GeoVision inc
The Vision of Security

# GV-Mobile Server

## User's Manual V1.3


MBSV13-A



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# Content

# Chapter 1 Introduction

GV-Mobile Server is an application that can encode up to **32** video channels and subsequently allows for live view access from GV-IP Decoder Box, GV-Pad, and mobile devices including Android Smartphone, iPad, iPhone, and iPod Touch. Third-party surveillance software can also access video channels from GV-Mobile Server through RTSP. The advantages of GV-Mobile Server include:

- Live view access of analog camera (connected to GV-System)
- Live view access of up to 4 user-selectable matrix channels
- Provides for dual streams
- Significantly reduces CPU loading and bandwidth usage of IP video devices
- User-configurable frame rate, quality, codec type and resolution for each camera stream
- Remote access to live view using non-IE browsers

Through GV-Mobile Server, the clients can:

- access GeoVision and third-party cameras connected to the GV-System.
- access GeoVision and third-party IP channels connected to GV-Video Gateway / GV-Recording Server
- directly access GeoVision and third-party devices

1. To encode channels connected to GV-System, install GV-Mobile Server on the same computer as GV-System.

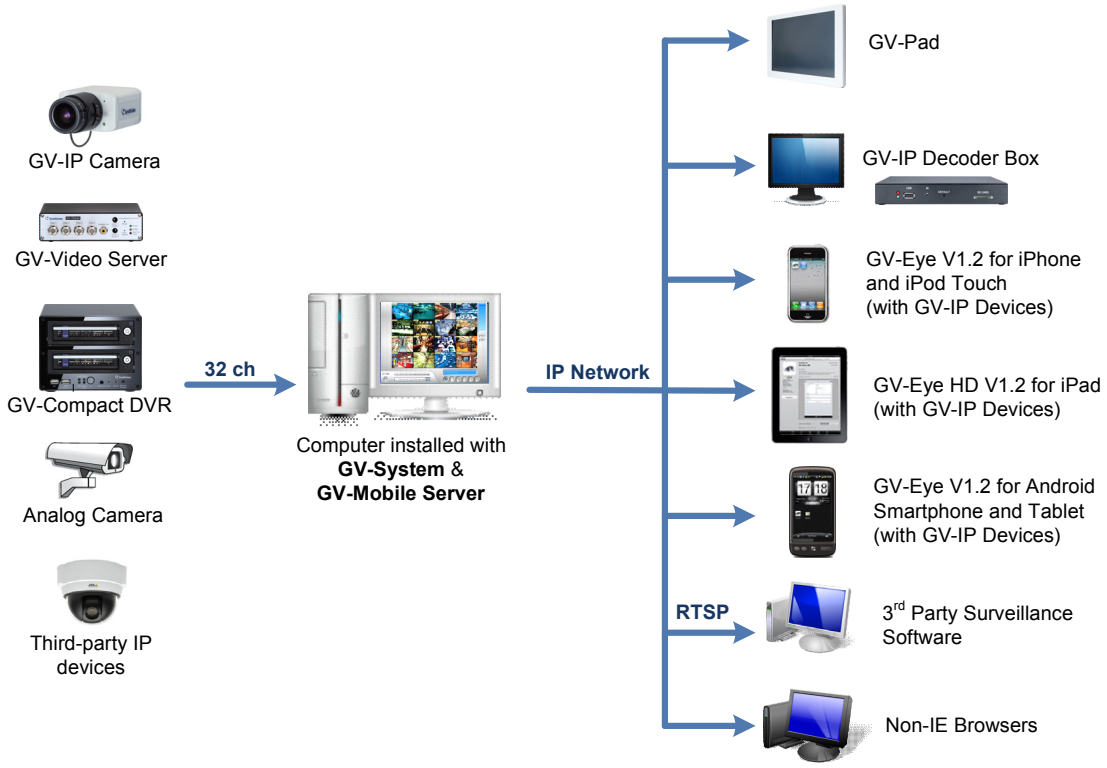


***Figure 1-1***

2. With a GV-USB Dongle, the professional version allows you to access IP channels from a GV-Recording Server / GV-Video Gateway. GV-Mobile Server can be installed on any computer and remotely connect to GV-Recording Server / GV-Video Gateway.

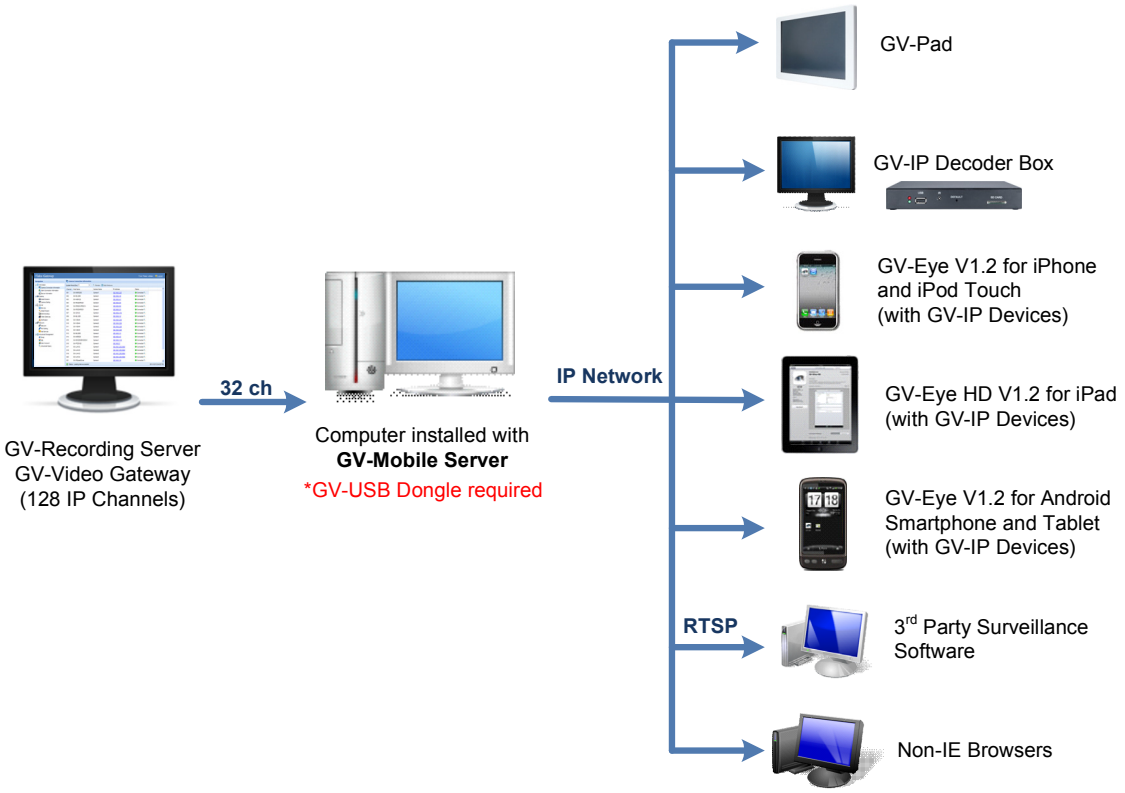


***Figure 1-2***

3. With a GV-USB Dongle, the GV-Mobile Server can directly encode IP channels from GeoVision and third-party IP advices through ONVIF and PSIA protocols. The GV-Mobile Server can be installed in any remote server.

