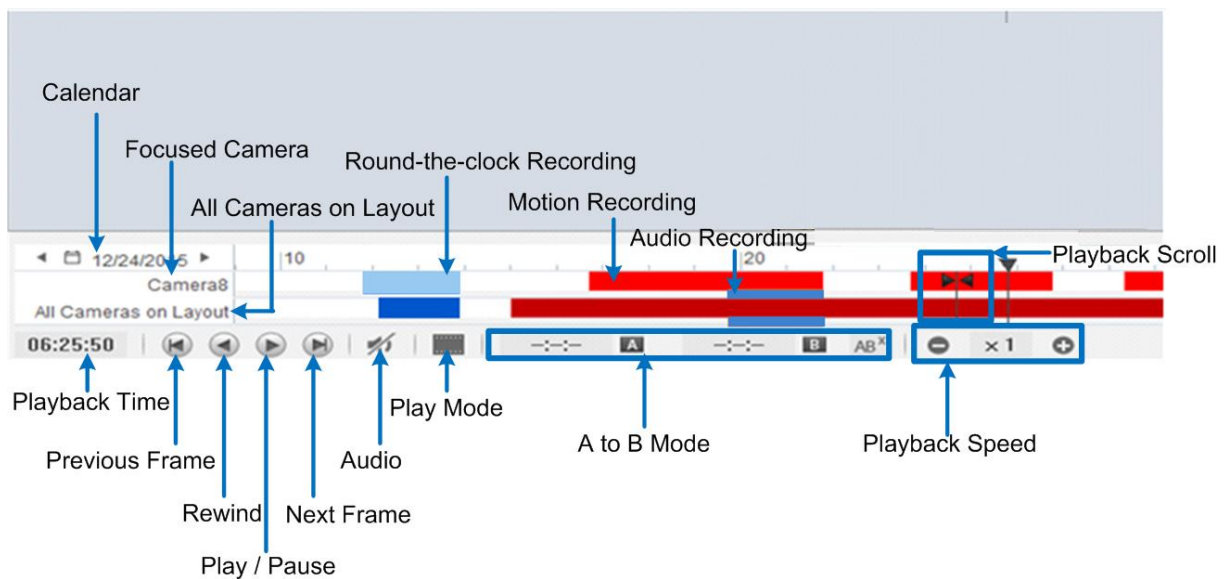
Colors in the timeline:

- **Red:** Motion / IO event recordings
- **Blue:** Audio recordings
- **Yellow:** Recordings retrieved from the SD cards of cameras when reconnecting after a temporary disconnection
- **Turquoise:** AI event / PVD Motion event recordings
- **Green:** Never Recycle recordings

Tip: Click **Filter** to display different event types in different colors on the timeline. Note that this function is only available for GV-VMS V17.4.6 or later / V18.3.2 (coming soon) or later / GV-AI Guard V2.0 (coming soon).

Playback Mode Option

By default, the Remote ViewLog is set to play back video in the Real Time mode. To change playback modes, click   on the Timeline Player.

- **Frame by Frame (without audio):** Play back video frame by frame without audio; however, playback can be delayed depending on the bandwidth and computer performance.
- **Real Time:** Play back video on real time. Despite saving rendering time, this method drops frames.

A to B Playback Mode

When playing back videos, you can set a start and an end frame for auto-playing:

1. To set the start frame, click   and double-click a time on the timeline.
2. To set the end frame, click   and double-click a time on the timeline.
3. The start time and end time are displayed besides A and B as illustrated below.
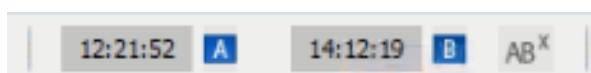
4. Click   to start playing back from frame A to B repeatedly.
5. To cancel this playback mode, click

Changing the Displayed Date on the Timeline

You can directly drag the timeline to search for and view the recordings of a previous or next day.

1. Scroll the mouse wheel forth to enlarge the timeline. The default display of the timeline is 24 hours.

2. Click and drag the timeline back and forth. The timeline jumps between the recording days.

Tip: Right-click on the timeline and drag a period of recording time to have a quick access to the following functions: Backup, Save as AVI, Object Search, Delete (recording files), Mark / Unmark Never Recycle.
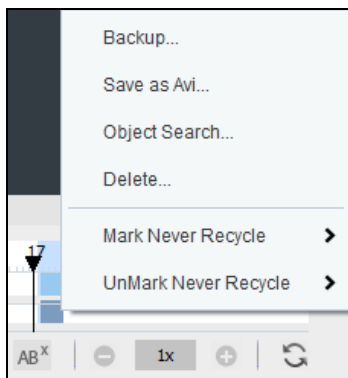
Chapter 6   Remote DVR / Desktop

6.1   Remote DVR

The Remote DVR service allows GV-Control Center to remotely access and configure client GV-DVR / NVR settings. This feature reduces the number of trips to each client's system.

Note:

1. The Remote DVR service is not supported by GV-VMS.
2. The Remote DVR service does not support the control of audio output, PTZ and I/O devices.

6.1.1   Running Remote DVR

1. Enable **Remote DVR** (under **Control Center Service**) in client GV-DVR / NVR.
2. In GV-Control Center, click a DVR / NVR on the Host List and select **Remote DVR**.

If the connection is established, the main screen of client GV-DVR / NVR will be displayed on GV-Control Center's desktop. At the same time, the client will have the following message, indicating GV-DVR / NVR is in use and has been locked.
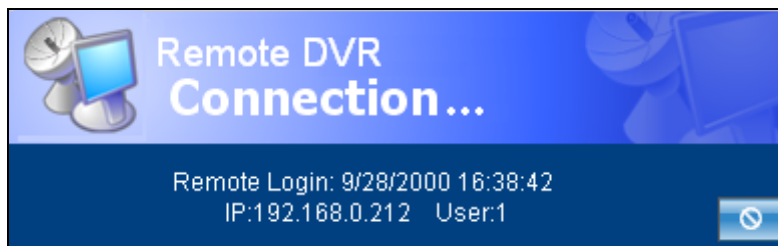
If the client wants to interrupt the connection, click the button at the bottom right corner.

Tip: If you want to minimize the bandwidth used while viewing client GV-DVR / NVR, you can connect to some cameras only. Before connecting to the client, in GV-Control Center, click **Configure** ⚙ (top right of the main screen) > **Setup** > **Application Position**. On the Application Position window, right-click the **Remote DVR** icon 🖳 RemoteDVR > **Activate Remote Camera** to select and deselect cameras.

6.2   Remote Desktop

The Remote Desktop enables the GV-Control Center operator to remotely access the GV-DVR / NVR / VMS desktop. The operator of GV-Control Center has full control over the surveillance system and Windows operation system of the client.

6.2.1   Running Remote Desktop

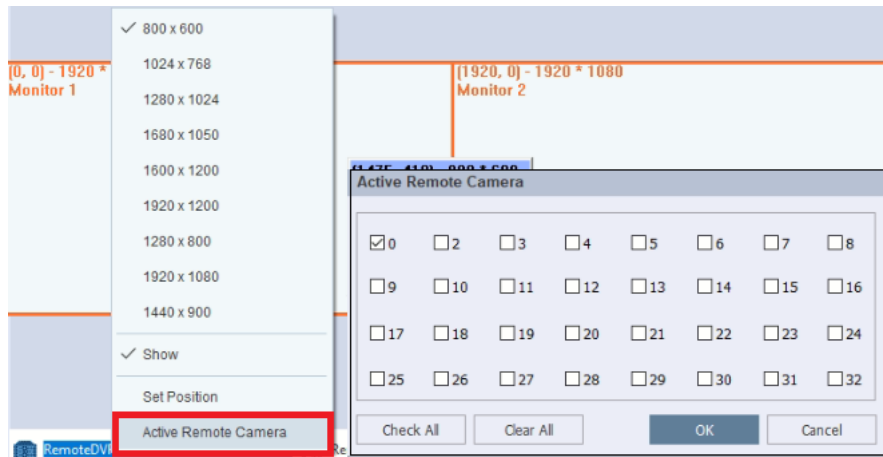1. Enable **Remote Desktop Service** (under **Control Center Service**) in GV-DVR / NVR / VMS.
2. In GV-Control Center, click a DVR / NVR / VMS on the Host List and select **Remote Desktop**.

When the connection is established, the client's desktop will appear in a separate window on the Control Center's desktop. If the client is using multiple monitors, click the **Monitor** icon to switch between them.

Note: The **Monitor** button is only supported by GV-VMS 15.10.1.0 or later.

![GeoVision Inc logo]

6.2.2   File Transfer

The File Transfer function is for transferring files easily between GV-Control Center and the client.

1. Run **Remote Desktop**.
2. Click the **File Transfer** button [icon] on the upper left corner of the Remote Desktop. The File Transfer Service dialog box appears.
3. Select the desired file to transfer to **Local** (GV-Control Center) or **Remote** (the client).

Note: The size of one single file for transfer cannot exceed 4GB, but there is no size limit for multiple files.

6.3   Data Event Query

You can query events from client GV-DVR / NVR / VMS by defining search criteria. The search results can be displayed in text or in a graph. You can also export your search results in the form of text, html or excel.

1.   Enable **WebCam Server** in GV-DVR / NVR / VMS.

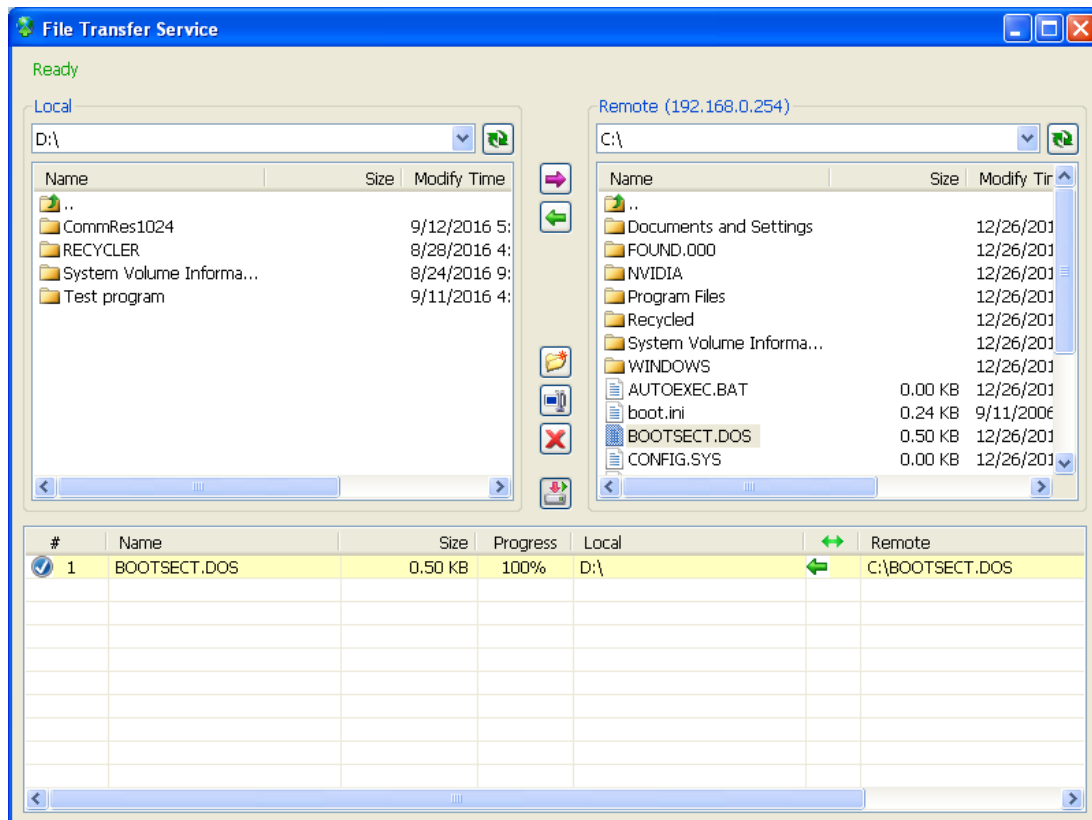2.   In GV-Control Center, click a DVR / NVR / VMS on the Host List and select **Event Data Query**.

3.   In the Event List Query page, you can define search criteria, and click the Video icon for event playback if available.

Video icon indicates the event is attached
with a video allowed for playback
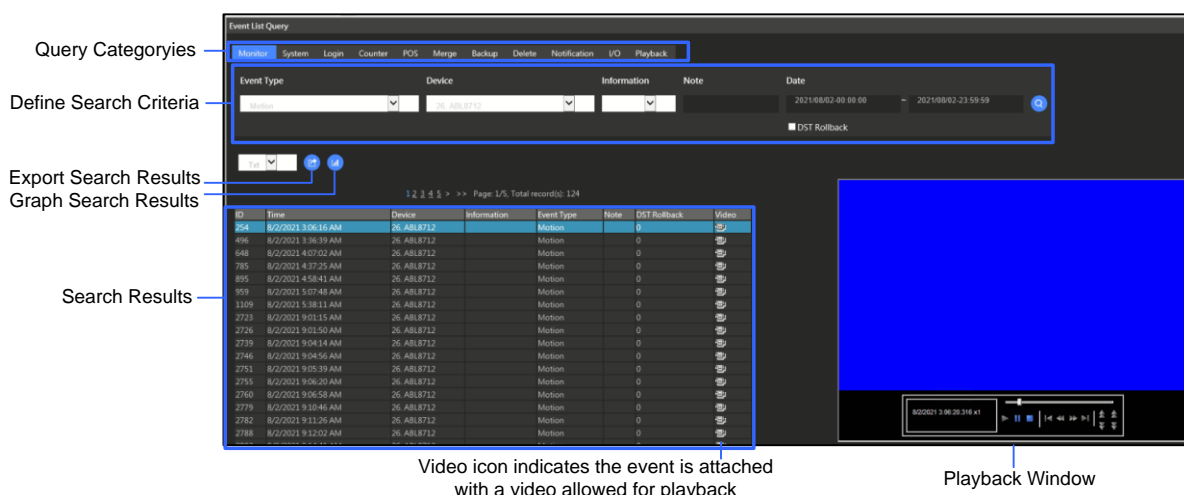
Chapter 7   I/O Central Panel

The I/O Central Panel provides a central management solution for I/O devices from different hosts. Its major features include:

- Group I/O devices from different hosts
- Trigger I/O devices in cascade mode
- Monitor different I/O cascade configurations at different times of the day
- Provide quick access to triggered I/O devices by a Quick Link window

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Note:

1. Configurations in the Advanced I/O Panel of the client GV-DVR / NVR / VMS and in the I/O Central Panel of GV-Control Center may conflict. It's recommended that the client cleans up the settings in the Advanced I/O Panel and renders I/O control to GV-Control Center.

2. The I/O Central Panel only supports GV-IP Devices.

7.1   Running I/O Central Panel

1. Drag and drop the desired hosts from the Host List to the **I/O Panel Group** in the Group List.
2. Right-click the group > **I/O Central Panel**.
3. When connections to hosts are established, the I/O Central Panel appears on the Control Center's desktop.

7.2 The I/O Central Panel
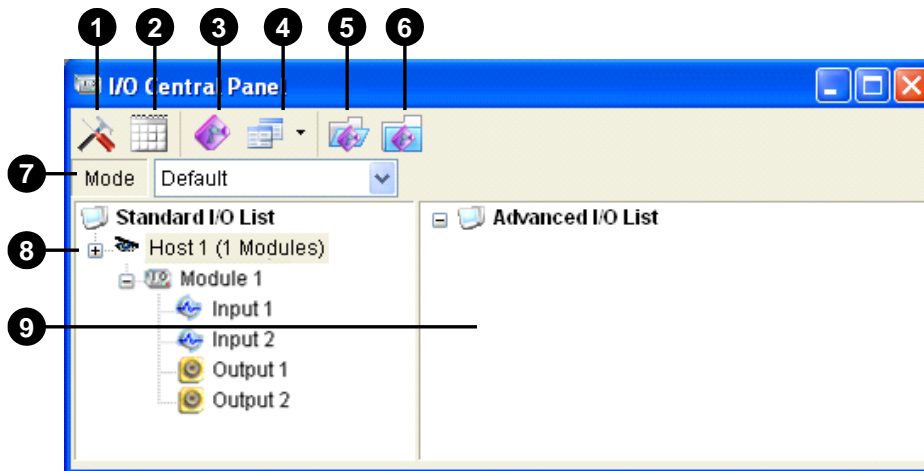
No.	Name	Description
1	Configure	Access Panel and Schedule settings.
2	Mode Schedule	Start /stop Mode Schedule.
3	Toggle Quick Link	Display the Quick Link window for quick access to triggered I/O devices.
4	Advanced I/O List Style	Display the Advanced I/O List in various styles: View/Edit, Icon and Detail.
5	Expand Tree Row	Expand tree branches.
6	Collapse Tree Row	Collapse tree branches.
7	Mode	Configure various cascade modes.
8	Standard I/O List	Display connected I/O modules.
9	Advanced I/O List	Group I/O devices in cascade mode.

7.3   Creating a Group for Cascade Triggers

You can group I/O devices by function or geography. Further, the group allows cascade triggers, meaning that the trigger actions of one trigger can activate another trigger.

For example, you might have a group called "Entrance" that contains all I/O devices installed at entrances. The "Entrance" group might contain other sub groups, each of which contains just the related I/O devices in various geographic locations:
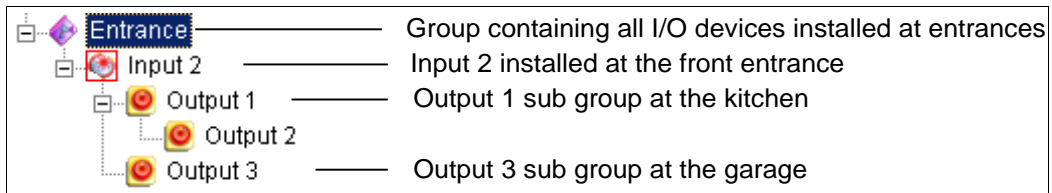
When Input 2 is triggered, it will trigger Output 1 and Output 3 sub-groups, and Output 1 will trigger Output 2 in a cascade series.

