
TrueView Heatmap™ — Manual

embedded for Axis IP cameras

version 1.0

Copyright © 2011 Cognimatics

Table of Contents

Overview	1
Mounting the camera	2
General guidelines	2
Installing the software	2
Configuring TrueView Heatmap™	4
General	4
Interface	4
Mask	5
Web Report	6
Time schedule	6
Axis settings	6
Live view	7
History	8
HTTP API	8
1. Request heatmap image	9
2. List all days, for which there is heatmap data	9
3. Download .hmp data file	10
4. Download readable text data file	10
5. Clear local heatmap data	11
6. Show the system log	11
7. Generate a log archive	11
Troubleshooting	12
A. Supported cameras	12

Overview

TrueView Heatmap™ is a visual tool for measuring traffic patterns inside retail stores. The product gives instant access to where and when shoppers go in the store making it a perfect tool to optimize store layout. It marks with color coding where there has been movement in the video. TrueView Heatmap™ runs fully embedded in standard network cameras from Axis and should be mounted in the ceiling or on a wall overlooking the store. A camera running TrueView Heatmap™ can at the same time also be used as a standard surveillance camera, potentially reducing the total project hardware cost.

The design of a store is crucial for the shopping experience. Having a well thought through and tested design can help leverage your business dramatically. Measuring how shoppers are using the space of your store gives you the information you need to test and optimize the store layout - potentially leading to improved space utilization and more satisfied and loyal customers. TrueView Heatmap™ provides an easy-to-use tool that

allows for a scientific approach to evaluate store design changes. The product can help to pinpoint problems areas, find the best merchandising spots for product campaigns, set shelf rent based on traffic patterns inside store, and more.

- Camera can be used for both surveillance and heatmap analysis at the same time.
- Automated system, operated in real time.
- Fully embedded into network camera.
- Easy to install and setup.
- View heatmap data directly in camera.
- Store and analyze data over any available period of time using TrueView Web Report™.
- Export data to jpeg images using TrueView Daemon™.
- Maintain the product remotely over IP, set and monitor parameters, download or stream video.
- Leading digital image processing minimizes shadow and reflection problems.

Mounting the camera

The camera should be mounted overlooking the area of interest and be mounted on a wall or in the ceiling.

General guidelines

For best result it is normally good to mask off heatmap color coding everywhere except on the floor. Then only the heatmap color coding along the floor is shown avoiding irrelevant movement shown on shelves, walls, ceilings etc. How masking is done is described below.

In order for the camera and, in effect, TrueView Heatmap™ to function properly, make sure that the lighting is sufficient. A minimum of 80 LUX in the scene is required.

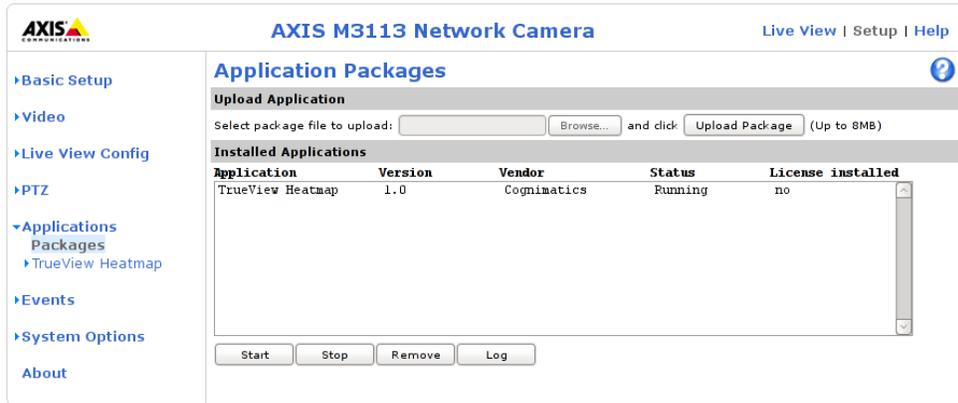
Make sure that no doors or other items are moving within the heatmap area. Do not mount the camera, for example, at an escalator. Also try to avoid getting very strong light and sharp shadows in the camera view.