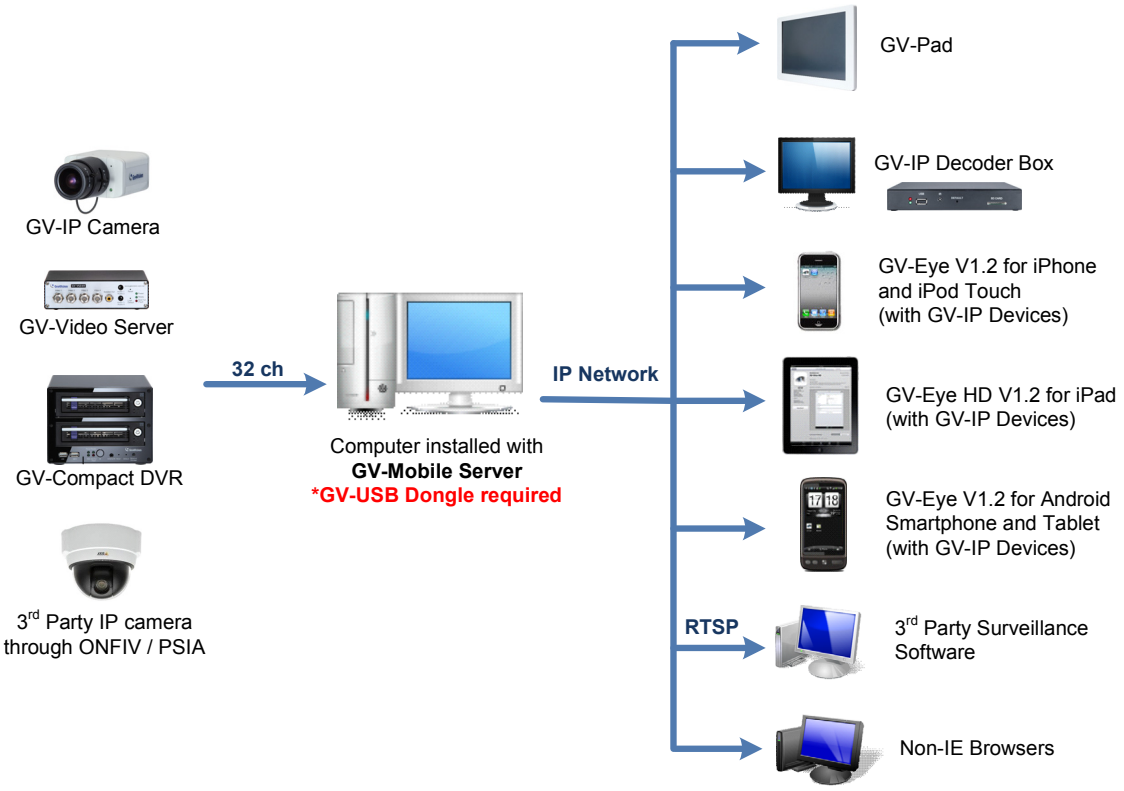


***Figure 1-3***

For each camera stream, you can set up different frame rate, codec and resolution. In addition, up to 32 cameras can be arranged into a matrix screen that counts as 1 channel when transmitting to clients. The matrix channels are also available in dual streams.

## 1.1 Packing List

- GV-USB Dongle for connection with GV-Recording Server / GV-Video Gateway, third-party IP devices and GV-IP Devices directly.
- GV-Mobile Server Software CD
- GV-Mobile Server Quick Start Guide

## 1.2 Minimum System Requirement

Depending on the resolution, video compression format and the number of connected channels, **Standard Version** or **Advanced Version** requirements shall be met.

### Standard Version

| | | |
|---|---|---|
| **OS** | **32-bit** | Windows 7 / Server 2008 |
| | **64-bit** | Windows 7 / Server 2008 R2 |
| **CPU** | | Core i3 2120K, 3.3 Ghz |
| **RAM** | | 2 GB x 2 |
| **Hard Disk** | | 1 GB or more for installation |
| **Graphic Card** | | AGP or PCI-Express, 1024 x 768, 32-bit color |
| **DirectX** | | 9.0c |
| **LAN** | | Gigabit Ethernet X 1 |
| **Hardware** | | Internal or external GV-USB Dongle |

### Advanced Version

| | | |
|---|---|---|
| **OS** | **64-bit** | Windows 7 / Server 2008 R2 |
| **CPU** | | Core i7 2600K, 3.4 Ghz |
| **RAM** | | 2 GB x 2 |
| **Hard Disk** | | 1 GB or more for installation |
| **Graphic Card** | | AGP or PCI-Express, 1024 x 768, 32-bit color |
| **DirectX** | | 9.0c |
| **LAN** | | Gigabit Ethernet x 2 |
| **Hardware** | | Internal or external GV-USB Dongle |

**Note:**

1. The memory required may vary depending on the number of channels and resolution of videos received.
2. A GV-USB Dongle is required when you install the GV-Mobile Server V1.3 in an independent PC.
3. Optionally purchase an internal USB dongle for the Hardware Watchdog function.

The Advanced Version is highly recommended in any of the following conditions:

| Resolution | Codec | No. of Connected Channels |
|---|---|---|
| CIF | H.264 | 32 |
| VGA | H.264 | 12 or more |
| D1 | H.264 | 11 or more |
| 1 MP | H.264 | 5 or more |
| 2 MP | H.264 | 3 or more |
| 3 MP | H.264 | 3 or more |
| 4 MP | H.264 | 3 or more |
| 5 MP | H.264 | 6 or more |
| **Note:** These data may vary in different scenes (different data bitrates). | | |

## 1.3 Options

The optional device can be purchased to assist with your surveillance management.

| Optional Device | Description |
|---|---|
| Internal GV-USB Dongle | An Internal GV-USB Dongle provides the hardware watchdog function to GV-Mobile Server by restarting the computer when Windows crashes. |

## 1.4 Compatible Firmware

- GV-System: V8.5.3 or later
- GV-Recording Server / GV-Video Gateway: V1.1.0.0 or later
- GV IP device: V1.09 or later

# Chapter 2 Installation

## 2.1 Installing the GV-Mobile Server

1. Insert GV-USB Dongle to a dedicated computer or server.
2. Insert the Software CD to the computer. This window pops up automatically.

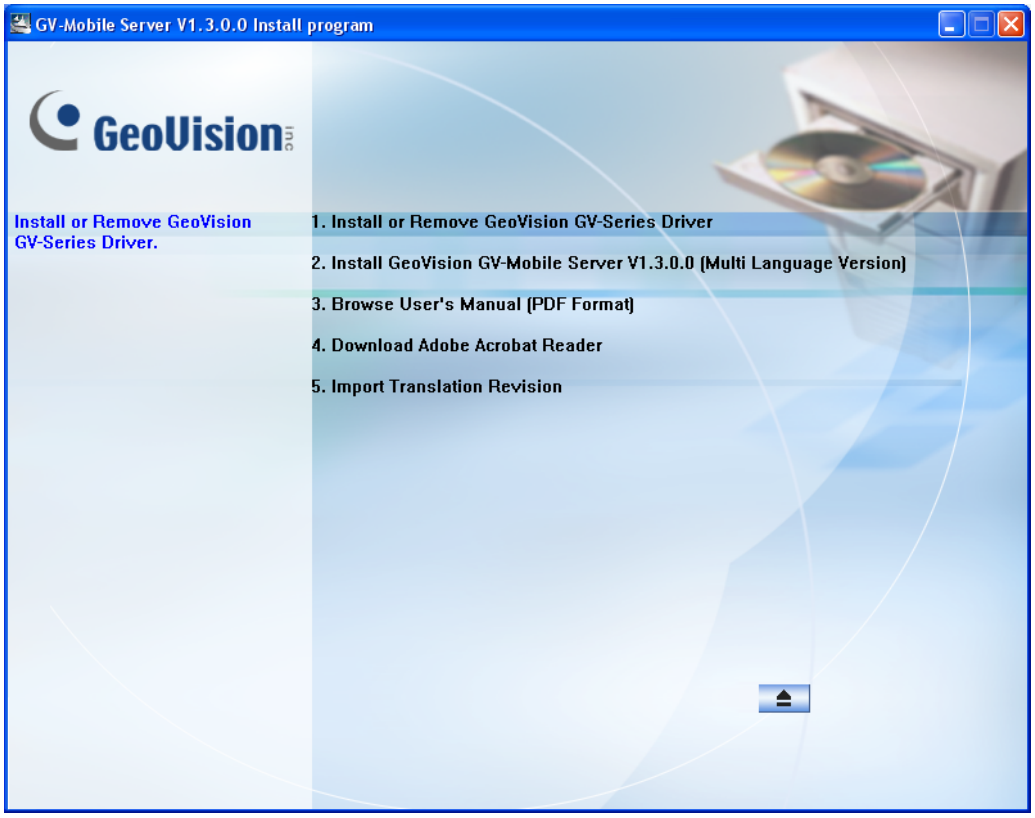


***Figure 2-1***

3. To install **USB driver**, select **Install or Remove GeoVision GV-Series Driver** to start.
4. To install **GV-Mobile Server**, select **Install GeoVision GV-Mobile Server V1.3.0.0 Server System** and select **GeoVision GV-Mobile Server V1.3.0.0 Server System** to start.

## 2.2 Starting the GV-Mobile Server

1. Go to Windows **Start**, point to **Programs**, select **GV-Mobile Server**, and then run **Mobile Server**. The GV-Mobile Server window appears.
2. To change the server name or to configure UPnP settings, click the **Network** tab. This page appears.

