

# GV-AI FR

## User's Manual





© 2023 GeoVision, Inc. All rights reserved.

Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of GeoVision.

Every effort has been made to ensure that the information in this manual is accurate. GeoVision, Inc. makes no expressed or implied warranty of any kind and assumes no responsibility for errors or omissions. No liability is assumed for incidental or consequential damages arising from the use of the information or products contained herein. Features and specifications are subject to change without notice.

GeoVision, Inc.  
9F, No. 246, Sec. 1, Neihu Rd.,  
Neihu District, Taipei, Taiwan  
Tel: +886-2-8797-8377  
Fax: +886-2-8797-8335  
<http://www.geovision.com.tw>

Trademarks used in this manual: *GeoVision*, the *GeoVision* logo and *GV* series products are trademarks of GeoVision, Inc. *Windows* is the registered trademark of Microsoft Corporation.

August 2023

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



[Warranty]



[Technical Support Policy]

# Preface

Welcome to the *GV-AI FR User's Manual*. The instructions will guide you through the installation and use of the software.

This *Manual* is designed for the following GV-Software:

Software
GV-AI FR

# Contents

<b>Preface</b> .....	<b>i</b>
<b>Note for Installing GV-IP Cameras</b> .....	<b>iv</b>
<b>Note for Upgrading GV-AI FR</b> .....	<b>iv</b>
<b>Chapter 1 Introduction</b> .....	<b>1</b>
1.1 Key Features .....	2
1.2 System Requirements.....	3
1.3 Optional Accessories .....	4
<b>Chapter 2 Getting Started</b> .....	<b>5</b>
2.1 Installation .....	5
2.2 Main Screen.....	6
2.2.1 Face Profile.....	7
2.2.2 FR List.....	8
2.3 Basic Settings.....	9
2.3.1 Configuring System Settings .....	9
2.3.2 Adding IP Cameras .....	10
<b>Chapter 3 Face Recognition</b> .....	<b>12</b>
3.1 Configuring Recognition Settings.....	13
3.2 Face Enrollment.....	16
3.2.1 Photo Requirements.....	16
3.2.2 Creating Face Profiles .....	17
3.2.3 Batch Enrolling Faces .....	18
3.3 Recognition Events.....	20
3.3.1 Enrolling via Query .....	22
3.4 Face Groups.....	23
<b>Chapter 4 Advanced Functions</b> .....	<b>24</b>
4.1 Dashboard & Analysis.....	25
4.2 General Settings.....	26
4.2.1 System Settings .....	26
4.2.2 Video Source.....	26
4.2.3 Recognition Settings .....	26
4.2.4 GV-VMS Connection .....	26
4.2.5 Account & Authority .....	27
4.2.6 Master / Slave Sync .....	27
4.3 Face Management.....	28
4.4 Notify Settings.....	28

4.4.1	Welcome Settings .....	29
4.4.2	Event Triggers .....	30
4.4.3	IO Box .....	32
4.4.4	Serial Port .....	33
4.4.5	GV-FWC / Controller .....	33
4.4.6	LINE Notify .....	33
4.4.7	SMTP Setting .....	34
<b>Chapter 5</b>	<b>GV-VMS Integration .....</b>	<b>35</b>
5.1	Connecting to GV-VMS .....	35
5.2	Video Recording by GV-VMS .....	38
5.3	Playing back Recognition Events on GV-AI FR .....	39
<b>Chapter 6</b>	<b>Access Control Management .....</b>	<b>40</b>
6.1	Connecting GV-AS Controller .....	40
6.2	Connecting 3 <sup>rd</sup> -party Controllers .....	42
6.2.1	Connecting 3 <sup>rd</sup> -party Controllers via GV-FWC .....	43
6.2.2	Connecting 3 <sup>rd</sup> -party Controllers via Serial Port .....	44
<b>Chapter 7</b>	<b>Useful Utilities.....</b>	<b>46</b>
7.1	GV-DDNS V2 Client .....	46
<b>Appendix for GV-CR1320</b>	<b>.....</b>	<b>47</b>

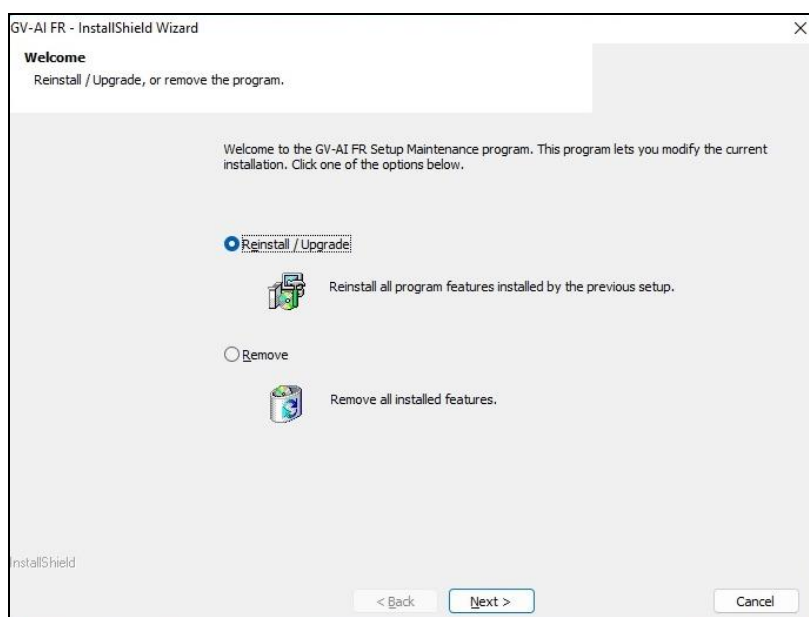
## Note for Installing GV-IP Cameras

The following are some tips to consider when connecting to and installing GV-IP Cameras for face recognition:

- All cameras connected must be set to a resolution of 12 MP or lower.
- All cameras to be used for VA should not have Smart Streaming enabled as it may affect the VA's accuracy and results.
- [Face Detection models](#) are recommended as the ideal cameras to be connected to GV-AI FR for optimal face detection and recognition results.
- When connecting to 5 or more channels of IP cameras, it is recommended that they are installed at sites where the recognition targets are relatively stationary or moving directly toward the cameras for optimal recognition results.
- The feature of Liveness Detection works best when the recognition targets are relatively stationary and facing directly at the cameras in environments with stable lighting conditions.

## Note for Upgrading GV-AI FR

To upgrade GV-AI FR, run the **Installer** (GV-AI FR setup.exe) included in the latest software downloads from our [website](#). Select **Reinstall / Upgrade**.



## Chapter 1 Introduction

GV-AI FR is a video analytic software designed to provide Face Recognition (FR) ability for up to 8 channels of IP cameras, and can be integrated into GV-VMS, a video management software, and/or GV-ASManager, via GV-Controllers, respectively for FR-triggered video recording and/or access management.



---

**Note:** For optimal recognition results, users are recommended to use [GV-Face Detection \(FD\) Cameras](#).

---

### Live Monitoring & Welcome

When a person enters the premises, a corresponding face recognition result, along with a predefined personalized image, can be displayed on the connected Welcome screen(s), playing advertisements, for greeting and/or commercial purposes.

### Dashboard & Average Hourly FR Count

The **Dashboard** and **Hourly FR Count** features of GV-AI FR respectively display the distribution of age and gender of FR events within a day and an average hourly FR count for a selected day, week, month or year.

## 1.1 Key Features

- Support for up to 8 channels of IP cameras
- Realtime face recognition and tracking
- Average recognition speed of within 1 second per face when the recognition targets are moving toward the cameras
- Face Database managing up to 100,000 Face Profiles with 3 face images per profile
- Face profiling by age and gender
- Liveness detection for ensuring the persons recognized are not of inanimate objects, such as printed photos, during recognition
- Automatic compilation of statistical graphs for the number and distribution of age and gender of the faces recognized entering and exiting the premise
- Exportable daily / weekly / monthly / yearly average hourly face recognition count
- Query by face recognition events
- Integration of GV-VMS for video recording and management
- Integration of GV-ASManager for access management by pairing access data to Face Profiles
- Master and Slave feature for interconnecting multiple GV-AI FRs with a centralized Face Database
- Support for connecting to 3<sup>rd</sup>-party controllers for access management via GV-FWC within the LAN and/or GV-COM V3 + GV-WTR by physical connection



## 1.2 System Requirements

### Minimum System Requirements

		1 – 4 Channels	5 – 8 Channels
<b>OS</b>	<b>64-Bit</b>	Windows 10 / 11	
<b>CPU</b>		8 <sup>th</sup> -Generation Intel Core i7 / i9 or above	
<b>Memory</b>		8 GB (4 GB x 2) DDR4 RAM	16 GB (8 GB x 2) DDR4 RAM
<b>Remote Access</b>		Microsoft Internet Explorer 11 or later	

#### Note:

1. For face recognition, the utilization of the graphics processor of 8th-gen Intel Core i7 / i9 or above is required, which only works when a monitor is connected to the onboard GPU.
2. Only Intel Core processors are compatible with GV-AI FR; other brands of CPU do not work with GV-AI FR.
3. For remote access through a browser, Internet Explorer must be used, as some functions will be nonfunctional through non-IE browsers.
4. GV-AI FR does not support virtual machine installation.

### Dongle License

<b>Free License</b>	N/A
<b>Maximum License</b>	8 Channels
<b>Increment of License</b>	1 Channel

**Note:** GV-USB Dongle comes in internal and external dongles. Internal dongle is recommended for its Hardware Watchdog function, which automatically restarts the PC when Windows crashes or freezes.

## 1.3 Optional Accessories

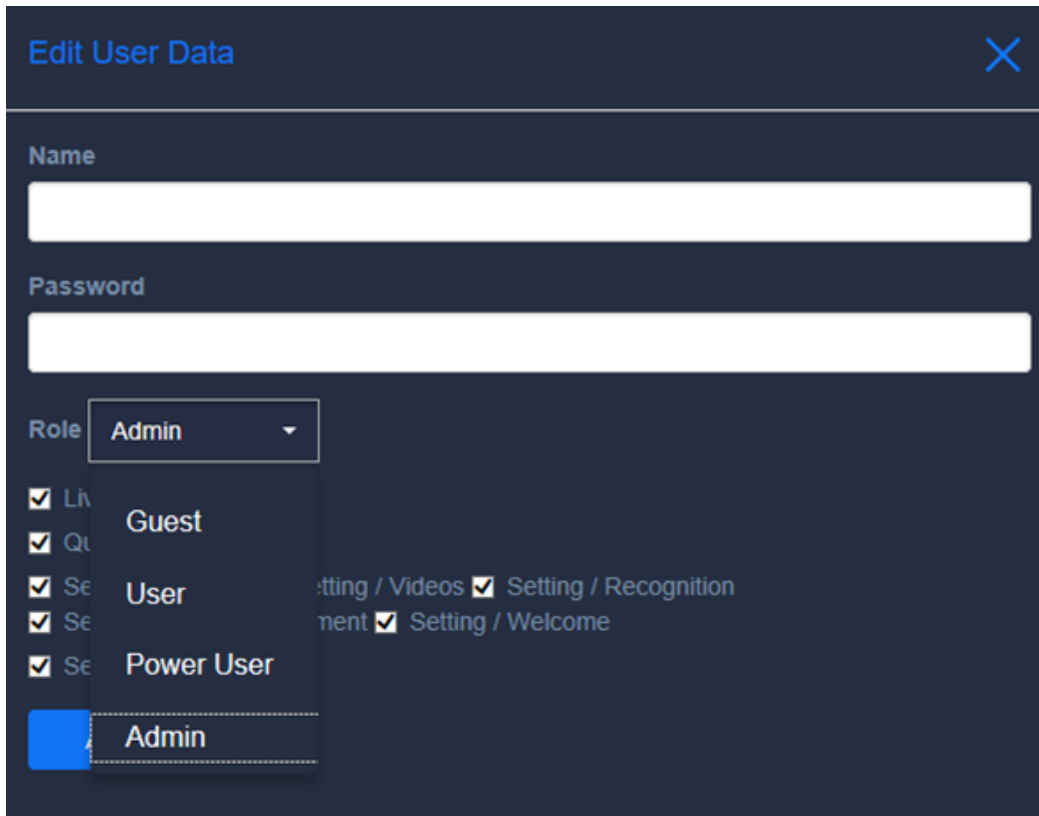
The following optional accessories are available for purchase to expand the capabilities and versatility of GV-AI FR. Contact your local dealer for details.

Optional Accessories	Details
<b>GV-COM V3</b>	By connecting to the USB port of a PC, GV-COM V3 is able to integrate 1 RS-485 port to your system.
<b>GV-FWC</b>	GV-FWC integrates GeoVision face-recognition-based cameras, software and readers into access control systems by sending access card data, paired to Face IDs, to controllers either through TCP/IP or Wiegand connection. See <i>6.2 Connecting 3<sup>rd</sup>-party Controllers</i> .
<b>GV-IO Box (Ethernet) Series</b>	GV-IO Box series (4E / 8E / 16E) provide 4 / 8 / 16 inputs and relay outputs and support Ethernet module, with 4E additionally supporting PoE connection. See <i>4.4.3 IO Box</i> .
<b>GV-WTR</b>	GV-WTR is a converter designed for converting Wiegand interface to RS-485 interface, and vice versa. It enables 3rd party readers to be connected to RS-485 GV-Controllers, as well as allowing GV-AI FR (software) and GV-CR1320 (RS-485 camera reader) to be connected to 3rd-party Wiegand controllers. See <i>6.2 Connecting 3<sup>rd</sup>-party Controllers</i> .

## Chapter 2 Getting Started

### 2.1 Installation

1. Download GV-AI FR from the [GeoVision's website](#) and execute *GVFRServerInstaller.exe* to install.
2. To use an USB dongle, make sure the driver **GV-Series Card Driver / USB Devices Driver** is properly installed, from the [GeoVision's website](#), and insert the dongle.
3. Upon first-time startup, users are required to set a new **Username** and **Password** for the administrator account after logging in with their default values of *admin, admin*.



