TrafficCounter

User Manual

End-user guide — v6.0.8

Versione 6.0.8

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Table of Contents

1. Introduction

Traffic Counter is an application installed on an Axis camera that:

- Counts people (or vehicles) passing through configured virtual checkpoints
- Aggregates counts as **In / Out** pairs for each checkpoint
- Automatically sends data to a remote server at regular intervals
- Displays historical statistics and real-time counters via web interface

The interface is accessible by opening the camera's web page and clicking **Traffic Counter** in the application list.

The navigation menu at the top includes the tabs:
Statistics · Live · Settings · Scenarios · Events · About · Maintenance

2. Prerequisites

Before using Traffic Counter, verify that:

- **Object Analytics (AOA)** is configured with at least one scenario of type *Cross Line Counting*. As of v6.0.8, scenarios can be created and modified directly from the **Scenarios** tab in Traffic Counter, without accessing AOA separately.
- The **license** has been activated (see § 3).

3. License Activation

At first launch, if the license is not yet active, an orange banner warns:

"No valid license. Go to About to activate."

Finding the serial number

- Click the **About** tab
- The **Camera serial** field shows the camera serial number (e.g. `XXXXXXXXXXX`)
- Provide this number to your system administrator

Loading the license file

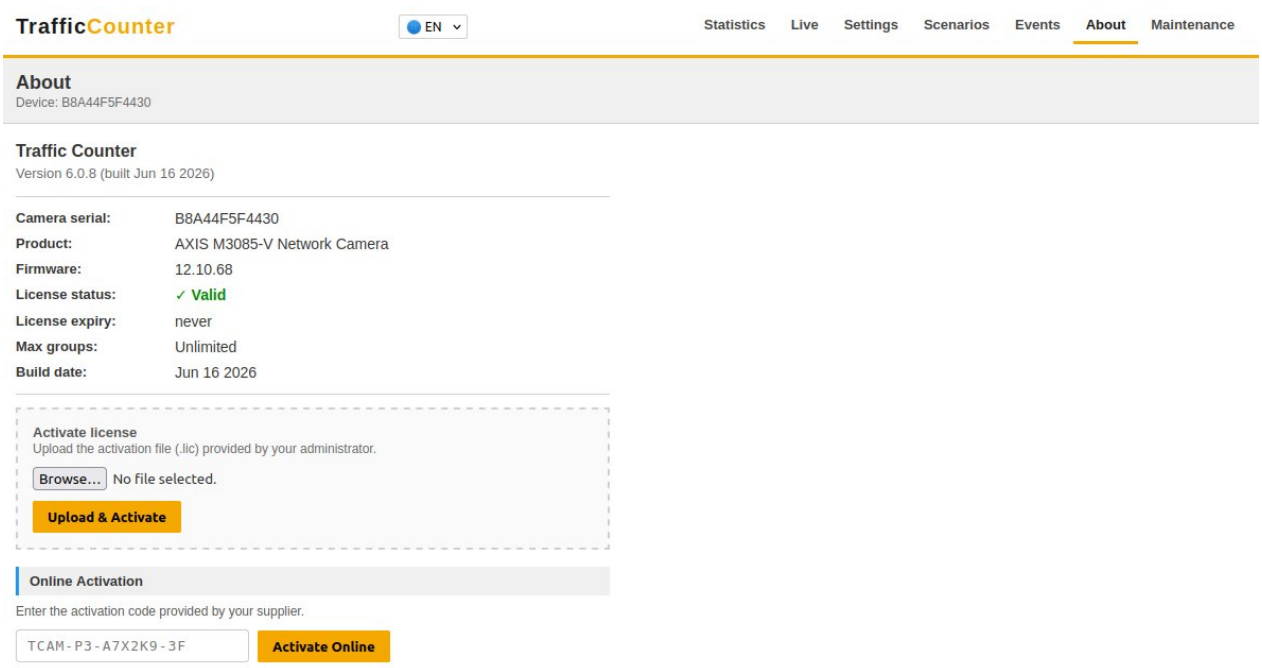
Once you have received the `.lic` file from the administrator:

- **About** tab → **Activate license** section
- Click **Browse…** and select the received `.lic` file
- Click **Upload & Activate**
- The **License status** field becomes ✓ **Valid**

Online Activation

As an alternative to the `.lic` file, **online activation** is available:

- **About** tab → **Online Activation** section
- Enter the activation code provided by your supplier (format `TCAM-XXXX-XXXX-XX`)
- Click **Activate Online**



[About screen — license management and online activation]

> *The license remains active after every restart — it does not need to be reloaded.*

License information

The About tab displays:

Field	Meaning
Camera serial	Camera hardware serial number
Product	Camera model
Firmware	Installed Axis firmware version
License status	✓ Valid = active, ✗ = invalid or expired
License expiry	Expiry date or "never" (perpetual)
Max groups	Maximum number of configurable groups, or "Unlimited"
Build date	Application build date

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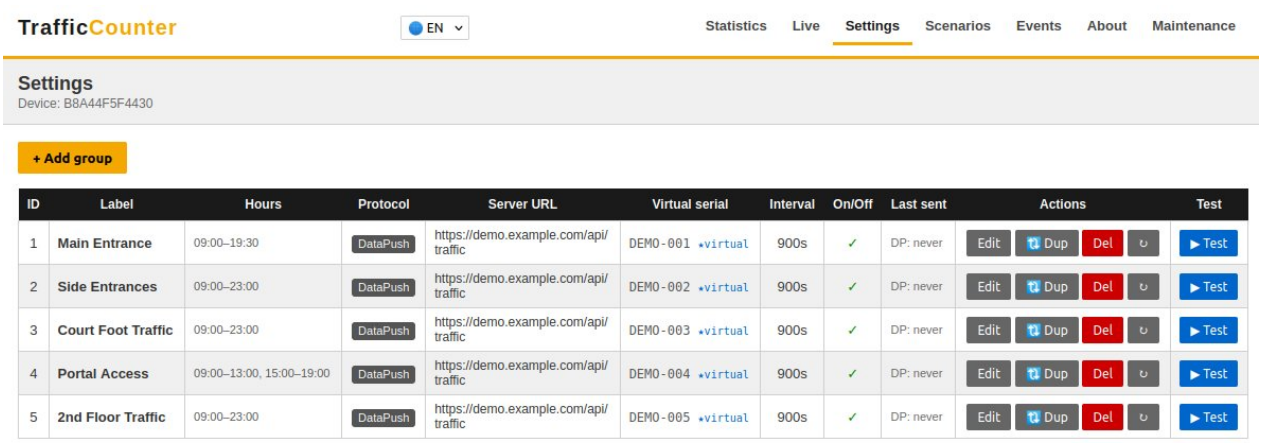
4. Group Configuration

A **group** represents a physical checkpoint (door, corridor, etc.) and defines how counting data is aggregated and sent.