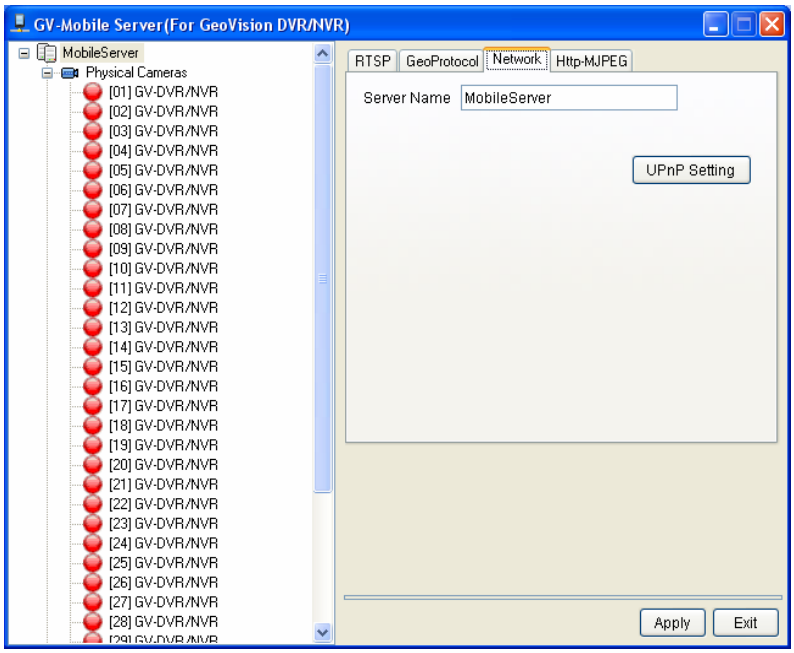


***Figure 2-2***

3. Type a new server name.
4. Click the **UPnP Setting** button to list the GV-Mobile Server in the network devices table for the operation system. Then you can connect to the GV-Mobile Server directly by clicking on the listed server.

5. By default, the ID and password for logging in the GV-Mobile Server are **admin**, and the Command Port for client connection is **55000**. To customize these values, click the **GeoProtocol** tab to modify the Command Port and select **Custom** to modify the login ID and password.

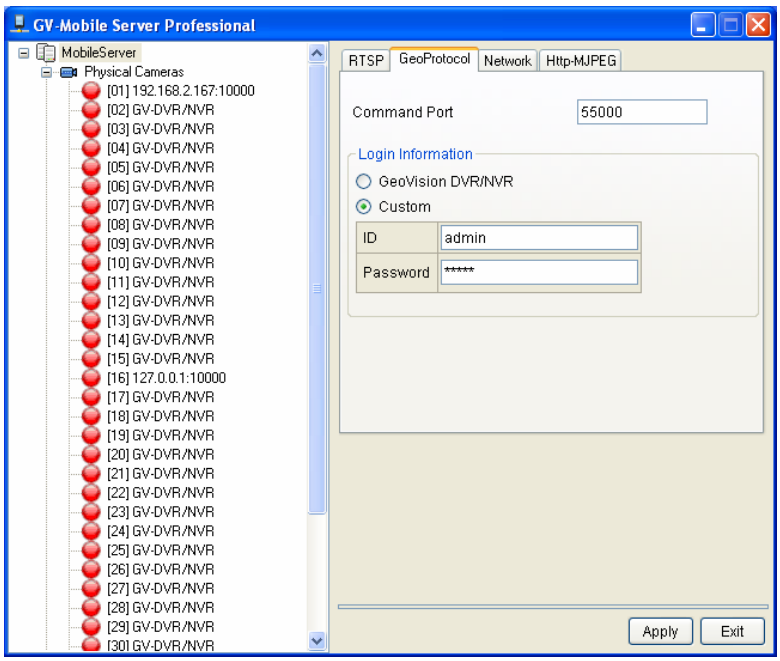


***Figure 2-3***

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**Note:** If you are installing GV-Mobile Server and GV-System on the same computer, select **GeoVision DVR/NVR** to apply the currently logged-in ID and Password of the GV-System to the GV-Mobile Server. To apply the login values of the GV-System to GV-Mobile Server, the GV-System must be run in the background.

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6. Click **Apply**.

# Chapter 3 Establishing Connections

## 3.1 Connecting to GV-System

The GV-Mobile Server can encode up to 32 channels from GV-System. To configure connection to GV-System:

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

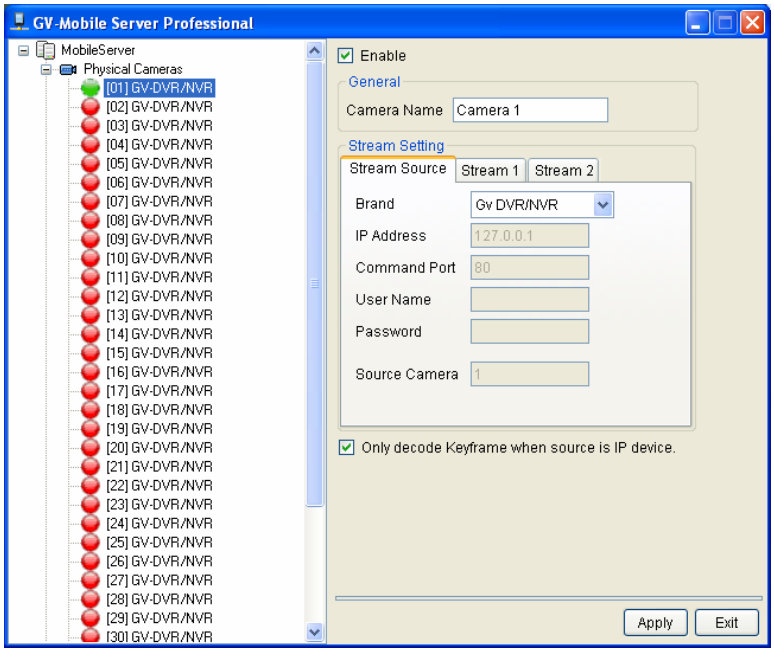


***Figure 3-1***

2. Select **GV DVR/NVR** for **Brand**.
3. To only decode key frames, select **Only decode key frame when source is IP device**.
4. Click **Apply**.

When the camera is connected, the red icon turns green. You can right-click the camera icon to access the live view.

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**Note:** The audio output of a channel is only accessible by clients when the channel is connected to GV-System and is accessed through RTSP.

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## 3.2 Connecting to GV-Recording Server / GV-Video Gateway

Using a GV-USB Dongle, GV-Mobile Server can encode up to 32 IP channels from GV-Recording Server / GV-Video Gateway. To configure connection to GV-Recording Server / GV-Video Gateway:

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

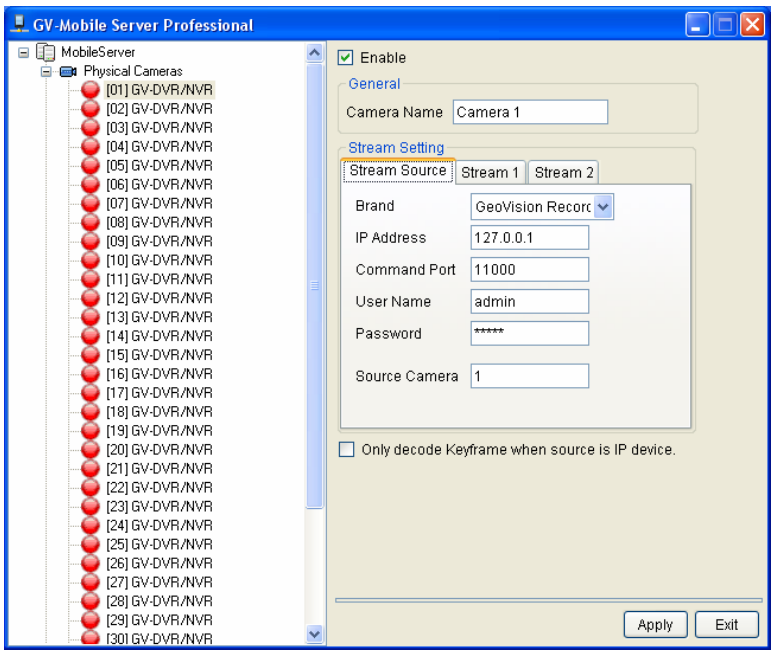


***Figure 3-2***

2. Configure the connection settings.
   A. Select **GeoVision Recording Server** for **Brand**.
   B. Type the **Command Port**, **IP Address**, **User Name** and **Password** of the GV-Recording Server / GV-Video Gateway. The default command port for GV-Recording Server / GV-Video Gateway is **11000**.
   C. Type the camera number for live viewing in **Source Camera**. The default setting is **1**.
   D. To only decode key frames, select **Only decode key frame when source is IP device**.
3. Click **Apply**.

When the camera is connected, the red icon turns green. You can right-click the camera icon to access the live view.

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**Note:** The TCP/IP Connection port (active connection port) on the GV-Recording Server / GV-Video Gateway must match the Command port setting (default 11000) here.