7.3.1   Creating a Group

1. Right-click on **Advanced I/O List** > **Add A Group**. This dialog box appears.
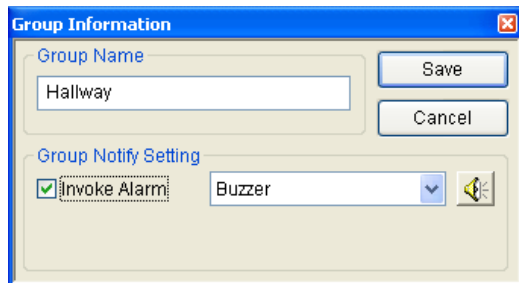
2. Name the group, and enable **Invoke Alarm** to trigger computer alarm upon I/O trigger.
3. Click **Save**.
4. To create a cascading hierarchy, drag the desired inputs/outputs from the **Standard I/O List** to the group.

Note: In the cascading hierarchy, each input can only be used once while the same output can be used repeatedly.

7.3.2 Editing a Group

To modify group settings, right-click a group > **View/Edit**. This dialog box appears.
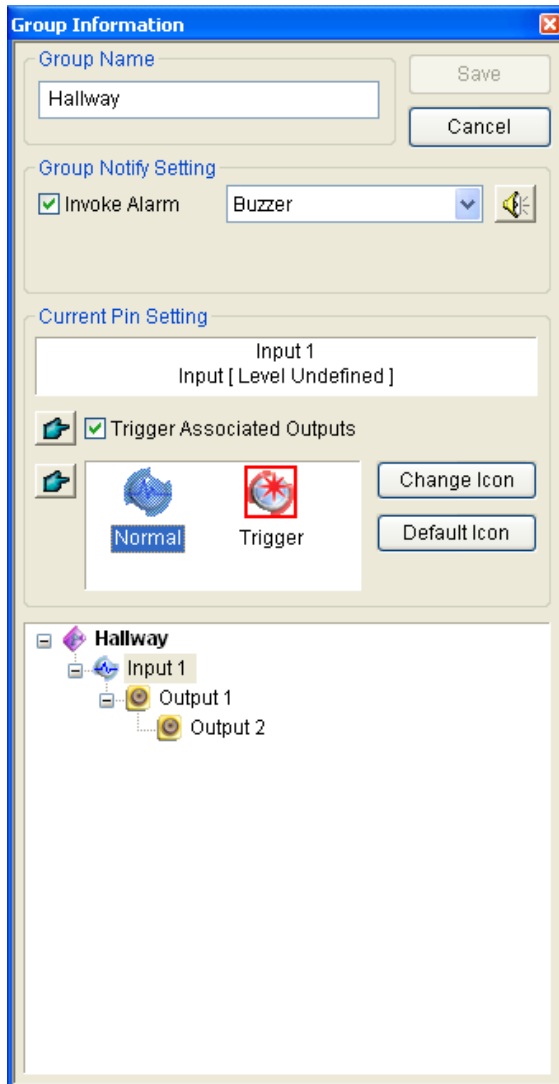
[Current Pin Setting] To enable this option, highlight an I/O device from the group list at the bottom of the dialog box.

- **Trigger Associated Outputs:** Trigger outputs in cascade mode. Click the **Finger** tab to apply the change to all I/O devices at the same group.

- **Change Icon:** To enable this option, select one of two displayed icons: Normal or Trigger. Click the **Change Icon** tab to change an icon. Click the **Finger** tab to apply the change to all I/O devices at the same group.

7.3.3   Editing an I/O Device

In addition to editing groups, you can also edit the settings of individual I/O device.
Right-click an I/O device > **Setting**. This dialog box appears.
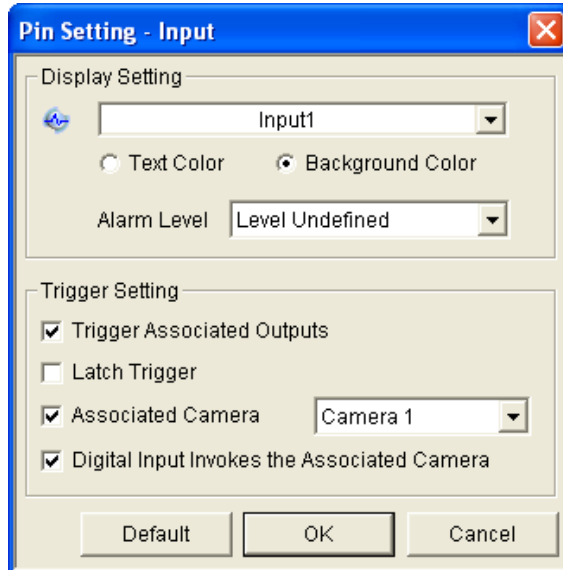
[Display Setting] Define the nature of I/O devices by color. Note that the setting only affects the **Detail** style of the Advanced I/O List.

■   **Alarm Level:** Click the dropdown list, and select one of the six default colors: Fire, Smog, Vibration, Intruder, Motion and Emergency. For the Level Undefined option, select **Text Color** or **Background Color**, and then click the Input/Output dropdown list to change its color.

Tip: To modify the naming for default alarm levels, see *7.5 Configuring the I/O Central Panel.*


[Trigger Setting]

■   **Trigger Associated Outputs:** Trigger outputs in cascade mode.

 The following options are only available when an Input is selected:

■   **Latch Trigger:** Instead of a lasting output alarm, the option provides a momentary alarm when the input is triggered in cascade mode.

■   **Associated Camera:** Associate a camera to the input. When this option is enabled, you can click the input under the Advance I/O List and select **View Associate Camera** to view its associated camera view.

■   **Digital Input Invoke Associated Camera:** Enable to pop up the associated camera view when the input is triggered. See *7.10 Popping up Live View After Input Trigger.*

7.4 I/O Monitoring

You can watch live view, play back recordings and access host information directly from the I/O Central Panel. This is useful for the operator to get an immediate checkup of hosts when any I/O events occur. In addition, the operator can start / stop I/O monitoring to a group of devices, disable any IO devices, and force an output conveniently.
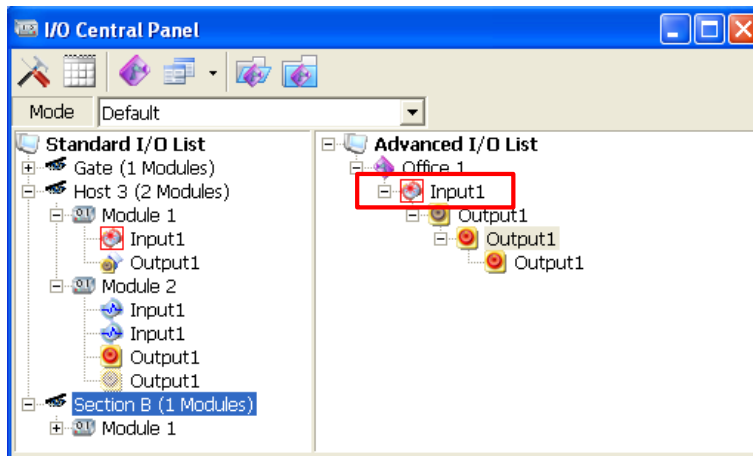

7.4.1 Watching Live View

On the I/O Central Panel, click an input > **View Associated Camera** to watch its corresponding camera view. For this function, you need to enable **Associated Camera** in *7.3.3 Editing an I/O Device*.

7.4.2 Viewing Host Information

You can access information on host name, alarm level and a history of trigger events. Right-click an input in the Advanced I/O List > **Information**. The Pin Information dialog box will appear.

72
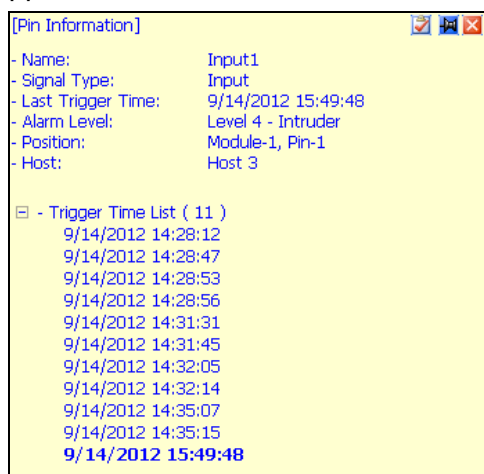
7.4.3   Playing Back Trigger Events

To play back recordings, click an input in the Advanced I/O List > **Instant Play**.

Alternatively, you can play back a specific trigger event. Right-click an input in the Advanced I/O List > **Information**, select an event from the Trigger Time List and select **Instant Play**.

Note: To allow the remote playback, the following functions must be enabled ahead:
- **DVR / NVR / VMS:** Enable recording and **Remote ViewLog Service**
- **GV-IP Devices:** Enable recording and **ViewLog Server**

7.4.4   Starting I/O Monitoring

You can start, stop and pause the I/O monitoring to a group of devices. Right-click a group in the Advanced I/O List, select **Start Monitoring**, **Stop Monitoring** or **Pause Monitoring**.

The **Pause Monitoring** is designed for a group of outputs set to be Toggle mode. When the option is selected, the inputs of the group will be reset, but the outputs keep on alarming.

7.4.5   Disabling I/O Devices

You can disable any I/O devices without interrupting the I/O monitoring.

Note: This function also supports client GV-IP Devices of these firmware versions: GV-Compact DVR (Firmware V1.43 or later), GV-IP Camera (Firmware V1.05 or later), GV-Video Server (Firmware V1.45 or later)

1. In the Standard I/O List, right-click a host > **I/O Enable Setting**. This dialog box appears.
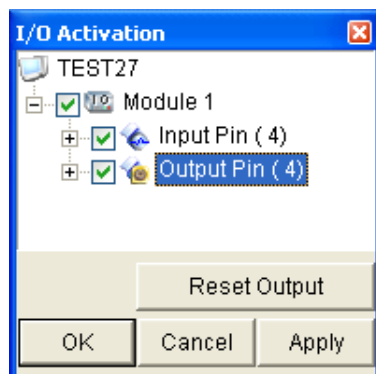
2. Uncheck to disable an input or output.

3. Click **Apply**.

7.4.6 Forcing Output

To manually force an output device, click the output and select **Force Output**.

● In the Standard I/O List, you can force the output individually.

● In the Advanced I/O List, considering cascade triggers, you can only manually force the output at the top level, e.g. Figure A. Outputs at sub levels cannot be forced manually, e.g. Figure B.

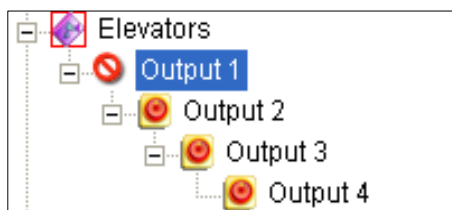● If the output is not in a cascading hierarchy, you can force it manually, e.g. Figure C.
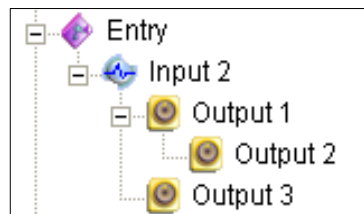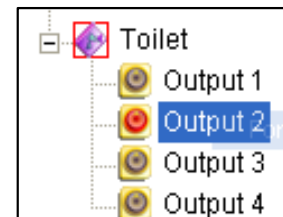

| **Figure A** | **Figure B** | **Figure C** |

7.5 Configuring the I/O Central Panel

On the panel toolbar, click the **Configure** button > **Panel Setting**. This dialog box appears.
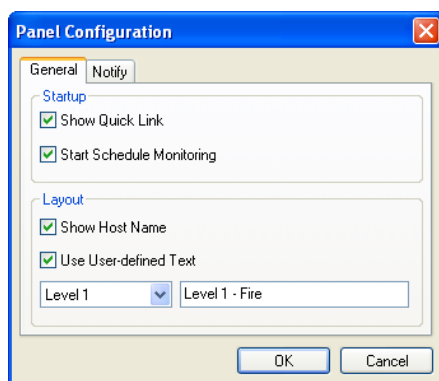
[Startup]

■ **Show Quick Link:** Open the Quick Link window upon panel startup.

■ **Start Schedule Monitoring:** Start Mode Schedule upon the panel startup. For details, see *7.7.2 Creating a Mode Schedule*.

[Layout]

■ **Show Host Name:** Display the host name of each I/O device in the Advanced I/O List.

■ **Use User-defined Text:** Allow you to modify the text of Alarm Level (see Figure under section 7.3.3).

7.6 Accessing Connection Log

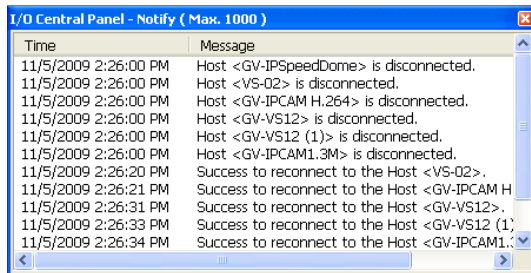You can access the connection status of hosts. On the panel toolbar, click the **Configure** button ▧ > **View Notification**. This dialog box will appear. The maximum of 1000 messages will be logged for reference.

7.7 Setting Mode Schedule

The Mode Schedule allows you to monitor surveillance sites using different I/O cascade configurations according to the scheduled time. For example, you may want I/O cascade triggers one way during business hours and another way for non-business hours. Modes can be switched automatically at a scheduled time.

7.7.1 Creating a Mode

1. Click the **Mode** dropdown list (No. 7, *7.2 The I/O Central Panel*) > **Mode Edit**. This dialog box appears.
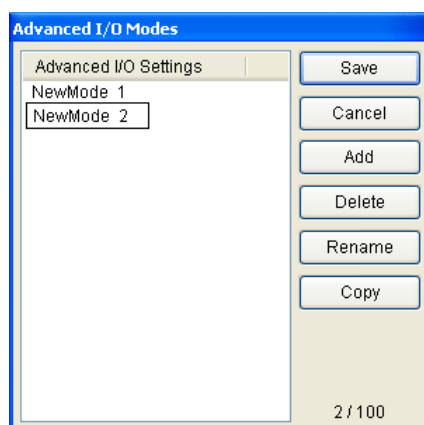
2. Click **Add**, and name the created mode. You can create up to 100 modes.

3. Click **Save** to return to the panel.

4. Select the created mode from the **Mode** dropdown list, and create the groups in the Advanced I/O List.

7.7.2 Creating a Mode Schedule

Define the times and days you like the panel to switch modes.

1. On the panel toolbar, click the **Configure** button ![icon] > **Schedule Setting**. This dialog box appears.
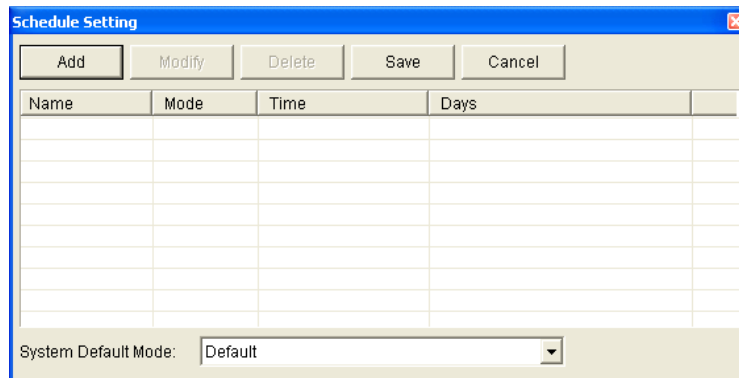
2. Click **Add** to create a schedule. This dialog box appears.
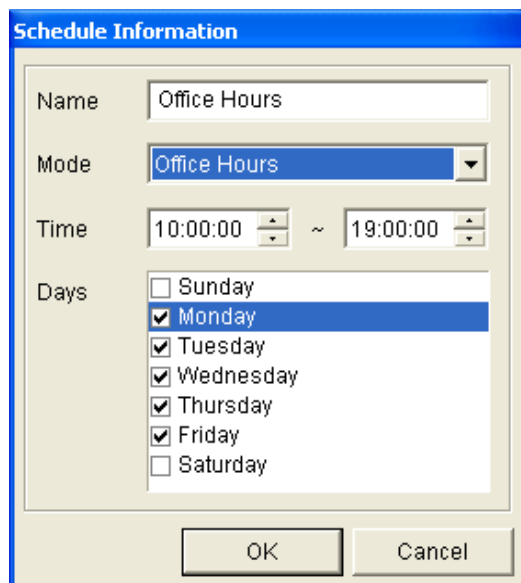
3. Name the schedule, select a Mode, and define time and day(s) to run the mode.
4. Click **OK**, and click **Save** to return to the panel.
5. To start the mode schedule, click the **Mode Schedule** button (No. 2, *7.2 The I/O Central Panel*) > **Mode Schedule Start**.

7.8 Quick Link

The Quick Link window provides a quick access to triggered I/O devices. It is a separate window displaying all the groups established in the Advanced I/O List. The group icon flashes when any included I/O device is triggered. Clicking the flashing icon will bring you to the I/O location in the Advanced I/O List.

- To open the window, click the **Toggle Quick Link** button ![icon] on the panel toolbar.