**Edit User Data** [Close]

Name  
[Input Field]

Password  
[Input Field]

Role: Admin [Dropdown]

- Liv
- Qu
- Se
- Se
- Se

Guest

User  Setting / Videos  Setting / Recognition  
 Setting / Welcome

Power User

Admin

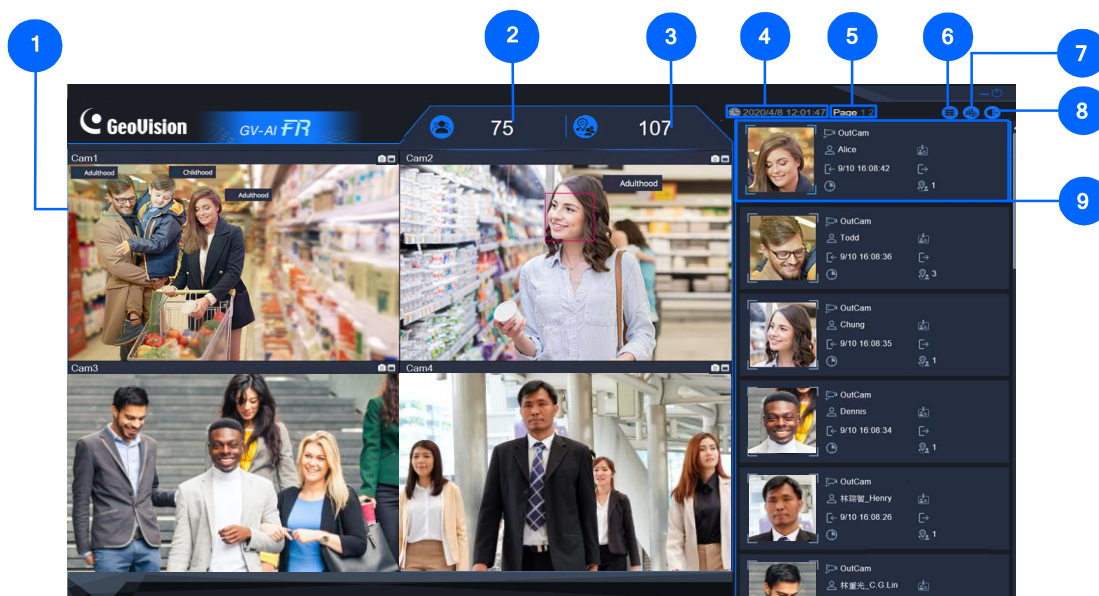
---

#### Note:

1. Upon first-time login, users are required to perform a one-time installation of the Windows OCX plugin in order to run the program
  2. For different account settings and their privileges, see [4.2.5 Account & Authority](#).
-

## 2.2 Main Screen

After logging into GV-AI FR, the following main screen appears.

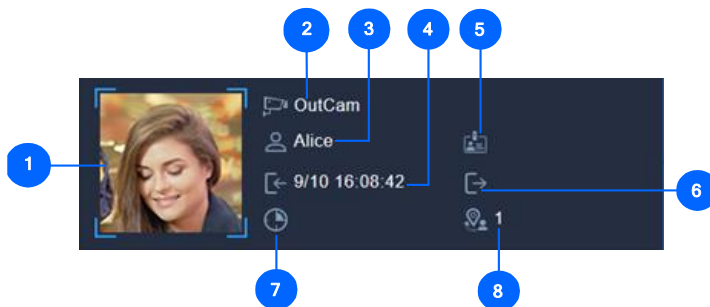


No.	Name	Description
1	Live View	Displays the live view of IP cameras connected.
2	Unique Face Count	Counts the number of unique face recognition events, the number of individuals recognized, within the day.
3	Total Face Count	Counts the total number of face recognition events within the day.
4	Time	Displays the current system date and time.
5	Page 1 / 2	Click <b>Page 1</b> or <b>2</b> to switch between the live views of camera channels 1 ~ 4 and camera channels 5 ~ 8.
6	FR List	Accesses the FR List, which simultaneously displays up to 60 realtime face recognition events. See 2.2.2 <i>FR List</i> .
7	Dashboard	Accesses the following: <ul style="list-style-type: none"> <li>Welcome — Previews the welcome screen to be displayed by the connected Welcome Monitor upon face recognition. For related settings, see 4.4.1 <i>Welcome Settings</i>.</li> <li>Dashboard — Displays the face recognition events, by age and gender, within the day, see 4.1 <i>Dashboard &amp; Analysis</i>.</li> <li>Analysis — Displays the face recognition data in a given day, week, month or year, see 4.1 <i>Dashboard &amp; Analysis</i>.</li> </ul>

		<ul style="list-style-type: none"> <li>● General Settings — Accesses the settings of GV-AI FR, such as system, camera and face recognition, see <i>2.3 Basic Settings</i>.</li> <li>● Face Management — Manages the face recognition database of GV-AI FR, see <i>Chapter 3 Face Recognition</i>.</li> <li>● Notify Settings — Configures notification settings, see <i>4.4 Notify Settings</i>.</li> <li>● Event Query — Displays and searches for face recognition events and system logs in chronological order. See <i>3.3 Recognition Events</i>.</li> </ul>
8	Logout	Logs out of the system.
9	Face Profile	Displays the latest faces recognized by the connected cameras, in chronological order. See <i>2.2.1 Face Profile</i> .

## 2.2.1 Face Profile

Next to the live view on the main screen, Face Profiles are displayed in chronological order, with the most recent face recognition events at the top.




No.	Name	Description
1	Face Snapshot	The face snapshot captured upon the face recognition event.
2	Camera Channel	The camera channel where the face recognition event occurred.
3	Face Profile	The face profile of the person recognized.
4	Entrance time	The time of the person recognized entering the vicinity, as determined by recognition events at cameras set as <i>Door(In)</i> . See <i>3.1 Configuring Recognition Settings</i> .
5	Face Group	The Face Group in which the Face Profile is categorized under, which is displayed as <i>Unknown</i> when unrecognizable.
6	Exit time	The time of the visitor exiting the vicinity, determined by the face recognition of cameras positioned at <i>Door(Out)</i> . See <i>3.1 Configuring Recognition Settings Cameras</i> .

7	Dwell time	The amount of time the person stayed in the vicinity (from Entrance time to Exit time).
8	Recognition Count	The number of times the person is recognized within a day.

## 2.2.2 FR List

The FR List can display up to 60 realtime face recognition events simultaneously. To access, click **FR List** on the main screen of GV-AI FR (No. 6, 2.2 Main Screen).



To pause the updating of the FR List, click the  button.

## 2.3 Basic Settings

This section will guide users through some of the basic settings of GV-AI FR, as listed below:

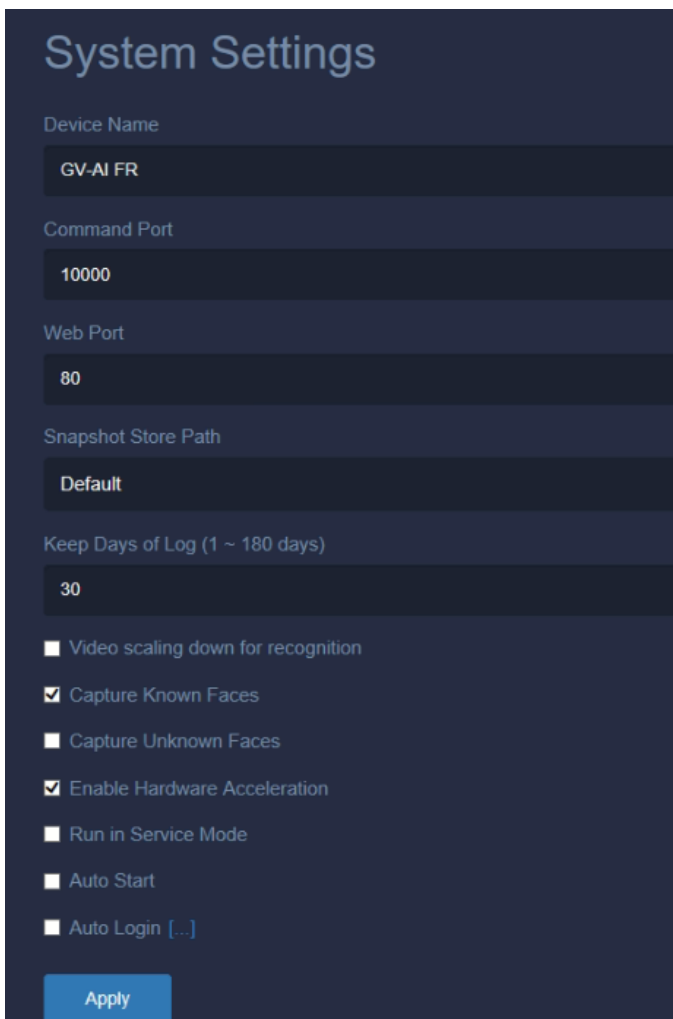
- General Settings: See 2.3.1 *Configuring System Settings*.
- Camera Setup: See 2.3.2 *Adding IP Cameras*.

For face recognition related settings, see *Chapter 3 Face Recognition*.

For other advanced settings, see *Chapter 4 Advanced Settings*.

### 2.3.1 Configuring System Settings

To configure the system settings of GV-AI FR, click **Dashboard** (No. 5, 2.2 Main Screen) > **General Settings** > **System Settings**



The screenshot shows the 'System Settings' page for a GV-AI FR device. The settings are as follows:

Setting	Value
Device Name	GV-AI FR
Command Port	10000
Web Port	80
Snapshot Store Path	Default
Keep Days of Log (1 ~ 180 days)	30
Video scaling down for recognition	<input type="checkbox"/>
Capture Known Faces	<input checked="" type="checkbox"/>
Capture Unknown Faces	<input type="checkbox"/>
Enable Hardware Acceleration	<input checked="" type="checkbox"/>
Run in Service Mode	<input type="checkbox"/>
Auto Start	<input type="checkbox"/>
Auto Login [...]	<input type="checkbox"/>

An 'Apply' button is located at the bottom of the settings list.

- **Device Name:** Type a desired name for the GV-AI FR.
- **Command Port:** Modify the default port of 10000 if necessary.

- **Web Port:** Modify the default port of 80 if necessary.
- **Snapshot Storage Path:** Select the storage path to save the captured and encrypted face snapshots
- **Keep Days of Log (1 ~ 180 days):** Define the number of days face recognition event logs are kept for.
- **Video Scaling Down for Recognition:** Disabled by default, reduce the system loading by compressing the videos of 4 MP / 5 MP to 1 MP for face recognition.
- **Capture Known Faces:** Enabled by default, all faces captured upon face recognition are saved and displayed on GV-AI FR. Optionally deselect to disable.
- **Capture Unknown Faces:** Disabled by default, record and display unrecognizable faces.
- **Enable Hardware Acceleration:** Enabled by default, use GPU decoding to reduce the CPU loading of the PC.
- **GPU Decode:** Enable / disable GPU decoding.
- **Run in Service Mode:** Enable to continue running the program after logging out of Windows.
- **Auto Start:** Enable to automatically run GV-AI FR after the PC is started.
- **Auto Login [...]:** Enable to automatically log in with the desired set of credentials, and display the main screen or one of the welcome screens upon starting of GV-AI FR. For the details of welcome screen and related settings, see *4.4.1 Welcome Settings*.

## 2.3.2 Adding IP Cameras

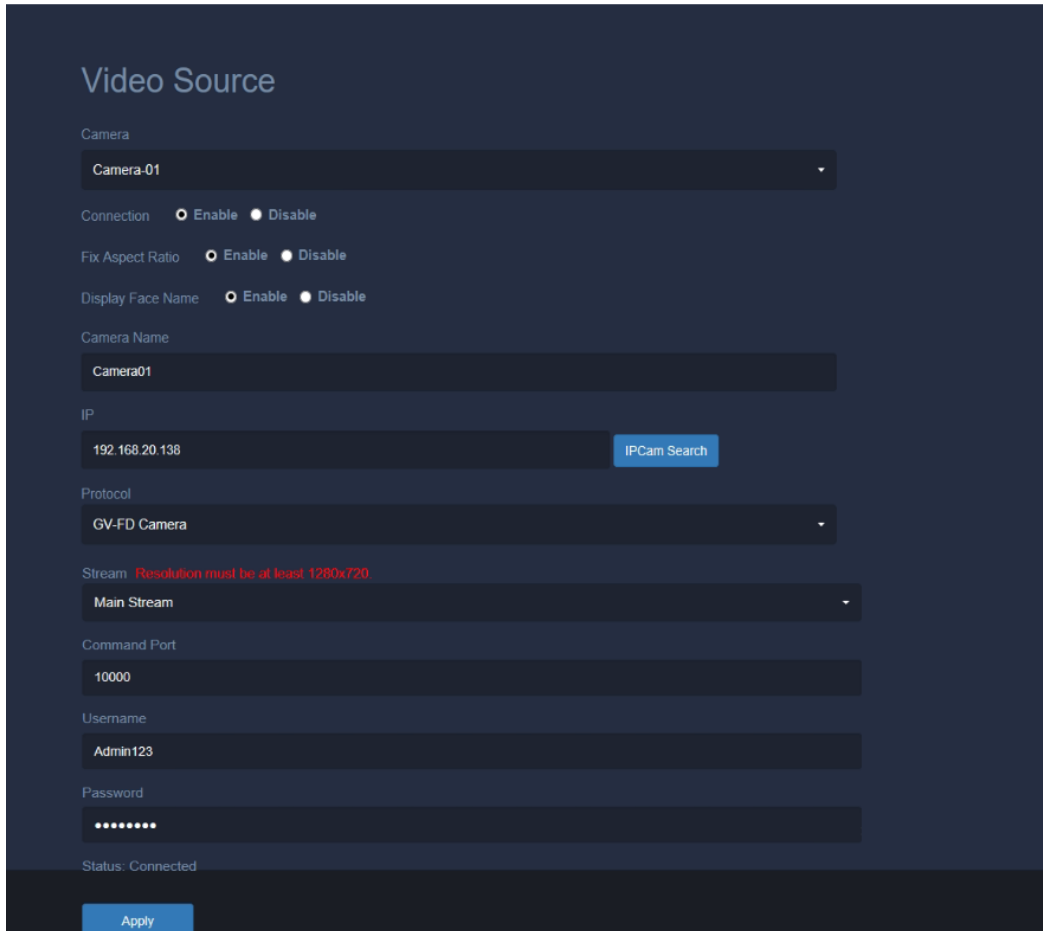
---

### Note:

1. Make sure the IP cameras to be added are installed within the same LAN as GV-AI FR.
  2. Any IP cameras to be added to GV-AI FR must first be set to a resolution of 12 MP or less.
  3. Make sure all IP cameras to be used for Video Analytics does not have Smart Streaming enabled as it may affect the accuracy and results of the Video Analytics.
-



1. From the main screen, click **Dashboard** (No. 5, 2.2 Main Screen) > **General Settings** > **Video Source**.



2. Select one of the 8 channels for the IP camera to be connected under from the **Camera** dropdown list.
3. Enable **Connection** for the live view of the camera to be streamed to GV-AI FR.
4. Optionally enable **Fix Aspect Ratio** and **Display Face Name** to respectively keep the original aspect ratio of the video source and display the recognition results of the recognition targets on the live view.
5. Type a desired name for the camera channel under **Camera Name**.
6. Select one of the following as the **Camera Type/Protocol**:
  - **ONVIF**: For all GeoVision and/or 3<sup>rd</sup>-party IP devices via ONVIF protocol.
  - **RTSP(TCP) / RTSP(UDP)**: For all IP devices via RTSP(TCP) / RTSP(UDP).
  - **USB Webcam**: For webcam cameras connected via USB.
  - **GV-FD Camera**: For connecting to GV-Face Detection cameras only. For details on GV-Face Detection Cameras, see [Face Detection models](#).

7. Type the **IP**, **Command Port** and login **Username** and **Password** of the camera to be added.
8. Optionally select **Main Stream** / **Sub Stream** from the **Stream** dropdown list.
9. Click **Apply**. After the camera is successfully connected, a Status of Connected is shown.

Status: Connected

10. To add more cameras, select a different channel under the **Camera** dropdown list and repeat Step 3 – 8.

## Chapter 3 Face Recognition

This chapter will guide users through all of the configurations related to face recognition, as listed below:

- **Enabling Face Recognition:** See *3.1 Configuring Recognition Settings*.
- **Enroll Faces:** See *3.2 Enrolling Face Data*.
- **Grouping Face Profiles:** See *3.3 Managing Face Groups*.