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## 3.3 Connecting to IP Devices Directly

Using a GV-USB Dongle, GV-Mobile Server can encode up to 32 IP channels directly from GeoVision IP devices and also third-party IP devices (through ONVIF or PSIA protocol). To configure connection to IP devices:

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

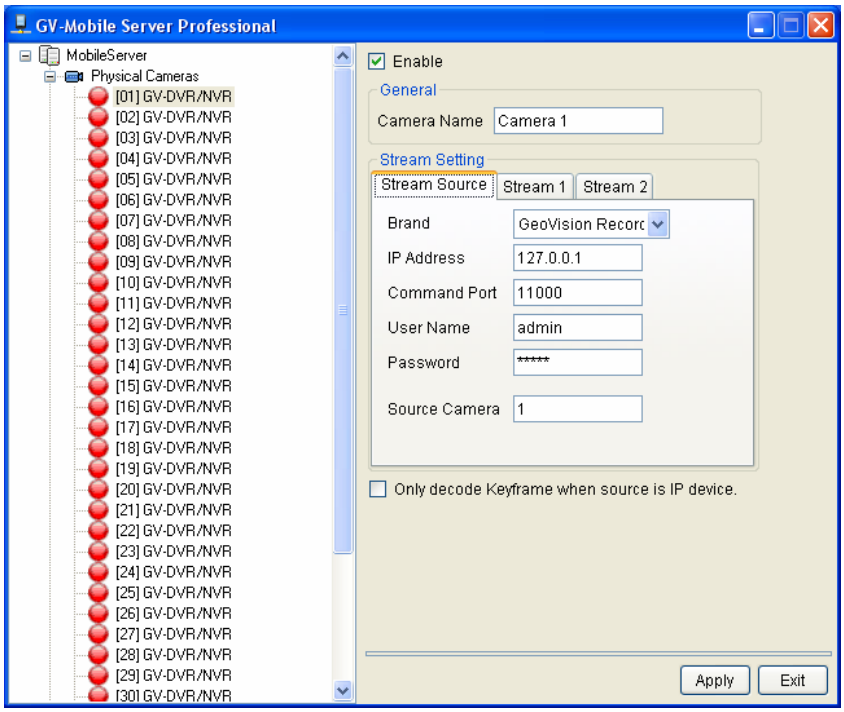


***Figure 3-3***

2. Configure the connection settings.
   A. Select **GeoVision IP Device** for **Brand**. To connect to a third-party IP device, select **ONVIF** or **PSIA** for **Brand**.
   B. Type the **IP Address**, **User Name** and **Password** of the IP device.

      Make sure the **Command Port** matches the **VSS Port** of the IP device. The default command port for GeoVision IP device is **10000** and **80** for third-party IP devices connected through ONVIF / PSIA.
   C. Type the camera number for live viewing in **Source Camera**. The default setting is **1**.
   D. To only decode key frames, select **Only decode key frame when source is IP device**.
3. Click **Apply**.

When the camera is connected, the red icon turns green. You can right-click the camera icon to access the live view.

# Chapter 4 Configuring the Channel

## 4.1 Setting the Individual Channel

For each individual channel, you can set up two streams, each with different frame rates, video qualities, codec and resolutions. The maximum resolution is D1 (720 x 480).

1. In the left menu, click a camera channel. The setting page for that camera appears.

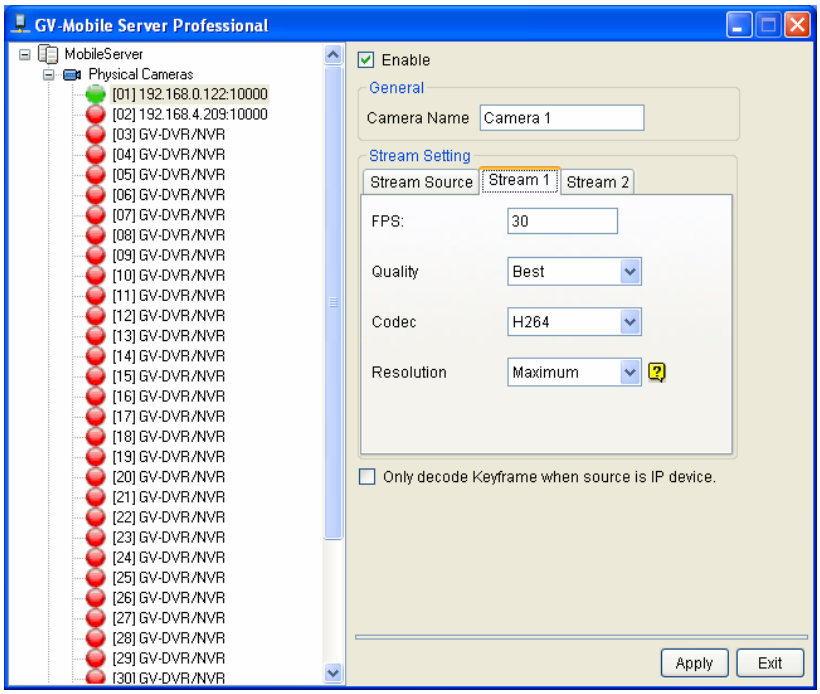


***Figure 4-1***

2. Select **Enable** to enable the camera.
3. Under Stream Setting, the following settings are available. When a client connects to stream 1 of the camera, the settings will be applied to the transmitted camera view.
   - **FPS:** Specifies the frames per second.
   - **Quality:** Set the image quality to **Best**, **Better** or **General**.
   - **Codec:** Select a codec type from **H.264** or **MPEG4**.
   - **Resolution:** Select a resolution. When Maximum is selected, the resolution will be D1. If the camera's maximum resolution is lower than D1, the maximum resolution will be applied.
4. To set up the other stream, click the **Stream 2** tab and complete the above settings.
5. Click **Apply**.

6. In the left menu, right-click a camera channel to access the options below:
   - **View Actual Stream:** Watch the camera view received by GV-Mobile Server. If the camera resolution is larger than D1, D1 resolution will be applied. If the camera resolution is lower than D1, the maximum resolution will be applied.
   - **View Encode Stream 1:** Watch the camera view according to the settings you specify in step 3 for stream 1.
   - **View Encode Stream 2:** Watch the camera view according to the settings you specify in step 3 for stream 2.

## 4.2 Setting the Matrix Channel

You can establish up to 4 matrix channels on GV-Mobile Server, each consisting of up to 32 cameras. You can also set up different settings (frame rates, codec video quality and resolution) for stream 1 and stream 2 of a channel. The maximum resolution supported is 1.3 MP (1280 x 1024).

To set up the matrix:

1. In the left menu, click a matrix channel. This window appears.

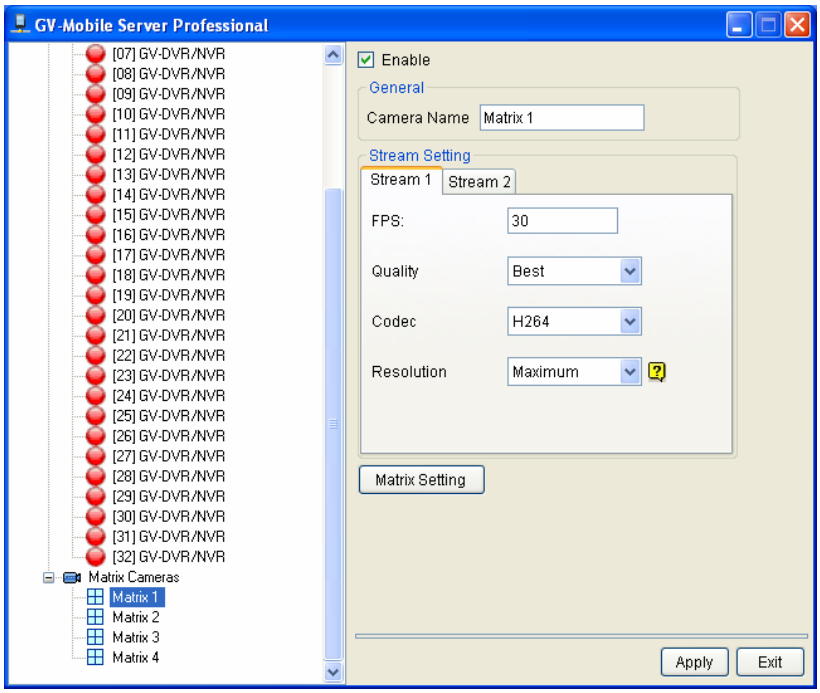


***Figure 4-2***

2. Complete the settings for Stream 1 of the matrix channel. When a client connects to stream 1 of the matrix channel, the settings will be applied to the transmitted matrix view. Refer to *Setting Up Individual Cameras* section above for details.

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**Note:** When Maximum is selected, the resolution of the matrix channel will be 1.3 M.