Group list

The **Settings** tab shows a table of all configured groups with the columns:

Column	Description
ID	Group identifier
Label	Checkpoint name
Hours	Active time windows
Protocol	Sending protocol (DataPush or Webreport)
Server URL	Destination server address
Virtual serial	Virtual identifier for the checkpoint
Interval	Send interval in seconds
On/Off	Enabled/disabled status
Last sent	Date and time of last successful send
Actions	Edit, Dup (duplicate), Del, ■ (reset timestamp) buttons
Test	■ Test button for immediate send



[Settings screen — list of configured groups]

Creating a new group

- **Settings** tab → **+ Add group**
- Fill in the fields in the **Edit group** screen:

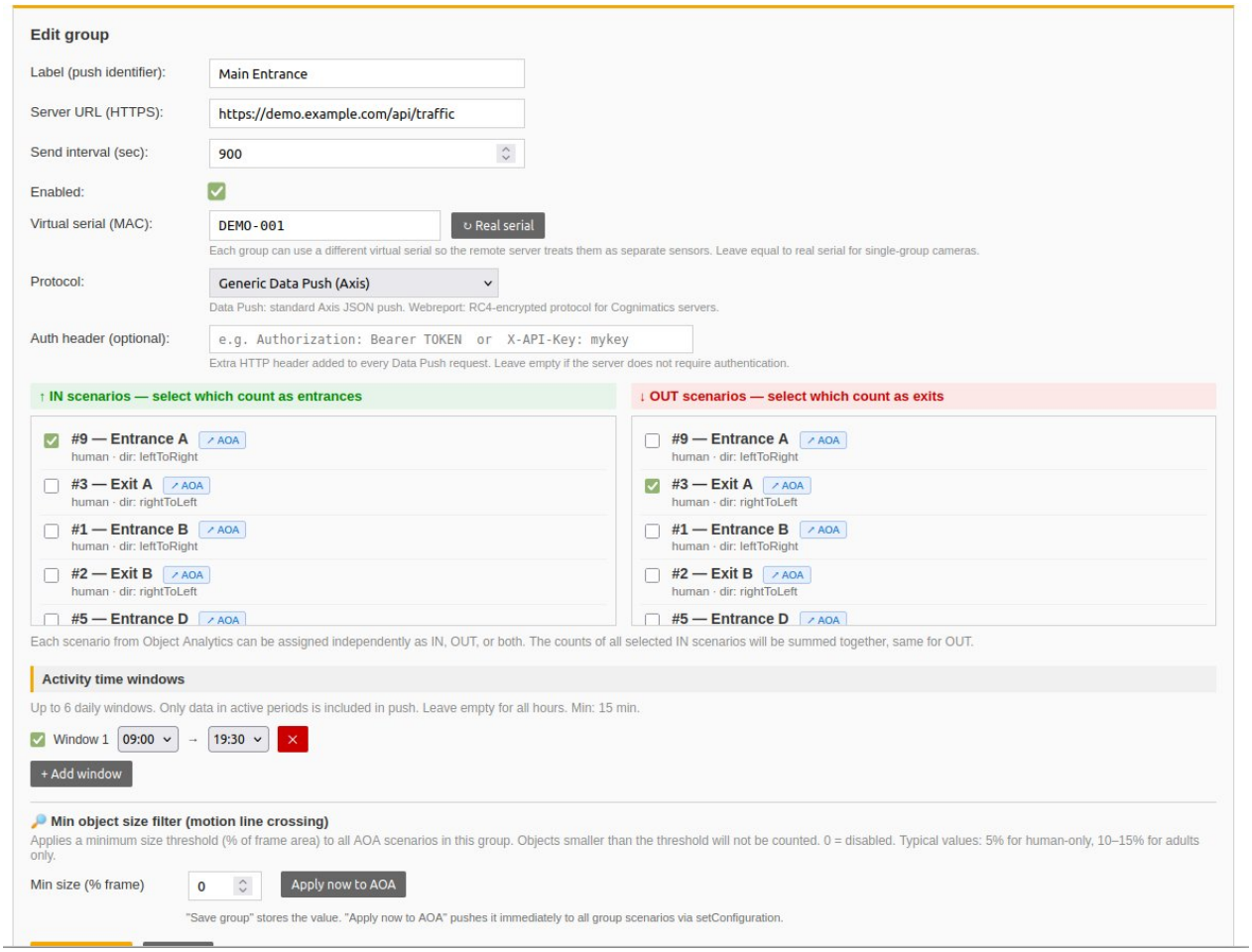
Field	Description
Label (push identifier)	Checkpoint name (e.g. `Main Entrance`)
Server URL (HTTPS)	Address of the server to send data to
Send interval (sec)	How often to send in seconds (900 = 15 minutes)
Enabled	Check to enable sending
Virtual serial (MAC)	Unique identifier for the checkpoint (see below)
Protocol	Sending protocol (see below)
Auth header (optional)	HTTP header for authentication, if required by the server

- Select the **IN scenarios** (entrances) and **OUT scenarios** (exits)

from the lists on the right — these correspond to virtual lines

configured in Object Analytics

- Click **Save group**



[Edit group screen — upper section with main fields]

Sending protocol

The **Protocol** field lets you choose the format for sending data to the server:

Value	Usage
Generic Data Push (Axis)	Standard Axis JSON protocol — compatible with most data collection servers
Webreport / Datamanager	RC4 protocol for Axis Webreport or Datamanager servers

Authentication header

The **Auth header (optional)** field adds a custom HTTP header to every

Data Push request. Leave empty if the server does not require authentication.

Example values:

- `Authorization: Bearer your-token`
- `X-API-Key: your-key`

IN and OUT scenarios

Each Object Analytics scenario detects crossings through a virtual line.

In the group you can assign:

- ↑ **IN scenarios**: scenarios whose count is summed as entrances

- ↓ **OUT scenarios**: scenarios whose count is summed as exits
- The same scenario can appear in both lists
- Each scenario shows: AOA ID, name, detected object type, direction

The ■ **AOA** button next to each scenario opens its configuration directly in Object Analytics.

Virtual serial (virtual MAC)

If you configure multiple groups on the same camera, each group can have a different **Virtual serial**. This allows the remote server to distinguish data from different checkpoints as if they came from separate cameras.

Convention: increment the last digits of the real serial:

- Checkpoint 1: `xxxxxxxxxxx` (real serial)
- Checkpoint 2: `xxxxxxxxxxx1`
- Checkpoint 3: `xxxxxxxxxxx2`

The ■ **Real serial** button resets the virtual serial to the physical serial value.

> *For cameras managing a single checkpoint, leave the virtual serial equal to the real serial.*

Editing, duplicating or deleting a group

In the groups table:

Button	Function
Edit	Opens the editor with current values
Dup	Duplicates the group (useful for similar configurations)
Del	Deletes the group (historical AOA data is not affected)
■	Resets the timestamp: the next push will resend all history
■ **Test**	Sends data immediately to verify server connectivity

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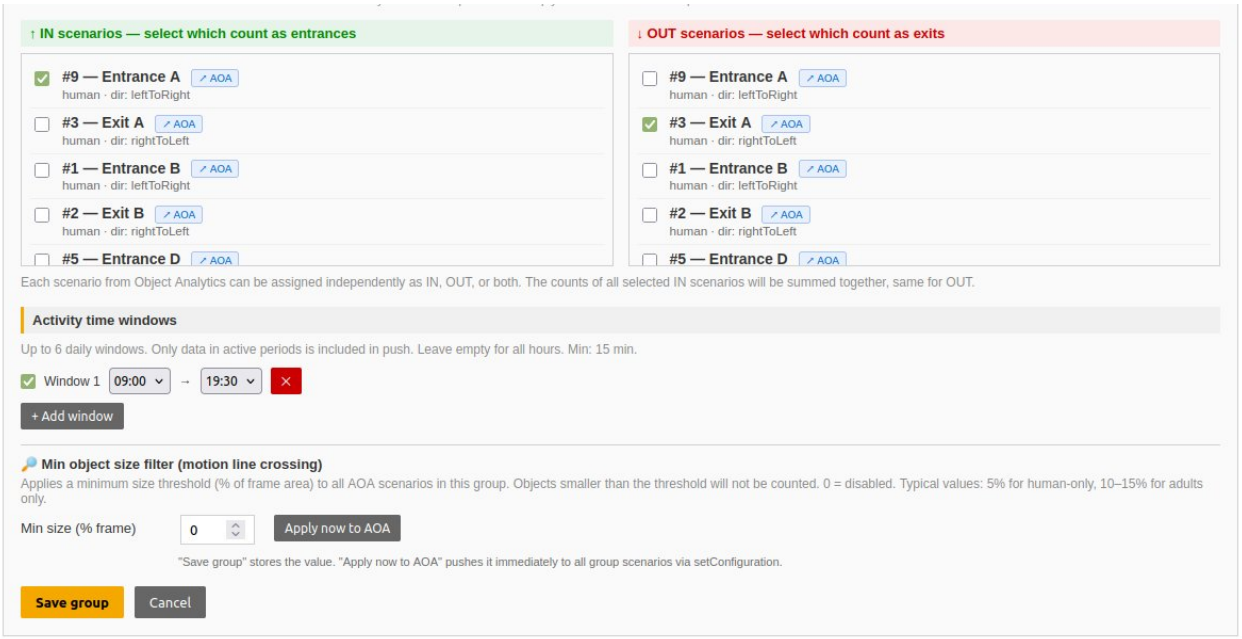
■ 5. Activity Time Windows

Allows you to **exclude certain time periods** from data sent to the server. Useful for excluding lunch breaks, closing hours, or periods when staff frequently pass through.