- To open the window upon the panel startup, enable the **Show Quick Link** option in *7.5 Configuring the I/O Central Panel.*

![Geovision Inc logo]
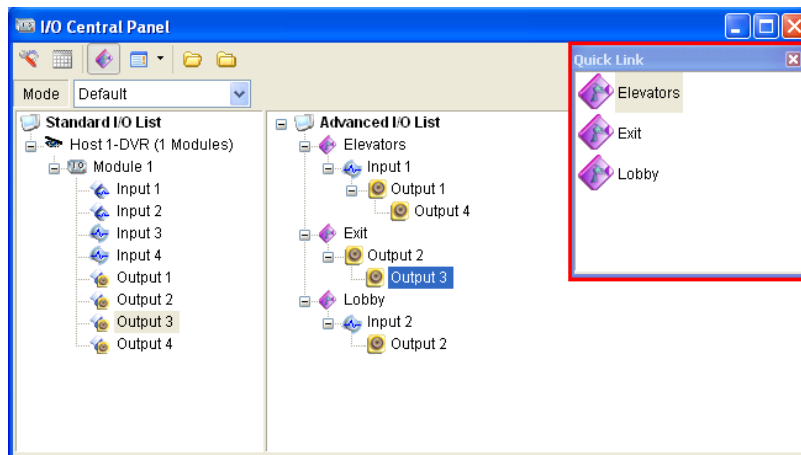
7.9 Editing Background Image

With the Background Image feature, you can import a floor plan to lay out the locations of the I/O devices. This feature works in the **Icon** style of the Advanced I/O List.

1. To switch to the Icon style, click the **Advanced I/O List Style** button [icon] on the panel toolbar > **Icon**.

2. Select a group in the Advanced I/O List.

3. Right-click on the right screen > **Background Image** to import a graphic file.

4. Drag the I/O icons to the desired locations on the imported map.

5. To add images to another group, repeat steps 2 to 4.
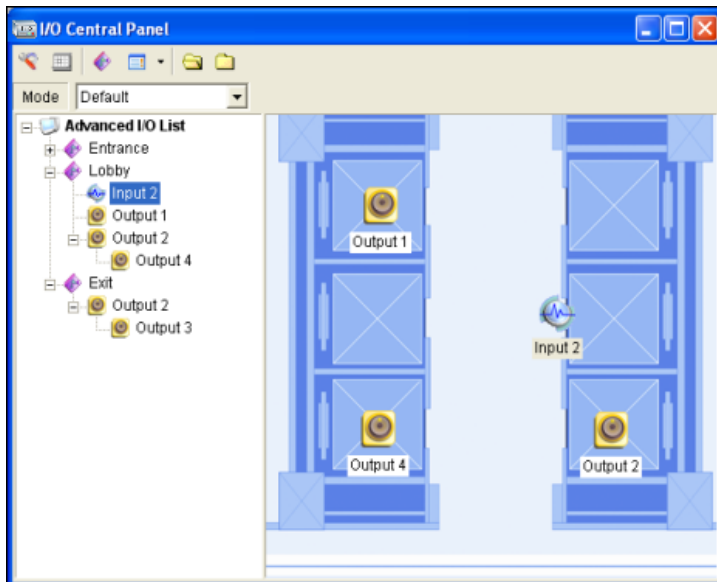
7.10 Popping up Live View upon Input Trigger

The operator can be alerted by a popup live view after an input device is triggered. One input device can trigger up to 4 camera views and a total of 16 camera views can be accessed on the I/O Control Panel simultaneously.

1. On the panel toolbar, click the **Configure** button ⬚ > **Panel Setting** > the **Notify** tab. This dialog box appears.

2. By default, the camera view is popped up in a separate window. Specify the **Maximum Number of Invoked Camera Views** that can be displayed when multiple input devices are triggered simultaneously. Up to 16 camera views can be accessed.

3. Select **Enable digital input to invoke the associated camera** to activate the function.

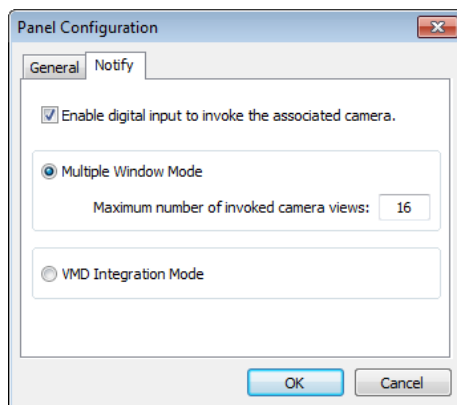4. If you want to pop up the camera view on the VMD window, select **VMD Integration Mode**. For this option, you must also enable the VMD window.

5. To map a camera to an input device, right-click an input device in the Advanced I/O List > **Setting**. This dialog box appears.
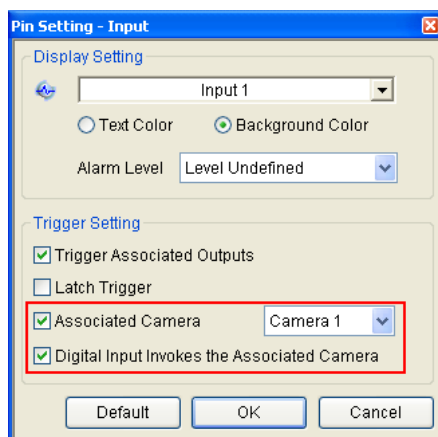
6. Select **Associated Camera** and assign up to four cameras from the dropdown list.

7. Select **Digital Input Invokes the Associated Camera**.

8. Click **OK**. When the input is triggered, the associated camera view will pop up.

Tip: You can use a GV-Keyboard to switch the audio (microphone and speaker) of the popup view on or off.

Chapter 8   Multi Monitors Applications

8.1   Application Position

The Application Position helps you adjust the resolution and position of multiple application windows in GV-Control Center.

Note: If GV-Control Center is displayed on a widescreen monitor, you can also utilize this feature to help you arrange the positions of multiple application windows.

---

1. On the top right of the main screen, click **Configure** ⚙ > **Setup** > **Application Position**. The Application Position window appears.
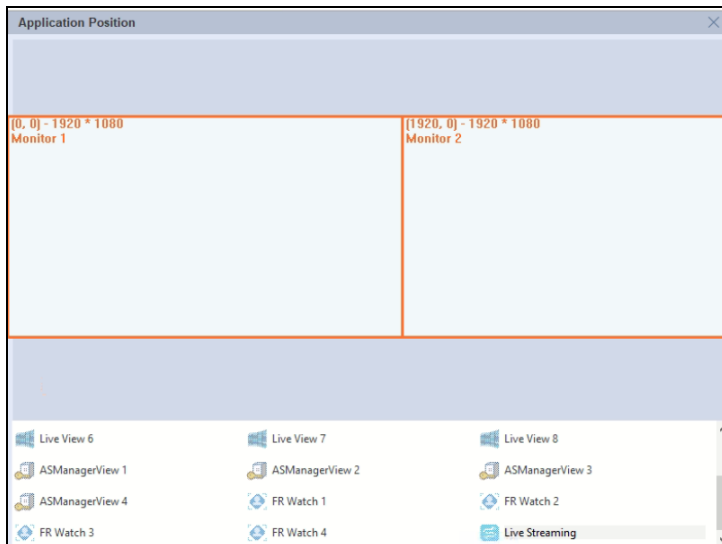
2. Right-click an application icon, select **Show** to display its window on the monitor and manually drag the window to the desired position.
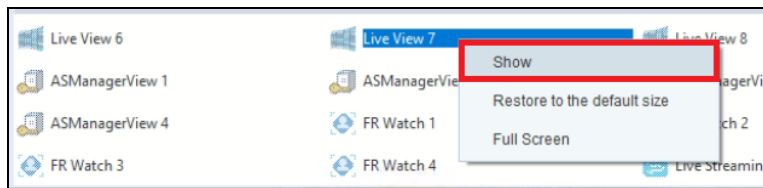
Tip: You can freely move and place a window between or among monitors.

---

3. To adjust the window's resolution and access other settings, right-click the application window or its icon at the bottom.

The following options are available based on the application you select:

■ **Resolution:** Select the resolution of the application window.

■ **Show:** Select / unselect to display or hide the application window on or from the monitor.

■ **Activate Remote Camera:** For Remote DVR only. Select the cameras of client GV-DVR / NVR to have remote access.

■ **Shut down when the Control Center is closed:** For I/O Central Panel only. Select to inactivate the I/O Central Panel when GV-Control Center is closed.

■ **Always apply specified position:** For I/O Central Panel only. Select to always show the I/O Central Panel at the specified position upon startup.

■ **Set Position:** Define coordinates of the application window.

The following options are only available for Remote E-Map:
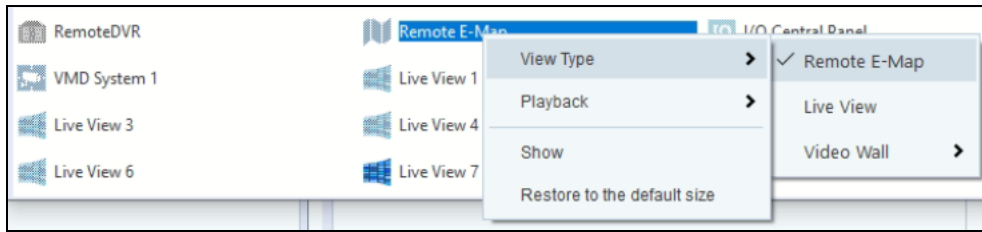
- ■ **View Type:** Define the display position of live view enabled from Remote E-Map.
  - • **Remote E-Map:** Enabled by default. Select for the camera view to appear in a separate window.
  - • **Live View:** Select for the camera view to appear on the Live View window.
  - • **Video Wall:** Select for the camera view to appear on the Video Wall.
- ■ **Playback:**
  - • **Remote E-Map:** Enabled by default. Select to play back recordings in a separate window.
  - • **Control Center:** Select to play back recordings in the Remote ViewLog window.
4. Re-activate the application for the settings to apply.

Note: GV-Control Center memorizes the position of the application window according to the latest arrangement on the monitor. When you select **Show** again, the application window is hidden from the Application Position interface, but not from the monitor the application window set.

8.2   Setting up Multiple Live Views

After arranging the positions of multiple Live Views on monitors (*8.1 Application Position)*,
follow the instructions below to apply a layout and cameras to each Live View.

1. Right-click the desired layout > **Apply to**, and select a **Live View** for the layout to be
   applied to.
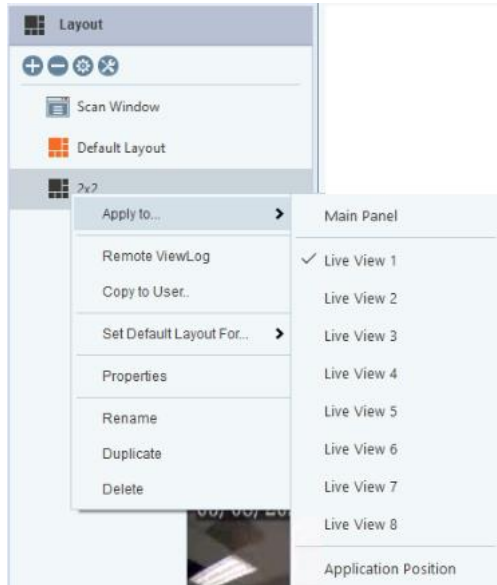
2. To disable the Live View from the monitor, unselect the Live View.
3. Drag and drop cameras / groups to the Live View for display.

Note:

1. For GV-Control Center to support up to 9 Live Views, with 100 camera channels for
   each Live View, higher PC specifications are required than the minimum system
   requirements.

2. According to your screen divisions, the Live View will reduce the received resolution
   as close to the division size as possible. For GV-IP Devices, the JPEG stream of 704 x
   480 or smaller will be changed to the MPEG stream of similar size; the JPEG stream
   higher than 704 x 480 will remain as JPEG stream. The mechanism is designed to
   reduce CPU usage and save bandwidth.

8.3 Quick Zoom

When you are monitoring live views on multiple monitors, the Quick Zoom feature allows you to call back a desired camera view to display on the primary monitor for instant inspection.

1. On the Layout List, click **Tools** ⊗ > **Live View Quick Zoom**. This dialog box appears.
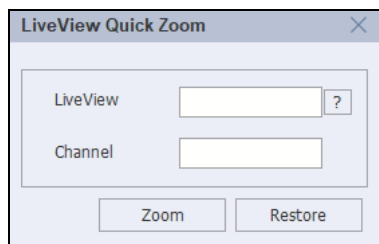
2. To identify the monitor number, click the **Identify** button [?]. The monitor number is displayed on the live views. Following is an example of running four live views in four separate monitors. Click the **Identify** button again to disable the number.
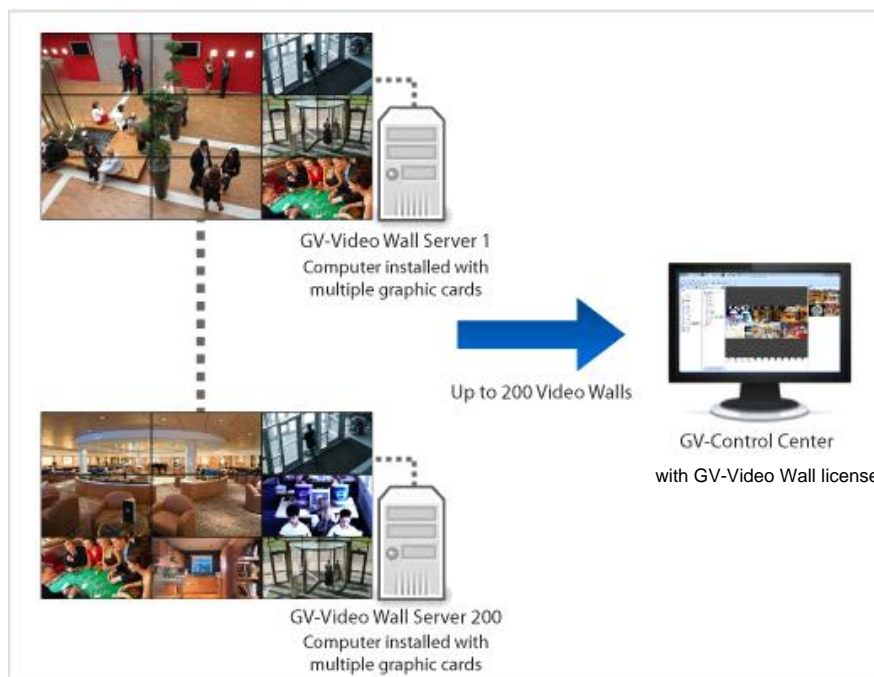

3. To display the desired camera view on the primary monitor, type its monitor number in the Matrix field and the camera channel. Click **Zoom**.

4. To return to the previous live view, click **Restore**.

8.4 Video Wall

GV-Video Wall is an establishment of multiple monitors on a server, blending and displaying various video sources and applications at the same time. GV-Control Center supports up to **200** GV-Video Wall servers, each with a different layout. On each Video Wall, you can:

- display up to **288** IP channels

- freely adjust the size and position of each channel, whether it be within or across monitors

- create up to **16** Zoom Windows, which display channels through manual activation

- create up to **16** Scan Windows, which are capable of displaying up to **64** channels in turn, at custom time interval

- display up to **16** web pages using Web Windows

- play back up to **16** videos using Media Windows

- play back up to **16** videos using Remote ViewLog

- display live views enabled from Remote E-Map

- display live views in up to **16** screen divisions upon event detection using the VMD Window

- display up to **288** channels of customized view region of a remote monitor

GV-Video Wall Server 1
Computer installed with
multiple graphic cards

Up to 200 Video Walls

GV-Control Center
with GV-Video Wall license

GV-Video Wall Server 200
Computer installed with
multiple graphic cards

An application of the Video Wall

GV-Video Wall allows you to display different applications and live views, such as Remote E-Map, GIS, Vital Sign Monitor, Remote Desktop and Remote ViewLog, on the defined monitors.


Note:

1. GV-Video Wall license is required for the function to be activated.

2. The number of monitors supported depends on the capability of graphic cards installed in the Video Wall server.

3. For the minimum system requirements of GV-Video Wall, see *1.1 Minimum System Requirements*.
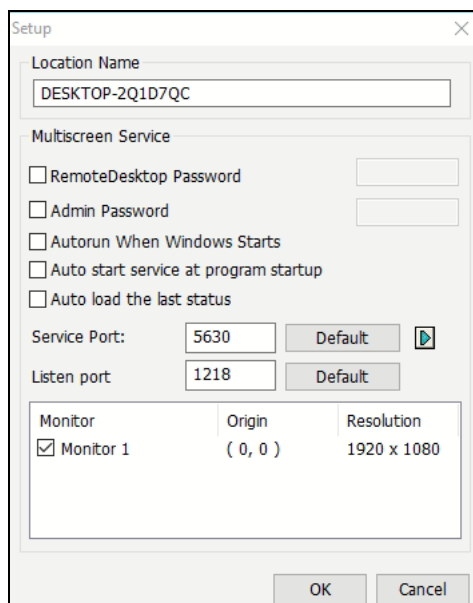
8.4.1 Setting up Video Wall Server

You can build the Video Wall server on a dedicated server or with GV-Control Center. Follow the steps below to install and set up the Video Wall server.

1. Download and install **GV-Video Wall Server** from our website.
2. The Video Wall server icon is minimized to the system tray.
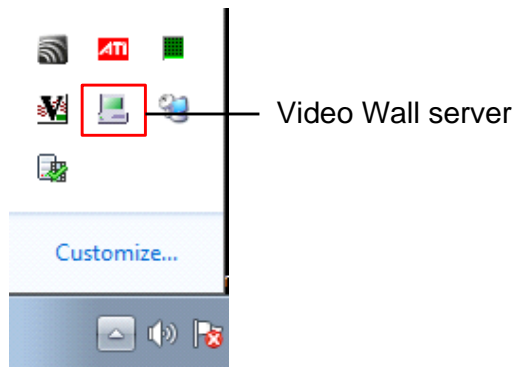
3. Right-click the Video Wall server icon and select **Configure**. This dialog box appears.

- ■ **Location Name:** Display the name of the local server.

- ■ **Remote Desktop password:** Define a password for accessing the desktop of GV-Video Wall from GV-Control Center.

- ■ **Admin Password:** Define a password for accessing the GV-Video Wall settings.

