

GV-Recording Server

User's Manual V1.3.0.0





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Preface

Welcome to the *GV-Recording Server User's Manual*.

This Manual is designed for the following version:

Product	Version
GV-Recording Server / GV-Video Gateway	V1.3.0.0

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Naming and Definition

GV-Backup Center	Geovision Backup Center software provides a secure and affordable remote backup solution for the GV-System, GV-Recording Server and GV-IP Devices.
GV-Control Center	GeoVision Control Center is a central monitoring software that allows you to remotely monitor and see live view from multiple GV-Systems, GV-Recording Server and GV-IP Devices.
GV-Failover Server	GV-Failover Server is a video backup server that enables you to automate your backups upon the failure of GV-Recording Server.
GV-GIS	GeoVision Geographic Information System. It is designed for vehicle tracking and location verification.
GV-Multi View	Geovision viewing software. A multi-channel viewer that allows you to view up to 36 channels through network.
GV-Redundant Server	GV-Redundant Server is a video backup server. It keeps an extra copy of your recordings to GV-Recording Server.
GV-Remote ViewLog	Geovision viewing software that allows you to play back recorded files remotely.
GV-System	GeoVision Analog and Digital Video Recording Software. The GV-System also refers to Multicam System , GV-NVR System and GV-Hybrid DVR System at the same time.
GV-VMS	Geovision video management system that records up to 64 channels of GeoVision and/or third-party IP devices.
GV-Video Gateway	GeoVision video streaming server capable of receiving up to 128 channels from various IP video devices and distributing up to 300 channels to clients.
GV-Vital Sign Monitor	GeoVision Vital Sign Monitor is a central monitoring software that receives text alert upon events from multiple GV-Systems, GV-Recording Server and GV-IP Devices.

Chapter 1 Introduction

The GV-Recording Server is a video streaming server designed for large-scale video surveillance deployments. It can receive and record up to 128 channels from various IP video devices. Through an intuitive Web interface, each IP camera can be configured to record video continuously, upon motion detection, upon I/O trigger or according to a schedule.

In addition, it can simultaneously distribute up to 300 channels to its clients which include GV-System (DVR/NVR system), GV-GIS (geographic information system), GV-Mobile Server, GV-Control Center (central monitoring system), and Multi View (viewing software). GV-Recording Server can also send text notifications to one GV-VSM (Vital Sign Monitor) when alert conditions occur. Using the GV-Recording Server, the desired frame rates can be reached while the CPU loading and the bandwidth usage of IP video devices are significantly reduced.

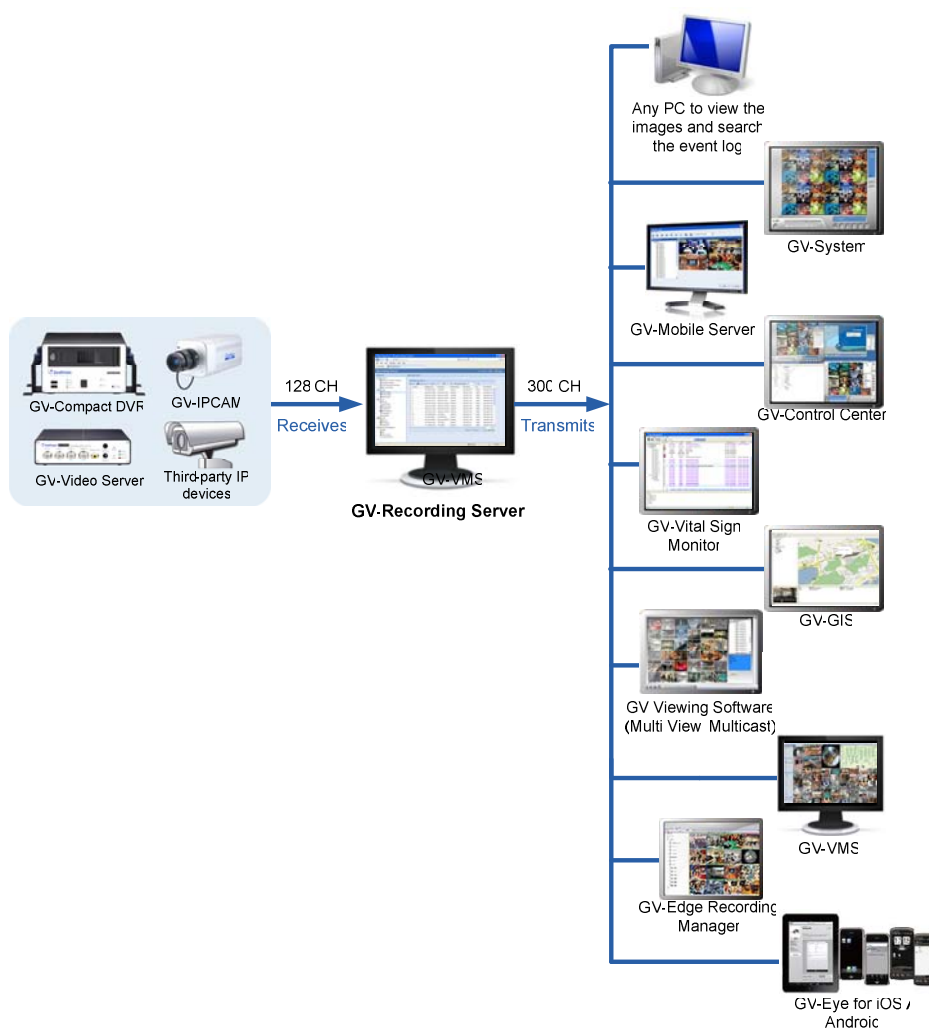
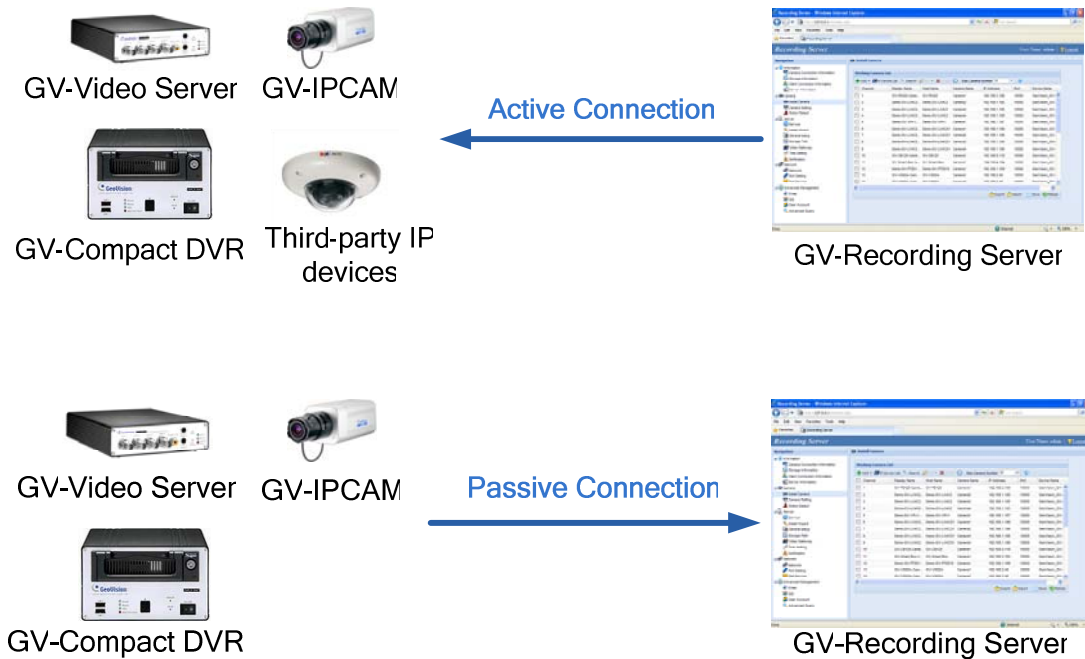


Figure 1-1

In some areas or countries, you may like to install 3G wireless Internet module (e.g. GPRS/UMTS) on the GV-Video Server or GV-Compact DVR but have the problem to obtain a public IP address from ISP. The **Passive** connection method of GV-Recording Server can solve the public IP issue by accepting the connection request from the GV-Video Server or GV-Compact DVR, and then distribute the video streaming to clients.



The GV-Recording Server provides you with a secure and affordable remote backup solution with the GV-Backup Center, GV-Failover Server and GV-Redundant Server.

GV-Recording Server

The GV-Backup Center can automatically store a copy of recordings to the offsite location. If a disaster strikes where the GV-Recording Server is located, the recording data remain safe in a different location. For connection setting, see 5.5.4 *Backup Center*.

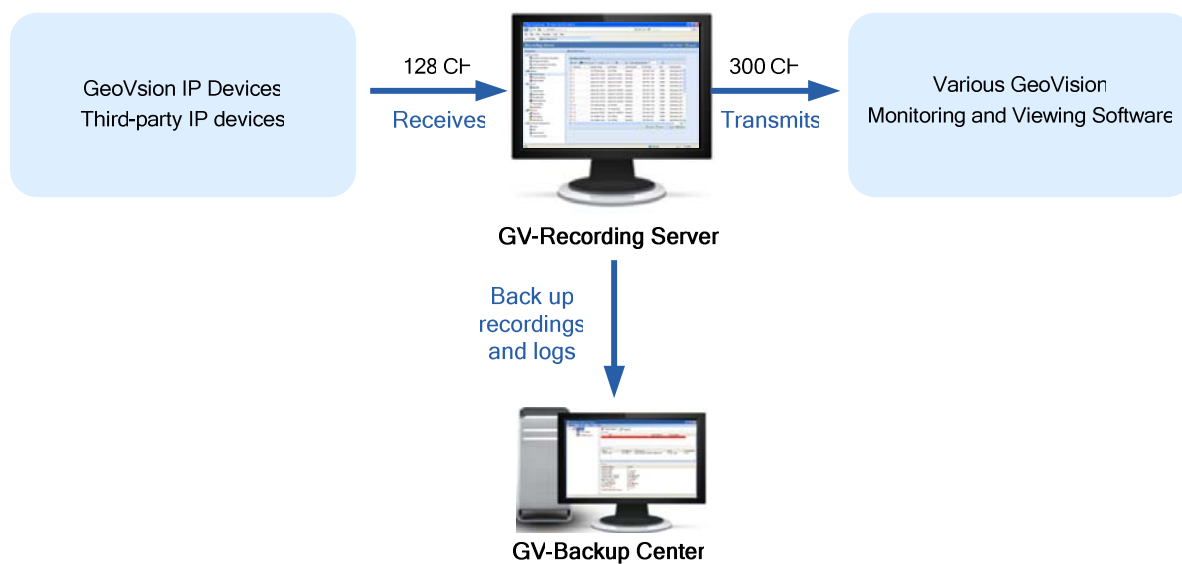


Figure 1-2

GV-Failover Server

GV-Failover Server is a video backup server that records up to 128 IP streams from the host GV-Recording Server when any of the following conditions occurs: (1) when the host GV-Recording Server starts up without recording; (2) when file recycling fails; (3) when there is an error in the hard drive; (4) when the connection between GV-Recording Server and IP cameras fails. For connection setting, see 5.5.5 *GV-Failover Server*.

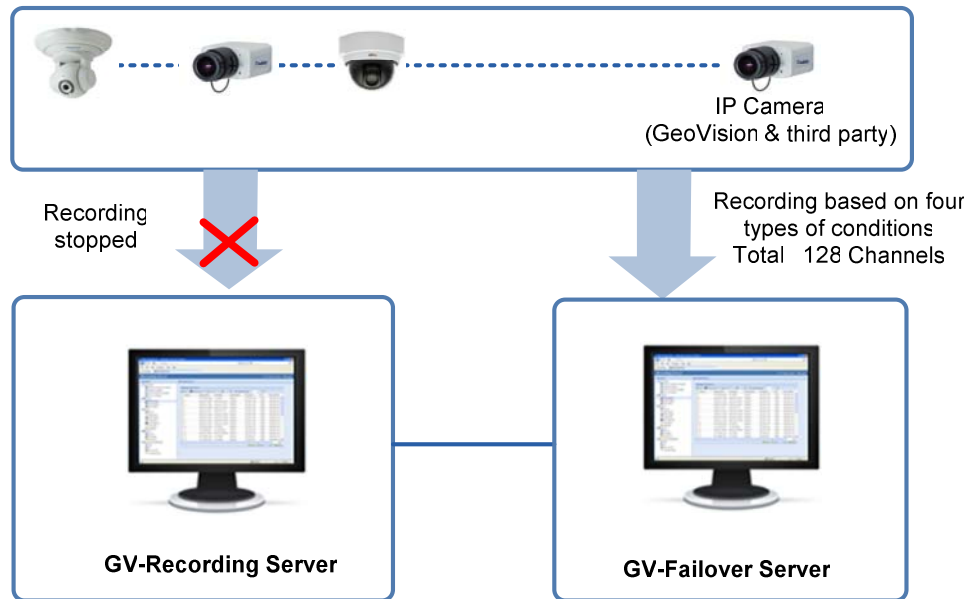


Figure 1-3

GV-Redundant Server

Similar to the GV-Failover Server, GV-Redundant Server is also a video backup server. The main difference is that it keeps an extra copy of recordings from up to 128 IP channels connected to GV-Recording Server. For connection setting, see *5.5.5 Failover Server*.

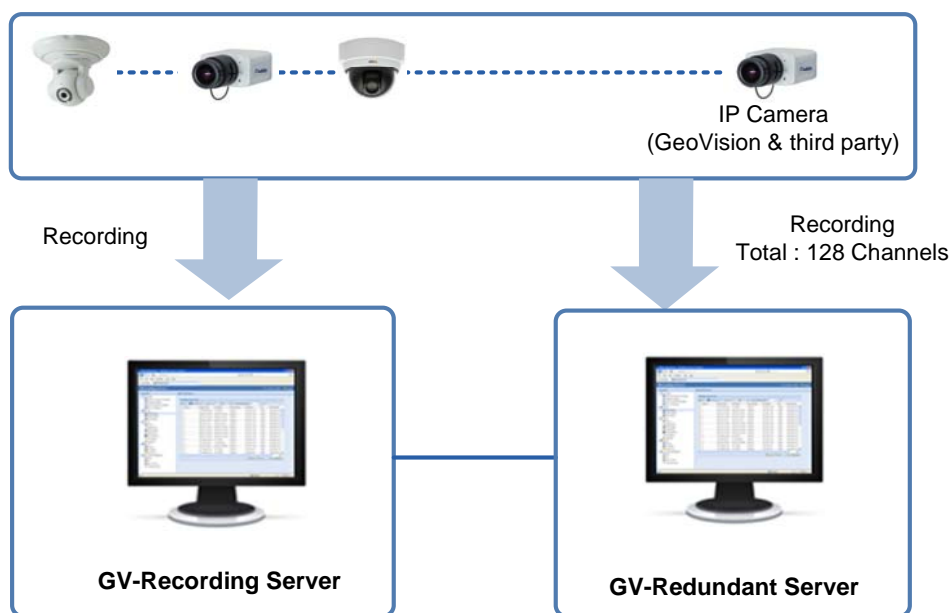


Figure 1-4

Note: Passive connection is not currently supported for GV-IP devices to GV-Failover / Redundant Server.

Features

- Simultaneously receiving and recording up to 128 IP channels
- Distributing up to 300 IP channels to clients
- Video gateway between IP devices and receiving clients (GV-DVR / NVR / VMS, GV-Control Center, GV-GIS, GV-Mobile Server, Multi View, GV-Edge Recording Manager and GV-Eye)
- Support for third-party IP video devices (Sony, Axis, VIVOTEK, Panasonic, HikVision, Arecont Vision)
- Support for ONVIF, PSIA and RTSP protocols
- Different recording policies to set each channel to record continuously, upon motion detection, upon I/O trigger or by schedule (recording upon I/O trigger are only for GV-IP devices)
- Video playback using Remote ViewLog
- Web interface to remotely configure and monitor GV-Recording Server using Internet Explorer, Firefox, Google Chrome and Safari
- Passive and active connection methods with IP video devices (Passive connection only supported by GV-IP devices)
- Solution for Mobile DVR (GV-Video Server, GV-Compact DVR) to obtain a public IP address
- Bandwidth monitoring
- Two-way audio communication (only for GV-IP devices through active connection)
- Remote event monitoring through GV-Vital Sign Monitor
- Remote backup through GV-Backup Center, GV-Failover Server and/or GV-Redundant Server
- Support for 31 languages

For the supported third-party IP video devices, see *Appendix C. Supported Third-Party IP Devices*.

1.1 System Requirements

The following is system requirements to run the GV-Recording Server.

1.1.1 Minimum System Requirements

Servers meeting the following minimum system requirements have the capacity to perform one of the following:

- Receive up to 128 channels and transmit up to 300 channels with the image settings of 1280 x 1024 resolution, 30 fps and H.264 codec for each channel. OR
- Receive up to 128 channels and transmit up to 300 channels with the image settings of 1920 x 1080 resolution, 30 fps and H.264 codec for each channel. OR
- Receive up to 128 channels and transmit up to 300 channels with the image settings of 2048 x 1536 resolution, 20 fps and H.264 codec for each channel.

OS	64-bit Windows 7 / 8 / 8.1 / 10 / Server 2008 R2 / Server 2012 R2
CPU	Core i7 2600, 3.4 GHz
Memory	<ul style="list-style-type: none"> • GV-Video Gateway: 6 GB Dual Channels • GV-Recording Server: 16 GB Dual Channels
Hard Disk	1 GB (for installation)
Browser	<ul style="list-style-type: none"> • Internet Explorer 8 to 11 • Firefox 26.0 • Google Chrome 31.0.1650.63 • Safari 5.1.7
LAN	Gigabit Ethernet x 1~6
Software	.Net Framework 3.5
Hardware	<ul style="list-style-type: none"> • GV-Video Gateway: Internal or external GV-USB Dongle • GV-Recording Server: Internal GV-USB Dongle

Note:

1. The 1 GB hard disk requirement is for installation of GV-Recording Server only. To see hard disk requirements for recording, please see *1.1.4 Recommended Hard Disk Requirements* for more details.
 2. In order to receive 128 channels and transmit up to 300 channels with the image settings of 1920 x 1080 resolution, 30 fps and H.264 codec for each channel, Gigabit Ethernet x 6 is required. Refer to *1.1.5 Network Requirements* for more details.
 3. The browsers supported by Recording Server are Internet Explorer, Firefox, Google Chrome, and Safari. You can access single live view by using Firefox and Internet Explorer. Only Internet Explorer is supported for playing back recorded files.
 4. To see how to install the internal GV-USB Dongle, refer to *Appendix D. Install the Internal USB Dongle*.
-

1.1.2 GV-USB Dongle

It is required to insert the GV-USB Dongle to the server, so that the GV-Recording Server software can be enabled. The GV-USB Dongle supports connection with up to 128 IP channels. You can select a dongle with GV-Video Gateway functions only or a GV-Recording Server dongle to access all functions.

GV-Video Gateway dongle supports both third-party IP devices and GV-IP devices, and comes in two types, internal and external dongles. For GV-Recording Server, you can select an internal dongle to enable GV-IP video devices only or a dongle to include both third-party IP devices and GV-IP devices.

GV-Video Gateway Only (without recording functions):

Free License	N/A
Max. License	128 channels
Increment for Each License	N/A
Optional Combinations	N/A
Dongle Type	Internal or external

GV-Recording Server (full functions available):

Free License	N/A
Max. License	128 channels
Increment for Each License	<ol style="list-style-type: none"> GV-IP video devices only: 8, 16, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120, 120, 124, 128 IP channels. Third-party IP devices (Includes GV-IP video devices): 8, 16, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120, 124, 128 IP channels.
Optional Combinations	N/A
Dongle Type	Internal

Note: The internal type of USB dongle can provide the Hardware Watchdog function to the GV-Recording Server by restarting the computer when Windows crashes. To see how to install the internal GV-USB Dongle, refer to [Appendix D. Install the Internal USB Dongle](#).

1.1.3 Compatible Versions of GeoVision Applications

The GV-Recording Server is only compatible with the following version:

- **GV-System, Multi View, Multicast:** version 8.5.6 or later.
- **GV-Control Center, GV-GIS:** version 3.0 or later.
- **GV-Mobile Server:** version 1.3 or later
- **GV-Vital Sign Monitor:** version 8.5.9 or later
- **GV-Backup Center:** version 1.1.2 or later
- **GV-Redundant Server and Failover Server:** version 1.1.0.0 or later
- **GV-VMS:** version 14.10 or later
- **GV-Edge Recording Manager:** version 1.0 or later
- **GV-Eye:** version 2.0 or later

Note: The GV-Recording Server cannot be installed with the GV-DVR / NVR / VMS on the same PC.

1.1.4 Recommended Hard Disk Requirements

The maximum channels per hard disk for motion recording and the recommended hard disk requirements for 24 hours of round-the-clock recording are listed as below.

Res.	FPS	Codec	Motion	Round-the-Clock		
			Max. ch per HDD	Max. ch per HDD and required HDD size	Required HDD size (recording 128 ch, 24 hr)	Recommended HDD requirements for 24 hr recording
1.3 MP	30 fps	H.264	10 ch	32 ch / 2.5 TB	10 TB	3 TB 7200RPM HDD x 4 (SATA3)
		JPEG		8 ch / 2.7 TB	43.2 TB	3 TB 7200RPM HDD x 16 (SATA3)
2.0 MP	30 fps	H.264	7 ch	21 ch / 2.2 TB	13.5 TB	3 TB 7200RPM HDD x 7 (SATA3)
		JPEG		5 ch / 2.5 TB	64 TB	3 TB 7200RPM HDD x 26 (SATA3)
3.0 MP	20 fps	H.264	10 ch	32 ch / 3 TB	12 TB	3 TB 7200RPM HDD x 4 (SATA3)

Res.	FPS	Codec	Motion	Round-the-Clock		
			Max. ch per HDD	Max. ch per HDD and required HDD size	Required HDD size (recording 128 ch, 24 hr)	Recommended HDD requirements for 24 hr recording
3.0 MP	20 fps	JPEG		4 ch / 2 TB	64 TB	3 TB 7200RPM HDD x 32 (SATA3)

Note:

1. The number of hard drive required varies depending on the write speed of the hard drive and the hard disk size required varies depending on the recorded file size. The recommended hard disk requirement is just for your reference.
2. The hard disk requirements above are applicable to GV-System and GV-IP Devices only. For the connection with GV-Backup Center, see *1.1.6 Requirements for Connecting to GV-Backup Center*.

1.1.5 Network Requirements

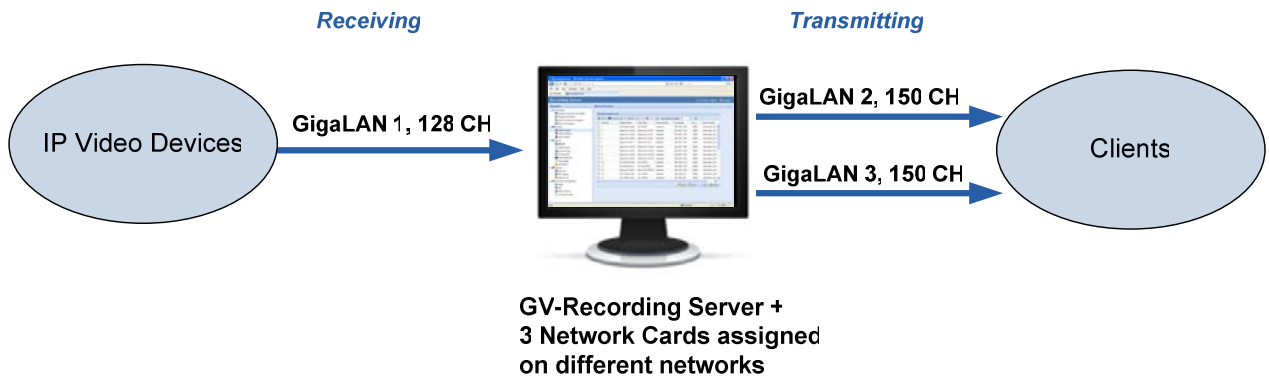
The server's transmitting capacity varies depending on the number of Gigabit connections. The number of Gigabit network cards required to receive 128 channels and transmit 300 channels are listed below according to the resolution of the source video.

Resolution	FPS	Codec	Gigabit Network Cards Required	
			Receiving 128 ch	Transmitting 300 ch
1.3 MP	30 fps	H.264	Gigabit network card x 1 (up to 128 ch per card)	Gigabit network card x 2 (up to 150 ch per card)
2.0 MP	30 fps	H.264	Gigabit network card x 2 (up to 64 ch per card)	Gigabit network card x 4 (up to 75 ch per card)
3.0 MP	20 fps	H.264	Gigabit network card x 1 (up to 128 ch per card)	Gigabit network card x 2 (up to 150 ch per card)

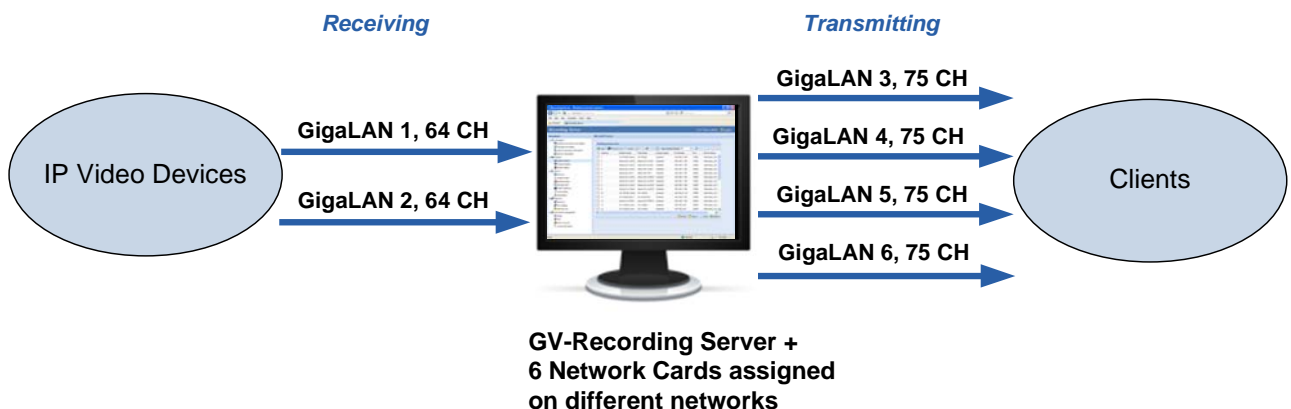
Note: The data above was determined with a bit rate of 5.2 Mbps for 1.3 MP resolution, 7.5 Mbps for 2 MP resolution and 6.8 Mbps for 3 MP resolution. The network requirements may vary depending on the bit rate of the streams.

The deployment of Gigabit connections for transmitting and receiving is suggested as illustrated below. Ensure to run every Gigabit connection on a different network in order to reduce the lag on any network connection.

1.3 MP / 3 MP Source Video



2 MP Source Video



Note:

1. To avoid network bottleneck, each network card must be assigned a different IP address and subnet mask. Refer to *Appendix E. How to Avoid Network Bottleneck* for more details.
 2. The network requirements above are applicable to GV-System and GV-IP Devices only. For the connection with GV-Backup Center, see *1.1.6 Requirements for Connecting to GV-Backup Center*.
-

1.1.6 Requirements for Connecting to GV-Backup Center

When GV-Recording Server is connected with GV-Backup Center, the recordings of all the channels connected to GV-Recording Server will be backed up. Before you establish the connection, note the following:

- To back up the recordings of total 128 channels from 1 unit of GV-Recording Server, the GV-Backup Center must be installed with at least 3 hard disks.
- Each GV-Backup Center supports up to 3 units of GV-Recording Server, with each GV-Recording Server being connected under an independent LAN.

To ensure backup performance, it is required to meet the maximum bit rate or the maximum channels supported by the GV-Recording Server. For the requirements to back up recordings of 128 channels or back up recordings with full 30 fps, see the sections below.

Maximum Bit Rate Supported by GV-Recording Server (based on 128 Ch)

To back up the recordings of 128 channels, it is required to meet the maximum bit rate supported by the GV-Recording Server and the maximum number of channels assigned to a single hard disk.

Bit Rate unit: Mbps

Res.	Codec	Clip Time	Bit Rate / Ch	Round-the-Clock and Motion Detection	
				Max. Ch per HDD	Recommended HDD requirements
1.3 MP	H.264	1 min	5.39	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.82	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
2.0 MP	H.264	1 min	5.33	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.96	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
3.0 MP	H.264	1 min	5.4	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	5.9	7 Ch	1 TB 7200RPM HDD x 19 (SATA3)

Maximum Channels Supported by GV-Recording Server (based on 30 fps)

To back up the recordings with full 30 fps, it is required to meet the maximum number of channels supported by the GV-Recording Server and the maximum number of channels assigned to a single hard disk.

Res.	Codec	Clip Time	FPS	Total Ch	Round-the-Clock and Motion Detection	
					Max. Ch per HDD	Recommended HDD requirements
1.3 MP	H.264	1 min	30	108	6 Ch	1 TB 7200RPM HDD x 18 (SATA3)
		5 min	30	113	6 Ch	1 TB 7200RPM HDD x 19 (SATA3)
2.0 MP	H.264	1 min	30	56	3 Ch	1 TB 7200RPM HDD x 19 (SATA3)
		5 min	30	59	3 Ch	1 TB 7200RPM HDD x 20 (SATA3)
3.0 MP	H.264	1 min	30	78	4 Ch	1 TB 7200RPM HDD x 20 (SATA3)
		5 min	30	80	4 Ch	1 TB 7200RPM HDD x 20 (SATA3)

For details on connecting GV-Backup Center, see *5.5.4 GV-Backup Center*.

Chapter 2 Installation

2.1 Installing the GV-Recording Server


It is recommended to install the GV-Recording Server on a dedicated computer or server. Before installing the GV-Recording Server, you need to plug the **GV-USB Dongle** to the computer, and then install the **dongle driver** and **Microsoft .Net Framework**.


You can install the driver and the GV-Recording Server from Software DVD or GeoVision Website.

Downloading from Software DVD

1. Insert Software DVD to the computer. It runs automatically and a window appears.
2. To install USB driver, select **Install or Remove GeoVision GV-Series Driver** and click **Install GeoVision USB Devices Driver**.
3. To install .Net Framework 3.5, select **Download Microsoft .NET Framework 3.5**.
4. To install GV-Recording Server, select **Install GeoVision GV-Recording Server**.

Downloading from GeoVision Website

1. Go to the Software Download and Upgrading page of GeoVision Website:
http://www.geovision.com.tw/english/5_8_VMS.asp.
2. To install USB driver, select the **Video Management Software** tab, find the **Driver** section and click the **Download** icon  of **GV-Series Card Driver / GV-USB Devices Driver**.

- To install GV-Recording Server, select the **Video Management Software** tab, find the **Primary Applications** section and click the **Download** icon  of **GV-Recording Server / GV-Video Gateway**.

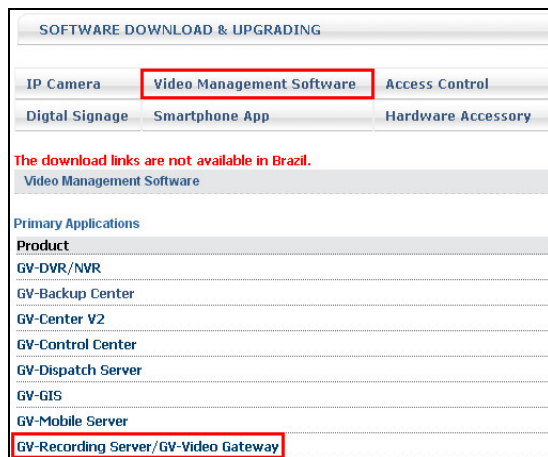


Figure 2-1

- To download and install .Net Framework 3.5, go to: <http://www.microsoft.com/en-us/download/details.aspx?id=21>.

Note: If you are using Window 8 or Windows Server 2012, see *How to install .Net Framework 3.5 for Windows Server 2012 and Windows 8* in Appendix F before proceeding to next step.

2.2 Starting the GV-Recording Server

After installing GV-Recording Server, the GV-Recording Server icon will appear in the system tray. Follow the steps below to access the Web interface of GV-Recording Server.



1. Right-click the GV-Recording Server icon, select **Login**, and type the login name and password. The default login name and password for the administrator account are **admin**.
2. The default HTTP port is 80 and the command port is 20000. To customize the port number, right-click the GV-Recording Server icon and select **Configure**. This dialog box appears.

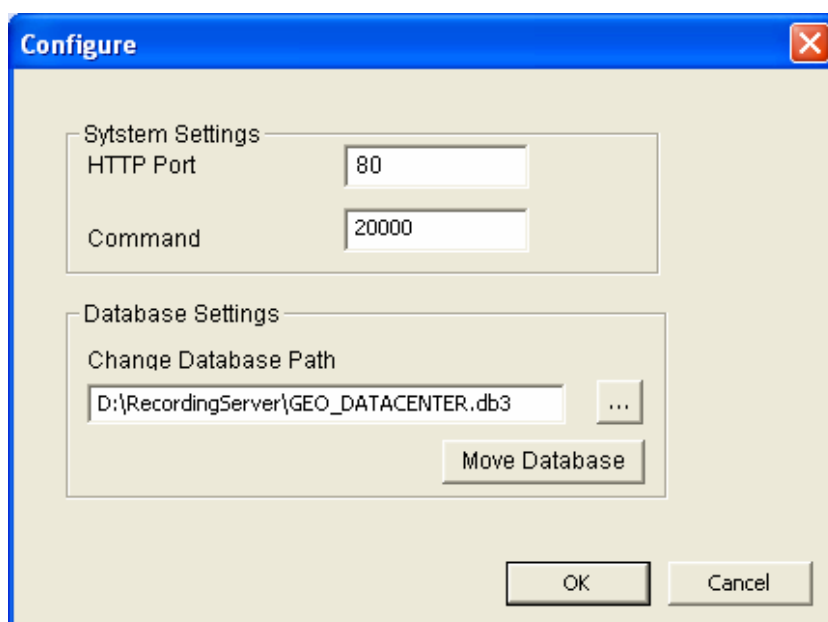


Figure 2-2

3. Customize the port number if needed and click **OK**.
4. Right-click the GV-Recording Server icon and select **Start Service**.

5. After the GV-Recording Server icon turns green, right-click the icon again and select **Access Web Interface**. The Web interface login page appears.

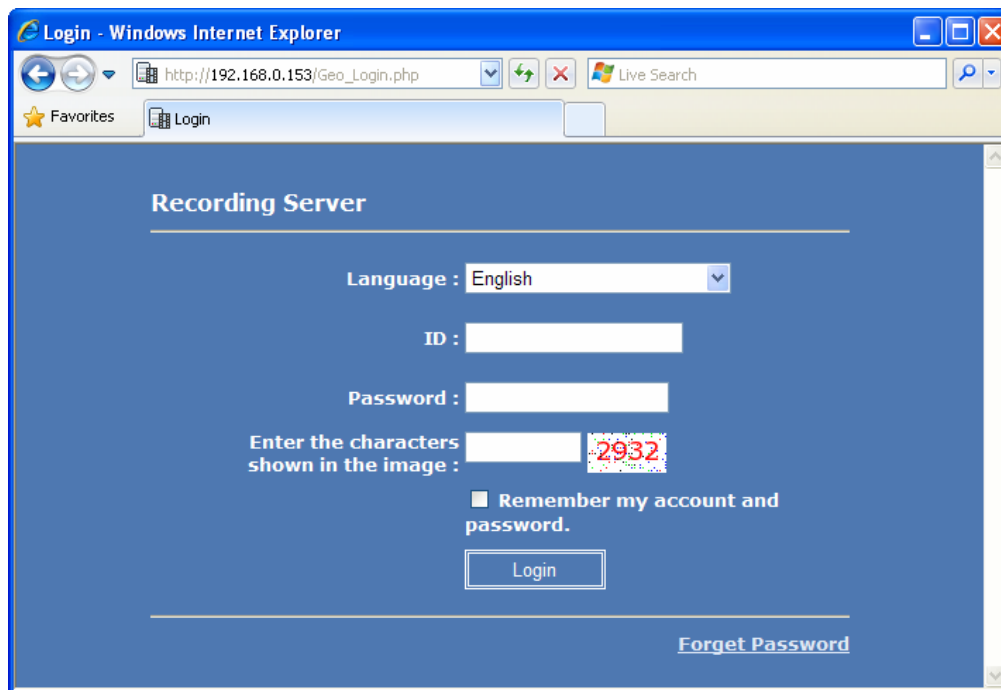


Figure 2-3

6. Type the **ID** and **Password**. The default login name and password for the Administrator are **admin**.
7. Type the verification number shown in the image.
8. Click **Login**. The GV-Recording Server Web interface is now displayed.

