GEUTEBRÜCK

G-Core MetaConnect

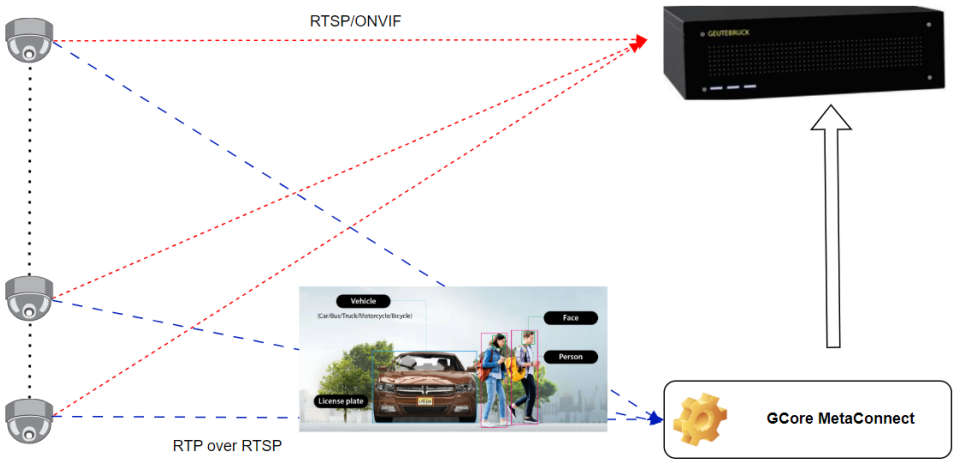
GEUTEBRÜCK

Contents

1 Introduction

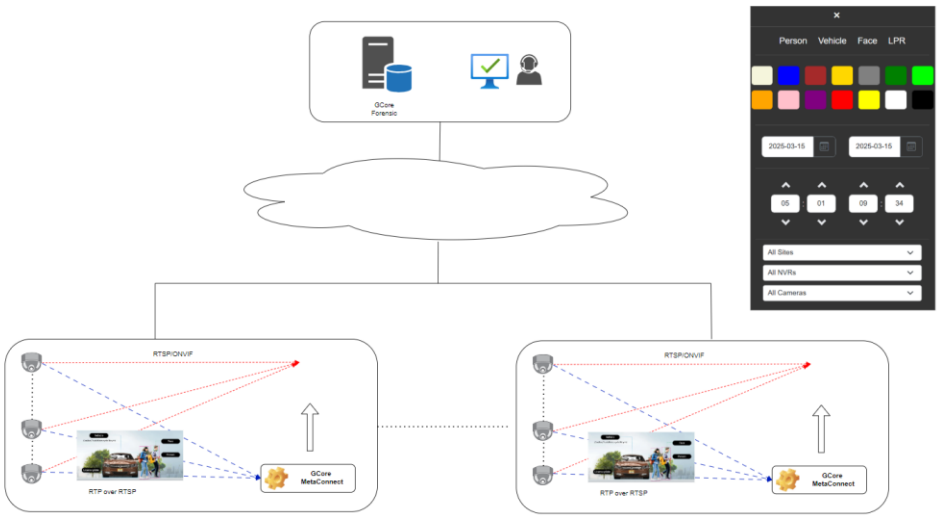
1.1 Overview

The application will establish a direct connection to the camera to retrieve AI analytics data, which will then trigger G-Core actions based on the associated metadata.



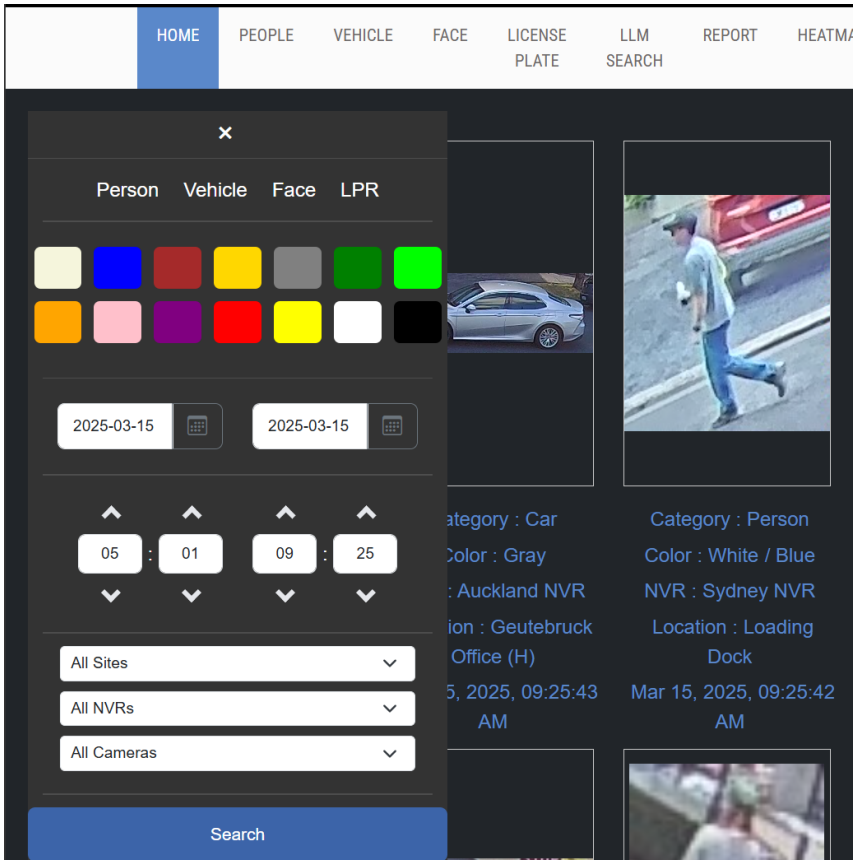
1.2 GCore-Forensic(Optional)

The 'GCore MetaConnect' application can work with 'GCore-Forensic,' which is capable of collecting object analytics data from each NVR, making it easier for operators to view the data centrally. It also offers basic visualization features that allow users to search for objects by colour or other attributes.



1.2.1 Object Search

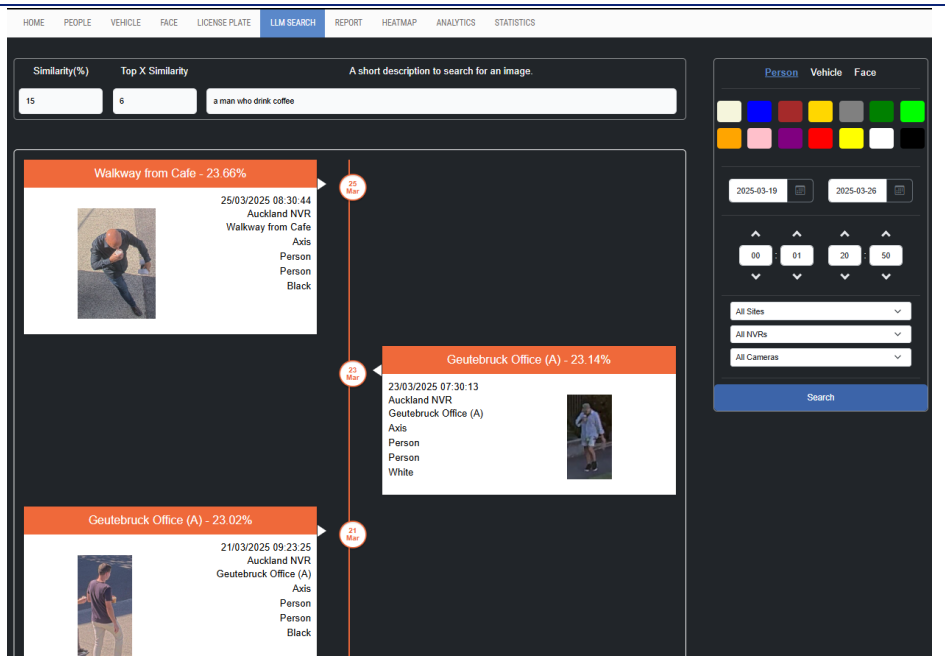
The application allows users to search the analyze object data based on color, location, or NVR information gathered by ''GCore MetaConnect'. It provides powerful visualization tools to enhance the user experience, making it easy to interpret and navigate the results.



1.2.2 Image Search via Text or Image(Reverse Image Search)

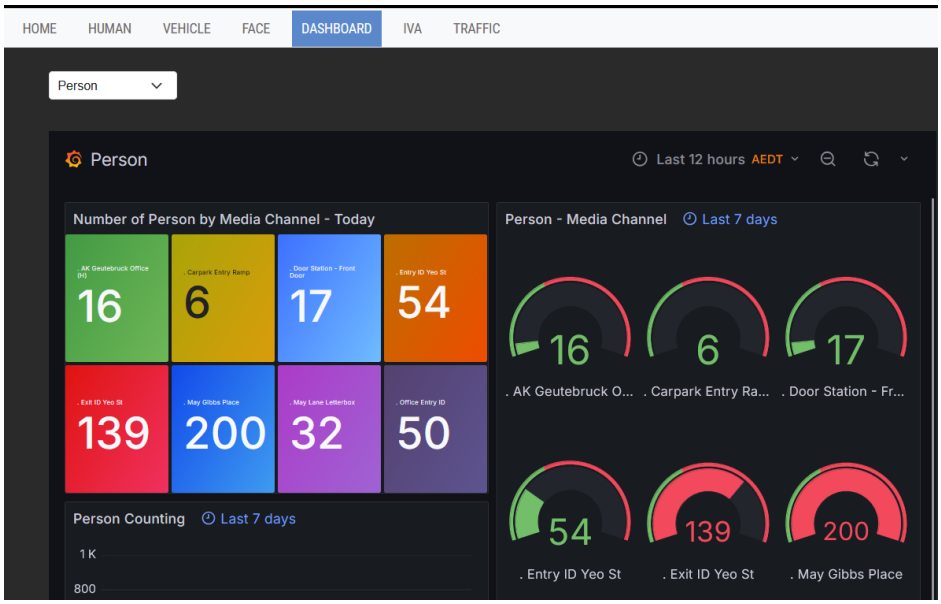
You can use specific keywords, phrases, or descriptions to search for images related to those terms. This can help you find similar shapes or images, which can assist in identifying objects, locations, or other details within the image.

i.e) A man who drink coffee.



1.2.3 Grafana Dashboard(Optional)

Grafana is an open-source analytics and interactive visualization web application that allows users to ingest data from various sources, query this data, and display it on customizable charts for easy analysis.



2 Object Analytics

AI-based object analytics on camera can detect, classify, track, and count humans, vehicles, and different types of vehicles. With AI-driven classification, you can focus on objects of interest and events that require attention, making your monitoring more effective.

2.1 Metadata By Camera Manufacturer

This section provides a brief overview of metadata and IVA(Intelligent Video Analytics) as specified by different manufacturers.

	Person	Vehicle	Colour		Clothing		Others				Audio
			Clothing	Vehicle	Upper	Lower	Gender	Hat	Mask	Glass	
Axis	O	O	O	O							
Bosch	O	O									
iPRO	O	O	O	O	O	O	O	O	O	O	
Hanwha	O	O	O	O	O	O	O	O	O	O	O

	IVA	Line crossing	Count
	Enter/Exit/Intrusion		
Axis	N/A	N/A	Crossline count Occupancy in Area
Bosch	O	N/A	N/A
iPRO	O	O	N/A
Hanwha	O	O	People count Queue count Vehicle count Crowd count

2.2 Colour By Camera Manufacturer

Some less frequent colours(*) may be remapped to one of the other colour.

	Beige	Black	Blue	Brown	Gray	Green	Orange	Purple	Pink	Red	White	Yellow
Axis	O	O	O	*	O	O	*	*	*	O	O	O
Bosch												
iPRO		O	O	O	O	O	O	O	O	O	O	O
Hanwha		O	O	O	O	O	O	O	O	O	O	O

2.3 G-Core Metadata with a Best snapshot

'G-Core MetaConnect' investigations by streamlining search for objects, people, or incidents without any analytics servers. Some of camera metadata allows you to efficiently pinpoint a single video clip of interest in G-Core and G-SIM, reducing analysis time from hours to minutes traditional approaches, where the camera sends data to servers for analysis.

3 Quick Startup

This is a quick startup list on what you need to do to use this application. Please see the details below to set up each setting.

1) Add a camera on GCore for both ‘Hardware‘ and ‘Media channels’

2) ‘Permanent recording’ and ‘Live streaming’ need to activated on ‘Media channels’

3) Enable the AI features on the camera. This process is slightly different for each manufacturer.

4) Create a GCore action for each AI feature and record it for both 'Media Channel' and 'DIF'—if possible

5) Add the camera to 'Metaconnect' using the user interface.

4 Application Installation

We recommend installing the application on the G-Core machine for automatic configuration. This setup will:

- Automatically populate the camera IP, user ID, and password.

If you choose not to use the G-Core machine, you will need to:

- Manually enter the camera IP, user ID, and password.

4.1 Prerequisites

If you need to use the Grafana dashboard for visualizing charts, you will need to use the existing G-Core database or install SQL Express on the machine.

Please skip to '3.2. Installation' if you don't need to use Grafana dashboard.

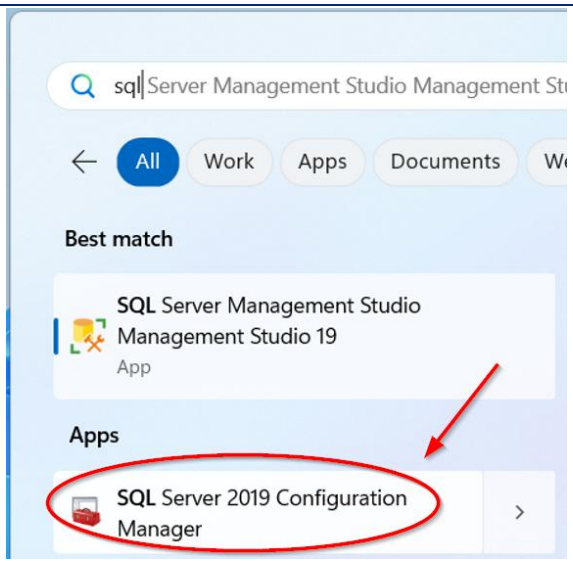
4.1.1 Database port

We need to know which port is being used by the G-Core or SQL database so that we can configure it for the application.

You can also find the SQL configuration manager from the Start menu.

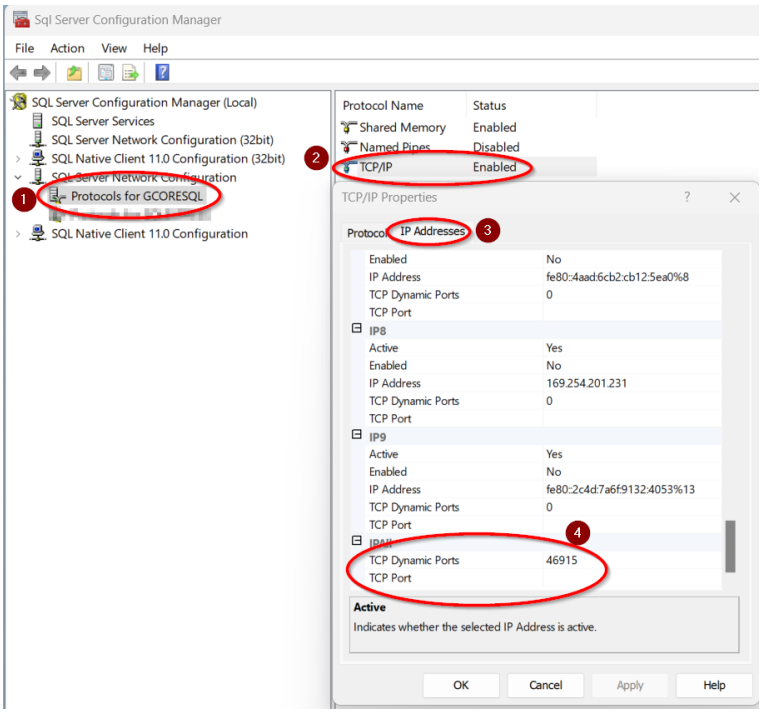
- i.e) "C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Microsoft SQL Server XXX\Configuration Tools"

1) Click Start > Programs > "SQL Server XXXX Configuration" > SQL Configuration Manager.