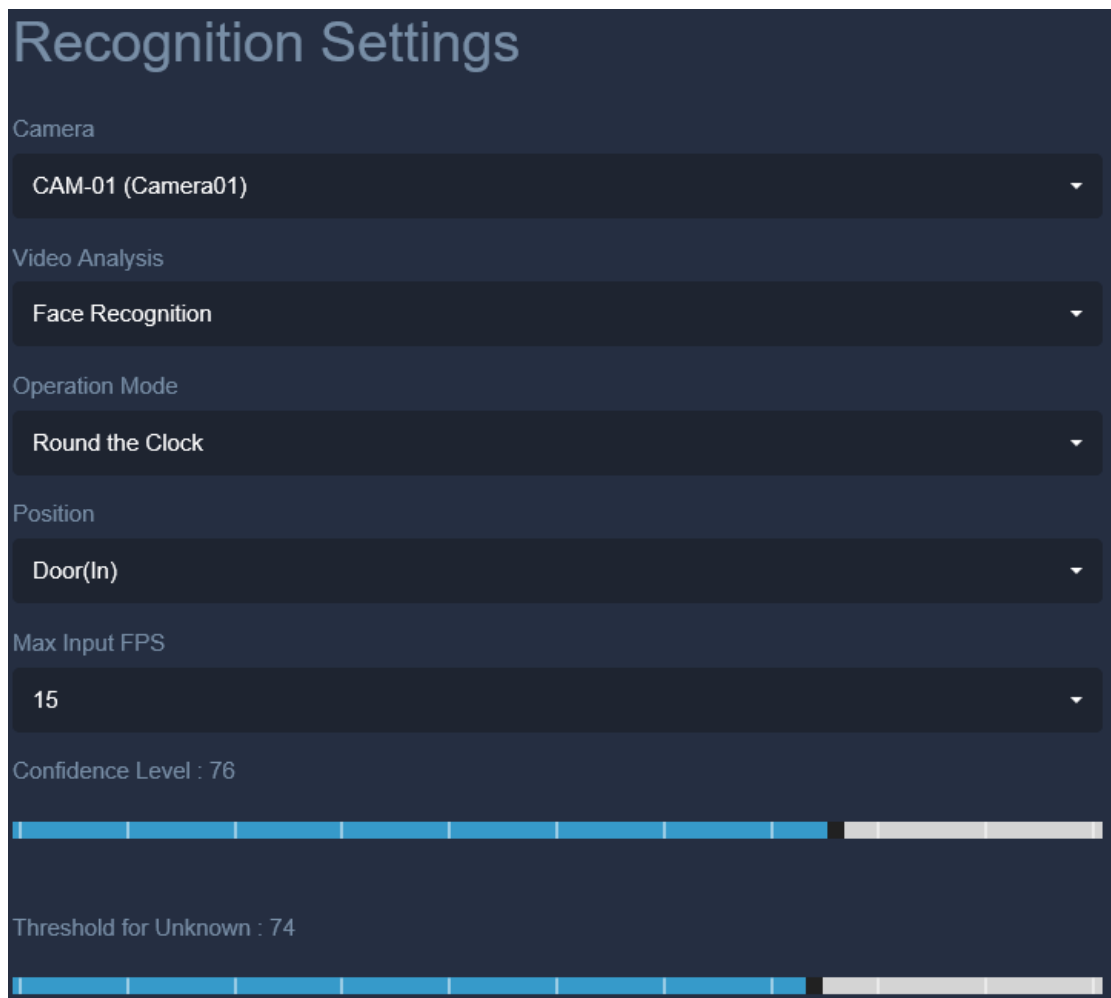
## 3.1 Configuring Recognition Settings

---

**Note:** To use face recognition, make sure there is at least one IP camera connected to GV-AI FR, see [2.3.2 Adding IP Cameras](#).

---

1. To enable face recognition, click **Dashboard** (No. 5, *2.2 Main Screen*) on the main screen and select **General Settings** > **Recognition Settings**.



Face Angle

Side

Min. Face Size(pixels)

80

Max. Face Size(pixels)

800

Dwell Time (milliseconds)

30

Unknown Interval

Auto

Only Detect for the Nearest Face among Multiple Faces

Disable

Liveness Detection

Disable

Age & Gender Detection

Disable

Mask

Setting...

Apply All

2. Select the camera channel in which to configure face recognition settings for from the **Camera** dropdown list.
3. Select *Face Recognition* under **Video Analysis** to enable face recognition.
4. Under **Operation Mode**, select **Round the Clock** or **Start/Stop by Trigger** to always perform face recognition or only recognize faces as controlled by event trigger(s), respectively.
5. Select a **Position** for the camera to be added from *Door(In)* and *Door(Out)*.
  - **Door(In)**: Faces recognized from this camera are identified as persons entering the vicinity.
  - **Door(Out)**: Faces recognized from this camera are identified as persons exiting the vicinity.

6. Optionally adjust the maximum frames per second under **Max Input FPS**.
7. Adjust the **Confidence** level, from 0 to 100. The higher the level, the more definitive and stricter the camera is toward distinguishing between similar faces upon face recognition.
8. Adjust the **Threshold for Unknown**. Recognition events below this value of confidence are recorded as unknown.
9. Select the **Face Angle** for the face recognition to perform under, as listed below:
  - **Front:** Faces are recognized for when they are facing the camera at a horizontal deviation of 0 ~ 15 degrees and a vertical deviation of 0 ~ 10 degrees.
  - **Side:** Faces are recognized for when they are facing the camera at a horizontal deviation of 0 ~ 25 degrees and a vertical deviation of 0 ~ 20 degrees
  - **Any Angle:** Faces are recognized for when they are facing the camera at a horizontal deviation of 0 ~ 45 degrees and a vertical deviation of 0 ~ 30 degrees.
10. Optionally modify the following settings:
  - **Min. Face Size(pixels) and Max. Face Size(pixels):** Only the faces within this size range are recognized for.
  - **Unknown Interval:** The amount of time before face recognition can be performed again on recognition targets that have been identified as unknown.
  - **Only Detect for the Nearest Face among Multiple Faces:** Only the largest face detected are recognized for when there are two or more faces at a time.
  - **Liveness Detection:** Only record face recognition events as valid on targets detected as live and moving, in preventing the use of inanimate objects, such as printed photos, for face recognition.

---

**Note:**

1. With the optimized recognition engine for GV-AI FR V1.1 or later versions, it is no longer required to set the **Dwell Time** for face recognition.
  2. In terms of anti-spoofing applications, liveness detection isn't applicable to all situations 100% of the time. For a higher level of security, the integration of [GV-FWC](#) and [GV-ASManager](#) for two-factor authentication, face recognition + access card, is strongly suggested.
- 

- **Age & Gender Detection:** Detect for the estimated age range and gender of the faces recognized.
- **Mask:** Mask areas on which face recognition will not be performed.

11. Optionally select **Apply All** to apply the same recognition settings to all camera channels.
12. Click **Apply**. Face recognition is now enabled for the channel selected and will recognize Face Profiles as enrolled within Face Management.

**Note:** To enroll face images and create Face Profiles for face recognition, see [3.2 Enrolling Face Data](#).

## 3.2 Face Enrollment

There are 3 ways to enroll face images into GV-AI FR, as listed below:

- **Manual Enrollment:** See [3.2.2 Creating Face Profiles](#).
- **Enrolling Unknown Recognition Events:** See [3.3.1 Enrolling via Query](#).

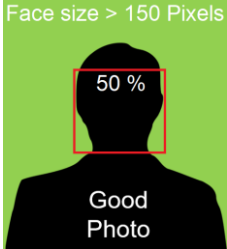
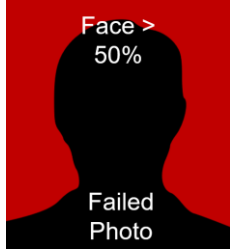
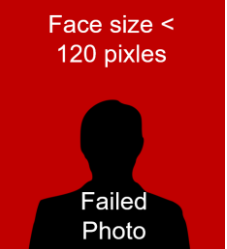
Regardless of the method of enrollment, the face images used must meet the criteria as specified in [3.2.1 Photo Requirements](#).

### 3.2.1 Photo Requirements

All face images to be enrolled as the basis of face recognition must meet the following criteria:

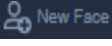
- Each photo must consist of only one face directly facing the camera.
- Do not use camera filters or wear a face mask.
- Make sure your hat, head covering, or hair does not block your eyebrows.
- Size of the face within the photo is greater than 150 pixels.
- Only JPEG format is supported.
- Make sure the face of the person does not occupy more than 50% of the image.

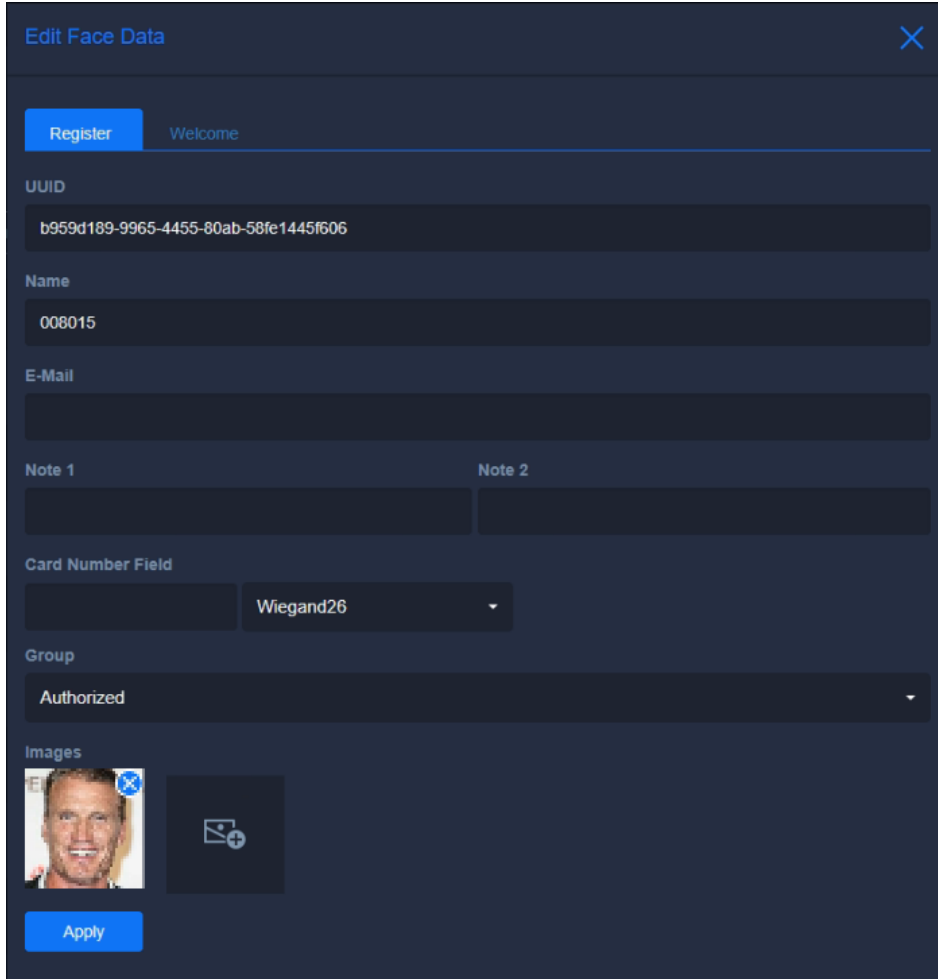
See examples below:

Ideal	Failed to enroll – 1	Failed to enroll – 2
		
<p>The face occupies less than 50% of the image. The size of the person's face is greater than 150 pixels.</p>	<p>The face occupies more than 50% of the image.</p>	<p>The size of the person's face is less than 120 pixels.</p>

## 3.2.2 Creating Face Profiles

To manually enroll face images and create Face Profiles on GV-AI FR, follow the steps below.

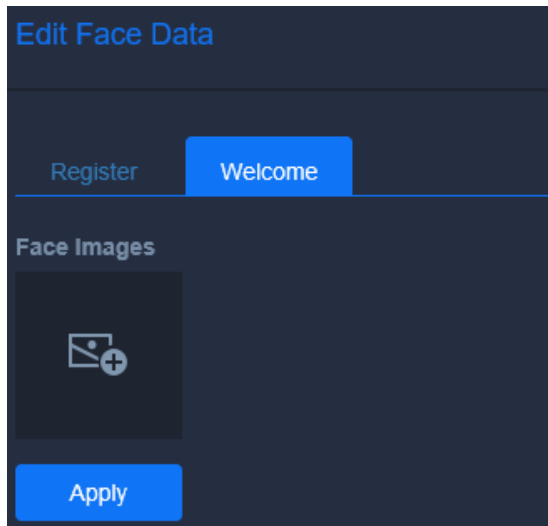
1. From the main screen, click **Dashboard** (No. 5, 2.2 *Main Screen*), select **Face Management > Face Profiles** and click **New Face** . This window appears.



2. Type a desired name for the Face Profile under **Name**.
3. Optionally type an e-mail account and notes for the Face Profile under **Note 1** and **Note 2**.
4. For integrating face recognition into access control systems, such as *GV-ASManager*, type a card number in the **Card Number Field** for the Face Profile to be paired with.
5. Select a **Group** for the Face Profile to be categorized under. To create and/or edit Face Groups, see *3.4 Editing Face Groups*.
6. Click the icon under **Images** to browse for and add face images for the Face Profile. Face images used must follow the criteria as specified in *3.2.1 Photo Requirements*.
7. Click **Apply**. The Face Profile is created.

## Face Image

In the **Welcome** tab of **Edit Face Data**, optionally browse for a **Face Image**, which can be displayed on the Welcome screen upon recognizing of the Face Profile. For details on the Welcome screen settings, see *4.4.1 Welcome Settings*.



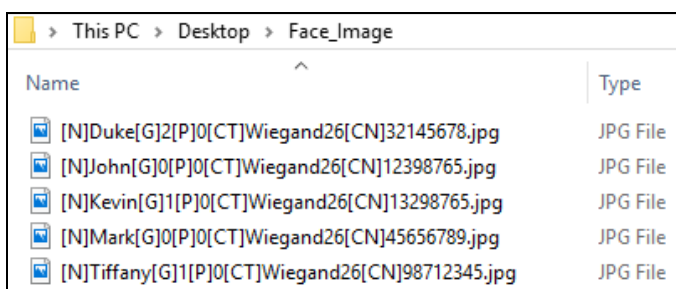
### 3.2.3 Batch Enrolling Faces

1. To enroll multiple face images, save all of the face images, which must follow the criteria as specified in *3.2.1 Photo Requirements*, to the same folder on your PC and rename them as exemplified below:


[N]< Face Profile Name>[G]<Group No. – 1>[P]<Photo No. – 1>[CT]<Card Type>[CN]<Card Number>[D1]<Note 1>[D2]<Note 2>.jpg

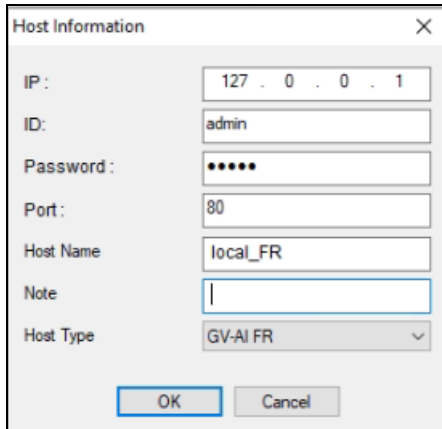
For example, [N]John[G]0[P]0[CT]Wiegand26[CN]12398765.jpg

The above image file will be added to Face Profile **John**, as its **first** photo, while being assigned an access card with **Wiegand26** card type, a card number of **12398765**, being categorized under **Group 1**, and with no data in its Note 1 and Note 2 fields.