Installing the software

If TrueView Heatmap™ software module is not already installed from your vendor it must be installed manually in your Axis camera.

1. Make sure you have one of the supported Axis IP cameras and that you have the correct corresponding software module of TrueView Heatmap™. The supported cameras and the corresponding software modules are listed in Appendix A.

2. Install the camera on your network, start it up and point your web browser to it. Supported web browsers are Firefox 3.x, Internet Explorer 7 & 8, Safari 4 & 5 and Google Chrome.
3. Upload the TrueView Heatmap™ installation file by clicking **Setup** -> **Applications**. Under the section *Select package file to upload*, specify the path to the TrueView Heatmap™ installation file or use the **Browse** button. Click on the **Upload Package** button. The application will start automatically. To do so explicitly, press the **Start** button.



Axis P3343-VE application package page

4. Click the **TrueView Heatmap™** link to get to the Heatmap interface. The first time you do this, you will be asked to enter your license code. Enter your license code and follow the instructions. The software will attempt to activate the license automatically by connecting to a registration server. If the server cannot be reached you will be asked to activate the license on a computer with Internet access. When the license activation is complete the camera is ready to be used for mapping.

Note that your software license is for one camera only. You can not install the software to another camera without a new registration key.

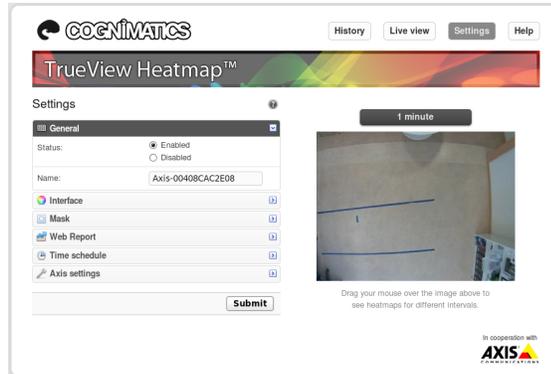


Registration page.

5. When you update any setting it can sometime take up to ten minutes for the counter to calibrate. You can see if the heatmap produces reasonable results by navigating to the **Live view** page.

Configuring TrueView Heatmap™

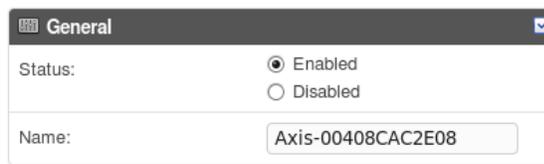
The TrueView Heatmap™ settings are divided into categories.



Note! Do not forget to press the Submit button when changes in settings are made, otherwise the settings will not be saved.

General

For the basic setup, go to the *General* section. This is where one toggles the counter status and set the name of the heatmap.



1. Verify that **Status** is set to Enabled.
2. Enter the **name** of the camera or location the TrueView Heatmap™ is viewing. Note that all cameras used for the application need to have unique names.

Interface

Some basic opacity settings can be set under the *Interface* section. To change the opacity for the heat in the images drag the *Heat opacity* slider. To change the opacity for the black areas in the heatmap images drag *Black opacity* slider. The changes will not be shown until the Submit is pressed.

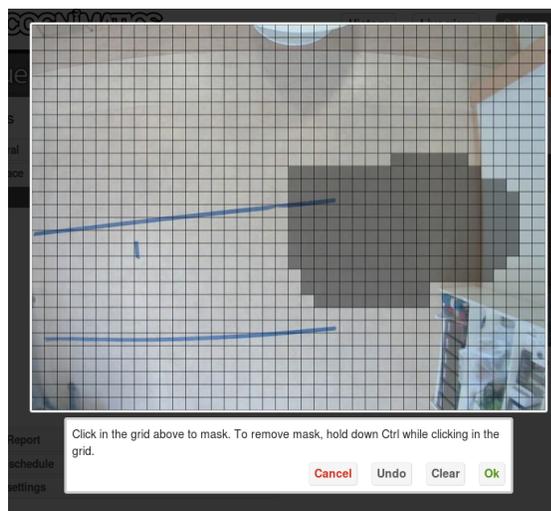


Mask

For best result mask off the parts of the camera's view where the heatmap color coding should not be displayed. It is normally best to only show heatmap color coding on the floor and to mask off walls, ceiling, shelves etc.



