PPE Violation Detection Installation & Setting Guide

Version 1.0

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Introduction

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Introduction

Purpose

This document is intended to provide guidelines for the installation and configuration of PPE Violation Detection Application on iPRO camera.
The performance of the application depends on the on-site environment such as camera position, angle of view and surrounding environment.
We recommend the appropriate installation, and the configuration based on this guidelines to get the best performance.

Aim

Targeting to acquire the following skills.

1. Installing the application
2. Planning the camera position based on the floor plans and on-site environment
3. Installing cameras at the appropriate angle
4. Application Configuration for PPE Violation Detection

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Specification Sheet

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Specification Sheet

- **Types of Personal Protective Equipment (PPE)**
  - **Vest**: Typically bright colored, such as neon or orange coloured vest
  - **Helmet**: safety helmet of different colors (white, yellow, orange, blue, etc.)
  - **Masks** : safety masks
- For equipment types not listed above, a customized model may be required. Please contact us for further details.
- Maximum detection capacity: 15–20 people
- Ideal condition: 6-10m away from the camera, non-occluded, well-lit conditions are preferred
- CV2X cameras: Detection speed is approximately 2 FPS

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Overview of PPE Violation Detection Application

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Overview of Application

Core functionality:

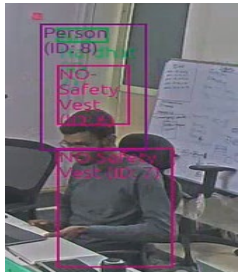
1. View whether person is wearing required PPE vest, helmet and mask through Web Stream
2. Send out alert when person is not wearing required PPE vest, helmet and mask

1. Web Stream

Yellow Box indicates
Vest is present

Gives:
1. Box drawn around object
2. ID + time tracked
3. Confidence

2. Alert

Date / Time	Thumbnail	Event
DD-MM-YYYY hh:mm:ss		No_Helmet, No-Vest

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Overview of Application

Application Architecture

PPE Violation Detection Application

Metadata
1. Image of people non-compliant
2. Date / Time
3. Non-compliance time

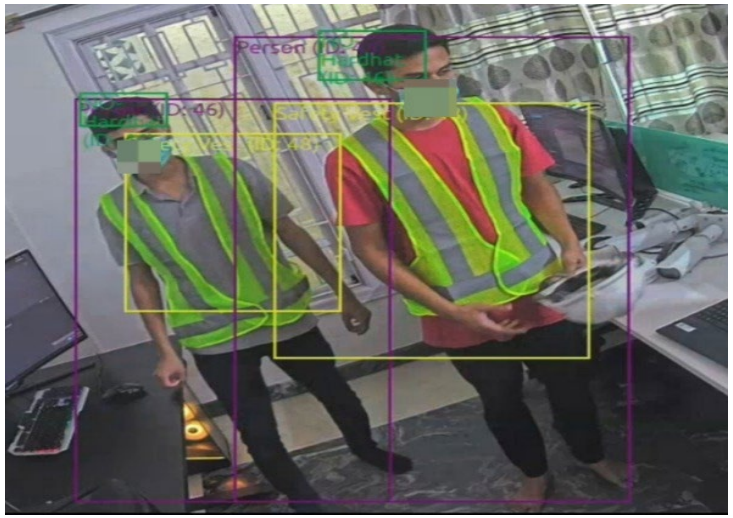
Store metadata

i-PRO Active Guard

Metadata

Visualize metadata

VIDEOINSIGHT



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Overview of Application

Non-Compliant case

Compliant case

- Easily differentiate people that are
  - Compliant
  - Non-compliant – No
- Modify settings to suit different needs
  - Detection confidence
  - Which cases to alert (helmet or vest or both)
  - Draw Region-of-Interest (ROI) for detection
- Register license key to activate product