To access the Web interface from a remote computer, start the Internet browser and type the IP address or the domain name of the GV-Recording Server in the Location/Address field. If the default HTTP port has been changed, type a colon and the port number after the IP address, for example, **Http://192.168.3.199:81/**. After the login page appears, follow steps 6 to 8 to log in the Web interface.

Note:

1. To enable the updating of images in Microsoft Internet Explorer, you must set your browser to allow ActiveX Controls and perform a one-time installation of GeoVision's ActiveX component onto your computer.
 2. If the GV-Recording Server is installed behind a firewall or router, you may need to open these default ports: HTTP port 80, server connection port (Active connection port) 11000 and Passive connection port 50000, remote playback (Remote ViewLog) port 5552.
 3. The Command port is used for running the recording server. By default, 11 ports are reserved, ranging from 20000 to 20010, for the program use. If other program is using the default ports, you may need to change the Command port value.
-

The GV-Recording Server icon in the system tray also allows you to change the database storage path, back up settings and restore settings.

1. To change the location of the database path, right-click the GV-Recording Server icon to select **Configure**, select a new location and click **Move Database**.
2. To back up settings, right-click the GV-Recording Server icon and select **Backup Settings**. Select to back up **Basic**, **Host List**, **E-Map** and/or **Password** settings and click **OK**.
3. To restore settings, right-click the GV-Recording Server icon and select **Restore Settings**. Select the backed up file and click **OK** to begin restoring settings.

Note: You can only access the **Configure** and **Restore Settings** button when GV-Recording Server service is stopped. To stop service, you will be required to log in using the Administrator account.

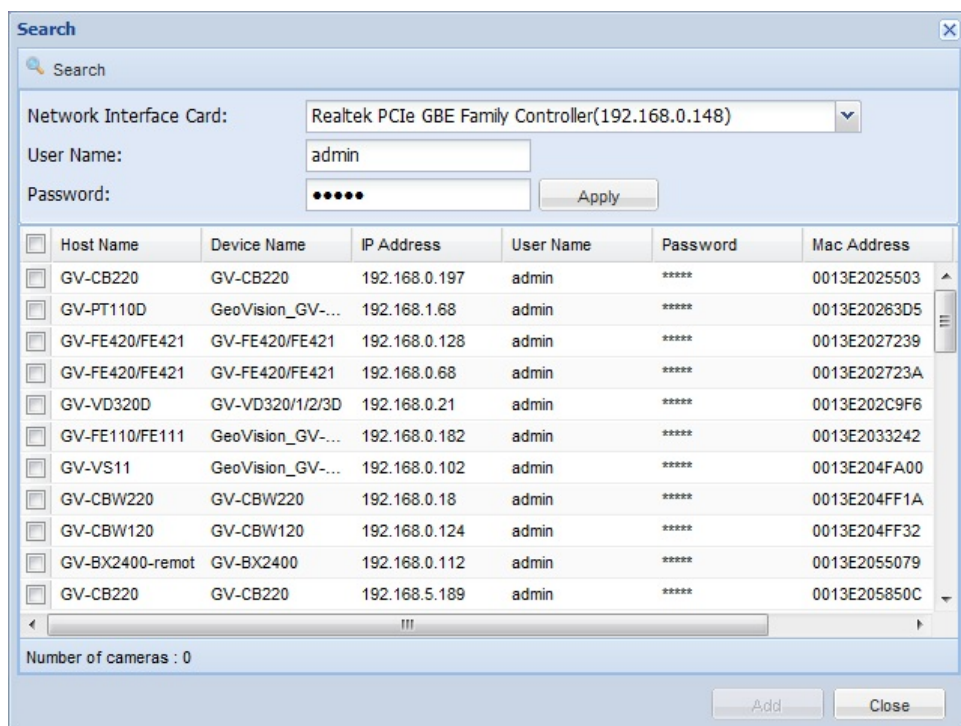
Chapter 3 Getting Started

When logging in the GV-Recording Server for the first time, the Install Wizard will be prompted to help you add IP video devices, assign storage path to store recorded files and start connections.

Note: To start the Install Wizard manually, click **Install Wizard** under the **Server** section in the left menu.

To add IP video devices:

1. When the Install Wizard is launched, the GV-Recording Server automatically detects available IP video devices under LAN. This dialog box appears.



<input type="checkbox"/>	Host Name	Device Name	IP Address	User Name	Password	Mac Address
<input type="checkbox"/>	GV-CB220	GV-CB220	192.168.0.197	admin	*****	0013E2025503
<input type="checkbox"/>	GV-PT110D	GeoVision_GV-...	192.168.1.68	admin	*****	0013E20263D5
<input type="checkbox"/>	GV-FE420/FE421	GV-FE420/FE421	192.168.0.128	admin	*****	0013E2027239
<input type="checkbox"/>	GV-FE420/FE421	GV-FE420/FE421	192.168.0.68	admin	*****	0013E202723A
<input type="checkbox"/>	GV-VD320D	GV-VD320/1/2/3D	192.168.0.21	admin	*****	0013E202C9F6
<input type="checkbox"/>	GV-FE110/FE111	GeoVision_GV-...	192.168.0.182	admin	*****	0013E2033242
<input type="checkbox"/>	GV-VS11	GeoVision_GV-...	192.168.0.102	admin	*****	0013E204FA00
<input type="checkbox"/>	GV-CBW220	GV-CBW220	192.168.0.18	admin	*****	0013E204FF1A
<input type="checkbox"/>	GV-CBW120	GV-CBW120	192.168.0.124	admin	*****	0013E204FF32
<input type="checkbox"/>	GV-BX2400-remot	GV-BX2400	192.168.0.112	admin	*****	0013E2055079
<input type="checkbox"/>	GV-CB220	GV-CB220	192.168.5.189	admin	*****	0013E205850C

Figure 3-1

2. If you have multiple network interface cards, use the drop-down list to select one and click **Search**.
3. Select the IP video devices you want to establish active connection with.

- Click **Add** and map the device to a channel. The Working Camera List appears.

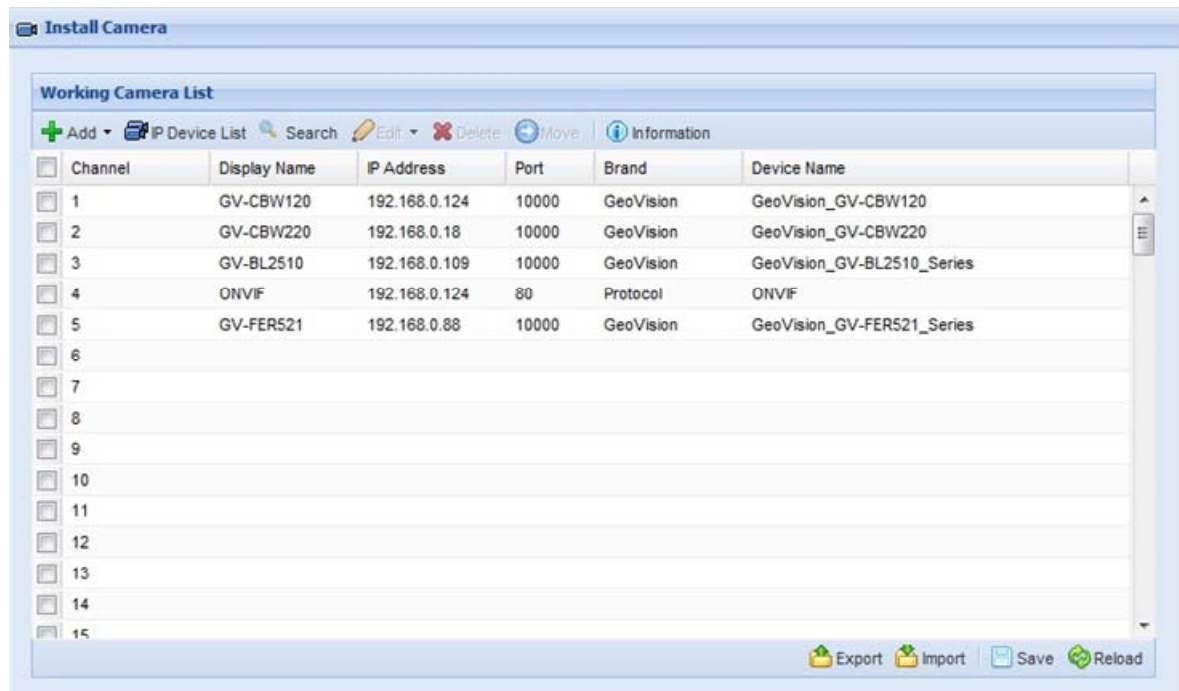




Figure 3-2

- The GV-Recording Server will try to connect to the devices using **admin** as the default ID and password. To connect with other ID and password, select the camera, click the **Edit** button  and select **Host Setting**. In the dialog box, select **Change ID and Password**, type a new ID and password and click **OK**.
- Click **Save** and click **Next Page**.

To assign storage paths:

1. In the Storage Path page, click the **Add** button  to add a new storage folder in a different disk drive, or select an existing storage folder.

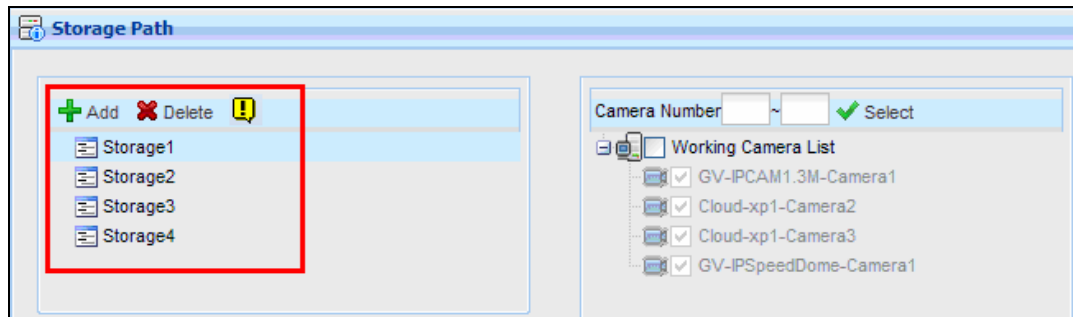


Figure 3-3

2. Use the default storage path, or click the **Add** button to select a new storage path.

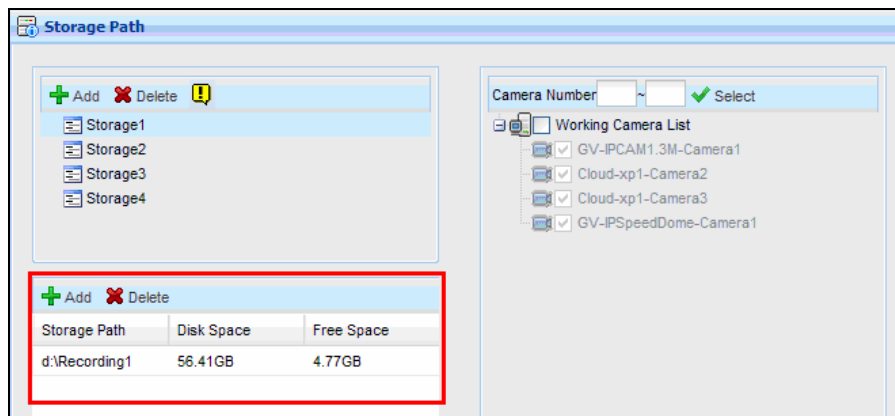


Figure 3-4

3. In the Working Camera List section, type a range of camera number and click the **Select** button. You can also select the **Working Camera List** checkbox to select cameras individually. Videos of the cameras selected will be recorded to the storage path indicated.
4. To specify a recycle threshold, select **Recycle** and type a minimum free space. When the remaining free space falls below the threshold, the oldest files will be overwritten.



Figure 3-5

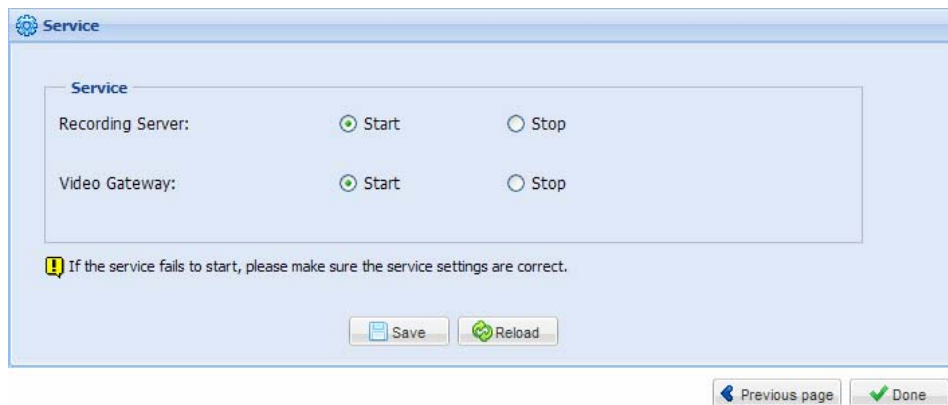
5. Click **Save** and click **Next Page** at the lower-right corner of the page.

IMPORTANT:

1. For details on the maximum channels per hard disk for motion recording and the recommended hard disk requirements for 24 hours of round-the-clock recording, see *1.1.4 Recommended Hard Disk Requirements*.
2. When multiple hard disks are added to a storage group, recycling of the oldest files will begin when the remaining free space of all hard disks in the storage group fall below the recycle threshold.
3. You can also select a network drive as storage path, e.g. the drive from an iSCSI or a NAS system.

To starting service:

1. In the Service page, to be able to receive and record IP channels, select **Start** for Recording Server.
2. To enable the Video Gateway to transmit video to clients, select **Start** for Video Gateway.

*Figure 3-6*

3. Click **Save** and click **Done**. The Camera Connection Information page appears and shows the connection status of the camera added.

Note:

1. The default recording policy is round-the-clock recording.
2. When the USB Dongle for GV-Video Gateway is inserted, the Recording Server option and recording functions will not be available.

After adding camera, you can refer to *5.2.2 Camera Setting* to see how to start or stop recording individual cameras. In addition, you can customize camera settings such as setting video attributes, recording policy and recording schedule.

Chapter 4 Active and Passive Mode

The GV-Recording Server is a proxy server on a network that can receive and record up to 128 IP video channels as well as transmit up to 300 IP video channels to clients simultaneously. There are two ways to establish connection with IP video devices, **active connection** where GV-Recording Server initiates the connection and **passive connection** where the GV-IP video device initiates the connection.

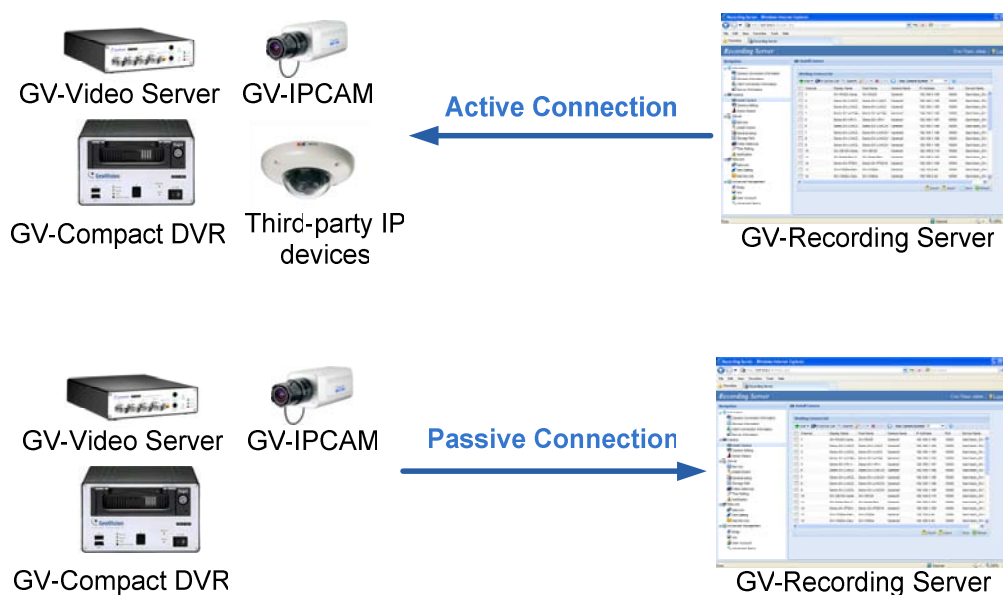


Figure 4-1

Note: Passive connection is only supported for GV-IP devices to GV-Recording Server.

4.1 Active Connection

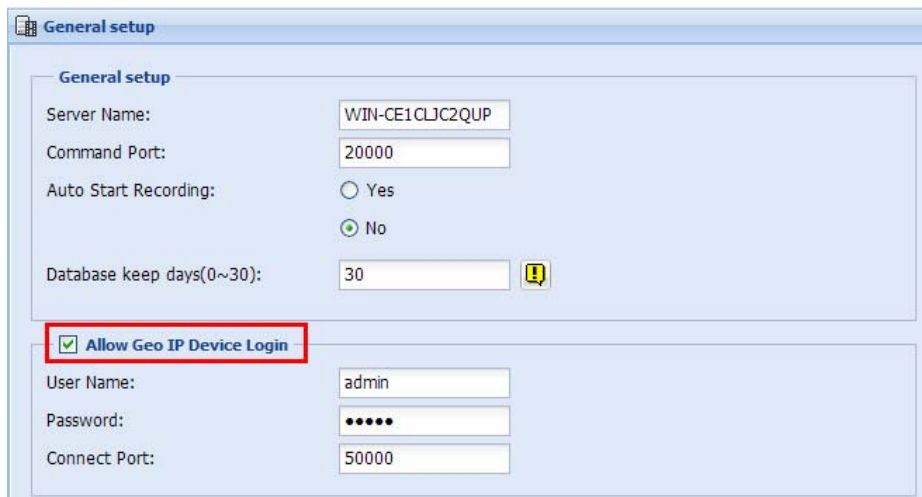
There are multiple ways to actively connect to IP video devices from GV-Recording Server. You can refer to *Chapter 3 Getting Started* and simply follow the steps in Installation Wizard to actively add IP video devices. For other ways to actively add IP video devices or to customize camera settings, refer to *5.2.1 Install Camera* and *5.2.2 Camera Setting*.

4.2 Passive Connection

To create passive connection, the GV-Recording Server must be configured to allow connections from GV-IP video devices. Passive connection to GV-Recording Server is only supported for GV-IP devices.

To allow passive connection on GV-Recording Server:

1. In left menu, select **General Setup**.
2. Select **Allow Geo IP Device Login**. The default ID and Password to log onto the GV-Recording Server is **admin**, and the default port value is **50000**. If you change the ID and Password, they must match the same settings configured on the GV-IP device (See Figure 4-3).



The screenshot shows the 'General setup' window of the GV-Recording Server. The 'General setup' tab is selected. The following settings are visible:

- Server Name: WIN-CE1CLJC2QUP
- Command Port: 20000
- Auto Start Recording: ☐ Yes, ☒ No
- Database keep days(0~30): 30
- ☒ Allow Geo IP Device Login (highlighted with a red box)
- User Name: admin
- Password: ****
- Connect Port: 50000

Figure 4-2

3. Click **Save**.

To access GV-Recording Server on GV-IP devices:

The GV-IP device must also be configured to access the GV-Recording Server.

1. Access the **Video Gateway / Recording Server** setting page on the Web interface of the GV-IP device.

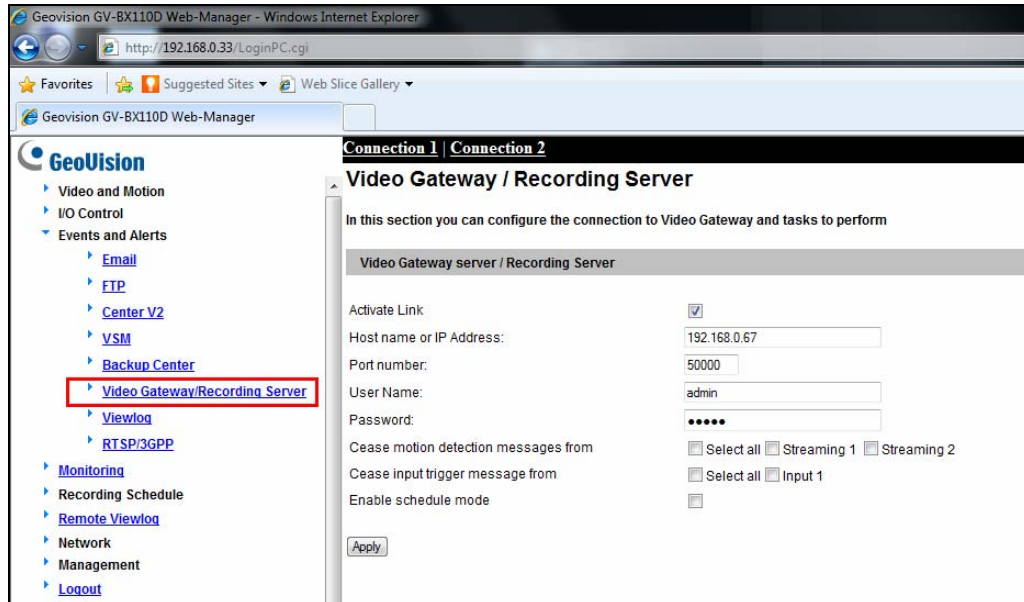


Figure 4-3

2. Select **Activate Link**.
3. Type IP address or domain name of the GV-Recording Server.
4. Keep default port number as 50000. Otherwise modify the port number to match the connect port specified in General Setup page on the GV-Recording Server (See Figure 4-2).
5. Type **User Name** and **Password** to log onto the GV-Recording Server. These user name and password must match the settings configured on the GV-Recording Server. The default values for both login username and password are **admin**.
6. Click **Apply** to start connection. When the connection is established, the following message will be displayed at the bottom of the Web interface.

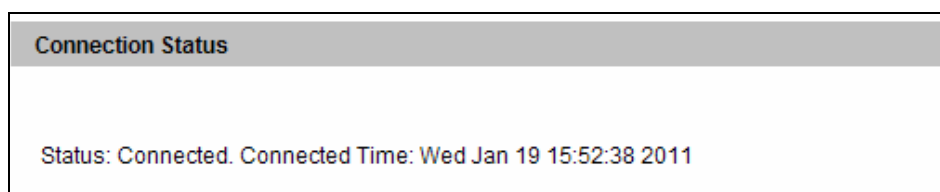


Figure 4-4

To start passive connection on GV-Recording Server:

1. On the GV-Recording Server, select **Install Camera** in the left menu. This dialog box appears.

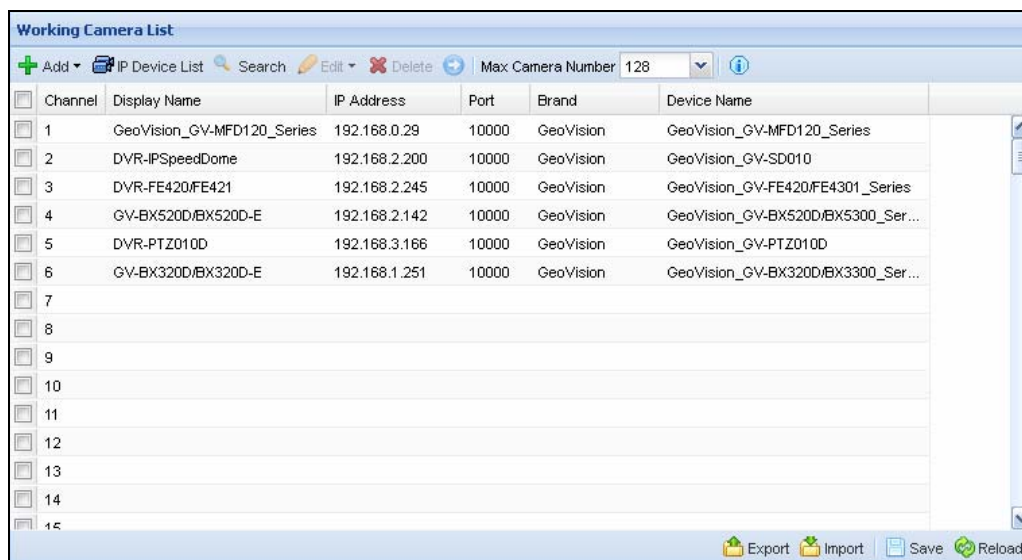



Figure 4-5

2. Click the **IP Device List** button  on the Working Camera List. The passive connection is listed as **Passive Mode** under the **Connection Type**.

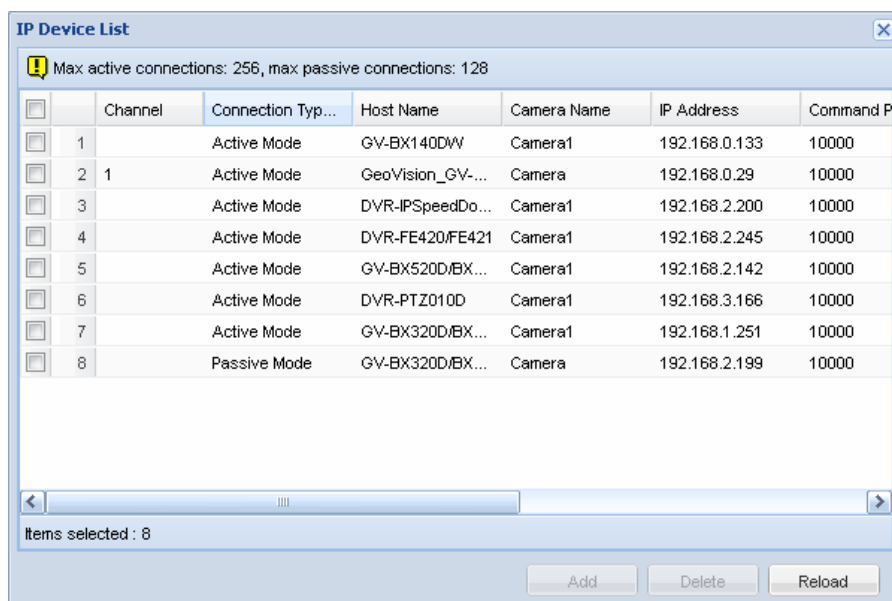
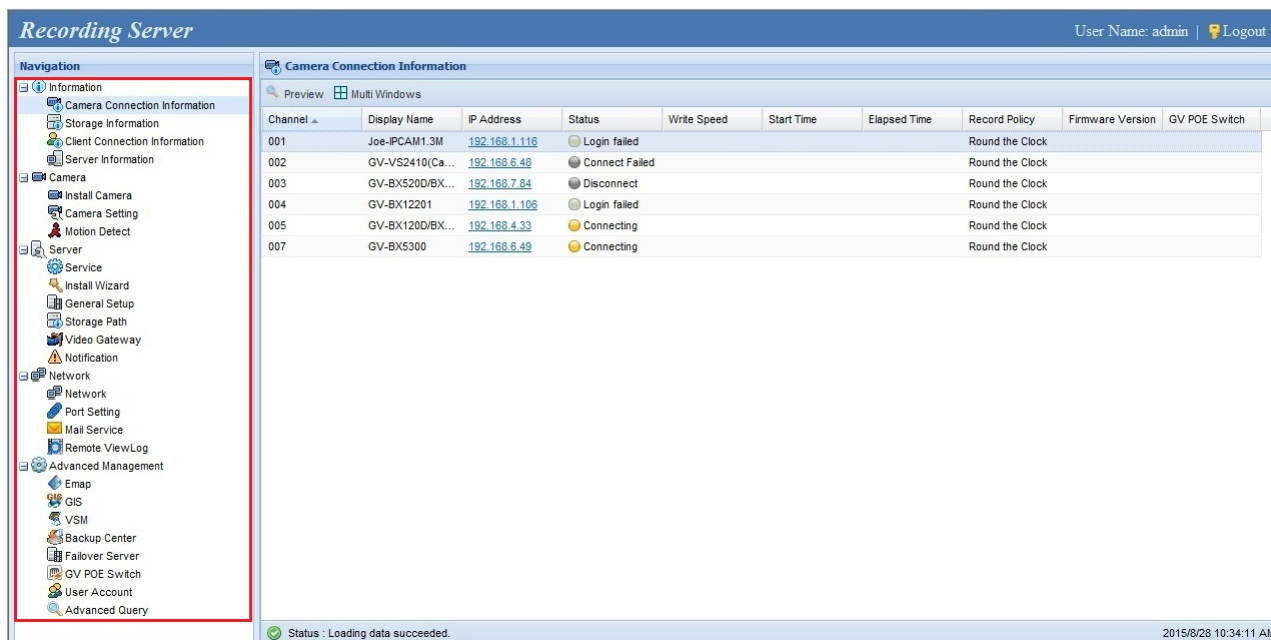


Figure 4-6

3. Click **Add** and select a channel. The IP device will be added to the Working Camera List.
4. Click **Save**.
5. In the left menu, click **Service** and select **Start** to enable the Recording Server and Video Gateway services.
6. Click **Save** to start services.

Chapter 5 Administrator Mode

The Administrator has access to all configurations in GV-Recording Server. On the left side of the Web interface, five categories of configurations are listed in a tree menu: **Information**, **Camera**, **Server**, **Network** and **Advanced Management**.



Recording Server User Name: admin | Logout

Navigation

- Information
 - Camera Connection Information
 - Storage Information
 - Client Connection Information
 - Server Information
- Camera
 - Install Camera
 - Camera Setting
 - Motion Detect
- Server
 - Service
 - Install Wizard
 - General Setup
 - Storage Path
 - Video Gateway
 - Notification
- Network
 - Network
 - Port Setting
 - Mail Service
 - Remote ViewLog
- Advanced Management
 - Emap
 - GIS
 - VSM
 - Backup Center
 - Fallover Server
 - GV POE Switch
 - User Account
 - Advanced Query

Camera Connection Information

Preview Multi Windows

Channel	Display Name	IP Address	Status	Write Speed	Start Time	Elapsed Time	Record Policy	Firmware Version	GV POE Switch
001	Joe-PCAM1.3M	192.168.1.116	Login failed				Round the Clock		
002	GV-VS2410(Ca...	192.168.6.48	Connect Failed				Round the Clock		
003	GV-BX520D/BX...	192.168.7.84	Disconnect				Round the Clock		
004	GV-BX12201	192.168.1.106	Login failed				Round the Clock		
005	GV-BX120D/BX...	192.168.4.33	Connecting				Round the Clock		
007	GV-BX5300	192.168.6.49	Connecting				Round the Clock		

Status : Loading data succeeded. 2015/8/28 10:34:11 AM

Figure 5-1

List of Menu Options

Find the topic of interest by referring to the sections below.

5.1 Information	5.1.1 Camera Connection Information 5.1.2 Storage Information 5.1.3 Client Connection Information 5.1.4 Server Information
5.2 Camera	5.2.1 Install Camera 5.2.2 Camera Setting 5.2.3 Motion Detect
5.3 Server	5.3.1 Service 5.3.2 Install Wizard 5.3.3 General Setup 5.3.4 Storage Path 5.3.5 Video Gateway 5.3.6 Notification
5.4 Network	5.4.1 Network 5.4.2 Port Setting 5.4.3 Mail Service 5.4.4 Remote ViewLog
5.5 Advanced Management	5.5.1 Emap 5.5.2 GIS 5.5.3 VSM 5.5.4 Backup Center 5.5.5 Failover Server 5.5.6 GV-POE Switch 5.5.7 User Account 5.5.8 Advanced Query

5.1 Information

This section introduces how to look up camera connection information, storage information, client connection information and server information.

5.1.1 Camera Connection Information

The Camera Connection Information page shows the connection status of all the IP cameras added to the Working Camera List and allows you to watch the live video of the connected camera.

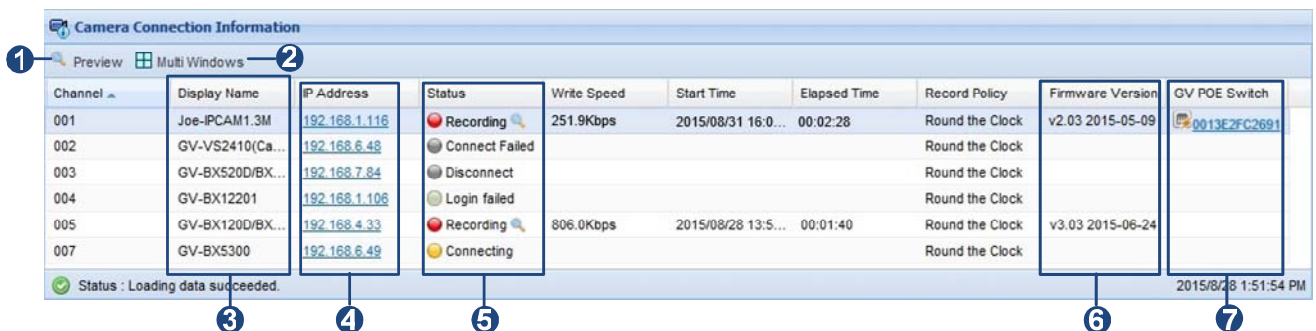













Figure 5-2

The controls in the window:

No.	Name	Description
1	Preview	Shows the live view of the selected camera.
2	Multi Windows	Shows the live view of multiple cameras in the list.
3	Display Name	The device will be identified by the display name when accessed by clients.
4	IP Address	Click to access the Web interface of the camera.
5	Status	<ul style="list-style-type: none">  Recording : The camera is recording. Click  to access the live view.  Connected : The camera is connected. Click  to access the live view.  Connecting : Connecting to the camera.  Connect Failed : Unable to connect to the camera.  Disconnect : Service has been stopped.  VIDEO LOST : Unable to obtain video from the device.  Login failed : Incorrect ID or password.  Recording Failure : Unable to record video.
6	Firmware Version	Shows the Firmware version of the camera.
7	GV-POE Switch	Click to access the Connect Setting and Switch Port List of GV-POE Switch.

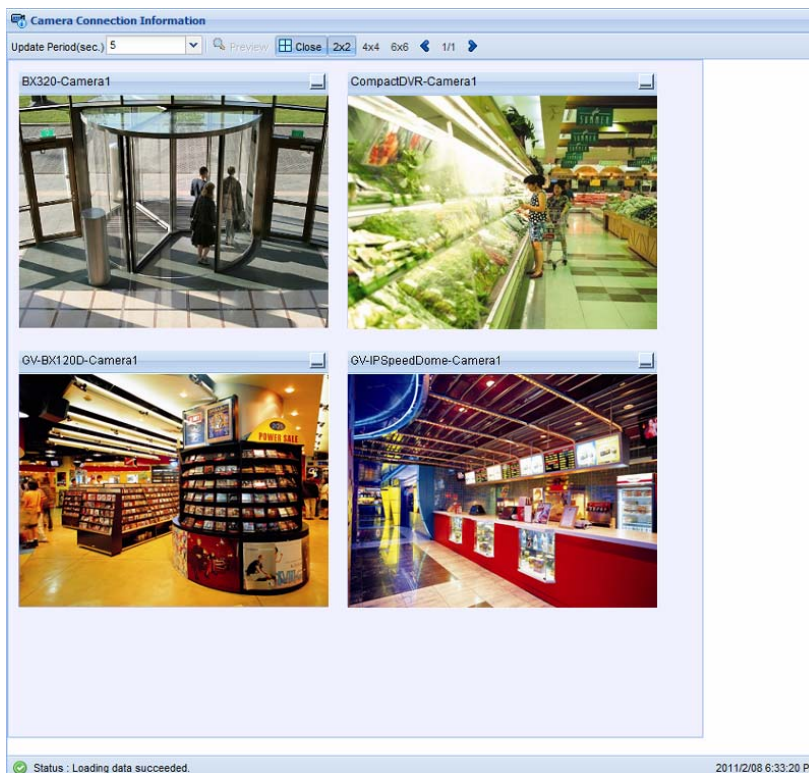
Note: The display of the Firmware version is only supported for GeoVision cameras that are connected to GV-Recording Server by active connection.



To watch the live view:

1. To watch the live view of an individual camera, select a connected camera and click the **Preview** button or the  icon. The live view, video codec, resolution and the frame rate of the camera are displayed.