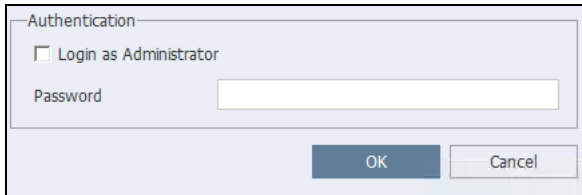**Note:** To prevent other users from configuring GV-Video Wall at the same time, set up **Admin Password** in GV-Video Wall. Then in GV-Control Center, click the **Configure** button ⚙ in the Video Wall list, and set up the same Admin Password.

```
┌─Authentication──────────────────────────────┐
│  ☐ Login as Administrator                    │
│                                              │
│  Password      [                          ]  │
│                                              │
│              [   OK   ]  [  Cancel  ]        │
└──────────────────────────────────────────────┘
```

- **Auto run when Windows starts:** Start the Video Wall service upon Windows startup.

- **Auto start service when program starts up:** Start the Video Wall service upon the startup of Video Wall program.

- **Auto load the last status:** Automatically load the previous Video Wall settings.

- **Service port:** Correspond to the Connect port 5630 in GV-Control Center.

- **Listen port:** Correspond to the Search Server port 1218 in GV-Control Center.

- **Monitor:** Display the monitors connected to the GV-Video Wall server.

4. Select the monitors to be used and click **OK**.

5. Right-click the Video Wall server icon 🖥 and select **Start Service**.

Note: In GV-Control Center, the **Video Wall Server** program is installed, launched and activated by default.

8.4.2 The Video Wall List
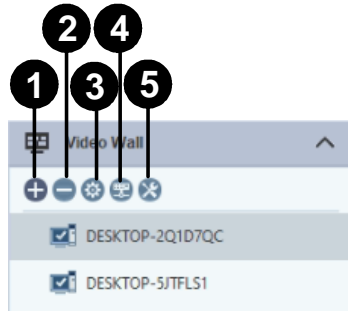
No.	Name	Description
1	Add Host	Add the hosts and layouts of GV-Video Wall server or GV-IP Decoder Box.
2	Delete Host	Delete the hosts and layouts of GV-Video Wall server or GV-IP Decoder Box.
3	Configure	Define layout, caption, network and authentication settings.
4	Connect	Connect/disconnect from a GV-Video Wall server.
5	Tools	Automatically set up IP addresses and names for GV-IP Decoder Box and access Video Wall settings.

8.4.3 Creating Video Wall Layout

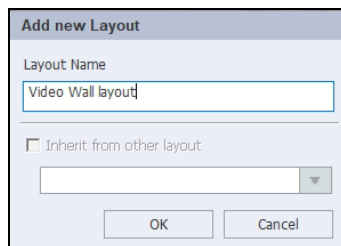Follow the steps below to add the GV-Video Wall server you have set up and configure its layout in GV-Control Center.

1. In the Video Wall list, click the **Add Host** button, and select **Search Server** to locate GV-Video Wall servers on the same LAN or **Video Wall** to manually add a GV-Video Wall server.
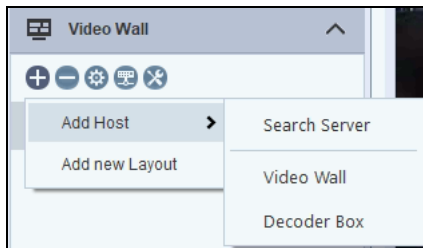
2. To create a layout, click the **Add** button > **Add New Layout**. This dialog box appears.

3. Name the layout and click **OK**. The monitor(s) from the GV-Video Wall are displayed in GV-Control Center.
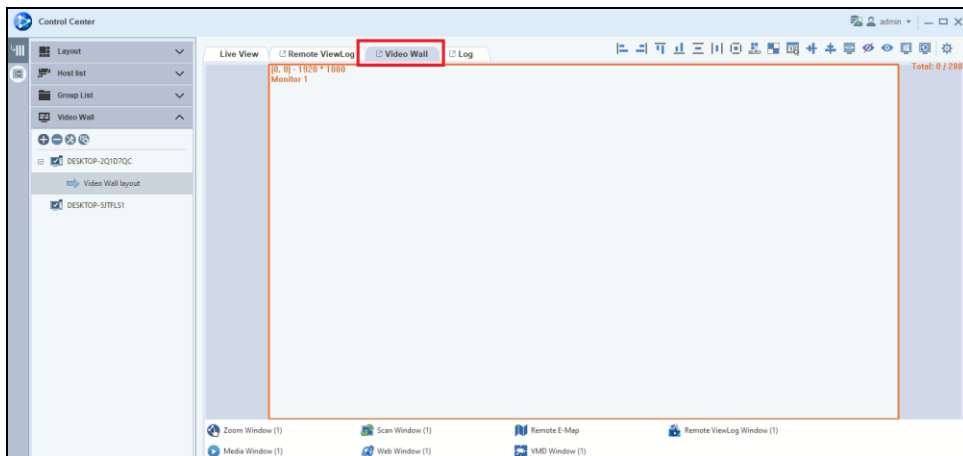
4. Drag and drop hosts / groups to the monitor(s) of the GV-Video Wall.

5. Adjust the channel size and position. The following is an example of 6 monitors from the GV-Video Wall.

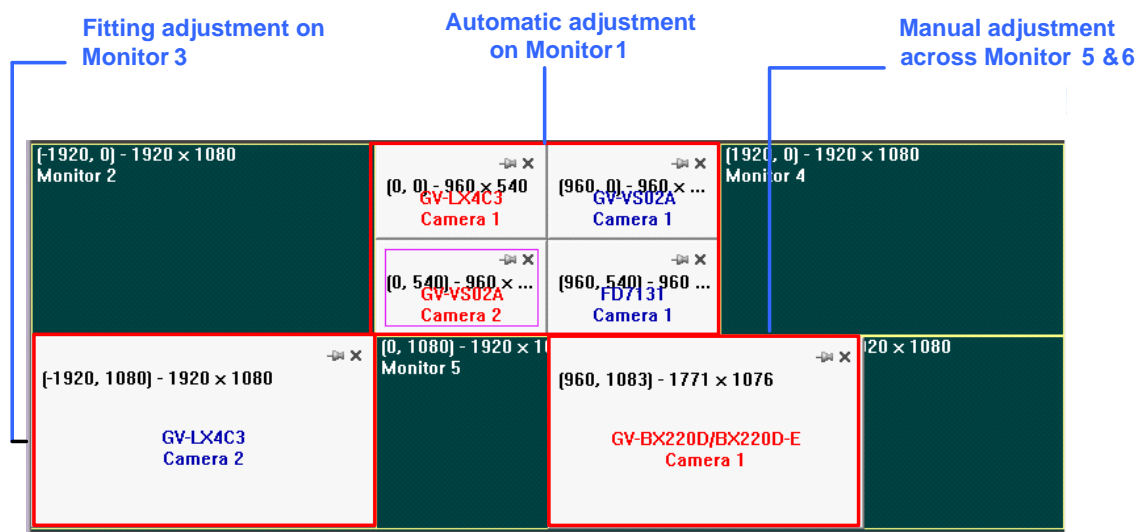- **Manual adjustment:** Drag the four corners of a channel to adjust its size and re-position. For example, the GV-BX220D/BX220D-E channel is manually placed across Monitors 5 and 6.

- **Automatic adjustment:** Right-click space on a desired monitor and select **Auto Arrange**. The channels on the selected monitor are automatically reshaped to equal size and arranged in order (of being added to the monitor). For example, four channels are automatically sorted on Monitor 1.

- **Fitting adjustment:** Right-click a channel and select **Fit to Screen**, the channel will fit the nearest monitor. For example, GV-LX4C3 is fitted to Monitor 3.


Tip:

1. To set multiple channels to the same size, drag your mouse to highlight the channels, right-click one of the channels and then select **Setup**. Define the width and height.

2. Double-click a channel for it to extend to full-monitor size. For example, a channel placing across two monitors will be extended to fit the two monitors.

---

6. Right-click space of a monitor to access the following options:
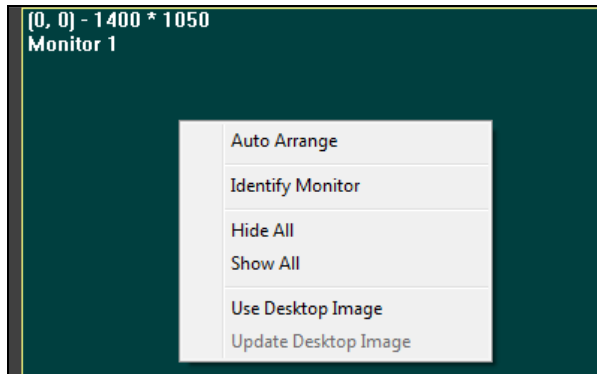
- **Auto Arrange:** See *Automatic adjustment* in step 5.

- **Identify Monitor:** Show the monitor number.

- **Hide All:** Inactivate and hide all the channels on the monitor.

- **Show All:** Show all the channels on the monitor.

- **Use Desktop Image:** Use the desktop image on the monitor. And select **Update Desktop Image** to refresh the desktop image from the Video Wall server.

7. Right-click a channel to access the following options:
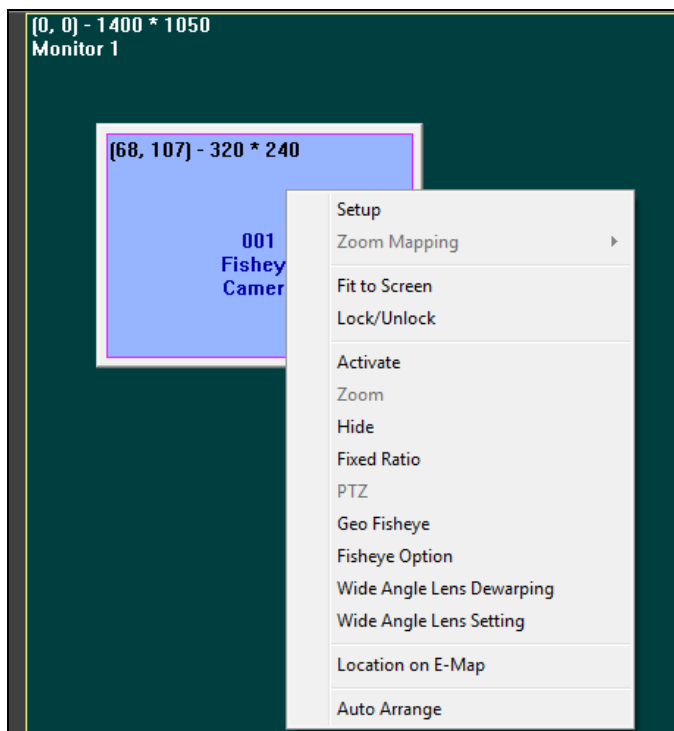
■ **Setup:** Define the position, size and captions of the channel.

■ **Zoom Mapping:** See *Setting up a Zoom Window* later in this section.

■ **Fit to Screen:** See *Fitting adjustment* in step 5.

■ **Lock/Unlock:** Lock or unlock the channel at its current position.

■ **Activate:** Activates the channel on the GV-Video Wall.

■ **Zoom:** See *Setting up a Zoom Window* later in this section.

■ **Hide:** Inactivate and hide the channel. To show a hidden channel, right-click its icon at the bottom of the layout and select **Show**.

■ **Fixed Ratio:** Set the camera view proportional to its source image.

■ **Geo Fisheye:** Only for the fisheye camera. Activate the display settings configured in **Fisheye Option**.

■ **Fisheye Option:** Only for the fisheye camera. Define fisheye display settings. For detail, see *4.3 Fisheye View.*

■ **Wide Angle Lens Dewarping:** Enable dewarping to the channel.

■ **Wide Angle Lens Setting:** Define the degree of dewarping. See *4.5 Adjusting Distorted Views.*

■ **Location on E-Map:** Show the position of the channel on Remote E-Map**.**

■ **Auto Arrange:** See *Automatic adjustment* in step 5.

8.4.4 Advanced Layout Settings

You may also use the controls on the Layout Tool to adjust the channel layout and size.
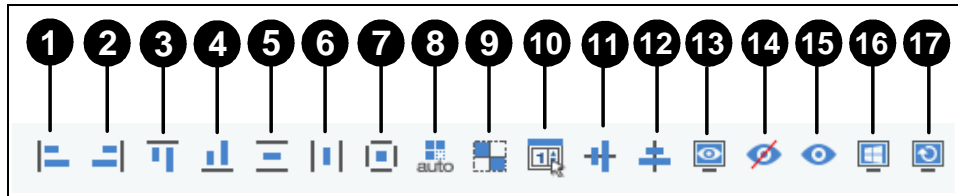
No.	Name	Description
1	Align Left	Aligns the selected channels to the left of the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
2	Align Right	Aligns the selected channels to the right of the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
3	Align Top	Aligns the selected channels to the top of the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
4	Align Bottom	Aligns the selected channels to the bottom of the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
5	Make Same Width	Makes the selected channels the same width as the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
6	Make Same Height	Makes the selected channels the same height as the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
7	Make Same Size	Makes the selected channels the same size as the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
8	Auto Layout	Automatically reshapes the channels to equal size and rearranges the channels in order.
9	View Gridlines	Shows or hide the auxiliary lines to precisely position the channels.
10	Settings	Contains settings for monitor selection and channel division.

11	Expand Horizontally	Reshapes and aligns the selected channels horizontally to the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
12	Expand Vertically	Reshapes and aligns the selected channels vertically to the reference channel. Drag-select desired channels and the last selected one will be the reference channel.
13	Identify Monitor	Shows the monitor number.
14	Hide All	Inactivates and hides all the channels.
15	Show All	Show all the channels on the layout.
16	Use Desktop Image	Use the desktop image on the layout
17	Update Desktop Image	Refreshes the Video Wall with desktop image. This option is only available when Use Desktop Image is enabled.

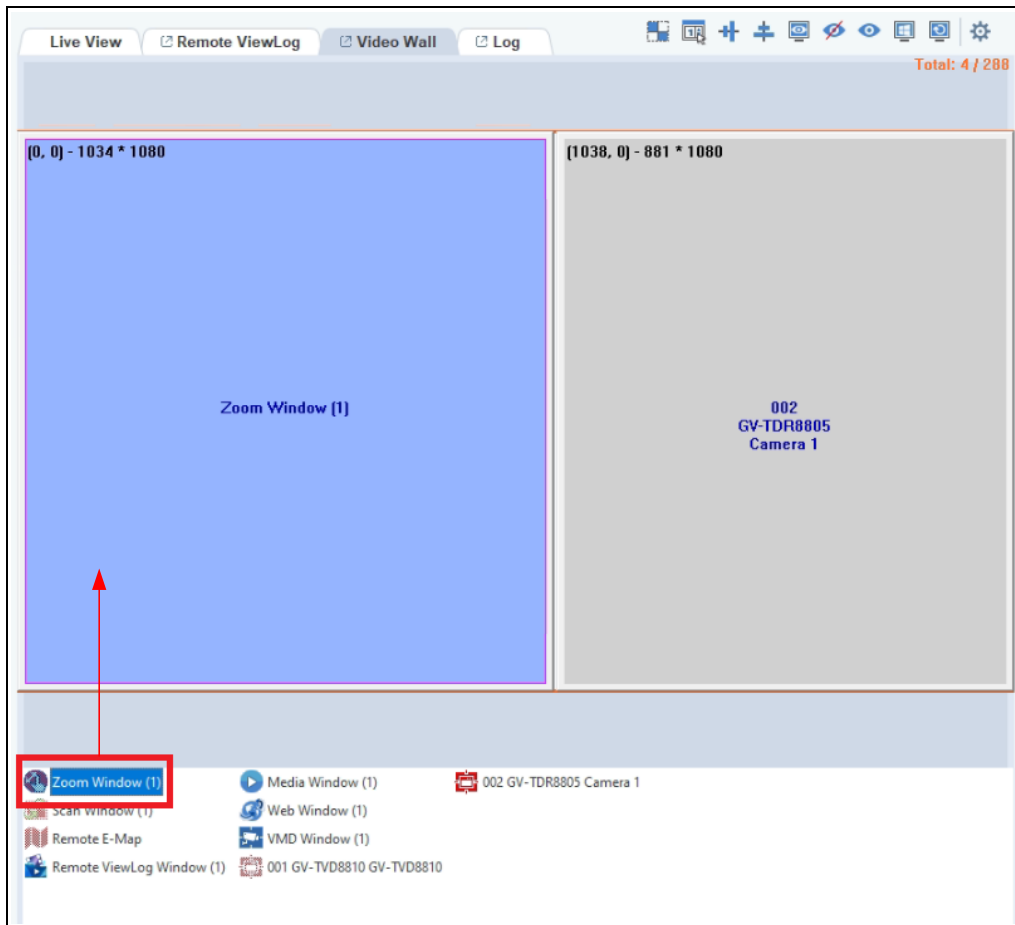## 8.4.5   Activating the Channel and Layout

After you have set up at least one layout, you can activate a channel at a time or all the channels of a layout at once. The activated channel or layout will be displayed on the Video Wall.

• To activate a channel, right-click the channel and select **Activate**. You can repeat this operation with another desired channel.

8.4.6 Setting Up a Zoom Window

A Zoom Window is a window reserved for displaying zoomed channels. Up to **16** Zoom Windows can be established.

1. Drag the **Zoom Window** icon from the Channel List at the bottom to a desired monitor. The **Zoom Window (1)** is created by default.

2. Adjust the position and size of the created Zoom Window. For detail, see Step 5 in *8.4.3 Creating Video Wall Layout*.

3. Make sure the channels intended for zoomed view are activated. Right-click the channel and select **Activate**.

4. Right-click the channel again and select **Zoom**. The channel is displayed on the Zoom Window.

5. To disable zooming, right-click the channel and select **Zoom** again.

6. When the Zoom Window already displays a zoomed view, you can replace the view by right-clicking another channel and selecting **Zoom**.

7. To add another Zoom Window, right-click the space in Channel List, select **Add Zoom Window**, drag the new Zoom icon to a desired monitor. To display on the new Zoom Window, right-click a channel and select **Zoom Mapping** to select the window.