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Preparation

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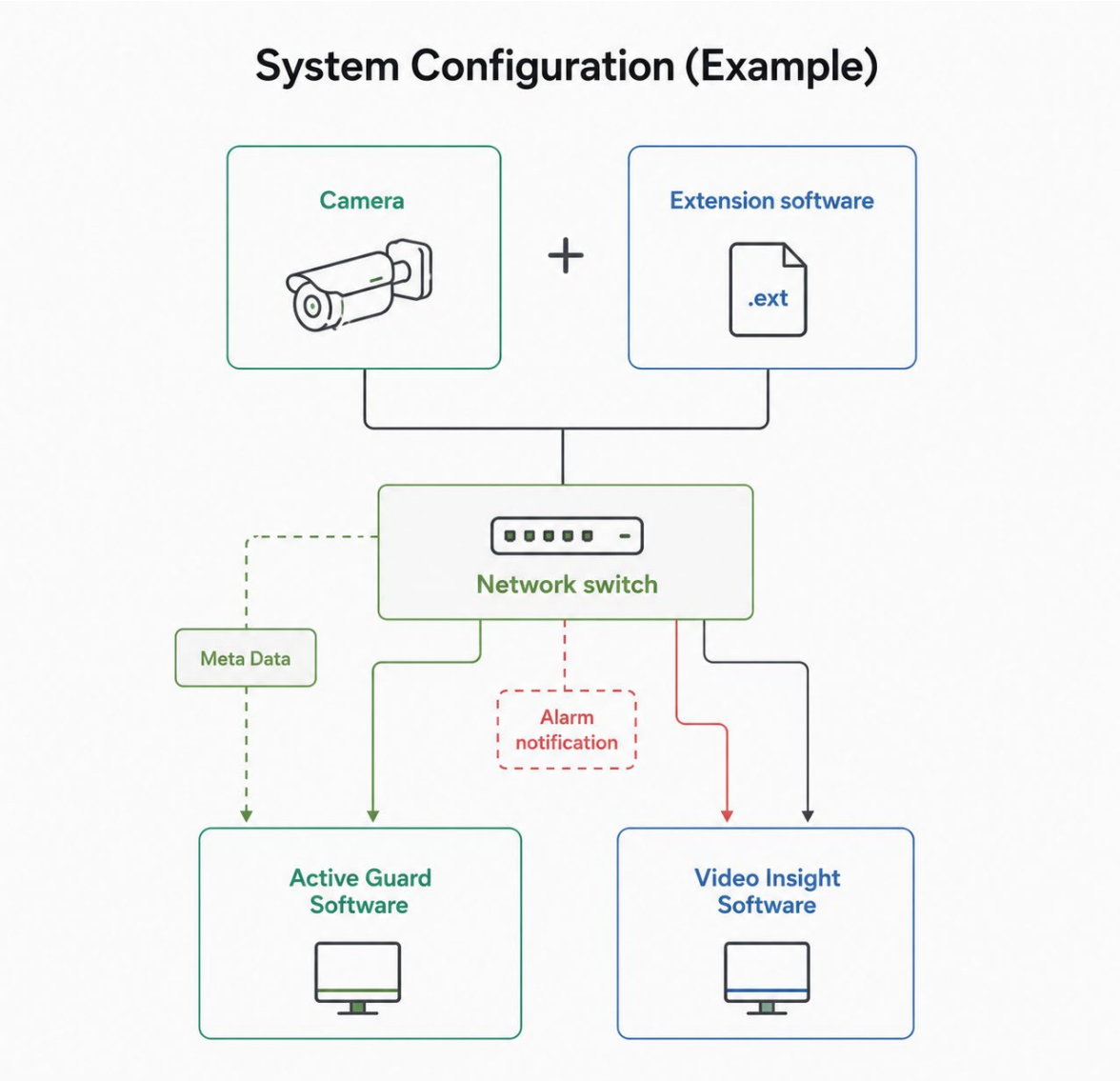
System Configuration



Note

- The Active Guard Server and Video Insight can be within the same hardware, does not need to be separate like in this diagram

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I. AI Camera

1. **Upgrading Camera Firmware** – to the latest firmware
   a. Refer to https://i-pro.com/products_and_solutions/en/surveillance/documentation-database
   b. If i-PRO Configuration tool is available
      i. Login > Professional mode > Update Firmware

2. **Installing Extension**
   a. Enter the camera IP on your web browser (e.g. 192.168.0.200)
   b. Navigate to the extension software page (Refer to next slide)
   c. Install the extension (Refer to next slide)