*Figure 5-3*

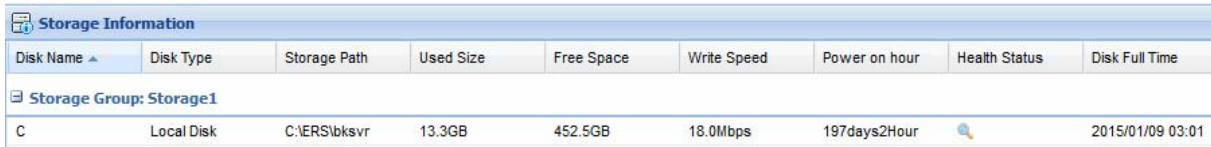
2. To watch the live view of multiple cameras, click the **Multi Windows** button. This window appears.

*Figure 5-4*

3. To specify the number of camera live view per page, click the **2x2**, **4x4** or **6x6** button.
4. Use the left and right arrows   to see other pages.

5.1.2 Storage Information

The Storage Information page shows the storage paths designated to store recorded videos. For each storage path, you can see the disk's used size, free space, write speed and the time when the disk became full.





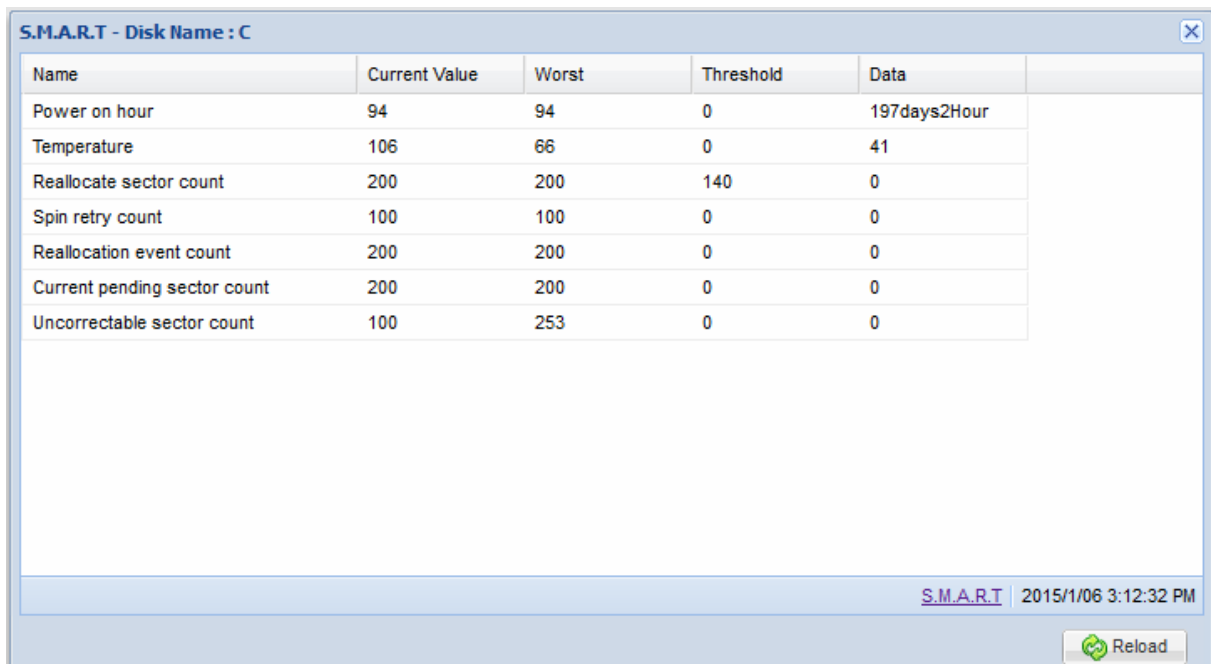
Disk Name	Disk Type	Storage Path	Used Size	Free Space	Write Speed	Power on hour	Health Status	Disk Full Time
Storage Group: Storage1								
C	Local Disk	C:\ERS\bksvr	13.3GB	452.5GB	18.0Mbps	197days2Hour		2015/01/09 03:01

Figure 5-5

You can click the **Health Status** button  to monitor hard disk reliability. The numeric information can be used to identify possible system failures and fix bugs in GV-Recording Server.



Name	Current Value	Worst	Threshold	Data
Power on hour	94	94	0	197days2Hour
Temperature	106	66	0	41
Reallocate sector count	200	200	140	0
Spin retry count	100	100	0	0
Reallocation event count	200	200	0	0
Current pending sector count	200	200	0	0
Uncorrectable sector count	100	253	0	0

S.M.A.R.T 2015/1/06 3:12:32 PM


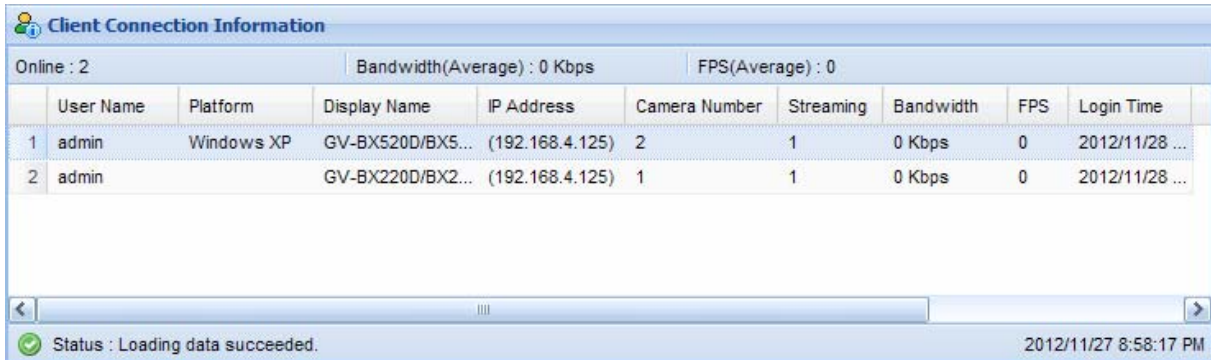
 Reload

Figure 5-6

5.1.3 Client Connection Information

The Client Connection Information page shows the clients currently logged into the GV-Recording Server. The platform, IP address, camera number, stream number, bandwidth occupied, FPS and login time of each client are listed.



The screenshot shows a web interface titled "Client Connection Information". At the top, it displays "Online : 2", "Bandwidth(Average) : 0 Kbps", and "FPS(Average) : 0". Below this is a table with 10 columns: "User Name", "Platform", "Display Name", "IP Address", "Camera Number", "Streaming", "Bandwidth", "FPS", and "Login Time". There are two rows of data. The first row shows a user named "admin" on a "Windows XP" platform, with a display name "GV-BX520D/BX5...", IP address "(192.168.4.125)", camera number "2", streaming status "1", bandwidth "0 Kbps", FPS "0", and a login time of "2012/11/28 ...". The second row shows another "admin" user on the same platform, with a display name "GV-BX220D/BX2...", IP address "(192.168.4.125)", camera number "1", streaming status "1", bandwidth "0 Kbps", FPS "0", and a login time of "2012/11/28 ...". At the bottom of the interface, there is a status bar that says "Status : Loading data succeeded." and a timestamp "2012/11/27 8:58:17 PM".

	User Name	Platform	Display Name	IP Address	Camera Number	Streaming	Bandwidth	FPS	Login Time
1	admin	Windows XP	GV-BX520D/BX5...	(192.168.4.125)	2	1	0 Kbps	0	2012/11/28 ...
2	admin		GV-BX220D/BX2...	(192.168.4.125)	1	1	0 Kbps	0	2012/11/28 ...

Status : Loading data succeeded. 2012/11/27 8:58:17 PM

Figure 5-7

5.1.4 Server Information

The Server Information page shows server information such as version information, CPU loading, transfer speed of network interface card and service status.

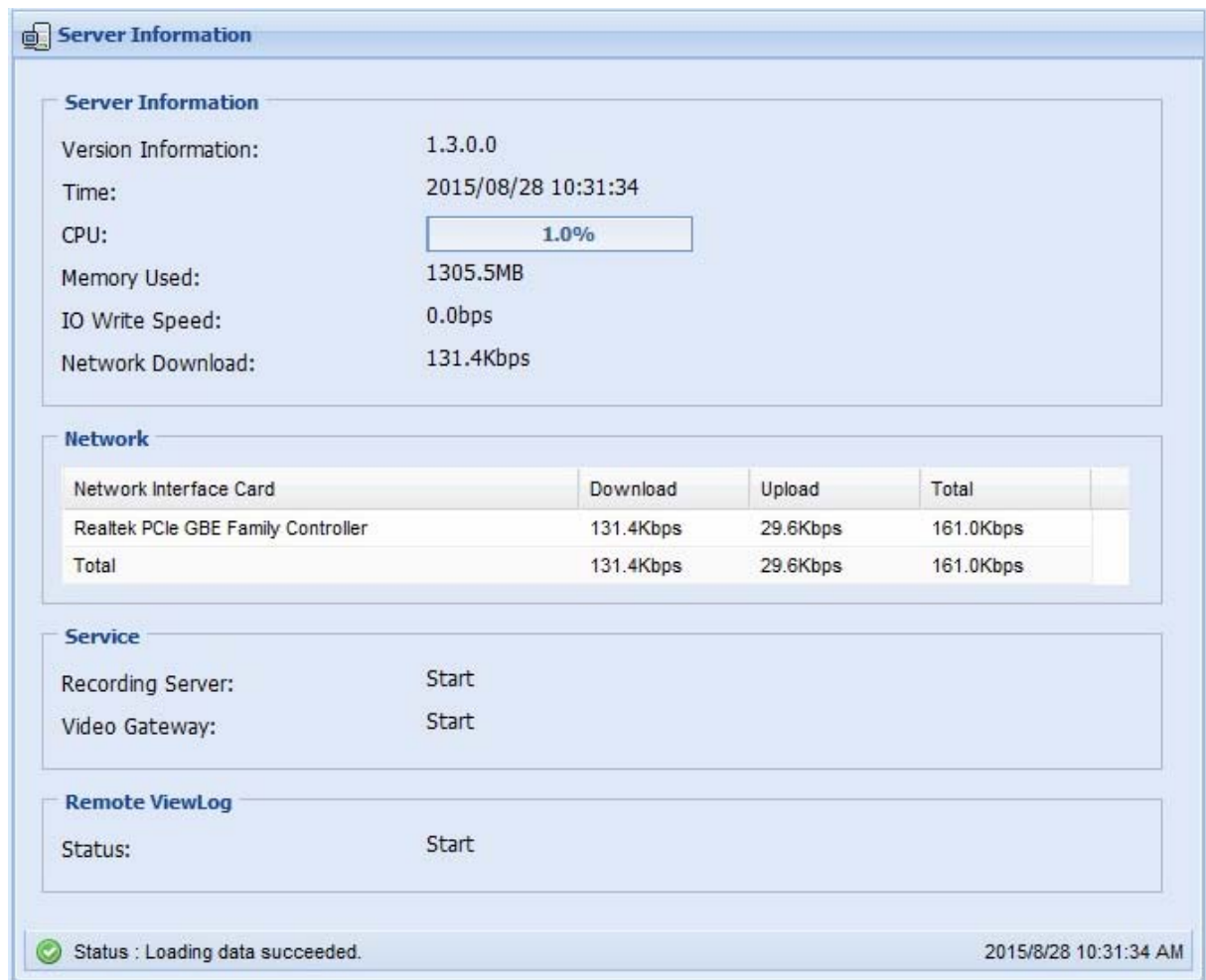


Figure 5-8

5.2 Camera

The Camera section allows you to add camera, configure camera settings and set up motion detection.

5.2.1 Install Camera

The Install Camera page helps you add IP devices to the Working Camera List.

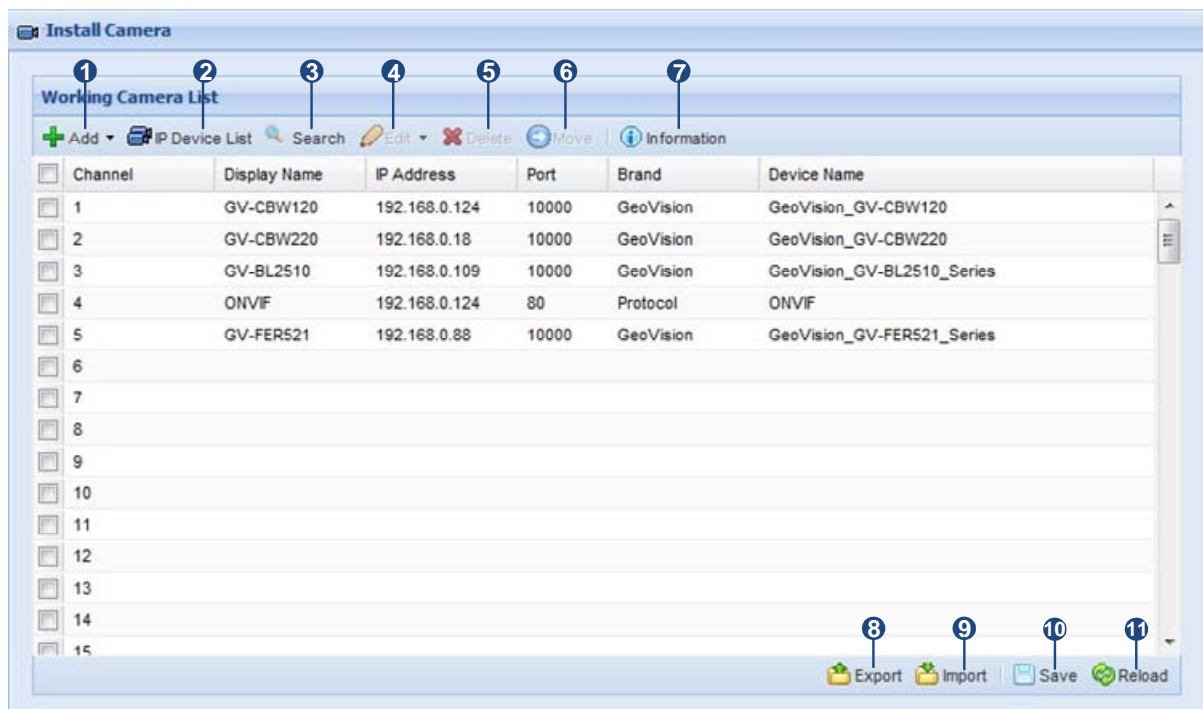


Figure 5-9

The controls in the window:

No.	Name	Description
1	Add	Add camera by manually typing the camera's connection information or by selecting from IP Device List.
2	IP Device List	Shows connection information of cameras that were and are being connected no matter through active or passive mode. You can select one or multiple cameras to add to Working Camera List or delete from IP Device List.
3	Search	Searches for available IP devices in the LAN.
4	Edit	Select a camera and click Edit to change host settings or camera display name.
5	Delete	Select one or multiple cameras and click Delete to delete from Working Camera List.

6	Move	Select a camera and click Move to move the camera to another channel.
7	Information	Shows the number of GV-IP Camera and third-party camera supported by the USB dongle inserted.
8	Export	Exports the camera connection information to an .hlt file.
9	Import	Locate a previously exported .hlt file and import the camera connection information.
10	Save	Saves the current settings.
11	Reload	Reloads the page.

There are three ways to add cameras to the Working Camera List:

To add cameras using the Search function:

1. Click the **Search** button.
2. In the dialog box, select a network interface card if you have more than one and click the **Search** button again. IP devices in the LAN will be detected.

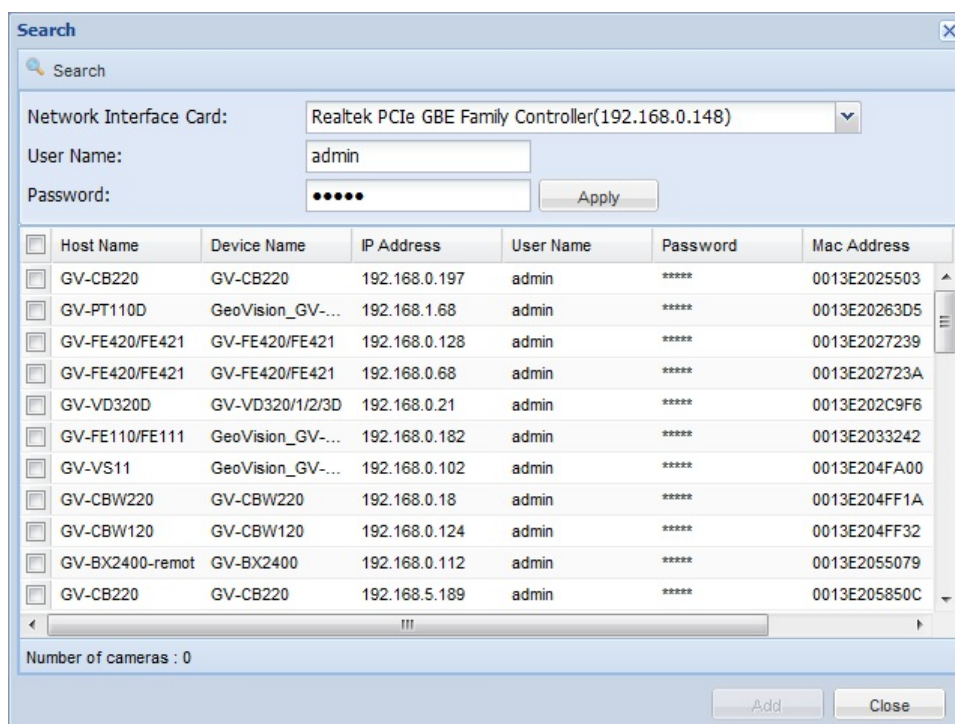


Figure 5-10

Hint: When adding devices through the **Search** function, the User Name and Password of the device will be set to **admin** by default. To change the ID and Password, go to the **Install Camera** page, select the camera and click the **Edit** button. Select **Host Setting** and select **Change ID and Password**. Type the correct ID and Password and click **OK**.

3. Select IP devices and click **Add** to add the cameras to the Working Camera List.

To add cameras using the IP Device List:

1. Click the **IP Device List**. The cameras that were and are being connected are all listed.
2. Select one or multiple cameras.
3. Click **Add**.

To add cameras by manually typing the camera's information:

1. Click the **Add** button and select **Add New Host**. This dialog box appears.

Figure 5-11

2. Select a **Connection Type** and type the **IP Address**, **ID** and **Password** of the IP device.
3. Change the default **Command Port** and **Web Port** if you wish.
4. Click **Auto Detect** to detect the camera's **Brand**, **Device Name** and **Mac Address**.
5. If the device information cannot be automatically detected, manually use the drop-down list to select the **Brand** and **Device Name** and type the **Mac Address** of the device.

6. If you want to use ONVIF, PSIA or RTSP protocol for connection, select **Protocol** from the **Brand** drop-down list and select the desired protocol from the Device Name drop-down list.

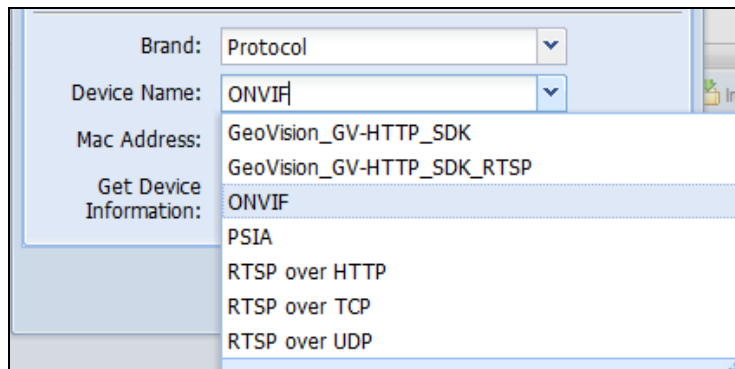


Figure 5-12

7. Click **OK**.

After adding the cameras through one of the methods above, a dialog box appears. Type a number and the cameras will be mapped to that channel and the channels after it.

Merge and Replace

If the channels are already occupied, a message appears to ask if you want to replace existing cameras. Click **Yes** and a message appears to ask if you want to replace or merge the recordings of existing camera with the new camera for playback.

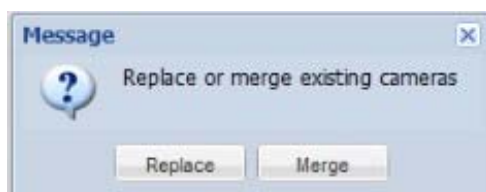


Figure 5-13

If you click **merge**, you will see the video events from both the existing camera and the new camera in Remote ViewLog player. See the example of figure 5-14 in which GV-BX2600 is the exiting camera and GV-FE420 is a newly added camera. If you click **replace**, you will only see the video events from the new camera in Remote ViewLog player. See the example of figure 5-15.

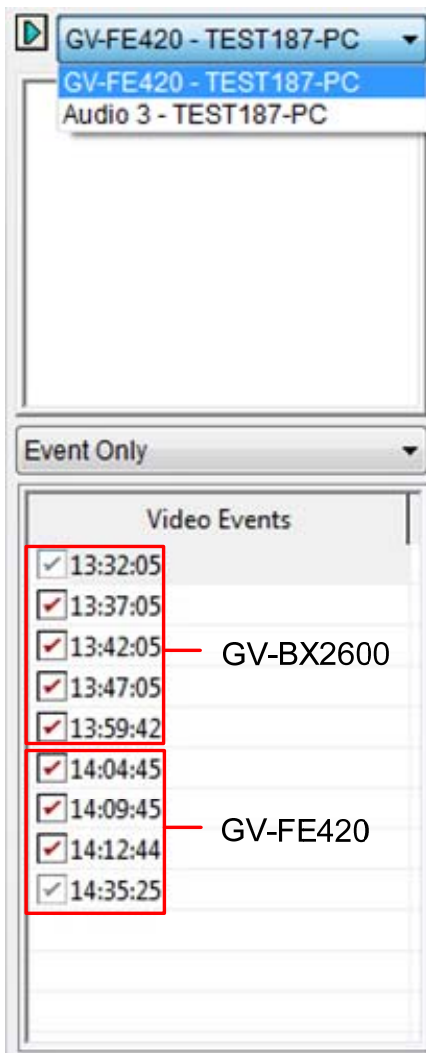


Figure 5-14

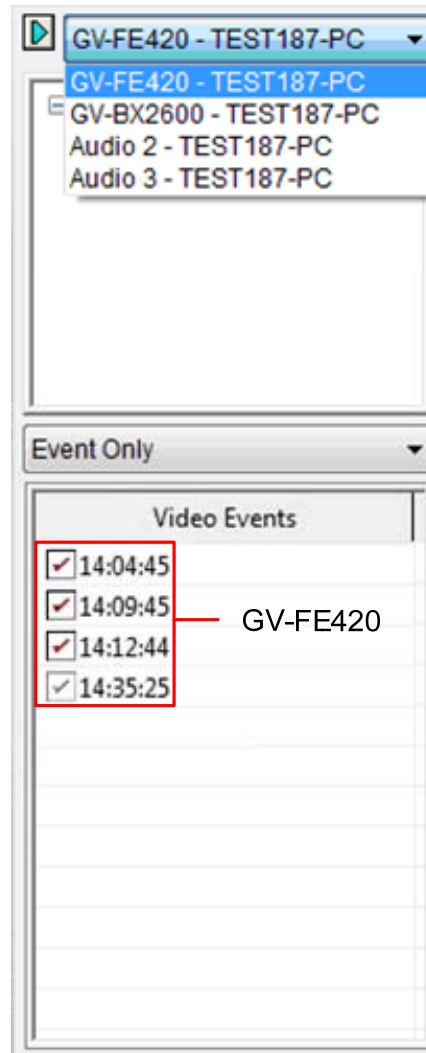


Figure 5-15

5.2.2 Camera Setting

In the Camera Setting page, you can customize the video settings, recording policy and recording schedule of the camera. In the Working Camera List, double-click a camera or click the **Edit** button to access the camera's setting.

To start or stop recording from the camera, select or clear the selection under the **Recording** column.


Working Camera List					
 Edit					
Channel	Display Name	IP Address	Mac Address	Device Name	Recording
1	GV-BX220D/BX2...	192.168.0.18	0013e20245ae	GeoVision_GV-BX220D/BX2300_Series	<input checked="" type="checkbox"/>
2	GV-BX520D/BX5...	192.168.0.35	0013e20255a9	GeoVision_GV-BX520D/BX5300_Series	<input checked="" type="checkbox"/>
3	GV-CAW120	192.168.0.11	0013e204fc03	GeoVision_GV-CAW120	<input checked="" type="checkbox"/>
4	GV-BX520D/BX5...	192.168.0.192	0013e20255ea	GeoVision_GV-BX520D/BX5300_Series	<input checked="" type="checkbox"/>
5	GV-CB120	192.168.0.28	0013e20254c9	GeoVision_GV-CB120	<input checked="" type="checkbox"/>
6	Passive-GV520	192.168.0.192	0013e20255ea	GeoVision_GV-BX520D/BX5300_Series	<input checked="" type="checkbox"/>
7	GV-CAW220	192.168.0.25	0013e204fc31	GeoVision_GV-CAW220	<input checked="" type="checkbox"/>

Figure 5-16

5.2.2.A Video Settings

Select the **Video** tab to access the camera's video attributes and audio settings.

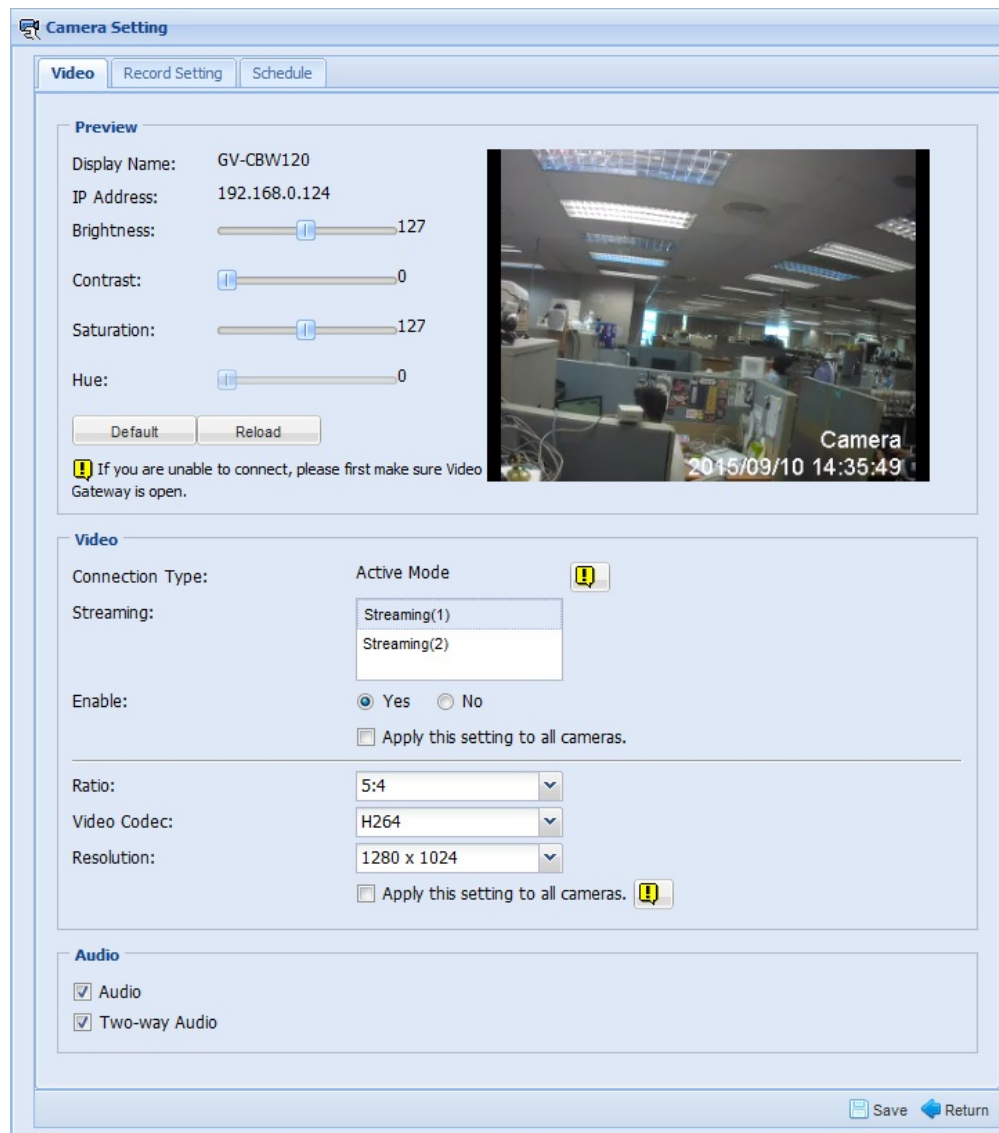


Figure 5-17

[Preview] Move the sliders to adjust the camera image's brightness, contrast, saturation and hue. Click the **Default** button to load the default settings of the camera's video attributes.

[Video]

- **Connection Type:** Shows whether the camera is connected through active mode or passive mode.
- **Streaming:** If the camera supports dual stream, you can select stream 1 or stream 2 to set up the ratio, video codec and resolution of the stream.
- **Enable:** You can choose to enable both streams or disable one of the streams.

- **Apply this setting to all cameras:** Use the same streaming settings to all IP cameras of the same model.
- **Ratio:** Select a display ratio for the stream selected.
- **Video Codec:** Select a type of video compression method.
- **Resolution:** Select a resolution for live view and recorded video.
- **Apply this setting to all cameras:** Apply the same video codec and resolutions to all IP cameras of the same model.

[Audio]

- **Audio:** Enables audio of live view.
- **Two-Way Audio:** Enables two-way audio for the camera.

Note:

1. Two-way audio is only supported for GV-IP devices connected through active mode.
 2. The adjustment of video attributes may not be available for some IP video devices.
 3. The Apply this setting to all cameras function only applies to the streaming settings, codec and resolution to all IP cameras of the same model.
-

5.2.2.B Record Setting

Select the **Record Setting** tab to customize the general setup, recording policy and I/O device setting for each IP video device.

Camera Setting

Video **Record Setting** Schedule

General setup

☐ Apply this setting to all cameras.

☐ Only Record Key Frame

☐ Record GPS Data

☐ Save Audio

Video Clip Time (1~5 min.): 5

☐ Maximum FPS (1~30) 10

☐ Keep Days(1~180) 20

☐ Never Recycle

Recording: Streaming(1)

I/O Device Setting

Input1

☐ Rec. Video

☐ Email Alarm

Record Policy

☐ Apply this setting to all cameras.

Record Policy: Round the Clock

Post-Rec (1~5 Sec): 3

Pre-Rec (1~5 Sec): 3

Storage Path

Storage Path: C:\ERS\bksvr

Save Return

Figure 5-18

[General Setup]

- **Apply this setting to all cameras:** Apply settings in General Setup to all cameras.
- **Only Record Key Frame:** Select to record key frames only.
- **Record GPS Data:** Records the video with GPS data.
- **Save Audio:** Include sounds when recording videos.

- **Video Clip Time (1~5min.):** Specify the maximum time length of each recorded file. For example, if you set the Video Clip Time to be 5 minutes, a 20-minute video will be divided into four 5-minute clips.
- **Maximum FPS (1~30):** Limit the frame rate per second to the number specified. This option only applies to JPEG.
- **Keep Days (1~180):** Specify the number of days to keep the recorded files.
- **Never Recycle:** Select to never recycle videos recorded by this camera.
- **Recording:** If the camera supports dual stream, you can select to use stream 1 or stream 2 for recording. The other stream will be used for preview.

[I/O Device Setting] Use the drop-down list to select an input device. When the selected input device is triggered, recording will start or e-mail alarm will be sent if the options are selected.

- **Rec. Video:** Start recording upon input trigger for the Video Clip Time length specified above.
- **E-mail Alarm:** The administrator can receive an e-mail alert after input trigger. To use this function, you must also set up the mail server. See *5.4.3 Mail Service*.

[Recording Policy] In the Record Policy section, use the **Record Policy** drop-down list to select one of the following record policies.

- **Round-the-Clock:** Records continuously.
- **Motion Detect:** Starts recording upon motion detection.
- **I/O Trigger:** Starts recording upon input device triggered.
- **Schedule:** Records according to the schedule specified.

Note:

1. Recording upon I/O trigger is only supported on GV-IP devices.
 2. After a camera is added to the Working Camera List, the default recording policy is Round-the-Clock.
-

To customize the recording policy:

1. The **Post-Rec** and **Pre-Rec** options are available when Motion Detect, I/O Trigger or Schedule is selected.

If **Motion Detect** or **I/O Trigger** is selected, type a time period between 1 and 5 seconds in the **Post-Rec** field to continue recording for the number of seconds specified after the motion detection or I/O trigger event. Use the **Pre-Rec** field to specify the number of seconds to start recording before motion is detected or before I/O device is triggered.

2. If **Schedule** is selected, refer to *5.2.2.C Schedule* to see how to set up a recording schedule.
3. If **I/O Trigger** is selected, you need to set up the related settings in the **I/O Device Setting** above.
4. To apply the settings to all cameras in the Working Camera List, select **Apply this setting to all cameras**.
5. Click **Save**.

[Storage Path] Shows the designated storage path for videos recorded from the camera. To see how to assign storage path, refer to *Setting Storage Path* section in *Chapter 3 Getting Started* for details.

5.2.2.C Schedule

In the **Schedule** tab, you can create a recording schedule by setting different recording policies during different time periods. First create a daily recording schedule and then assign the daily schedule to a date or a day of the week in the calendar.

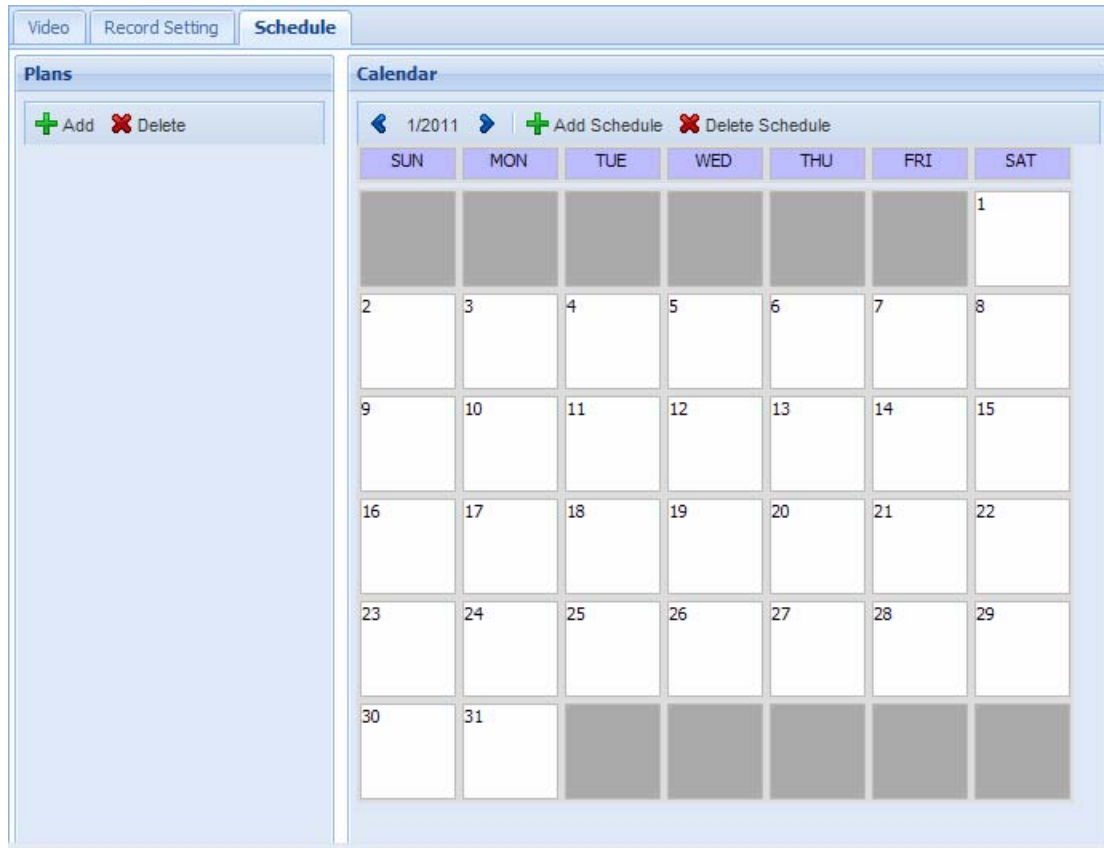



Figure 5-19

1. In the Plans section, click the **Add** button  and type a name for the schedule plan. The schedule plan appears in the Plans list.
2. Double-click the schedule plan. This dialog box appears.