8. To delete a Zoom Window, right-click its icon on the Channel List and select **Remove**.

Note:

1. To set the size of Zoom Window proportional to the source video, right-click the window and select **Fixed Ratio**.

2. To operate the Zoom Window using GV-Keyboard V3, see *2.6 GV-Video Wall GV-Keyboard V3 User's Manual.*


8.4.7 Setting Up a Scan Window

With a Scan Window, you can reserve a portion of the Video Wall to display a group of channels in turn. Up to **16** Scan Windows can be established and a Scan Window can display up to **64** channels in turn.

1. Establish a Group with the channels for scan display.

2. Drag a **Scan Window** icon from the Channel List to a desired monitor. **Scan Window (1)** is created by default.
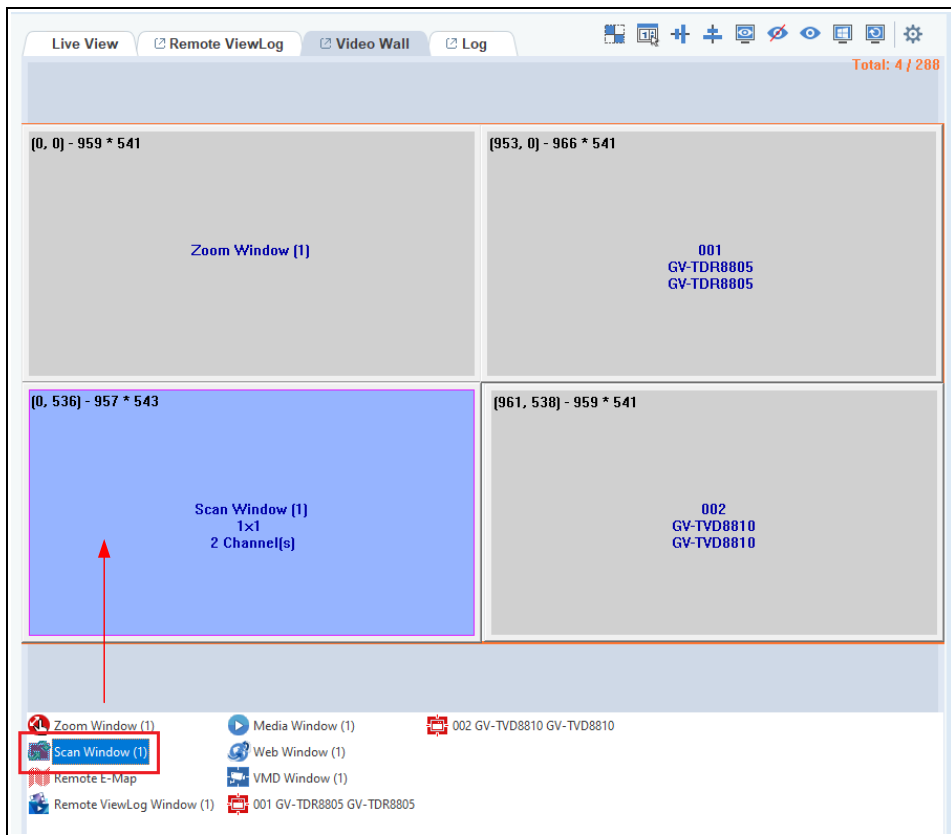
3. Adjust the position and size of the created Scan Window. For detail, see Step 5 in *8.4.3 Creating Video Wall Layout*.

4. To configure the scan display settings, right-click the Scan Window, select **Setup**. This dialog box appears.
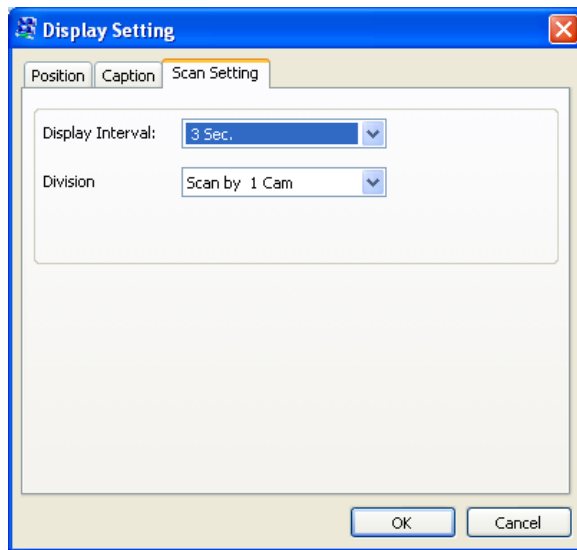
[Scan Setting]

- **Display Interval:** displays channels at the specified interval. The default is 3 seconds.

- **Division:** the channels are displayed in the specified divisions.

Note: For megapixel channels, it is strongly recommended to set the Display Interval to at least 10 seconds to compensate for longer connection and processing time.

---

5. Drag and drop the established group to the Scan Window.

6. To activate scan display, right-click the Scan Window and select **Activate**. The channels are displayed by turn on the Scan Window at the specified interval.

7. To inactivate scan display, right-click the Scan Window and select **Activate** again.

8. To add another Scan Window, right-click the space in Channel List, select **Add Scan Window** and repeat Steps 1 to 6.

9. To remove a Scan Window, right-click its icon in Channel List and select **Remove**.

To zoom a Scan Window

1. If only one Zoom Window is set up, right-click the activated Scan Window and select **Zoom**. The channels are displayed in turn on the Zoom Window and disappear on the original Scan Window.

2. If more than one Zoom Windows are set up, right-click the activated Scan Window, select **Zoom Mapping**, select a Zoom Window. The channels are displayed in turn on the selected Zoom Window and disappear on the original Scan Window.

3. To disable zooming, right-click the activated Scan Window and select **Zoom** again. The channels return to the original Scan Window.

Note: To operate the Scan Window using GV-Keyboard V3, see *2.6 GV-Video Wall* in the *GV-Keyboard V3 User's Manual.*


8.4.8   Displaying Remote Monitor, Web Page and Playing

Back Videos
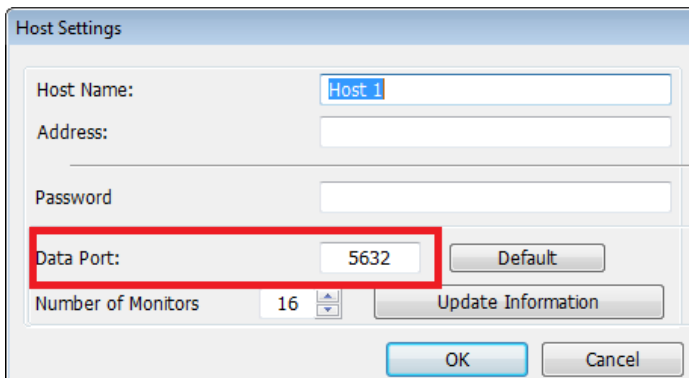
Displaying a Remote Monitor on Video Wall

You can display customized view region of a remote monitor as a channel on Video Wall. Up to **288** Remote Monitor channels can be displayed.

1. Install the Remote Desktop server to the remote server you intend to access.

   A. Insert the Software DVD to the server, select **Install GeoVision Paid Software** and click **Yes** to accept the License Agreement.

   B. Click **GV-Remote Desktop Service** and follow the on-screen instructions. The Remote Desktop server is installed shortly and automatically enabled. The RDS icon 🖥 appears in the system tray.

2. Define the display area of the remote server and access other settings.

   A. Right-click the RDS icon 🖥 and select **Stop Service**.

   B. Right-click the RDS icon 🖥 again and select **Configure**. This dialog box appears.
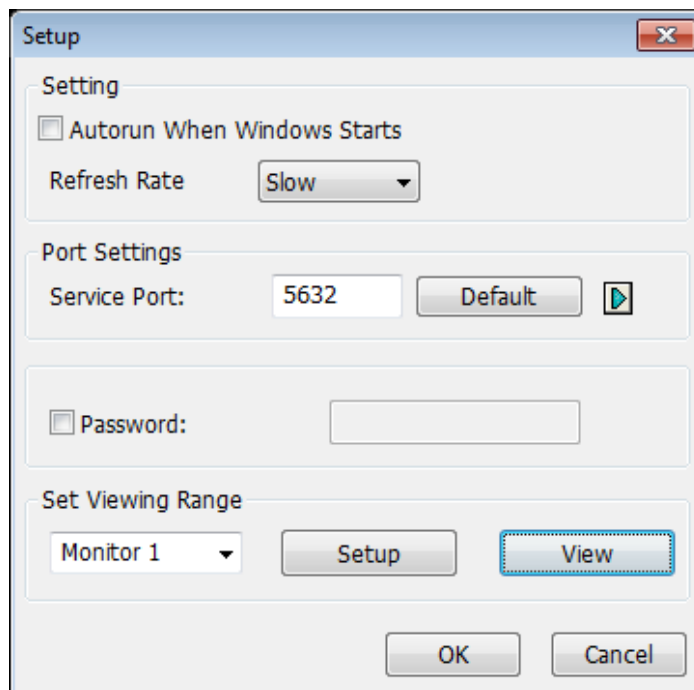
■ **Autorun When Windows Starts:** automatically activates Remote Desktop Service when Windows starts.

■ **Refresh Rate:** defines how quickly this remote server refreshes while being accessed. By default, the **Slow** option is selected.

■ **Service Port:** corresponds to the Data port for Remote Desktop Service in Control Center Server. By default it is 5632.

■ **Password:** sets a password requirement for any remote access of this server.

C. If the remote server contains more than one monitor, select a monitor using the drop-down list under Set Viewing Range.

D. To define the display area, select **Setup** and draw a square on the monitor. These options appear.

■ **Save:** Saves the selected display area.

■ **Abort:** Gives up the configuration.

■ **Full Screen:** Sets the display area to full screen.

E. After you have defined the display area, click **Save** to store the configuration.

F. Right-click the RDS icon 🖵 and select **Start Service**.


Tip: To access the Data port in Control Center Server, right-click **Remote Desktop Service** from the Host List and select **Add Remote Desktop**.

3. Add and connect the Remote Desktop server to Control Center.

   A. On the Control Center's Host List, click the **Add** button > **Add Host** > **Add Remote Desktop**. Type the IP of the remote desktop. Optionally, you can set up a password for remote access in the filed of **Password.**

   B. On the upper right corner of the **Device Information** section, click the **Update Information** button   .

   C. The remote server and the installed monitors are shown in the Host List and connected to Control Center. In this example, the remote server contains one monitor.
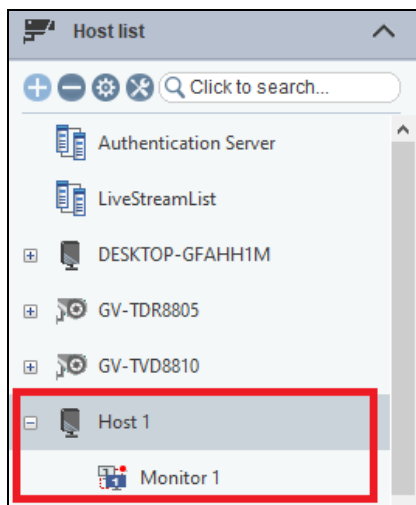
4. Drag the monitor to the Channel List of the Video Wall Server you wish to monitor the remote desktop and configure the position and size of the remote desktop on Video Wall. For details, see Step 5 in *8.4.3 Creating Video Wall Layout*.

![GeoVision logo]

Displaying Web Pages on Video Wall

You can display and operate up to **16** web pages on the Video Wall.
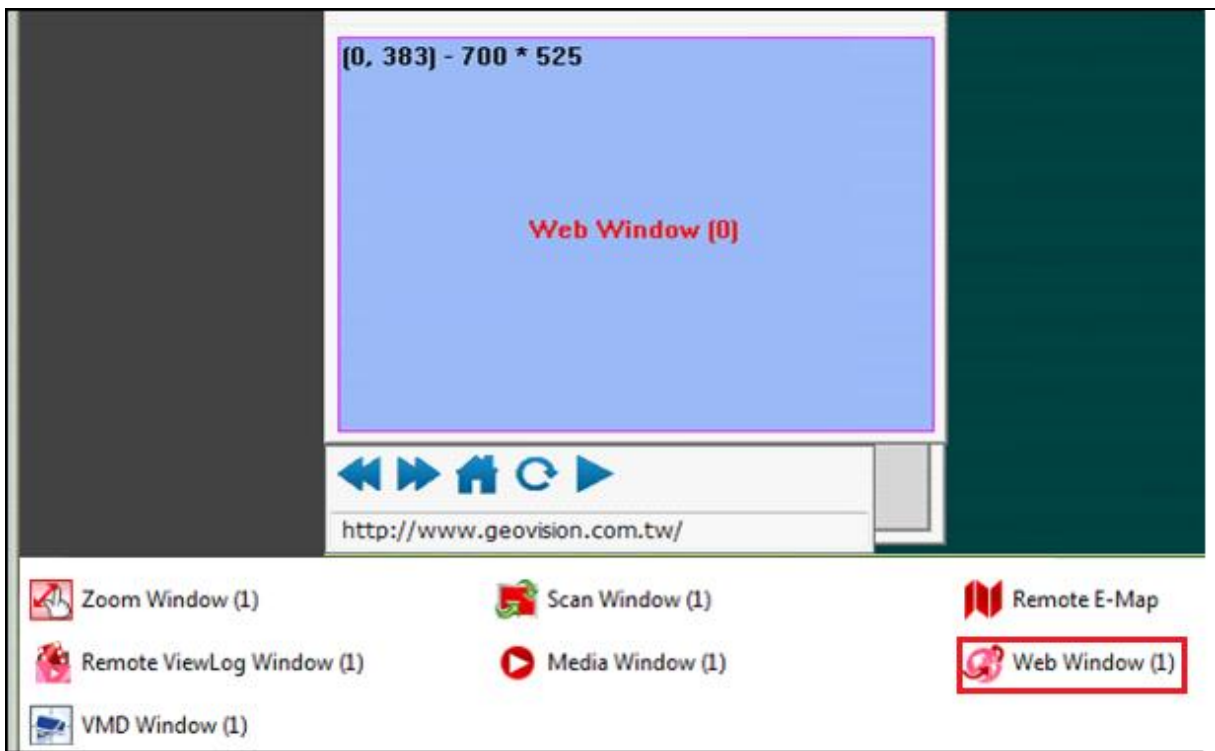
Controls on the Web Window:

| Icon	Function
44	Click to go back to the previous page.
▶▶	Click to go to the next page.
🏠	Click to go to the home page.
↻	Click to refresh the Web page.
▶	Click to link to the specified Web address.

Follow the steps below to display a Web page on Video Wall:

1. Drag and drop the **Web Window** icon to the layout.

2. Adjust the size and position of the Web Window. For details, Step 5 in *8.4.3 Creating Video Wall Layout*.

3. Type the Web address in the blank and click ▶ .

4. To add another Web Window, right-click the space in Channel List and select **Add Web Window**.

5. To delete a Web Window, right-click its icon in Channel List and select **Remove**.

Video Playback on Video Wall

You can display and play back up to **16** recordings (of last 5 minutes) on Video Wall.
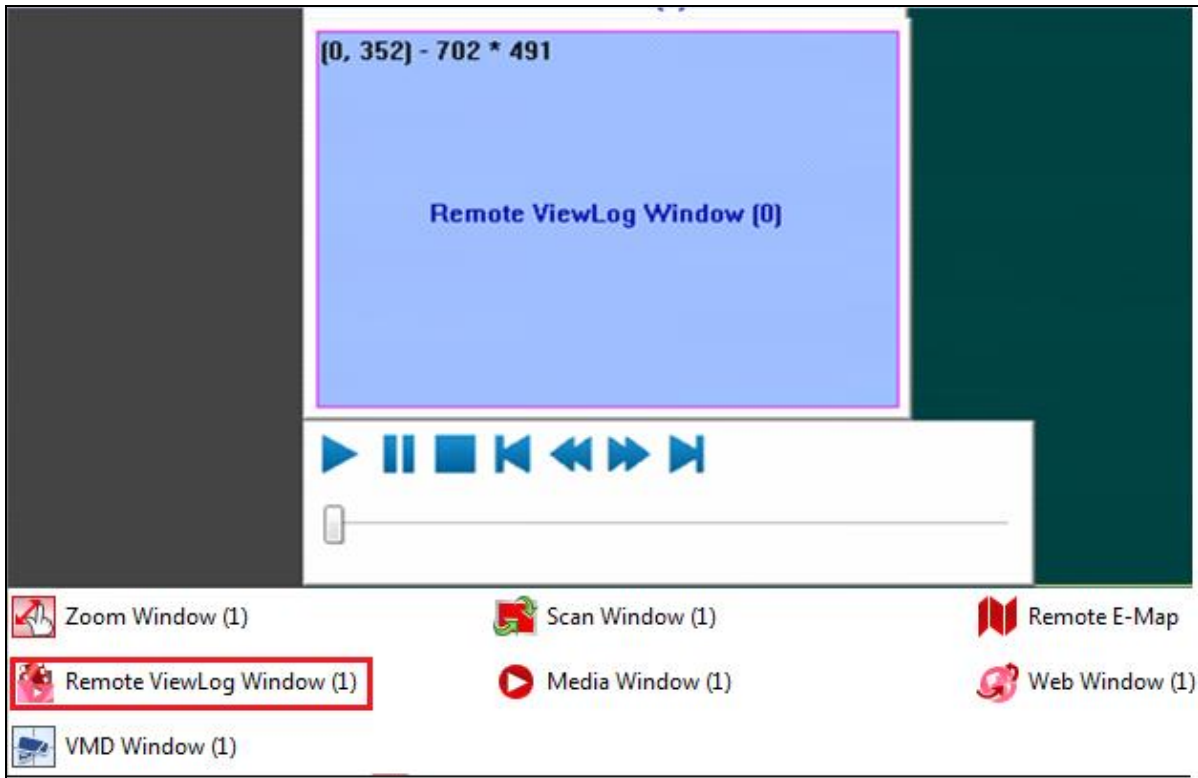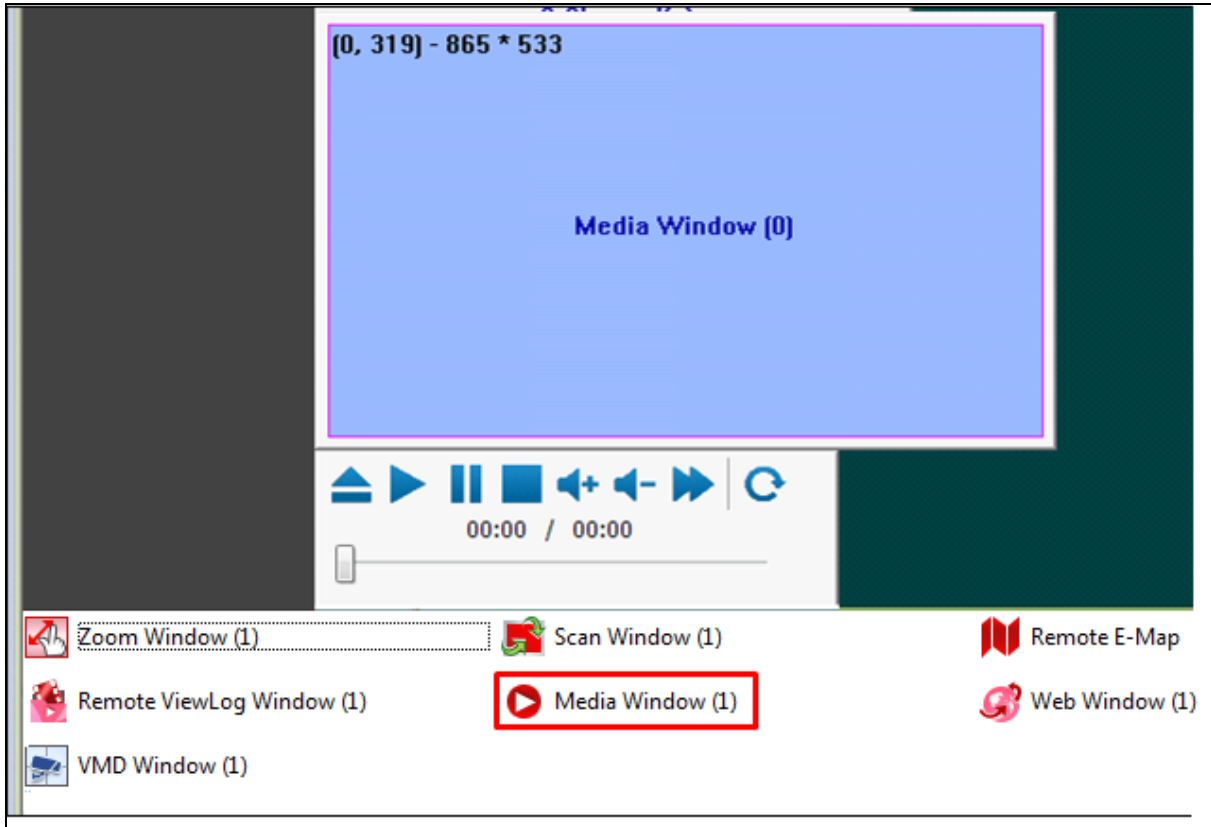

1. Drag and drop the **Remote ViewLog Window** icon to the layout.

6. Adjust the size and position of the Remote ViewLog Window. For details, Step 5 in *8.4.3 Creating Video Wall Layout*.

2. Drag and drop a camera from the Host List to the Remote ViewLog Window for playback. Events recorded from the previous 5 minutes are played back on the Video Wall.

3. To add another Remote ViewLog Window, right-click the space in Channel List and select **Add Remote ViewLog Window**.

4. To delete a Remove ViewLog Window, right-click the icon in Channel List and select **Remove**.

Note: Make sure you have enabled **Remote ViewLog service** on the GV-IP Devices and GV-DVR / NVR VMS for this application.

Video Playback on Video Wall with Media Window

You can play back and display up to **16** media files on Video Wall. File types supported by Microsoft Media Player are supported for playback in Media Window.


1. Drag and drop the **Media Window** icon to the layout.

7. Adjust the size and position of the created Media Window. For details, Step 5 in *8.4.3 Creating Video Wall Layout*.

2. Click the **Browse** button ⏏ to browse a file for playback. The recording is played back shortly.

3. To add another Media Window, right-click the space in Channel List and select **Add Media Window**.

4. To delete a Media Window, right-click its icon in Channel List and select **Remove**.

8.4.9   Displaying Live View from Remote E-Map

The Video Wall can be used to display live views enabled from Remote E-Map.

- Make sure you have selected **Video Wall** for Remote E-Map's view type. For details, see Step 3 in *8.1 Application Position*.

- Adjust the E-Map channel size and position on the Video Wall. See Step 5 in *8.4.3 Creating Video Wall Layout*.
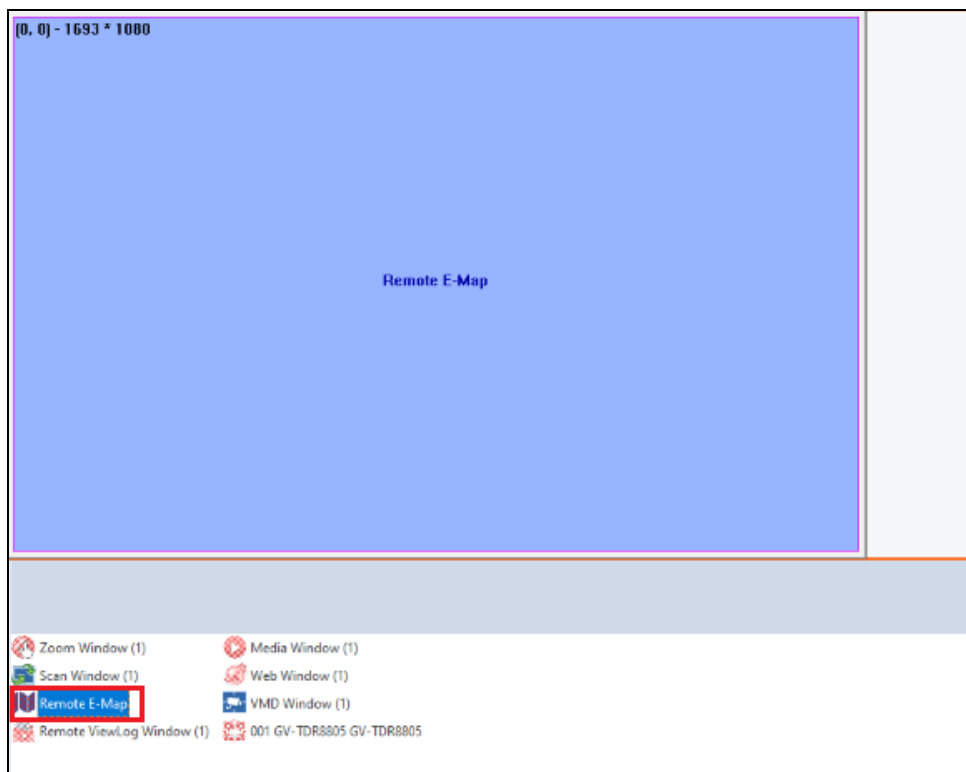
- Right-click the E-Map channel to access more settings. See Step 7 in *8.4.3 Creating Video Wall Layout*.


Tip: You can have 1, 4, 9 or 16 divisions within the Remote E-Map channel by right-clicking the channel, selecting **Setup** and then **Division**.

- When the layout is activated, live views from E-Map will be displayed on the Video Wall.

8.4.10   Setting Up a VMD Window

Pop-up live views can be displayed in up to **16** screen divisions on the VMD window immediately whenever assigned video analysis events, e.g. motion detection, occur.

1.   Establish a Group with the channels for the pop-up display.

2.   Drag and drop the **VMD Window** icon to the layout.
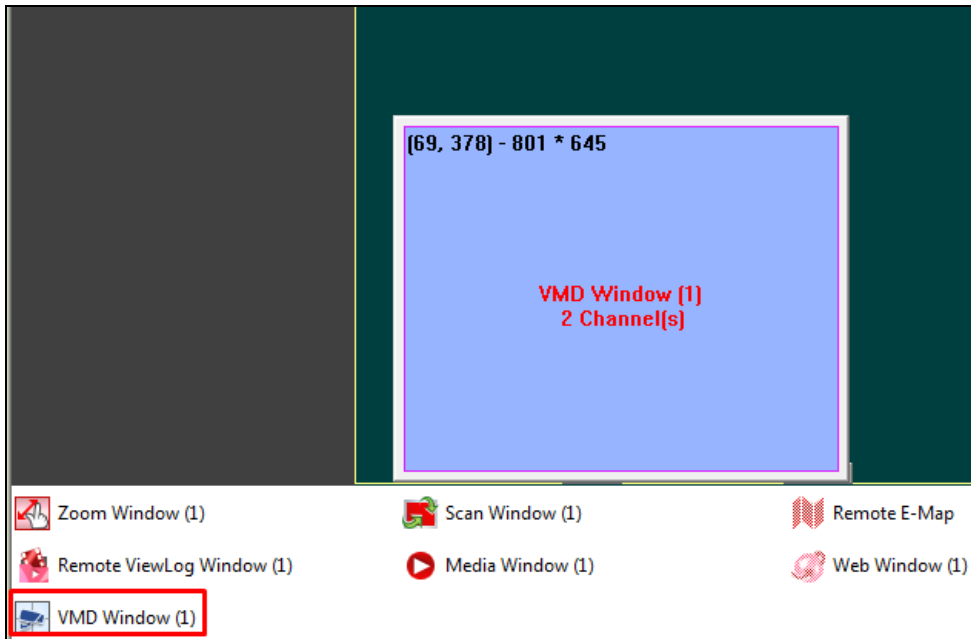
3.   To configure the display setting including the position, caption and screen divisions, right-click the created VMD Window and select **Setup**.

4.   Drag and drop the established group to the VMD Window.

5.   To activate pop-up display, right-click the VMD Window and select **Activate**. A live view will pop up upon the assigned video analysis events.

6.   To create another VMD Window, right-click the space in Channel List, select **Add VMD Window** and repeat Steps 1 to 6.

7.   To remove a VMD Window, right-click its icon and select **remove**.

8.5 Adding GV-IP Decoder Box for Remote Monitor

Display

You can add GV-IP Decoder Box to GV-Control Center to be assigned the desired camera channels for remote monitor display. For details, see *Chapter 6 Integration to GV-Software* in *GV-IP Decoder Box Ultra User's Manual*.

![GeoVision logo]

Chapter 9   Other Applications

9.1   Remote E-Map

The Remote E-Map is to monitor cameras and I/O devices on a map. The Remote E-Map can:

- illustrate the location of cameras and I/O devices with icons
- illustrate the surveillance zone of cameras
- signal motion and I/O events with blinking camera icons or blinking map areas
- play back recordings via camera icons.

Note:

1. Third-party cameras are not supported by the Remote E-Map.

2. The Remote E-Map also supports access control software GV-ASManager to monitor the vehicle lanes and doors. For which event to trigger a blinking icon on E-Map and limits, see *9.1.8 Connecting to GV-ASManager*.
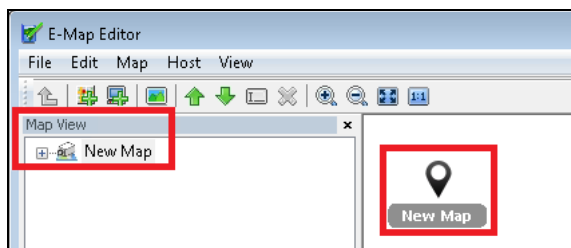

9.1.1   Creating E-Map

To create an E-Map file, follow the steps below.

1. Drag the desired hosts from the Host List to the **E-Map Group**.
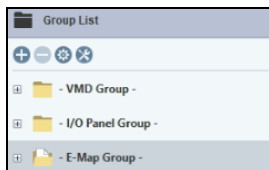
2. To create a map for the group of hosts, right-click **E-Map Group** > **E-Map Editor**.

3. Click the **Add Map** button on the toolbar. A New Map file is created in Map View and the Floor Plan window separately.

4. Click the **New Map** file in Map View, and click the **Load Map** button (No. 4, *9.1.2 The E-Map Editor Window*) to import a graphic file. The file opens in the Floor Plan window.

5. Drag and drop the icons from Host View (No. 15, *9.1.2 The E-Map Editor Window*) onto the map in the Floor Plan window.

6. To change the orientation of the default camera icon, right-click the camera from the Host View, and select an orientation.

7. To change the camera / IO icon to your own, right-click the camera / IO from the Host View, and add your own icon.

> **Note:** Make sure the icon file is of 32 x 32 pixels or smaller.

Define the condition that the icon appears by selecting **No Event** or **Event** and select the icon orientation using the drop-down list. You can set different icons for an event and no-event situation. In this example, the icon of IPCam.jpg appears on the map when no event occurs and when an event occurs, the icon changes to the default one.

8. Click **File** in the window menu, and select **Save to Control Center** to save the created map file to the Control Center folder or **Save to File** to save the file to other directory.
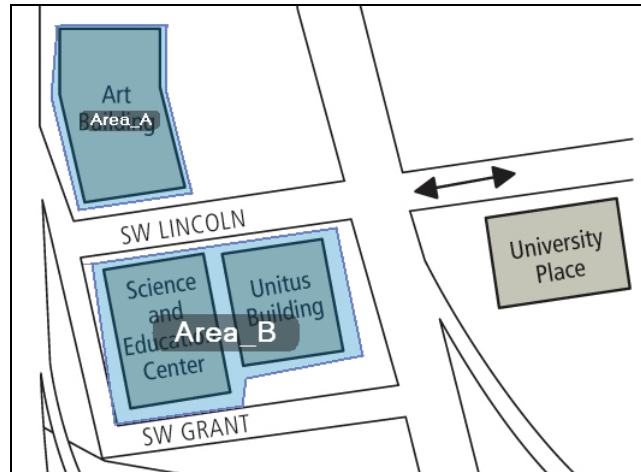
9.1.2 The E-Map Editor Window
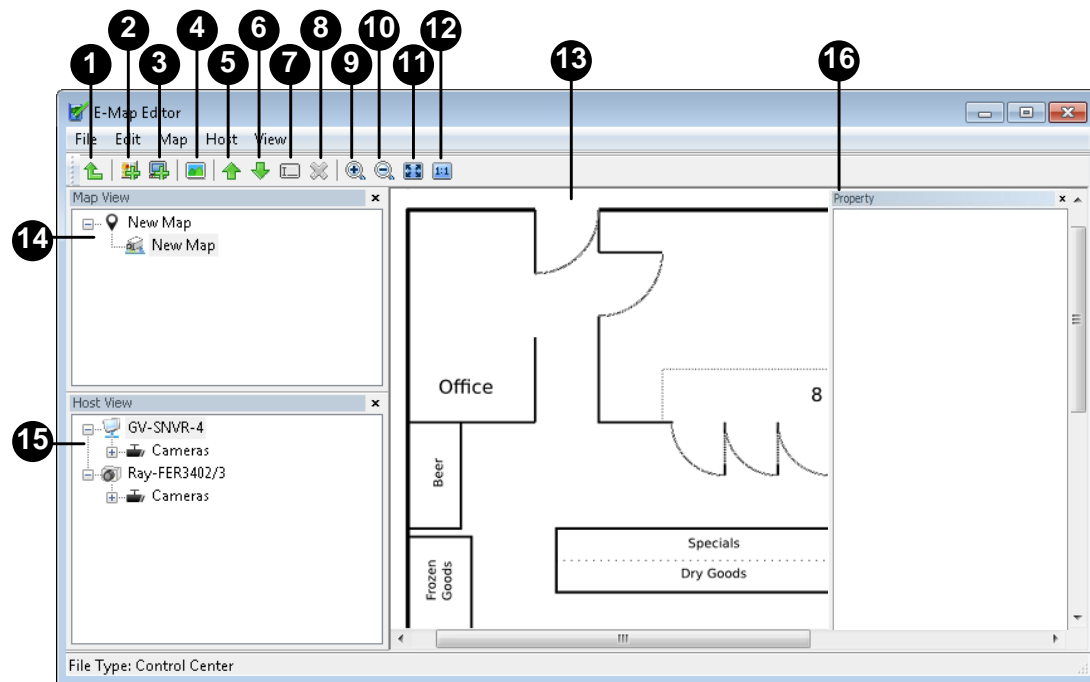
No.	Name	Description
1	Up	Return to the previous map file.
2	Add Map	Add a map file.
3	Add Host	Add a host folder in the Host View.
4	Load Map	Import a floor plan.
5	Move Up	Move the selected map up in the list.
6	Move Down	Move the selected map down in the list.
7	Rename	Rename a map file / folder.
8	Delete	Delete a map file / folder.
9	Zoom In	Zoom in on the floor plan.
10	Zoom Out	Zoom out on the floor plan
11	Fit to Screen	Fit the floor plan to the E-Map Editor Window.
12	Actual Size	Show the floor plan in its original size.
13	Floor Plan	The window displays the imported graphic file.
14	Map View	Tree view of map files / folders.
15	Host View	Tree view of host folders.
16	Property	Adjust the property of view zone

9.1.3 Setting up the Polygonal Area

The Polygonal Map function helps you quickly locate a triggered device. Draw an area on the map and it will flash when any device within the area is triggered.

1. In the E-Map Editor window, click to highlight a map or an I/O icon, and select **Edit Polygonal Map** or **Edit Polygonal IO**.