2) In SQL Server Configuration Manager, expand SQL Server Network Configuration and then select Protocols for GCORESQL on the left panel. To identify the TCP/IP Port used by the SQL Server Instance, right click on TCP/IP and select Properties from the drop down as shown below.

3) In TCP/IP Properties window click on the IP Addresses tab and you will see the Port used by the instance of SQL Server in either TCP Dynamic Ports for a dynamic port or TCP Port for a static port as highlighted in the snippet below.



4.2 Installation

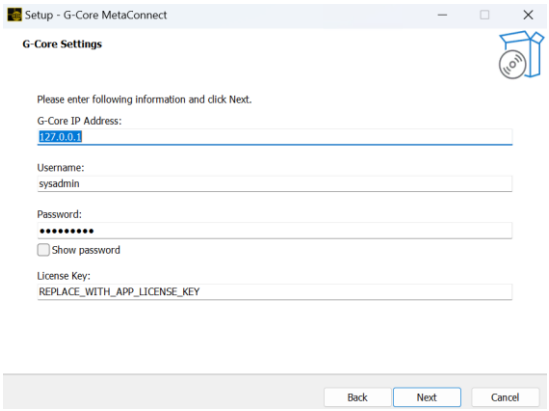
The first step for installing a piece of software on Windows is to download the software's installation executable. This executable (a .exe file) contains the tasks our computer must perform to install the software. Running the executable, therefore, installs the software.

4.2.1 G-Core Setting & License Key Setting

Click the application installation file to start the installation. While you can change the input information after installation, it's recommended to provide accurate details during setup, especially for the database configuration.

1) G-Core IP Address, User name and User password

2) License key



4.2.2 Application Login & Other Setting

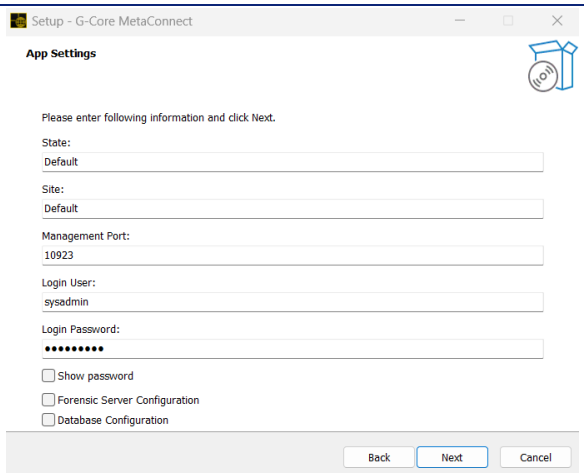
1) Application port, and user login credentials for User interface.

2) Forensic Server Configuration.

   (Optional: If you want to deliver the meta analytics data to a central server)

3) Database configuration.

   (Optional: If you want to store the count data in a database for use with Grafana)

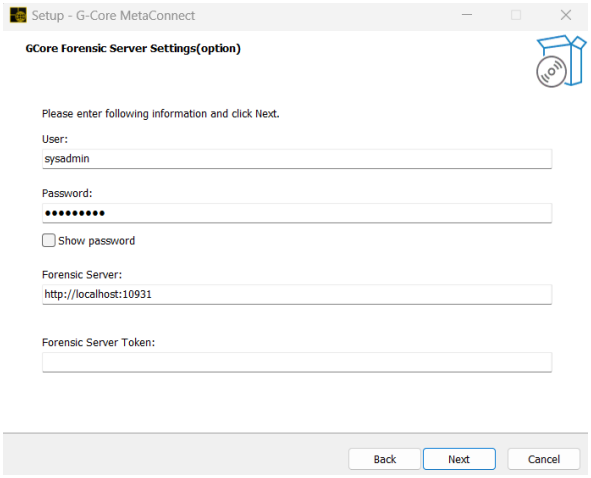

Setup - G-Core MetaConnect
App Settings
Please enter following information and click Next.
State:
Default
Site:
Default
Management Port:
10923
Login User:
sysadmin
Login Password:
Show password
Forensic Server Configuration
Database Configuration
Back
Next
Cancel

4.2.3 G-Core Forensic Setting(optional)

1) User login credentials for the 'GCore Forensic' application: These can be updated at any time after installation.

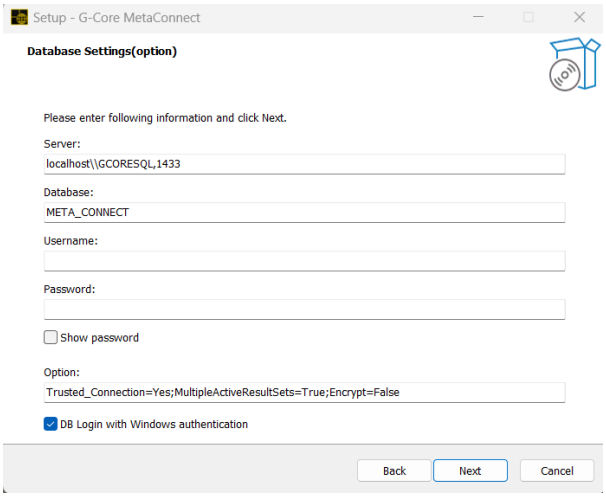
2) Forensic Server API: The API details for connecting to the forensic server.

3) Token information: This can be obtained from the 'GCore Forensic' server and can be updated at any time after installation.



4.2.4 G-Core Database Setting(optional)

if you want to use it for people or vehicle counting to provide statistical data through Grafana.



5 Application Management

Once the installation is complete, the 'G-Core MetaConnect.exe' will be created on your desktop. You will need to use it to manage the application.

The default login credentials are 'sysadmin' and 'masterkey', unless you changed them during installation.

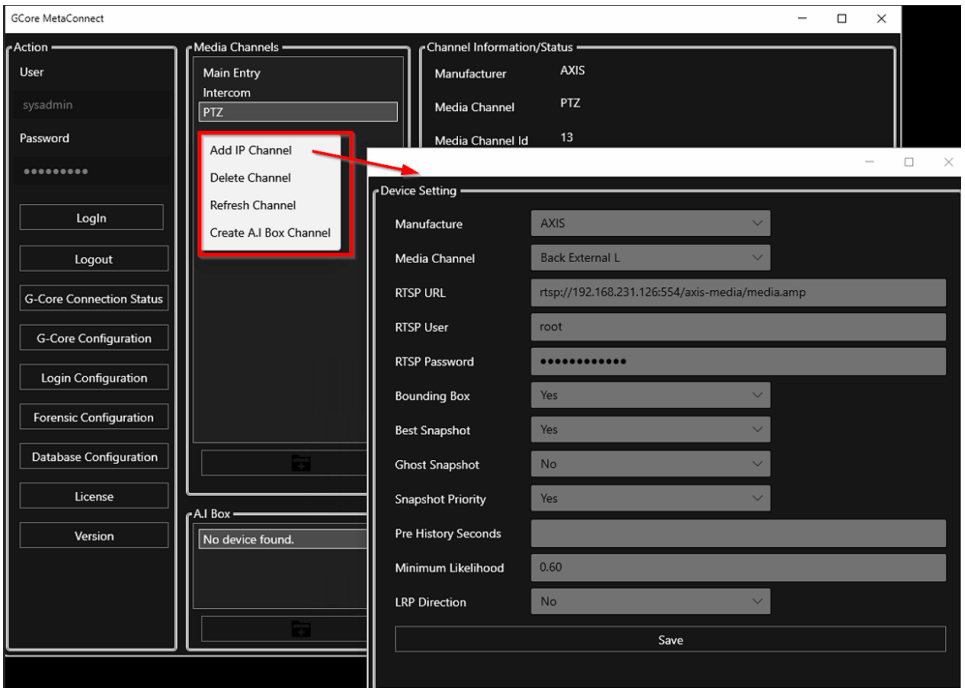
5.1 Application Configuration

We need to add the media channels that will be used to connect the camera and retrieve the object analytics results from the camera.

5.1.1 Add the Media channel

Below is the main screen of the user interface and you can add or delete the media channel or update it.

Mouse over to the 'Media Channels' section to display the menu for adding an 'IP Channel' or an 'A.I. Box Channel.' , and please add the 'A.I. Box' first to enable the addition of its channels.



1) Camera manufacturers : It will automatically select the appropriate manufacturer when you choose the media channel. However, this may not occur if there is a communication timeout with the camera or if the application was not installed on the G-Core machine.

Note : ***Please ensure that the correct manufacturer is selected, as this is crucial for proper data parsing by the application. Choosing the wrong manufacturer may cause the application to stop working***.

2) Media Channels : Once you select the media channels, No. 1, 3, 4, and 5 will be automatically populated if the application was installed on the G-Core machine. Otherwise, please provide this information manually.

3) Bounding Box : A bounding box, or box, is simply a rectangle drawn on an image to highlight the presence of an object of interest at that spatial location.

4) Best Snapshot : The analytics metadata streams can also be configured to include cropped images of detected classified objects using the Best Snapshot feature.

5) Ghost Snapshot : If the metadata does not include the snapshot image, a blank image will be sent to map the event with the snapshot. Since the snapshot does not have the data to link to the metadata, it is recommended not be left Blank to avoid any confusion.

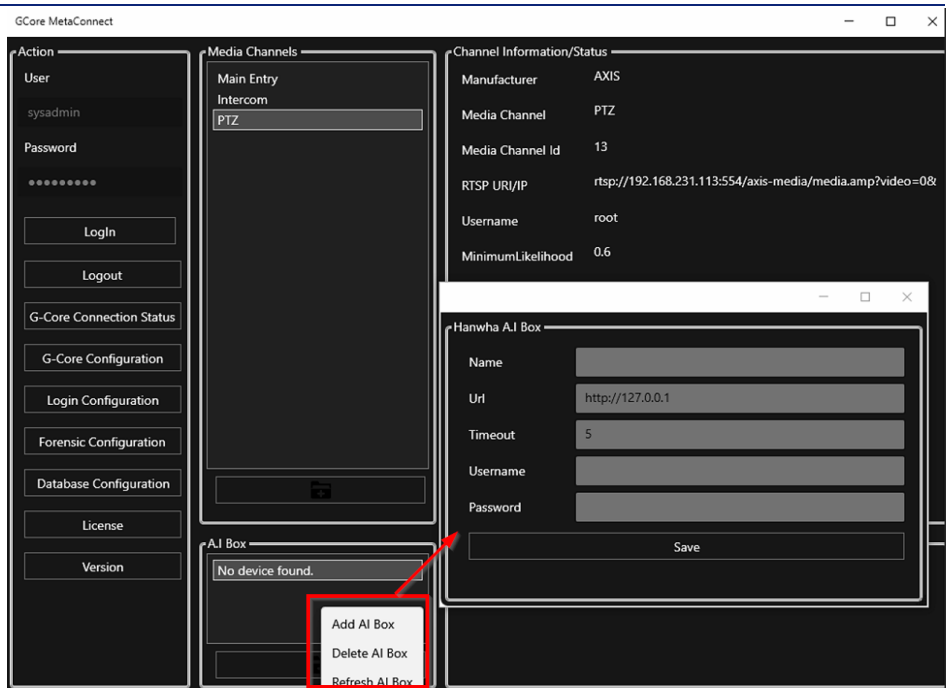
6) Snapshot Priority : The application will attempt to send the metadata information along with the snapshot image, but there is a drawback as well.

7) Minimum Likelihood : Likelihood will help you obtain more accurate data from the camera by filtering the data based on this threshold.

8) LRP Direction : The application will use this information to store data on vehicle direction, even if multiple cameras supply the data. This is important to ensure accuracy and avoid potential errors.

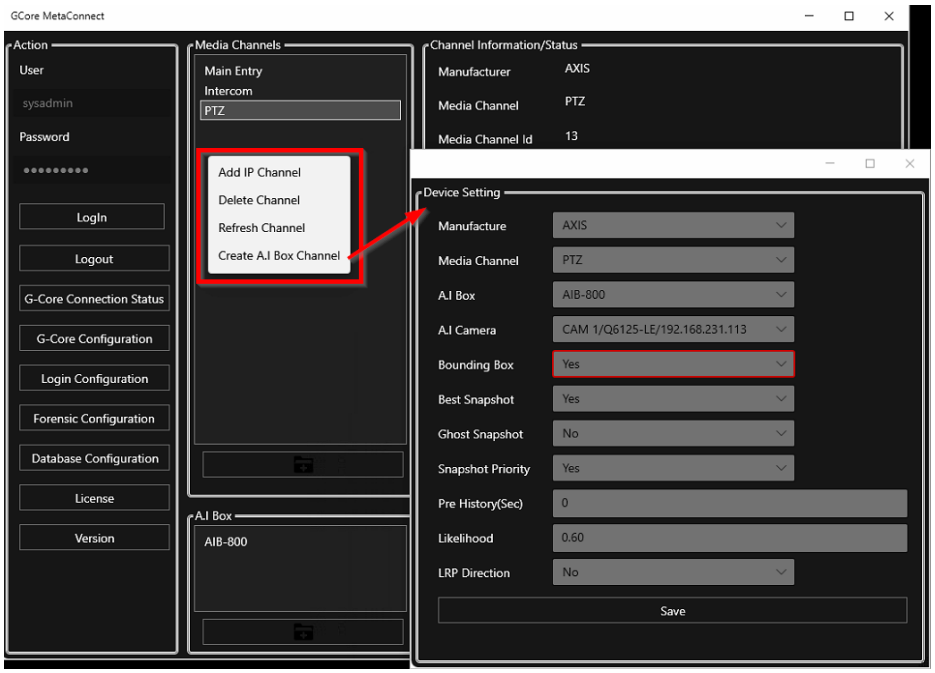
5.1.2 Add the Hanwha A.I Box

Mouse over to the ‘A.I Box' section to display the menu for adding an 'A.I Box'.



5.1.3 Add the Hanwha A.I Box channel

Mouse over to the 'Media Channels' section to display the menu for adding an 'A.I. Box Channel.'.



1) A.I Camera : It should match the 'Media Channel' you have on the G-Core, from which you can get the A.I. analytics data in the application.

5.2 Bounding box & Best Snapshot

Some cameras may have a transmission interval for sending thumbnails or delivering metadata (e.g., object classification, colour, etc.) when an object is analysed. This can sometimes result in ghost bounding boxes or the absence of a best snapshot image, depending on priority.

Please note that if you enable 'Snapshot Priority' and 'Best Snapshot,' the camera may not include the cropped (best snapshot), which will not generate the GCore event. If you still want to use it, enable 'Ghost Snapshot' or disable 'Snapshot Priority.'.