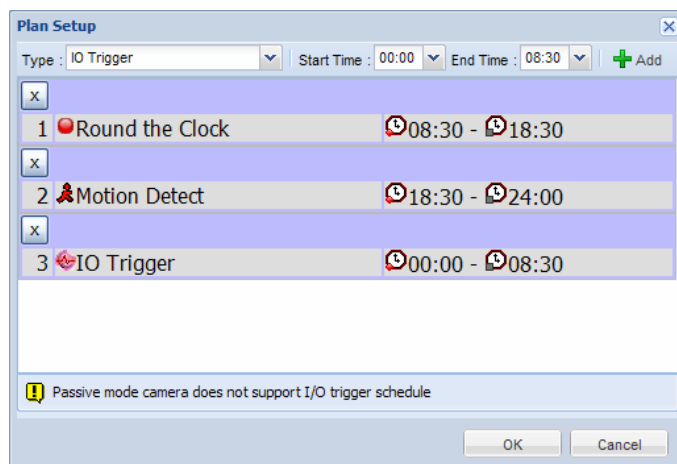


Figure 5-20

3. Use the **Type** drop-down list to select whether to record video round-the-clock, upon motion detection or upon I/O trigger.
4. Select a **Start Time** and an **End Time** to apply the recording policy specified above.
5. Click the **Add** button.
6. Repeat steps 3 to 5 to set different recording policies during other time periods. Click **OK**.
7. Under Calendar, click **Add Schedule**. This dialog box appears.

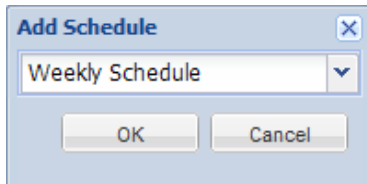


Figure 5-21

8. To apply the schedule plan created above to a particular day of the week continuously, select **Weekly Schedule**. In the dialog box that appears, select a schedule plan and select a day of the week to apply.

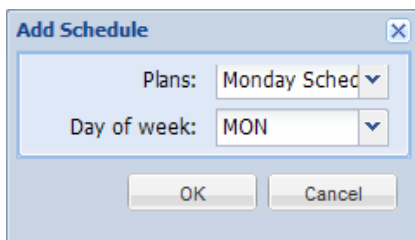


Figure 5-22

9. To apply the schedule plan to a particular day only, select **Special Day Schedule**. In the dialog box that appears, select a schedule plan and select a date to apply.

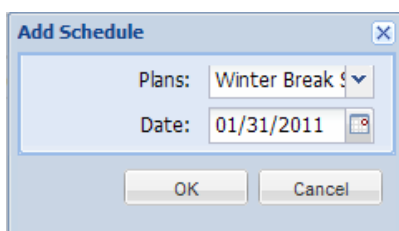


Figure 5-23

10. Click **Save**.

5.2.3 Motion Detection

Set up motion detection to generate a notification or to begin recording whenever movement occurs in the video image. You can set up to 8 areas with different sensitivity values for motion detection.

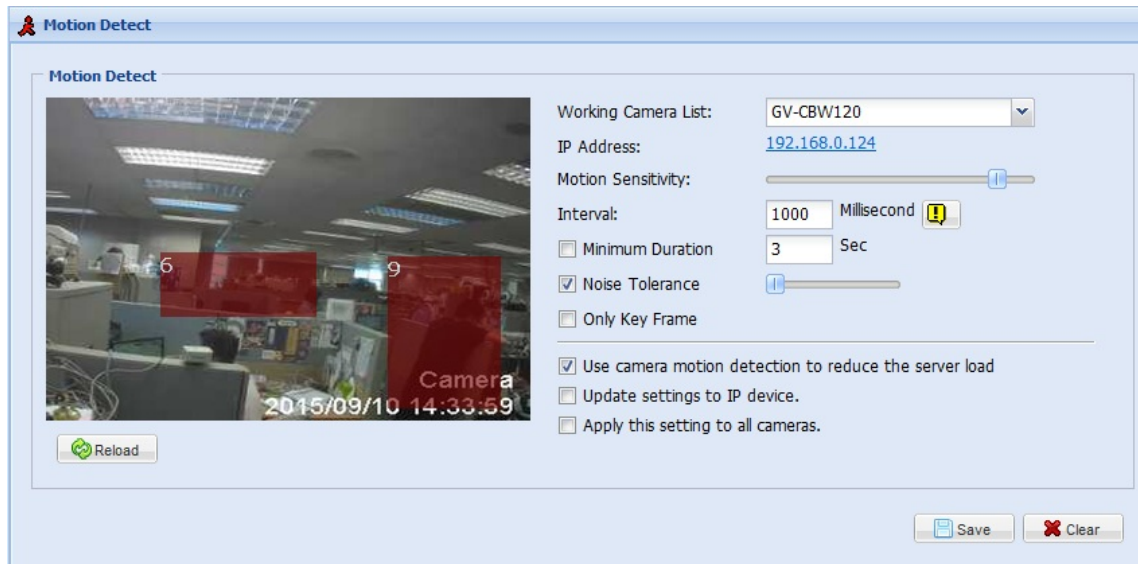


Figure 5-24

1. In the Working Camera List, select a camera.
2. The default sensitivity value is 8 for the entire area. To define a different sensitivity value, right-click the camera view and click **Delete**.
3. Select the sensitivity by moving the slider. The higher the value, the more sensitive the camera is to motion.
4. Drag an area on the image. Click **Add** when you are prompted to confirm the setting.
5. To create several areas with different sensitivity values, repeat steps 3 and 4.
6. Set a time **Interval** in milliseconds to specify the frequency of motion detection. A smaller interval will make motion detection more precise.
7. To determine the length of time the motion must persist to be detected, select **Minimum Duration** and type the number of seconds. The default Minimum Duration is 3 seconds.
8. Select the **Noise Tolerance** by moving the slider. The higher the values, the higher the level of noise the camera can tolerate, which helps distinguishing noise from motion.
9. In order to detect motion from only key frames, select **Only Key Frame**.
10. To reduce server loading by using the motion detection function on the camera, select **Use camera motion detection to reduce the server load**. By default, the function is enabled.

11. To overwrite the motion detection settings set on the Web interface of the camera with the settings on GV-Recording Server, select **Update settings to IP device**.
12. Click **Save**.

Note:

1. The **Minimum Duration** function and the **Noise Tolerance** function are only available for the motion detected by GV-Recording Server. To enable the two functions, you must unselect the option **Use camera motion detection to reduce the server load**.
 2. For cameras supported by the ONVIF protocol, the Motion Detection functions are the same as that of GeoVision Cameras, *except for the option **Update settings to IP device***.
-

You can now set up e-mail notifications to be sent or to start recording upon motion detection. Refer to *5.3.6 Notification* and *5.2.2 Camera Setting* to see how to set up notifications and record policy.

Suggested Time Interval for Motion Detection

The number of channels GV-Recording Server can receive and transmit may vary depending on the frequency of motion detection you set. When the time interval between each motion detection is small, motion detection is more sensitive. However, more CPU resource is required and the number of receiving and transmitting channels supported is decreased. The default time interval setting is 1000 milliseconds.

Below is the suggested time interval for motion detection and the number of channels supported at that time interval.

Resolution	Time Interval for Motion Detection	Receiving	Transmitting
1.3 MP (1280 x 1024)	500 milliseconds	128 ch	240 ch
2.0 MP (1920 x 1080)		90 ch	180 ch
3.0 MP (2048 x 1536)	250 milliseconds	55 ch	111 ch
5.0 MP (2560 x 1920)		45 ch	90 ch

5.3 Server

In the Server section, you can start services, configure general setup, specify storage path, modify Video Gateway ports, and set up e-mail notifications.

5.3.1 Service

The Recording Server service must be started to record videos from connected IP devices and the Video Gateway service must be started to receive and stream videos.

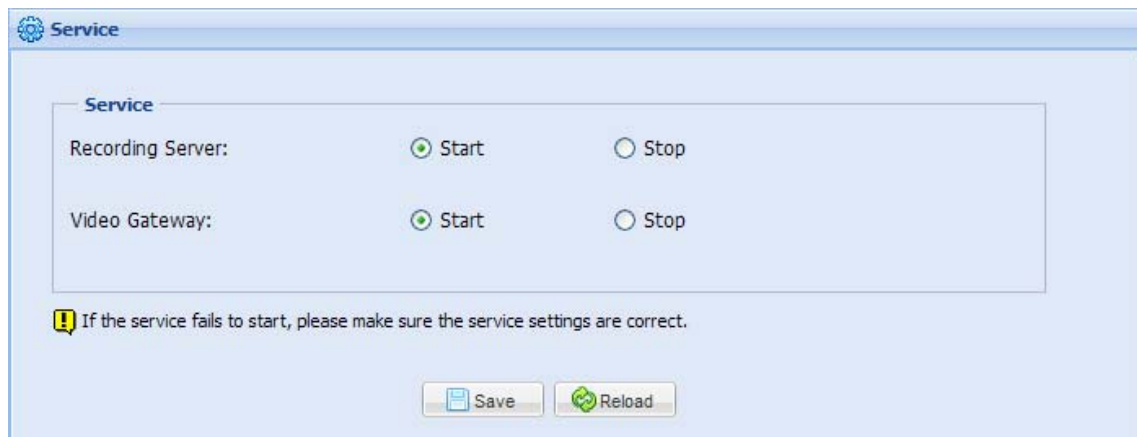


Figure 5-25

5.3.2 Install Wizard

When logging in GV-Recording Server for the first time, the Install Wizard will be prompted to help you add IP video devices, assign storage path to store recorded videos and start connections. Refer to *Chapter 3 Getting Started* for details.

5.3.3 General Setup

In the General Setup page, you can configure the command port of GV-Recording Server and configure system log settings to allow passive connection from GV-IP Devices.

The screenshot displays the 'General Setup' web interface. It is organized into several sections:

- General Setup:** Contains fields for 'Server Name' (TEST187-PC), 'Command Port' (20000), and 'Auto Start Recording' (radio buttons for Yes and No, with Yes selected).
- Camera Setting:** Includes 'Text Overlay Setting' (checkbox for 'Use Server Side Setting'), 'Skip Setting of IP Camera' (radio buttons for Yes and No, with No selected), and 'Standard codec' (radio buttons for Yes and No, with No selected).
- System Log:** Includes 'Keep Days(1~180):' (30), 'Recycle:' (radio buttons for Yes and No, with Yes selected), and 'Backup Settings:' (checkbox for 'Enable' is checked). Under 'Backup Settings', there is a 'Backup Path' (h:\ERS\SystemLog with a 'Browse' button) and a 'Time Setting' (1:00 with a dropdown arrow).
- Time to Send System Report by email:** A dropdown menu set to 'SUN'.
- Allow Geo IP Device Login:** A checkbox is checked. Below it are fields for 'User Name' (admin), 'Password' (masked with dots), and 'Connect Port' (50000).

At the bottom of the interface are two buttons: 'Save' and 'Reload'.

Figure 5-26

[General Setup]

- **Server Name:** Type a name to identify the GV-Recording Server. The default value is the computer's name.

- **Command Port:** The default command port is 20000. The command port is used for running the recording server program. By default, 9 ports are reserved ranging from 20000 to 20009. If other program is using the default ports, you may need to change the command port value.
- **Auto Start Recording:** Automatically start recording video once the GV-Recording Server program is activated.

[Camera Setting]

- **Text Overlay Setting:** Select **Use Sever Side Setting** to display text on the camera views. You can choose to display text on **Streaming 1** or **Streaming 2**.
- **Overlaid with time stamps:** Include time stamps on live and recorded videos.
- **Overlaid with camera's display name:** Include camera names on live and recorded videos.
- **Skip Setting of IP Cameras:** Enable this option to keep the current codec and resolution settings of IP cameras when the system restarts.
- **Standard Codec:** Enable this option to encode the videos in the standard H.264 codec which allows you to play the recordings with any player.

[System Log]

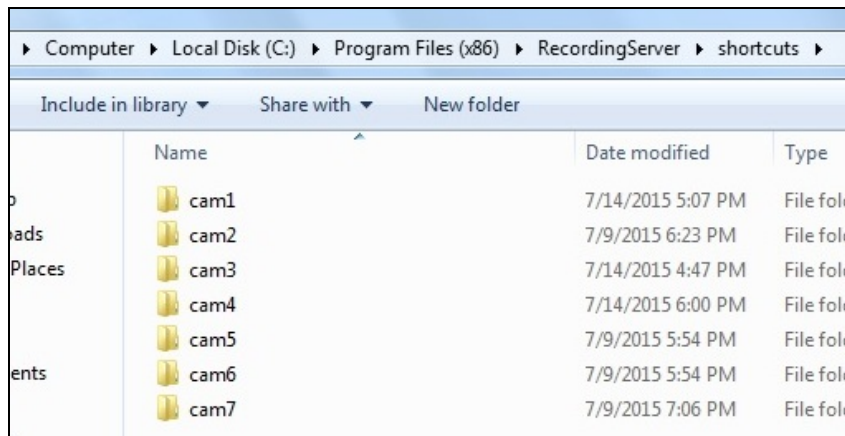
- **Keep days (1~180):** Specify the number of days to keep system log before deleting.
- **Recycle:** Enables recycling of system log.
- **Backup Settings:** Select to assign a storage path and time to back up system log. The default path is :\\ERS\\SystemLog.
- **Time to Send System Report by email:** Select a specific day of the week to send a system report, such as server information, disk health status and statistics of connection list, in PDF format via e-mail automatically. See *5.4.3 Mail Server* to set up the mail server.

[Allow Geo IP Device Login] Select this option to allow GV-IP devices to connect to GV-Recording Server. Type a user name, password and connect port for the IP device to connect. Refer to *4.2 Passive Connection* for more details.

5.3.4 Storage Path

In the Storage Path page, you can set a storage path for each camera to store recorded videos and specify the file size threshold for recycling recorded video. Refer to the *Setting Storage Path* section in *Chapter 3 Getting Started* for details.

Note: When a camera begins recording, the shortcut path of the respective camera will be created, linking to the storage path of its recorded videos. By default, the shortcut folders are located at C:\Program Files (x86)\RecordingServer\shortcuts.

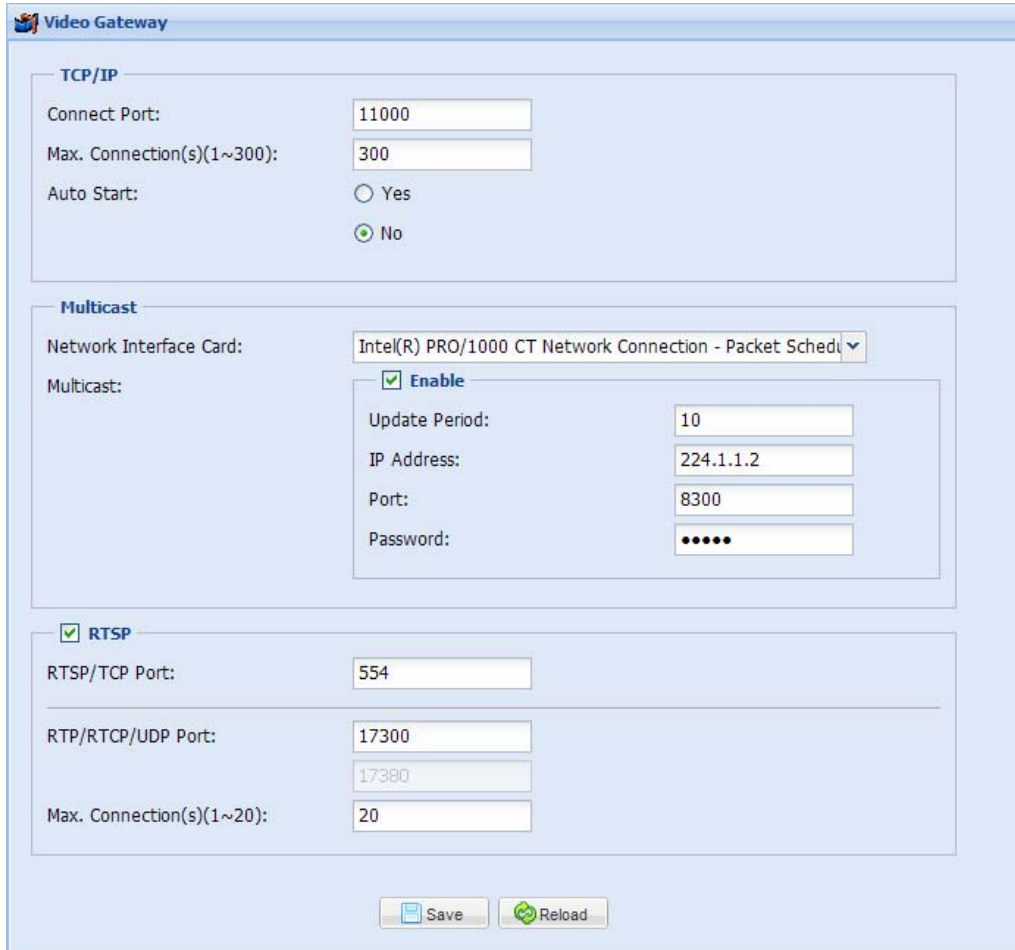


Computer > Local Disk (C:) > Program Files (x86) > RecordingServer > shortcuts >			
Include in library ▾ Share with ▾ New folder			
	Name	Date modified	Type
	cam1	7/14/2015 5:07 PM	File folder
	cam2	7/9/2015 6:23 PM	File folder
	cam3	7/14/2015 4:47 PM	File folder
	cam4	7/14/2015 6:00 PM	File folder
	cam5	7/9/2015 5:54 PM	File folder
	cam6	7/9/2015 5:54 PM	File folder
	cam7	7/9/2015 7:06 PM	File folder

Figure 5-27

5.3.5 Video Gateway

The Video Gateway page allows you to configure the connection settings for TCP/IP port, Multicast streaming and RTSP protocol.



The screenshot shows the 'Video Gateway' configuration window. It is divided into three main sections: TCP/IP, Multicast, and RTSP. The TCP/IP section includes fields for 'Connect Port' (11000), 'Max. Connection(s)(1~300)' (300), and 'Auto Start' (radio buttons for Yes and No, with No selected). The Multicast section includes a dropdown for 'Network Interface Card' (Intel(R) PRO/1000 CT Network Connection - Packet Schedu...), a checked 'Enable' checkbox, and fields for 'Update Period' (10), 'IP Address' (224.1.1.2), 'Port' (8300), and 'Password' (masked with dots). The RTSP section includes a checked 'RTSP' checkbox, fields for 'RTSP/TCP Port' (554), 'RTP/RTCP/UDP Port' (17300 and 17380), and 'Max. Connection(s)(1~20)' (20). At the bottom, there are 'Save' and 'Reload' buttons.

Figure 5-28

[TCP/IP]

- **Connect Port:** The default TCP/IP port is 11000.
- **Max. Connection(s)(1~300):** Specify the maximum number of channels transmitted to clients. The default value is 300 channels.
- **Auto Start:** Automatically starts connections with IP devices after GV-Recording Server is started.

[Multicast] The multicast provides a mechanism for sending a single video and audio stream to a group of hosts.

- **Network Interface Card:** Select a Network Card to run multicast on a different network. Since the multicast can take a lot of bandwidth when enabled, separating it from the main network is advised whenever possible.
- **Multicast:** Select this option to enable the multicast settings and send video and audio streams to the multicast group.
 - **Update Period:** Specify the time length in second between each update of multicast streams.
 - **IP Address:** Type the IP address used for multicasting. Only the hosts with the same multicast IP can receive the multicast streams. The default IP address is 224.1.1.2.
 - **Port:** Type the port number used for multicasting. The default port number is 8300.
 - **Password:** Select this option and type a password to secure multicast streams. The hosts in the multicast group will need to enter the password before accessing video and audio streams.

To see how to connect to GV-Recording Server using Multicast, see *7.3 Connecting with Multicast*.

[RTSP] You can connect to IP devices through RTSP protocol if the protocol is supported by the IP device.

- **RTSP/TCP Port:** The default port number is 554.
- **RTP/RTCP/UDP Port:** The default port range is 17300 to 17380.
- **Max. Connection(s)(1~20):** Specify the maximum number of RTSP connections. The default value is 20 channels.

Note: Only VLC media player and QuickTime Player are supported for streaming H.264 video via RTSP protocol.

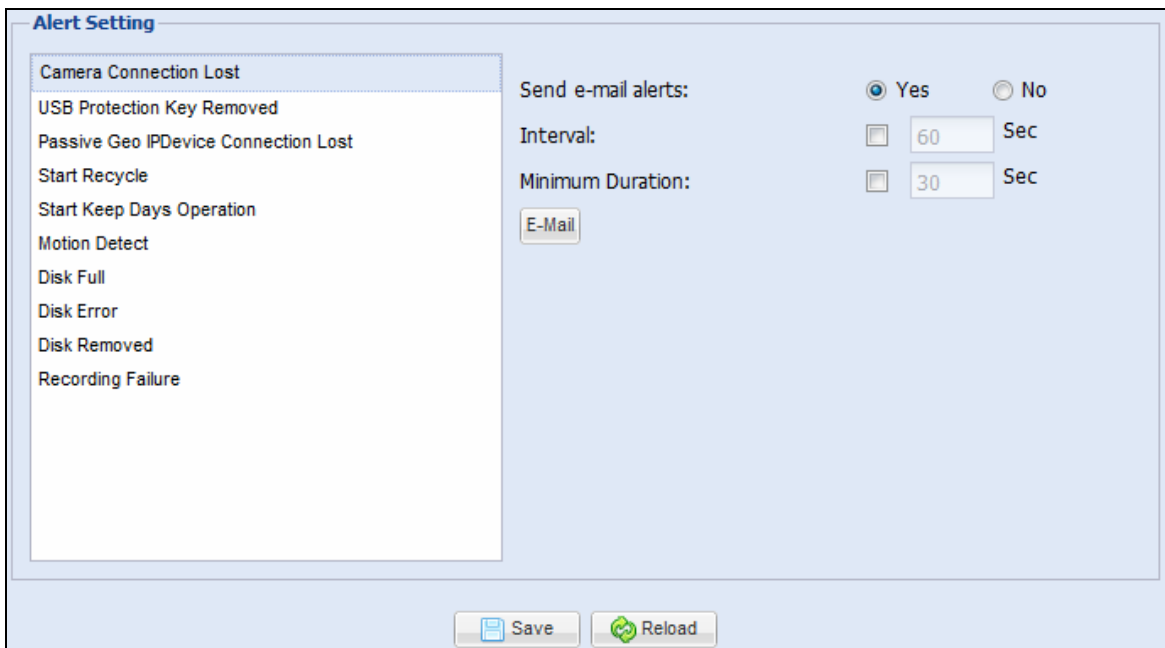
For more details on how to connect to IP devices through RTSP, see *Appendix B. RTSP Protocol Support*.

5.3.6 Notification

You can receive e-mail notification for the following conditions:

- Active connection lost
- USB protection key removed
- Passive connection lost
- Recycling of recorded video
- Start keep days operation
- Motion detection
- Disk full
- Disk error
- Disk Removed
- Recording Failure

To receive e-mail alerts, select the type of condition and select **Send E-mail Alerts**.



The image shows a software window titled "Alert Setting". On the left, there is a list of conditions: "Camera Connection Lost", "USB Protection Key Removed", "Passive Geo IPDevice Connection Lost", "Start Recycle", "Start Keep Days Operation", "Motion Detect", "Disk Full", "Disk Error", "Disk Removed", and "Recording Failure". The "Camera Connection Lost" condition is selected. To the right of the list, there are settings for "Send e-mail alerts:" with radio buttons for "Yes" (selected) and "No". Below this, there are two rows: "Interval:" with a checkbox and a text box containing "60" followed by "Sec", and "Minimum Duration:" with a checkbox and a text box containing "30" followed by "Sec". At the bottom of the settings area is a button labeled "E-Mail". At the very bottom of the window are two buttons: "Save" and "Reload".

Figure 5-29

For some conditions, you can set a minimum time **interval** in seconds between e-mail alerts. These conditions include:

- Camera Connection Lost
- Passive Geo IP Device Connection Lost
- Motion Detection
- Disk Full
- Disk Error

- Disk Removed
- Recording Failure

You can set a **minimum duration** time in seconds for the following conditions:

- Camera Connection Lost
- Passive Geo IP Device Connection Lost
- Motion detection

If the mail server has not been set up, click the **E-Mail** button to go to the Mail Service page.

For details on the Mail Service settings, see *5.4.3 Mail Service*.

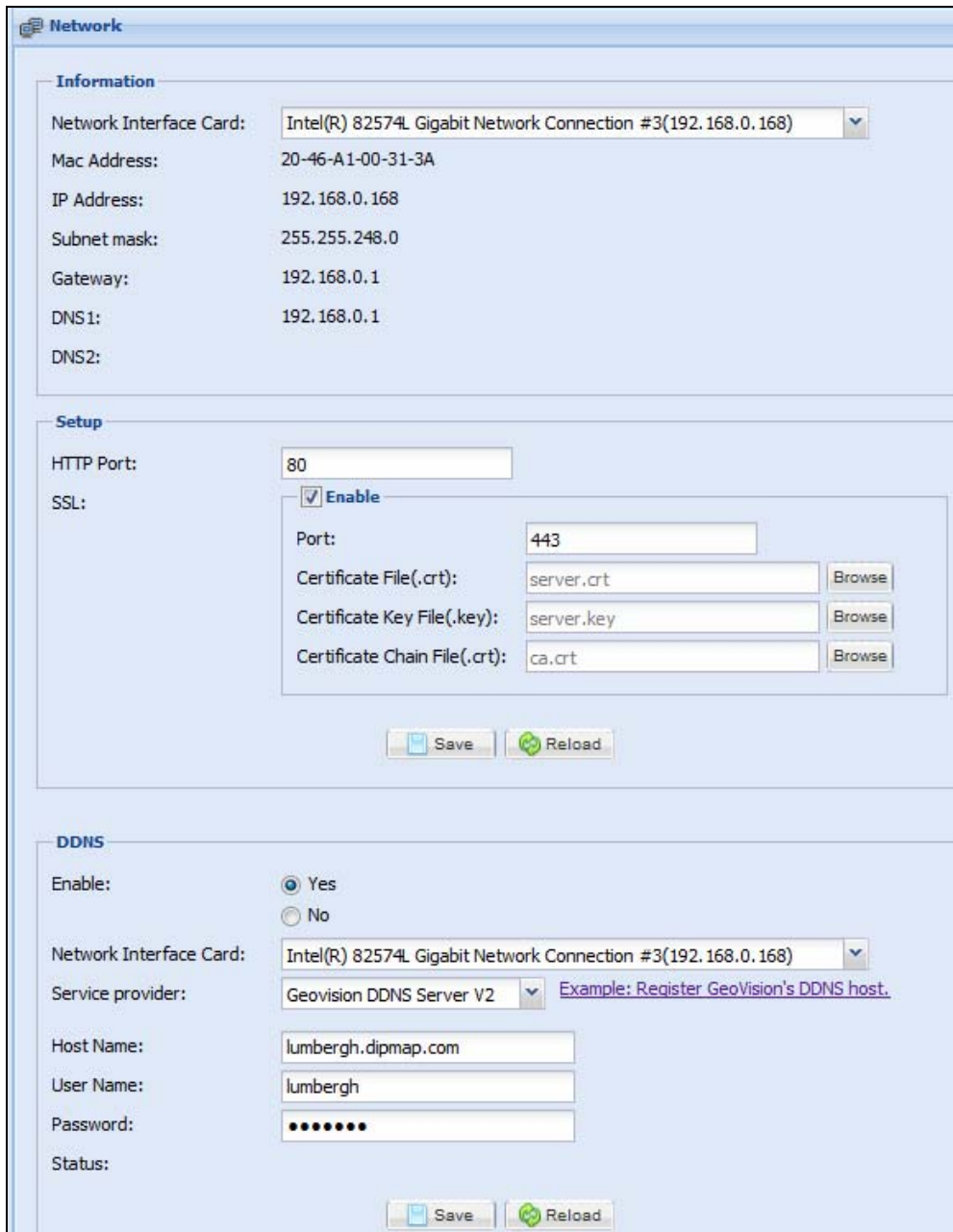
Note: You can also receive e-mail notification for I/O Trigger alert by enabling **E-mail Alarm** in the Recording Setting page (Camera Setting page < Recording Setting tab < E-mail Alarm). See *5.2.2.B Record Setting*.

5.4 Network

The Network section includes setting up basic network configurations, communication ports, mail service for e-mail notifications and Remote ViewLog for remote playback.

5.4.1 Network

In the Network page, you can configure basic network settings as well as set up SSL protocol and Dynamic DNS.



The screenshot shows the 'Network' configuration page in the GeoVision web interface. It is divided into three main sections: Information, Setup, and DDNS.

Information Section:

- Network Interface Card: Intel(R) 82574L Gigabit Network Connection #3(192.168.0.168)
- Mac Address: 20-46-A1-00-31-3A
- IP Address: 192.168.0.168
- Subnet mask: 255.255.248.0
- Gateway: 192.168.0.1
- DNS1: 192.168.0.1
- DNS2:

Setup Section:

- HTTP Port: 80
- SSL: ☒ Enable
 - Port: 443
 - Certificate File(.crt): server.crt [Browse]
 - Certificate Key File(.key): server.key [Browse]
 - Certificate Chain File(.crt): ca.crt [Browse]

Buttons: [Save] [Reload]

DDNS Section:

- Enable: ☒ Yes ☐ No
- Network Interface Card: Intel(R) 82574L Gigabit Network Connection #3(192.168.0.168)
- Service provider: Geovision DDNS Server V2 [Example: Register GeoVision's DDNS host.]
- Host Name: lumbergh.dipmap.com
- User Name: lumbergh
- Password: [Masked]
- Status:

Buttons: [Save] [Reload]

Figure 5-30

[Information]

- **Network Interface Card:** Select a Network Interface Card to connect to the Internet.

[Setup]

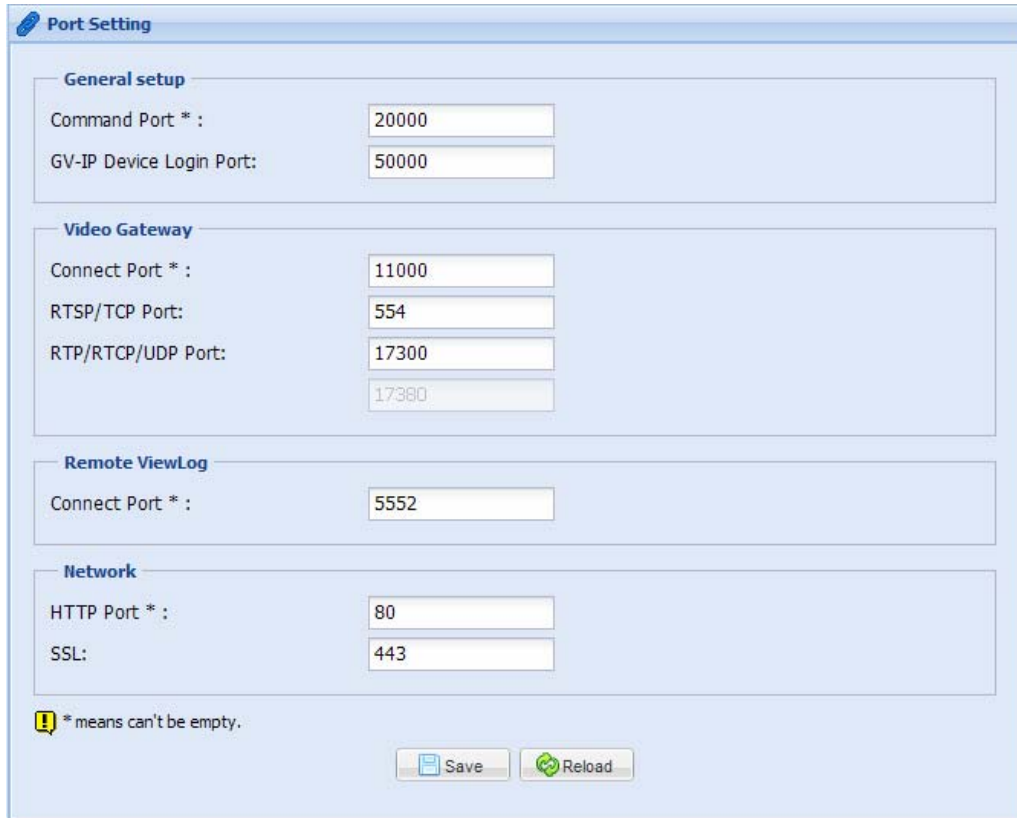
- **HTTP Port:** The default HTTP port is 80.
- **SSL:** Enable the Secure Sockets Layer (SSL) protocol for a more secure Internet connection. To use your own Certificate File, Certificate Key File and Certificate Chain File, click the **Browse** buttons and select the files stored at your computer. The encryption strength depends on your SSL certificate.

[DDNS] Dynamic DNS allows you to register a domain name to easily access your GV-Recording Server when using a dynamic IP address.

- **Enable:** Select to enable DDNS.
- **Network Interface Card:** Select a Network Interface Card to connect to the Internet when more than one Network Interface Card is installed on the computer of GV-Recording Server.
- **Service Provider:** Select a DDNS service provider. If you select GeoVision DDNS Server, click the link on the right for service registration.
- **Host Name:** Type the host name used to connect to the GV-Recording Server. The host name registered on GeoVision DDNS Server is created by adding “.dipmap.com” to the username.
- **ID:** Type the username used to enable the service from the DDNS.
- **Password:** Type the password used to enable the service from the DDNS.

5.4.2 Port Setting

You can see all communication ports used by the GV-Recording Server. If your server is installed with a router or firewall, make sure the related communication ports are open. To modify any port number, click the field and click **Save** after the modification.



Port Setting

General setup

Command Port * : 20000

GV-IP Device Login Port: 50000

Video Gateway

Connect Port * : 11000

RTSP/TCP Port: 554

RTP/RTCP/UDP Port: 17300
17380

Remote ViewLog

Connect Port * : 5552

Network

HTTP Port * : 80

SSL: 443

! * means can't be empty.

Save Reload

Figure 5-31

Note:

1. If the GV-Recording Server is installed behind a firewall or router, you may need to open these default ports: HTTP port 80, server connection port (Active connection port) 11000, Passive connection port 50000, remote playback (Remote ViewLog) port 5552.
2. The Command port is used for running the recording server. By default, 11 ports are reserved, ranging from 20000 to 20010, for the program use. If other program is using the default ports, you may need to change the Command port value.

5.4.3 Mail Service

When any of the following conditions occur, the administrator can receive alert by an e-mail:

- Active connection lost
- Passive connection lost
- USB protection key removed
- Recycling of recorded video
- Start keep days operation
- Motion detection
- Disk full
- Disk error
- Disk Removed
- Recording Failure

To send e-mail alerts, you have to configure the following mail server settings and specify the e-mail address to receive alert messages.

The screenshot shows a web-based configuration window titled "Mail Service". It is divided into two main sections: "SMTP" and "Mail Setup".

SMTP Section:

- Port: 25
- Connection Type: SSL (selected from a dropdown menu)
- Authentication: ☒ Allow
- User Name: admin
- Password: (masked with dots)

Mail Setup Section:

- SMTP Server: geovision.com.tw
- E-Mail From: system@geovision.com.tw
- E-Mail To: security@geovision.com.tw
- Subject: RS Alert from 2308
- Text Content: Motion detected. (with expand/collapse arrows)
- Test Mail Account button

At the bottom of the window are two buttons: "Save" and "Reload".

Figure 5-32

[SMTP Setting]

- **Port:** The default port for most SMTP servers is 25. However webmail Yahoo and Hotmail generally use different SMTP port. In this case, check your e-mail provider for the SMTP port number.
- **Connection Type:** For a more secure connection, use the drop-down list to select **SSL** or **TLS/STARTTLS**.
- **Authentication:** If your mail server needs login authentication, select **Allow** and type your login account name and password.

[Mail Setup]

- **SMTP Server:** Type your mail server's URL address or IP address.
- **E-Mail From:** Type the sender's e-mail address.
- **E-Mail To:** Type the recipient's e-mail address. For multiple recipients, add a semicolon between each e-mail address.
- **Subject:** Type a subject that comes with the alert message.
- **Text Content:** Type the content of the alert message.
- **Test Mail Account:** Click this button to send a test e-mail to the assigned account.

5.4.4 Remote ViewLog

Through the network, you can remotely retrieve the files recorded by GV-Recording Server and play back video. To see how to connect to GV-Recording Server using Remote ViewLog, see *7.4 Connecting with Remote ViewLog*.