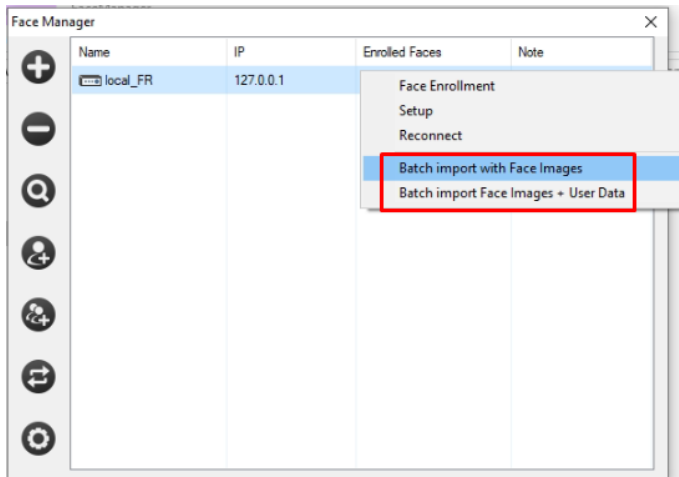




- Once all the face images are named properly and saved under the same folder, run **FaceManager.exe** from the GV-AI FR > FaceManager directory (C:\GV-AIFR\FaceManager).
- Upon first-time execution, the user is required to set a login ID and Password for the Face Manager.
- After logging in, click **Add Host**  and type the **IP address**, **Port**, the login **ID** and **Password** and a desired **Host Name** for the GV-AI FR, and click **OK**.



- Once the GV-AI FR is added to Face Manager, right-click on it and select **Batch import with Face Images** or **Batch import Face Images + User Data** to respectively batch enroll the face images *without* or *with* their paired access card data.



- Select the folder and click **Select Folder**. All the face images saved within are imported into the GV-AI FR.

---

**Note:** For further details on the different functions of Face Manager, see [Face Manager User's Guide](#).

---

### 3.3 Recognition Events

The **Event Query** stores all face recognition events and allows users to search for certain events during a specified time, as well as enroll the face snapshots of unknown recognition events into new or existing Face Profiles.

---

**Note:** For GV-AI FR to record and display recognition events, make sure there is at least one IP camera connected with the recognition function enabled, see [2.3.2 Adding IP Cameras](#) and [3.1 Configuring Recognition Settings](#), respectively.

---

There are four types of event logs for face recognition events, which can be accessed by clicking **Dashboard** (No. 5, *2.2 Main Screen*) > **Event Query**:

- **Detail Log:** Records and displays the *Camera, Face Group, Name, Notes, Wiegand Card No.* and *Time* of all recognition events.
- **Invalid Detection Log:** Records and displays the *Camera, Type.* and *Time* of all abnormal recognition events.
- **Advanced Log:** Records and displays the *Gender, Age, Face Group, Name, Notes, Wiegand Card No.*, as well as the *Entering* and *Exit Time* of the Face Profiles recognized.
- **System Log:** Records and displays the system logs of the GV-AI FR.

When accessing **Detail / Invalid Detection / Advanced Log**, apply the desired search criteria and click **Query**.

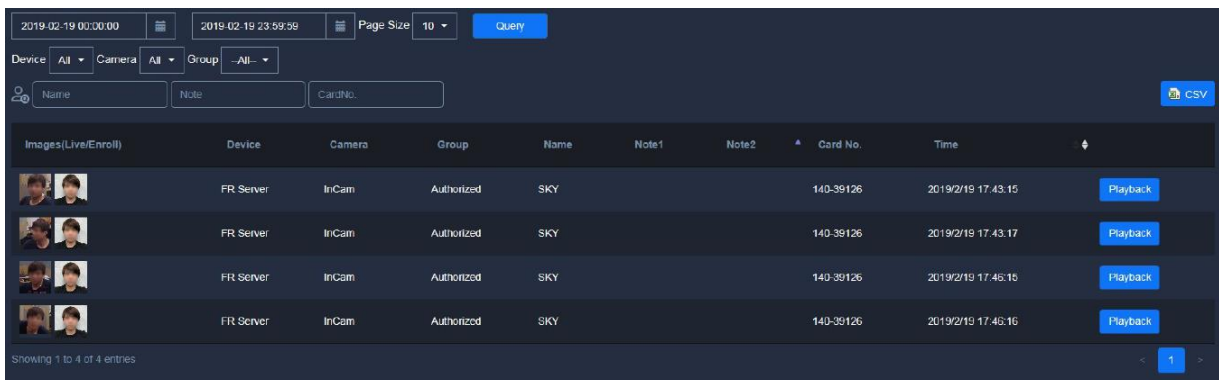


1. Select the start and end date/time of the events searched.
2. Optionally select the necessary **device**, **camera channel** and/or **face group** from the respective dropdown lists.
3. Not applicable to Invalid Detection Log, optionally type the necessary Face Profile name, note and/or access card number in the respective fields.
4. Only for **Detail Log**, choose to sort the search results by **Time** or **Name**.
5. Only for **System Log**, choose the **Category** of log to be searched for.

The search results are displayed based on the criteria set, with the data explained below.

- **Images (Live/Enrolled):** Displays the face snapshot captured upon the face recognition event, along with the face image already enrolled for the Face Profile recognized.
  - ⦿ For unknown recognition events, the face image shown next to the snapshot is of the Face Profile that the system determines to be most similar to the unknown face.
- **Group:** Displays the Face Group in which the recognized Face Profile belongs to. This field is displayed as *Unknown* if the face recorded is unrecognizable.
- **Gender:** Displays the gender of the face recognized as determined by GV-AI FR.
- **Age:** Displays the estimated age of the face recognized as determined by GV-AI FR.
- **Name:** Displays the name of the Face Profile recognized.
- **Note:** Displays the notes of the Face Profile recognized.
- **Card No:** Displays the Wiegand card number paired to the Face Profile recognized.

### [Detail Log]



Images(Live/Enroll)	Device	Camera	Group	Name	Note1	Note2	Card No.	Time	
	FR Server	InCam	Authorized	SKY			140-39126	2019/2/19 17:43:15	<a href="#">Playback</a>
	FR Server	InCam	Authorized	SKY			140-39126	2019/2/19 17:43:17	<a href="#">Playback</a>
	FR Server	InCam	Authorized	SKY			140-39126	2019/2/19 17:45:15	<a href="#">Playback</a>
	FR Server	InCam	Authorized	SKY			140-39126	2019/2/19 17:45:16	<a href="#">Playback</a>

Showing 1 to 4 of 4 entries

The following are data / options only available in **Detail / Invalid Detection Log**.

- **Camera:** Displays the camera channel where the face recognition event occurred.
- **Time:** Displays the time of the face recognition event.
- **Playback:** Only for Detail Log, click to play back recordings of the face recognition event.
- **Type:** Only for Invalid Detection Log, displays the type of invalid detection the event was identified as.

---

**Note:** For playing back recognition events, the camera channel where the event occurred must be connected to GV-VMS, with video recording enabled, see [Chapter 5 GV-VMS Integration](#).

---

**[Advanced Log]** The following are data / options only available in **Advanced Log**.

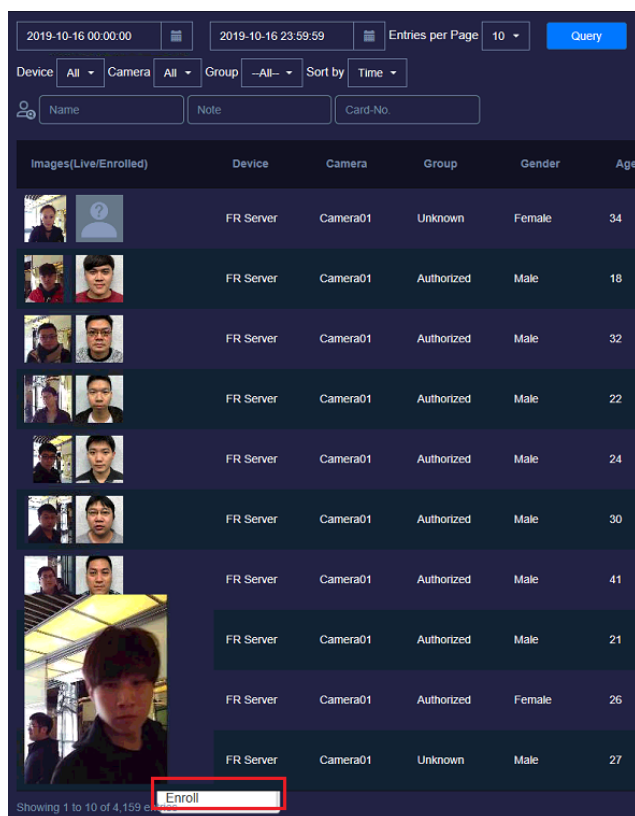
- **In / Out Time:** Displays the most recent entering and exiting times of the Face Profile recognized.
- **Stay Time:** Displays the amount of time the person recognized stayed within the vicinity.

## Exporting Logs

On the Event Log pages, users can also export the event logs displayed as an *.csv* or *.html* file by clicking  **CSV** or  **HTML**. When exporting, all ongoing and finished export tasks are displayed on the **Exported Files** page, which can be accessed by clicking **Dashboard** (No. 5, 2.2 Main Screen) > **Event Query** > **Exported Files**.

### 3.3.1 Enrolling via Query

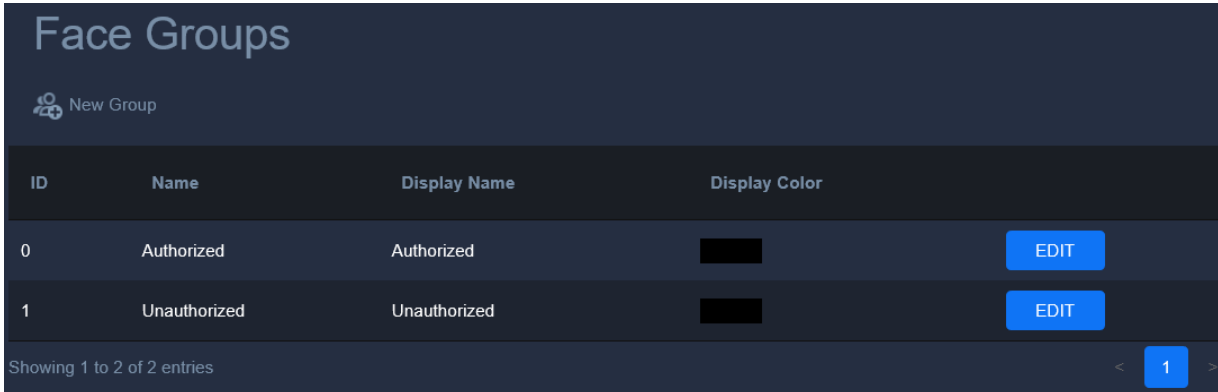
1. To enroll face snapshots of unknown recognition events, click **Dashboard** (No. 5, 2.2 Main Screen) > **Event Query** > **Detail Log** and follow Step 1 – 4 in 3.3 Recognition Events and click **Query**.
2. Right-click on the snapshot of an unknown recognition event and click **Enroll**.





3. Follow Step 2 – 5 in 3.2.2 Creating Face Profiles.
4. Click **Apply**. A new Face Profile is created.

## 3.4 Face Groups

From the main screen, click **Dashboard** (No. 5, 2.2 Main Screen) > **Face Management** > **Face Groups**. The Face Groups page appears, which allows users to create new Face Groups and/or edit existing ones, for the Face Profiles to be categorized under.

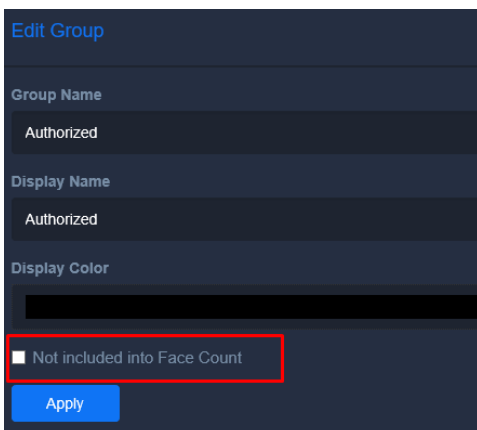


ID	Name	Display Name	Display Color	
0	Authorized	Authorized		<a href="#">EDIT</a>
1	Unauthorized	Unauthorized		<a href="#">EDIT</a>

Showing 1 to 2 of 2 entries < 1 >

- **New Group:** Click to create a new Face Group.
- **ID:** Displays the ID number of the Face Group.
- **Name:** Displays the name of the Face Group
- **Display Name:** Displays the name of the Face Profile as shown on the **Welcome** page, see 4.4.1 *Welcome Settings*.
- **Display Color:** Highlights all Face Profiles within this Face Group with the color selected.
- **Edit:** Click edit to modify the Face Group.


When creating or editing a Face Group, optionally select **Not included into Face Count** to not include any face recognition events of that Face Group into the face/recognition counts of GV-AI FR.



[Edit Group](#)

Group Name  
Authorized

Display Name  
Authorized

Display Color  


Not included into Face Count

[Apply](#)

## Chapter 4 Advanced Functions

This chapter covers the advanced functions of GV-AI FR, which includes the following categories: **Dashboard & Analysis**, **General Settings**, **Notify Settings**, and **Event Query**.