1) "Snapshot Priority" – Yes

   The application will send the object detection information when the camera's payload (ONVIF Profile M) includes the 'best snapshot' data, which most camera manufacturers provide when objects are analysed, such as colour or object classification.

2) "Snapshot Priority" – No

   You may want to use this option when you need to obtain object classification or object counting data (e.g., for people or vehicles) without colour.

   In this case, we cannot guarantee that the object detection information matches the best snapshot image. This discrepancy may occur because the information could be provided separately by the camera, or delays in analysing the image may cause a lag in displaying the object detection information from GCore. You might need to play back the footage to see the detected object clearly.

3) "Ghost snapshot" – Yes

   It would be used when you disable the 'Snapshot Priority' to avoid confusion, as we cannot guarantee that the object detection information matches the best snapshot image. The application will attempt to create a blank image to provide a better user experience when the camera's payload (ONVIF Profile M) doesn't have the 'best snapshot'.

Below are the general recommended configurations for each manufacturer.

Option	Axis	Hanwha	i-PRO	Bosch
Bounding Box	-	O	O	O
Best Snapshot	O	O	O	N/A
Snapshot Priority	O	O	O	N/A

Ghost snapshot	-	-	-	N/A

5.2.1 Axis

1) “Snapshot Priority” - Yes

If you enable 'Snapshot Priority,' you will get the best snapshot of the detected object, as shown on the right screen. However, if the object is detected from far away, the camera may not capture the best snapshot image.

2) “Snapshot Priority” – No & “Ghost snapshot“ - Yes

If you disable 'Snapshot Priority,' you may not get the best snapshot image, as the application prioritizes object detection information over capturing the snapshot.

5.2.2 Hanwha

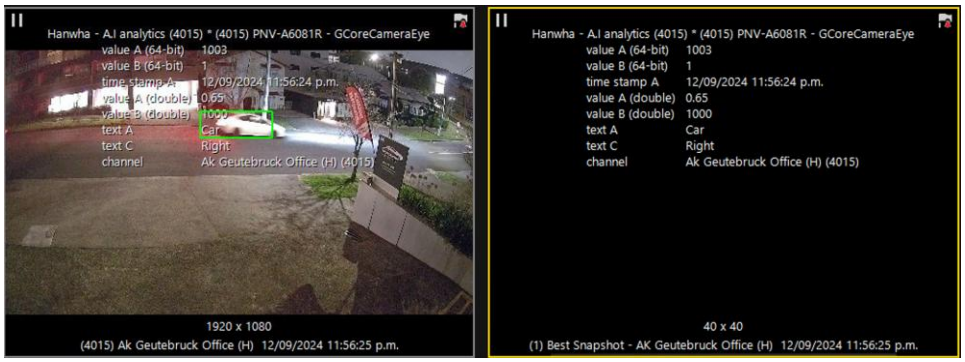
1) “Snapshot Priority” - Yes

If you enable 'Snapshot Priority,' you will get the best snapshot of the detected object, as like following right screen, but you may also experience ghost bounding boxes. You might need to play back the footage to see the detected object clearly.

2) “Snapshot Priority” – No & “Ghost snapshot“ - Yes

If you disable 'Snapshot Priority,' you might get a good bounding box for the object, but the snapshot image may not be the best, or it may still show the previous snapshot, which could lead to confusion.

You may not receive colour information for the detected object, as it will be provided by the camera with the best snapshot image.



5.2.3 i-PRO

There are two types of ONVIF meta information as follows.

1) Analytics stream : The detection frame information is sent regularly but G-Core only take first metadata stream if it has the person or vehicle information, and it makes ghost bounding box as like following. It will have object detection attributes only when the object is analysed with the ‘Best Shot.’

2) Event stream : Send thumbnails and meta information. The transmission interval is different for each applications. The transmission interval of thumbnails and metainformation is 2 second or 3 seconds interval.

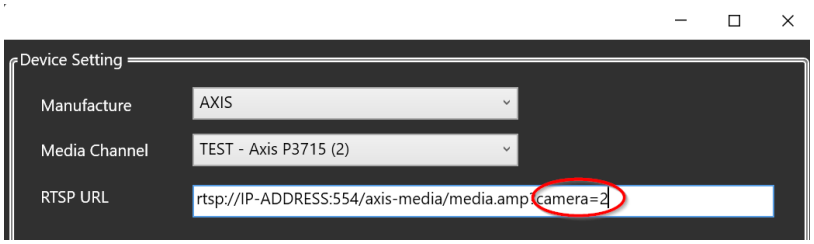
3) “Snapshot Priority” – Yes – use the ‘Event Stream’ to retrieve thumbnail images from the camera.

If you enable 'Snapshot Priority,' you will get the best snapshot of the detected object, as like following right screen, but you may also experience ghost bounding boxes. You might need to play back the footage to see the detected object clearly.

5.2.4 Axis - Multi head camera

Please add the camera number to the RTSP URL if the camera has multiple sensors.

rtsp://x.x.x.x:554/axis-media/media.amp?**camera=2**



6 Camera Configuration

6.1 Axis Camera Configuration

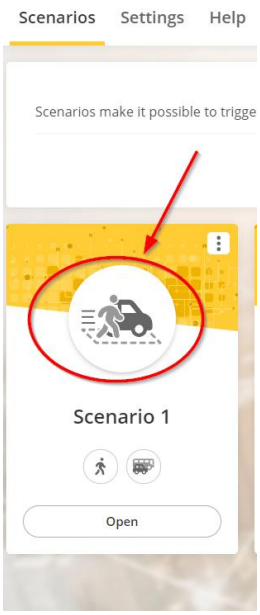
AXIS Object Analytics is supported and preinstalled in firmware on compatible cameras, it cannot be downloaded separately. To run the application, MLPU cameras must have firmware 10.2 (or higher) and DLPU cameras must have 10.3 (or higher).

The analytics metadata streams can also be configured to include cropped images of detected classified objects using the Best Snapshot feature, but you must have the firmware 11.11.73(or higher).

6.1.1 Axis Object In Area

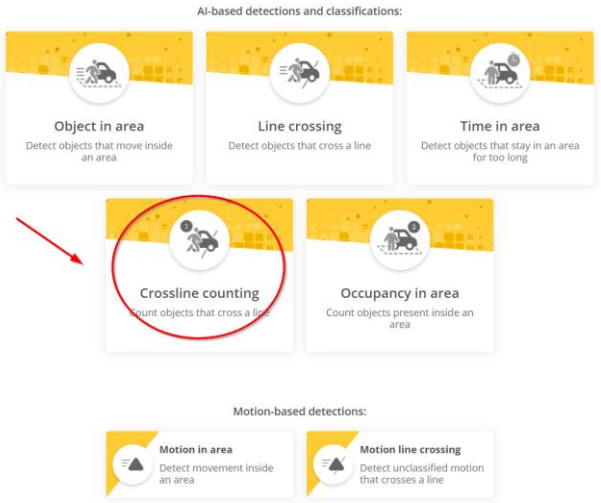
1) Open your web browser and go camera web page > App > Axis Object Analytics.

2) Create "**Object in Area"** as like following if you don't have it.

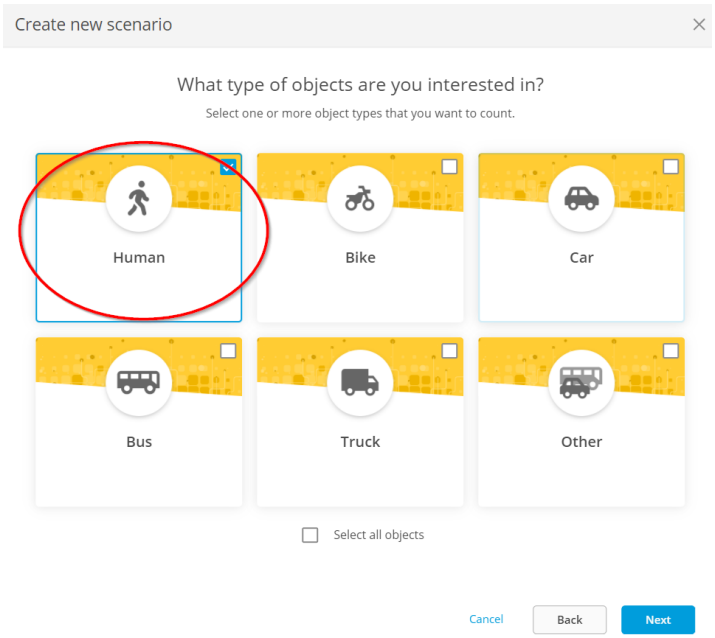


6.1.2 Axis Cross counting

1) Add two 'Crossline Counting' configurations as follows. The names should be comma-separated values because the system supports direction-based counting, so we need two configurations to accurately track occupancy.

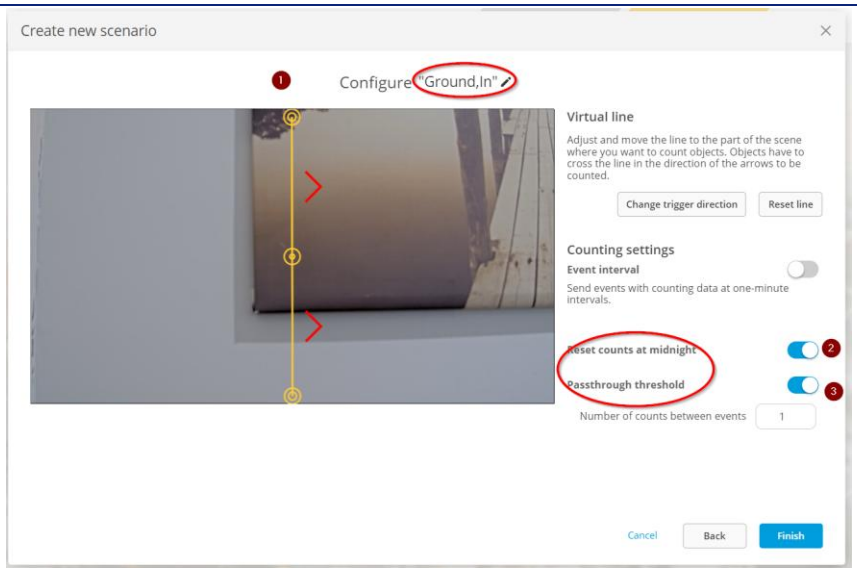


2) Select the 'Human' option to count the people.

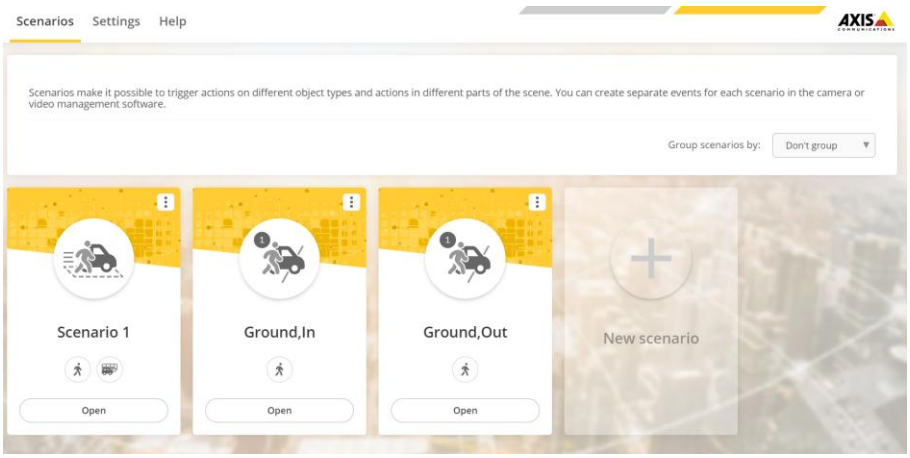


3) Axis allow 16 characters for the naming, and please use comma separate value to use it for Grafana statistics dashboard.

- Ground**,In** : The 'First value (Ground)' indicates the floor level, while selecting 'In' will count the people entering.
- Ground**,Out** : The 'First value (Ground)' indicates the floor level, while selecting 'Out' will count the people leaving.
- Please enable the 'Reset counts at midnight', and 'Passthrough threshold'.



4) Please create a rule for 'Ground, Out.' Below, you'll find the expected screen layout for reference.



6.2 Hanwha Camera Configuration

Object Detection technology classifies the types of objects (person, face, vehicle, license plate) and identifies their location in the video. Object Detection adopts deep learning algorithms to learn images of objects (person, face, vehicle, license plate) and detect similar objects within an image.

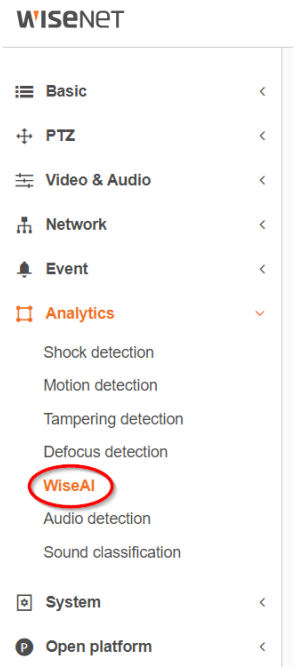
6.2.1 Object Detection

1) Open your web browser and go camera web page > Settings > Analytics > WiseAI

2) Enable the Object detection and Bestshot & Attributes

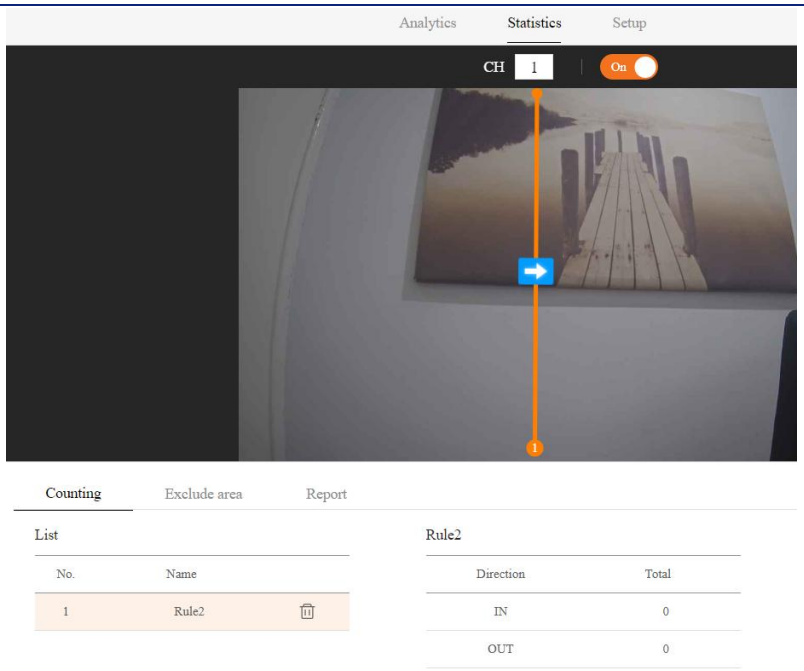
6.2.2 People Count

1) Open your web browser and go camera web page > Analytics > WiseAI



2) Go to Statistics > People counting.

Since Hanwha does not allow the use of commas or any other specific characters as delimiters, the rule name needs to be 'floor level.'