Configuration

In the group editor → **Activity time windows** section:

- Up to **6 daily windows** can be configured
- **+ Add window** to add each period to include
- Select **start** → **end** with a minimum granularity of 15 minutes
- The checkbox on the left enables/disables the individual window
- ✕ removes the window



[Edit group screen — IN/OUT scenarios, time windows and object size filter]

Examples

Scenario	Configuration
Continuous hours 9–21	1 window: 09:00 → 21:00
With lunch break	Window 1: 09:00 → 12:30 — Window 2: 14:00 → 21:00
Two shifts	Window 1: 06:00 → 14:00 — Window 2: 14:00 → 22:00

> *If no windows are configured, **all hours are included**.*
>
> *Windows filter data sent to the server, not the live counters.*

6. Live View

The **Live** tab shows real-time counters for all configured groups.

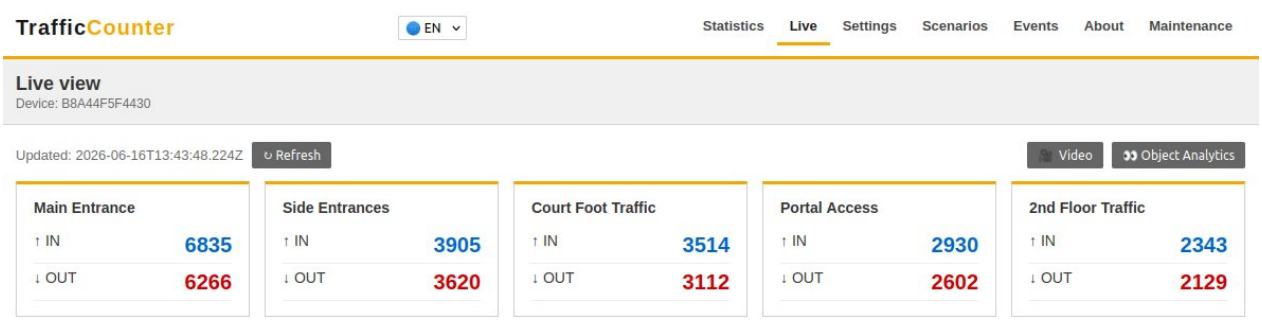
View without video

The default mode shows counter cards for each group:

Indicator	Meaning
↑ **IN**	Total entrances since last AOA reset (in blue)
↓ **OUT**	Total exits since last AOA reset (in red)
Updated	Timestamp of last update
■ **Refresh**	Manually refresh counters

The ■ **Video** button in the top right activates the live stream view.

The ⊕ **Object Analytics** button opens the AOA interface directly.



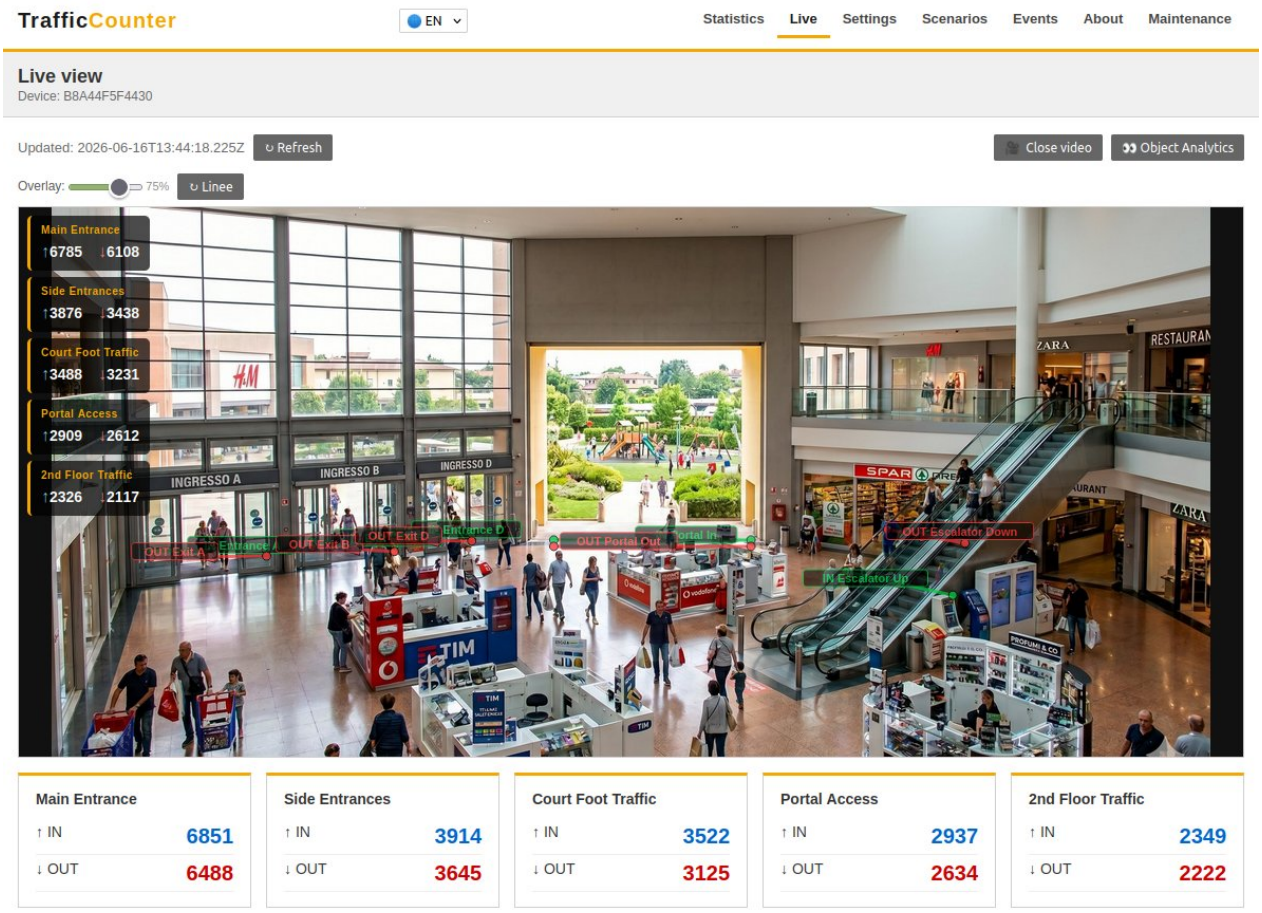
[Live view screen — counters without video]

View with video

Clicking **Video** shows the camera's live stream with overlaid:

- **Counters** for each group in the upper left corner of the image
- **Virtual lines** labeled with their AOA names (**Lines** button to show/hide)
- **Overlay** control to adjust overlay opacity (0–100%)

The button changes to **Close video** to return to the view without stream.