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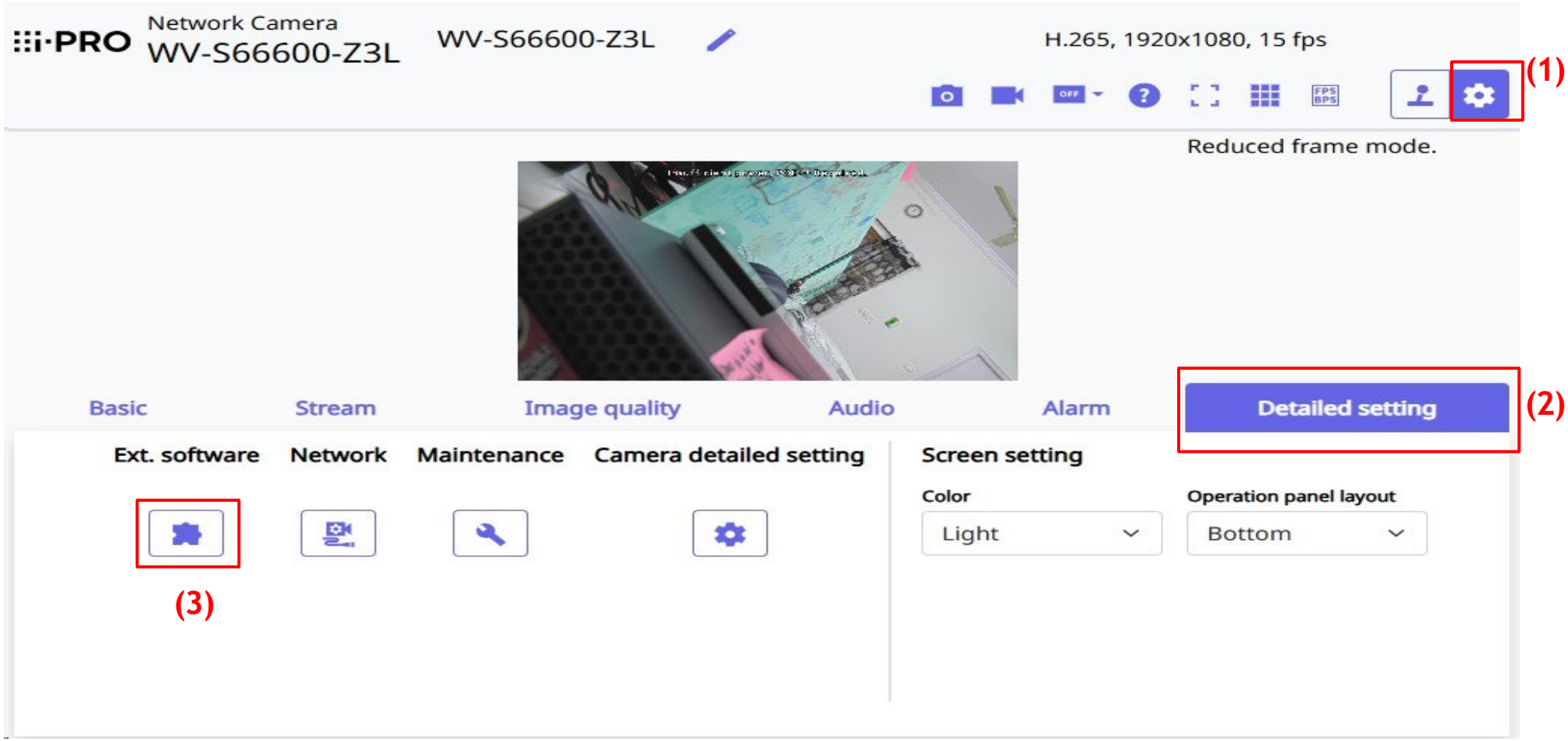
I. AI Camera

Note that navigation will differ depending on **camera firmware version.**

1. Enter camera IP on your web browser
2. Initial set up (username and password) if not done so
3. Click on **(1)** Set up (setting icon) > **(2)** Detailed setting > **(3)** Extension Software logo



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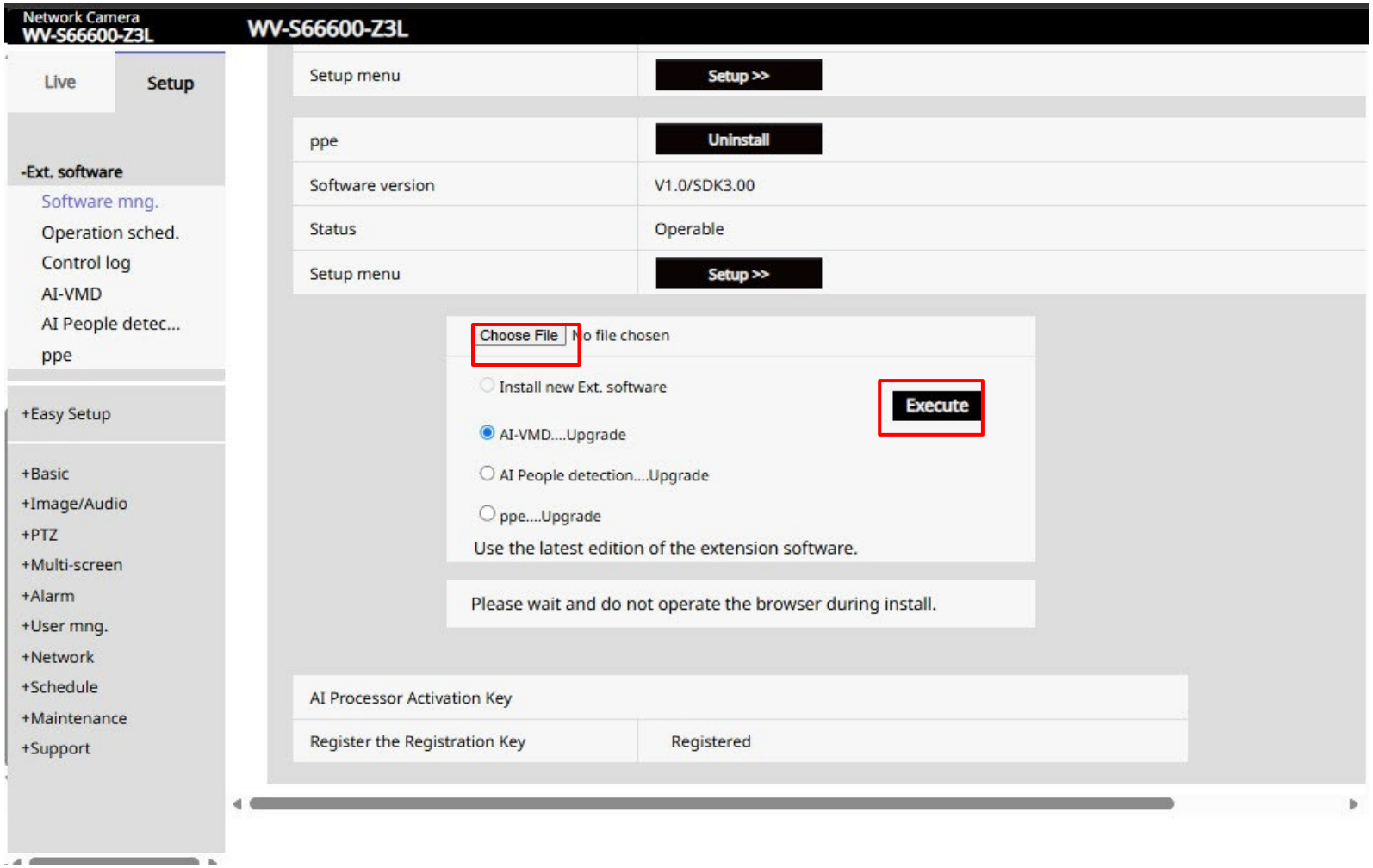
I. AI Camera