---

3. Click the **Stream 2** tab to set up stream 2.

4. Click the **Matrix Setting** button to arrange the matrix. This window appears.

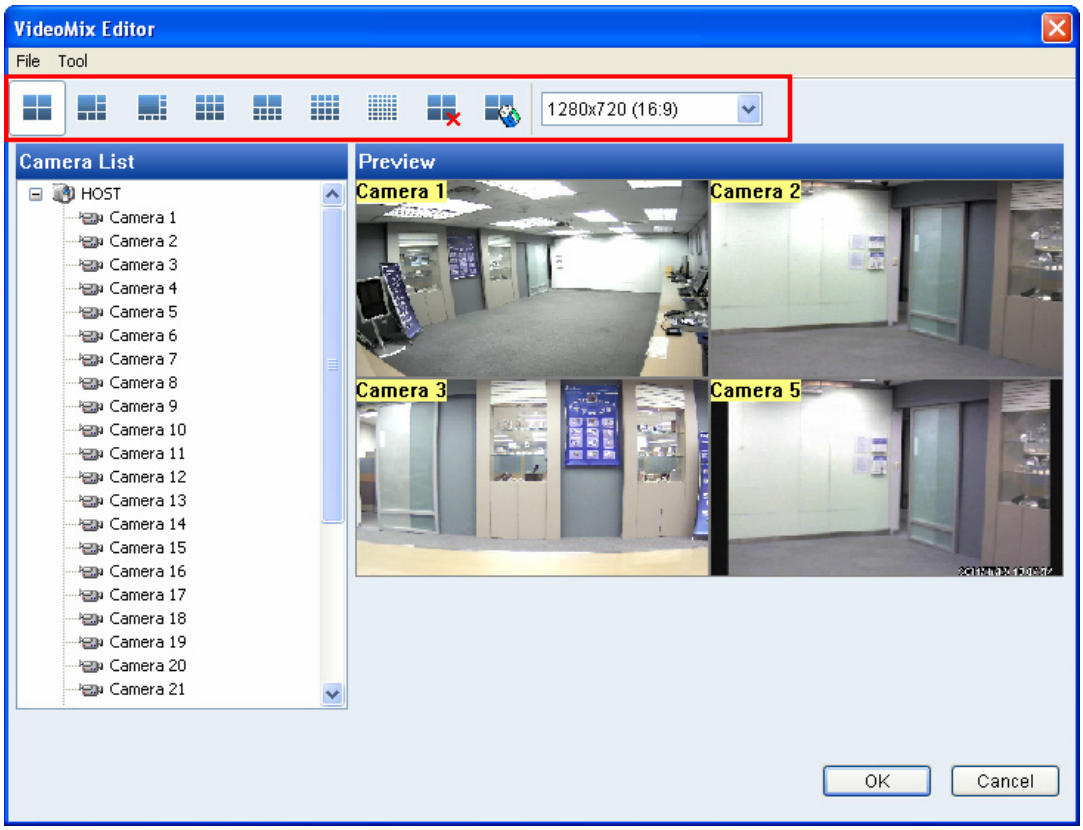


***Figure 4-3***

5. Select a type of screen division and select the display ratio. The display ratio selected will be applied to the matrix view in GV-Mobile Server.
6. Drag and drop the camera numbers to the desired positions on the divisions.
7. Click **OK** and then click **Apply**.
8. In the left menu, right-click a camera channel to access the options below:
   - **View Actual Stream:** Watch the matrix view in the display ratio selected in step 5.
   - **View Encode Stream 1:** Watch the camera view according to the settings you specify in step 2 for stream 1.
   - **View Encode Stream 2:** Watch the camera view according to the settings you specify in step 3 for stream.

# Chapter 5 Accessing the Live View

## 5.1 Using GV-IP Decoder Box / GV-Pad

There are two ways to access GV-Mobile Server channels from GV-IP Decoder Box / GV-Pad:

- To add channels **one by one**, see *Displaying Channels by Browsing* in this section.
- To add **multiple channels** at a time, *Displaying Channels Using GV IP Device Utility* in this section.

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**Note:** The GV-Mobile Server, GV-IP Decoder Box / GV-Pad and GV-IP Device Utility must be installed under the same LAN.

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### Accessing Channels by Browsing

1. On GV-Mobile Server window (Figure 2-3), change the Command Port to **10000**.
2. On the main menu of GV-IP Decoder Box, select  and press **OK** to search. The channels of GV-Mobile Server will be listed.

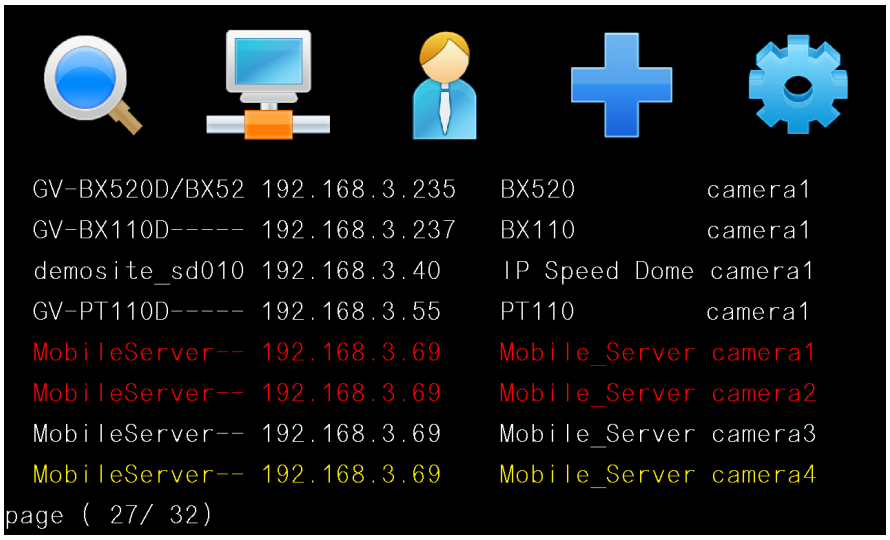


***Figure 5-1***

3. To move on the list, press the up and down arrow keys. The yellow shows the cursor position.
4. To select a channel, press the right arrow key. The selected channels will be in red.
5. Repeat step 3 to select multiple channels.
6. Press the **OK** key. The selected channels will be displayed.

**Note:** The GV-IP Decoder Box supports Stream 1 and H.264 codec only.

## Accessing Channels Using GV IP Device Utility

1. Make sure you have installed the GV IP Device Utility program from *GV-IP Decoder Box and GV-Pad Software DVD*.
2. Double-click the **GV IP Device Utility** icon on the desktop. The GV IP Device Utility window appears. It will automatically search for all the video channels under the same LAN.

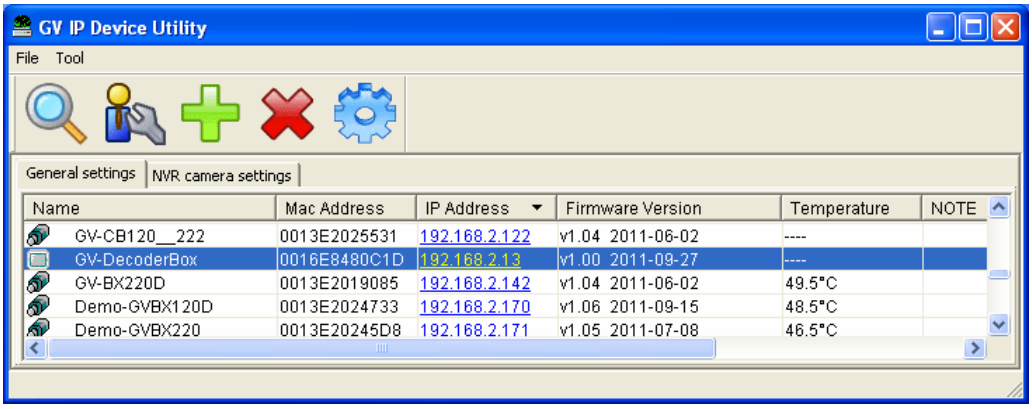


***Figure 5-2***

3. Click on the IP address of your GV-IP Decoder Box and select **Connect Setting**. This dialog box appears.

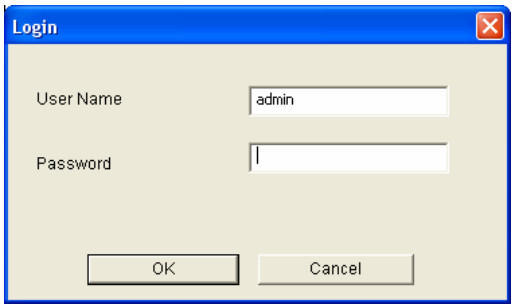


***Figure 5-3***

4. Type the ID and password of your GV-IP Decoder Box and click **OK**. For detail, see *2.4. Configuring the Basics* in *GV-IP Decoder Box and GV-Pad User's Manual*. The Video Connection Setting window appears.