[Live view screen — counters with live video and overlaid AOA virtual lines]

7. Statistics

The **Statistics** tab displays aggregated historical data for all groups.

Options

Control	Function
Group	Select which checkpoint to display (or "— All groups —")
Daily	One value per day
Hourly	One value per hour
15 min	Maximum granularity (15-minute intervals)
■ **Show all**	Display all available data
■ **Refresh**	Refresh data

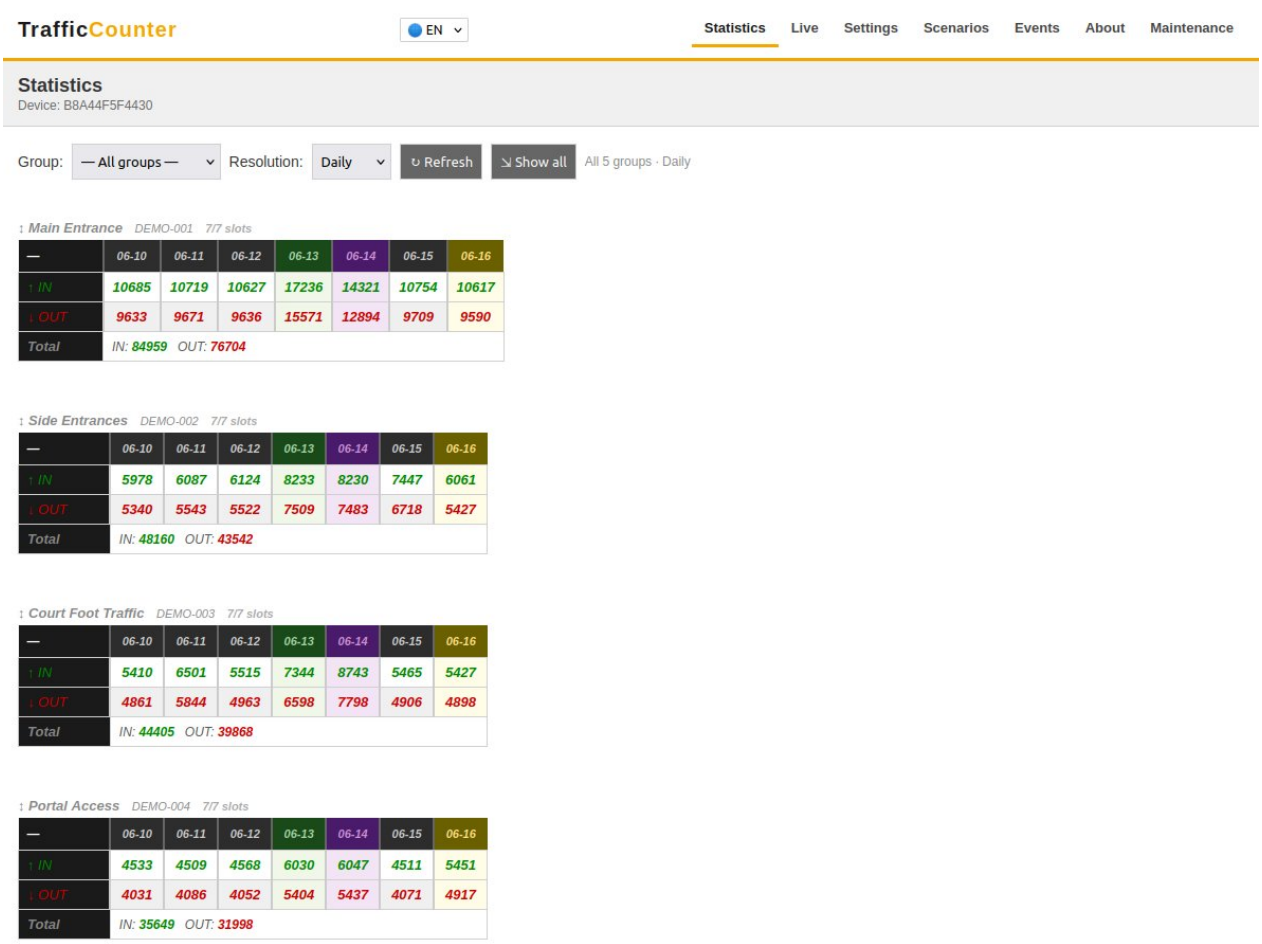
Daily view

Each group is shown in a separate box with:

- Group name, virtual serial and number of available slots
- A row for dates (columns)
- ↑ **IN** row (green) with entrance counts
- ↓ **OUT** row (red) with exit counts
- **Total** row with the total for the displayed period

Columns with a **purple background** indicate Sundays.

The column with a **dark green background** indicates today (partial data, updating in real time).



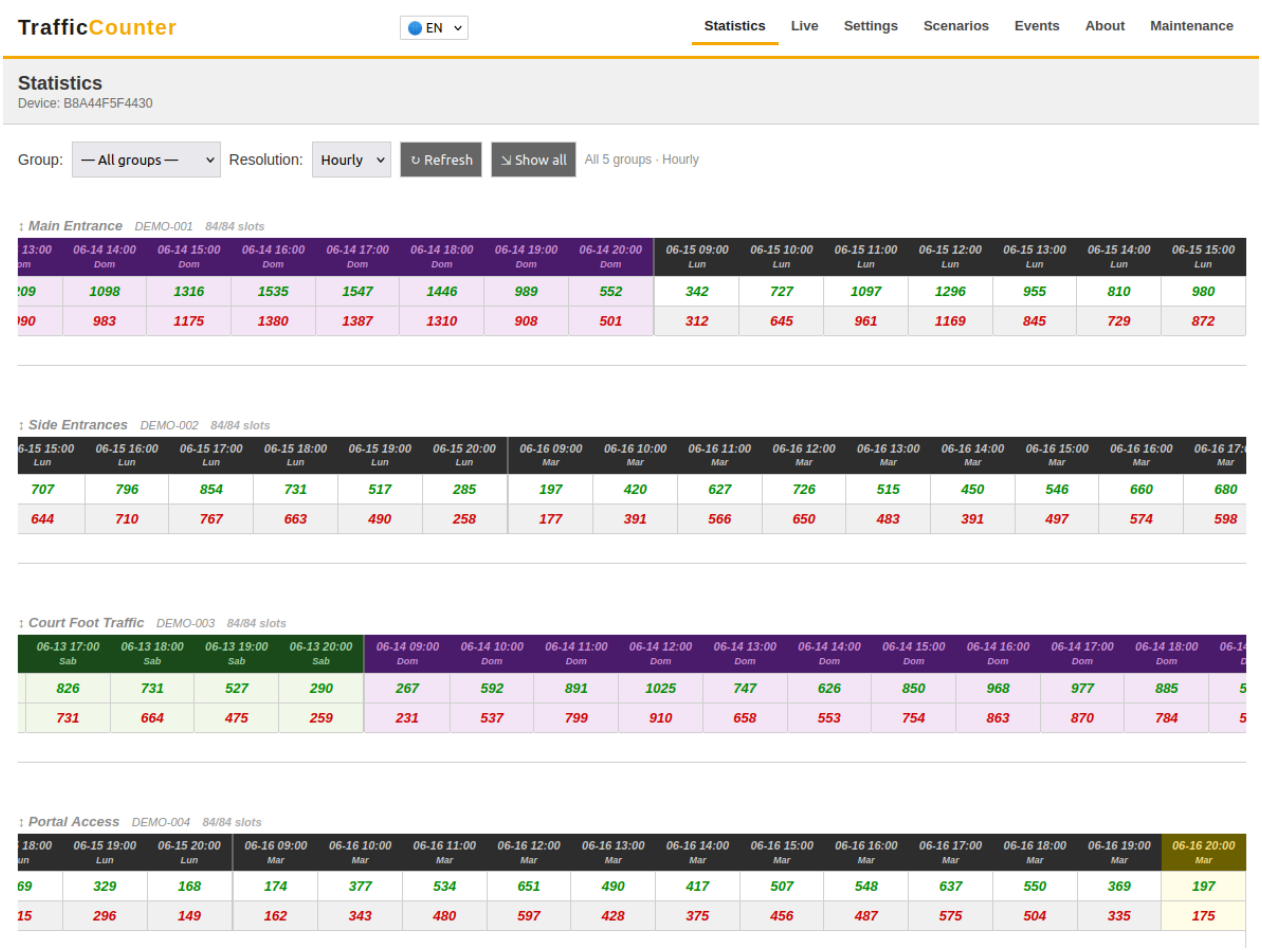
[Statistics screen — daily view with all groups]

Hourly view

In the **Hourly** view, each column shows date, time and day of the week.