1. Click on Choose File > Select the .ext file to install > Execute
2. After accepting terms and conditions, the application will take a while to install – refresh the page after 45 seconds if the application does not show up



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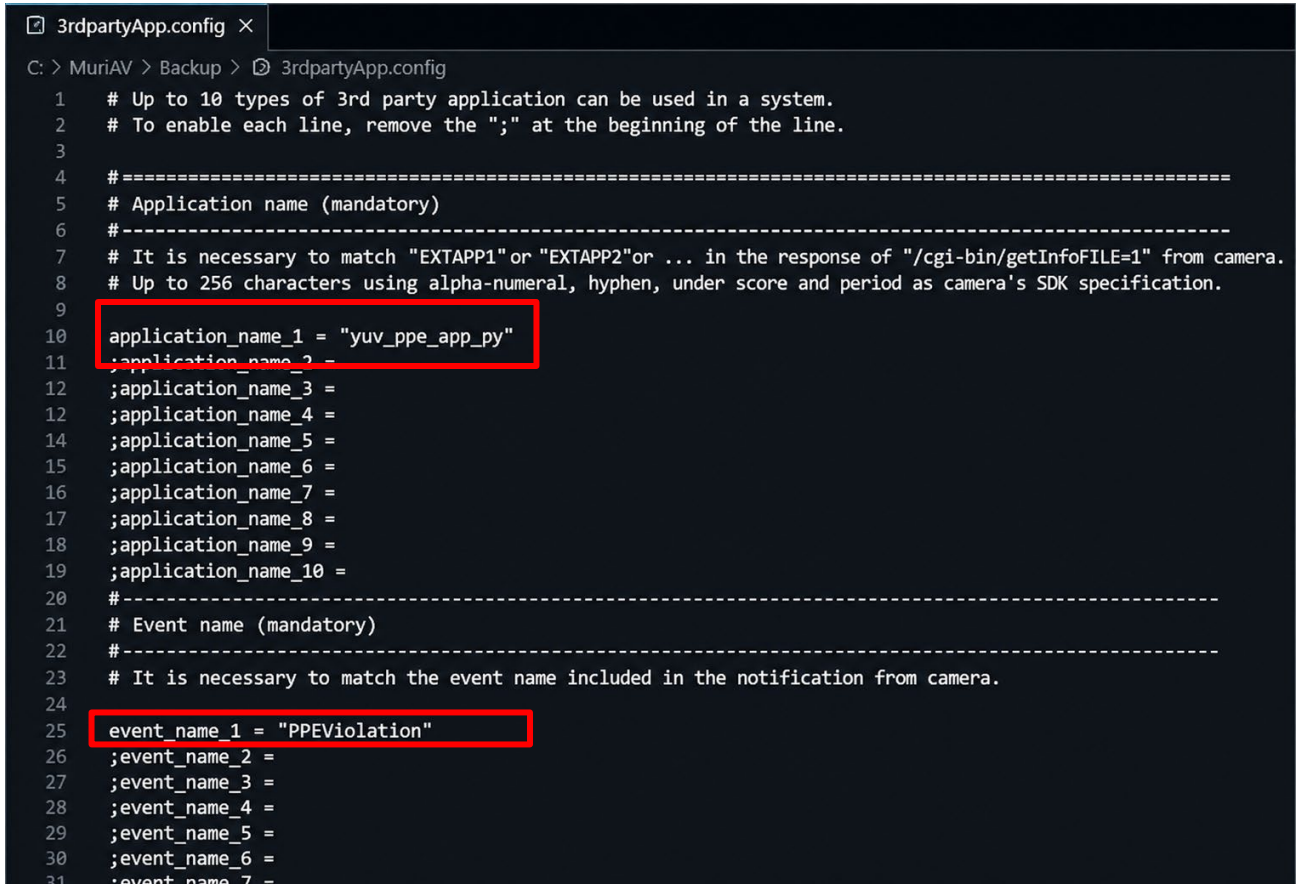
II. Active Guard