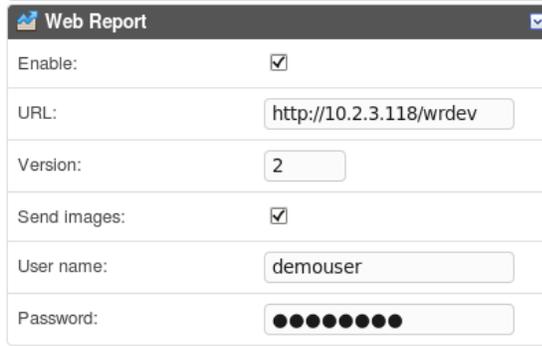
Click in the mask image.



Click and drag with the mouse to mask on and off parts of the camera's view.

Web Report

Apart from showing heatmap images in the camera interface and serving plain text data, TrueView Heatmap™ can also push data to the TrueView Web Report™. The settings for this are found in the *Web Report* section.



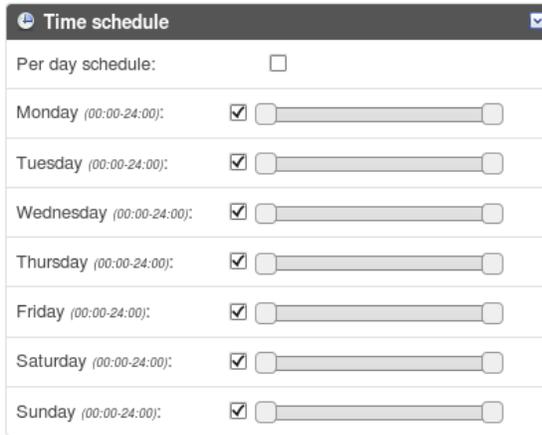
The screenshot shows a configuration window titled "Web Report". It contains the following settings:

Enable:	<input checked="" type="checkbox"/>
URL:	<input type="text" value="http://10.2.3.118/wrdev"/>
Version:	<input type="text" value="2"/>
Send Images:	<input checked="" type="checkbox"/>
User name:	<input type="text" value="demouser"/>
Password:	<input type="password" value="••••••••"/>

1. Check the *Enable* check-box to enable pushing data to TrueView Web Report™.
2. Enter the Web Report server address and your account credentials.

Time schedule

Under the *Time schedule* section start and stop times for the heatmap can be set individually for each day of the week. By unchecking the Per day schedule box, changing the times for one day will affect all days. Unchecking a box by the sliders will disable mapping for that particular day.



The screenshot shows a configuration window titled "Time schedule". It contains the following settings:

Per day schedule:	<input type="checkbox"/>
Monday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Tuesday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Wednesday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Thursday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Friday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Saturday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>
Sunday (00:00-24:00):	<input checked="" type="checkbox"/> <input type="range"/>

Axis settings

You can set the standard parameters of the AXIS camera by selecting one of **Users**, **TCP/IP** or **Date & Time** in the *Axis settings* section. See your AXIS camera manual for how to set the parameters. To assure the best mapping performance, avoid using

any camera built-in functionality that may affect the performance. Do not set any other parameters than:



- a. Local time
- b. IP address
- c. Users

Live view

To see when TrueView Heatmap™ is running you go to the *Live view* page. The heatmaps shown here are continuously updated and show the mapping made for the past 1 minute, 5 minutes and 30 minutes.



History

TrueView Heatmap™ can store data up to five days in five minute intervals. On the *History* page all available data can be shown by dragging the slider. You can select a specific day and use the slider to see different times during that day, or choose to view all available days and slide through the entire time interval.