6.3 i-PRO Camera Configuration

6.3.1 Vehicle and People Detection

1) Open your web browser and go camera web page > Settings > Detailed settings > Ext. software

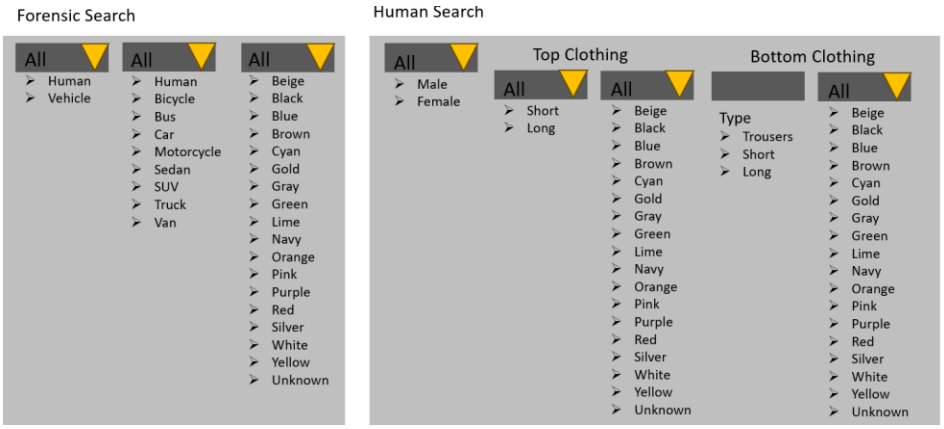
2) Please install the ‘AI Vehicle detection” and ‘AI People detection’ if you don’t have it.

7 G-Set & G-SIM Configuration

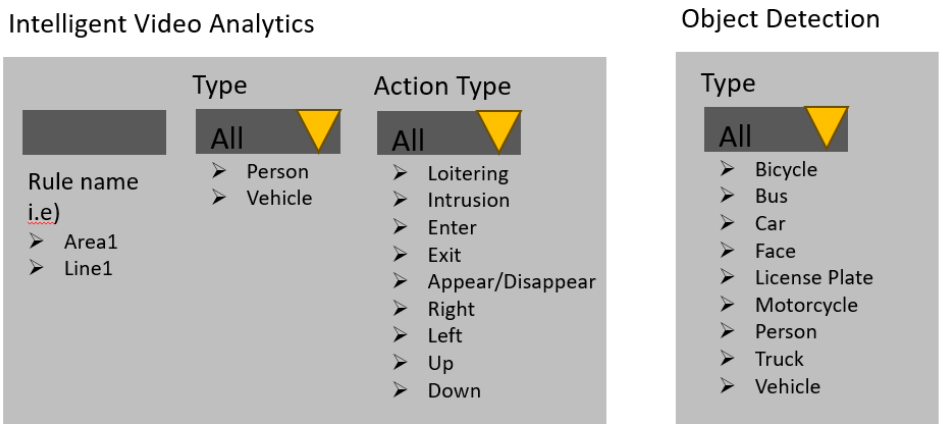
You need to add the 'G-Set' event and 'Process Data Filter' to the G-SIM in order to search the object analytics data, including the best snapshot image.

7.1 Forensic Search Hierarchy Diagram.

The following hierarchical structure could be used for the management console.



7.2 Intelligent Video Analytics Search.



7.3 G-Set & Management Console Configuration.

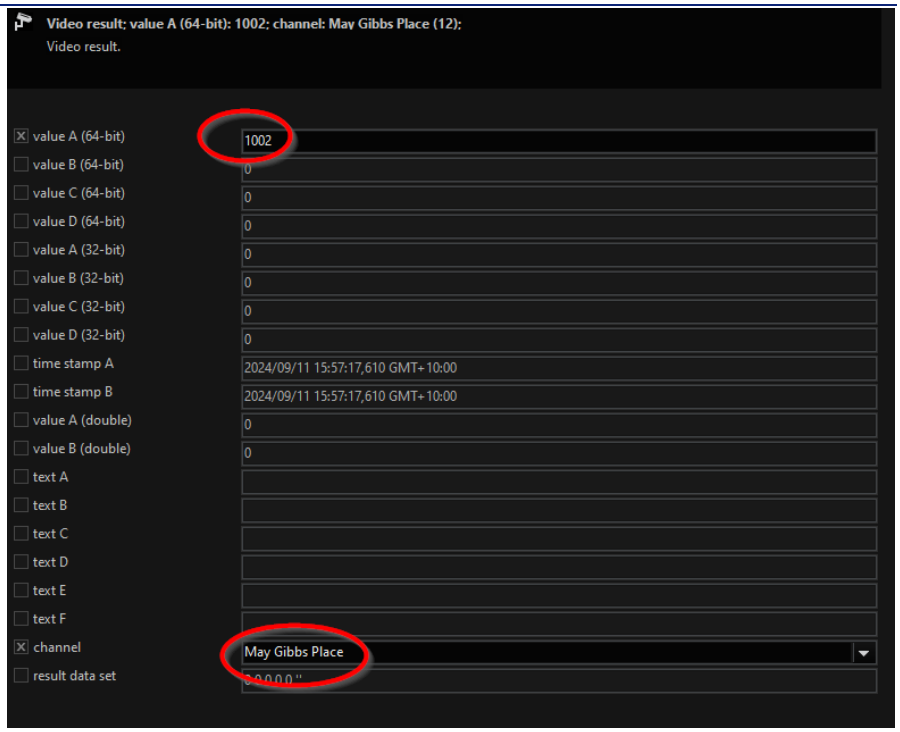
7.3.1 Person

'Video result' need to be used to receive event notifications.

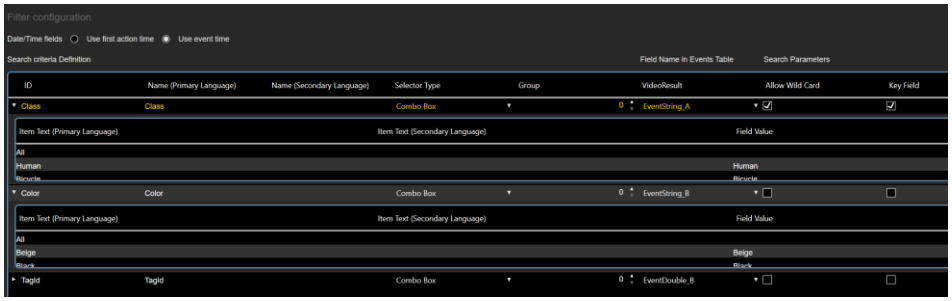
Fields	Value	Comments
value A(64-bit)	**1002**	Fixed value
value B(64-bit)	1:Hanwha, 2 :iPro, 3:AXIS, 4:Bosch	Fixed value
value C(64-bit)	Blank : All, 1:Male, 2:Female	Fixed value
value D(64-bit)	Blank : All, 1: Face mask	Fixed value(i-PRO only)
value A (32-bit)	Blank : All, 1: Optical	Fixed value(i-PRO only)
value B (32-bit)	Blank : All, 1: Hat	
value C (32-bit)	Blank : All, 1: Belonging	
value D (32-bit)	201 – Upper clothing length : Short 202 – Upper clothing length : Long	
time stamp A	Date & Time	
time stamp B		
value A (double)	Likelihood	
value B (double)	**1000**	Fixed value
text A	**Person**	Fixed value
text B	Beige, Black, Blue, Brown, Gray, Green, Lime, Orange, Purple, Pink, Red, White, Yellow, Unknown	Upper clothing colour
text C	Black, Blue, Brown, Gray, Green, Lime, Orange, Purple, Pink, Red, White, Yellow, Unknown	Lower clothing colour
text D	Long, Short, Trousers	Lower clothing
text E		
text F		

1) G-Set configuration

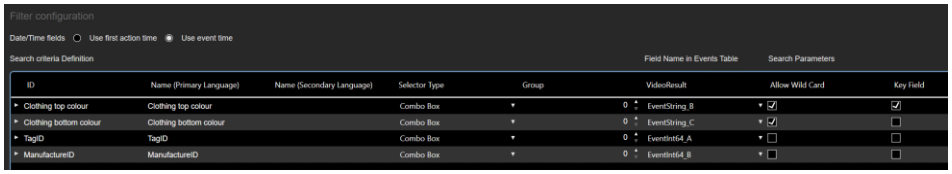
Please change the channel if you want to receive notifications.



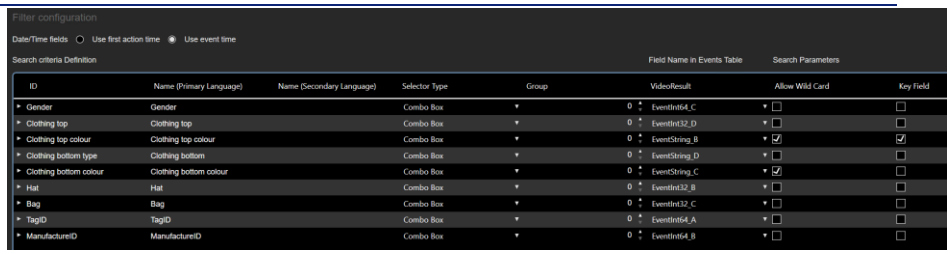
2) Forensic search for all of camera - Management Console configuration



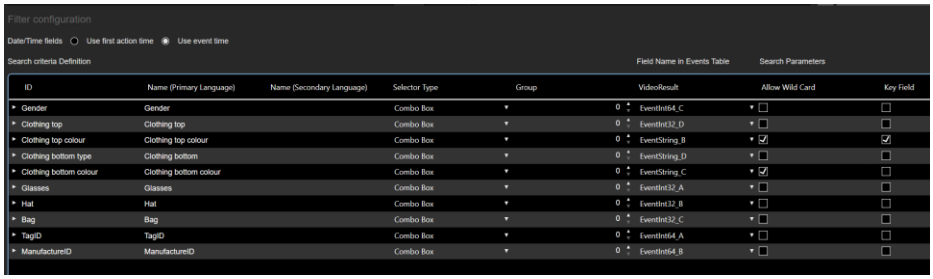
3) Forensic search for Axis - Management Console configuration



4) Forensic search for Hanwha - Management Console configuration



5) Forensic search for i-PRO - Management Console configuration



7.3.2 Vehicle

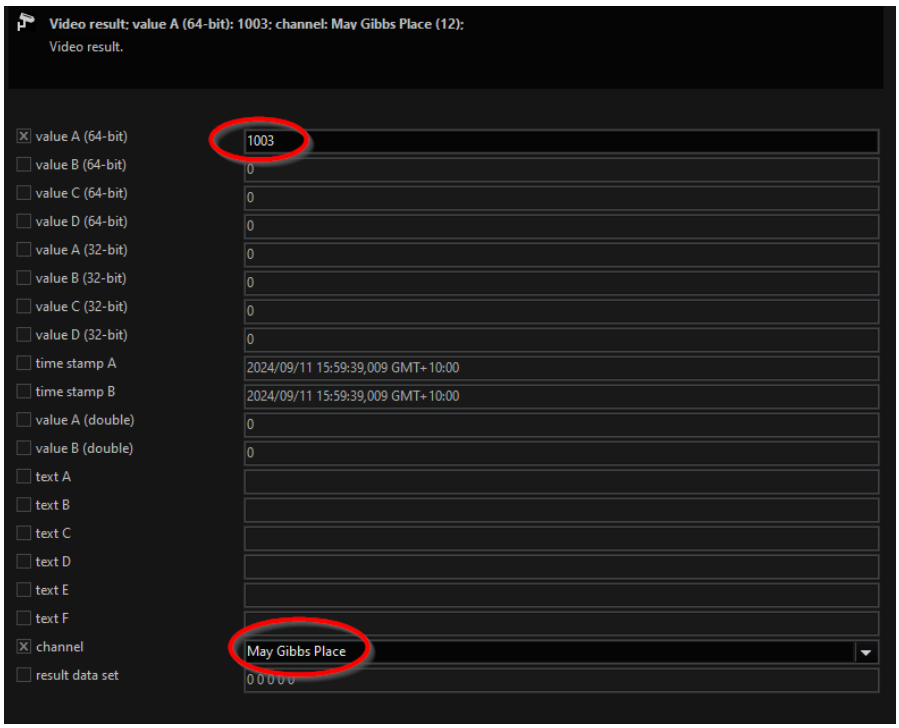
'Video result' need to be used to receive event notifications.

Fields	Value	Comments
value A(64-bit)	**1003**	Fixed value
value B(64-bit)	1:Hanwha, 2 :iPro, 3:AXIS, 4:Bosch	Fixed value
value C(64-bit)		
value D(64-bit)		
value A (32-bit)		
value B (32-bit)		
value C (32-bit)		
value D (32-bit)		
time stamp A	Date & Time	
time stamp B		
value A (double)	Likelihood	
value B (double)	**1000**	Fixed value

text A	Bike, Bus, Car, Motorcycle, Sedan,SUV,Truck, Van, PickupTruck,Pram, Caravan,Train, TwoWheels	Fixed values
text B	Black, Blue, Brown, Gray, Green, Orange, Purple, Pink, Red, White, Yellow, Unknown	Fixed values
text C	Blank, Down, Up, Right, Left, UpLeft, UpRight, DownRight,DownLeft	Hanwha, i-PRO
text D		
text E		
text F		

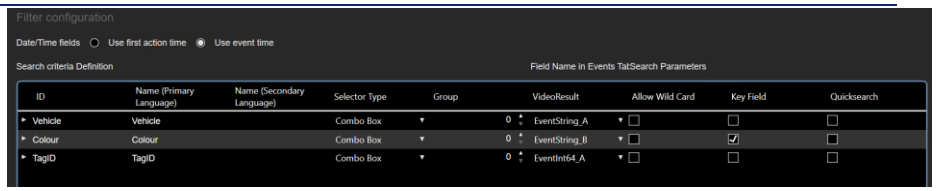
- G-Set configuration

  Please change the channel if you want to receive notifications.



- Forensic search for all of camera - Management Console configuration

  You can use the either 'forensic search' example or following example.



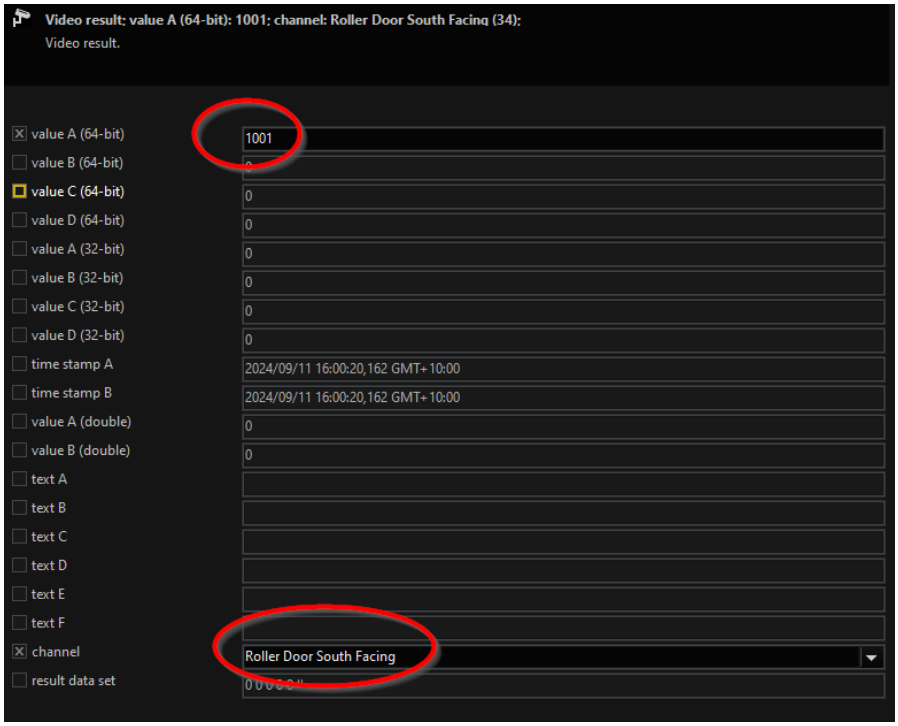
7.3.3 Face

'Video result' need to be used to receive event notifications.