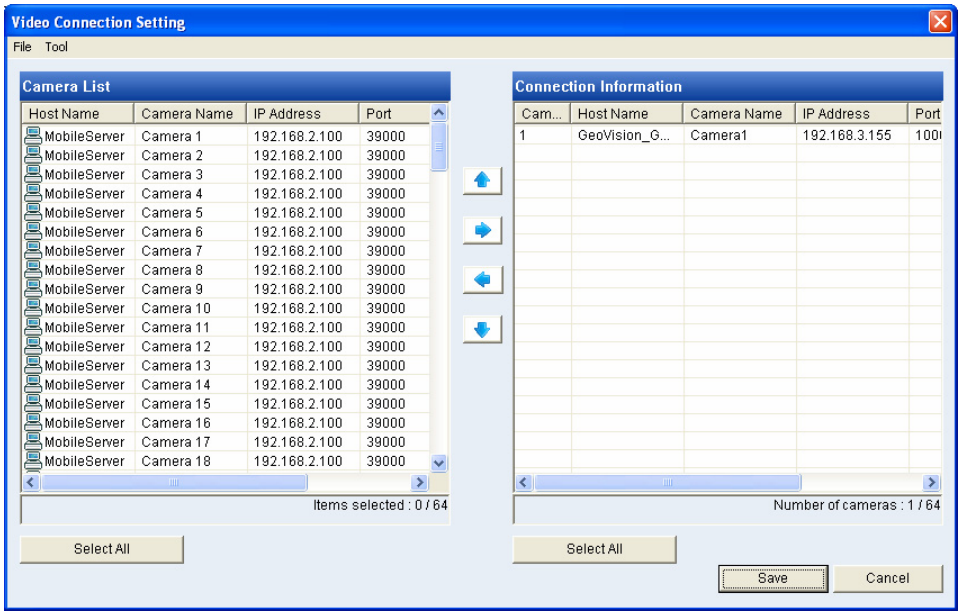


***Figure 5-4***

5. Use the **right** button to add video channels.
6. Right-click each added channel, select **Edit** and type its username and password to log in. By default, the login ID and password for all GV IP devices are **admin**.
7. Use the **up** and **down** buttons to change the order of the added channels. The channels will be displayed accordingly.
8. Click **Save**. The cameras on the Connection Information column will be updated to the GV-IP Decoder Box and displayed on the monitor.

## 5.2 Using iPhone / iPod Touch / iPad

Follow the steps below to access GV-Mobile Server channels from iPhone, iPod Touch and iPad:

1. Download **GV-Eye V1.2** app from App Store. The **GV-Eye** icon appears on the desktop.

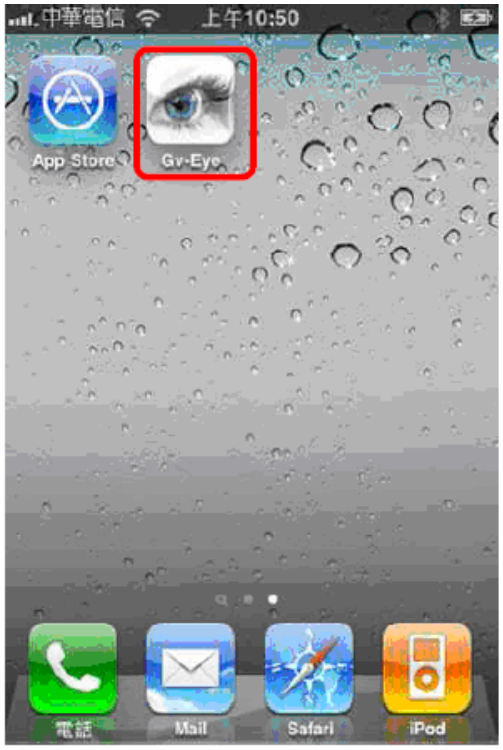


***Figure 5-5***

2. Tap the **Add** button  to create connection.

3. Type the connection information, login username and password of the GV-Mobile Server.


*Figure 5-6*

- **Host name:** Name the GV-Mobile Server.
- **Domain/IP:** Type the domain name or public IP address of the GV-Mobile Server.
- **Port:** Type the default port number 55000, or modify the port number to match the command port on the GV-Mobile Server.
- **Username:** Type the login username of the GV-Mobile Server. The default value is **admin**.
- **Password:** Type the login password of the GV-Mobile Server. The default value is **admin**.

4. Tap the **Save** button. The GV-Mobile Server is added to the connection list. Click the GV-Mobile Server on the list to access live images.

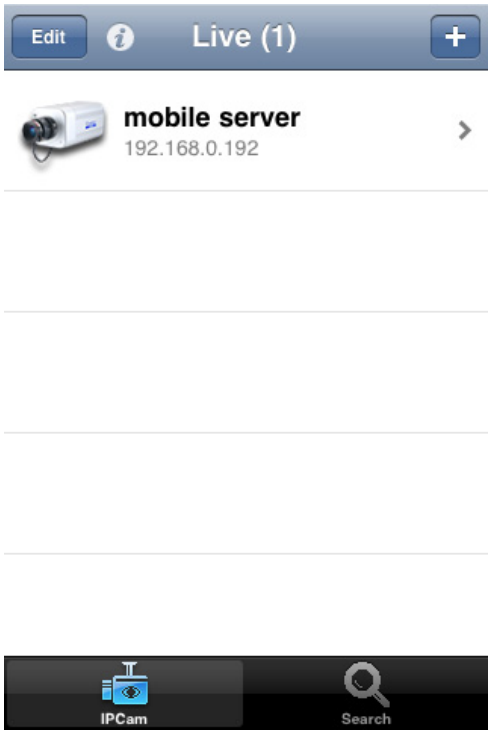


***Figure 5-7***

For detailed instructions, see this document
http://www.geovision.com.tw/upload/en/mobileap/GV-Eyev112.pdf

## 5.3 Using Android Smartphone / Tablet

Follow the steps below to access GV-Mobile Server channels from Android Smartphone or tablet:

1. Download **GV-Eye V1.2** app from Android market. The **GV-Eye** icon appears on the desktop.


***Figure 5-8***

2. Tap the **GV-Eye** icon, and then the login page appears.

3. Type the connection information, login username and password of the GV-Mobile Server.

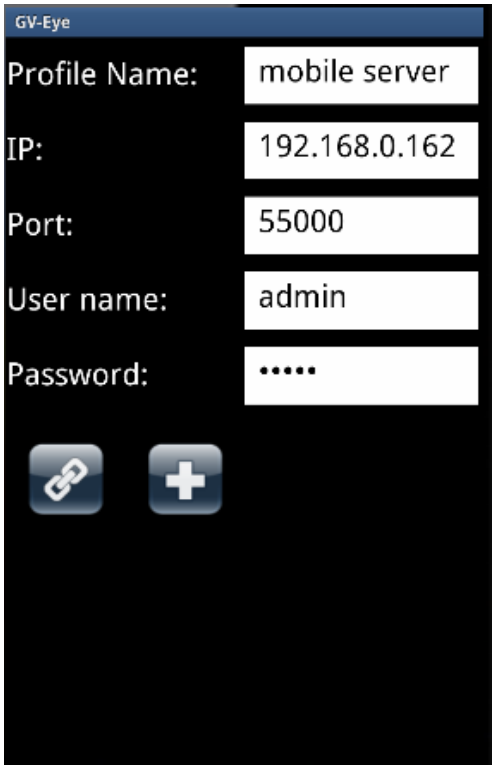


***Figure 5-9***

- **Profile Name:** Name the GV-Mobile Server.
- **IP:** Type the domain name or public IP address of the GV-Mobile Server.
- **Port:** Type the default port number 55000, or modify the port number to match the command port on the GV-Mobile Server.
- **Username:** Type the login username of GV-Mobile Server. The default value is **admin**.
- **Password:** Type the login password of GV-Mobile Server. The default value is **admin**.

4. Tap the Connect button and receive the live images from GV-Mobile Server.

For detailed instructions, see this document:
http://www.geovision.com.tw/upload/en/mobileap/GV-Eye_AndroidV10.pdf

## 5.4 Using Third-Party Surveillance Software

To allow third-party software to connect to GV-Mobile Server through RTSP protocol, complete the settings below.

1. Click the **RTSP** tab. This window appears.

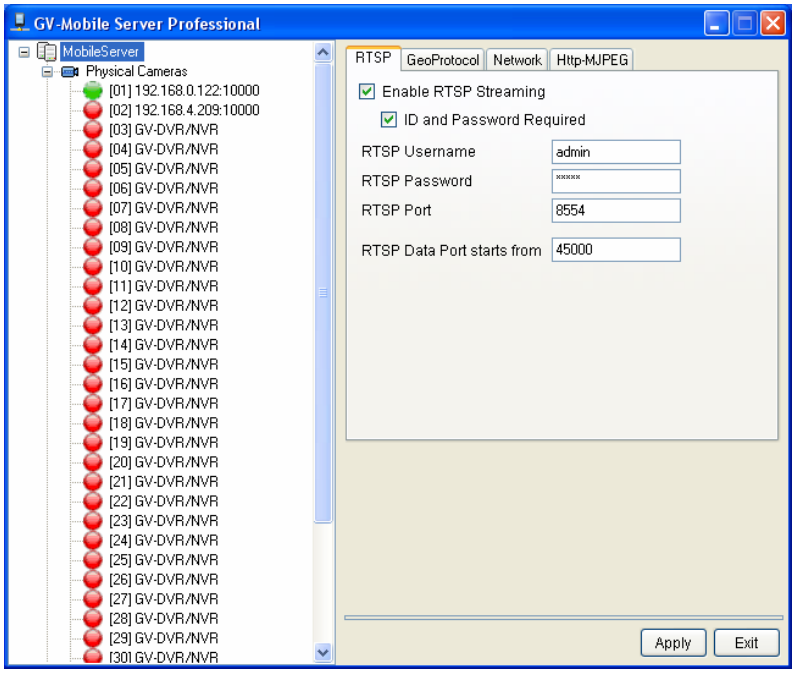


***Figure 5-10***

2. Click **Enable RTSP Streaming**.
3. For a more secure connection, select **ID and Password Required** and type an **RTSP Username** and **RTSP Password**.
4. Modify the default **RTSP Port** 8554 if necessary. By default, RTSP data port starts from 45000.
5. Click **Apply**.