### List of Configurations

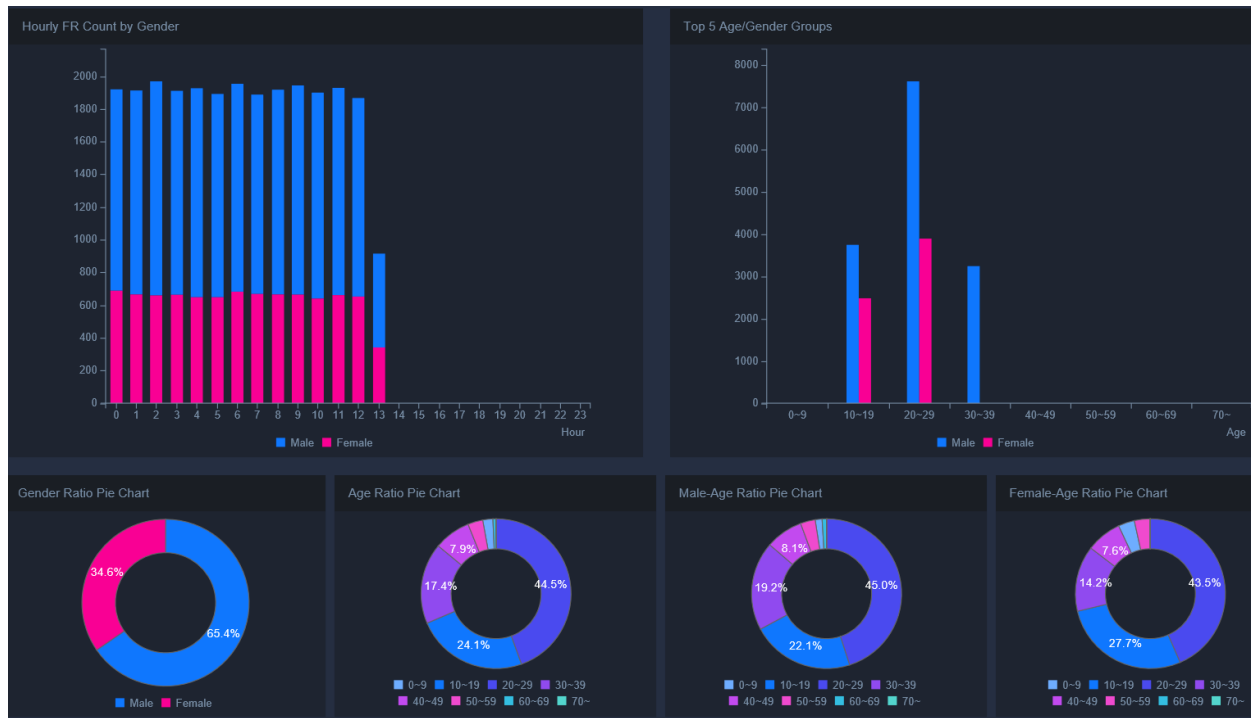
See the table below for the advanced functions of GV-AI FR.

<b>4.1 Dashboard &amp; Analysis</b>	
<b>4.2 General Settings</b>	4.2.1 System Settings
	4.2.2 Video Source
	4.2.3 Recognition Settings
	4.2.4 GV-VMS Connection
	4.2.5 Account & Authority
	4.2.6 Master / Slave Sync
<b>4.3 Face Management</b>	
<b>4.4 Notify Settings</b>	4.4.1 Welcome Settings
	4.4.2 Event Trigger
	4.4.3 IO Box
	4.4.4 Serial Port
	4.4.5 GV-FWC / Controller
	4.4.6 LINE Notify

## 4.1 Dashboard & Analysis

- **Dashboard**

The **Dashboard** page records and displays the total number of faces recognized along with the gender and age distribution, in statistical graphs, within a day.



- **Analysis — Hourly FR Count**

The **Hourly FR Count** page records and displays the average number of recognition events, by the hour, entering and exiting the premise in a day, week, month or year.



## 4.2 General Settings

This section covers all of the settings available under General Setting, including **System Settings**, **Video Source**, **Recognition Settings**, **GV-VMS Connection**, **Account & Authority** and **Master / Slave Sync**.

### 4.2.1 System Settings

The **System Settings** page configures the system settings of GV-AI FR, see 2.3.1 *Configuring System Settings*.

### 4.2.2 Video Source

The **Video Source** page allows users to connect up to 8 IP cameras to the GV-AI FR for live video streaming, see 2.3.2 *Adding IP Cameras*.

### 4.2.3 Recognition Settings

The **Recognition Settings** page enables and configures the face recognition parameters for each of the camera channels of GV-AI FR, see 3.1 *Configuring Recognition Settings*.

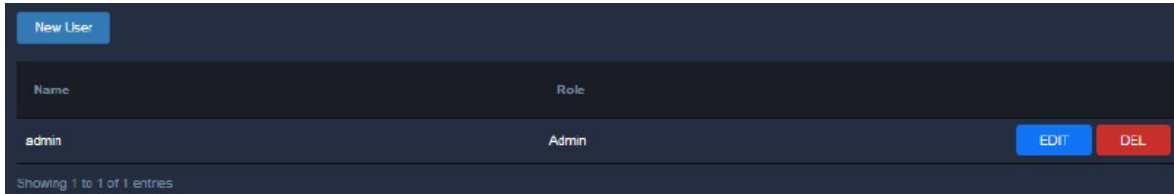
### 4.2.4 GV-VMS Connection

GV-AI FR can be connected to GV-VMS V18.1 or later for remote streaming and video recording, see *Chapter 5 GV-VMS Integration*.



## 4.2.5 Account & Authority

The **Account & Authority** page allows users to create and edit user accounts, available in 4 levels, as well as enabling / disabling configuration rights for various accounts.



Name	Role	
admin	Admin	<a href="#">EDIT</a> <a href="#">DEL</a>

Showing 1 to 1 of 1 entries

## 4.2.6 Master / Slave Sync

When there are two or more GV-AI FRs installed, users can set one of them as the **Master** for storing and recording all face recognition data to be used by **up to 10** other GV-AI FRs, or **Slaves**, to avoid the need of managing multiple databases simultaneously.

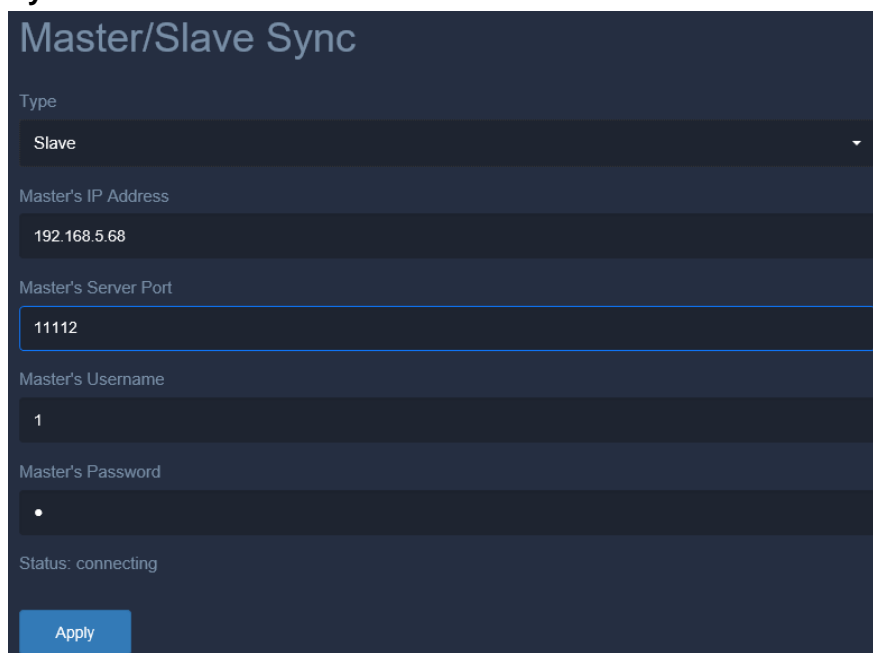
---

**Note:** By default, all GV-AI FR are set as **Standalone** and have their own, exclusive face database for face recognition.

---

To set up Master and Slave GV-AI FRs, follow the steps below:

1. On the GV-AI FR to be set as the Master, typically the one in which all the face data are stored, click **Dashboard** (No. 5, 2.2 Main Screen) > **General Settings** > **Master/Slave Sync**.



**Master/Slave Sync**

Type  
Slave

Master's IP Address  
192.168.5.68

Master's Server Port  
11112

Master's Username  
1

Master's Password  
•

Status: connecting

[Apply](#)

2. Select **Master** as **Type** and set a desired **Username** and **Password**, which will be used by other Slave GV-AI FRs for connecting to the Master.
3. Optionally modify the default **Port** of **11112** if necessary and click **Apply**.
4. After the Master GV-AI FR is set, click **Dashboard** (No. 5, 2.2 *Main Screen*) > **General Settings** > **Master/Slave Sync** on a separate GV-AI FR to set it as the Slave.
5. Select **Slave** as **Type** and type the **IP Address**, **Port**, **Username** and **Password** of the Master GV-AI FR.
6. Click **Apply** and restart the slave GV-AI FR for the changes to take effect.
7. To connect multiple Slave GV-AI FRs to the Master, repeat Step 4 – 6.

Once the Slave GV-AI FRs are successfully connected to the Master GV-AI FR, all face recognition events occurred on the Slaves will be based on and sent to the face database of the Master.

## 4.3 Face Management

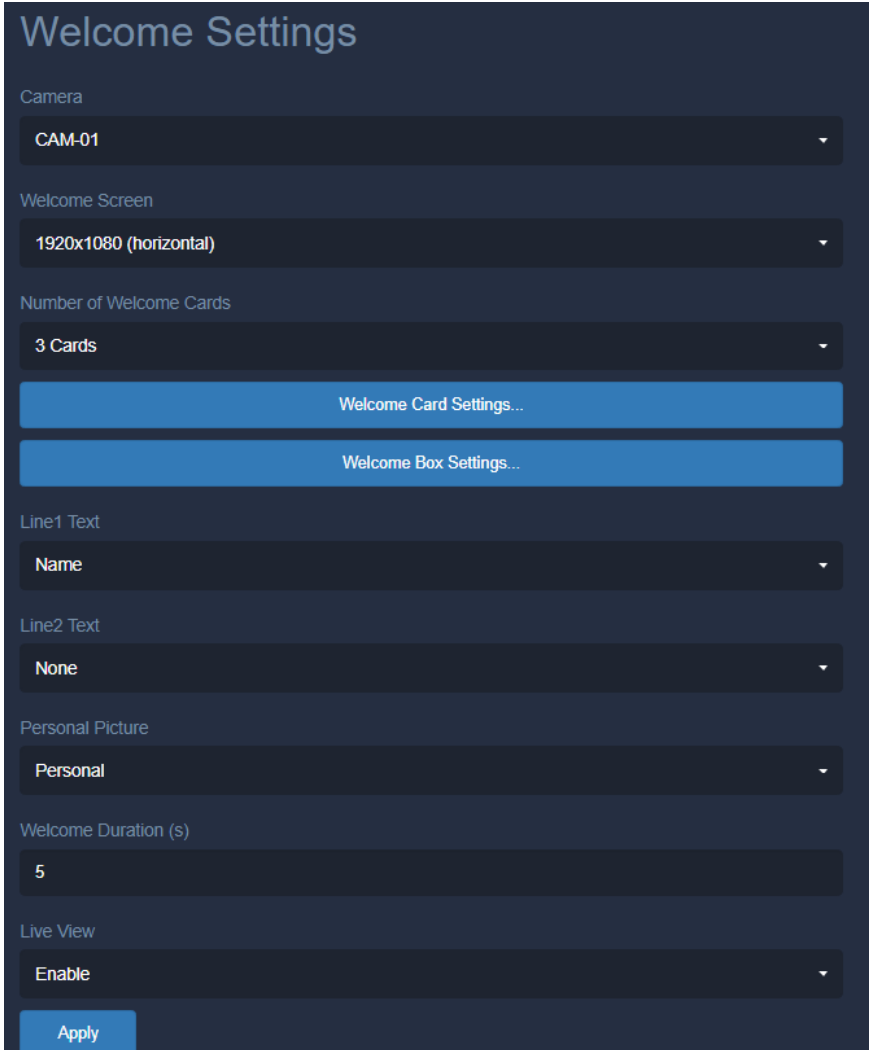
The Face Management pages, namely **Face Profiles** and **Face Groups**, allow users to manage the face database of GV-AI FR, see 3.2.2 *Creating Face Profiles* and 3.4 *Face Groups*.

## 4.4 Notify Settings

This section covers all the event notification functions of GV-AI FR, including **Welcome**, **Event Trigger**, **IO Box**, **Serial Port**, **GV-FWC / Controller**, **LINE Notify** and **SMTP Setting**.

## 4.4.1 Welcome Settings

The **Welcome Settings** page can configure to display a welcome screen and/or advertisement, either locally or at a remote monitor, for each of the camera channels upon face recognition. To access the Welcome Setting, click **Dashboard** (No. 5, 2.2 Main Screen) > **Notify Settings** > **Welcome**.



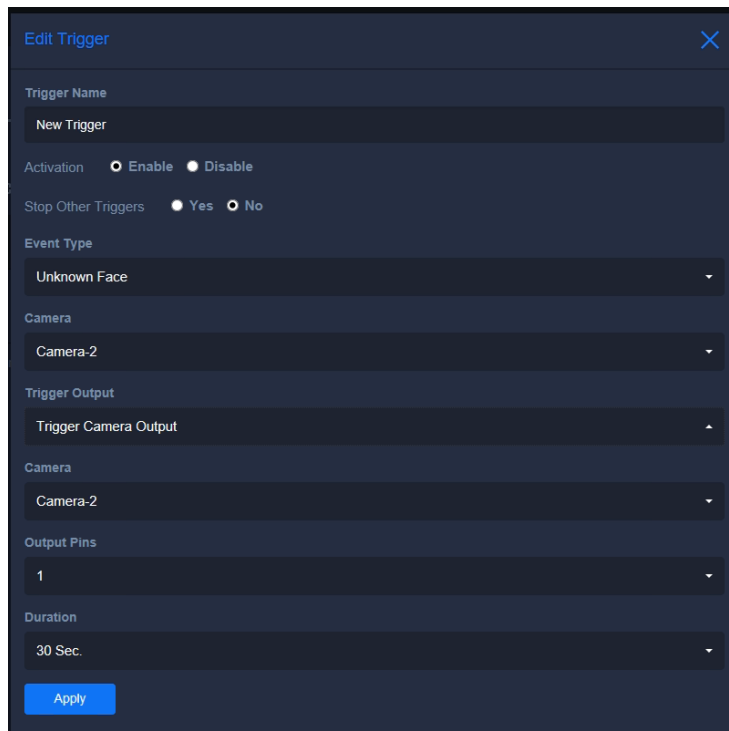
- **Camera:** Select the camera channel to configure the welcome screen for.
- **Welcome Screen:** Only for local display, select the desired image resolution for the welcome screen and/or configure to display an advertisement upon face recognition.
  - ⊙ When displaying AD, users can replace the default advertisement videos with their own at `C:\IGV-AIFR\apache\htdocs\welcomeboard\style4\ad` and `C:\IGV-AIFR\apache\htdocs\welcomeboard\style5\ad`, respectively for **1920 x 1080 + AD (Horizontal)** and **1920 x 1080 + AD (Vertical)**.
- **Number of Welcome Cards:** Sets the maximum number of welcome messages, from 1 – 3, to be shown at a time.
- **Welcome Card Settings:** Select the type of message to display upon face recognition.

- **Welcome Box Settings:** Connects to and display the welcome screen remotely on GV-Welcome app, see [GV-Welcome App Installation Guide](#).
- **Line 1 / 2 Text:** Select the info of the Face Profile recognized to be displayed on the welcome screen upon face recognition.
- **Personal Picture:** Select **Enroll** to display the enrolled face photo of the Face Profile recognized; select **Live** to display the live snapshot of the recognition target; or select **Personal** to display the Face Image of the Face Profile recognized, see *Face Image, 3.2.2 Creating Face Profiles*.
- **Welcome Duration (s):** Sets the number of seconds the welcome card and message are displayed for upon face recognition.
- **Live View:** Only for local display, enable to display the live view at the bottom-right corner of the welcome screen.

## 4.4.2 Event Triggers

The **Trigger Settings** page allows users to set up various trigger actions upon certain face recognition and/or input trigger events. To access the Trigger Settings page, click **Dashboard** (No. 5, 2.2 Main Screen) > **Notify Settings** > **Event Triggers**.