Fields	Value	Comments
value A(64-bit)	**1001**	Fixed value
value B(64-bit)	1:Hanwha, 2 :iPro, 3:AXIS	Fixed value
value C(64-bit)	Blank : All, 1:Male, 2:Female	Fixed value
value D(64-bit)	Blank : All, 1 : Face mask	Fixed value
value A (32-bit)	Blank : All, 1: Optical	Fixed value
value B (32-bit)	Blank : All, 1: Hat	Fixed value
value C (32-bit)	Blank : All, 0 : No Beard, 1: Beard	iPRO only
value D (32-bit)	101 – Short Hair length 102 - Long Hair length	iPRO only
time stamp A	Date & Time	
time stamp B		
value A (double)	Likelihood	
value B (double)	**1000**	Fixed value
text A		
text B		
text C		
text D		
text E		
text F		

- G-Set configuration

Please change the channel if you want to receive notifications.



- Forensic search for all of camera - Management Console configuration

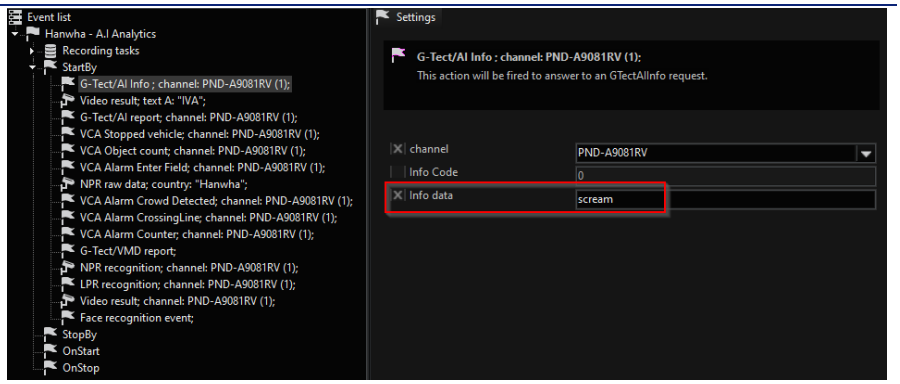
7.3.4 South classification & Audio Detection

'G-Tech/AI Info' need to be used to receive event notifications.

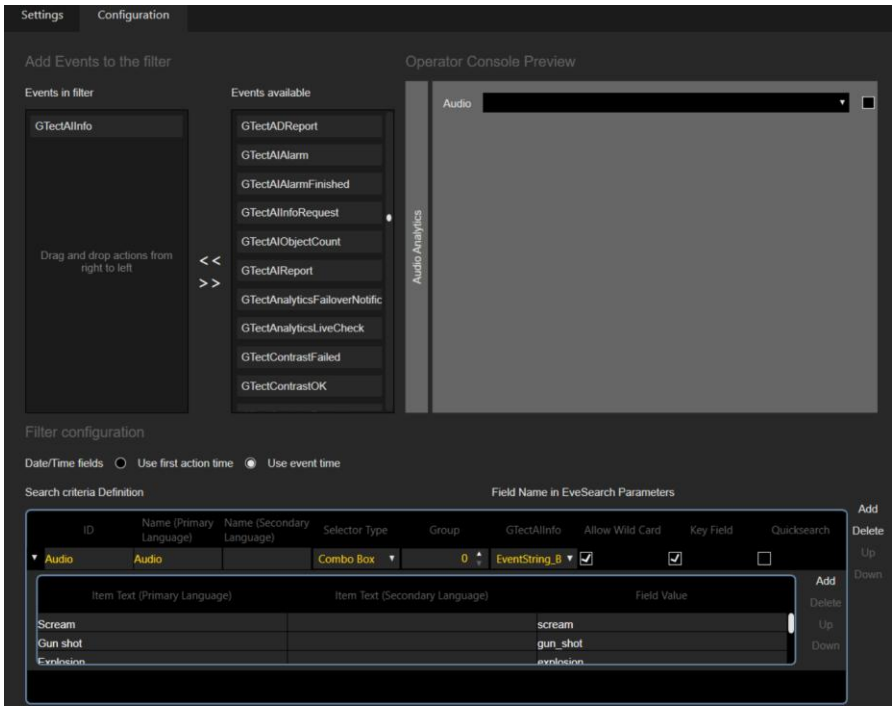
Note : 'Info data' can be Blank for all of events for 'both Audio Analytics' and 'Audio Detection'.

Field	Value	Comments
Info data	scream	
	gun_shot	
	explosion	
	glass_breaking	
	audio over threshold	

1) G-Set configuration



2) Management Console configuration



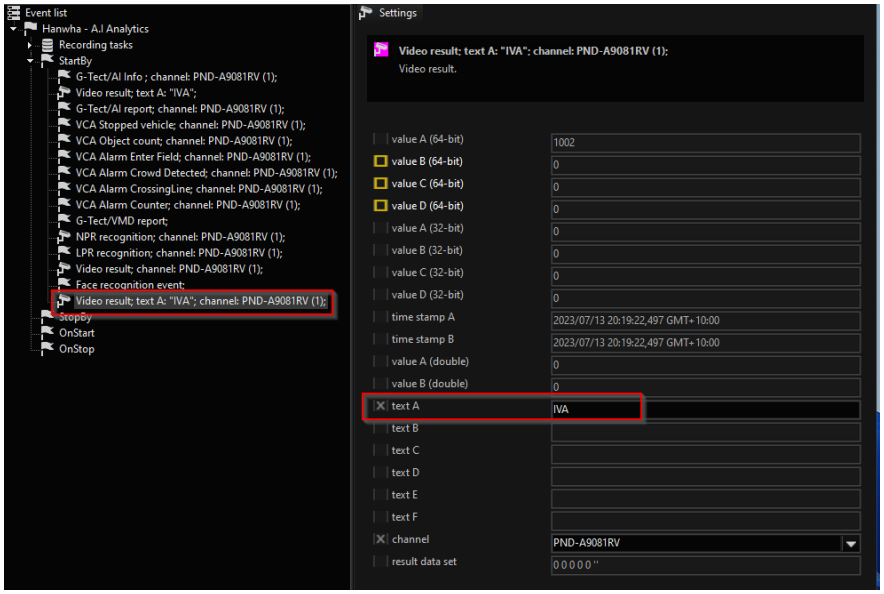
7.3.5 IVA(Intelligent Videl Analytics)

'Video Result' need to be used to receive event notifications.

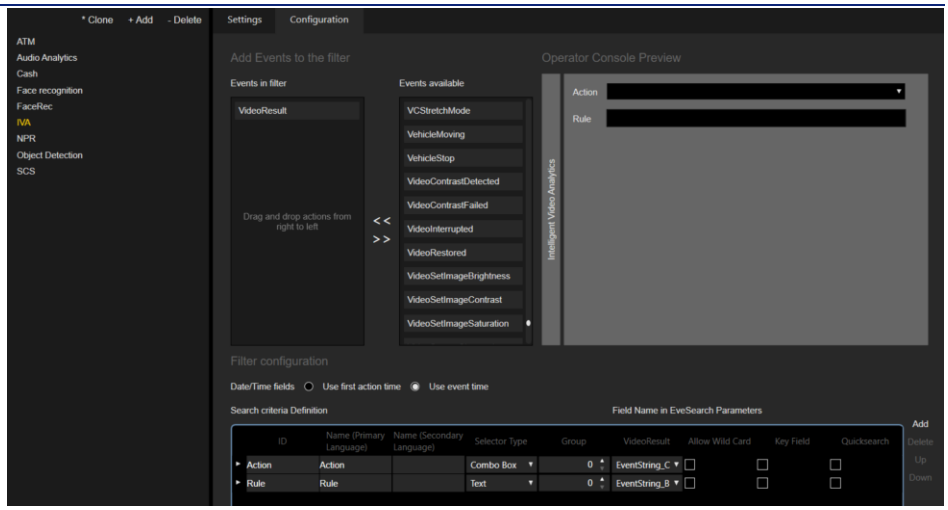
Fields	Value	Comments
Int64FieldA	2002	Fixed value
Int64FieldB	0 1	Only for Axis camera 0 : de-active

		1 : active
text A	IVA	Fixed value
text B		Blank or Variable(i.e: Area1, Line2)
text c		Blank, Loitering, Intrusion, Enter, Exit, Appear/Disappear, Right, Left, Up, Down
text E		Blank or Loitering, Intrusion, Enter, Exit, Appear/Disappear, Right, Left, Up, Down

1) G-Set configuration



2) Management Console configuration

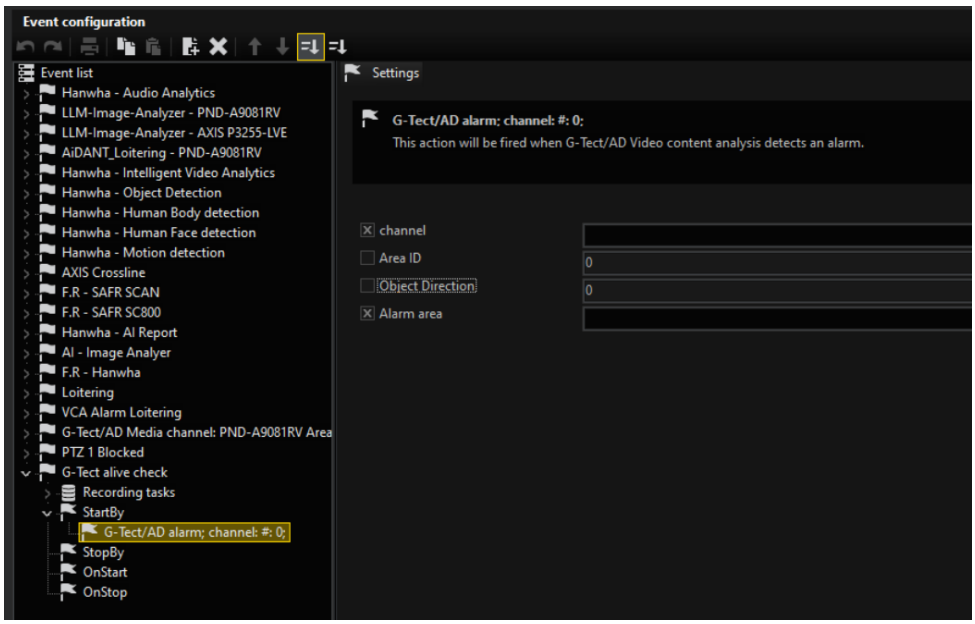


7.3.6 Object Detection(Not in use)

'G-Tech/AD Alarm' need to be used to receive event notifications.

Fields	Value	Comments
Object Direction (EvenString B)		Person, Vehicle, Face, LicensePlate, Bicycle, Car, Motorcycle, Bus, Truck

1) G-Set configuration



7.3.7 NRP Recognition

'NRP' need to be used to receive event notifications for 'Axis License Plate Verifier'

7.3.8 People/Queue/Crowd/Object Count

'Video result' need to be used to receive event notifications.

Fields	Value	Comments
value A(64-bit)	**2003**	Fixed value
value B(64-bit)	1:Hanwha, 2 :iPro, 3: AXIS	Fixed value
value C(64-bit)	bike / totalbike	Axis
value D(64-bit)	bus / totalbus	Axis
value A (32-bit)	car / totalcar	Axis
value B (32-bit)	human / totalhuman	Axis
value C (32-bit)	truck / totaltruck	Axis
value D (32-bit)	Total for Axis, Count for i-PRO and Hanwha	Axis / Hanwha/i-PRO
time stamp A	Date & Time	Server time
time stamp B		
value A (double)	otherVehicle	
value B (double)	**Epoch time**	**Event time**
text A	Person, Vehicle, Car, Bike	Hanwha Axis
text B	People Count People Count Summary Object Count -> Hanwha Queue Count -> Hanwha Crowd Count -> Hanwha Crossline Count -> Axis/i-PRO Occupancy Count -> Axis	
text C	Rule name	
text D	Direction(i.e : In or Out)	Hanwha/i-PRO

		In the case of Axis, if the rule name includes ",IN", then it will be IN. If it includes ",OUT", then it will be OUT
text E		
text F		

7.4 G-Set Configuration – Hanwha Only

7.4.1 PPE Detection – Video Result

Fields	Value	Comments
value A(64-bit)	**3001**	Fixed value
value B(64-bit)		
value C(64-bit)		
value D(64-bit)		
text A	PPE	Fixed value
text B	No Helmet, No Vest No Helmet No Vest Fall	One of fixed value

7.4.2 PPE Line Crossing Detection – Video Result

Fields	Value	Comments
value A(64-bit)	**3002**	
value B(64-bit)		
value C(64-bit)	Number of count	Number of people who crossed the line in the current frame.

value D(64-bit)		
text A	PPE	Fixed value
text B	Person or blank	

7.4.3 Forklift Detection – Video Result

aFields	Value	Comments
value A(64-bit)	**1004**	Fixed value
value B(64-bit)	1:Hanwha	
value C(64-bit)		
value D(64-bit)		
time stamp A	Date & Time	
time stamp B		
value A (double)	Likelihood	
value B (double)	**1000**	Fixed value
text A	Forklift	Fixed value
text B		
text C		

7.4.4 Forklift Speed Detection – VCA Detection AI Object

7.4.5 Vehicle Speed Detection – VCA Detection AI Object

Fields	Value	Comments
Object class	Forklift,Vehicle	One of value
Rule name	Rule name	Dynamic
Object data	Speed	Fixed value
Timestamp		

Position X	speed	Speed of object Forklift or vehicle
Position Y		

7.4.6 Blocked Exit Detection – VCA Detection AI Object

7.4.7 ATM Hook Chain Detection – VCA Detection AI Object

7.4.8 Proximity Detection – VCA Detection AI Object

Fields	Value	Comments
Object class	Blocked,ATM,Proximity	One of them
Rule name	Rule name	Dynamic
Object data	Exit,HookChain,Proximity	One of them
Timestamp		
Position X		
Position Y		

7.4.9 Pedestrian object Detection – VCA Detection AI Person

7.4.10 Fallen object Detection – VCA Detection AI Object

Fields	Value	Comments
Object class		
Rule name	Rule name	Dynamic
Object data	Pedestrian, Fallen object	One of them
Timestamp		
Position X		
Position Y		

7.4.11 Crowd Counting Detection – VCA Counting AI Object

Fields	Value	Comments
Object class		
Rule name	Rule name	Dynamic
Object data	Crowd,	One of them
Timestamp		
Position X		
Position Y		