Columns with a **purple background** indicate Sunday hours, making it easy to identify traffic patterns on weekends compared to weekdays.

The table is horizontally scrollable to navigate through the 84 available hours.



[Statistics screen — hourly view with Sundays highlighted in purple]

8. Data Push — Automatic Sending

Traffic Counter sends data automatically at regular intervals.

Timing

Data is sent **~60 seconds after** the close of each 15-minute block

(at :00, :15, :30, :45 of every hour). This ensures all cameras send in sync.

With Send interval = 900s (15 min):

- AOA closes the block at 09:15:00
- Traffic Counter sends at approximately 09:16:00

Connection verification (Test)

To immediately verify that the server receives data:

- **Settings** tab → ■ **Test** button next to the group
- The result appears with an outcome message:

Result	Meaning
✓ green	Server reached successfully (HTTP 200)
✗ HTTP 404	Virtual serial not registered on the destination server

Result	Meaning
✗ HTTP 401	Server requires authentication — check the Auth header
✗ HTTP 403	Access denied by server
✗ HTTP 422	Payload rejected by server
✗ HTTP 500	Internal error on the remote server
✗ Network error	Server unreachable — check URL and connectivity

> ***Note on virtual serial:*** *before running the test, make sure the group's virtual serial is registered on the destination server. If the server does not recognise the virtual serial, it will respond with HTTP 404.*

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9. AOA Scenarios

The **Scenarios** tab allows you to view, create and modify Object Analytics counting scenarios directly from the Traffic Counter interface, without accessing AOA separately.

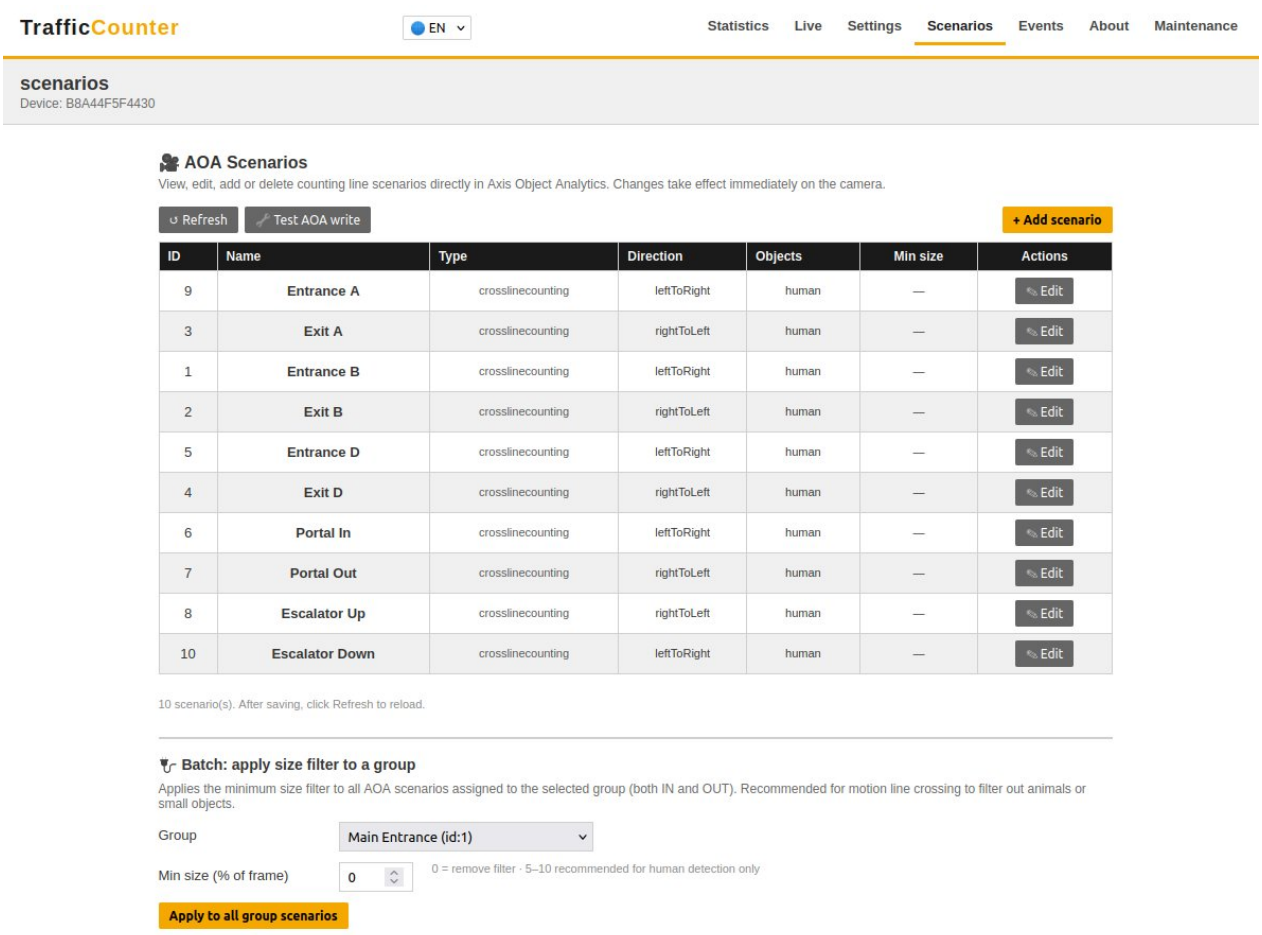
Scenarios list

The table shows all AOA scenarios configured on the camera:

Column	Description
ID	Scenario identifier in AOA
Name	Descriptive name of the line
Type	Type (always `crosslinecounting`)
Direction	Main counting direction (`leftToRight` / `rightToLeft`)
Objects	Detected object class (`human`, `vehicle`)
Min size	Active minimum size filter (— if disabled)
Actions	**Edit** button

The ■ **Refresh** and ✎ **Test AOA write** buttons allow you to reload the updated list and verify that Traffic Counter has write permissions on AOA.

The **+ Add scenario** button creates a new AOA scenario.