1. **Installing and setting up ActiveGuard**
   a. Refer to https://i-pro.com/products_and_solutions/en/surveillance/products/multi-ai-system-for-video-insight?defaultTab=documentation

2. **Configuring ActiveGuard**
   a. After installing ActiveGuard
   b. Go to C:¥MultiAI¥Backup
   c. Edit 3rd party App
      i. Add application name
      ii. Add event name



Note

Remove ";" in front of:

- application_name_1
- event_name_1, 2 & 3

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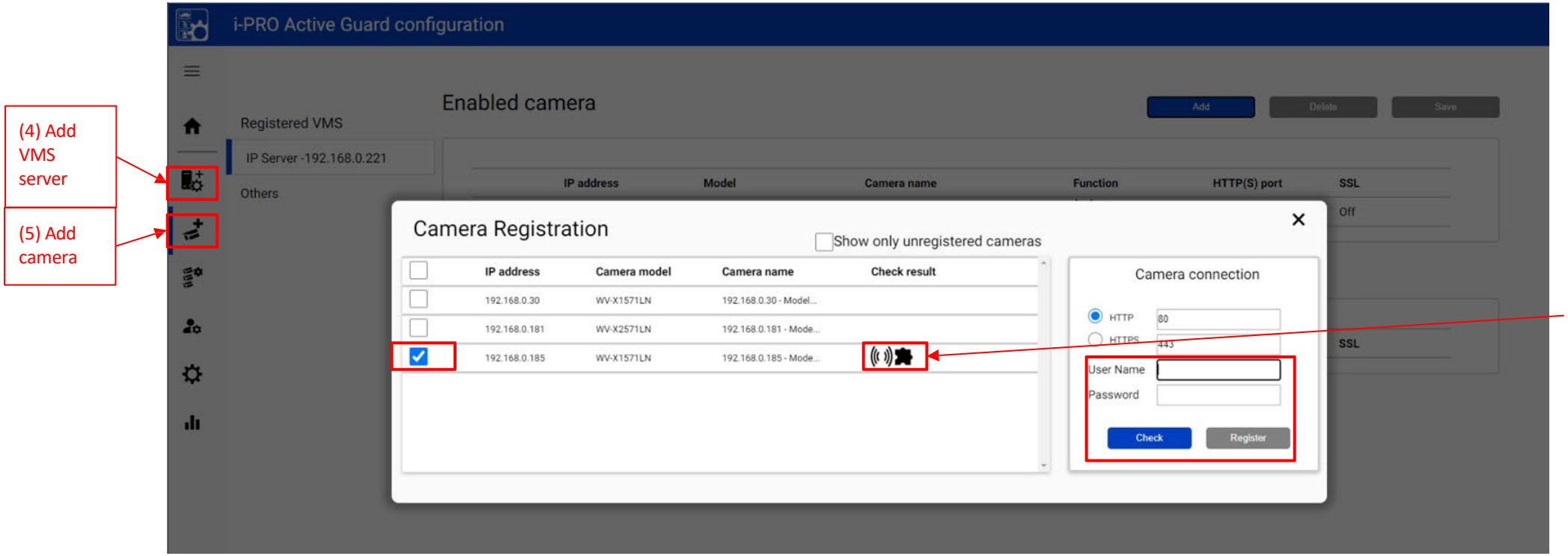
II. Active Guard

3. Login to Active Guard via localhost:8092 or IP_ADDRESS:8092 (IP_ADDRESS is the IP of the machine hosting active guard server)
    a. With Administrator username and password
4. Add VMS Server
5. Add Camera to Active Guard
    a. Click on tick for camera > ensure third-party icons are there > enter username and password > click check > click register