1. To set up trigger actions, click **New Trigger**. This dialog box appears.



2. Type a desired name for the trigger action under **Trigger Name** and enable **Activation**.
3. Optionally enable **Stop Other Triggers** to have priority over and stop all other trigger events upon triggering.
4. Select the type of face recognition events the trigger action is triggered for under **Event Type**.
  - **Unknown Face:** Triggers action when unrecognizable faces are detected.
  - **Registered Face:** Triggers action when registered faces are recognized.
  - **Face in Group:** Triggers action when Face Profiles within a specific Face Group are recognized.
  - **Gender / Age in Range:** Triggers action when the specified gender and age range is detected for.
  - **Fake/Spoofed:** When Liveness Detection is enabled, triggers action upon recognition of inanimate face. See *3.1 Configuring Recognition Settings*.
  - **Input Trigger from IO:** Triggers action upon a specified input trigger.
  - **GV-FWC Controller Response:** This option is for triggering the LED and beeper of GV-CR1320 to indicate access status. For configuration details, see *Appendix*.
  - **System Event:** Triggers action when any of the following conditions occurs: Dongle removed, camera connected / disconnected, I/O Box connected / disconnected, GV-FWC/Controller connection failed and GV-FWC Controller Response (specially for GV-CR1320 use).
5. Select a desired type of trigger action under **Trigger Output**, from *IO-Box Output*, *Serial Port Output*, *LINE Notify*, *GV-FWC/Controller*, *GV-Face App*, *Trigger Camera Output* or *Send E-Mail*.
6. Click **Apply**.

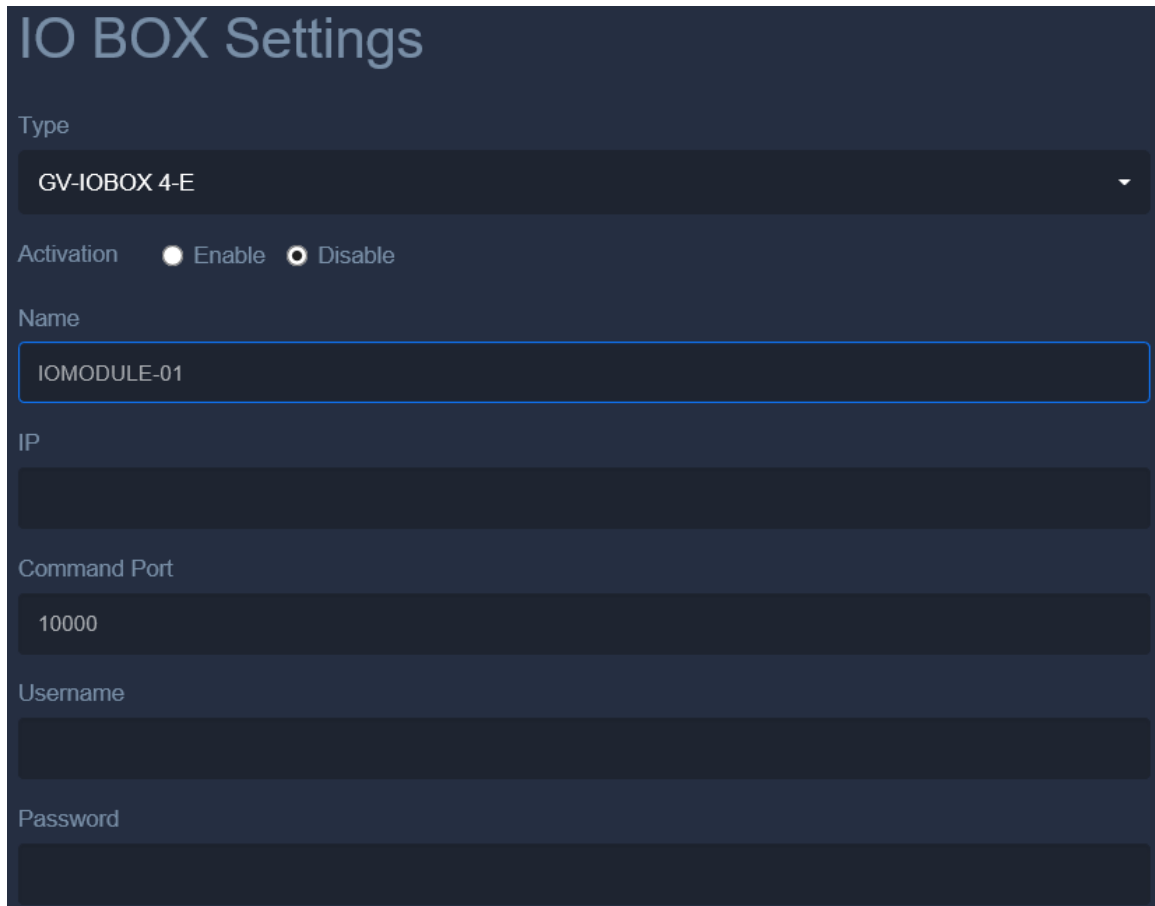
---

**Note:**

1. For triggers to function, make sure the corresponding trigger output(s) are properly set, see [4.4.3 IO Box](#), [4.4.4 Serial Port](#), [4.4.5 GV-FWC / Controller](#), [4.4.6 LINE Notify](#) and [4.4.7 SMTP Setting](#) (for sending e-mail).
  2. To trigger push notifications through GV-Face mobile app, see [GV-Face Installation Guide](#).
-

### 4.4.3 IO Box

The **IO Box Settings** page can configure for and connect the GV-AI FR to a GV-IO Box via network.



- **Type:** Select the type of GV-IO Box the GV-AI FR is connecting to.
- **Activation:** Enables / disable the GV-IO Box to be connected.
- **Name:** Type a desired name for the GV-IO Box to be connected.
- **IP Address:** Type the IP address of the GV-IO Box.
- **Command Port:** Modify the default port value of *10000* if needed.
- **Username & Password:** Type the login Username and Password of the GV-IO Box to be connected.

Click **Apply**.

#### 4.4.4 Serial Port

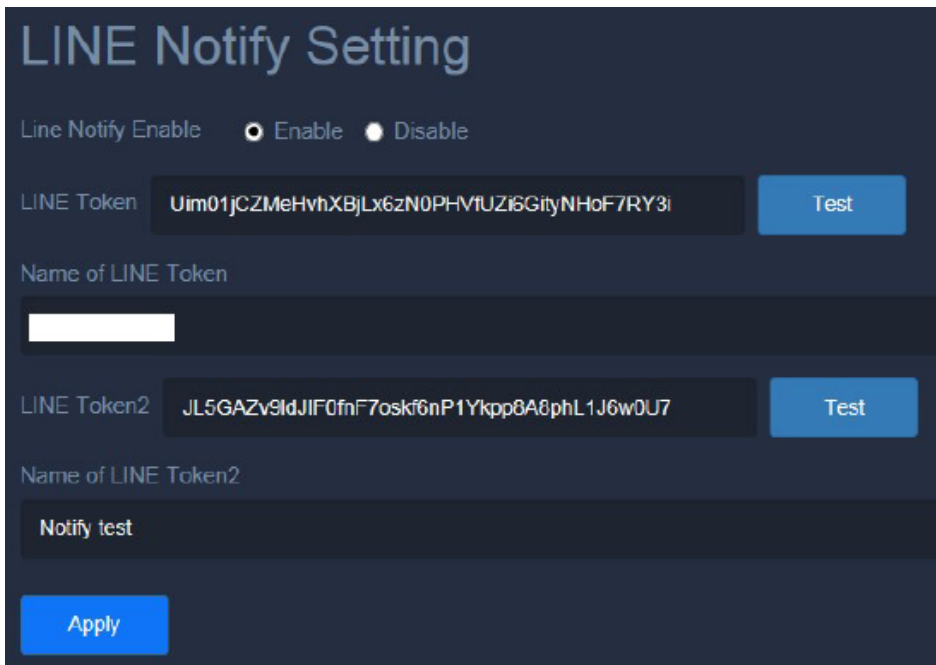
The **Serial Port** settings page is used for physically connecting GV-AI FR to 3<sup>rd</sup>-party controllers in order to send the access data paired to the face(s) recognized upon face recognition events. For details, see *6.2.2 Connecting 3<sup>rd</sup>-party Controllers via Serial Port*.

#### 4.4.5 GV-FWC / Controller

The **GV-FWC / Controller Settings** page allows GV-AI FR to connect to and send access data to GV-AS Controller or GV-FWC via LAN. For details, see *Chapter 6 Access Control Management*.

#### 4.4.6 LINE Notify

GV-AI FR can be configured to connect to up to 2 LINE IDs for sending LINE notifications upon face recognition and/or input trigger events. To access the **LINE Notify Settings** page, click **Dashboard** (No. 5, 2.2 Main Screen) > **Notify Settings** > **LINE Notify**.



**LINE Notify Setting**

Line Notify Enable  Enable  Disable

LINE Token

Name of LINE Token

LINE Token2

Name of LINE Token2

1. **Enable** Line Notify.
2. Access and log into the desired LINE ID on the [LINE notify website](#).
3. After logging in, click the name of the LINE ID and select **My page**.
4. Under Generate access token (For developers), click **Generate token**.

5. Type a message of up to 20 characters to be displayed before every LINE notification, select a LINE chat group to send the notifications to and click **Generate token**.
6. Once the access token is generated, copy and paste it into the **LINE Token** field on the LINE Notify Setting of GV-AI FR.
7. Optionally click **Test** to make sure the connection is properly established.

Click **Apply**.

#### 4.4.7 SMTP Setting

GV-AI FR can be configured to send e-mail notifications upon various triggered events.



- **Activation:** Enables / disable the SMTP server.
- **Host:** Type the SMTP server address.
- **Server Port:** Type the SMTP server port.
- **Username:** Type your SMTP username.
- **Password:** Type your SMTP password.
- **SSL Type:** Select SSL or TLS if the SMTP server required the authentication for connection.
- **Send Mail to:** Type an e-mail address for sending.

Click **Apply**.



## Chapter 5 GV-VMS Integration

This chapter will guide users through all of the configurations related to the integration of GV-VMS, as listed below:

- **Connect GV-AI FR to GV-VMS:** See *5.1 Connecting to GV-VMS*.
- **Record Camera Streams of GV-AI FR by GV-VMS:** See *5.2 Video Recording by GV-VMS*.
- **Playback Face Recognition Events:** See *5.3 Playing back Recognition Events on GV-AI FR*.

---

**Note:** The GV-VMS to be connected must be on a separate PC and within the same LAN as GV-AI FR.

---

### 5.1 Connecting to GV-VMS

To connect GV-AI FR to GV-VMS, follow the steps below:

#### Configuring GV-AI FR

1. On the GV-AI FR, click **Dashboard** (No. 5, *2.2 Main Screen*) > **General Settings** and select **GV-VMS Connection**. This page appears.



**GV-VMS Connection**

Camera  
CAM-01

VMS IP Address

ViewLog Server Port




Camera Mapping

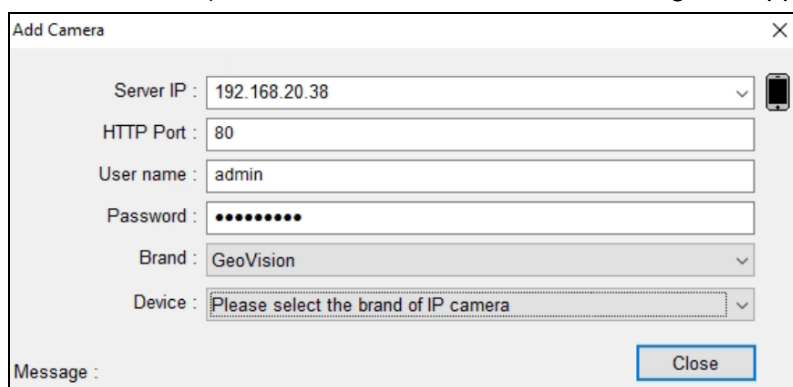
Username





Password

2. Under **Camera**, select the desired camera channel of the GV-AI FR to be connected to GV-VMS.
3. Under **VMS IP Address**, type the IP address of the GV-VMS.
4. Under **ViewLog Server Port**, optionally modify the default port value of 5552, to match the Control Center Server Log port of GV-VMS.
5. Under **Camera Mapping**, type the camera channel of GV-VMS to which the camera will be connecting to.
6. Type the login **Username** and **Password** of the GV-VMS to be connected to.
7. Click **Apply**.
8. Repeat Step 2 – 7 to connect multiple camera channels of the GV-AI FR to GV-VMS.

### Configuring GV-VMS

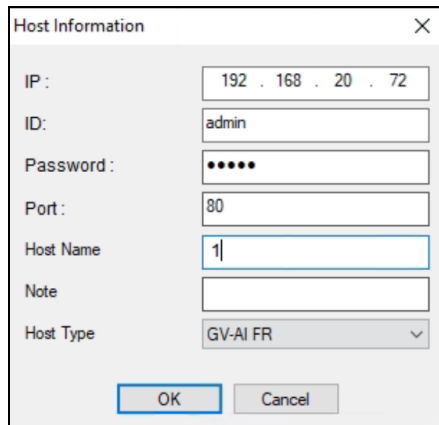
9. In **IP Device Setup** of the GV-VMS (**Home**  > **Toolbar**  > **Configure**  > **Camera Install**), click **Add Camera** . This dialog box appears.



10. Type the IP Address, Port, Username and Password of the IP camera corresponding to the channel of GV-AI FR selected in Step 2 and select its brand and model from the respective **Brand** and **Device** dropdown lists.
11. Repeat Step 10 to add multiple cameras of the GV-AI FR to GV-VMS.
12. Once the desired IP camera(s) of the GV-AI FR are added to GV-VMS, assign them to the same camera channel(s) as defined by Step 5 and close **IP Device Setup**.
13. In **Face Manager** of the GV-VMS (**Home**  > **Toolbar**  > **Configure**  > **Face Manager**), click **Add GV-AI FR** .




14. Type the IP Address, Port, Username (ID) and Password of the GV-AI FR, type a desired Host Name, select GV-AI FR as the **Host Type** and click **OK**.