[Scenarios screen — AOA scenario list with management buttons]

Editing a scenario

Clicking **Edit** on a scenario opens the graphical editor:

- **ID** and **Name** — numeric identifier and descriptive name
- **Type** — scenario type (crosslinecounting)
- **Object classes** — selection of Human and/or Vehicle

(bicycles and motorcycles are included in Vehicle)

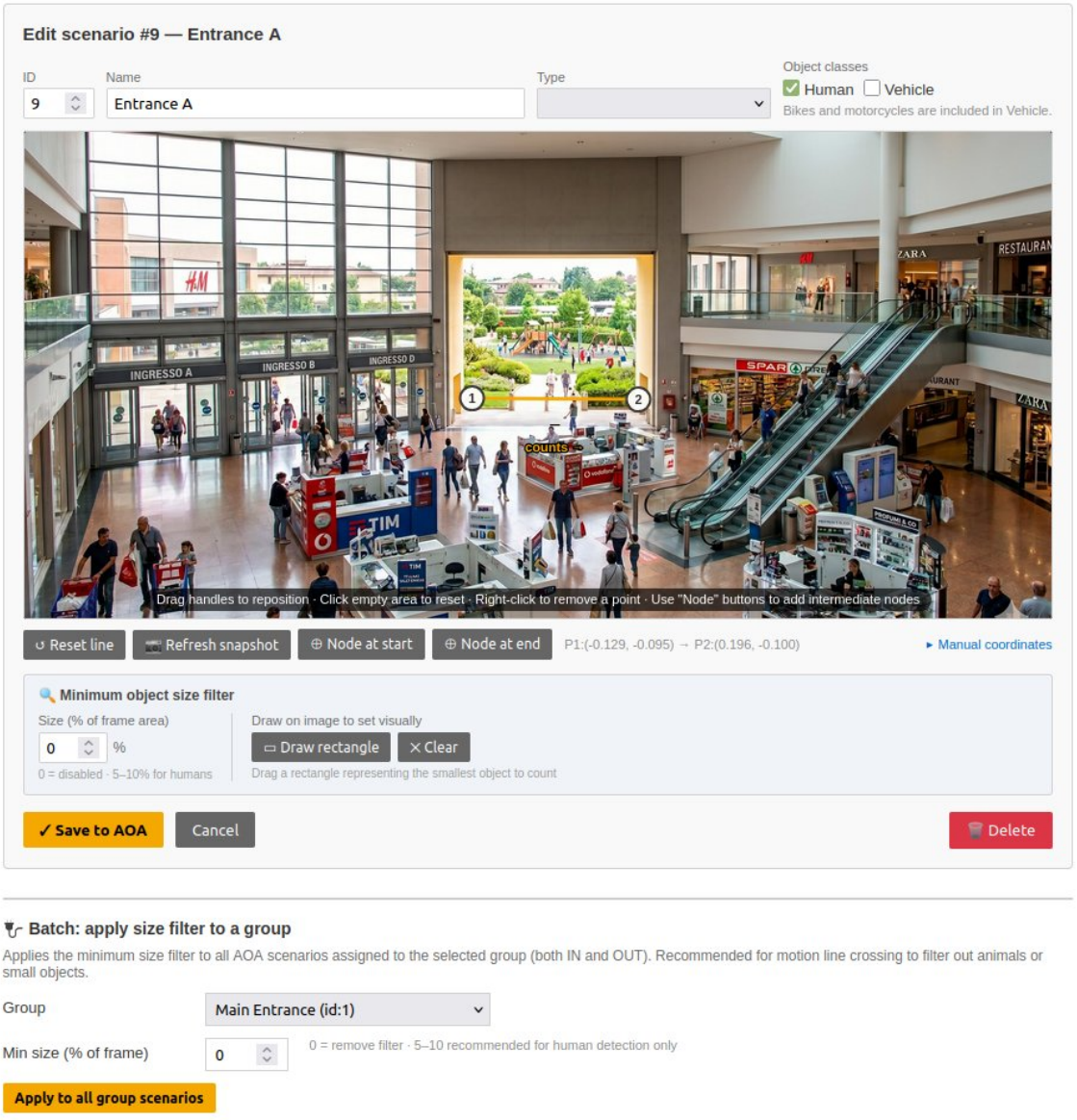
- **Graphical editor** — shows a live camera snapshot;

counting line points can be dragged to reposition the line

- **Reset line** — resets the line to its default position
- **Refresh snapshot** — updates the background image with a new frame
- **Node at start / Node at end** — adds intermediate nodes to the line
- **Manual coordinates** — precise numerical coordinate entry

Click ✓ **Save to AOA** to save changes directly to the camera,

or **Cancel** to discard. The red ■ **Delete** button deletes the scenario.



[Edit scenario screen — graphical editor with repositionable counting line]

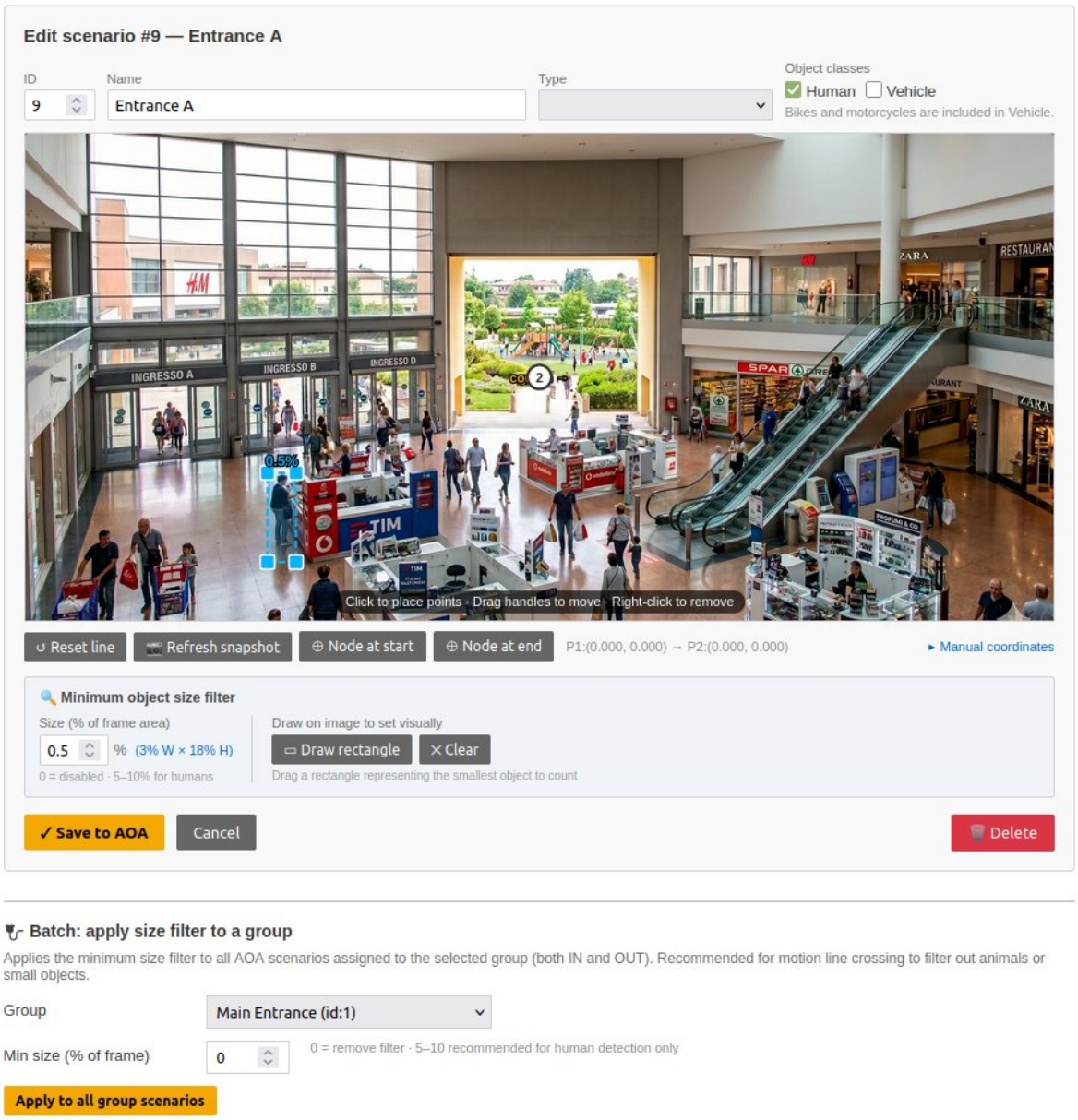
Minimum object size filter

Each scenario has a **Minimum object size filter** that excludes from the count objects occupying less than a threshold percentage of the image area. This allows filtering out children, small animals or false positives crossing the line.