Application Configuration

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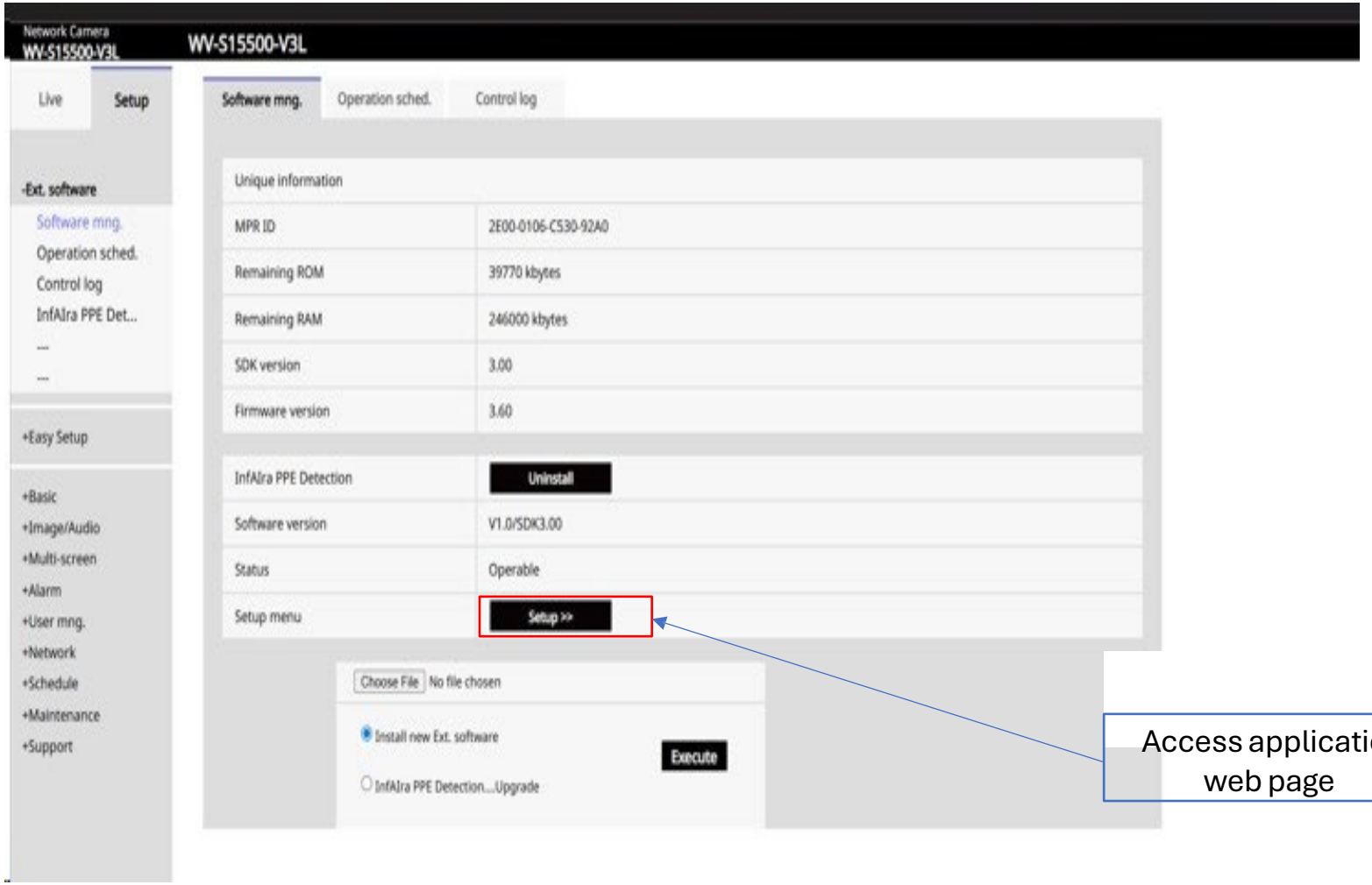
Launch Application Portal

- Click on setup button in the application to activate the app and modify the settings