Note

The slider is disabled if no data is available

HTTP API

1. **Request heatmap image:** Returns a heatmap as an image
2. **List available data:** Returns a list of days where data exists
3. **Download binary data:** Returns Cognimatics proprietary format
4. **Request text data:** Returns an heatmap in readable numbers

5. **Clear local heatmap data**
6. **Show the system log**
7. **Generate a log archive:** Generates a gzip'ed tarball containing log files and settings

1. Request heatmap image

URL

```
http://<servername>/local/heatmap/.api?  
heatmap.png[&time=<timestamp>|  
from=<timestamp>&to=<timestamp>|interval=<interval>]  
[&stretch=1]
```

where <timestamp> is a 14 character timestamp in YYYYMMDDhhmmss format; <interval> is a time interval either 1m, 5m or 30m for the past 1 minute, 5 minutes or 30 minutes, respectively; and stretch=1 is given to scale the heat values to the minimum/maximum range. If no arguments are given, the 1-minute interval is returned, without stretch scaling.

Format

PNG

Method

GET

Return

A heatmap image

2. List all days, for which there is heatmap data

URL

```
http://<servername>/local/heatmap/.api?list-hmp.json
```

Format

JSON

Method

GET

Return

```
{  
  "timestamp" : "<timestamp>",  
  "days" : {  
    "YYYYMMDD" : ["hhmmss", [...] "hhmmss"],  
    [...]  
    "YYYYMMDD" : ["hhmmss", [...] "hhmmss"]  
  }  
}
```

<timestamp>

time in the camera in the format YYYYMMDDhhmmss

<days>

an object of days where there exists data where the day is the key the value is an array of times where data exists for respective day.

Example

List all days of data available in TrueView Heatmap™

URL

`http://<servername>/local/heatmap/.api?list-hmp.json`

Return

```
{
  "timestamp" : "20110116071553",
  "days" : {
    "20110115" : ["235000", "235500"],
    "20110116" : ["000000", "000500"]
  }
}
```

3. Download .hmp data file

URL

`http://<servername>/local/heatmap/.api?export-hmp&time=<timestamp>`

where <time> can be a timestamp of the form YYYYMMDDhhiiss

Format

hmp

Method

GET

Return

This script returns a Cognimatics proprietary binary data file for the given timestamp

Example

Request historical data for the 12th of May 2011 16:10 - 16:15.

URL

`http://<servername>/local/heatmap/.api?export-hmp&date=2011051215161500`

4. Download readable text data file

URL

`http://<servername>/local/heatmap/.api?export-ascii&time=<timestamp>`

where `<time>` can be a timestamp of the form `YYYYMMDDhhii:ss`

Format

`>text/plain`

Method

GET

Return

This script returns a Heatmap with 80 x 60 numbers between 0 and 255 representing a Heatmap. Each row in the output is a new row in the heatmap image.

5. Clear local heatmap data

URL

`http://<servername>/local/heatmap/.api?clear-data`

Format

`text/plain`

Method

GET

Return

OK

6. Show the system log

URL

`http://<servername>/local/heatmap/.api?show-logs`

Format

Plain text

Method

GET

Return

Displays the system logs.

7. Generate a log archive

URL

`http://<servername>/local/heatmap/.api?generate-logs`

Format

`tar.gz`

Method

GET

Return

A log archive.

Troubleshooting

The video does not show on the History page.

Make sure no one else is watching the video and click reload in your web browser.

The setting page does not show the parameter values.

Reset to factory default after installation and restart the camera.

The software does not upload to TrueView Web Report™.

Go to `http://<servername>/local/heatmap/.api?show-logs` in your web browser and see if the logs can help you. Note that some times it can take up to half an hour for the software to upload data to TrueView Web Report™.

A. Supported cameras

Table A.1. Supported cameras

Camera model	Software module
Axis cameras with support for Axis Camera Application Platform	TrueView_Heatmap_1_0_ARTPEC-3__x.y-z.eap

x, y and z indicate the version number of the software module.