7.4.12 Fire Detection – VCA Alarm

Fields	Value	Comments
Channel		
Type		
Zone name	Rule name	Dynamic
Object info		

7.4.13 Wrong Way Detection – VCA Wrong direction

Fields	Value	Comments
Channel		
Type		
Zone name	Rule name	Dynamic
Object info		

7.4.14 Stopped Vehicle Detection – VCA Stopped vehicle

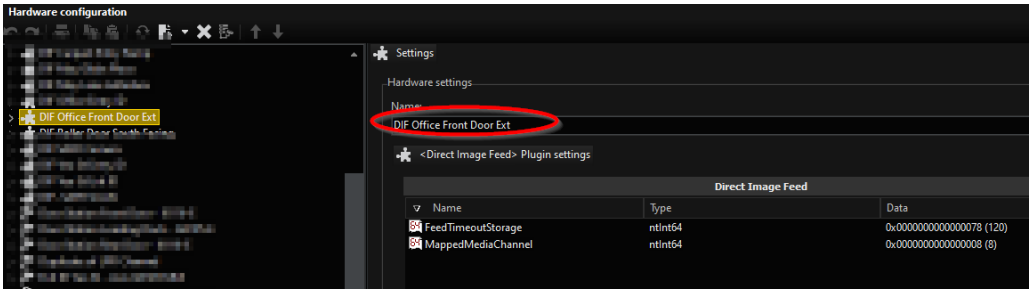
Fields	Value	Comments
Channel		

Type		
Zone name	Rule name	Dynamic
Object info	Car Bus Truck Motorcycle Bicycle	Dynamic

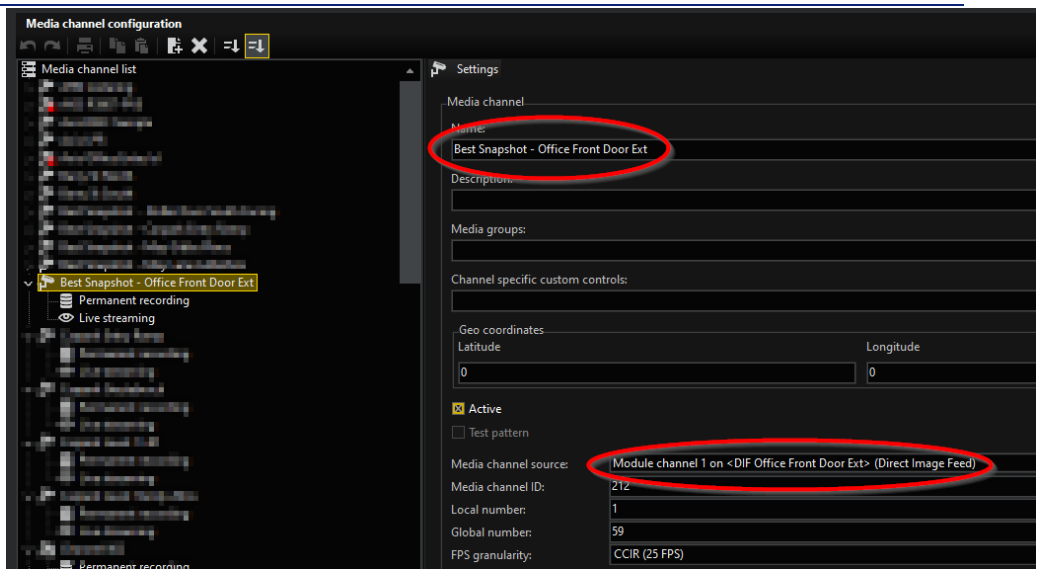
7.5 G-Set Configuration for Best snapshot

7.5.1 Add '< Direct Image Feed Plugin>'

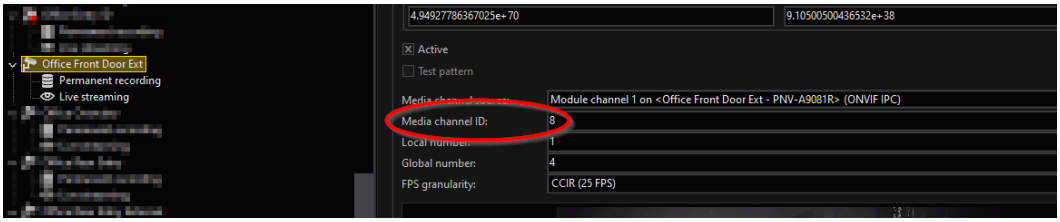
1) Start G-Set application.
2) We are not including the procedure for adding the Hardware and Media channel for the camera.
3) Go to Media channels/Hardware -> Hardware.
4) Click on the Add button at the top of the Hardware configuration window. Select Plugin <Direct Image Feed Plugin> from the list of plugins, then press Add. A new IP plugin entry will appear in the Module list.
5) Update the 'Hardware setting's name



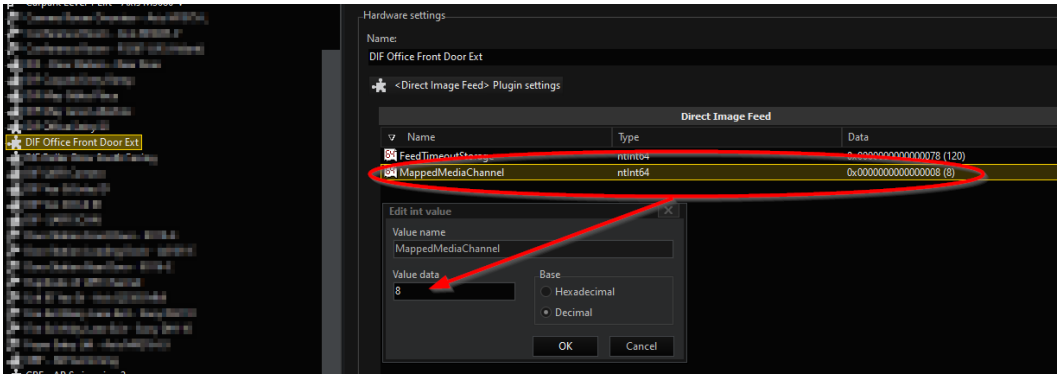
6) Go to Media channels/Hardware -> Media channels.
7) Click on Add Media Channel with the 'DIF' you just added from #No4.



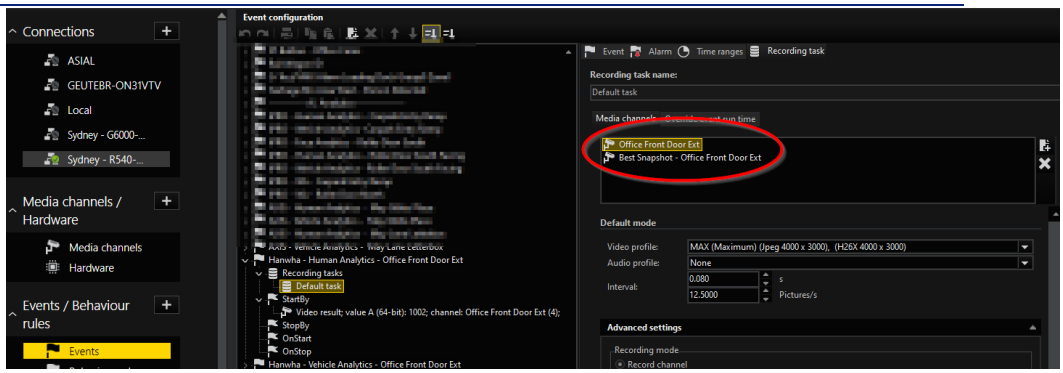
8) Get the 'Media channel ID' of the "Office Front Door Exit" from 'Media Channels'.



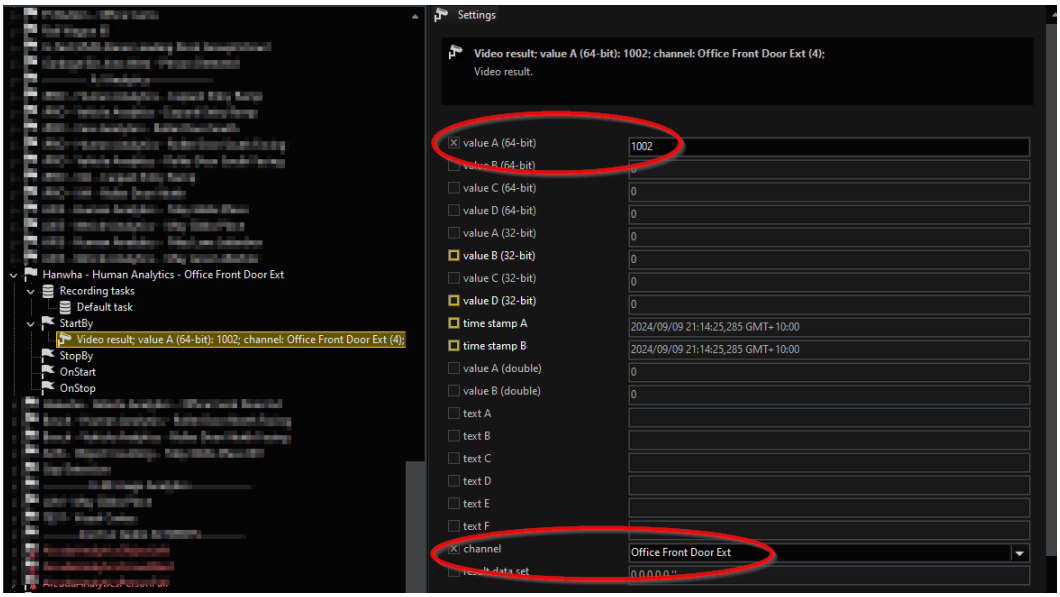
9) Go to Hardware, and update the '*MappedMediaChannel' with the value you got it from #No8.*



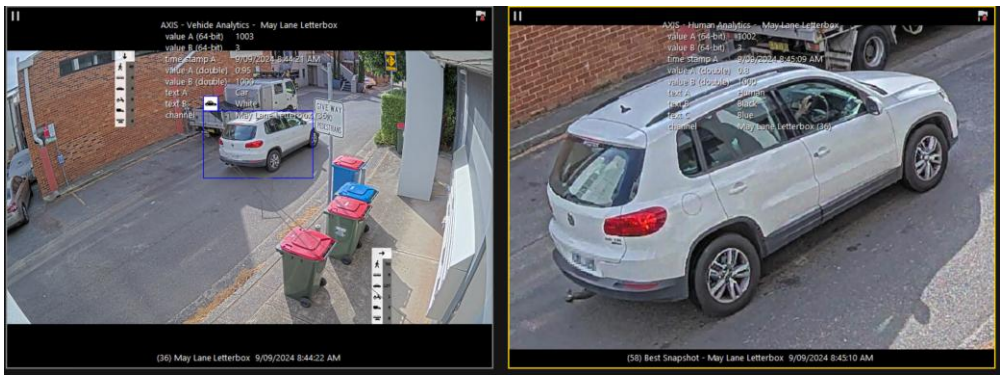
10) Add the 'Best Snapshot – Office Front Door Ext' to the existing G-Core Action's Recording tasks.



11) Below is the ‘StartBy’ example.



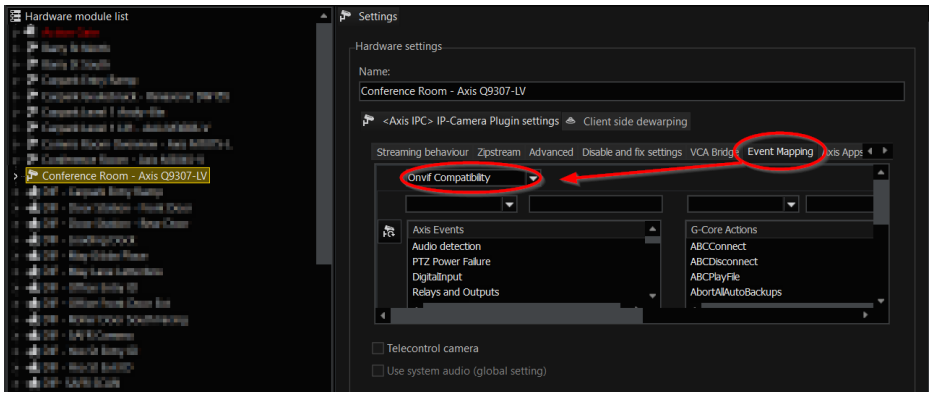
12) Below are examples of the G-Core Event and DIF.



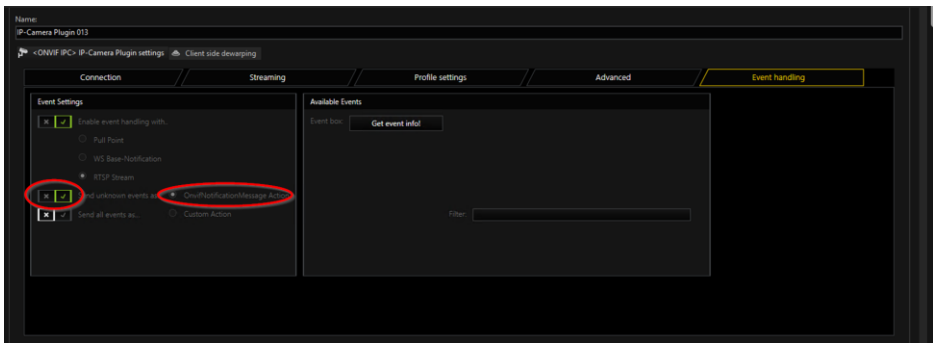
7.6 G-Set Configuration for Aidant Loitering

7.6.1 Axis IPC Plugin

If you're using the 'Axis IPC plugin,' please make sure to enable the 'Onvif Compatibility' for 'Event Mapping.



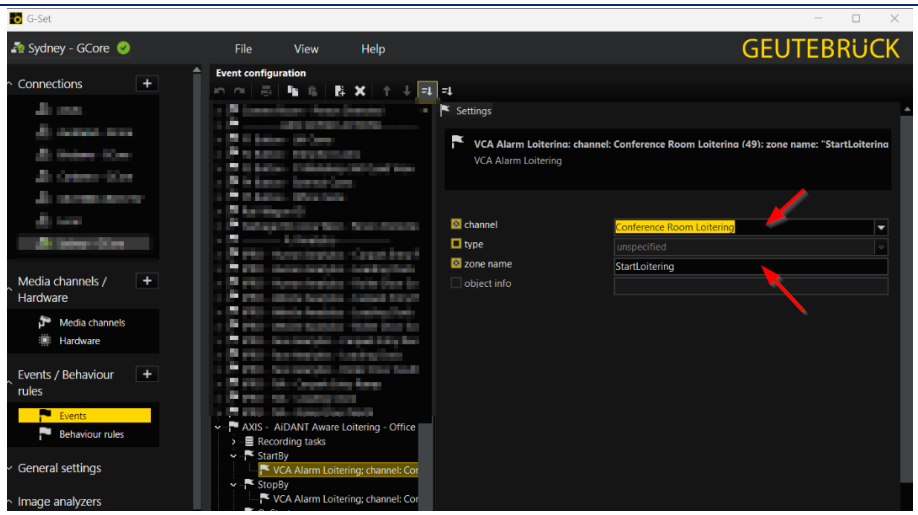
If you're using the 'ONVIF IPC plugin,' please make sure to enable the 'OnvifMessage Action' for 'Event handling.