click on the Application name to open the UI page

Access application web page

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Application Interface

Click to see the Detection Report

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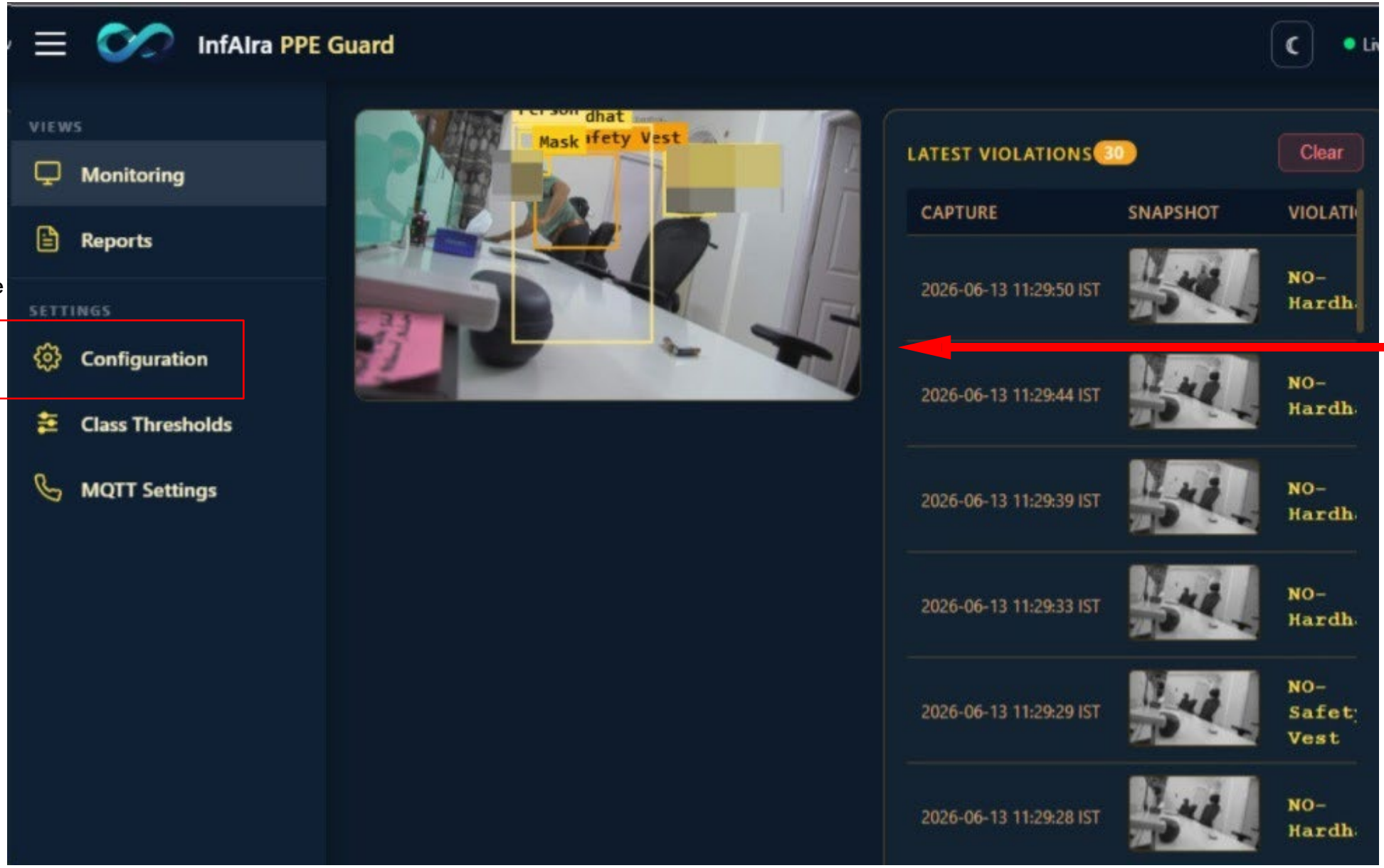
Application Interface