Use the RTSP commands below to connect:

**No ID and password required:**

**rtsp://<IP of the GV-Mobile Server>:<Port>/<CamNo_StreamNo>**

For example, **rtsp:// 192.168.3.111:8554/cam1_stream2**

**ID and password required:**

**rtsp://<ID>:<Password>@<IP of the GV-Mobile Server>:<Port>/<CamNo_StreamNo>**

For example, **rtsp://admin:1234@192.168.3.111:8554/cam1_stream2**

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**Note:** The 4 matrix channels can be accessed using camera number 33 to 36. For example, the RTSP command for the second matrix channel may be

**rtsp://admin:1234@192.168.3.111:8554/cam34_stream1**

To create a matrix channel, see *4.2 Setting Matrix Channels*.

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## 5.5 Using Non-IE Browsers

You can watch live view in MJPEG codec using non-IE browsers such as Google Chrome, Firefox and Safari.

To enable MJPEG Stream:

1. Click the **Http-MJPEG** tab and select **Enable MJPEG Stream**. This window appears.

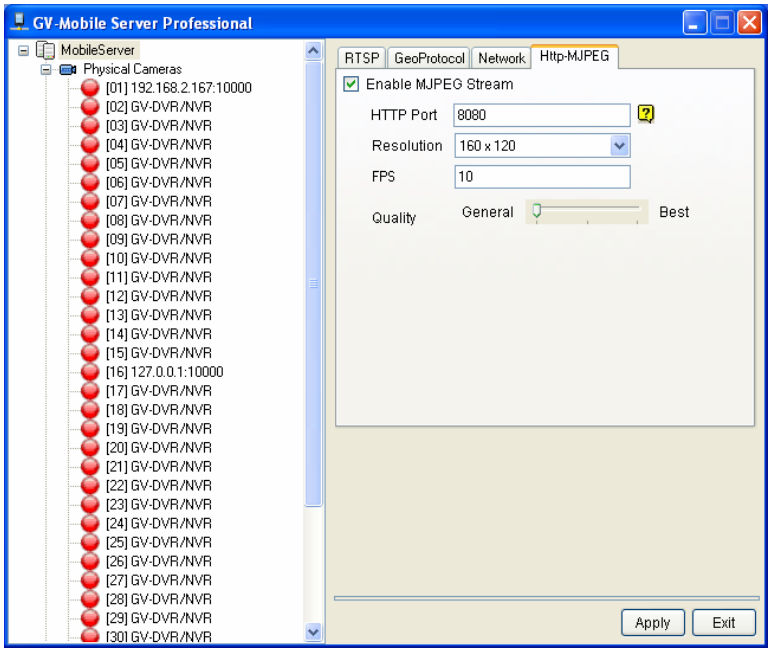



***Figure 5-11***

2. Modify the default **HTTP Port** 8080 if necessary.
3. Set the **Resolution** using the drop-down list.
4. Set an **FPS** from 1-30 fps and **Quality** to **General**, **Medium** or **Best**.
5. Click **Apply**.

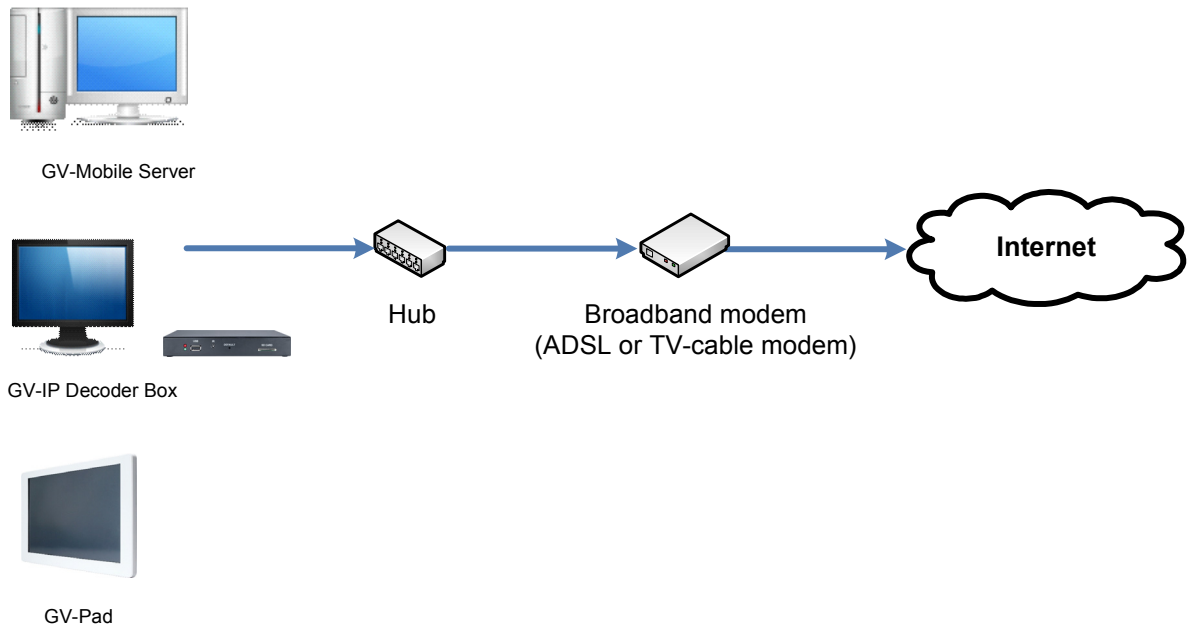
After completing the setting, you can now use the address below to access live view with non-IE browsers:

**http://<GV-Mobile Server IP>:<Http Port>/cam_video_rs.cgi.jpg?cam=<CamNo>**

For example, **http://192.168.3.117:8080/cam_video_rs.cgi.jpg?cam=1**

# Chapter 6 Setting Up the Router

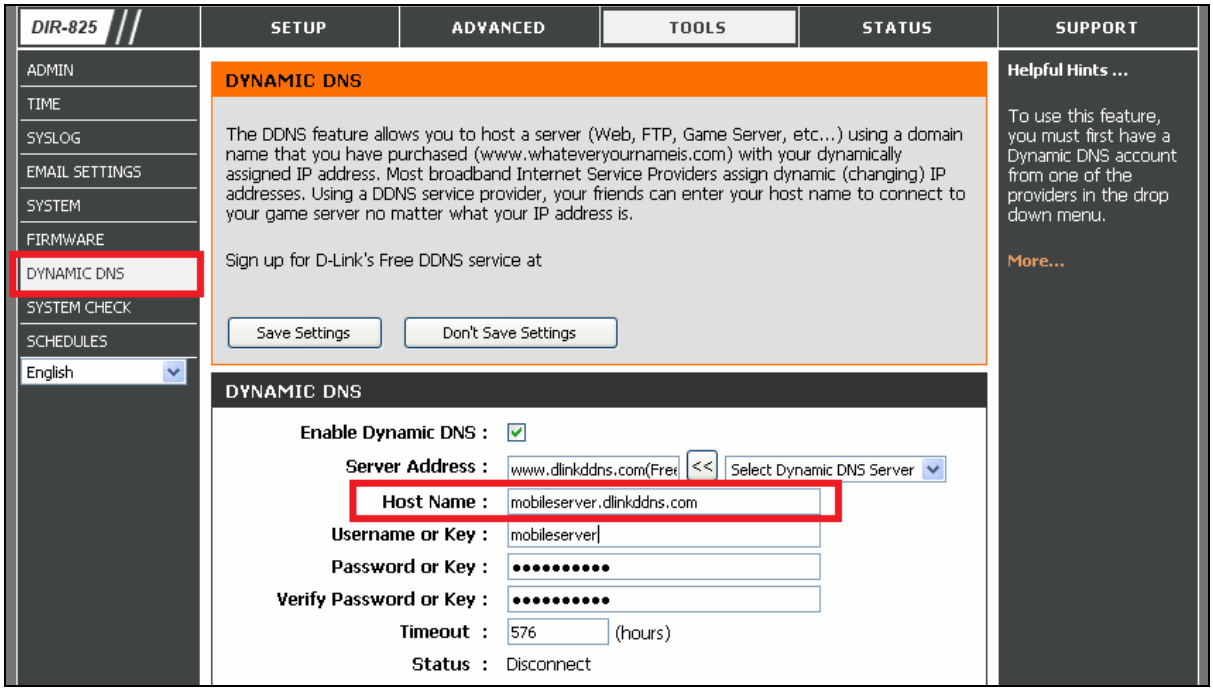
Your GV-Mobile Server and other devices may be installed on a local area network (LAN), with a router connected to a broadband modem, as illustrated below. The router will typically assign private IP address to the connected devices such as 192.168.x.x. You cannot see the devices outside from the Internet by using the private IP address 192.168.x.x. What you use on the Internet is the public IP address from the ISP, which is the IP address of your router.