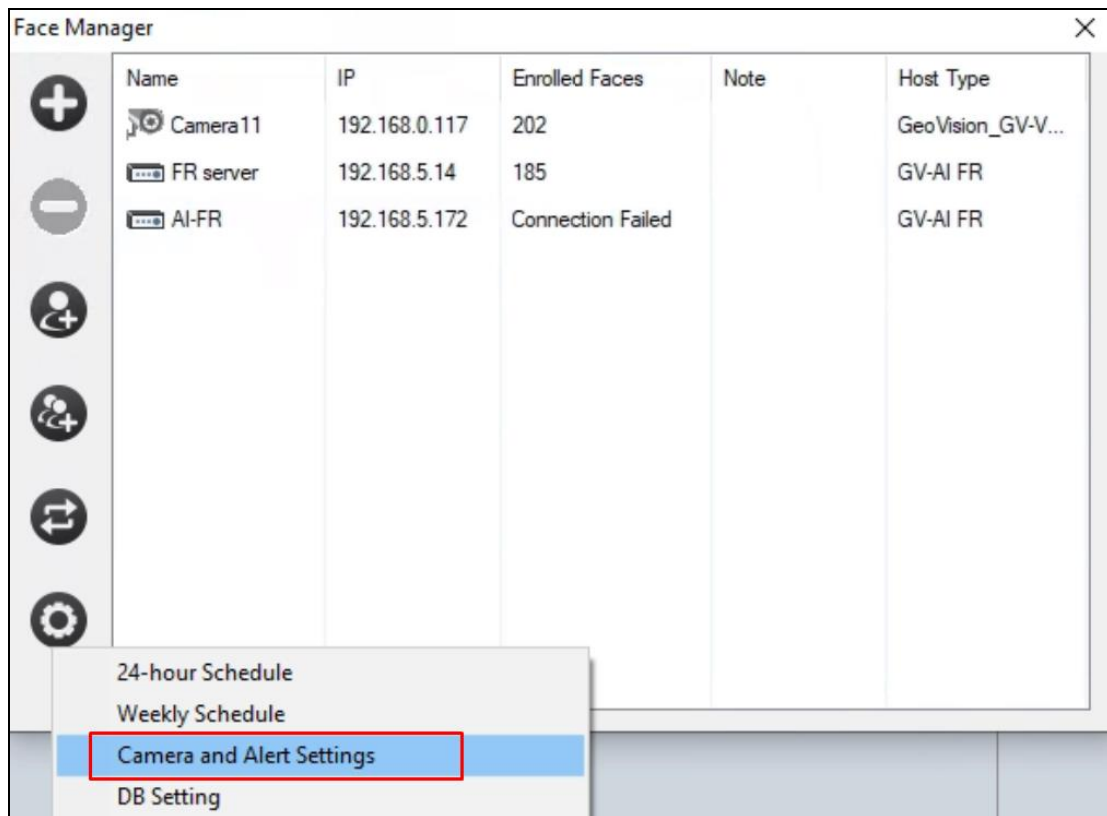


Host Information dialog box with the following fields:




- IP: 192 . 168 . 20 . 72
- ID: admin
- Password: [masked]
- Port: 80
- Host Name: 1
- Note: [empty]
- Host Type: GV-AI FR

Buttons: OK, Cancel

15. After adding the GV-AI FR in Face Manager, select it, click **Configure**  and select **Camera and Alert Settings**.



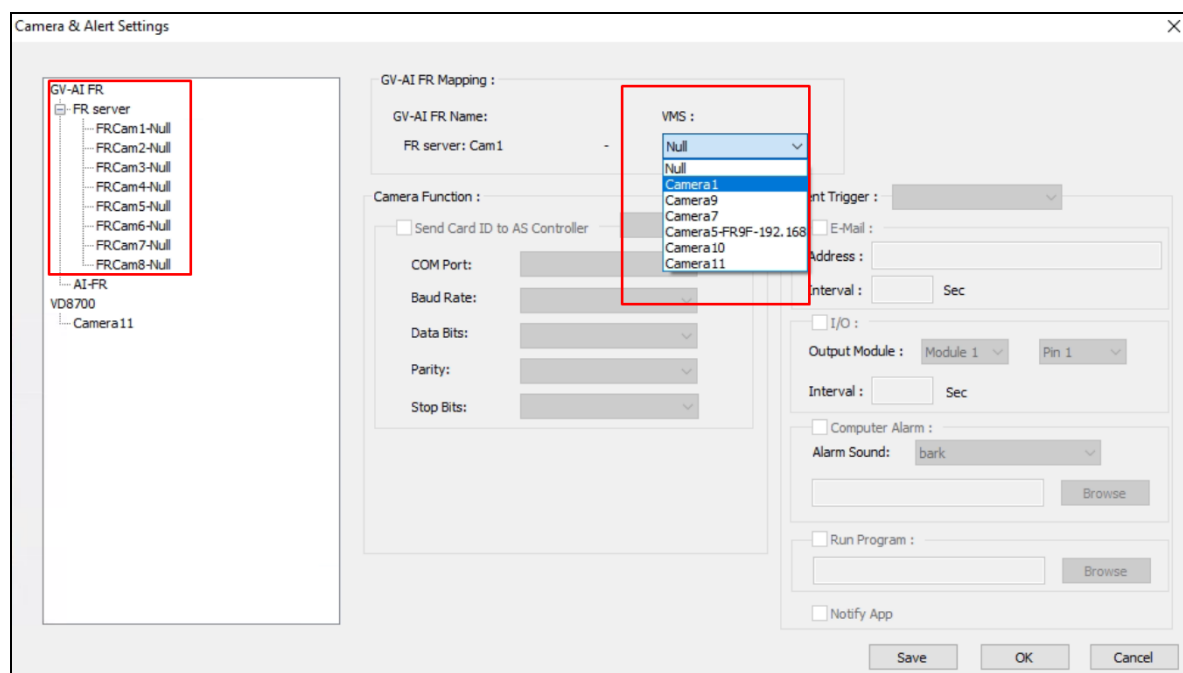
Face Manager interface showing a table of devices and a configuration menu.

	Name	IP	Enrolled Faces	Note	Host Type
	Camera11	192.168.0.117	202		GeoVision_GV-V...
	FR server	192.168.5.14	185		GV-AI FR
	AI-FR	192.168.5.172	Connection Failed		GV-AI FR

Configuration menu (highlighted):

- 24-hour Schedule
- Weekly Schedule
- Camera and Alert Settings**
- DB Setting

16. On the left of the window, select the camera channel of GV-AI FR selected in Step 2. Then under **GV-AI FR Mapping**, select the channel of GV-VMS in which the same IP camera is assigned to in Step 12 from the **VMS** dropdown list.






17. Repeat Step 16 to map multiple cameras of the GV-AI FR to the corresponding channels on the GV-VMS.

Once successfully configured, the camera channel(s) of the GV-AI FR mapped can be streamed to and recorded by the GV-VMS. For details, see *5.2 Video Recording by GV-VMS*.

## 5.2 Video Recording by GV-VMS

After the IP cameras of GV-AI FR are added to GV-VMS, users can start recording their video streams on the GV-VMS by starting monitoring.

To start monitoring, click **Home**  > **Toolbar**  > **Monitor**  and select the camera channels the IP cameras of the GV-AI FR are assigned to in Step 12, *5.1 Connecting to GV-VMS*.

---



**Note:** After starting monitoring, the camera channels will be recorded upon motion detection by default. To change the recording settings of GV-VMS, see *Recording Settings, Chapter 1, GV-VMS User's Manual*.

---

## 5.3 Playing back Recognition Events on GV-AI FR

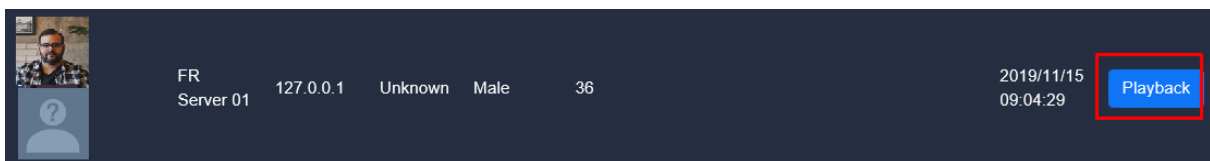
Prior to playing back face recognition events on GV-AI FR, make sure the Remote ViewLog Server of the GV-VMS used for recording is enabled.

### Enabling Remote ViewLog Server

On the GV-VMS, click **Home**  > **Toolbar**  > **Network**  > **Control Center Server** and select **Remote ViewLog Service** to enable.

### Face Recognition Event Playback

On the GV-AI FR, click **Dashboard** (No. 5, 2.2 Main Screen) > **Event Query** > **Detail Log**, set a search criterion to search for the desired face recognition events and click **Playback** next to an event to play back its recording.



For details on face recognition events and the event log of GV-AI FR, see 3.3 *Recognition Events*.

## Chapter 6 Access Control Management

This chapter will guide users through all of the configurations related to connecting GV-AI FR to GV-AS Controllers and 3<sup>rd</sup>-party controllers, for access management by GV-ASManager or 3<sup>rd</sup>-party access control systems, respectively.

- **Connect GV-AI FR to GV-AS Controller:**

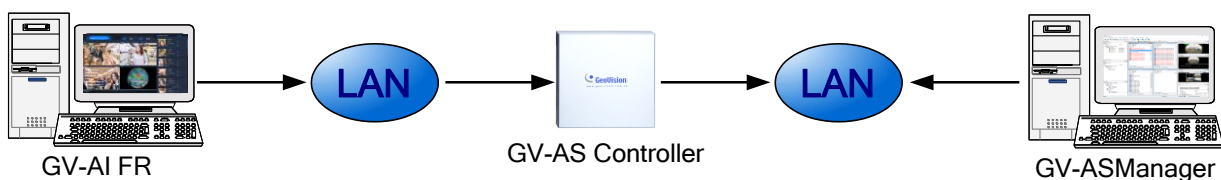
For connecting to GV-AS Controllers and the necessary configurations on the GV-ASManager, see *6.1 Connecting GV-AS Controller*.

- **Connect GV-AI FR to 3<sup>rd</sup>-party Controller:**

For connecting to 3<sup>rd</sup>-party controllers, see *6.2 Connecting 3<sup>rd</sup>-party Controllers*.

### 6.1 Connecting GV-AS Controller

By connecting to and sending access card data to GV-AS Controller(s) via LAN, the face recognition feature of GV-AI FR can be easily integrated into GV-ASManager for a face-recognition-based access management.



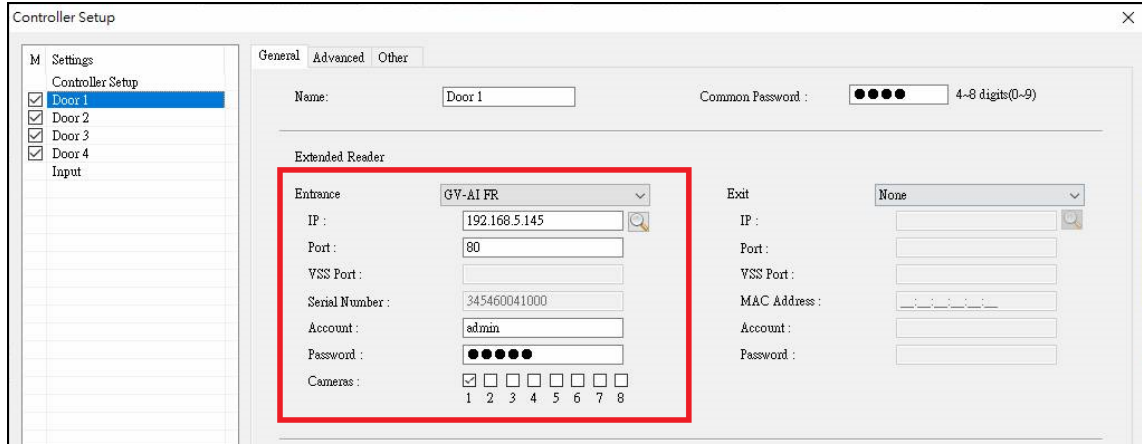

---

**Note:** The following procedures are only applied to GV-AI FR V1.2.0 or later.

---

To set up **GV-ASManager** to connect to GV-AI FR:

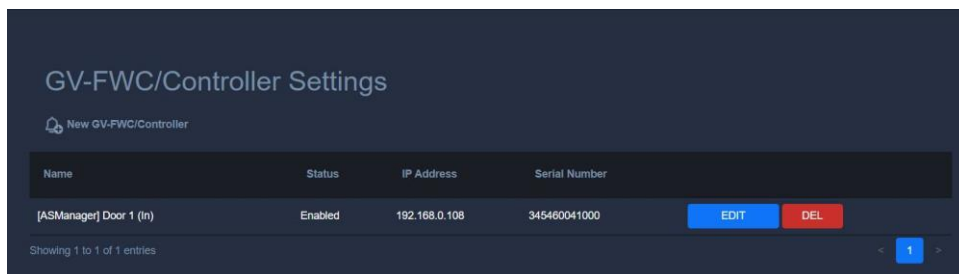
1. In **Device List (Setup > Devices)**, double-click the GV-AS Controller that GV-AI FR is to be connected to and select a desired **Door**. This window appears.



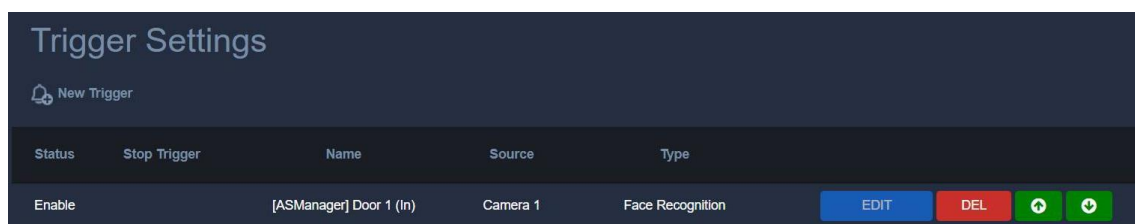
2. Under **Extended Reader**, select **GV-AI FR** from **Entrance** and/or **Exit** drop-down lists, according to the access scenario.
3. Type the **IP**, login **Account** and **Password** of the GV-AI FR. Optionally modify the default **Port** of **80** if necessary.
4. For **Camera**, select the camera(s) of the GV-AI FR used in the access scenario.
5. Click **OK**. The GV-AI FR is connected to the selected GV-AS Controller and GV-ASManager is also connected to GV-AI FR.

To verify the connection in **GV-AI FR**:

6. On the GV-FWC / Controller Setting page (**Dashboard > Notify Settings > GV-FWC / Controller**), you should find an entry, for example, *[ASManager] Door 1 (In)*, written back from GV-ASManager to indicate which controller IP and which door is connected to.



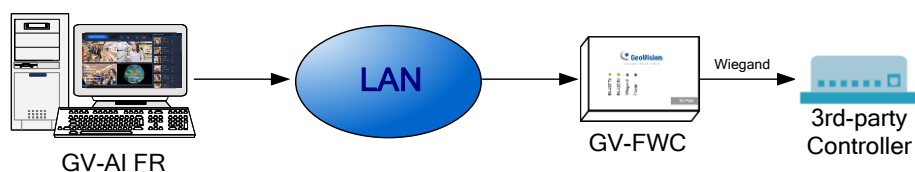
- On the Event Trigger page (**Event Trigger > Notify Settings**), you should also find an entry of face recognition. No matter which FR events, recognized or unknown faces, all will trigger GV-AI FR to send the access data to GV-ASManager.



## 6.2 Connecting 3<sup>rd</sup>-party Controllers

There are two methods of connecting GV-AI FR to 3<sup>rd</sup>-party controllers, as illustrated below:

- Via GV-FWC within the LAN:**



For connecting GV-AI FR to 3<sup>rd</sup>-party controllers through GV-FWC within the LAN, see [6.2.1 Connecting 3<sup>rd</sup>-party Controllers via GV-FWC](#).

- Via Serial Port Physical Connection:**



For physically connecting GV-AI FR to 3<sup>rd</sup>-party controllers through its serial port, see [6.2.2 Connecting 3<sup>rd</sup>-party Controllers via Serial Port](#).