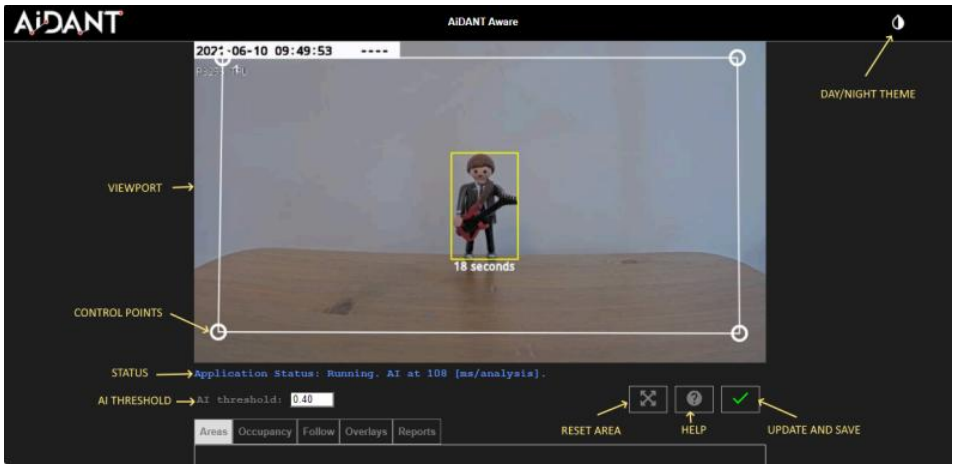
7.6.2 Create G-Set Action

Please add the 'Loitering' action with the 'VCA Alarm Loitering' for both 'Start By' and 'Stop By' triggers.

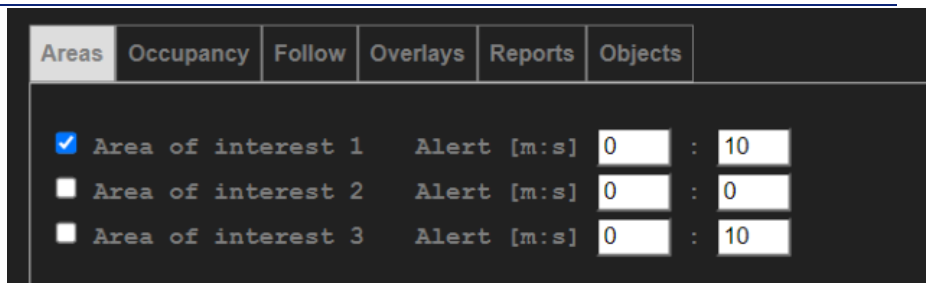
- Start By : ‘Zone name’ need to be ‘StartLoitering’
- Stop By: ‘Zone name’ need to be ‘StopLoitering’.



7.6.3 Update AiDANT configuration



- The 'AI Threshold' field can be modified to indicate how selective we want to be in identifying a person/object (i.e. the higher the number, the more discriminate it becomes to determine if an object on the screen is the desired object and the less positives that we will have). A value of 0.40 is the default as it minimizes false positives and increases true positives for detection.



- To configure the 'Area of Interest' functionality, select an area to monitor by dragging the control points until the polygon shape covers the area of interest.
- Indicate the minimum number of persons/objects in the area of interest needed to trigger the alarm by using the 'Notify only when count is' field. The user can also indicate the minimum amount of time needed for someone/object to linger in an area of interest by using the Alert Time field.
- Press the 'Update and Save' button to save your configuration changes

8 Grafana Installation & Configuration

8.1 SQL Server Configuration

8.1.1 Create Database and Login Credentials.

The database and login credentials you entered during the installation were created by the application. Please check the 'Trouble shooting' section if you don't have them.

8.2 Grafana Installation & Configuration

8.2.1 Grafana Installation

1) Navigate to the Grafnana download page https://grafana.com/grafana/download
2) Select the Grafana version you want to install.
3) Select ‘Enterprise’ edition.
4) Click Windows
5) To use the Windows installer, complete the following steps
    a. Click Download the installer.
    b. Open and run the installer.

8.2.2 Sign in to Grafana

To sign in to Grafana for the first time, follow these steps:

1) Open your web browser and go to root URL specified in Grafana configuration file. Unless you have configured Grafana differently, it is set to use http://localhost:3000 by default.
2) On the sign-in page, enter admin for username and password.
3) Click Sign in.
4) If successful, you will see a prompt to change the password.
5) Click OK on the prompt and change your password.

8.2.3 Microsoft SQL Server data source

To configure basic settings for the data source, complete the following steps.

3) Click Connections in the left-side menu.

4) Under Your connections, click Data sources.

5) Enter Microsoft SQL Server in the search bar.

6) Select Microsoft SQL Server. The Settings tab of the data source is displayed.

7) Set the data source's basic configuration options.

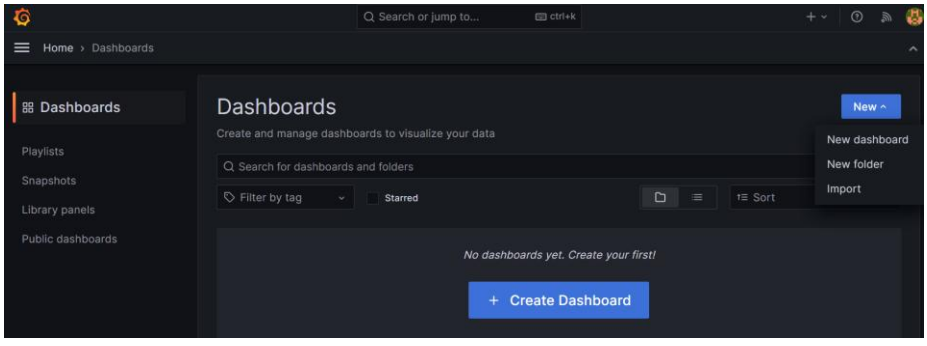
Field	Value	Description
Name	META_CONNECT_DB	
Host	IP-ADDRESS\GCORESQL,46915	Port might be different
Database	META_CONNECT	
Username		
Password		

8.3 Import Dashboard

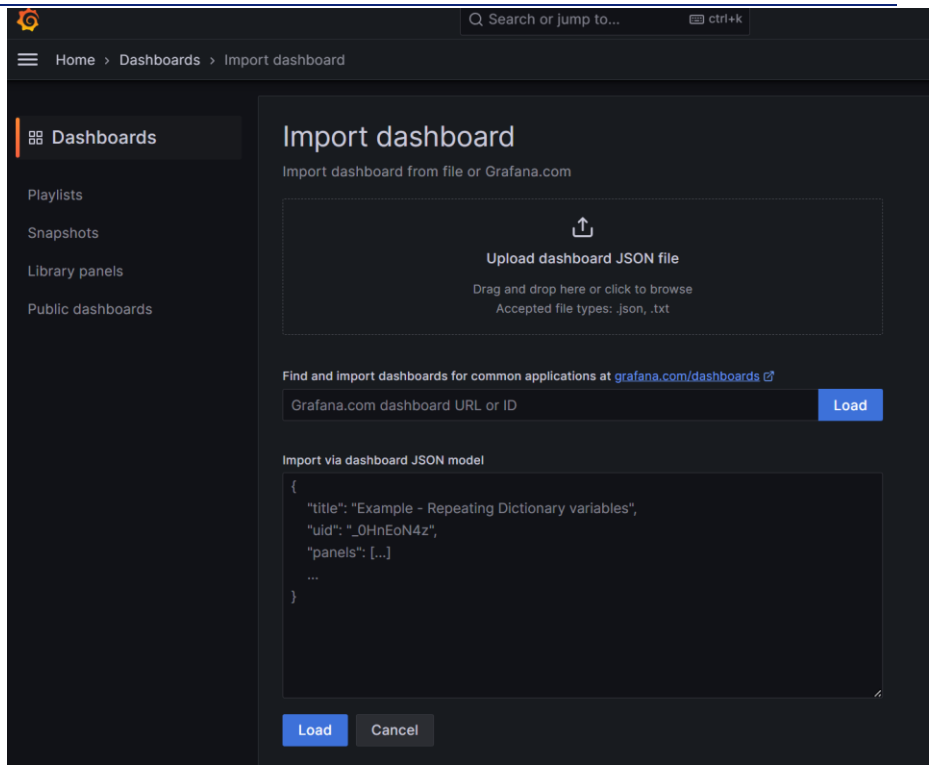
To import a dashboard, follow these steps:

1) Click Dashboards in the primary menu.

2) Click New and select Import in the drop-down menu.

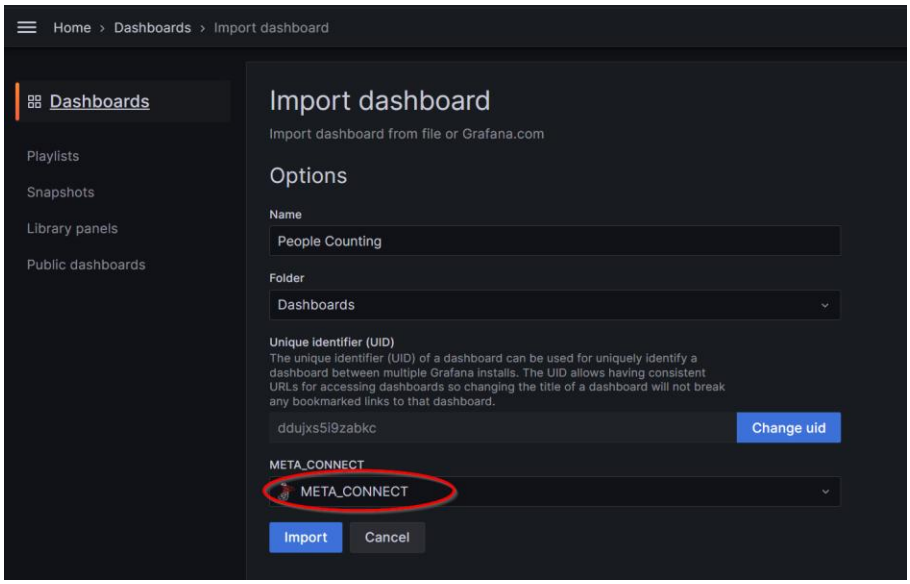


3) Upload a dashboard JSON file.



4) (Optional) Change the dashboard name, folder, or UID, and specify metric prefixes, if the dashboard uses any.

5) Select a data source, if required.



6) Click Import.

7) Save the dashboard.

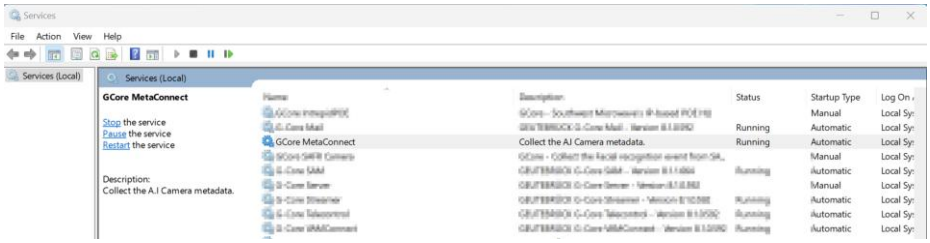
9 Application Management

9.1 Application

File	Directory or Comment
Home Directory	C:\Program Files\Geutebruck Pacific\G-Core MetaConnect
appsettings.json	Application log level and log file path configuration
application.json	Application configuration
ipcameras.json	IP camera configuration
Log directory	C:\ProgramData\GBP\G-Core MetaConnect\logs

9.1.1 Window Service Name

Following Window services will be automatically started when the computer boots, can be paused and restarted, and do not show any user interface.



9.1.2 Log level change and Monitoring log file

The application logging level specified for a log handler determines the amount of information written to the log files. Log levels include a message type and a message level. Enabling logging at a specific level also enables logging at all higher levels.

1) Please change the log level to 'Debug' in the 'appsettings.json' file located at 'C:\Program Files\Geutebruck Pacific\G-Core MetaConnect'

2) You don’t need to restart the application; the change will be applied automatically after a few seconds.

3) Monitor the following log file.

   - “C:\ProgramData\GBP\G-Core MetaConnect\logs\app_yyymmdd.log”

4) Please roll it back the log level “Warning” or “Information” once you done.

10 Trouble shooting

10.1 No Metadata

If you encounter an issue retrieving metadata from the application, refer to the following guide below to help identify the cause.

10.1.1 G-Set

Please check the G-Set configuration and ensure that you have filled out the required fields as described in Section 5.

Please also refer to the following links for instructions on setting up the 'Media Channel' and 'Event'.

- https://www.geutebrueck.com/g-help/g-core/en/Content/G-Set/G-Set.htm?tocpath=G-Set%7C 0

10.1.2 Camera Firmware

1) AXIS

   The analytics metadata streams can also be configured to include cropped images of detected classified objects using the Best Snapshot feature, but you must have the firmware 11.11.73(or higher).

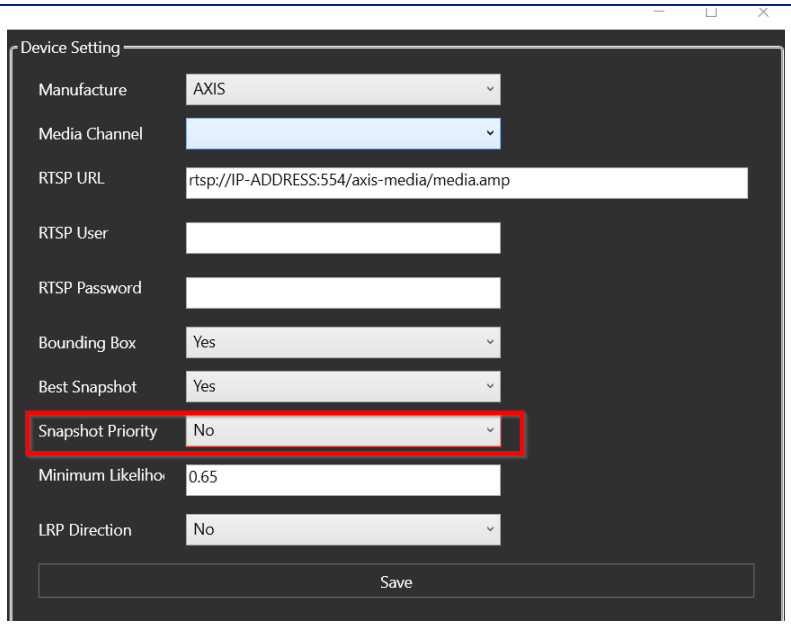
2) Hanwha

   You may need to use firmware 2.2.14 or higher, WiseAI version 1.02.03 or higher.

10.1.3 Snapshot Priority

By default, the application will deliver metadata when it has the best snapshot image, enabling quicker access to insights, facilitating automated actions, supporting informed decision-making, and improving search efficiency and predictions.

You may need to turn it off if the camera does not support this feature.



10.2 Error creating database and table

You might encounter a 'database and table creation error' when you start the application.

It might be related to the privileges of your Windows account or domain.

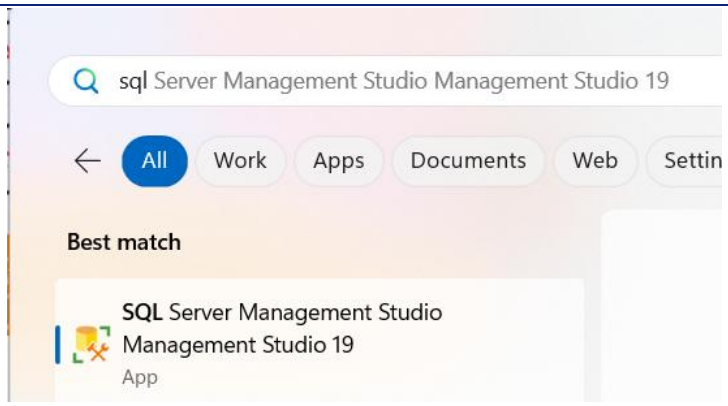
10.2.1 Verify that user login credentials.