2. Click on the map to start drawing a polygonal shape, indicated by a yellow dotted line.
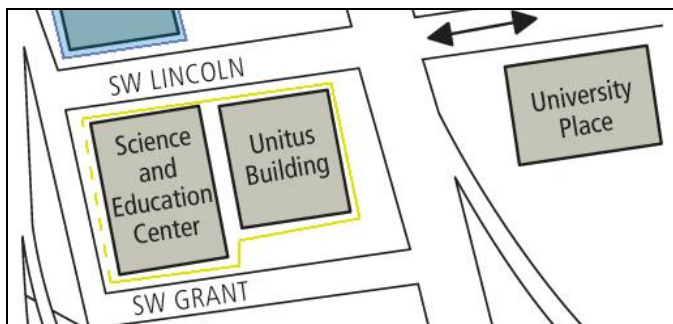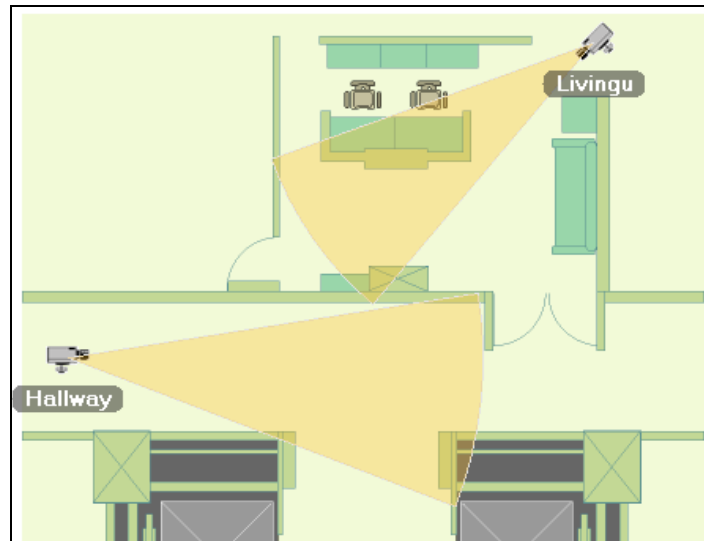

3. After closing the shape, right-click the map and select **Finish**.

The enclosed area will be colored in blue. When a device placed within the polygonal map is triggered, the blue area will flash in blue and red.

9.1.4 Setting up the View Zone

The View Zone function illustrates the monitored area of each camera on the E-Map.


1. In the E-Map Editor window, click to highlight a camera icon, and select **Edit View Zone**.

2. Move the mouse to adjust the size and direction of the monitored area.

3. Right-click the map and select **Finish** to finalize the zone.

4. You can also adjust the property of the view zone from the Property menu.

## 9.1.5   The Remote E-Map Window

You can monitor events using the E-Map. When any events are detected on connected hosts, the associated camera or input icon on the E-Map will flash to alert the operator. Clicking the camera icon will bring its live view for immediate investigation. To open the monitoring Remote E-Map window, right-click **E-Map Group** > **Remote E-Map**.
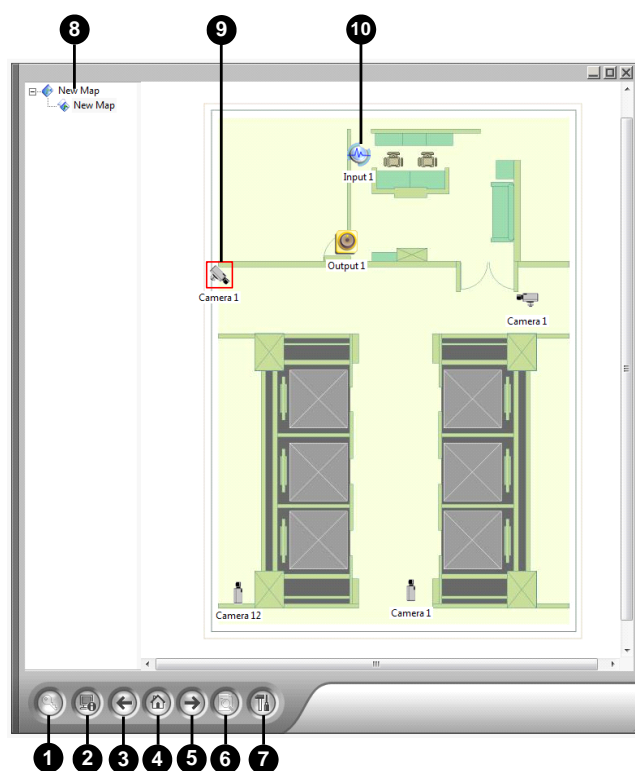
No.	Name	Description
1	Login	Log in up to 500 hosts.
2	Host Information	View the information of incoming events upon motion detected and I/O devices triggered.
3	Previous	Go to the previous map file.
4	Home	Back to the top of the tree view.
5	Next	Go to the next map file.
6	ViewLog	Access the Remote ViewLog function.
7	Configure	Configure the Remote E-Map.
8	Tree List	The list displays all created map files and folders.
9	Blinking Icon	The blinking icon represents a triggered camera or I/O device.
10	Output Icon	Click to manually force the output device.

9.1.6   Configuring the Remote E-Map

Click the **Configure** button (No. 7, *9.1.5 The Remote E-Map Window*) to access the following settings.
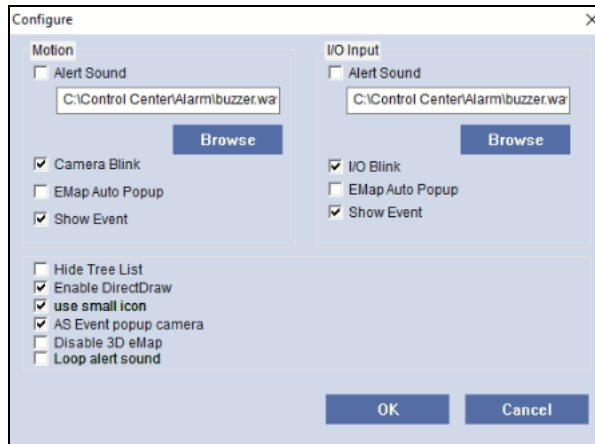
- ■ **Alert Sound:** Assign a .wav file to alert the operator when cameras or input devices are triggered.

- ■ **Camera Blink, I/O Blink:** When cameras or input devices are triggered, the icons will flash on the map.

- ■ **EMap Auto Popup:** When cameras or input devices are triggered, the associated map will pop up on the screen instantly when the Remote E-Map window is minimized.

- ■ **Show Event:** Display the information of triggered events on the Host Information window.

- ■ **Hide Tree List:** Hide the tree list.

- ■ **Enable DirectDraw:** Enabled by default to speed up graphics rendering. Some graphics cards might not support DirectDraw and can produce distorted frames. In this case, disable the function.

- ■ **Use small icon:** Use smaller icons for cameras and I/O devices.

- ■ **AS Event popup camera:** When any door events occur on GV-ASManager, the associated live view will pop up on the Remote E-Map window.

- ■ **Disable 3D emap:** Disable the 3D e-map function.

- ■ **Loop Alert Sound:** When **Alert Sound** is enabled, the assigned .wav file will be played repeatedly until it is turned off by the operator

9.1.7 Connecting to GV-ASManager

You can create an E-Map for access control software GV-ASManager, and include the icons of vehicle lanes and doors to a map. When the following door events happen, the associated icons will flash to alert you and the live view will pop up if a camera is mapped.

- Held open
- Force Open
- Duress
- Access Denied
- Tamper
- Fire Alarm

Note:

1. Make sure the **Remote Monitor Server** is enabled on GV-ASManager to allow remote access from GV-Control Center.
2. Currently, the icon of vehicle lanes does not support any event alerts. You can only right-click the icon to access live view.
3. When creating an E-Map, you can map up to 2 cameras for each Door and up to 7 cameras for each Vehicle Lane (including 4 Recognition Cameras and first 3 Overview Cameras).

9.2   MultiLang Tool for Translated Text

The user interface has been translated from English into 30 other languages. If you find the translation to be unsuitable and would like to correct it, you can use the MultiLang Tool to revise the translation. Then, you can apply the revised text to the application and export an .exe file to make the same revision to another system. You can also send the revision back to GeoVision to have the revision included in future software release.
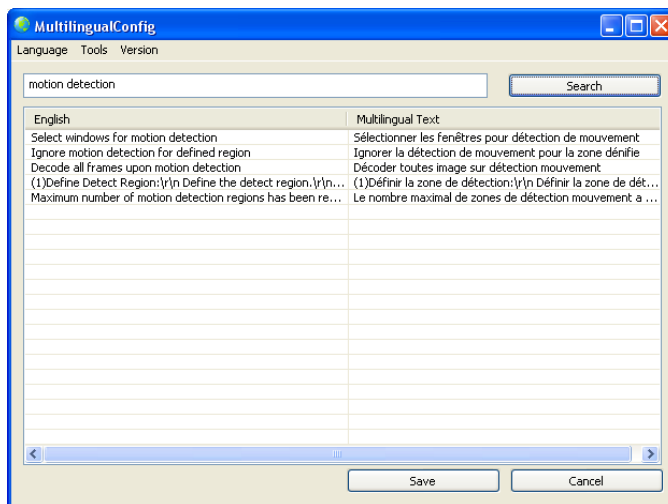
Revising the translated text:

1.   Download and install the MultiLang Tool from our website.

2.   Close all GeoVision applications first and double-click **MultilingualConfig.exe**. This dialog box appears.
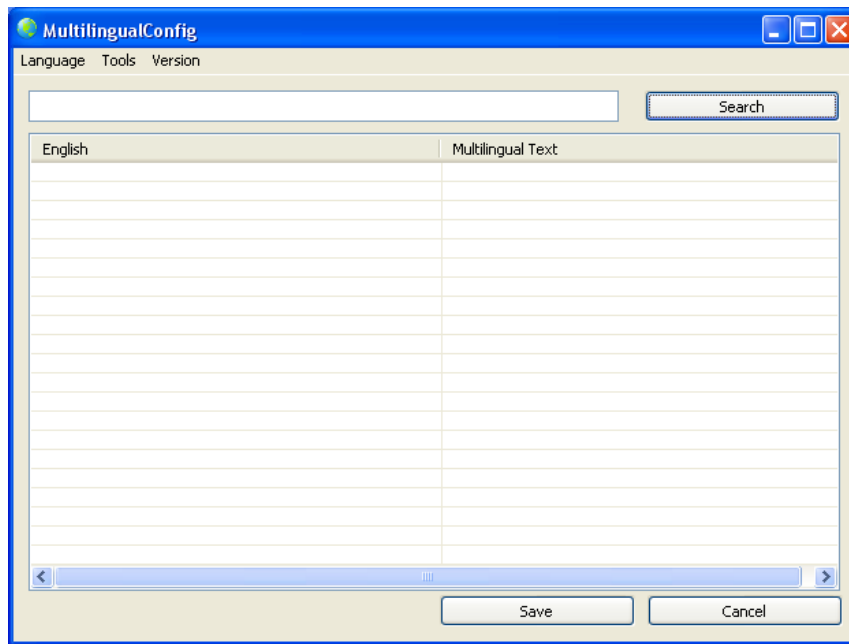
3.   Click **Language** and select the language of the text you want to revise.

4. In the **Search** field, type all or part of the text in English or the target language and click **Search**.

Note:
1. The search is case sensitive.
2. Before making any revision, click **Tools** and select **Revision Note** to read the revision instructions.

---

5. Double-click the text you want to revise. This dialog box appears.
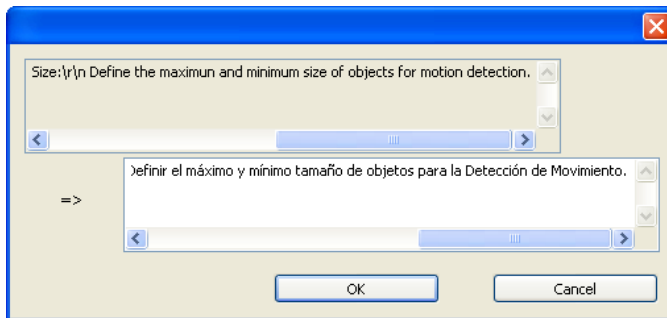

6. Revise the translated text and click **OK**.

Tip:
1. The text may contain symbols such as **%d** or **\n** that instruct the application to perform certain functions. Be careful not to change the symbols in the translated text.
2. It is recommended to revise an entire sentence at a time instead of simply searching a single word and replacing the word in all other strings.

Applying the revised text:

1. To apply the revised translation to the application, click **Save**. For the following applications, the system will automatically locate the corresponding files on your computer and replace with the revised translation.

   - GV-Control Center V3.0 or later
   - GV-Video Wall Server V3.0 or later
   - GV-DVR / NVR / VMS
   - Remote ViewLog
   - GV-IP Device Utility
   - Multi View
   - Remote E-Map
   - Center V2
   - Vital Sign Monitor
   - Dispatch Server
   - GV-GIS
   - MCamCtrl Utility
   - POS Text Sender
   - Authentication Server
   - SMS Server
   - Audio Broadcast
   - Multicast
   - TwinDVR System
   - Bandwidth Control Client Site
   - Backup Viewer
   - Mobile Server

2. After applying the revision, a dialog box appears to show which applications have been revised. Click **OK**.
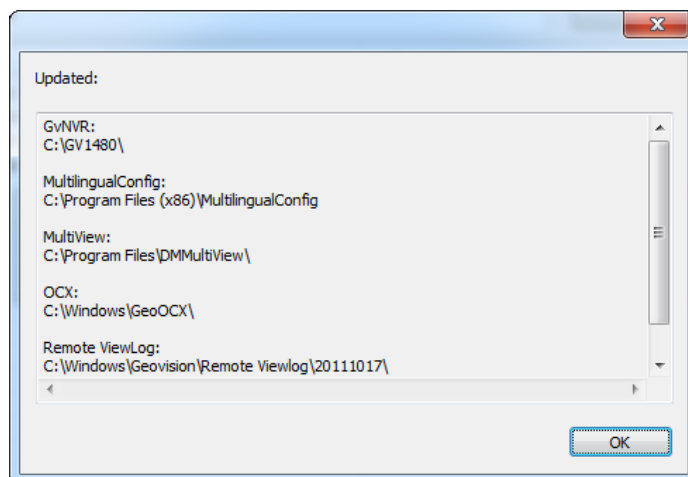
3. The message "*Do you want to apply the revised multilingual texts to another folder?*" appears. If the storage path for the application has been changed or if the associated application is not listed in the dialog box, click **Yes** and select the folder of the application.

To export or send the revised text:

1. To export the revision as an executable file, click **Tools**, **Export** and **Export executable file**. You can copy the .exe file to another computer and apply the same translation revision by running the .exe file.

2. To report the translation revision back to GeoVision,

   - If your default mail client is Outlook, Outlook Express or Mozilla Thunderbird, click Tools, Export and Send Report to send the revision.
   - If your default mail client is not set up or supported, click Tools, Export and Export text file, and email the exported text file to gvlocalize@geovision.com.tw

9.3   Authentication Server

GV-Control Center can integrate with the Authentication Server to access a specified group of GV-DVR / NVR / VMS hosts and thus the connected cameras of these hosts, through an Authentication user account.

For details on the settings of Authentication Server, see *9.4 Authentication Server* in *GV-VMS User's Manual*.

Follow the steps below to connect GV-Control Center to GV- Authentication Server.

1. On the Host List, right-click **Authentication Server** > **Add Authentication Server**. The Use Remote Authentication Account dialog box appears.
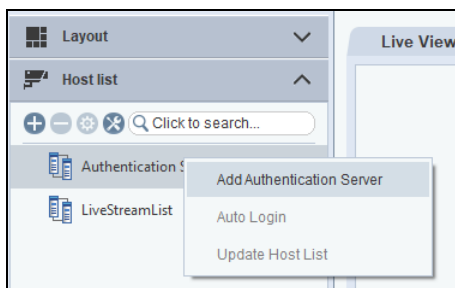
2. Under **Network Setting**, type the IP address of the Authentication Server.

3. Under **Server Login,** type the Authorized ID, Authorized Password, and Client Name of the Authentication Server.

4. Under **User Account**, type the Account ID and Password created on the Authentication Server. Optionally select **Save Account** to enable GV-Control Center to memorize the ID and Password of the Authentication Server.
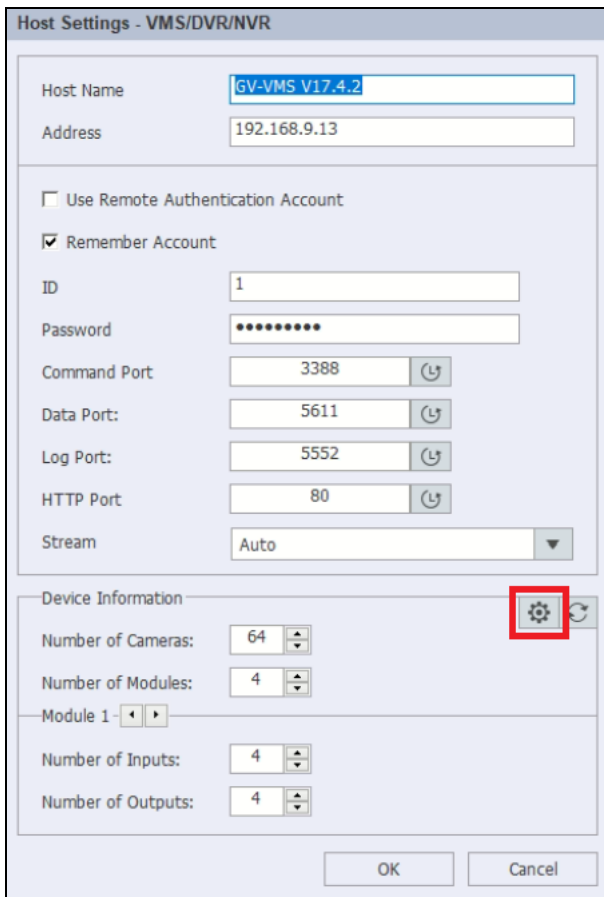
5. Click **OK**. A list of hosts assigned to the user account created on the Authentication Server will be displayed in the Host List.

9.4   Multicast Setting

In a multicast environment, a GV-VMS can send a single stream to multiple Control Center servers on the LAN, thereby significantly reducing the VMS server's workload.