Field	Description
Size (% of frame area)	Threshold as a percentage of frame area. `0` = disabled
Draw rectangle	Allows drawing visually on the image the rectangle corresponding to the minimum desired size
Clear	Removes the drawn rectangle

Typical values: **5–10%** for adult human detection only.

The system shows the corresponding dimensions in real time (e.g. `3% W × 18% H`).



[Edit scenario screen — minimum size filter with reference rectangle drawn on image]

Apply filter to a group (Batch)

At the bottom of the Scenarios tab, the **Batch: apply size filter to a group** function applies the same minimum size filter value to all scenarios assigned to a group (both IN and OUT) in a single operation:

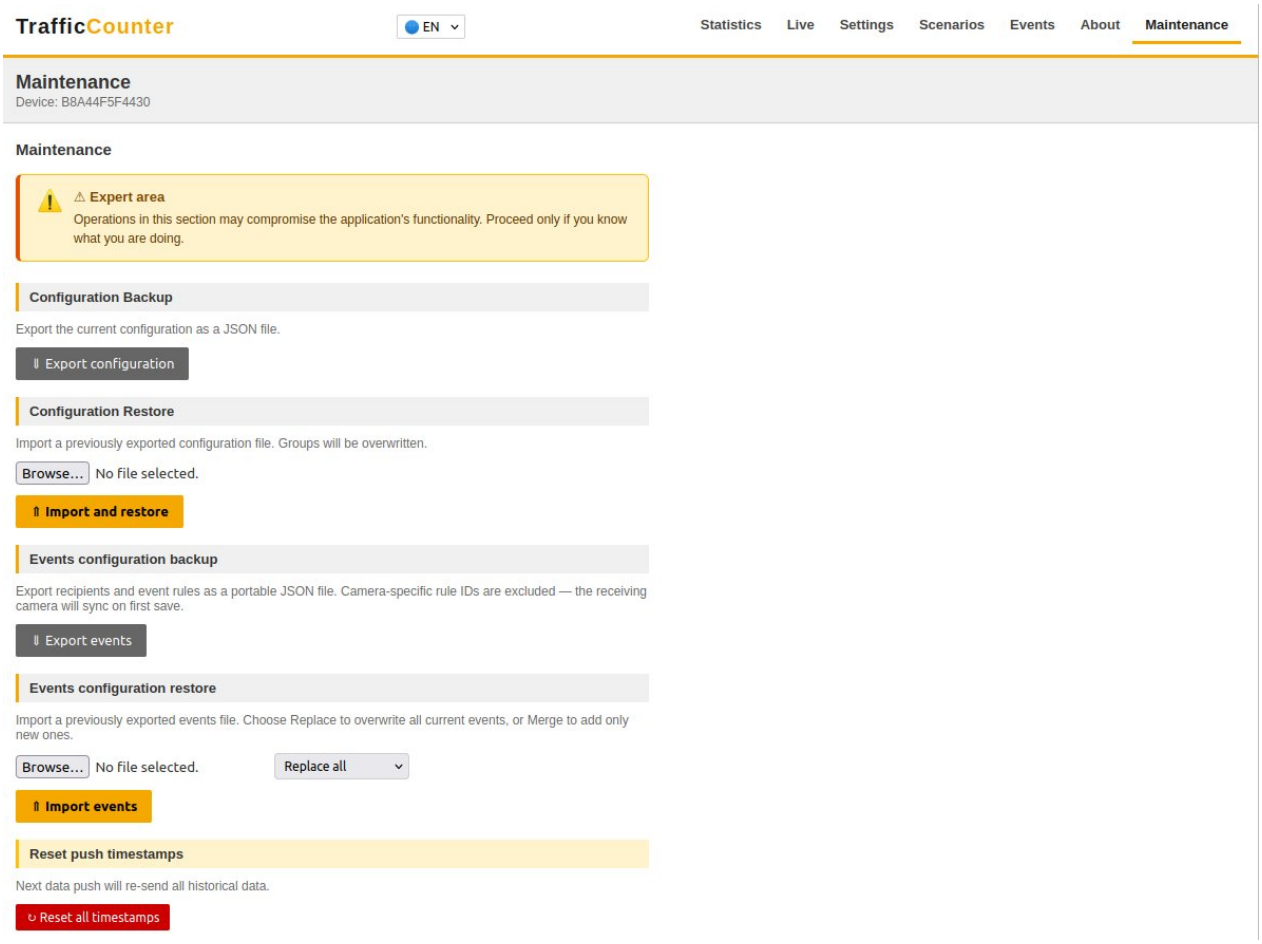
- Select the group from the **Group** dropdown
- Set the **Min size (% of frame)** value
- Click **Apply to all group scenarios**

10. Maintenance

The **Maintenance** tab contains backup, restore and diagnostic operations.

Expert area — operations in this section may compromise the application's

functionality. Proceed only if you know what you are doing.



[Maintenance screen — backup, restore, diagnostics and Demo Mode]

Group configuration backup

Maintenance tab → **Configuration Backup** → ■ **Export configuration**

Downloads a `.json` file with all groups, scenarios and settings.

Useful as a backup or to document the installed configuration.

Group configuration restore

Maintenance tab → **Configuration Restore** → select the `.json` file → ■ **Import and restore**

Existing groups are overwritten with those from the imported file.

Events configuration backup

Maintenance tab → **Events configuration backup** → ■ **Export events**

Exports recipients and event rules to a portable `.json` file.

Camera-specific rule IDs are excluded: the receiving camera will sync

its own IDs on first save.

Events configuration restore

Maintenance tab → **Events configuration restore**:

- Click **Browse…** and select the events file
- Choose the mode from the dropdown:
- **Replace all** — replaces all existing events
- **Merge** — adds only events not already present
- Click ■ **Import events**

Reset push timestamps

Maintenance tab → **Reset push timestamps** → ■ **Reset all timestamps**

The next Data Push will resend all available history for all groups.

Useful after changing the server.

■ 11. Interface Language

The language selector is in the upper left corner of the interface,

next to the TrafficCounter logo.

Available languages: English, Italiano, Français, Deutsch, Español, ■■■■■■■, ■■.

The selection is saved automatically.

■ 12. Events and Notifications

The **Events** tab allows you to configure automatic notifications: when an object

crosses an AOA virtual line, the camera sends an image to a user-configured HTTP server.