The image shows a web-based configuration window titled "Remote ViewLog". Inside the window, there is a section labeled "Connect Setting". This section contains three input fields: "Port:" with the value "5552", "Max. Connection(s):" with the value "16", and "Maximum idle time(min.):" with the value "30". Below these fields are two buttons: "Save" and "Reload".

Figure 5-33

- **Port:** Keep the default port 5552 or modify to match the setting on Remote ViewLog.
- **Max. Connection (s):** Type a number to limit the maximum number of connections.
- **Maximum idle time (min.):** Users connecting from Remote ViewLog will be disconnected after being idle longer than the time period specified.

5.5 Advanced Management

The Advanced Management section allows you to set up E-map, connection to GV-GIS, user accounts and advanced query.

5.5.1 E-map

E-Map displays the area being monitored on Google Maps, which allows the operator to easily locate the IP video devices.

To set up E-Map:

1. Click **E-Map Editor** at the bottom of the E-map page. This window appears.

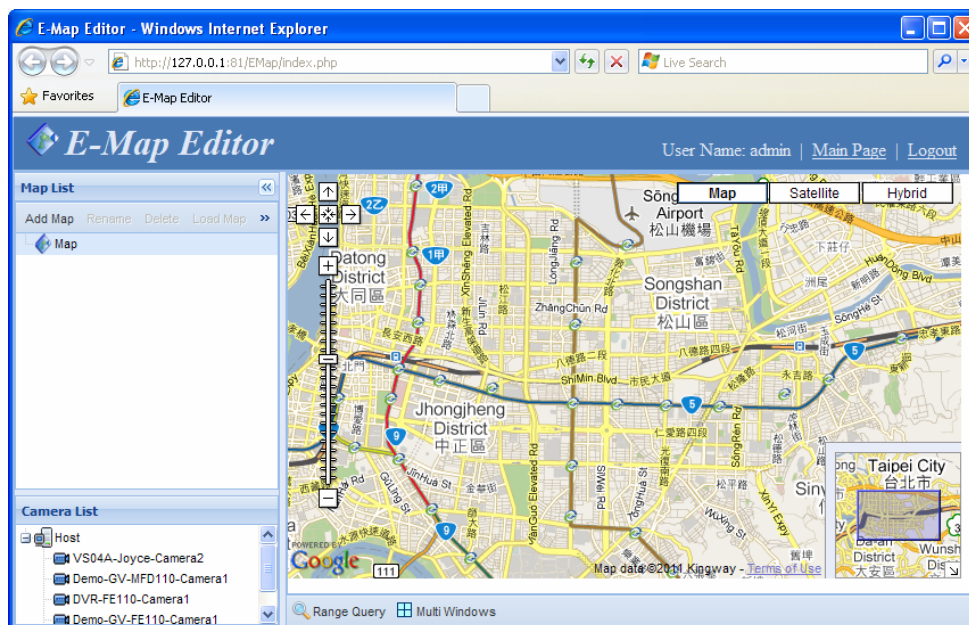


Figure 5-34

2. Drag the camera from the Camera List and drop in the Google map to indicate the location of the camera.

3. Right-click the camera icon and click **Live View** to see the live view of the camera.



Figure 5-35

4. Right-click the camera icon and click **Street View** to see the Google street view of the camera location.

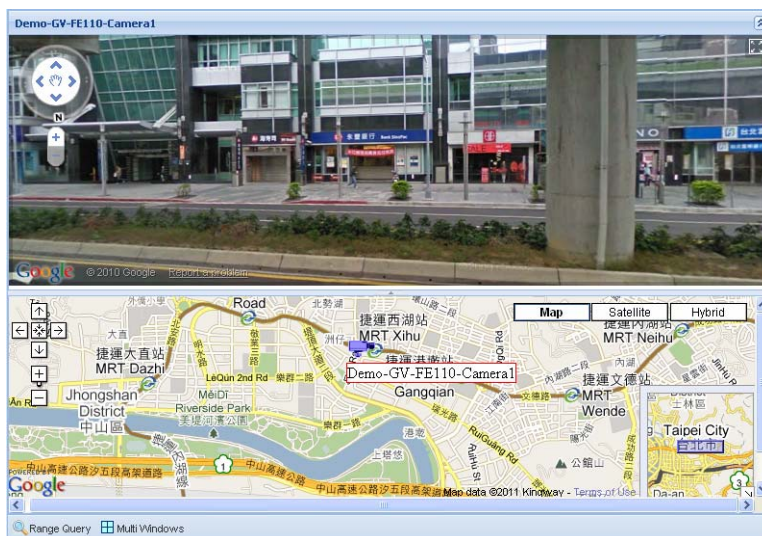


Figure 5-36

5. To change the direction of the camera icon, right-click the icon and select a direction.
6. At the bottom of the page, you can click **Range Query** and a circular area will be highlighted on the map. You can adjust the location and size of the circle and click **Multi Windows** to see the live view of all cameras included in the circle.

7. To insert a floor plan on the Google map, click **Add Map** under Map List. This dialog box appears.

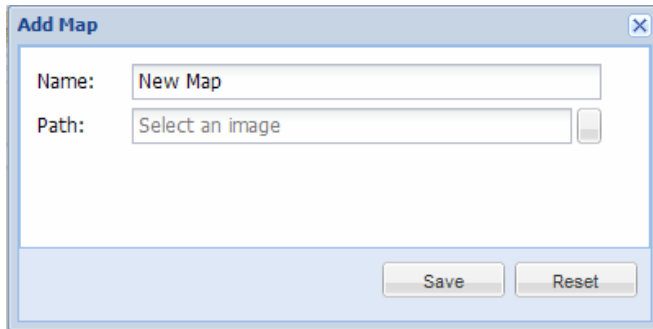


Figure 5-37

8. Type a name for the map and select the path of the graphic file. Click **Save**. A map icon will be created on the Google map.
9. Double-click the map icon and drag the cameras onto the map from the Camera List.

Note: To view Google street view, you need to install Adobe Flash Player version 10 or later. The Google street view may not be available in your location.

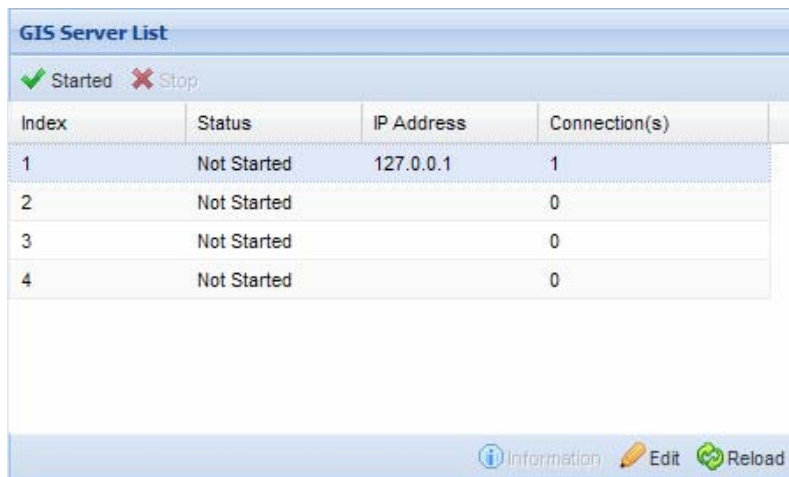
5.5.2 GIS

You can send the GPS data of connected IP video devices to the GV-GIS for location verification and vehicle tracking. The GPS data can be sent to up to 4 GV-GIS stations for tracking simultaneously.

To connect with the GV-GIS, the **Mobile Host** accounts for each IP video device need to be created on the GV-GIS station in advance. For details, see *GV-GIS User's Manual*.

Note: The GV-Recording Server is only compatible with GV-GIS of version 3.0 or later.

1. Select one GV-GIS server and click the **Edit** button  at bottom right corner.

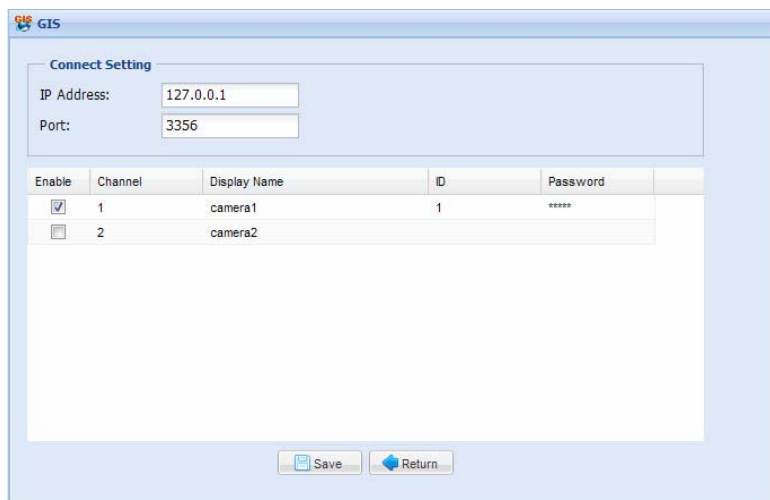


Index	Status	IP Address	Connection(s)
1	Not Started	127.0.0.1	1
2	Not Started		0
3	Not Started		0
4	Not Started		0

Information Edit Reload

Figure 5-38

2. Type the **IP Address** of the GV-GIS. Keep the default port 3356 or modify to match the settings on GV-GIS.



GIS

Connect Setting

IP Address: 127.0.0.1

Port: 3356

Enable	Channel	Display Name	ID	Password
<input checked="" type="checkbox"/>	1	camera1	1	*****
<input type="checkbox"/>	2	camera2		

Save Return

Figure 5-39

3. Select the cameras.
4. Click on the fields under **ID** and **Password** to type the individual ID and Password created in GV-GIS for cameras.
5. Click **Save** and return to GIS Server List. The total number of to-be-connected IP cameras is displayed in the Connection (s) column in the GIS Server List.
6. Click the GV-GIS server and click the **Start** button.
7. After the GV-GIS server is started, you can click the **Information** button to see the connection status of the GV-GIS server.

5.5.3 VSM


You can connect the GV-Recording Server to one GV-Vital Sign Monitor (GV-VSM), and when any of the following conditions occur on the GV-Recording Server and the connected cameras, a text message will instantly be sent to the GV-Vital Sign Monitor:

- Motion detected
- Camera connection lost
- Camera connection resumed
- Video lost
- Video resumed
- Recording Server / Video Gateway service started or stopped
- Disk full on GV-Recording Server
- Disk error on GV-Recording Server

For details on GV-Vital Sign Monitor, see *GV-CMS Series User's Manual*.

Note: The GV-Recording Server is only compatible with GV-Vital Sign Monitor of version 8.5.9.0 or later.

To connect the GV-Recording Server to the GV-Vital Sign Monitor:

1. Click the **Edit** button  at the bottom right corner of the Server List. This dialog box appears.

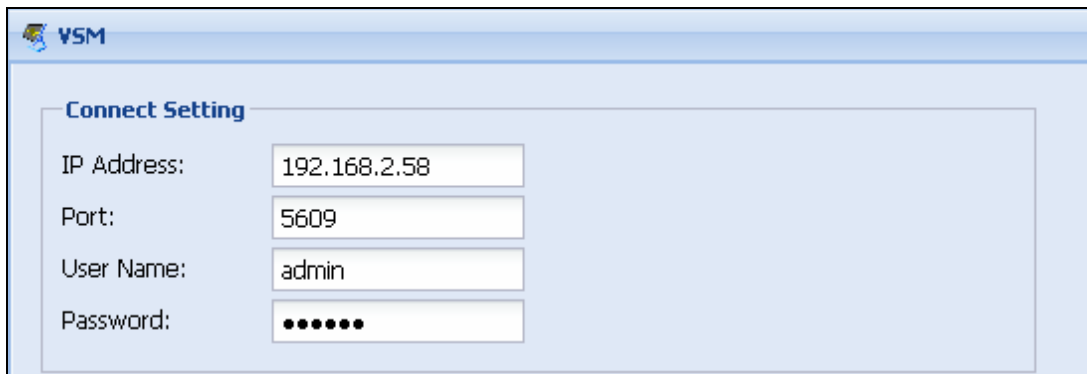


Figure 5-40

2. In the Connection Setting section, type the **IP Address** of the VSM server.
3. Keep the default **Port** 5609 or modify to match the setting on VSM.
4. In the **User Name** and **Password** fields, type the login ID and password of a VSM subscriber account.

- Under the Working Camera List, select the cameras that will trigger VSM notification upon the conditions listed above.

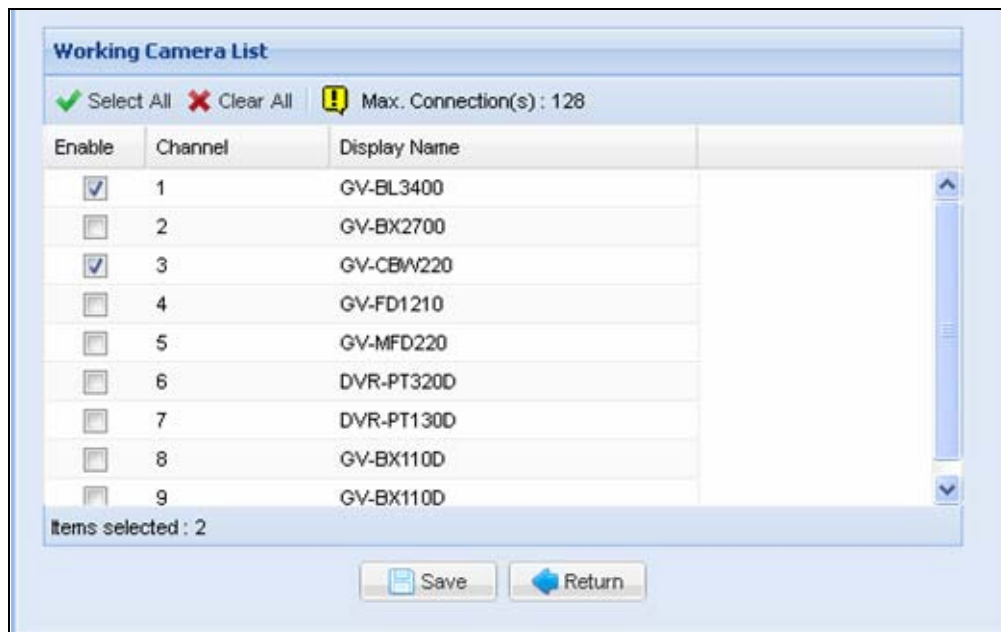


Figure 5-41

- Click **Save** to apply the settings.
- Click **Start** to start the connection.

After the GV-Recording Server is successfully connected to the VSM, a "Connected" message will appear in the Status column.




Figure 5-42

5.5.4 Backup Center

The recordings on GV-Recording Server can be backed up to GV-Backup Center automatically which ensures the recorded files are not permanently lost or damaged.

Note: The recordings of all the channels connected to the GV-Recording Server will be backed up to the GV-Backup Center. To ensure system performance, it is required to meet the maximum bit rate or channel numbers supported by GV-Recording Server, the necessary hard disk numbers and network deployment. For details, see section 1.1.6 *Requirements for Connecting to GV-Backup Center*.

To connect the GV-Recording Server to the GV-Backup Center:

1. Click the **Edit** button  at the bottom right corner of the Server List. This dialog box appears.

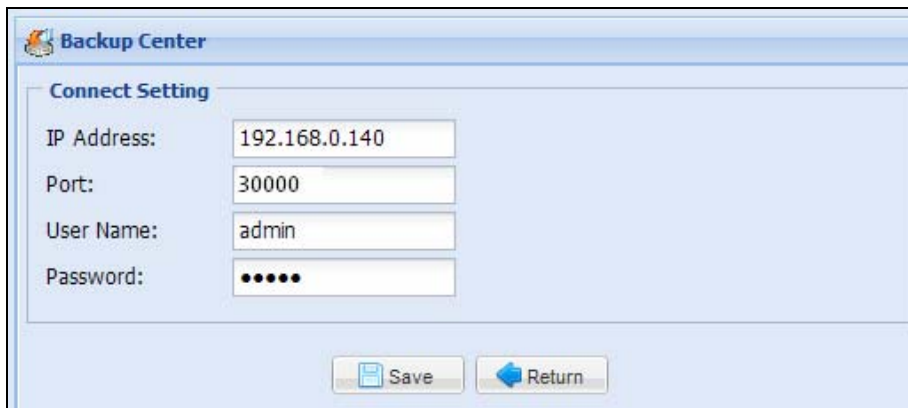


Figure 5-43


2. Type the **IP Address**, **Username** and **Password** of the GV-Backup Center. These entries must match the account and password created on the GV-Backup Center (Figure 4-2). The default ID and Password are **admin**.
3. Keep the default port number **30000**. Otherwise, modify the port number to match the **Listen Port** number on the GV-Backup Center.
4. Click **Save** to apply the settings.
5. Click **Start** to start the connection.

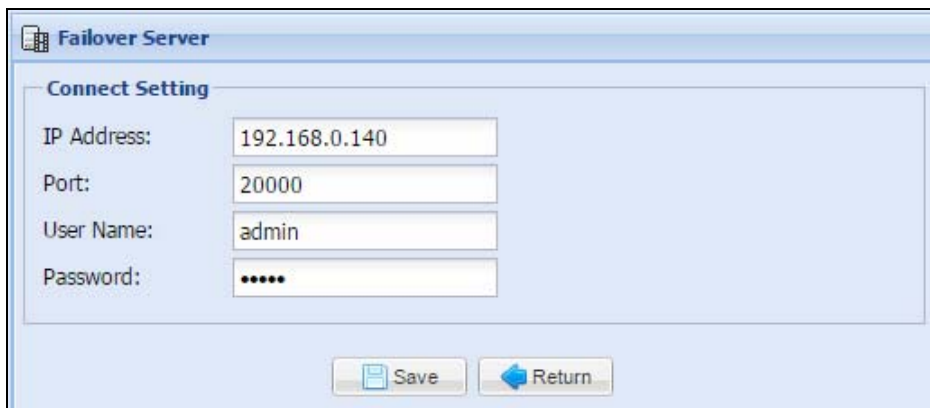
After the GV-Recording Server is successfully connected to the GV-Backup Center, a “Connected” message will appear in the Status column.

5.5.5 Failover Server

Your recordings can be backed up to GV-Failover Server / GV-Redundant Server automatically in case of the failure of GV-Recording Server.

To connect the GV-Recording Server to the GV-Failover Server / GV-Redundant Server:

1. Click the **Edit** button  at the bottom right corner of the Server List. This dialog box appears.



The dialog box titled "Failover Server" contains a "Connect Setting" section with four input fields: "IP Address" (192.168.0.140), "Port" (20000), "User Name" (admin), and "Password" (masked with dots). At the bottom are "Save" and "Return" buttons.

Figure 5-44

2. Type the **IP Address**, **Username** and **Password** of the GV-Failover Server / GV-Redundant Server. These entries must match the account and password created on the GV-Failover Server / GV-Redundant Server. The default ID and Password are **admin**.
3. Keep the default port number **20000**.
4. Click **Save** to apply the settings.
5. Click **Start** to start the connection.


After the GV-Recording Server is successfully connected to the GV-Failover Server / GV-Redundant Server, a "Connected" message will appear in the Status column.


Note: Passive connection is not currently supported for GV-IP devices to GV-Failover Server / Redundant Server.

5.5.6 GV-POE Switch

You can power off PoE ports on a GV-POE Switch to help control power usage of connected IP devices. The GV-Recording Server will detect GV-POE Switch automatically under the same LAN.

To enable / disable a PoE port:

1. In the Switch List, double-click an IP address or click the **Setup** button  to access the Connect Setting.

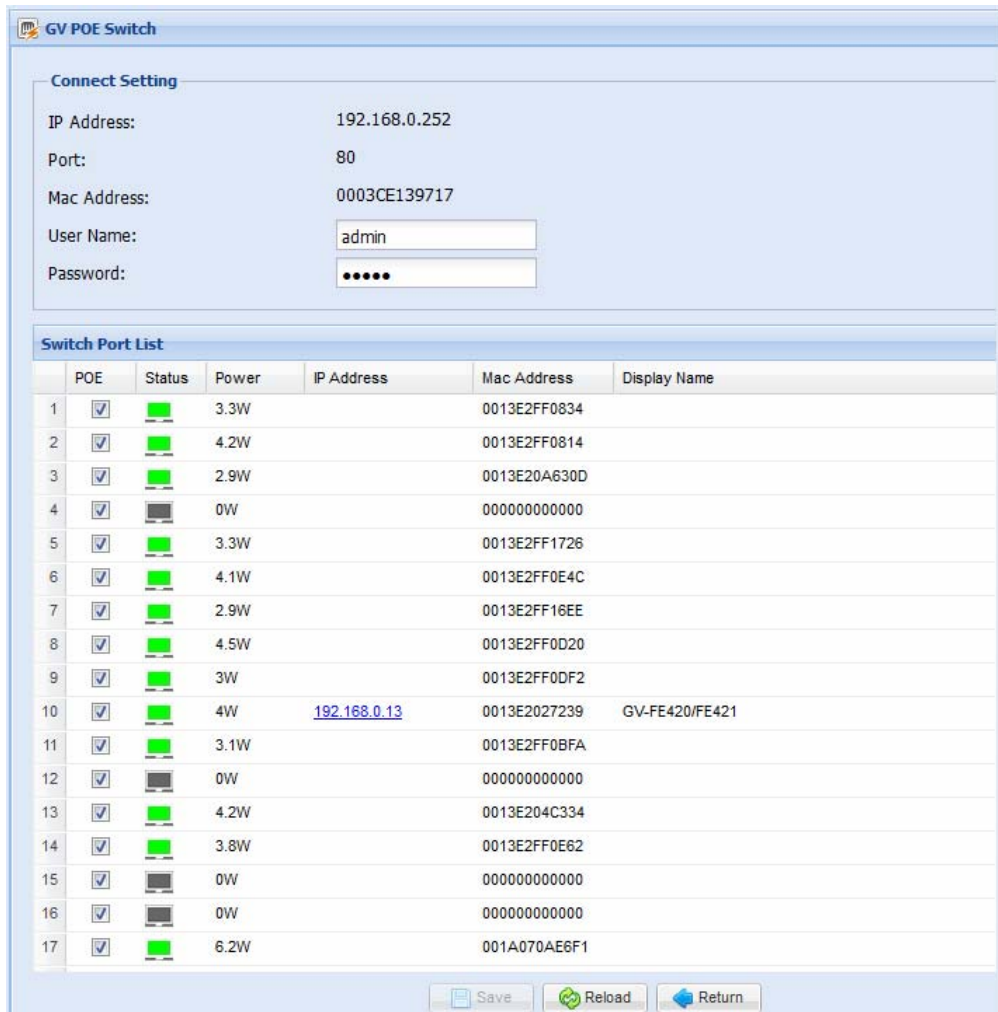
GV POE Switch							
Switch List							
 Setup							
	IP Address	Mac Address	Max Power	Used Power	Max Port	Used Port	Estimated month...
1	192.168.0.252	0013E2087980	2500	65	18	6	46
2	192.168.0.250	0013E2087BC7	1300	77	10	5	55
3	192.168.0.250	0013E2087B8B	1300	83	10	3	59
4	192.168.0.250	0013E2088C23	4000	185	24	11	133
5	192.168.0.208	0003CE117116	1300	358	10	7	257
6	192.168.0.250	0013E2087BC5	1300	0	10	3	0
7	192.168.0.250	0013E20879AA	2500	322	18	13	231
8	192.168.0.251	0013E20872A6	4000	696	26	18	501
9	192.168.0.250	0003CE139717	4000	271	26	7	195
10	192.168.0.250	0013E2087BC6	1300	73	10	3	52

Status : Loading data succeeded.

 Reload

Figure 5-45

2. Type the **Username** and **Password** of the POE switch. The default ID and Password are admin.



GV POE Switch

Connect Setting

IP Address: 192.168.0.252


















Port: 80

Mac Address: 0003CE139717

User Name: admin

Password:

Switch Port List

	POE	Status	Power	IP Address	Mac Address	Display Name
1	<input checked="" type="checkbox"/>		3.3W		0013E2FF0834	
2	<input checked="" type="checkbox"/>		4.2W		0013E2FF0814	
3	<input checked="" type="checkbox"/>		2.9W		0013E20A630D	
4	<input checked="" type="checkbox"/>		0W		000000000000	
5	<input checked="" type="checkbox"/>		3.3W		0013E2FF1726	
6	<input checked="" type="checkbox"/>		4.1W		0013E2FF0E4C	
7	<input checked="" type="checkbox"/>		2.9W		0013E2FF16EE	
8	<input checked="" type="checkbox"/>		4.5W		0013E2FF0D20	
9	<input checked="" type="checkbox"/>		3W		0013E2FF0DF2	
10	<input checked="" type="checkbox"/>		4W	192.168.0.13	0013E2027239	GV-FE420/FE421
11	<input checked="" type="checkbox"/>		3.1W		0013E2FF0BF4	
12	<input checked="" type="checkbox"/>		0W		000000000000	
13	<input checked="" type="checkbox"/>		4.2W		0013E204C334	
14	<input checked="" type="checkbox"/>		3.8W		0013E2FF0E62	
15	<input checked="" type="checkbox"/>		0W		000000000000	
16	<input checked="" type="checkbox"/>		0W		000000000000	
17	<input checked="" type="checkbox"/>		6.2W		001A070AE6F1	

Save Reload Return

Figure 5-46

3. In the Switch Port List, select or deselect the **POE** checkout to enable or disable POE function to a connected IP device. The green color indicates the status of a powered POE port, whereas the grey color represents the “off” status.
4. Click **Save** to apply the setting.

5.5.7 User Account

You can create up to 1000 User and Supervisor accounts to access GV-Recording Server and/or GV-Video Gateway. The Supervisor accounts have full access to GV-Recording Server and/or GV-Video Gateway, and you can set up different level of access rights for the User accounts.

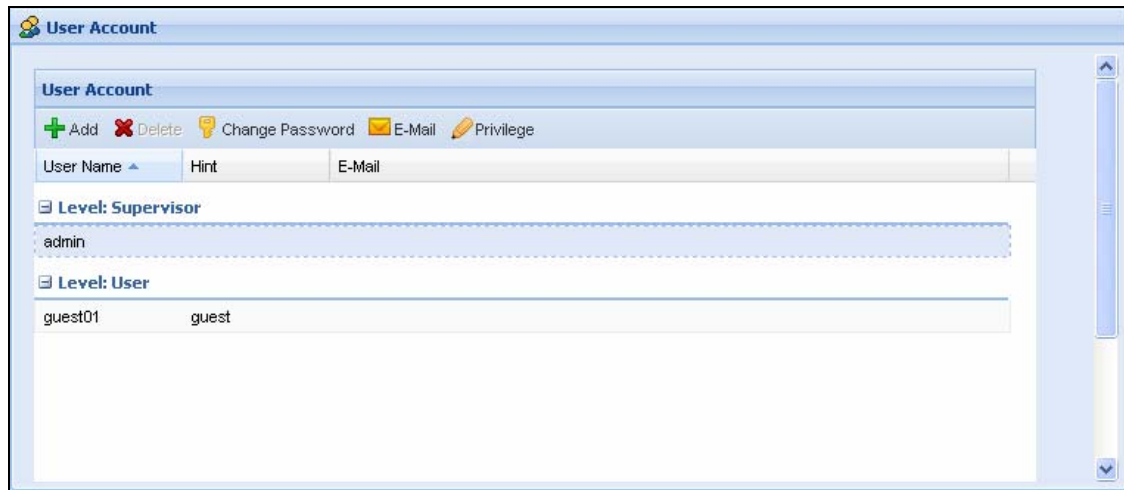


Figure 5-47

To create an account:

1. Click the **Add** button . This dialog box appears.

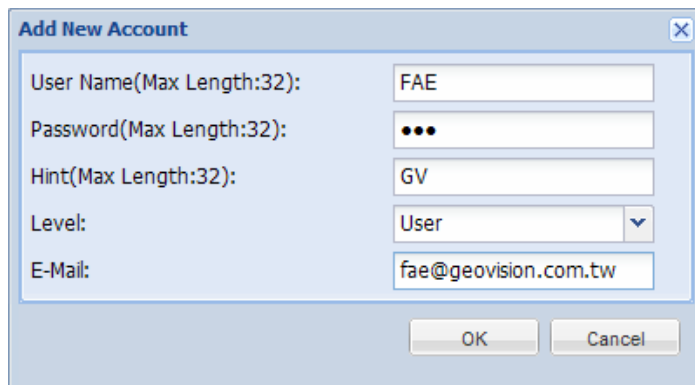


Figure 5-48

2. Type the **User Name**, **Password** and a password **Hint** for the account.
3. Use the **Level** drop-down list to select **Supervisor** or **User**.
4. Type an e-mail address for the account. When you forget the password, the password can be sent to your e-mail account using the Forget Password link in the login page.
5. Click **OK** to return to the User Account List. You can edit the account setting using the **Change Password** and **E-Mail** button.

To set access rights:

1. Select a user account and click the **Privilege** button . This dialog box appears.

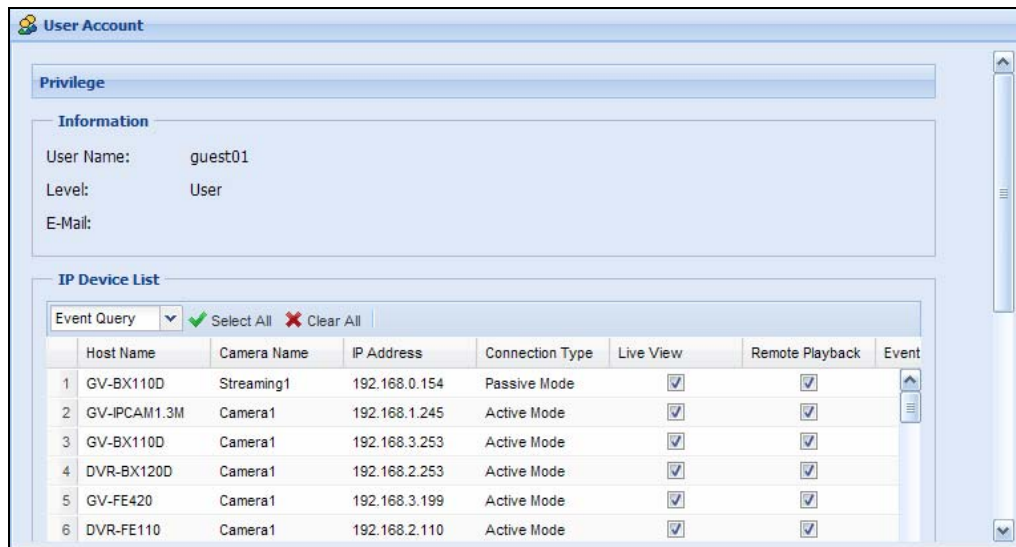


Figure 5-49

2. The cameras listed in the IP Device List are displayed. Select to allow the user to access the **Live View**, **Remote Playback** and **Event Query** of the camera.
3. You can **Select All** cameras or **Clear All** selected cameras for each function by using the drop-down list above the camera list.

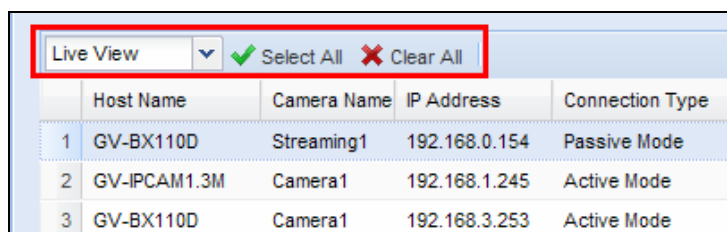


Figure 5-50

4. Click **Save**.

5.5.8 Advanced Query

Using Advanced Query, you can see the live view of the cameras in Working Camera List, as well as search for events to remotely play back recorded videos. In addition, you can query GV-Recording Server system logs and look up graphical charts of event analysis.

The Advanced Query interface is the same as the Web interface when logging in GV-Recording Server through client user account. For more details on Advanced Query, refer to *Chapter 6 User Mode*.

Chapter 6 User Mode

The GV-Recording Server administrator can create client user accounts with different access rights to its Web interface. Refer to 5.5.3 *User Account* to see how to create user accounts for clients. After the client account is created, follow the steps below to access the Web interface in User Mode.

1. In the Location/Address field of Internet Explore, type the IP address or the domain name of the GV-Recording Server.

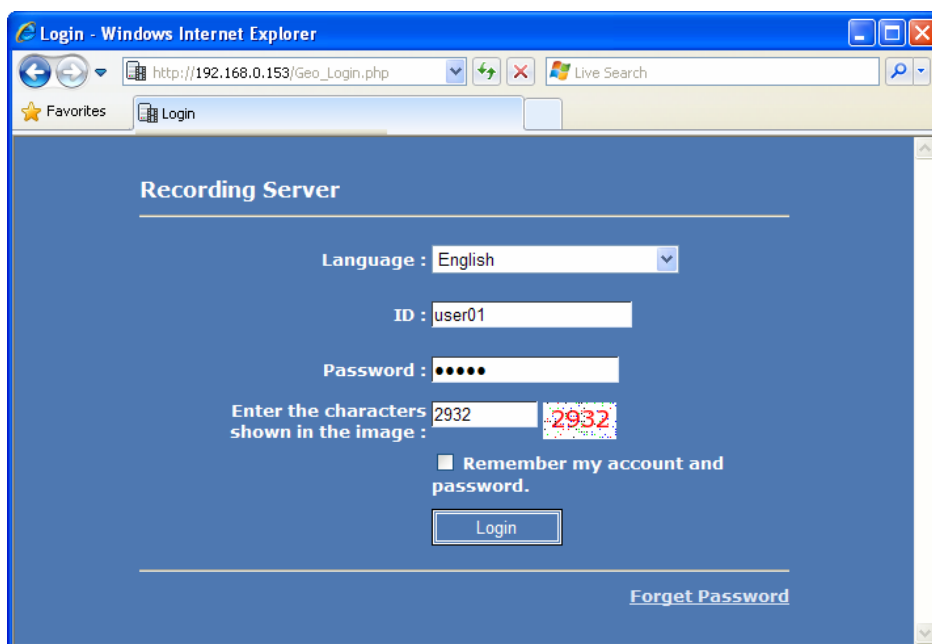


Figure 6-1

2. In the login page of the GV-Recording Server Web interface, type the **ID** and the **Password** of the client account.
3. Type the verification number shown in the image.
4. Click **Login**. The GV-Recording Server Web interface is now displayed.

Note: The GV-Recording Server supports several browsers to access its Web interface, including Internet Explorer, Firefox, Google Chrome, and Safari. You can access single live view by using Firefox and Internet Explorer. Only Internet Explorer is supported for playing back recorded files.

6.1 Single Live View

In the left menu, expand **Live View** and select **One Channel** to display the Single Live View. Use the Working Camera List drop-down list to select a camera.