## 6.1 Registering a Domain Name for the Router

If your router is receiving a dynamic IP address from the ISP, you may register a domain name linking to the ever-changing IP address of the router. Most broadband routers support a dynamic DNS service such as www.dyndns.org. Check your router's Web interface and document for the Dynamic DNS settings.

The following example is the **Dynamic DNS** settings on the D-Link DIR-825 router. The dynamic IP address of the router will be always directed to the domain name: **mobileserver.dlinkddns.com**.



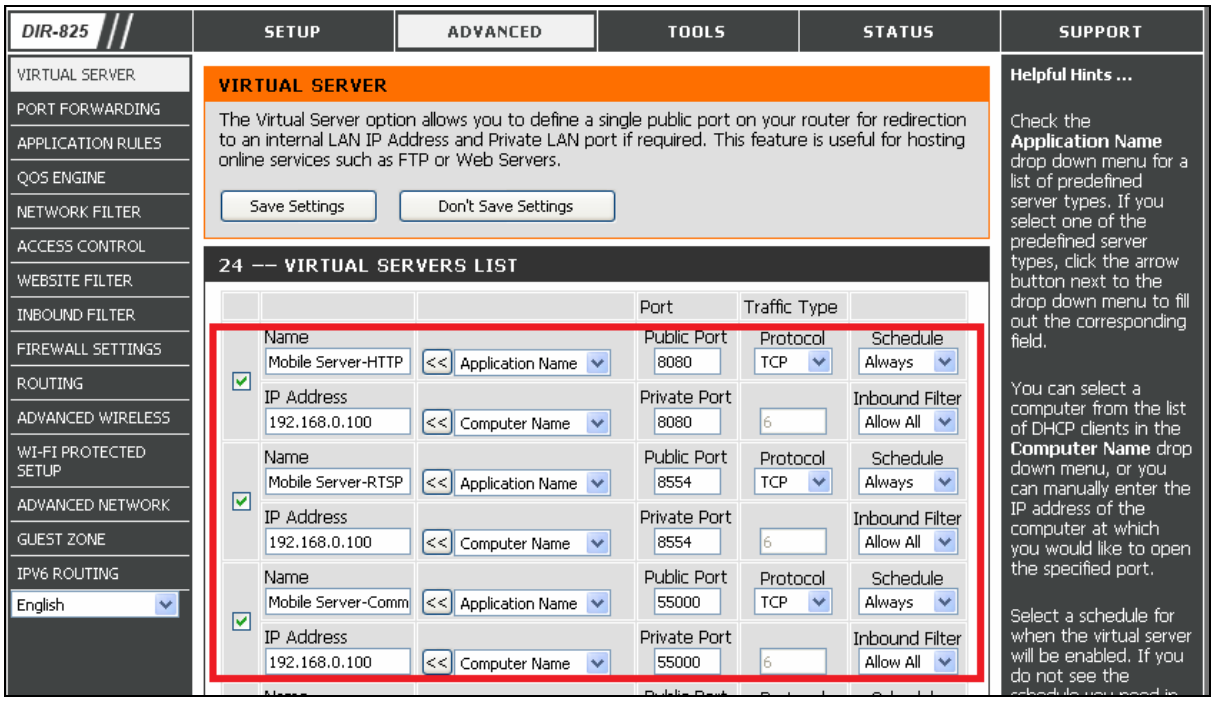

**Note:** Another alternative is to purchase a fixed public IP address from your ISP.

## 6.2 Opening Ports on the Router

To have more features of GV-Mobile Server, you need to open the following ports on the router.

| Port type | Value | Description |
|---|---|---|
| HTTP | 8080 | To access live view with non-IE browsers. For details see *5.5 Using Non-IE Browsers.* |
| RTSP | 8554 | To access live view with third-party surveillance software. For details see *5.4 Using Third-Party Surveillance Software*. |
| Command | 55000 | To access live view with mobile phone viewers. For details see *5.1 Using GV-IP Decoder Box / GV-Pad*, *5.2 Using iPhone / iPod Touch / iPad*, *5.3 Using Android Smartphone / Tablet*. |

In the following example of D-Link DIR-825 router, the port forwarding settings are in the **Advanced** tab. We correlate the public ports (HTTP, RTSP and Command ports) with the private IP address of the GV-Mobile Server (192.168.0.100).



### [Non-IE browsers]

After you open HTTP port 8080 on the router, you can use the address below to access live view with non-IE browsers:

**http://<Router's IP or domain name>:<Http Port>/cam_video_rs.cgi.jpg?cam=<CamNo>**

For example, **http://mobileserver.dlinkddns.com:8080/cam_video_rs.cgi.jpg?cam=1**

### [RTSP command]

After you open RTSP port 8554 on the router, you can use the command below to access live view:

No ID and password required:

**rtsp://< Router's IP or domain name >:<Port>/<CamNo_StreamNo>**

For example, **rtsp://mobileserver.dlinkddns.com:8554/cam1_stream2**

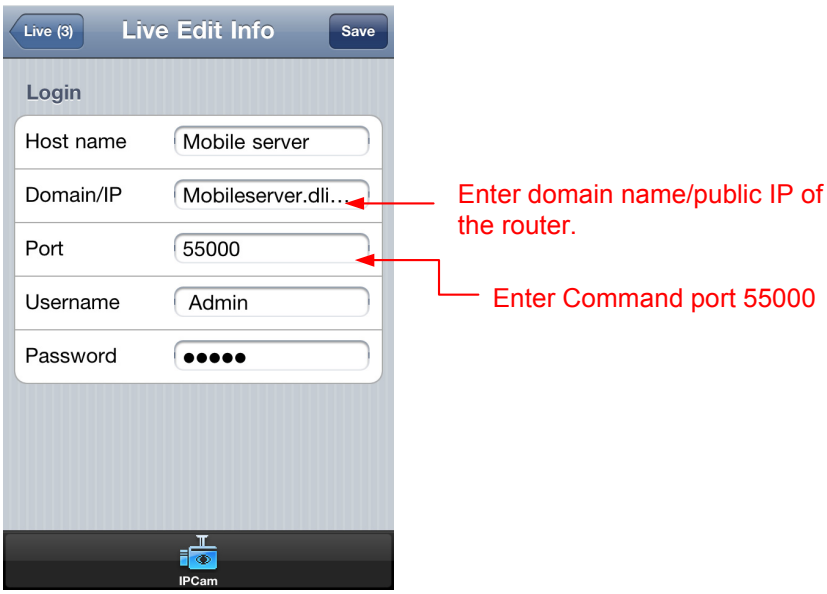
ID and password required:

**rtsp://<ID>:<Password>@<IP of the GV-Mobile Server>:<Port>/<CamNo_StreamNo>**

For example, **rtsp://admin:1234@mobileserver.dlinkddns.com:8554/cam1_stream2**

### [Mobile Phone Viewer]

After you open Command port 55000 on the router, you can use the GV mobile phone viewer to access live view. We use the **GV-Eye** login page to illustrate how to enter the IP address and port value. For details see *5.2 Using iPhone / iPod Touch / iPad.*



# Specifications

| | |
|---|---|
| **Channels** | |
| **Maximum No. of Channels** | 32 |
| **Maximum No. of Matrix Views** | 4 |
| **Dual Stream Support** | Yes |
| **Supported Connections** | |
| **GV-System** | V8.5.3 or later |
| **GV-Recording Server / GV-Video Gateway** | V1.1.0.0 or later |
| **GV IP devices** | V1.09 or later |
| **Third-party IP devices** | Yes (through ONVIF or PSIA) |
| **Live View Access** | |
| **From GeoVision IP devices** | Yes (GV-IP Decoder Box and GV-Pad) |
| **From third-party surveillance software** | Yes (through RTSP) |
| **From mobile devices** | Yes<br>• **GV-Eye V1.2 or later** for iPhone / iPod Touch / Android Smartphone and tablet<br>• **GV-Eye HD V1.2 or later** for iPad |
| **Using non-IE browsers** | Yes (in MJPEG format) |
| **General** | |
| **Language** | 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 |

All specifications are subject to change without prior notice.