Click to modify the settings

Main Display/ UI output

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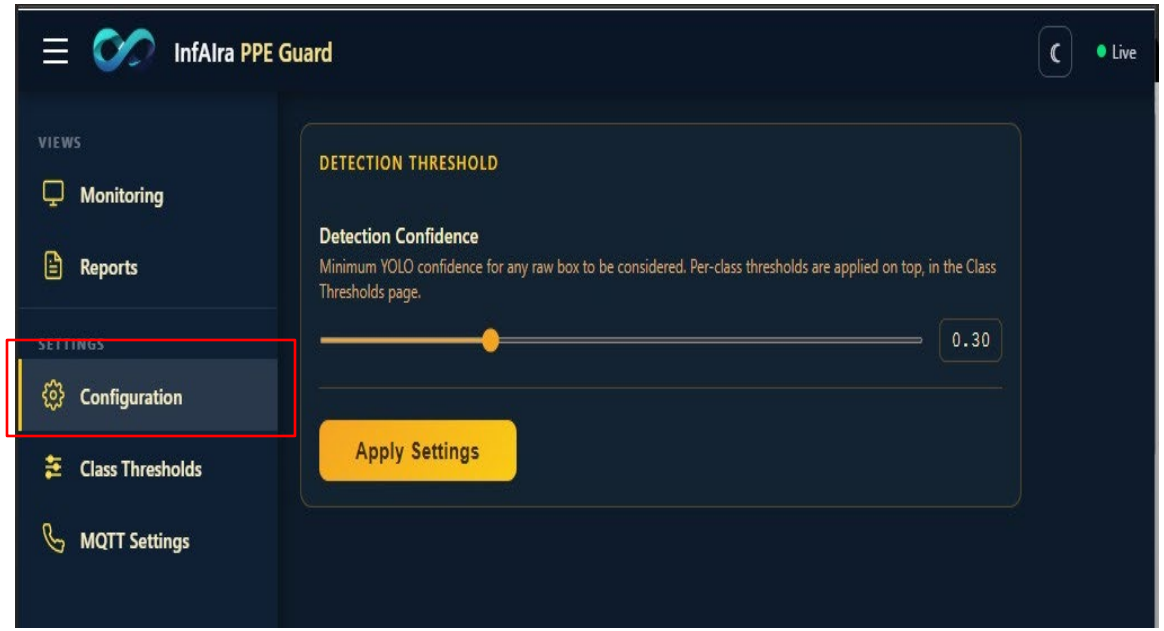
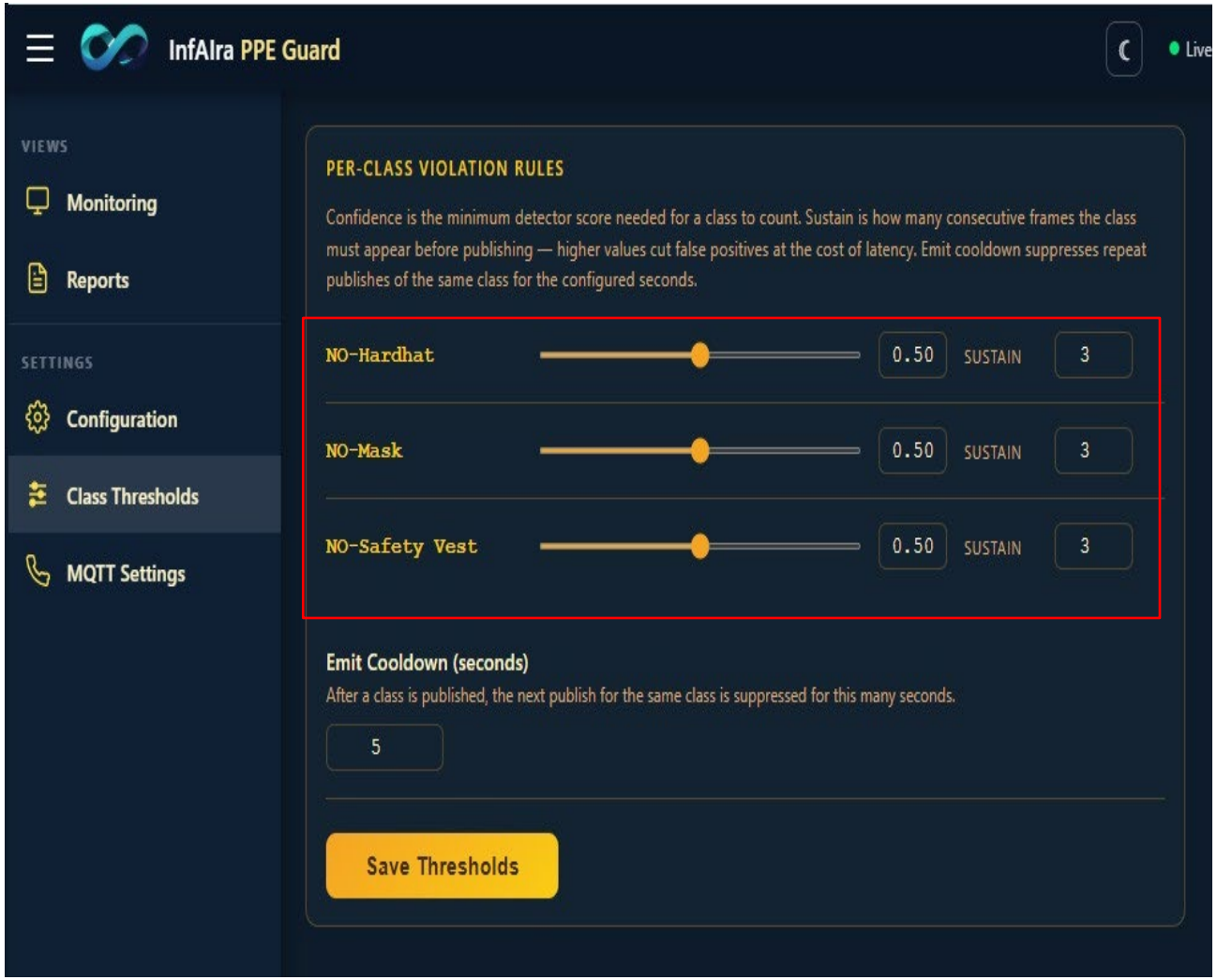
Switching PPE Detection Modes — UI





Configuration Settings

Users can fine-tune confidence levels directly through the UI to suit varying environmental conditions.

Per-class violation detection thresholds can also be independently configured for each PPE category — Vest, Helmet, and Mask — allowing more precise control over detection sensitivity for each item.

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Thank You!

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