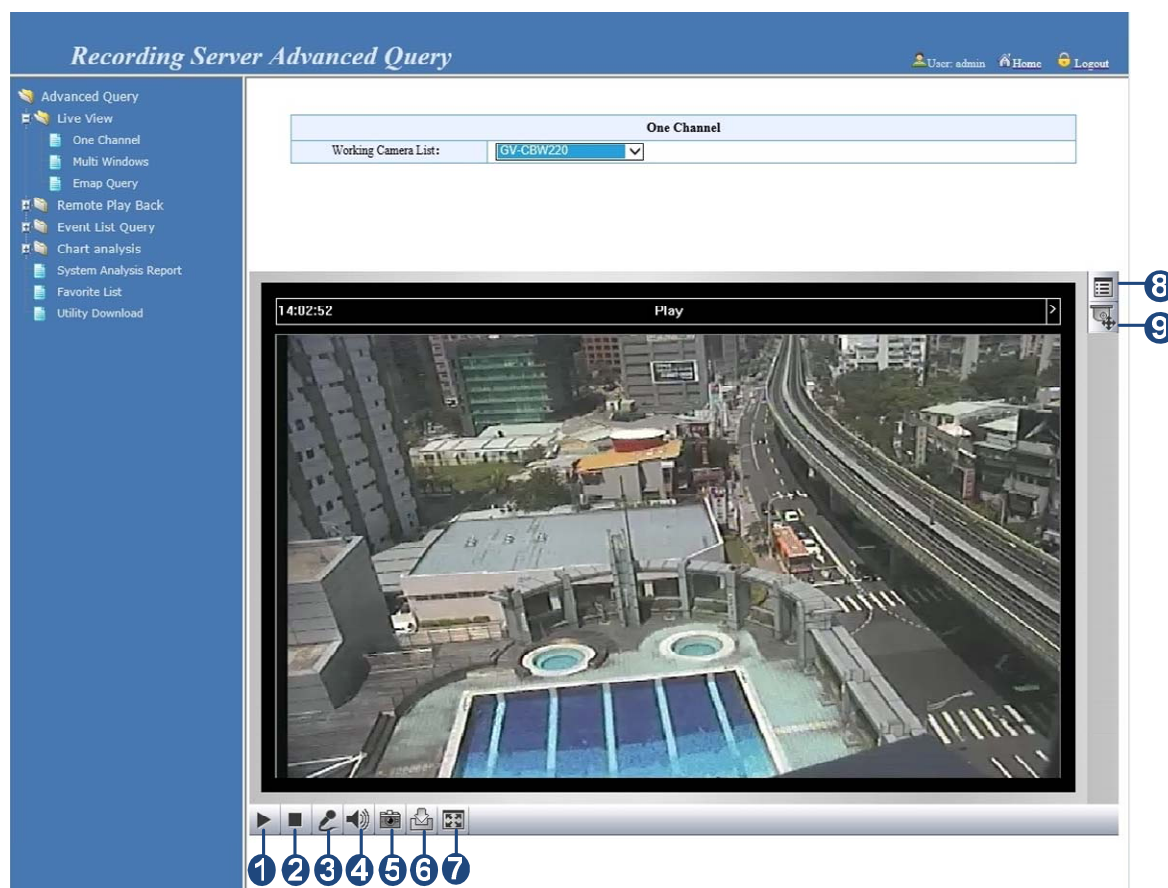


Figure 6-2

No.	Name	Description
1	Play	Plays live video.
2	Stop	Stops playing video.
3	Microphone	Talks to the surveillance area from the local computer.
4	Speaker	Listens to the audio around the camera.
5	Snapshot	Takes a snapshot of live video.
6	Download	Records live video to the local computer.
7	Full Screen	Switches to full screen view. Right-click the image to have these options: Snapshot , Resolution , PIP , PAP , Geo Fisheye , IMV1 Panomorph , Google Maps , Zoom In and Zoom Out .
8	Option	Select Show Camera Name to show camera name on image and select Image Enhance to access the De-interlace , De-block and DirectDraw functions.
9	PTZ Control	Starts the PTZ control Panel and the Virtual PTZ.

6.1.1 Control Panel

To open the control panel of the Live View window, click the arrow button on top of the viewer. You can access the following functions by using the left and right arrow buttons on the control panel.

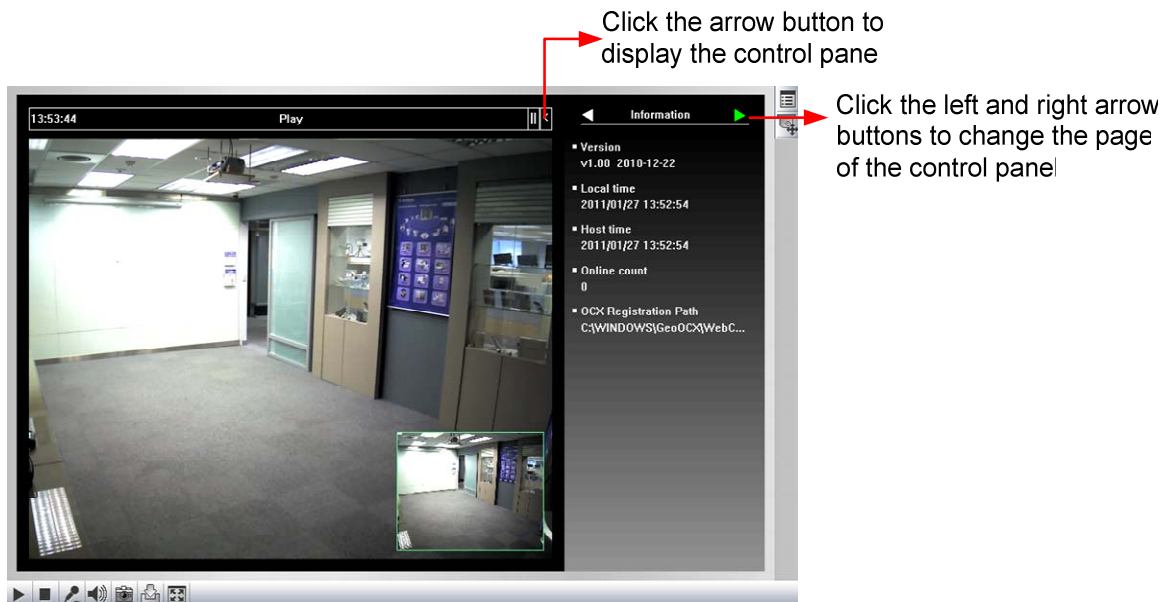


Figure 6-3

[Information] Displays the version of the camera, local time of the local computer, host time of the camera, and the number of users logging in to the camera.

[Video] Displays the current video codec, resolution and data.

[Audio] Displays the audio data rates when the microphone and speaker devices are enabled.

[GPS] For details see 6.1.8 *GPS Maps Setting*.

[Camera Adjustment] Allows you to adjust the image quality.

6.1.2 Snapshot of a Live Video

To take a snapshot of live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 6-2). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and select **JPEG** or **BMP** as **Save as Type**. You may also choose whether to display the name and date stamps on the image.
3. Click the **Save** button to save the image in the local computer.

6.1.3 Video Recording

You can record live images for a certain period of time to your local computer.

1. Click the **Download** button (No. 6, Figure 6-2). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and move the **Time Period** scroll bar to specify the time length of the video clip from 1 to 5 minutes.
3. Click the **Save** button to start recording.
4. To stop recording, click the **Stop** button (No. 2, Figure 6-2).

6.1.4 Picture-in-Picture and Picture-and-Picture View

The full screen mode provides two types of close-up views: **Picture-in-Picture (PIP)** and **Picture-and Picture (PAP)**. The two views are useful in providing clear and detailed images of the surveillance area.

To access this feature:

- Click the **Full Screen** button (No. 7, Figure 6-2). Right-click the full screen to select **PIP** or **PAP**.
- Right-click the live view to select **PIP** or **PAP**.

Picture-in-Picture View

With the Picture in Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video.



Figure 6-4

1. Select **PIP**. An inset window appears.
2. Click the insert window. A navigation box appears.
3. Move the navigation box around in the inset window to have a close-up view of the selected area.
4. To adjust the navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
5. To exit the PIP view, right-click the image and click **PIP** again.

Picture-and-Picture View

With the Picture and Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. A total of 7 close-up views can be defined.



Figure 6-5

1. Select **PAP**. A row of three inset windows appears at the bottom.
2. Draw a navigation box on the image, and this selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To change the frame color of the navigation box or hide the box, right-click the image, select **Mega Pixel Setting** and click one of these options:
 - **Display Focus Area of PAP Mode:** Displays or hides the navigation boxes on the image.
 - **Set Color of Focus Area:** Changes the color of the box frames.
6. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and click **Delete**.
7. To exit the PAP view, right-click the image and click **PAP** again.

6.1.5 Video and Audio Configuration

You can enable the microphone and speaker for two-way audio communication, and adjust the audio volume. To access this feature, click the **Microphone** button (No. 3, Figure 6-2) or the **Speaker** button (No. 4, Figure 6-2).

Note:

1. To listen to the audio, the **Audio** function (Figure 5-11) must be enabled on the GV-Recording Server in advance.
 2. The two-way audio communication only works for GV-IP device connected through active mode.
-

6.1.6 PTZ Control

To open the PTZ control panel, click the **PTZ Control** button (No. 8, Figure 6-2) and select **PTZ Control Panel**. Different PTZ devices have different functions, so the features included in the **Option** button may vary.

This feature is only available when the connected IP camera has the PTZ function.

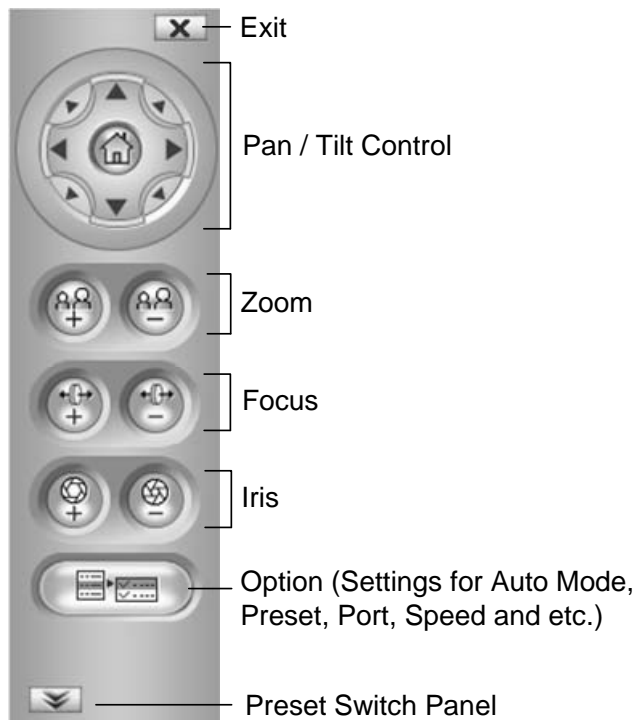


Figure 6-6

6.1.7 Visual PTZ

In addition to the PTZ control panel, you can display a visual PTZ control panel on the image. This feature is only available when the connected IP camera has the PTZ function.



Figure 6-7

- To access this feature, click the **PTZ Control** button (No. 8, Figure 6-2) and select **Visual PTZ**.
- To change the panel settings, click the green **PTZ** button on the top left corner. You will have these options:

[PTZ Control Type]

- **Fixed Direction Move:** In this mode, the dome view can only be moved to the eight directions (north, south, east, west, northeast, northwest, southeast and southwest). To move the camera view, click and hold on to the dotted red line further from the panel. The round panel appears when moving the mouse to the live view.
- **Random Move:** In this mode, you can move the camera view to any direction. Click any place on the live view for the panel to appear, and right-click for the panel to hide. To move the camera view, click and hold on to a desired direction. Click further for the camera view to move faster.
- **Center Move:** In this mode, you can zoom in and out using the mouse scroll or by drawing a block directly on the live view. The **Center Move** mode is only for GV-SD220.

[Configure]

- **Set Color:** Changes the color of the panel. Three kinds of colors are available: **Red**, **Green** and **Blue**.
- **Transparent Degree:** Adjusts the transparency level of the panel. Ten levels range from 10% (fully transparent) to 100% (fully opaque).

6.1.8 Camera Name Display

To display the camera name on the image, click the **Options** button (No. 8, Figure 6-2), and select **Show Camera Name**.

6.1.9 Image Enhancement

To enhance the image quality of live video, click the **Options** button (No. 8, Figure 6-2), and select **Image Enhance**. This dialog box appears.

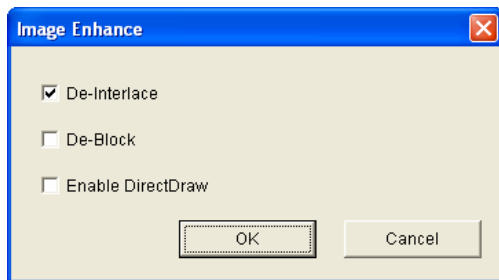


Figure 6-8

- **De-Interlace:** Converts the interlaced video into non-interlaced video.
- **De-Block:** Removes the block-like artifacts from low-quality and highly compressed video.
- **Enable DirectDraw:** Activates the DirectDraw function.

6.1.10 GPS Tracking

The GPS page allows you to see the location of the connected IP video device on Google maps. The GPS location can only be displayed when the connected IP video device is installed with the GPS equipment and the GPS function is enabled on the device.

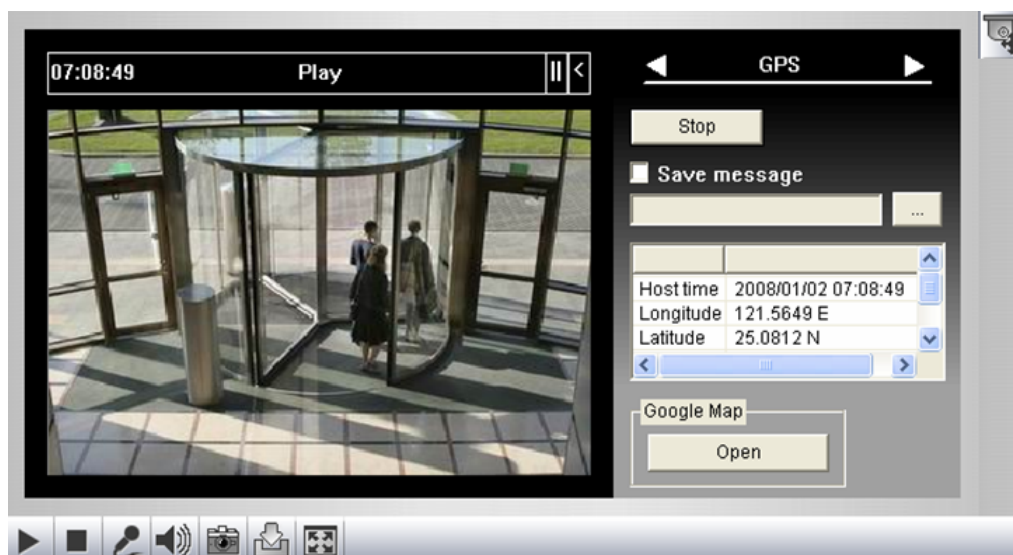


Figure 6-9

To track the location of the connected IP video device:

1. Click **Start** to activate GPS tracking. The longitude, latitude and host name of the connected IP video device will be displayed.
2. To save the location information to your local computer, select **Save message** and click [...] to assign the storage path.
3. Click **Open**. A dialog box appears.
4. Enter the **Google Maps API key**. Refer to 5.5.1 *E-map* to see how to obtain a Google Maps API Key.

- Click **OK**. A warning message appears.

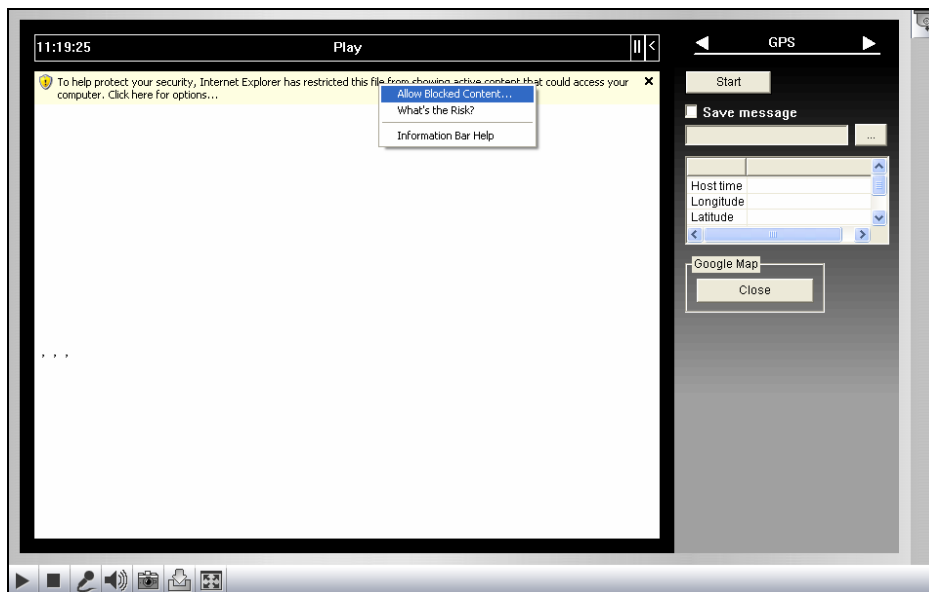


Figure 6-10


- Right-click the warning message and select **Allow Blocked Content**. The map will be displayed. The  icon indicates the location of the IP video device. At the upper right corner you have options to view different map formats, such as Satellite and Hybrid.



Figure 6-11

6.2 Multi-Channel Live View

In the left menu, expand **Live View** and select **Multi Windows** to display up to 16 channels of live images.

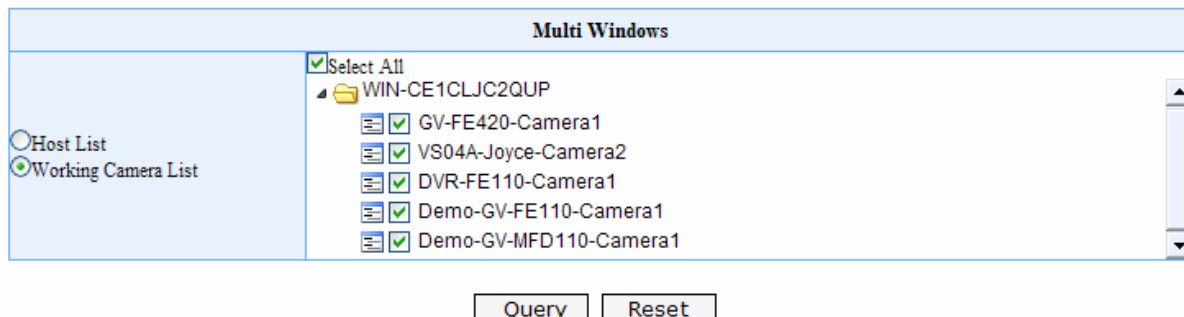


Figure 6-12

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Double-click server name and select the cameras, or select **Select All**.
3. Click **Query** to access the live view.

Note: Only Internet Explorer browser is supported for multi-channel live view.

6.3 Emap Query

In the left menu, expand **Live View** and select **Emap Query** to see the cameras' locations on Google Maps and play the live images of the camera or the Google Street View of the location.

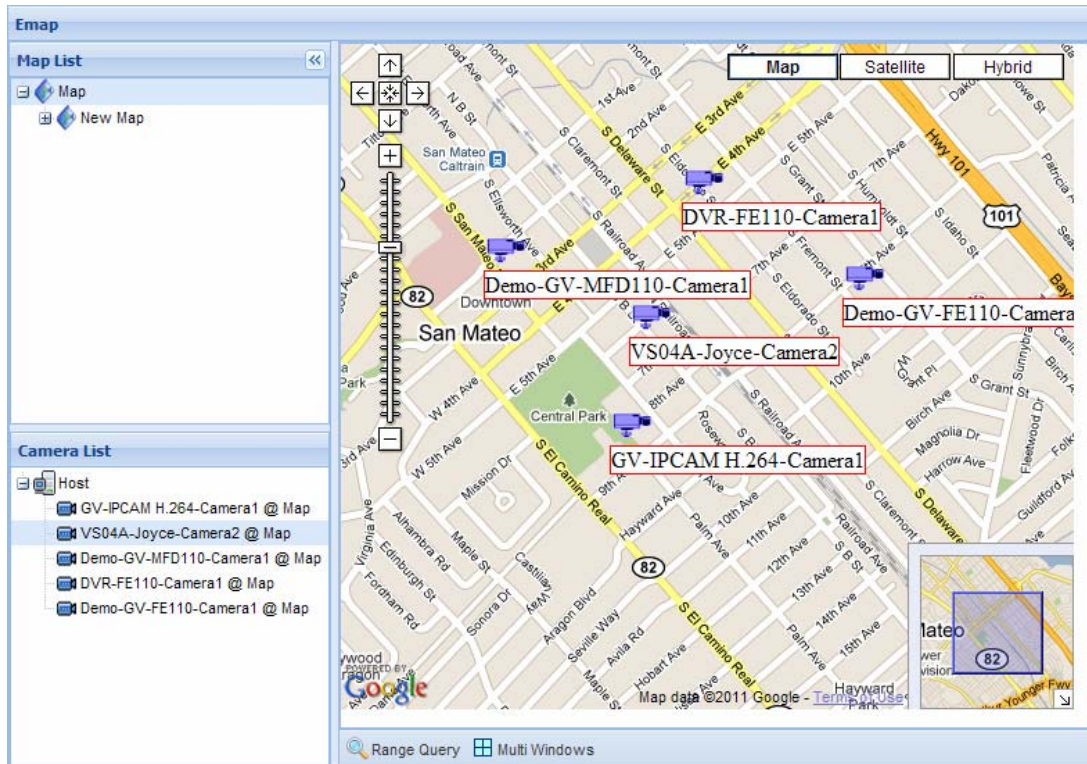


Figure 6-13

1. In the Camera List, double-click a camera to locate the camera on Google Maps.
2. Right-click the camera icon and click **Live View** to see the live view of the camera or click **Street View** to see the Google Street View of the camera location.
3. At the bottom of the page, you can click **Range Query** and a circular area will be highlighted on the map. You can adjust the location and size of the circle and click **Multi Windows** to see the live view of all cameras inside the circle.

Note: This page is only available when at least one camera is added to Emap.

6.4 Remote Playback

There are two ways to look up events under Remote Playback: **Event List Query** to search events by time range and **Preview Query** to access a camera by selecting from a list of camera snapshots.

6.4.1 Event List Query

In the left menu, expand **Remote Playback** and select **Event List Query** to search for camera events during a time period and play back the recorded events.

	Device N...	Host	Camera	Event Type	RemoteStart Time	RemoteEnd Time	Elapsed..	File Siz...	DST	Previ...	VIDEO CLIP
1	TestPC-PC	GV-BX130...	Camera1	Motion	2013-11-29 14:4..	2013-11-29 14:4..	00:00:04	0.399	No		View
2	TestPC-PC	GV-BX130...	Camera1	Motion	2013-11-29 14:4..	2013-11-29 14:4..	00:00:38	2.745	No		View
3	TestPC-PC	GV-BX130...	Camera1	Motion	2013-11-29 14:5..	2013-11-29 14:5..	00:01:01	5.146	No		View
4	TestPC-PC	GV-BX130...	Camera1	Motion	2013-11-29 14:5..	2013-11-29 14:5..	00:00:12	1.053	No		View

Figure 6-14

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Double-click the server name and select the cameras, or select **Select All**.
3. Use the **Event Type** drop-down list to select the type of event to include in the search results.
4. In the **Time** section, select **Quick** to specify a time period before and after a time point or select **Range** to specify a time range directly.
5. Click **Query** to see the search results.
6. To preview a snapshot of the video, click the **Preview** button . To see the recorded video, click **View** under Video Clip.

You can click the **Add Favorite** button to save the search criteria to the **Favorite List** in the left menu for future use. You can also export the search results in word format and excel format by clicking **Export Word** or **Export Csv**.

Note:

1. Only Internet Explorer browser is supported for Remote Playback function.
 2. When more than 10000 search results are found, browsing through the search results pages may take a long time.
-

6.4.2 Preview Query

In the left menu, expand **Remote Playback** and select **Preview Query** to see snapshots of the most recent video file recorded by the connected cameras. You can then click the snapshot to access the camera live view and search for recordings of a specified time point. This preview function allows you to quickly identify the camera you want to access.

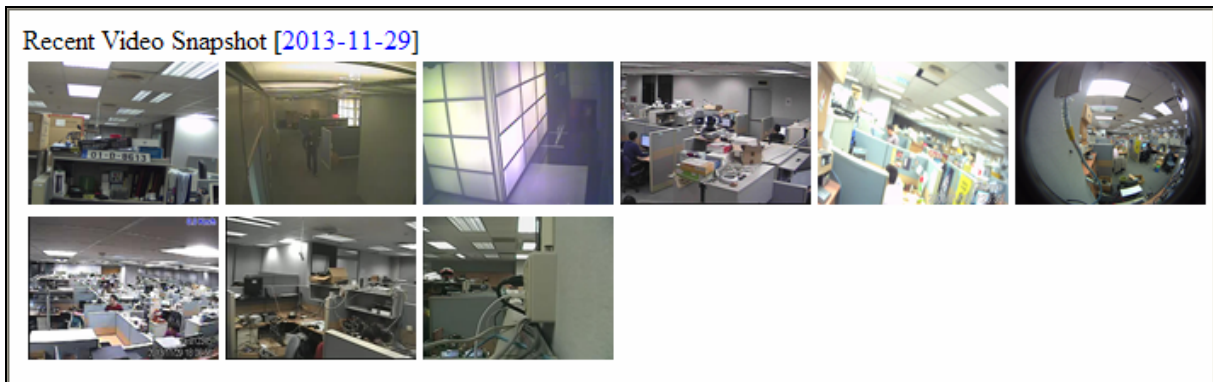




Figure 6-15

1. Select a camera by clicking the snapshot preview. This dialog box appears.



Figure 6-16

2. To play back the event from a specific time point, select the date and time next to **Remote Playback** and click the **Playback** button .
3. To download the recordings before and after the specified time point, select a time length of 5 minutes, 10 minutes or 20 minutes and click **Download**.
4. To access the camera live view, click the **Live View** button .

You can also download the Remote ViewLog program to access recorded files. Refer to 7.4 *Connecting with Remote ViewLog* for more details on how to set up Remote ViewLog.

6.5 Composite Information Query

Using the **Composite Information Query** under **Event List Query**, you can search for camera events during the time period specified, see the location of the camera on Emap, watch camera live view and play back recorded events.

Composite Information Query

☐ Host List
☒ Working Camera List

☐ Select All
☒ Test177-PC

Event Type: Select All

Time: ☒ Quick: 2011-2-1 15:00:00 before and after 5min.
☒ Range: 2011-2-2 00:00:00 ~ 2011-3-2 23:59:59

Query Reset

Remote Playback List

Query Result List			
	Camera	Event Type	RemoteSta
1	DVR-FE110-Camera1	Round the Clock	2011-02-
2	VS04A-Joyce-Camera2	Round the Clock	2011-02-
3	GV-IPCAM H.264-Camera1	Round the Clock	2011-02-
4	DVR-FE110-Camera1	Round the Clock	2011-02-
5	VS04A-Joyce-Camera2	Round the Clock	2011-02-
6	GV-IPCAM H.264-Camera1	Round the Clock	2011-02-
7	DVR-FE110-Camera1	Round the Clock	2011-02-
8	VS04A-Joyce-Camera2	Round the Clock	2011-02-
9	GV-IPCAM H.264-Camera1	Round the Clock	2011-02-
10	DVR-FE110-Camera1	Round the Clock	2011-02-

Page 1 of 1

Camera In Map

Remote Playback

Figure 6-17

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Double-click the server name and select the cameras, or select **Select All**.
3. Use the **Event Type** drop-down list to select the events to include in the search results.

4. In the **Time** section, select **Quick** to specify a time period before and after a time point or select **Range** to specify a time range directly.
5. Click **Query** to see the search results. To see the live view of a camera, select the camera and click the play button in the map.

Note:

1. This page is only available when at least one camera is added to Emap.
 2. When more than 10000 search results are found, browsing through the search results pages may take a long time.
-

6.6 System Log Query

Using the System Log Query, you can search the system events of GV-Recording Server, such as camera connection, HTTP server activation, video recycling, and USB Protection Key status etc. To access this query, expand **Event List Query** and select **System Log Query**.

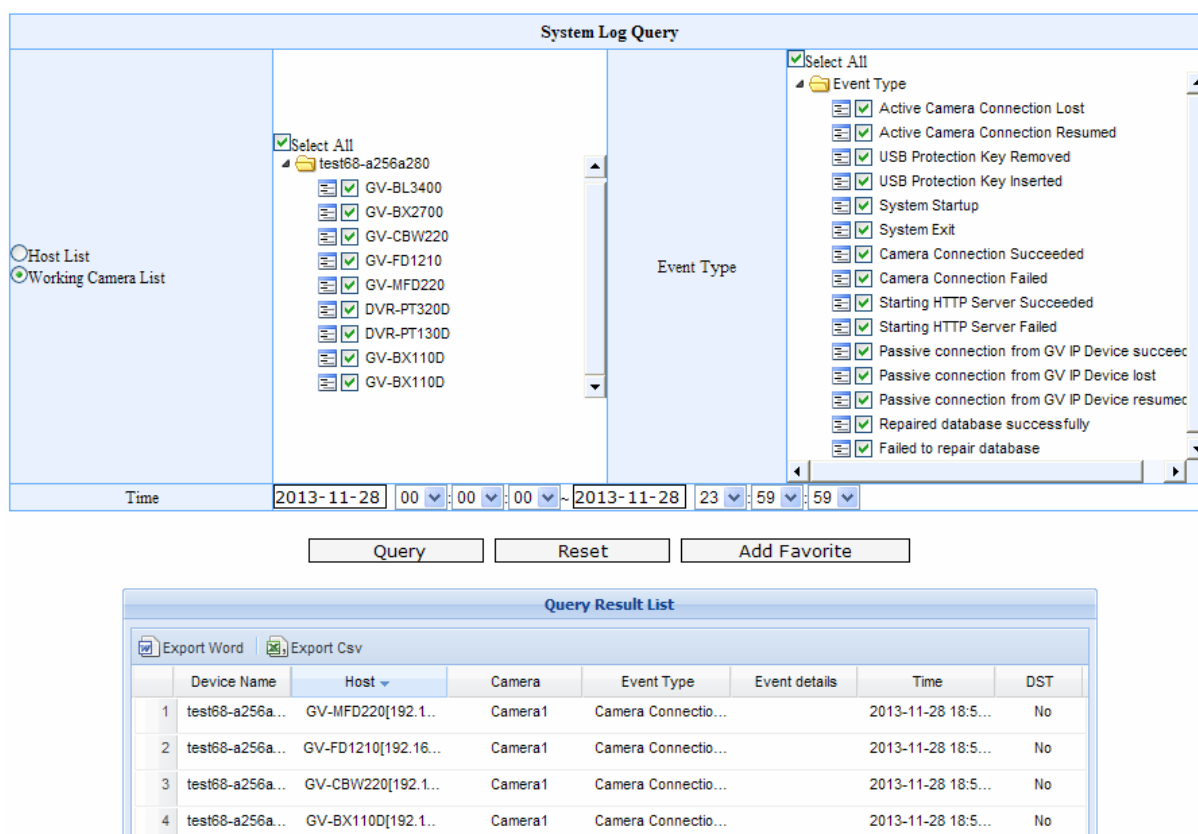


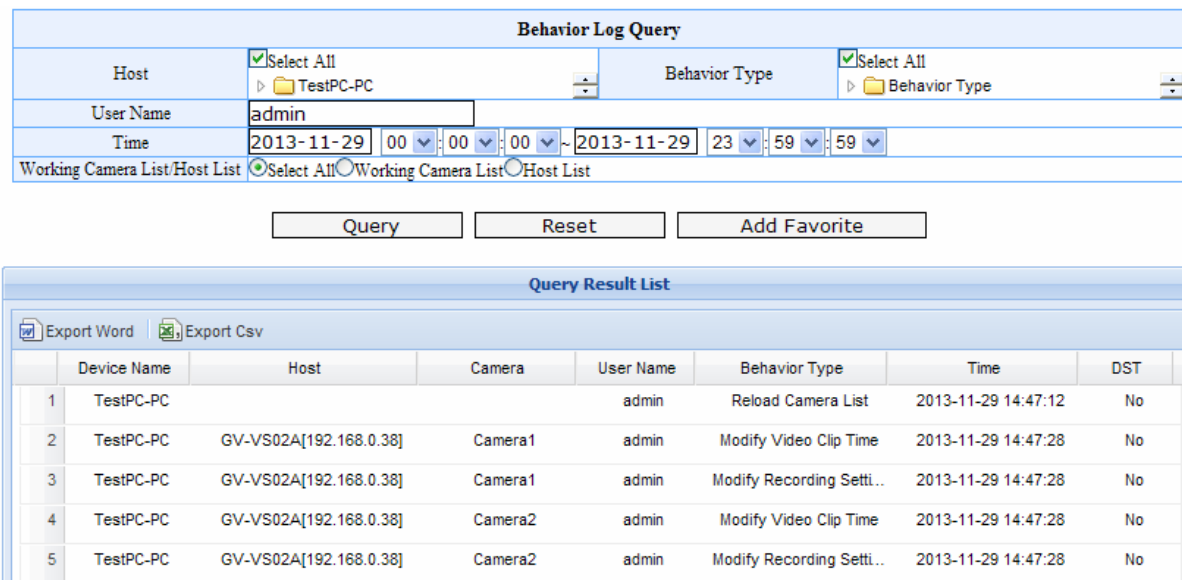
Figure 6-18

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Double-click the server name and select the cameras, or select **Select All**.
3. Under Event Type, select the types of events to include in the search results or click **Select All**.
4. In the **Time** section, select a period of time.
5. Click **Query** to see the search results.

You can click the **Add Favorite** button to save the search criteria to the **Favorite List** in the left menu for future use. You can also export the search results in word format and excel format by clicking **Export Word** or **Export Csv**.

6.7 Behavior Log Query

Using the Behavior Log Event Query, you can search the events of Supervisor's activities, such as adding a host, adding a user, modifying port, previewing video images and etc. To access this query, expand **Event List Query** and select **Behavior Log Query**.



The screenshot shows the 'Behavior Log Query' interface. It includes fields for Host (TestPC-PC), User Name (admin), and Time (2013-11-29 00:00:00 to 2013-11-29 23:59:59). Below these are buttons for 'Query', 'Reset', and 'Add Favorite'. The 'Query Result List' section shows a table with 5 rows of search results.

	Device Name	Host	Camera	User Name	Behavior Type	Time	DST
1	TestPC-PC			admin	Reload Camera List	2013-11-29 14:47:12	No
2	TestPC-PC	GV-VS02A[192.168.0.38]	Camera1	admin	Modify Video Clip Time	2013-11-29 14:47:28	No
3	TestPC-PC	GV-VS02A[192.168.0.38]	Camera1	admin	Modify Recording Setti...	2013-11-29 14:47:28	No
4	TestPC-PC	GV-VS02A[192.168.0.38]	Camera2	admin	Modify Video Clip Time	2013-11-29 14:47:28	No
5	TestPC-PC	GV-VS02A[192.168.0.38]	Camera2	admin	Modify Recording Setti...	2013-11-29 14:47:28	No

Figure 6-19

1. In the **Host** section, click the server name and select the cameras, or select **Select All**.
2. In the **User Name** section, type the Supervisor's or a client's name. You can also leave the field blank to search all users that have logged into and out the GV-Recording Server.
3. Click the server name and select the cameras, or select **Select All**.
4. Under Behavior Type, select the types of activities to include in the search results or click **Select All**.
5. In the **Time** section, select a period of time.
6. In the **Active List** section, select **Active List** to search the connecting hosts, **Inactive List** to search the disconnected hosts, or click **Select All**.
7. Click **Query** to see the search results.

You can click the **Add Favorite** button to save the search criteria to the **Favorite List** in the left menu for future use. You can also export the search results in word format and excel format by clicking **Export Word** or **Export Csv**.

6.8 Login / Logout Query

Using the Login and Logout Query, you can search the login and logout information of Supervisor and clients. To access this query, expand **Event List Query** in the left menu and select **Login/Logout Query**.

Login / Logout Query								
Device Name	<input checked="" type="checkbox"/> Select All <input type="button" value="List"/> <input checked="" type="checkbox"/> TestPC-PC			User Name	<input type="text" value="admin"/>			
Login / Logout	<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>							
Time	<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>		<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>					
Status	<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>			Mode	<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>			
DST	<input type="button" value="List"/> <input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/>							

Query Result List								
<input type="button" value="Export Word"/> <input type="button" value="Export Csv"/>								
	Device Name	User Name	Login / Logout	Time	Status	Mode	NOTE	DST
1	TestPC-PC	admin	Login	2013-11-29 14:4...	Success	Local	127.0.0.1	No
2	TestPC-PC	admin	Login	2013-11-29 17:1...	Success	Local	192.168.5.21	No
3	TestPC-PC	admin	Login	2013-11-29 17:1...	Success	Local	192.168.5.106	No
4	TestPC-PC	admin	Login	2013-11-29 17:2...	Success	Video Gateway	(192.168.0.136)	No

Figure 6-20

1. In the **Device Name** section, click the server name and select the cameras, or select **Select All**.
2. In the **User Name** section, type the Supervisor's or a client's name. You can also leave the field blank to search all users that have logged in and out the GV-Recording Server.
3. In the **Login/Logout** section, select one type of event or **Select All**.
4. In the **Time** section, select a period of time.
5. In the **Status** section, select login **Fail** or **Success**.
6. In the **Mode** section, select **Video Gateway**.
7. In the **DST** section, select **Select All** to search all events including DST (Daylight Saving Time) events, **Y** to only search DST events or **N** not to search DST events.
8. Click **Query** to see the search results.

You can click the **Add Favorite** button to save the search criteria to the Favorite List in the left menu for future use. You can also export the search results in word format and excel format by clicking **Export Word** or **Export Csv**.

6.9 Chart Analysis

Using the Chart Analysis, you can see the following types of data analysis presented in three types of graph: bar, pie and line graph.