## 6.2.1 Connecting 3<sup>rd</sup>-party Controllers via GV-FWC

---

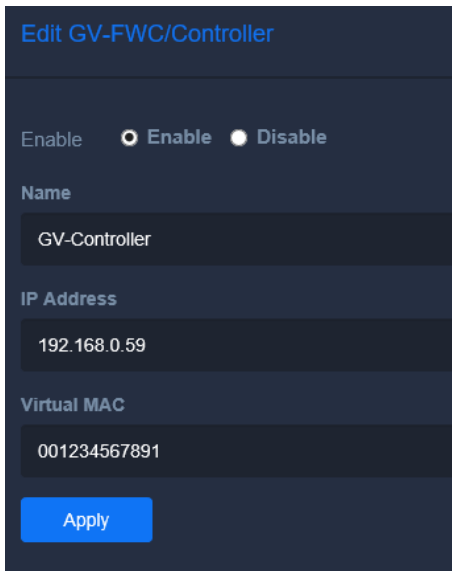
**Note:** The GV-FWC, used for connecting to 3<sup>rd</sup>-party controllers, must be connected to the same LAN as GV-AI FR.

---

**IMPORTANT:** Face images of recognition events cannot be sent to 3<sup>rd</sup>-party controllers from the GV-FWC for they are connected via Wiegand.

---

1. Click **Dashboard** (No. 5, 2.2 Main Screen) > **Notify Settings** > **GV-FWC / Controller** to access the **GV-FWC / Controller Settings** page.
2. Click **New GV-FWC**. This dialog box appears.



3. Select **Enable** and type a desired **Name** for the GV-FWC to which the GV-AI FR is connecting to.
4. Type the **IP Address** of the GV-FWC.
5. Type a 12-digit long **Virtual MAC** to be recognized as a virtual reader for connecting to the GV-FWC.
6. Click **Apply**.
7. After successfully adding the GV-FWC, select **Event Triggers** under **Notify Settings** in the left menu to configure for sending face recognition events to the GV-FWC, see 4.4.2 *Event Triggers*.

For connecting the GV-FWC and sending Wiegand access data to 3<sup>rd</sup>-party controllers upon face recognition, see [GV-FWC Installation Guide](#).

## 6.2.2 Connecting 3<sup>rd</sup>-party Controllers via Serial Port

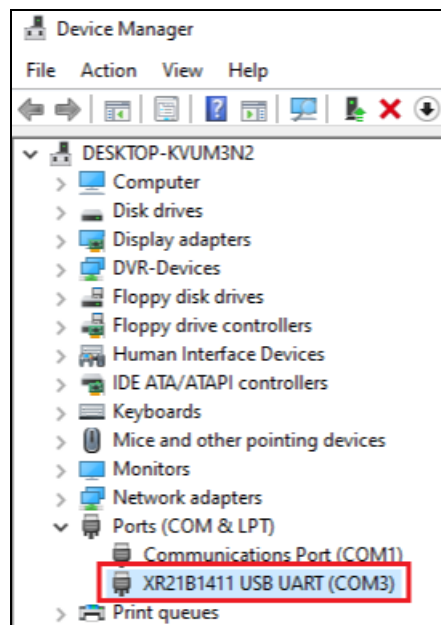
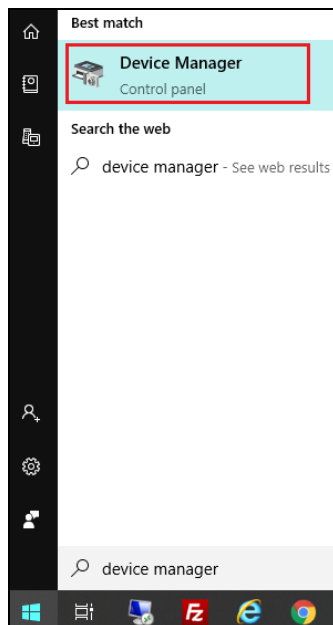
**Note:** For connecting to 3<sup>rd</sup>-party controllers via LAN, see 6.2.1 *Connecting 3<sup>rd</sup>-party Controllers via GV-FWC*.

**IMPORTANT:** Face images of recognition events cannot be sent to the controller when connected through the serial port.

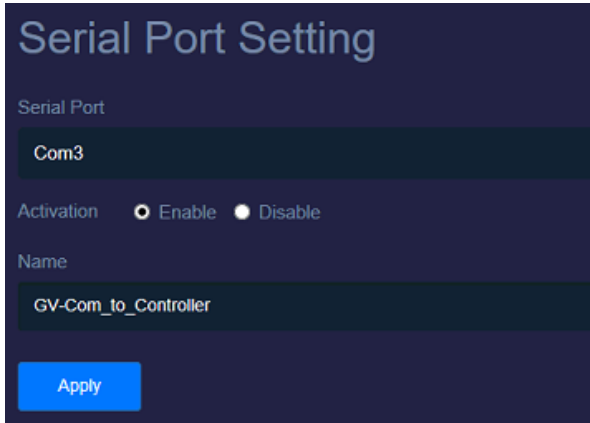
1. Connect the GV-AI FR to a 3<sup>rd</sup>-party controller via GV-COM V3 and GV-WTR, as illustrated below.



2. From the Windows **Start** menu of the GV-AI FR PC, type **Device Manager** and click on the application of the same name to run. Then click and expand **Ports (COM & LPT)** to display the COM number with the GV-COM V3 serial number, as shown below.



3. On GV-AI FR, click **Dashboard** (No. 5, 2.2 Main Screen) > **Notify Setting** > **Serial Port** to access the **Serial Port Setting** page.



4. Select the corresponding COM number, as displayed by Step 2, from the **Serial Port** dropdown list and select **Enable** next to **Activation**.
5. Type a desired **Name** for the serial port and click **Apply**.

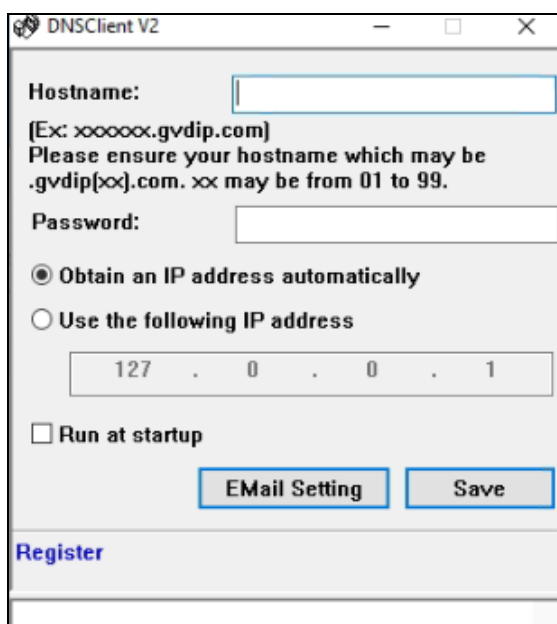
Once properly configured, any access data paired to the Face Profiles of GV-AI FR will be sent to the 3<sup>rd</sup>-party controller upon face recognition.

## Chapter 7 Useful Utilities

### 7.1 GV-DDNS V2 Client

GV-AI FR comes with **GV-DDNS V2 Client**, which provides GeoVision's Dynamic DNS Service for users to register for a domain name that always point to GV-AI FR when it uses a dynamic IP address.

To access GV-DDNS V2 Client, go to the DDNS folder within the GV-AI FR directory (C:\GV-AIFR\DDNS) and double-click **DNSClientV2.exe**. This dialog box appears.

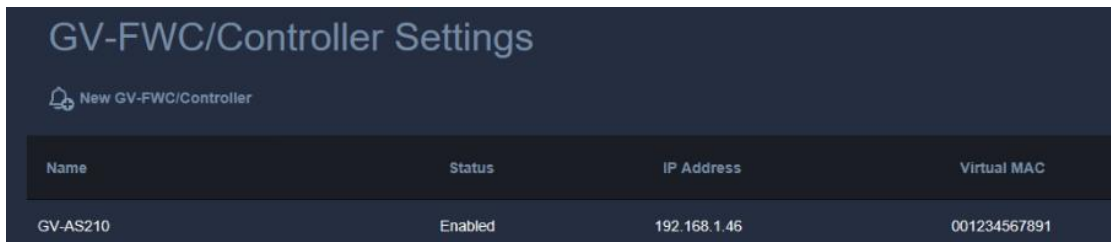


For details on registering for and configuring GV-DDNS, see [GV-DDNS V2 Installation Guide](#).

## Appendix for GV-CR1320

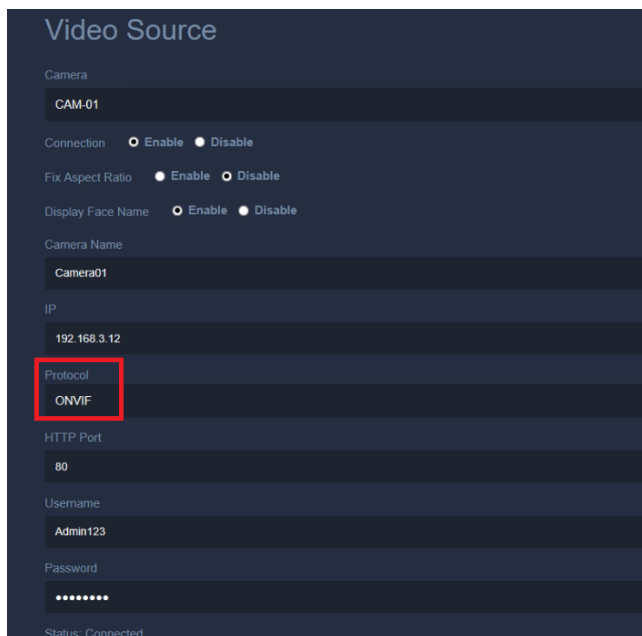
To trigger the LED and beeper on GV-CR1320 (V1.07 or later) upon face recognition events, to indicate the access status, follow the steps below:

1. Make sure the connection between GV-AI FR, GV-AS Controller and GV-ASManager is well established. For how to connect GV-AI FR to GV-AS Controller, see *6.1 Connecting GV-AS Controller*. The following is an illustration of a GV-AS210 controller connected on GV-AI FR.



Name	Status	IP Address	Virtual MAC
GV-AS210	Enabled	192.168.1.46	001234567891

2. Connect GV-CR1320, as a camera, to GV-AI FR.
  - Select **General Settings > Video Source**, type the connection information of the GV-CR1320 and select **ONVIF** under protocol.



Video Source

Camera  
CAM-01

Connection  Enable  Disable

Fix Aspect Ratio  Enable  Disable

Display Face Name  Enable  Disable

Camera Name  
Camera01

IP  
192.168.3.12

Protocol  
ONVIF

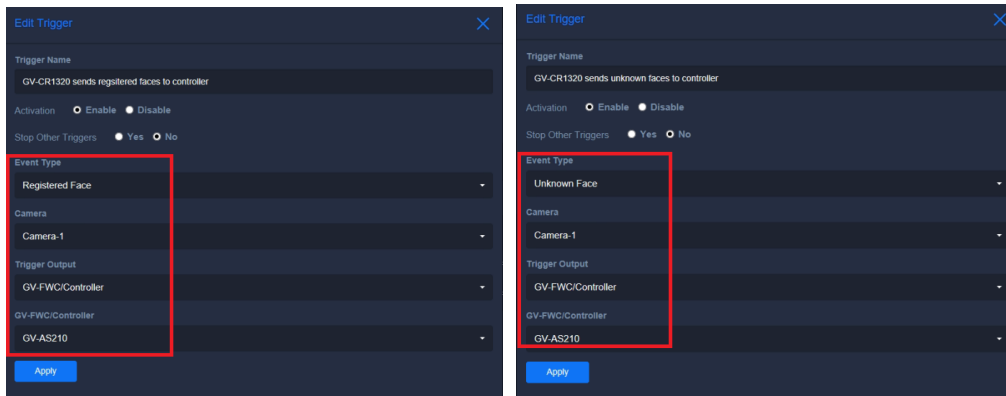
HTTP Port  
80

Username  
Admin123

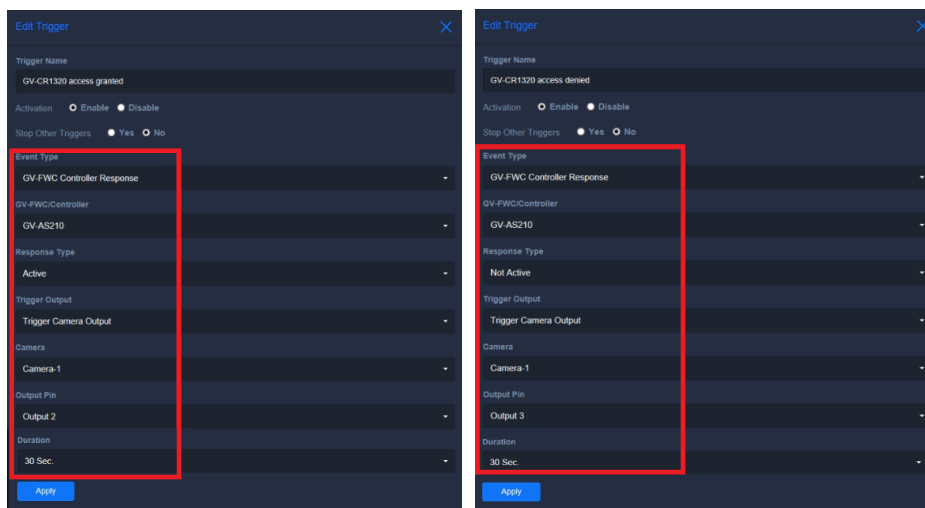
Password  
\*\*\*\*\*

Status: Connected

3. Send the recognition events of GV-CR1320 to GV-AS Controller.
  - A. Select **Event Trigger > New Trigger**, select the **Camera** of the GV-CR1320, select **GV-FWC/Controller** under Trigger Output, and select the corresponding controller under GV-FWC/Controller.
  - B. Create two event trigger conditions. One is to send recognized events; the other is to send unrecognized events.




4. GV-AS Controller triggers the LED and beeper on GV-CR1320.
  - A. To have trigger action on recognized events, select **Event Trigger > New Trigger**, select **GV-FWC/Controller Response** under Event Type, the corresponding controller under GV-FWC/Controller, **Active** under Response Type, **Trigger Camera Output** under Trigger Output, the **Camera** of the GV-CR1320, **Output 2** under Output Pin, and the desired trigger **Duration**.
  - B. To have trigger action on unrecognized event, select **Event Trigger > New Trigger**, select **GV-FWC/Controller Response** under Event Type, the corresponding controller under GV-FWC/Controller, **Not Active** under Response Type, **Trigger Camera Output** under Trigger Output, the **Camera** of the GV-CR1320, **Output 3** under Output Pin, and the desired trigger **Duration**.



5. The following is an illustration of four event trigger conditions set based on step 3 - 4. When the GV-CR1320 detects faces, its LED and beep will response accordingly.

Trigger Settings

 New Trigger

Status	Stop Trigger	Name	Source	Type		
Enable		GV-CR1320 sends registered faces to controller	Camera 1	Registered Face	EDIT	DEL
Enable		GV-CR1320 sends unknown faces to controller	Camera 1	Unknown Face	EDIT	DEL
Enable		GV-CR1320 access granted	GV-AS210	GV-FWC/Controller Response	EDIT	DEL
Enable		GV-CR1320 access denied	GV-AS210	GV-FWC/Controller Response	EDIT	DEL