Note: The multicast function is only supported by GV-VMS V17.1 or later.

1. Add a GV-VMS host to one GV-Control Center (On the Host List, click the **Add** button > **Add Host** > **Add VMS/DVR/NVR**).
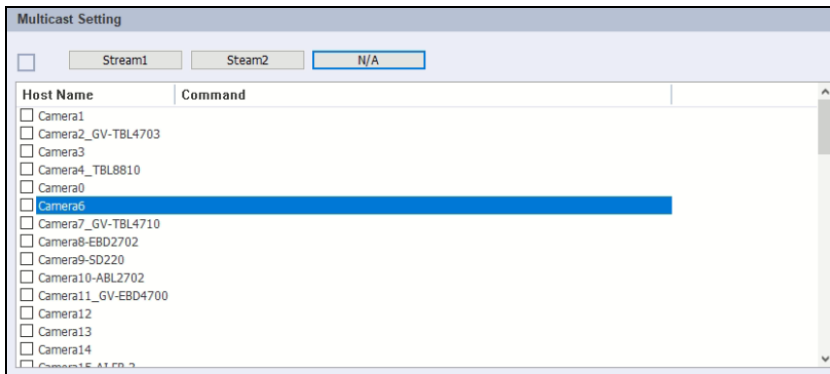

2. Click the **Multicast Setting** button.

3. Select IP cameras to be streamed to the GV-Control Center, and select **Stream 1** (main stream) or **Stream 2** (sub stream) for live view display. Click **OK**.

4. Add the GV-VMS host to other GV-Control Centers to enable multicasting, as described above.

5. On the main screen of the GV-VMS, click **Home** 👁 > **Toolbar** 🛠 > **Network** 🔗 > **Mobile Service**. This dialog box appears.
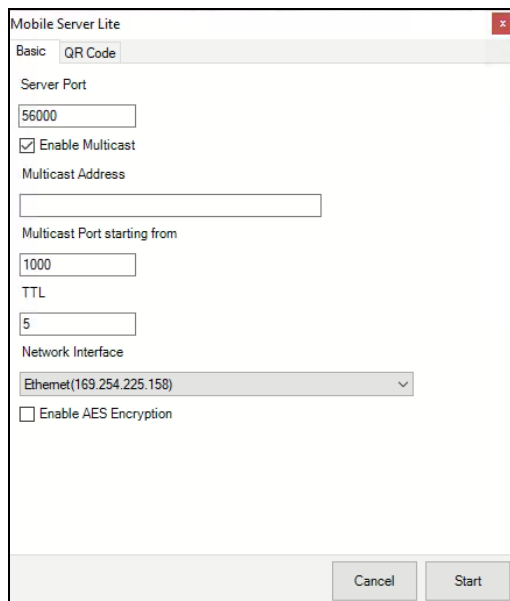
- **Server Port**: Change the default port 56000 if necessary.

- **Enable Multicast**: Enable the multicast function on the GV-VMS.

- **Multicast Address**: Define a multicast address in the range of 239.0.0.0 to 239.255.255.255.

- **Multicast Port Start**: Change the default port 1000 if necessary.

- **TTL**: Change the default TTL (time to live) value 5 if necessary.

- **Network Interface**: Select a network address.

- **Enable AES Encryption**: Enable AES encryption to secure data and video transmission.

126

6. Click **Start**. The GV-VMS is now multicasting the live stream of selected IP cameras to multiple GV-Control Centers.


IMPORTANT:

1. The multicast setting only enables the live stream of GV-VMS to GV-Control Center. To have full Control Center services, on the main screen of GV-VMS, click **Home** 👁 > **Toolbar** 🛠 > **Network** 🖧 > **Control Center Server** > **Control Center Service**).

2. The live view display will inherit the settings from the multicast environment if both the Control Center Server and the multicast setting are enabled at the same time.


Chapter 10 System Configuration

On the top right of the main screen, click **Configure** ⚙ > **Setup** > **System Configure** to have system configuration settings.

10.1 General Settings
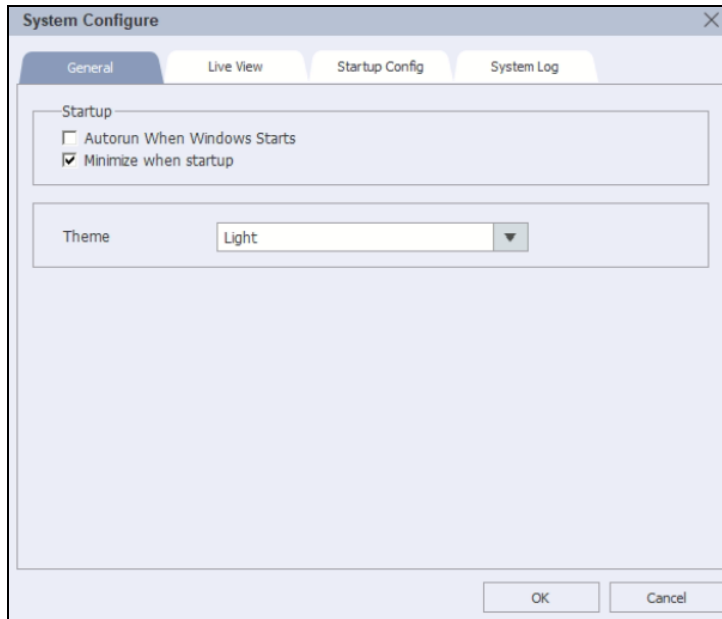
- ■ **Autorun When Windows Starts:** Automatically run GV-Control Center at Windows startup.

- ■ **Minimize when startup:** Automatically minimize GV-Control Center window to the taskbar upon startup.

- ■ **Theme:** Set the color theme of user interfaces to Light or Dark.

10.2   Live View Settings
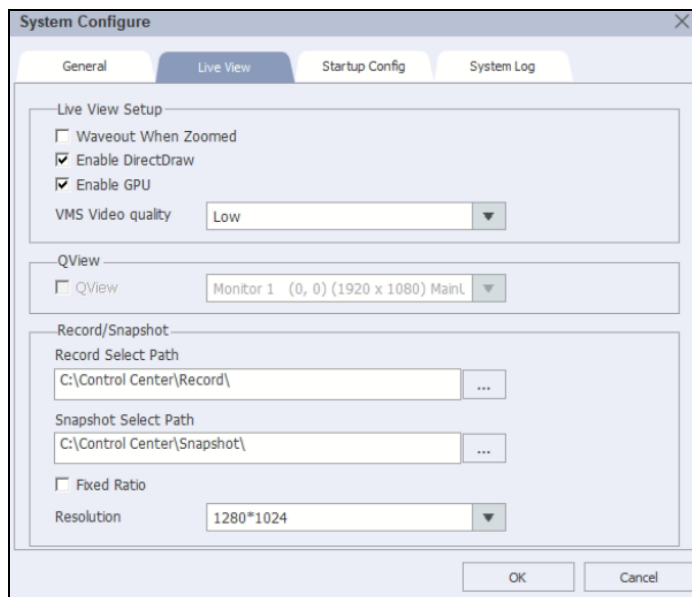
- ■ **Waveout When Zoomed:** Enable audio when a camera view is zoomed.

- ■ **Enable DirectDraw:** Enabled by default. Enhance video performance of live view.

- ■ **Enable GPU:** Enabled by default. Lower the CPU loading to increase the maximum frame rate.

- ■ **VMS Video Quality:** Set the stream quality from GV-VMS to Low, Medium or High.

- ■ **QView:** Enable to display a live view on another monitor as soon as the live channel is clicked.

- ■ **Record/Snapshot:** Define the storage paths for the recordings and snapshots.

- ■ **Fixed Ratio:** Set the camera view and snapshot proportional to its source image.

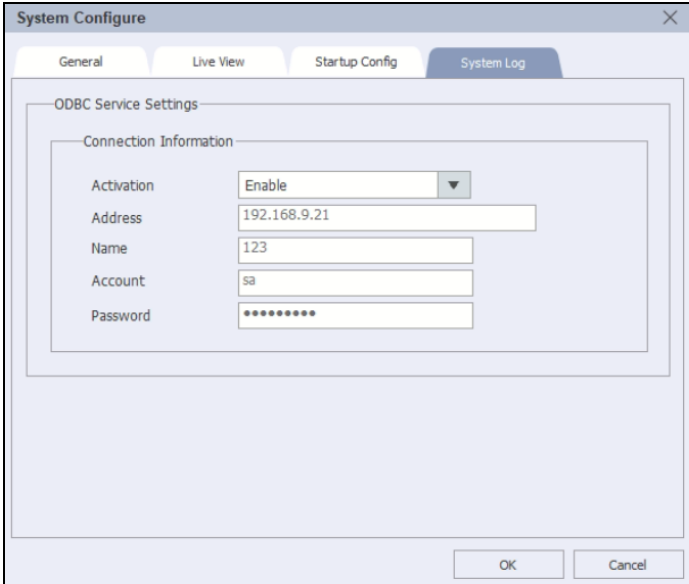- ■ **Resolution:** Set the resolution of camera view and snapshot.

10.3   Startup Settings

Select which application will be started along with GV-Control Center's startup.
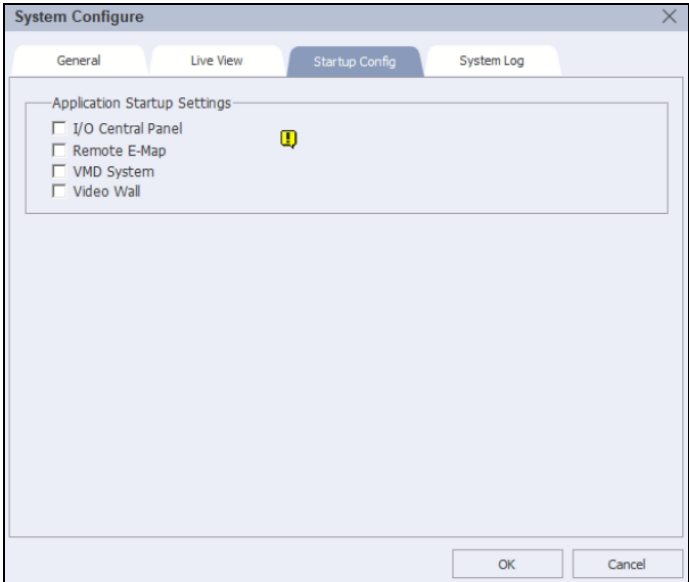
10.4   System Log Settings

The settings allow you to set up a SQL Server account for recording the system log.

Appendix A.   GV-USB Dongle Upgrade

Note the following requirements and limitations for the Control Center:

Dongle Requirements

- An appropriate GV-USB dongle is required.

- It is required to install drivers for the GV-USB dongle to work.

- GV-USB dongle can be upgraded to include more functions, e.g. video wall.

- Using more than one GV-USB dongles of different software on the same computer is possible. However, **GV-Control Center** and **GV-Center V2** cannot be run together.

Upgrading the Black Dongle

GV-USB dongle can be upgraded to include more functions for enhancing the system. You need to collect the data from your dongle and send it back to GeoVision for an upgrade. The upgrade is a charged service. To upgrade your dongle, follow the following steps:

1. Each dongle has its own serial number. Find it on the side of the dongle. Later this serial number will be used in naming the files for upgrading.
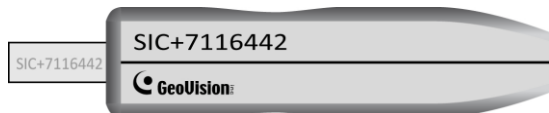
2. Insert the dongle to the computer.

3. In the GV folder, double-click **GVUsbKeyUpClient.exe**. This dialog box appears.
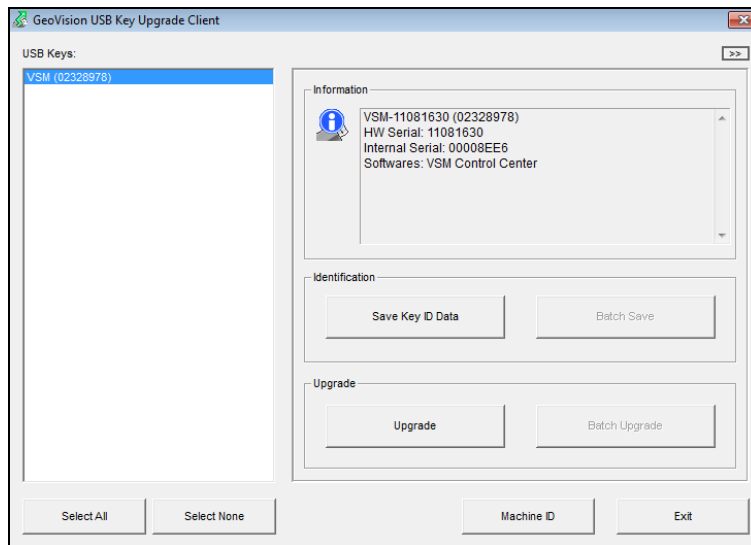
4. To retrieve the data from the dongle, click **Select All**. The information of the dongle is displayed in the information field. Note the displayed number of "HW Serial" should be the same as that on the dongle.

5. To save the data to your local computer, click **Save Key ID Data**. If you have more than one dongle to upgrade, click **Batch Save**. Different dongle data will be saved as separate files. The file will be named after the serial number on the dongle and saved as ***.out**. For example, if a dongle serial number is 7116442, the file is named "NVR-7116442.out".

6. Send this data file to GeoVision at sales@geovision.com.tw. The GeoVision will examine the data file and send an ***.in** file back to you. The file name also includes the serial number of that dongle. In this example, the data file you will receive is named "NVR-7116442.in".

7. After you receive the updated file, insert the correct dongle matching the .in file you receive, and then run **GVUsbKeyUpClient.exe**.

8. Click **Select All** to read the dongle, click **Upgrade** and then open the updated file to upgrade the dongle. You can also select more than one dongle in the list and click **Batch Upgrade** to upgrade them at the same time. Make sure these dongles match the updated files you receive.

Appendix B.   PTZ Control Using GV-Joystick and/or GV-Keyboard

You need to run the following program in the background when using the GV-Joystick or GV-Keyboard to control PTZ. Up to **8** GV-Joysticks and/or GV-Keyboards can be used for PTZ control in Live View and Matrix.

1. On the top-right corner of the main screen, click **Configure** ⚙ > **GvKeyboard/Joystick**. The Keyboard & Joystick dialog box appears.
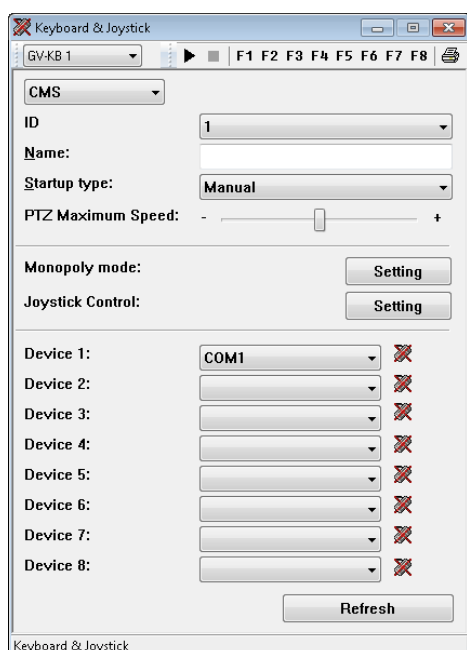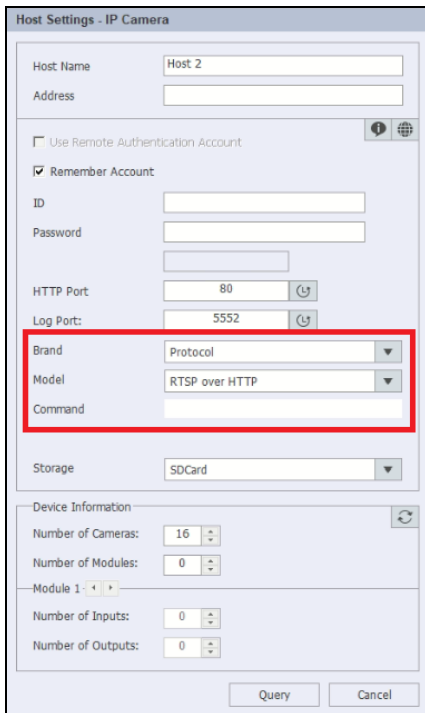

2. In the Device field,

   ● For GV-Keyboard V3, select the **COM** port connected to the device.

   ● For GV-Joystick V2, select **GeoVision Joystick** connected to the device.

3. Click the **Start Service** button ►. Then you can use the GV-Joystick or GV-Keyboard to control the camera.

4. If more than one GV-Joystick or GV-Keyboard is connected, repeat Step 2 to set up the device.

For details on how to use the two devices, see *GV-Joystick User's Manual* and *GV-Keyboard User's Manual*.

Appendix C.   RTSP Streaming

GV-Control Center supports IP video devices using RTSP standard. To connect the IP device compatible with RTSP standard:

1. Select **Protocol** from the **Brand** dropdown list.

2. Select one of the following options from the **Model** dropdown list.

   ■ **GV_HTTP_SDK_RTSP:** Only for GeoVision SDK users, the RTSP protocol uses a HTTP port for video streaming from cameras.

   ■ **RTSP over HTTP:** The RTSP protocol uses a HTTP port for video streaming from cameras.

   ■ **RTSP over TCP:** The RTSP protocol uses a TCP port for video streaming from cameras.

   ■ **RTSP over UDP:** The RTSP protocol uses an UDP port for video streaming from cameras.

3. On the Command box, type the RTSP link address. For the RTSP command, please consult the documentation of your camera. For example:

   For an AXIS IP camera, type

   RTSP://<IP of the IP camera>/<codec>/media.amp

Appendix D.   Specifications

For details on GV-Control Center specifications, see the [datasheet](#).

For details on GV-Video Wall specifications, see the [datasheet](#).