- **System Analysis of Event Count:** Shows event counts of each type of system event.
- **Monitor Analysis of Event File Size:** Shows the total file size of events recorded under each recording policy.
- **Monitor Analysis of Event Count:** Shows event counts of events recorded under each recording policy.
- **Monitor Analysis of Time File Size:** Shows the total file size of all videos recorded in a month, a day and an hour.

To search for System Analysis of Event Count, Monitor Analysis of Event File Size, or Monitor Analysis of Event Count, follow the steps below:

System Analysis of Event Count													
<input type="radio"/> Host List	<input checked="" type="checkbox"/> Select All			Event Type	Select All								
<input checked="" type="radio"/> Working Camera List	WIN-CE1CLJC2QUP												
Time	2011-01-27	00	:	00	:	00	~	2011-01-27	23	:	59	:	59
Graph Type	<input checked="" type="radio"/> Bar Graph <input type="radio"/> Pie Graph <input type="radio"/> Line Graph												

Figure 6-21

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Click the server name and select the desired IP video devices, or select **Select All**.
3. In the **Event Type** section, select one type of event or **Select All**.
4. In the **Time** section, select a period of time.
5. Select a type of graph.
6. Click **Query** to display search results.

To search for Monitor Analysis of Time File Size, follow the steps below:

Monitor Analysis of Time File Size			
<input type="radio"/> Host List	<input checked="" type="checkbox"/> Select All	Event Type	Select All
<input checked="" type="radio"/> Working Camera List	WIN-CE1CLJC2QUP		
Graph Type	<input checked="" type="radio"/> Bar Graph <input type="radio"/> Pie Graph <input type="radio"/> Line Graph		
PeriodType	<input type="radio"/> By Year <input type="radio"/> By Month <input checked="" type="radio"/> By Day	Period	Year: 2011 Month: 1 Day: 28

Figure 6-22

1. Select **Working Camera List** or **Host List** to list all connecting cameras or list cameras by IP video devices.
2. Click the server name and select the desired IP video devices, or select **Select All**.
3. In the **Event Type** section, select one type of event or **Select All**.
4. In the **Graph Type** section, select a type of graph.
5. In the **Period Type** section, select By Year to see the total file size of each month in a year, select By Month to see the daily file size in a month or select By Day to see the file size of each hour in a day.
6. In the **Period** section, select the year, month or date depending on the Period Type selected.
7. Click **Query** to display search results.

6.10 System Analysis Report

Using the System Analysis Report, you can see the following types of data analysis presented in a PDF file.

- **Recording Summary:** Shows the total recording size and the total counts of connection lost on the specified dates.
- **Recording Information of Disk:** Shows the recorded date, file size and current speed for each disk drive on the specified dates.
- **Disk Space:** Estimates the keep days for the recorded files according to the average recording speed and the total disk space on the specified dates.
- **Recording Size of Hour:** Shows the total file size recorded per hour, and displays the results in a bar graph on the specified dates.
- **Recording Information of Camera:** Shows the recorded number and the total file size of videos for each IP address connected on the specified dates.
- **Statistics of Connection Lost:** Shows the invalid connection records for the cameras connected on the specified dates.
- **Camera Information:** Shows the camera name and their IP addresses connected on the specified dates.
- **Statistics of Event:** Shows the event types and the event counts on the specified dates.

To convert the data analysis to a PDF file, follow the steps below.

System Analysis Report	
Date	2013-9-2 ~ 2013-9-5

Figure 6-23

1. Select **System Analysis Report** from the left menu under the Chart Analysis File Folder.
2. Click first **Date** field to set a desired start date.
3. Click the second **Date** field to set a desired end date.
4. Click the **PDF** button to create the PDF file.

Chapter 7 Connections with Clients

The GV-Recording Server can simultaneously transmit up to 300 channels to clients. You can establish connection with GV-System, MultiView, Multicast, GV-VMS, Remote ViewLog, GV-Control Center, GV-Mobile Server and GV-Edge Recording Manager.

7.1 Connecting with GV-System

You need to configure the GV-System to access video streaming from the GV-Recording Server. You can find the GV-System from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

1. On the main screen, click the **Configure** button, select **System Configure**, select **Camera Install** and select **IP Camera Install**. This dialog box appears.

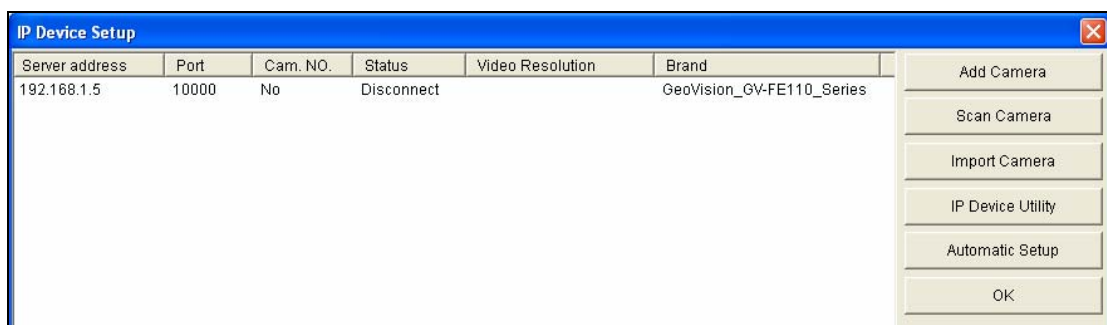


Figure 7-1

2. Click the **Add Camera** button. This dialog box appears.

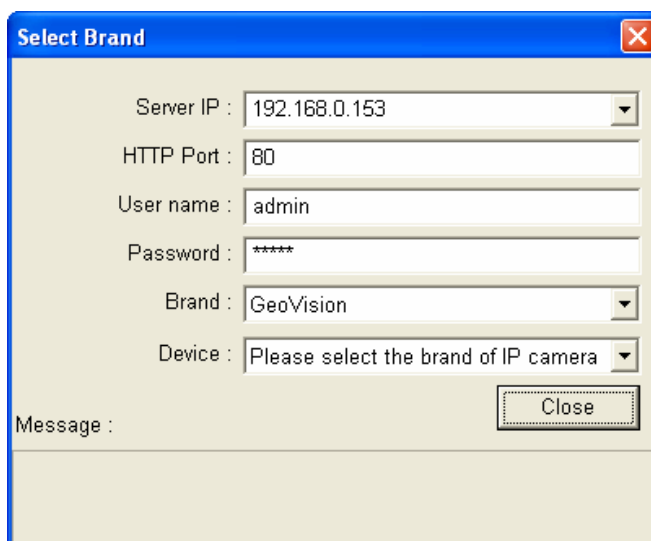


Figure 7-2

- Type the IP address or domain name of the GV-Recording Server. Keep default HTTP port as 80 or change to match the HTTP port configured in GV-Recording Server. Type the client's username and password created on the GV-Recording Server. Select **GV-Video Gateway / GV-Recording Server** from the Device drop-down list. This dialog box appears.

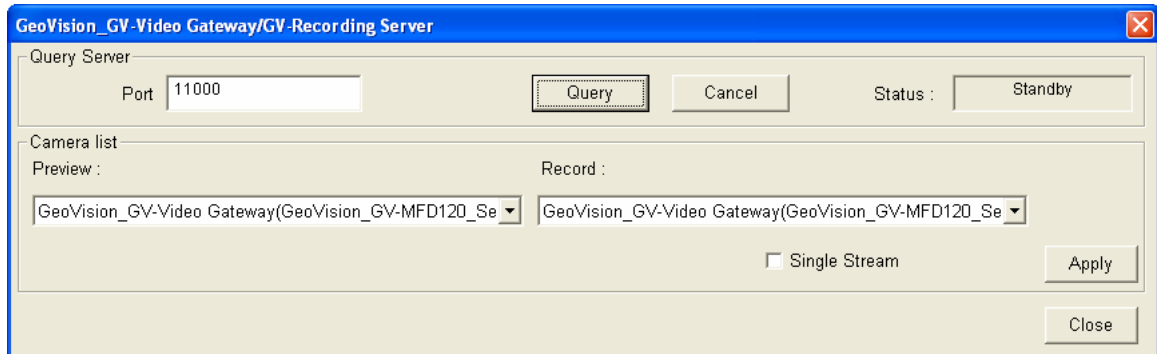


Figure 7-3

- Keep the default communication port of GV-Recording Server as 11000, or modify the value to match the TCP/IP port on the GV-Recording Server (Figure 5-24). Click the **Query** button to attempt connection to the GV-Recording Server. When the connection is established, the camera options will be displayed in the Preview and Record drop-down lists.
- Select one camera to be connected. The selections in the Preview and Record drop-down lists will be the same.
- Click **Apply**. The IP camera is added to the list.
- To add another IP camera from the GV-Recording Server, click the **Add** button and follow steps 2 to 6. The number of IP cameras you can add is depended on your GV-System's capacity.
- Click the listed camera, and select **Display Position** to map the IP camera to any channel on the GV-System. After the mapping is completed, the Status column will display "Connected".

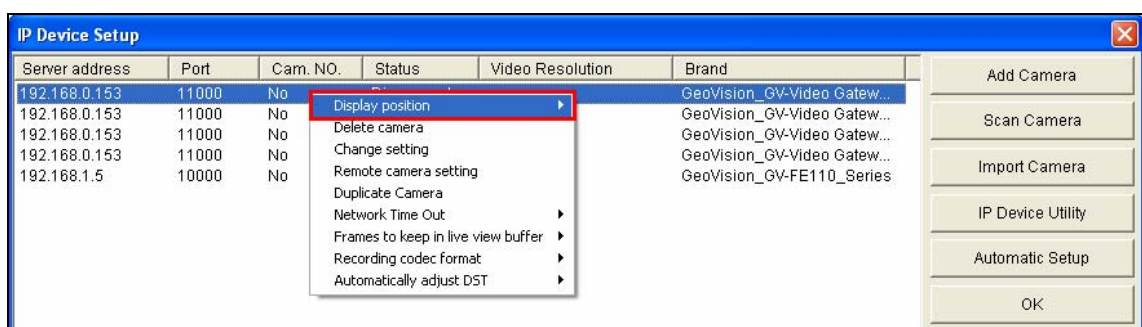


Figure 7-4

9. To listen to live audio from the IP camera, click the **Configure** button, select **AV Setting**, select **Audio Settings** and select **Wave Out**.

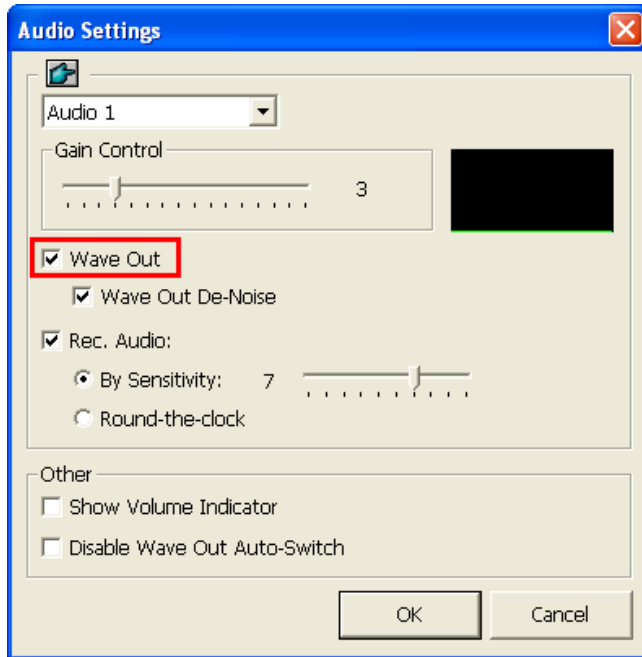


Figure 7-5

10. Click **OK** to exit all open dialog boxes. The IP camera from the GV-Recording Server is now displayed at specified channel.
11. To talk to the surveillance area of the IP camera, right-click its mapped channel, select **Camera x** and select **Talk Back Toggle**.

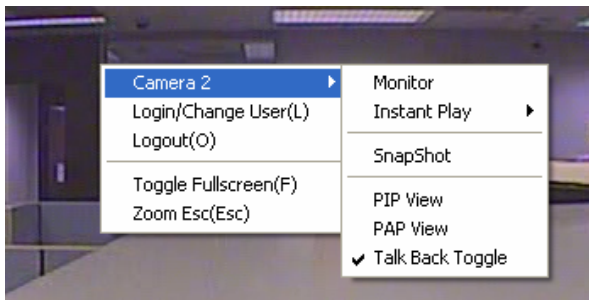


Figure 7-6

For details on GV-System, see *GV-DVR User's Manual* on Software DVD.

7.2 Connecting with Multi View

You can find the Multi View from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

After installing the program, you need to log in the Multi View to access video streaming from the GV-Recording Server.

1. In the login dialog box, click the **Edit** button. This dialog box appears.

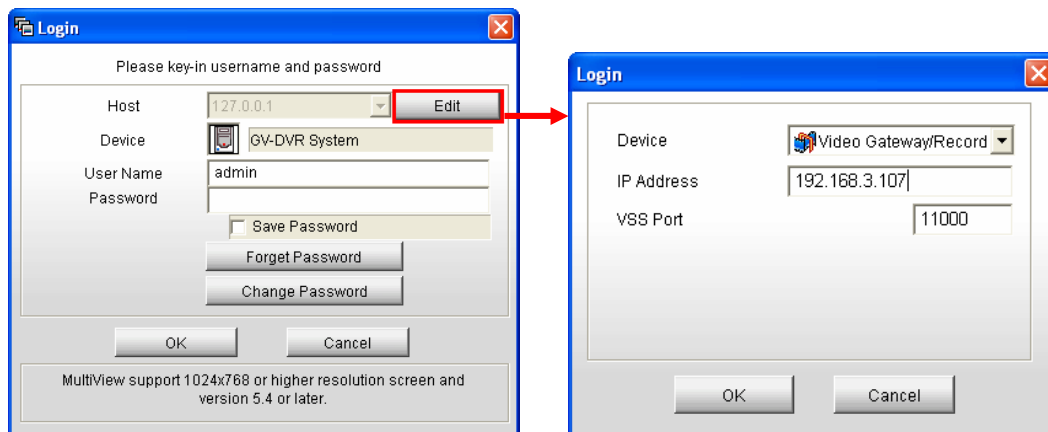


Figure 7-7

2. Select **Video Gateway / Recording Server** from the Device drop-down list.
3. Type IP address or domain name of the GV-Recording Server.
4. Keep the default VSS Port as 11000; otherwise modify it to match the TCP/IP port on the GV-Recording Server (Figure 5-21).
5. Click **OK** to return to the login page.

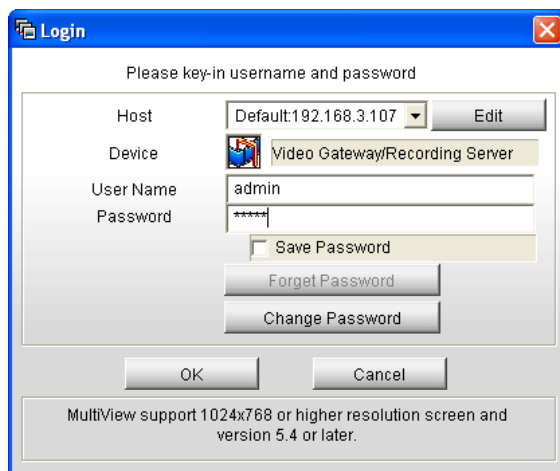


Figure 7-8

6. Type the client's username and password created on the GV-Recording Server.
7. Click **OK** to login.

8. The GV-Recording Server created on the Host list will be listed. Drag and drop its IP cameras to the desired channels on the Multi View.

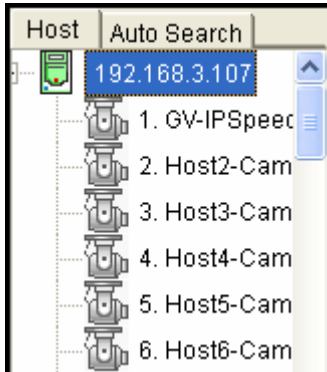


Figure 7-9

For details on the Multi View functions, see “Multi View Viewer”, Chapter 8 Remote Viewing, *GV-DVR User’s Manual* on Software DVD.

7.3 Connecting with Multicast

The Multicast view allows you to receive video and audio streams from a multicast group. You will need to first enable the multicast function as described in 5.3.5 Video Gateway.

You can find the Multicast from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

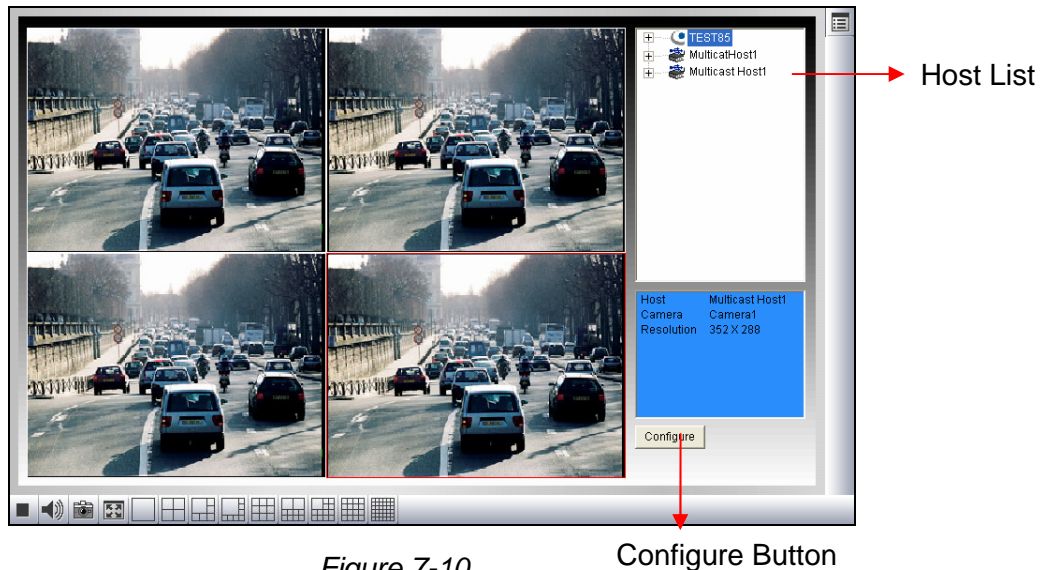


Figure 7-10

1. The host(s) in the multicast group is displayed automatically on the host list. If you cannot see any host displayed, click the **Configure** button, select **General Setup**, select **Multicast** and ensure the relevant IP address, port number and network card are correctly configured.
2. Expand the Host folder and drag the desired cameras to the screen for display. If the host has already set a password, you will be promoted to enter it at this step.
3. To receive audio broadcasting, first ensure a speaker is properly installed on the local computer. Then click the **Configure** button, select **General Setup**, select **Receive broadcast audio**, and ensure the broadcast IP address and port number are correctly configured.
4. To save the current settings of screen division and camera display for future use, click the **Configure** button, select **Video List Setup**, and select **Export**. You can also select **Import** to apply the pre-defined settings.




Note: Using Multicast, you can only connect to GV-Recording Server under LAN.

7.4 Connecting with GV-VMS

To set up the cameras from the GV-Recording Server on the GV-VMS, follow these steps:

You can find the GV-VMS from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

Note: The following instructions are based on GV-VMS V14.10 software and user interfaces.

1. To access the IP Device Setup page, click **Home** , select **Toolbar** , click **Configure**  and select **Camera Install**.

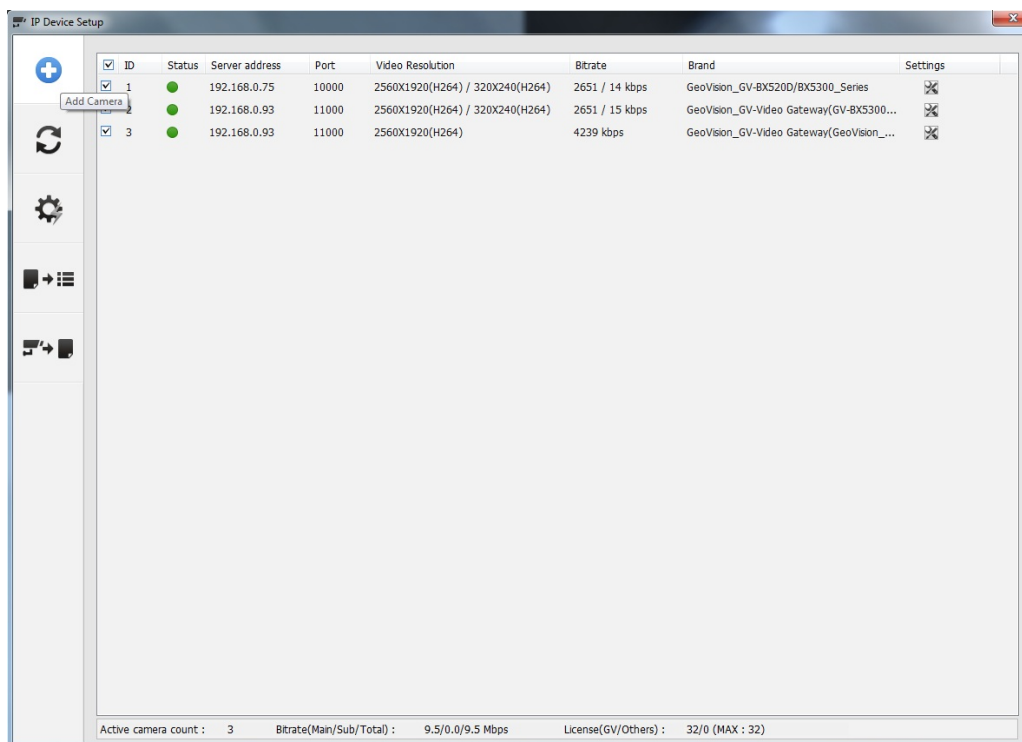


Figure 7-11

2. Click **Add Camera** . This dialog box appears.



Figure 7-12

3. Type the IP address or domain name of the GV-Recording Server. Keep default HTTP port as 80 or change to match the HTTP port configured in GV-Recording Server. Type the client's username and password created on the GV-Recording Server. Select **GV-Video Gateway / GV-Recording Server** from the Device drop-down list. This dialog box appears.

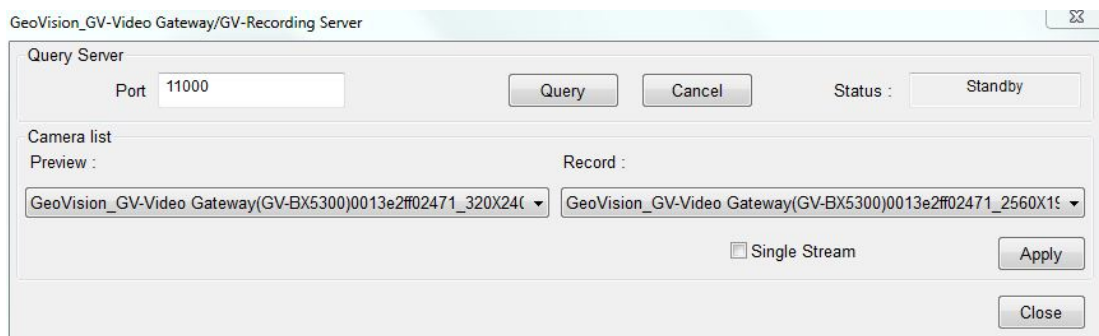


Figure 7-13

4. Keep the default communication port of GV-Recording Server as 11000, or modify the value to match the TCP/IP port on the GV-Recording Server (Figure 5-24). Click the **Query** button to attempt connection to the GV-Recording Server. When the connection is established, the camera options will be displayed in the Preview and Record drop-down lists.
5. Select one camera to be connected. The selections in the Preview and Record drop-down lists will be the same.
6. Click **Apply**. The IP camera is added to the list.
7. To add another IP camera from the GV-Recording Server, click the **Add** button and follow steps 2 to 6. The number of IP cameras you can add is depended on your GV-VMS's capacity.

8. Drag and drop the listed cameras to the live view grid for display.

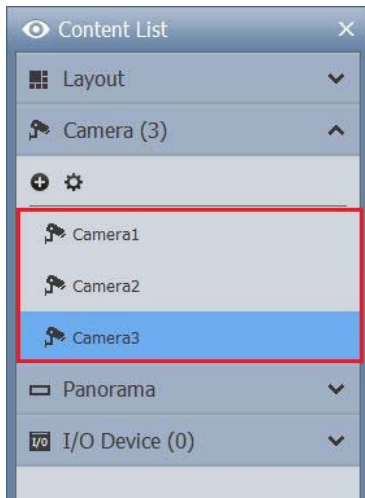



Figure 7-14

9. To listen to live audio from the camera, click the **Setup** button  of the connected camera on the IP Device List, select **Audio Settings** and select **Wave Out**.

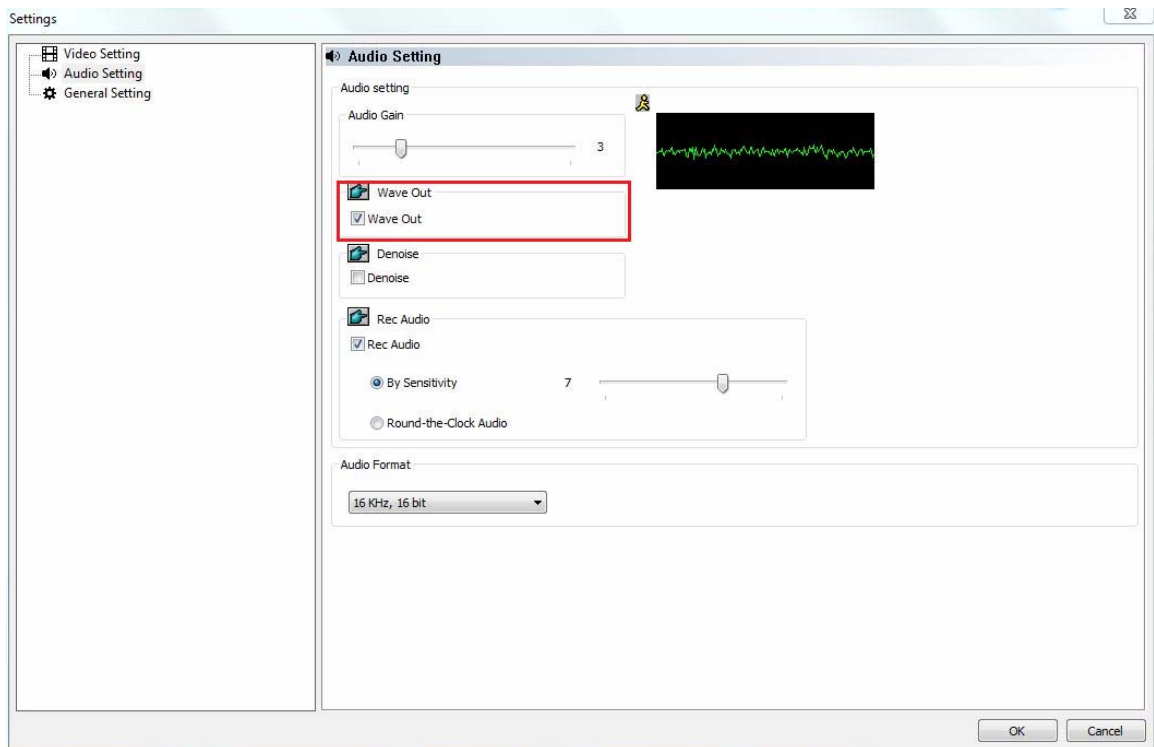


Figure 7-15


12. To talk to the surveillance area of the camera, click **Tools**  and select **Talk Back Toggle**.



Figure 7-16

For details on GV-VMS, see *GV-VMS User's Manual* on Software DVD.


7.5 Connecting with Remote ViewLog

The files recorded on the GV-Recording Server can be played back remotely using the GV-Remote ViewLog. You can find the GV-Remote ViewLog from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

Note: When the Remote ViewLog program is started, it will pop up the selections of Remote ViewLog Server and Remote Storage System. Just click any place on the window to ignore and close the pop-up window.

To access recorded files from the GV-Recording Server through the Remote ViewLog program, you can configure the Address Book for downloading the files of specific IP devices, or connect through the Remote ViewLog Service for downloading the files of all connected IP devices. For quick access to the recorded files of specific IP device, you may connect through the Address Book.

Configuring Address Book

1. On the main screen, click the **Tools** button  and select **Address Book**. This dialog box appears.

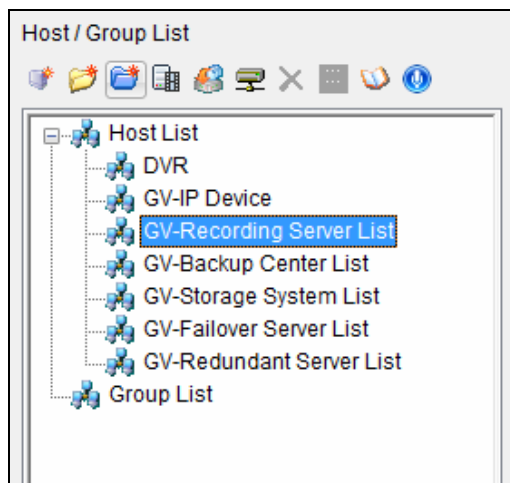

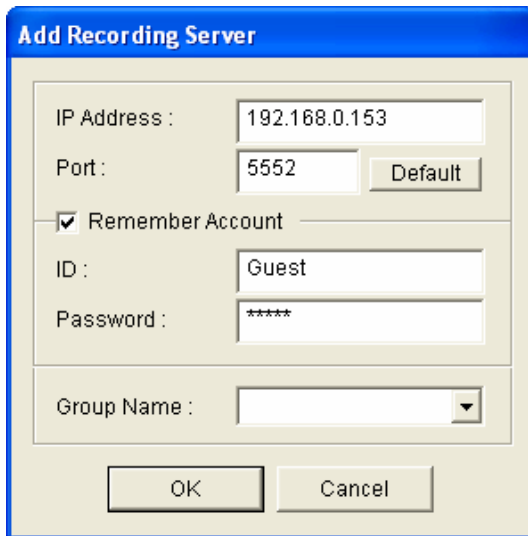


Figure 7-17

2. Click **Add GV-Server** button  and select **Add GV-Recording Server**. This dialog box appears.



The dialog box titled "Add Recording Server" contains the following fields and controls:

- IP Address :** Text box containing "192.168.0.153".
- Port :** Text box containing "5552" and a **Default** button.
- ☒ **Remember Account** (checkbox is checked).
- ID :** Text box containing "Guest".
- Password :** Text box containing "*****".
- Group Name :** Dropdown menu.
- OK** and **Cancel** buttons at the bottom.

Figure 7-18

3. Type the **IP address** of the GV-Recording Server. Use the default connection port 5552 or modify to match the settings on GV-Recording Server. See *5.4.4 Remote ViewLog*.
4. Type the **ID** and **Password** of the GV-Recording Server user account. To access the recorded files without entering the ID and password again when connecting with the device, click **Remember Account**.
5. To add the GV-Recording Server to address book under a group, select a **Group Name** or type a new name.
6. Click **OK**. The GV-Recording Server is now added to the address book.

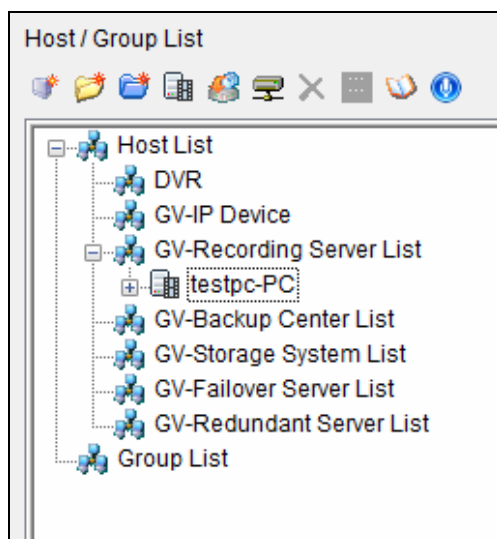


Figure 7-19

7. Right-click an IP device listed under the GV-Recording Server List and select **Connect**.

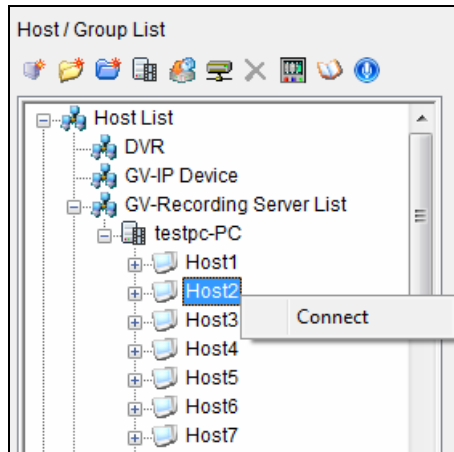


Figure 7-20

Note: Users that did not click **Remember Account** in Add Recording Server (Figure 7-12) will have to type the **ID** and **Password** of the GV-Recording Server user account.

8. The ViewLog video player appears and recorded events will be listed for playback.

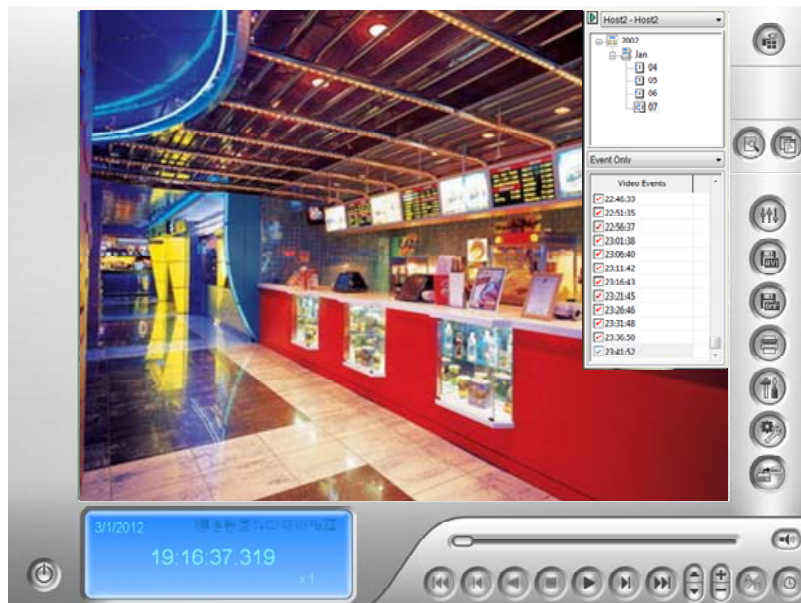



Figure 7-21

Connecting through Remote ViewLog Service

1. On the main screen, click the **Tools** button  and select **Remote ViewLog Service**. This dialog box appears.

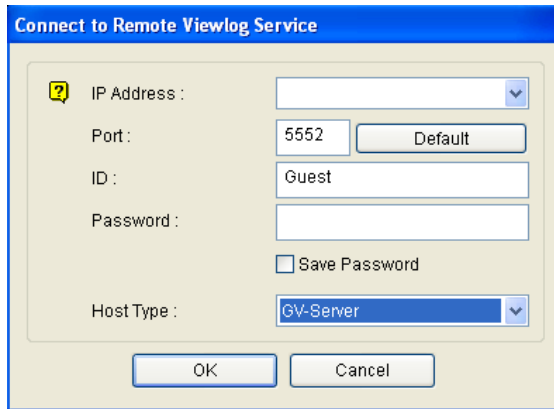


Figure 7-22

2. Type the **IP address**, login **ID** and **password** of the GV-Recording Server. Keep the default port **5552** or modify it if necessary.
3. In the Host Type, select **GV-Server**.
4. Click **Connect**. The recorded files of the GV-Recording Server are ready for playback.

For details on GV-Remote ViewLog, see Chapter 3 Video Playback, *GV-DVR User's Manual* on Software DVD.

7.6 Connecting with the GV-Control Center

You need to configure the GV-Control Center to access video streaming from the GV-Recording Server. You can find the GV-Control Center from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

Note: The GV-Recording Server is only compatible with the GV-Control Center of version 3.0 or later.

1. On the Host List, right-click **Recording Server List** and select **Add Recording Server**. The Host Settings dialog box appears.