The database was created by the application, and you need to create a login in SQL Server.

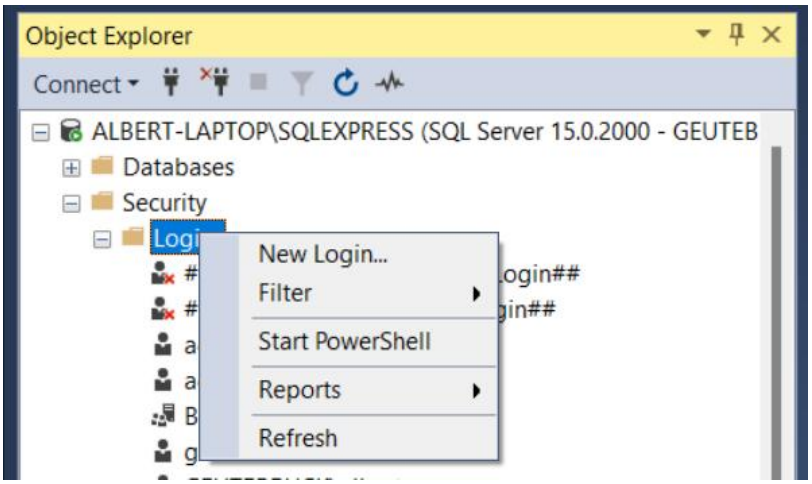
You can also find the SQL configuration manager from the Start menu.

- i.e) “C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Microsoft SQL Server XXX\Configuration Tools”

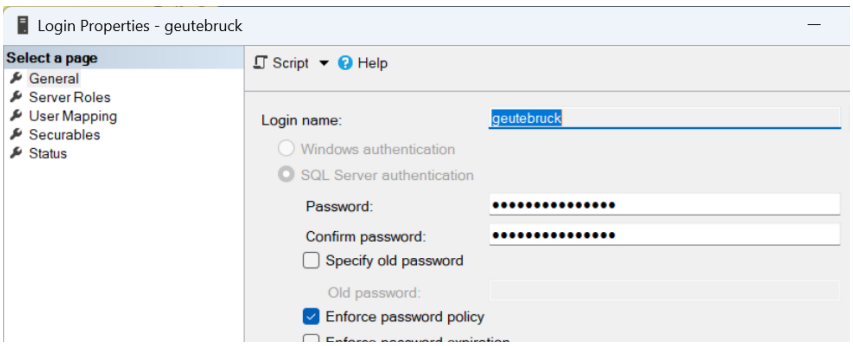
1) Click Start > Programs > “SQL Server Management Studio”



2) Right-click on Security in Object Explorer and choose New Login



3) In the General option of the Login-New window: Provide the New User Login account Name and login authentication. Click OK (If the window is closed, select your new account name in the Security option of your Object explorer and double-click on it).

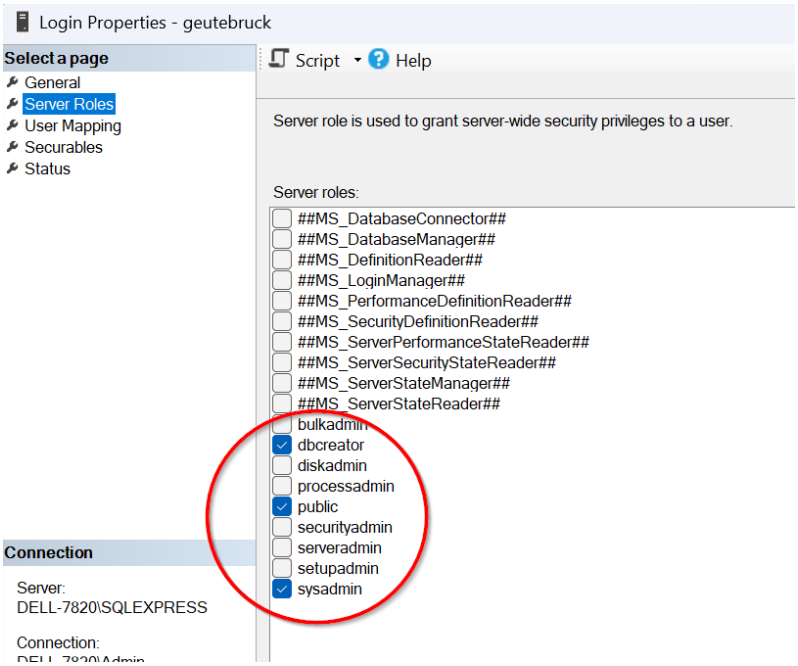


4) In the General option of the Login-New window: Provide the New User Login account Name and login authentication. Click OK (If the window is closed, select your new account name in the Security option of your Object explorer and double-click on it).

5) In User Mapping Option: In this, specify databases that the user account can access if the login needs more access in one or other databases. In the

Membership, select the lists of all possible database membership roles the new database user can own.

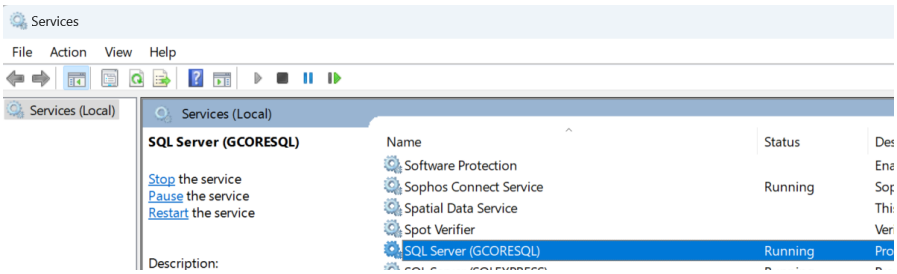
- dbcreator
- syadmin



10.2.2 Restart SQL Server

You may need to restart SQL Server if you change the server authentication settings.

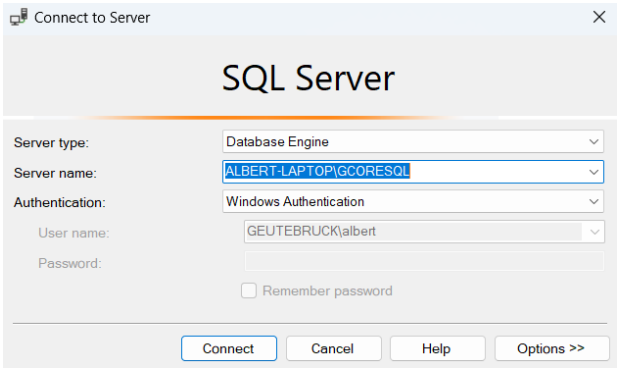
The following screen capture shows a view of the Windows Service Manager on a server with a single instance of SQL Server as the default instance (GCORESQL)



10.2.3 Verify that the database and tables exists

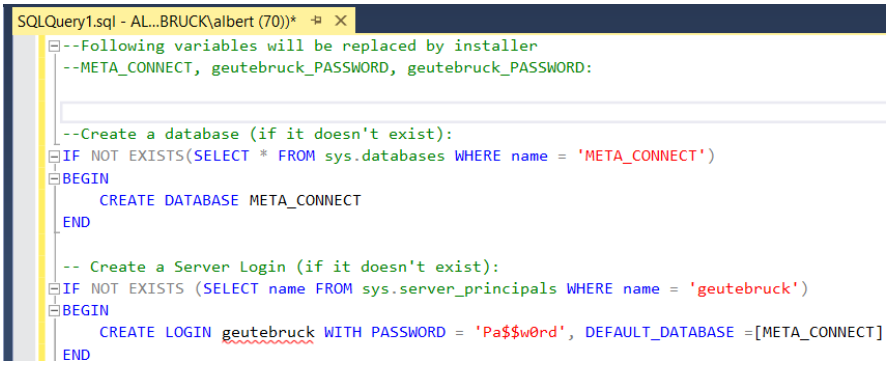
1) Start “SQL Server Management Studio Management Studio XX” as an Administrator.

2) Connect to the database using Windows Authentication.



3) Database script files exist in “C:\Program Files\Geutebruck Pacific\G-Core MetaConnect\database”

4) Open a “INSTALLER-DRIVEN-CREATE-DATABASE.sql", and Open a query window, paste the query from the file into it, and execute the query.



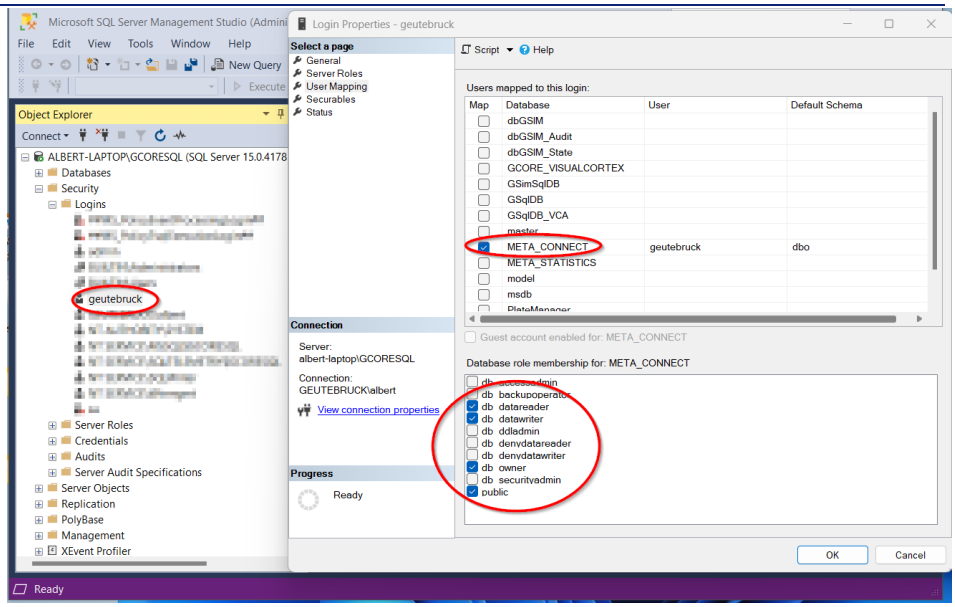
5) Open a “INSTALLER-DRIVEN-CREATE-LOGIN-ROLL.sql", and Open a query window, paste the query from the file into it, and execute the query.

6) Open a “INSTALLER-DRIVEN-CREATE-TABLE.sql", and Open a query window, paste the query from the file into it, and execute the query.

10.2.4 Verify the User mapping

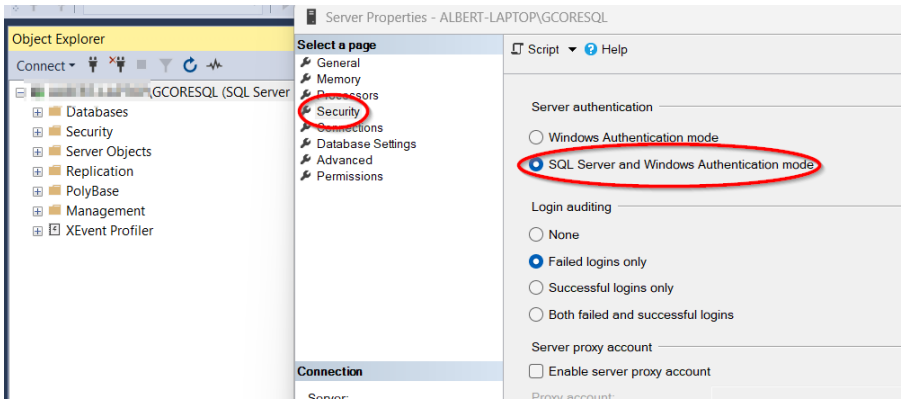
2) Expand the " Security" and "Logins" sections in the Object Explorer panel, then right-click on the user and choose "Properties".

3) Click the " User Mapping", select the “META_CONNECT” database, and set the database role membership to "db_owner", "db_datareader","db_datawriter" and “db_owner”, and “public”.

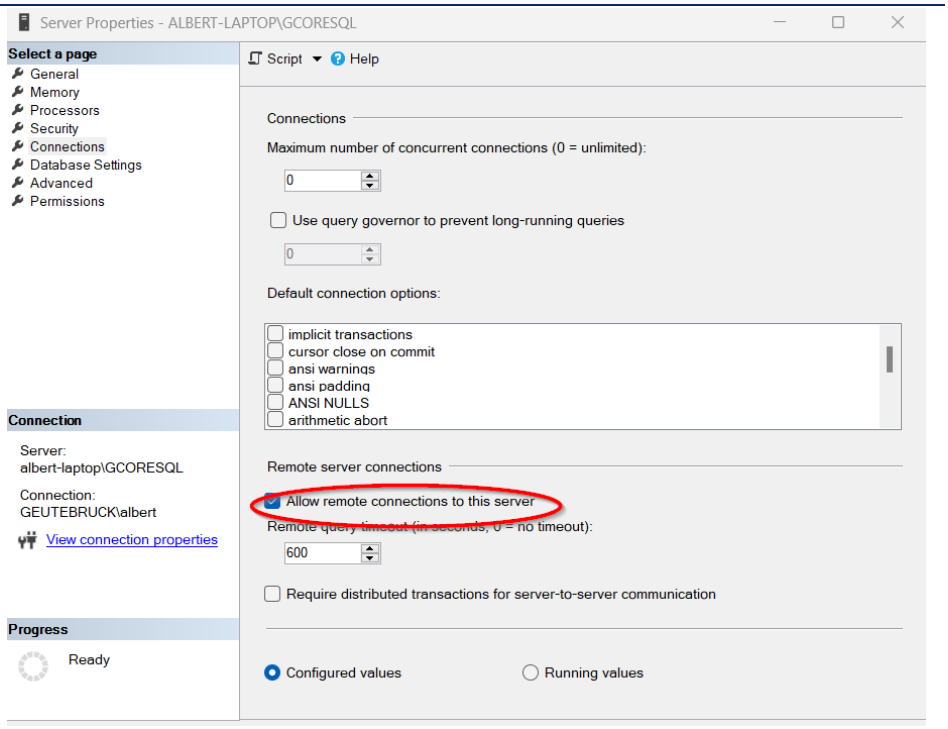


10.2.5 Server Authentication mode

You can check to see which authentication method is configured in several ways.



Then, go to the Connections page and ensure that "Allow remote connections to this server" is checked, and click OK.


Server Properties - ALBERT-LAPTOP\GCORESQL
Select a page
General
Memory
Processors
Security
Connections
Database Settings
Advanced
Permissions
Script
Help
Connections
Maximum number of concurrent connections (0 = unlimited):
0
Use query governor to prevent long-running queries
0
Default connection options:
implicit transactions
cursor close on commit
ansi warnings
ansi padding
ANSI NULLS
arithmetic abort
Connection
Server:
albert-laptop\GCORESQL
Connection:
GEUTEBRUCK\albert
View connection properties
Remote server connections
Allow remote connections to this server
Remote query timeout (in seconds, 0 = no timeout):
600
Require distributed transactions for server-to-server communication
Progress
Ready
Configured values
Running values