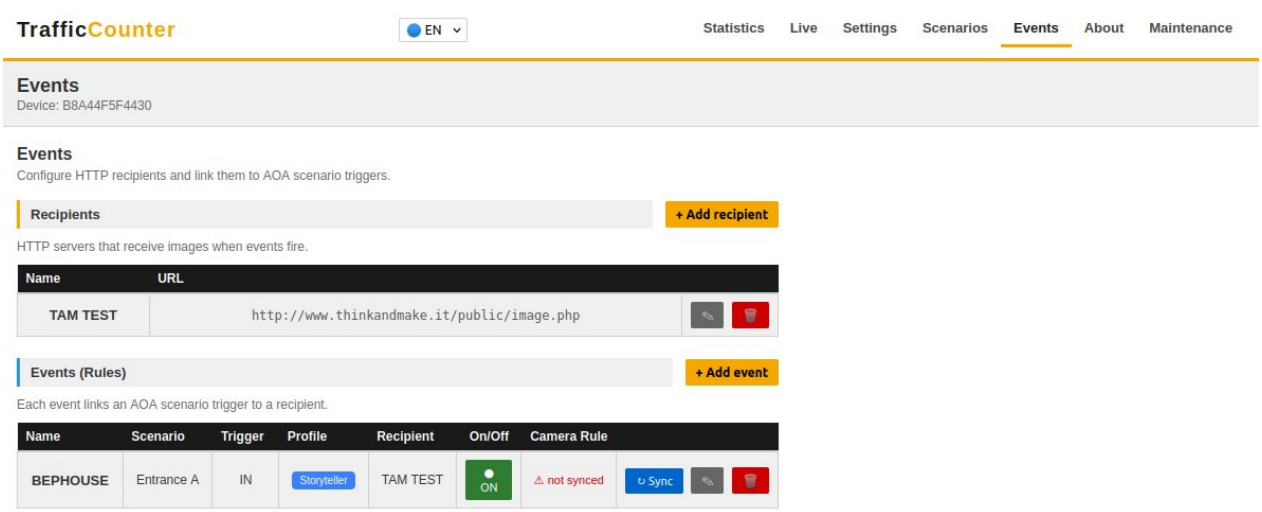
HTTP Recipients

A **recipient** is a server that receives images.

- Click **+ Add recipient**
- Fill in:

Field	Description	Example
Name	Recipient name	`VMS Server`
URL	Full server address	`https://your-server.example.com/api/snapshot`

- Click **Save**



[Events screen — recipient list and event rules]

Event Rules

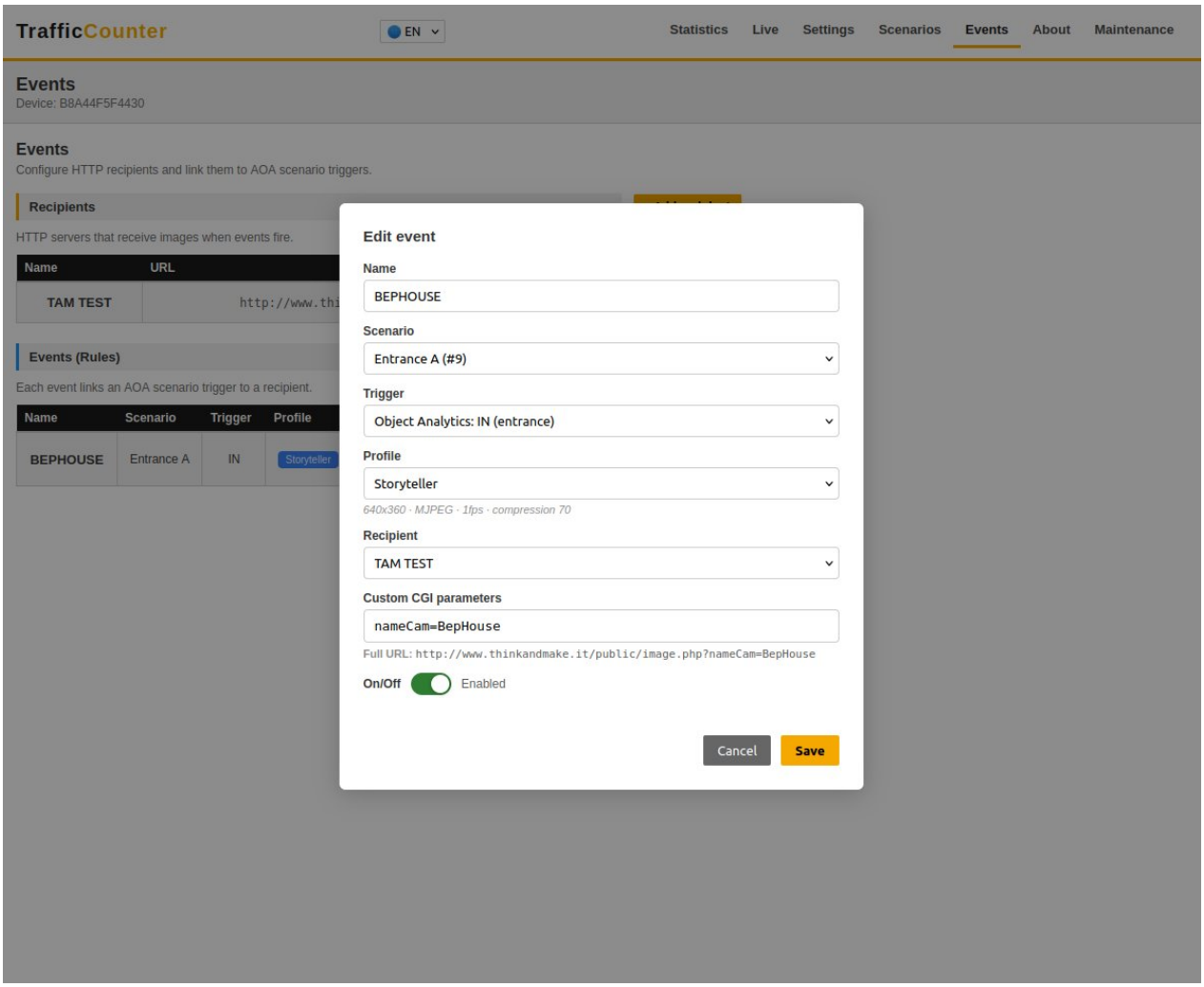
An **event rule** links an AOA scenario trigger to a recipient.

- Click **+ Add event**
- Fill in the **Edit event** dialog:

Field	Description
Name	Descriptive rule name
Scenario	The AOA scenario that generates the trigger
Trigger	`Object Analytics: IN (entrance)` or `OUT (exit)`
Profile	Image profile (e.g. Storyteller: 640×360 MJPEG 1fps)
Recipient	HTTP recipient to notify
Custom CGI parameters	Additional parameters appended to the URL (e.g. `nameCam=CheckpointName`)
On/Off	Enabled / Disabled (slider)

- Click **Save**

The full resulting URL is shown as a preview below the Custom CGI parameters field.



[Edit event screen — dialog with all fields]

Enabling/disabling a rule

Each row in the events table has an **ON/OFF** button: clicking it enables or disables the rule without deleting it. The **Camera Rule** column shows the synchronisation status with the camera's internal rule system:
if ■ **not synced** appears, click ■ **Sync** to align the rule.

■ 13. Troubleshooting

The orange banner does not disappear after uploading the license

Verify that the `.lic` file is the correct one for this camera
(the serial in the file must match the one shown in About).

Groups do not appear in statistics

Data is only sent after the first 15-minute cycle. Wait a maximum of
16 minutes after activating the group, or use ■ **Test** for an immediate send.

"License limit reached" when creating a group

The installed license has a group limit. Contact your administrator to obtain a license with more groups.

Scenarios do not appear in the group editor

Object Analytics is not configured or has no *Cross Line Counting* scenarios. Open the **Scenarios** tab and verify that active scenarios exist, or create a new one with **+ Add scenario**.

The ■ Test button shows an error

Message	Cause	Solution
HTTP 404	Virtual serial not registered on server	Register the virtual serial on the destination server
HTTP 401	Authentication required	Add the correct Auth header in the group editor
HTTP 403	Access denied	Check credentials and permissions on the server
HTTP 422	Payload rejected	Verify that the selected protocol is compatible with the server
HTTP 500	Remote server internal error	Contact the remote server administrator
Network error	Server unreachable	Check URL and camera network connectivity

> ***Important:*** *connectivity is checked from the camera's network, not from the client computer's network. A server reachable from the browser may not be reachable from the camera if they are on different networks.*

Sundays do not appear with a different colour in statistics

The purple colouring of Sundays in the hourly view is automatic and based on the timezone configured on the camera. Verify that the camera's clock and timezone are correctly set.