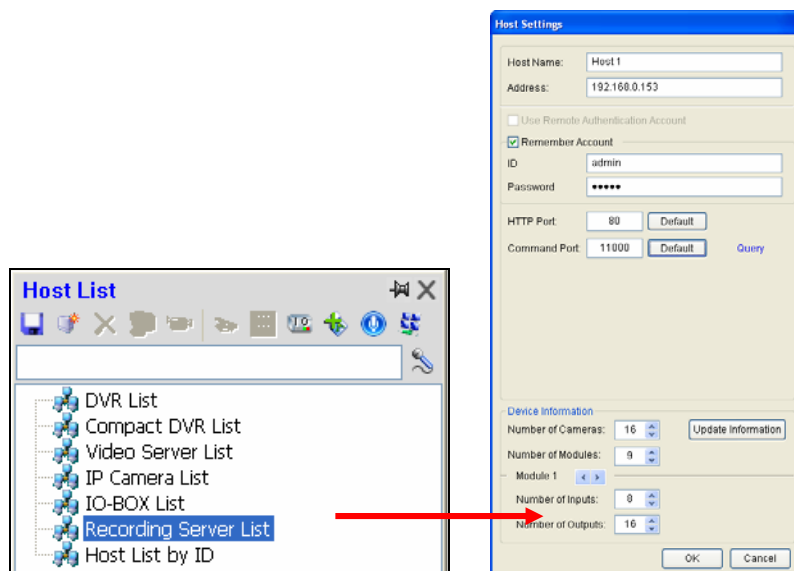


Figure 7-23

2. Name the host of GV-Recording Server.
3. Type the IP address or domain name of the GV-Recording Server.
4. Type the client's username and password created on the GV-Recording Server.
5. Keep the communication ports as default settings; otherwise modify them to match the HTTP (default value: 80) and TCP/IP (default value: 11000) ports on the GV-Recording Server (Figure 5-25).
6. Click the **Update Information** button to request the number of cameras from the GV-Recording Server. When the update is complete, the message *"Update system information successfully"* will appear.
7. Click **OK**. The host is created under the Recording Server List.

For details on GV-Control Center, see *GV-Control Center User's Manual* on Software DVD.

7.7 Connecting with the GV-Mobile Server

You need to configure the GV-Mobile Server to access video streaming from the GV-Recording Server. You can find the GV-Mobile Server from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

Note: The GV-Recording Server is only compatible with GV-Mobile Server of version 1.3 or later.

1. Select a camera from the left menu and click the **Stream Source** tab. This window appears.

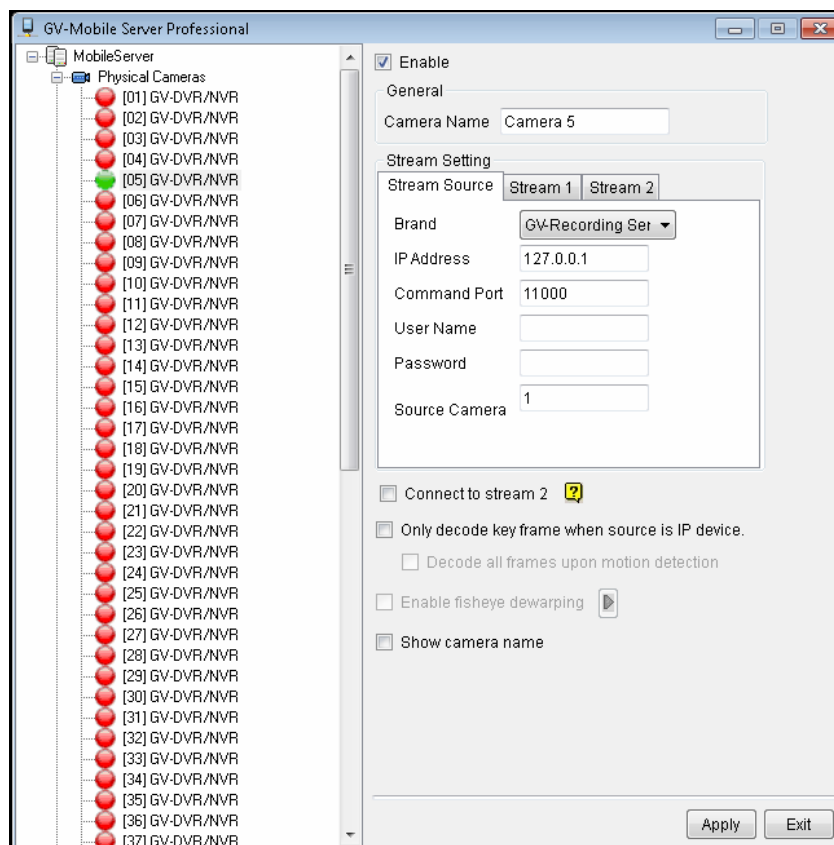



Figure 7-24

2. Type a name to describe the camera in the **Camera Name** field (Max. 31 characters).
3. Configure the connection settings.
 - A. Select **GV-Recording Server** for **Brand**.
 - B. Type the **Command Port**, **IP Address**, **User Name** and **Password** of the GV-Recording Server. The default command port for GV-Recording Server is **11000**.
 - C. Type the camera number for live viewing in **Source Camera**. The default setting is 1.


4. If your GV-IP device supports dual streams, GV-Mobile Server connects to stream 1 by default. To connect to stream 2, select **Connect to stream 2**.
5. To decode key frames for IP source, select **Only decode key frame when source is IP device**. To decode all frames when a motion is detected and decode key frames when there is no motion, select **Decode all frames upon motion detection**.
6. If the camera is a fisheye camera, select **Enable fisheye dewarping**, and click  to open the FisheyeConfig window. To configure dewarping settings, right-click the image in the window. .
7. To show the camera name specified in Step 2 on the live view, select **Show camera name**.
8. Click **Apply**.

For details on GV-Mobile Server, see *GV-Mobile Server User's Manual* on Software DVD.

7.8 Connecting with the GV-Edge Recording Manager

You need to configure the GV-Edge Recording Manager to access video streaming from the GV-Recording Server.

You can find the GV-Edge Recording Manager from the Software DVD. Click **2. Install GeoVision Primary Applications** to access the installation program.

1. From the Host list, click the **Add Host** button  and select a device type. The Host Settings dialog box appears. The settings may vary slightly for different device types. The following is an example of GV-IP Camera.

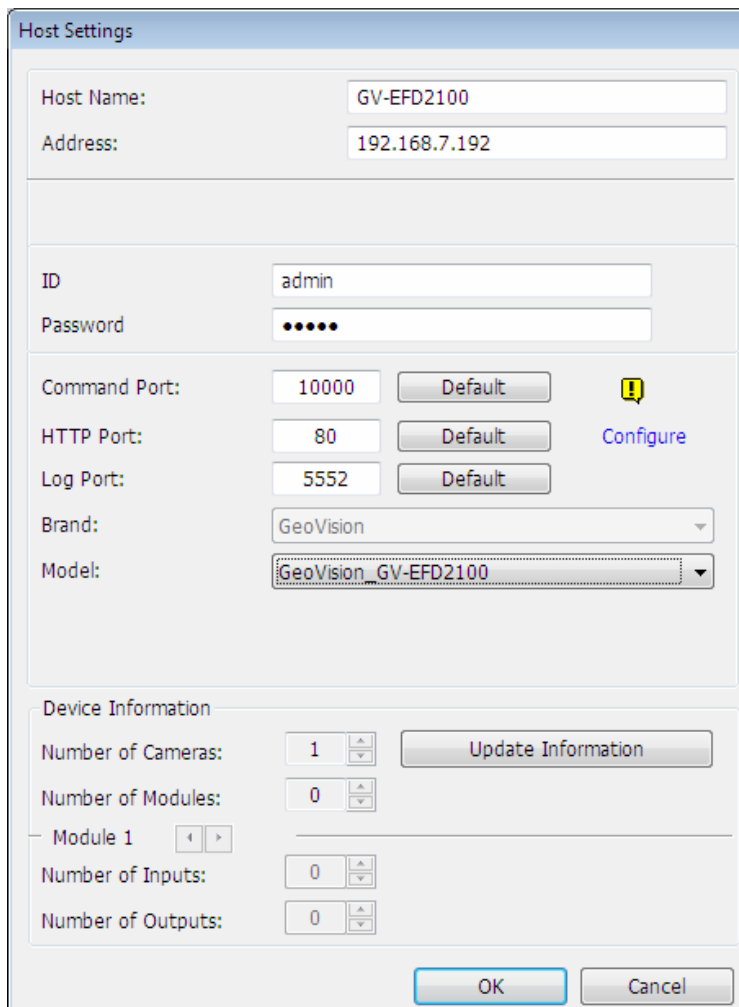


Figure 7-25

2. Type the Host Name, IP address, ID and password of the host. Modify the Communication Port if necessary.
3. Click the **Update Information** button to request the number of cameras and I/O modules installed.
4. Click **OK** to add the host. The host is added to the Host List.

5. Drag and drop the added camera to the Live View Window for live view display.

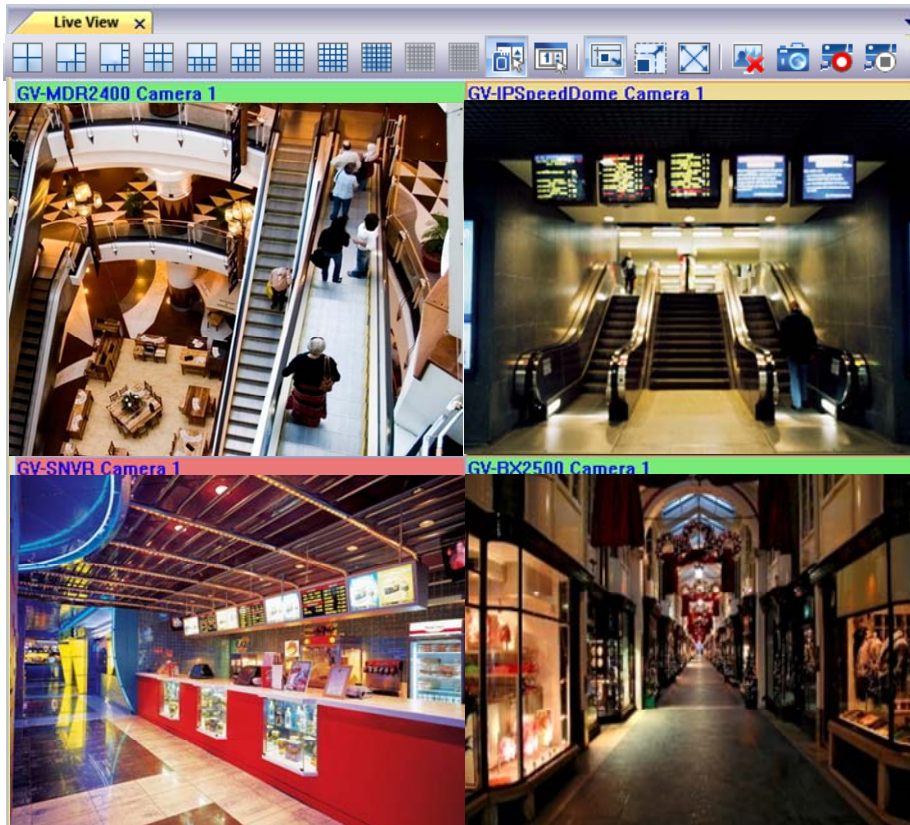


Figure 7-26

For details on GV-Edge Recording Manager, see *GV-Edge Recording Manager User's Manual* on Software DVD.

Specifications

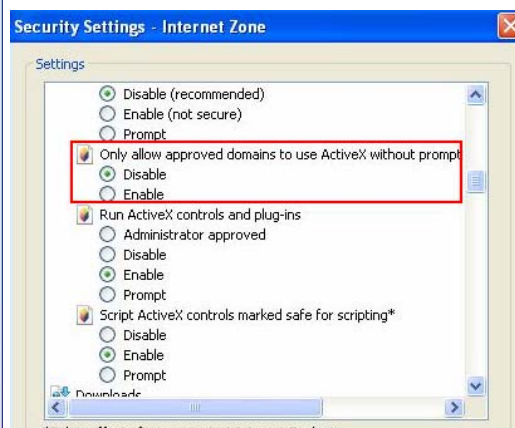
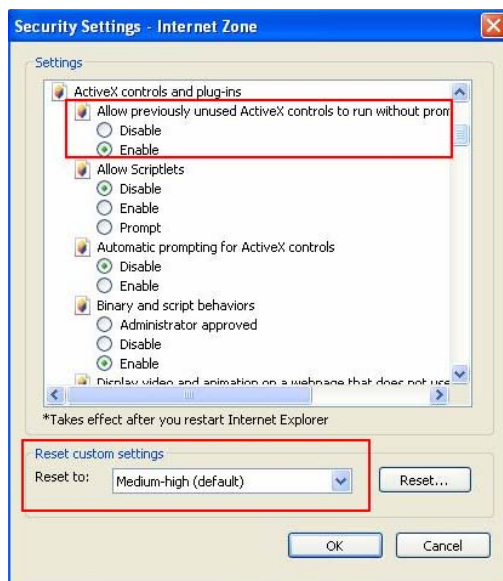
Number of IP Video Device Connections	128 channels
Number of Remote Client Connections	300 channels
Active Connections	Yes
Passive Connections	Yes (only for GV-IP devices)
3 rd Party IP Cameras Support	Yes
Live Viewing	Single live view, multi-channel live view
Recording	Yes (up to 128 channels)
Remote Backup	Yes (with GV-Backup Center, GV-Failover Server and GV-Redundant Server)
Protocol	DynDNS, HTTP, HTTPS, ONVIF, PSIA , RTSP, SMTP, TCP, UDP, UPnP
E-mail Notification	Yes (for Active connection lost, passive connection lost, USB protection key removed, recycling of recorded video, start keep days operation, motion detection, disk full, disk error, I/O trigger, disk removed, recording failure)
SMS Notification	No
2-Way Audio	Yes (only for GV-IP devices through active connection)
GPS support	Yes (only for GV-IP cameras)
Number of Accounts	Up to 1000 accounts
Mobile Phone Support	Yes (GV-Eye)
Bandwidth Control	No
IE Live View	Yes (up to 36 channels)
IE Event Query	Yes
IE I/O Control	No
Languages	Arabic / Bulgarian / Czech / Danish / Dutch / English / Finnish / French / German / Greek / Hebrew / Hungarian / Indonesian / Italian / Japanese / Lithuanian / Norwegian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Swedish / Thai / Traditional Chinese / Turkish

Appendix

A. Settings for Internet Explorer 8 or later

If you use Internet Explorer 8 or later, it is required to complete the following setting.

1. Set the Security to **Medium-high (default)**.
2. Enable **Allow previously unused ActiveX controls to run without prompt**.
3. Disable **Only allow approved domains to use ActiveX without prompt**.



B. RTSP Protocol Support

The GV-Recording Server can support RTSP protocol for video streaming.

To connect using **TCP** port, use the following RTSP command. The default port is 554.

rtsp://<Recording Server IP>/<camNo.>_<streamNo.>

For example, rtsp://192.168.3.111/cam1_stream1

To connect using **UDP** port, use the following RTSP command. The default port range is 17300 to 17380.

rtsp://<Recording Server IP>:<port>/<camNo.>_<streamNo.>

For example, rtsp://192.168.3.111:17300/cam1_stream1

Note:

1. The RTSP server must be enabled on the Web interface. See Figure 5-21.
 2. H.264 is the only codec supported by RTSP streaming.
 3. Only VLC media player and QuickTime Player are supported for streaming H.264 video via RTSP protocol.
-

C. Supported Third-party IP Devices Brands and Protocols

The GV-Recording Server is compatible with GeoVision IP devices and the following third-party IP device brands. To see the supported models for each brand, refer to the Supported IP Camera List on GeoVision's website by clicking the links below.

Brands	
Arecont Vision	http://www.geovision.com.tw/english/product/SupportIPCAMR_Arecont.asp
AXIS	http://www.geovision.com.tw/english/product/SupportIPCAMR_AXIS.asp
HikVision	http://www.geovision.com.tw/english/product/SupportIPCAMR_hikvision.asp
GeoVision	http://www.geovision.com.tw/english/product/SupportIPCAMR_GeoVision.asp
Panasonic	http://www.geovision.com.tw/english/product/SupportIPCAMR_Panasonic.asp
Sony	http://www.geovision.com.tw/english/product/SupportIPCAMR_SONY.asp
VIVOTEK	http://www.geovision.com.tw/english/product/SupportIPCAMR_VIVOTEK.asp

Note: GV-Recording Server V1.2.4 only supports IP devices with V8.5.9.0 or earlier versions listed under the GV S/W column in the support list.

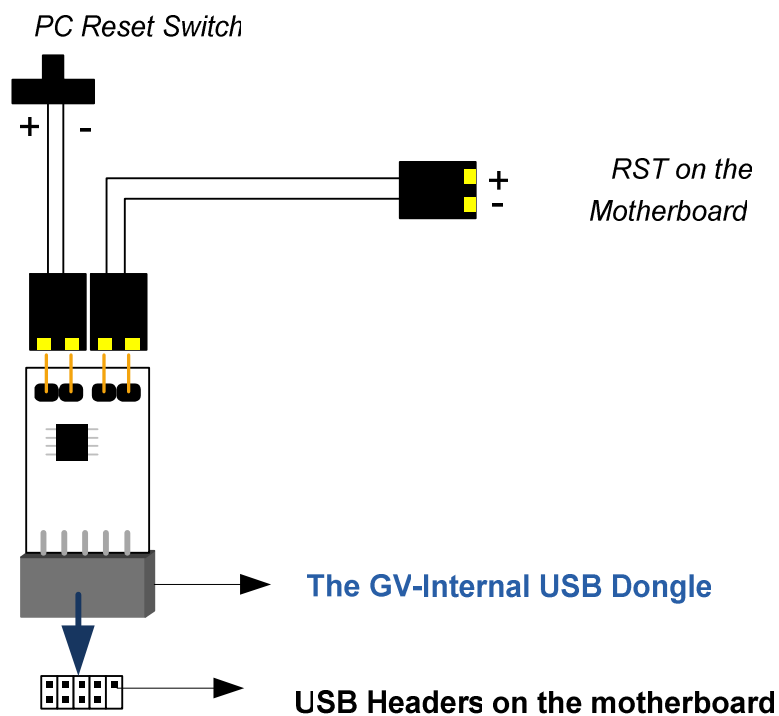
GV-Recording Server also allows for integration with all other IP video devices compatible with the following protocols.

Protocols		
RTSP	PSIA	ONVIF

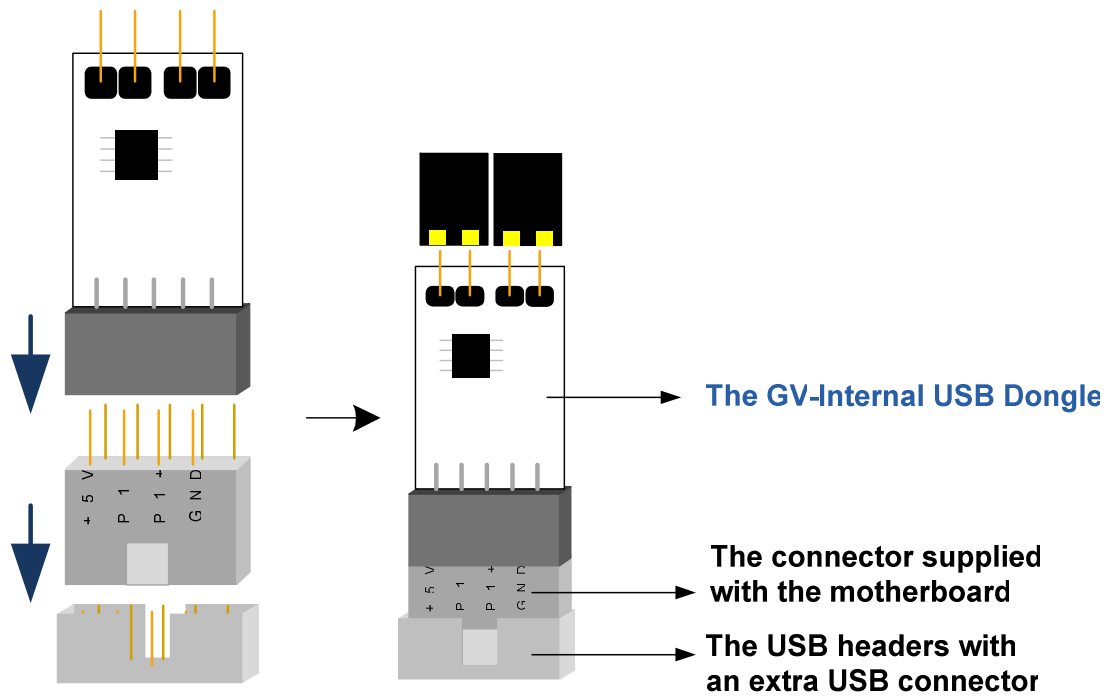
D. Installing the Internal USB Dongle

Follow the instructions below to install the internal USB dongle for the GV-Recording Server.

1. Turn off the computer, and open the case.
2. Connect the **GV-Internal USB Dongle** to the USB headers on the motherboard.
3. Remove the wire of the computer's reset switch from the motherboard, and connect it to the **GV-Internal USB Dongle**. Use the supplied Jumper Wire to connect the pins on the **GV-Internal USB Dongle** and the reset pins on the motherboard.



4. For some motherboards, the internal USB headers are integrated with an extra connector, making it unfit for the **GV-Internal USB Dongle** to plug in. In this case, it is required to use a connector supplied with the motherboard to connect the **GV-Internal USB Dongle** to the motherboard.

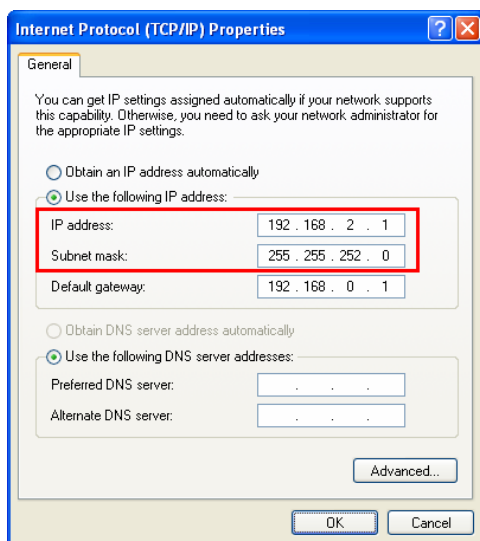


Note: Ensure not to remove the GV-Internal USB Dongle when the computer is powered on; otherwise it would cause the computer to restart or the GV-Internal USB Dongle to be damaged.

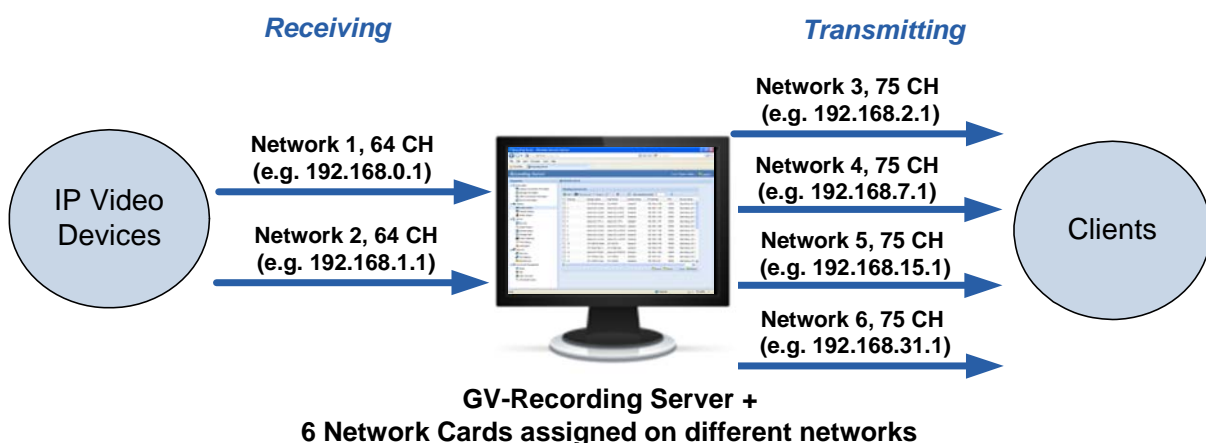
E. How to Avoid Network Bottleneck

To increase network bandwidth and avoid network bottleneck, you need to set up multiple networks and divide networks into different multiple subnets or segments. Next, organize IP channels received and clients transmitted into different networks.

1. To set up multiple networks on GV-Recording Server, you need to install multiple network cards. Each network card is assigned a different IP address and subnet mask.



2. Organize IP channels and clients into groups and then assign each group to different network cards using the IP addresses you have set up.

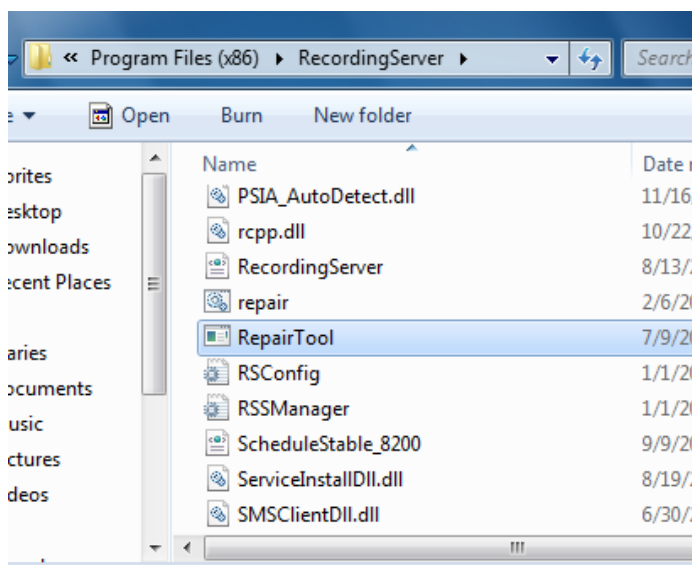


The GV-Recording Server can receive from up to 128 IP channels and transmit up to 300 channels. In the example above, the incoming 128 channels are divided among two network cards and the outgoing 300 channels are divided among four network cards to relieve network congestion.

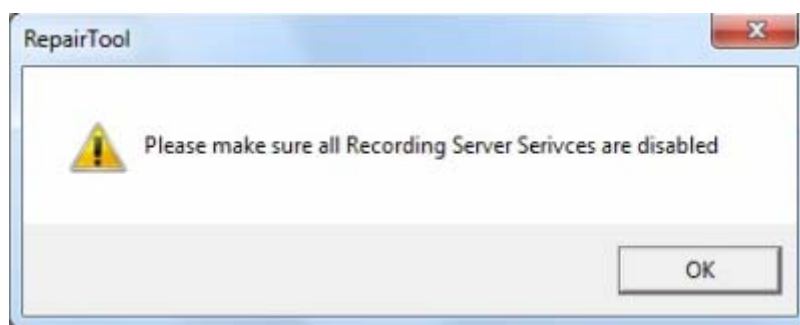
F. How to Repair the Storage Path

When a storage path or the folder name of a storage path is changed, GV-Recording Server or Remote Viewlog will be unable to locate the altered storage path. You need to use the Repair Tool to repair the storage path. The Repair Tool is a preinstalled program on your computer. Follow the steps below to run the Repair Tool.

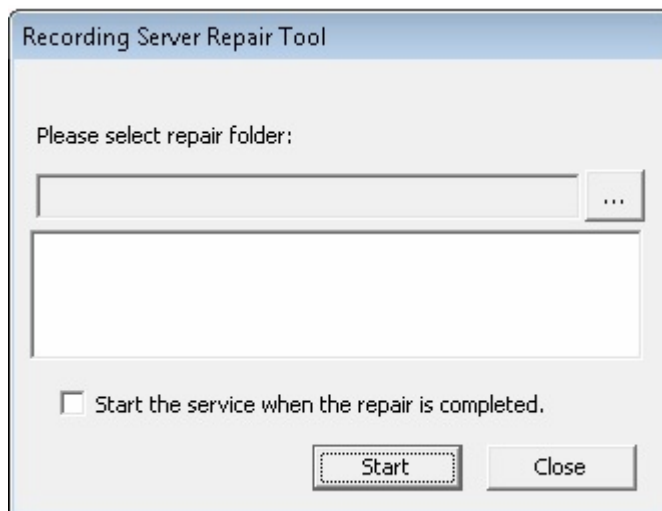
1. Close the GV-Recording Server completely.
2. Go to c:\program files and open the Recording Server folder (the destination path may vary depending on where you have installed GV-Recording Server).



3. Double-click **RepairTool**. This dialog box appears.



- Click OK. This dialog box appears.



- Select the new storage path and click **Start**. The repair process usually takes a few minutes to complete.

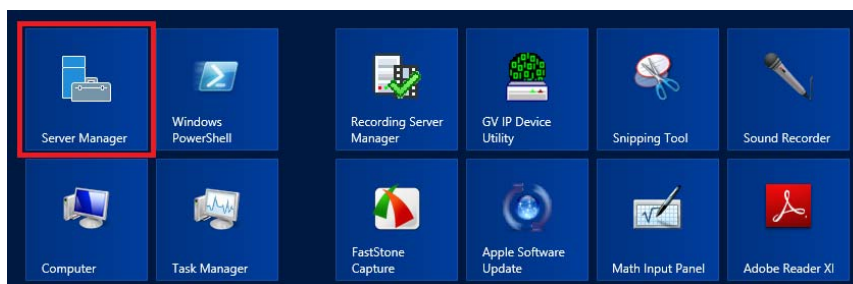
Note: Select the option **Start the service when the repair is complete** to start GV-Recording Service automatically once the repair process is finished.

G. Installing .Net Framework 3.5 for Windows Server 2012 and Windows 8

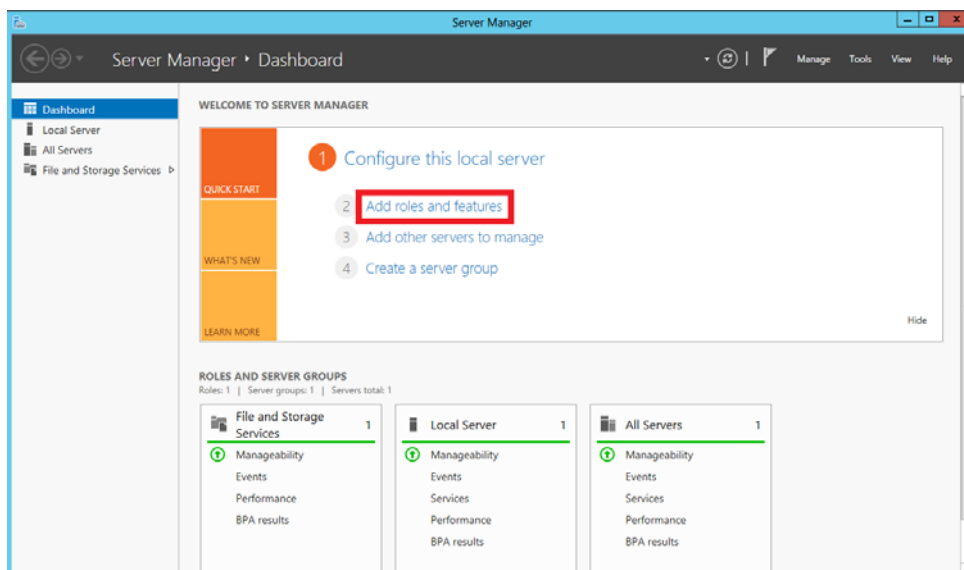
Follow the steps below to manually install **.Net Framework 3.5** for Windows Server 2012 and Windows 8.

Windows Server 2012:

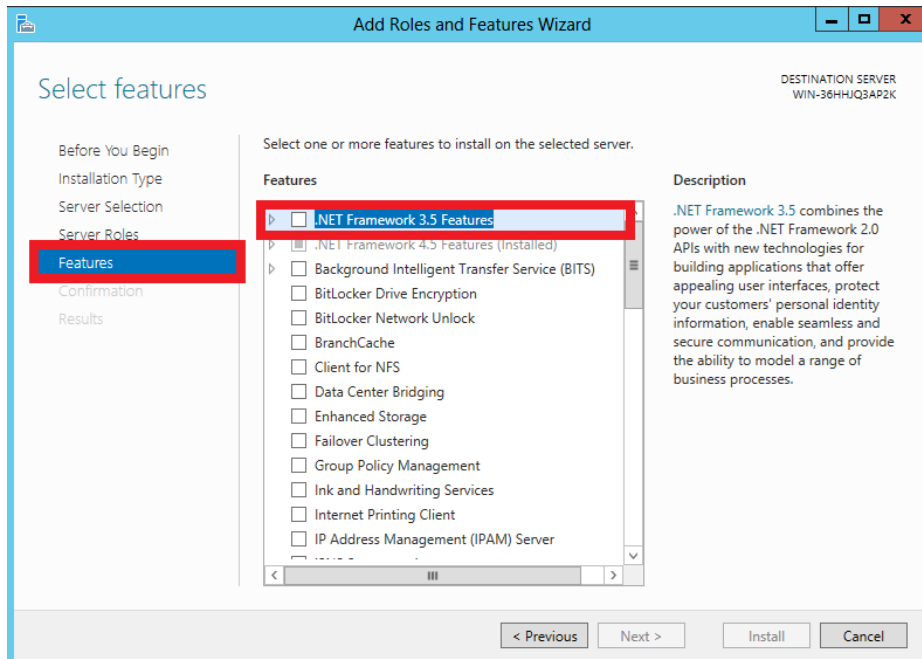
1. Open **Server Manager** from the Start menu.



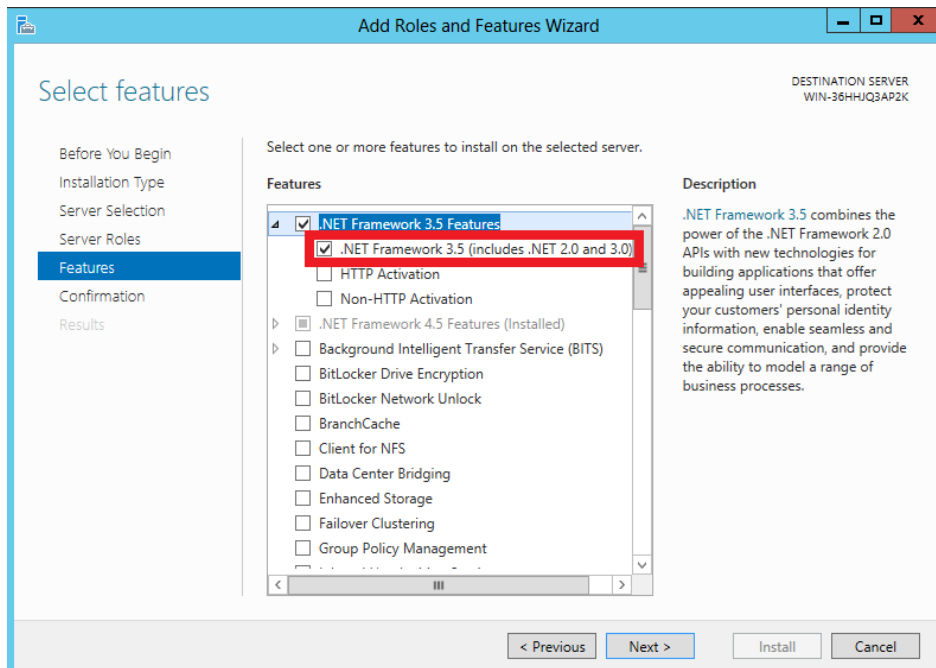
2. Click **Dashboard** from the tree list on the left and click **Add roles and features**.



- Click **Features** from the tree list on the left and select **.Net Framework 3.5 Features**.

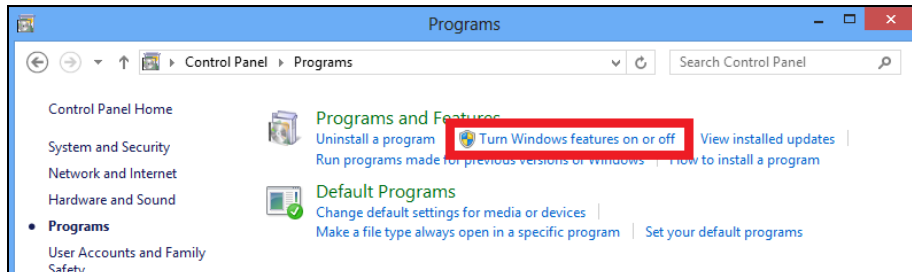


- Select **.Net Framework 3.5 (include 2.0 and 3.0)** and click the **Install** button.



Window 8

1. Click **Control Panel** from the Start menu.
2. Click the **Programs** icon.
3. Select **Turn Windows features on or off** under the Programs and Features title.



4. Select **.Net Framework 3.5 (includes .Net 2.0 and 3.0)** and click the **OK** button.

