

# Aimetis People Counter

Version 2.1

Installation and User Guide

May 29, 2013



# Document History

**Table 1. Changes to this guide**

Date	Description
May 29, 2013	<ul style="list-style-type: none"> <li>• Added title page, preface, and table of contents to this manual.</li> </ul>
May 8, 2013	<ul style="list-style-type: none"> <li>• “Important: Aimetis People Counter 2.1 is compatible only with Axis cameras based on the ARTPEC-4 CPU (chip) and that support ACAP (AXIS Camera Application Platform). Aimetis People Counter 2.0 is compatible only with Axis cameras based on the ARTPEC-3 CPU (chip) and that support ACAP (AXIS Camera Application Platform).” on page 2</li> <li>• Fixed typo on page 16.</li> </ul>
March 26, 2012	<ul style="list-style-type: none"> <li>• How to reset counters - sample code: “Command for resetting counters” on page 36</li> </ul>
December 23, 2011	<ul style="list-style-type: none"> <li>• Aimetis People Counter 2.1 works on Axis devices based on ARTPEC</li> </ul>
May 5, 2011	<ul style="list-style-type: none"> <li>• Clarified content in “How to Use the Advanced Options” on page 17</li> <li>• Clarified and added content in Table 6, “How to resolve issues,” on page 21: “CPU is too busy message” on page 22 and in Example “CPU is too busy message. The Aimetis People Counter is slow when generating reports.” on page 23</li> </ul>
April 1, 2001	First instance of this guide.

# Preface

## Conventions

Table 1. Symbols and formatting used in this manual

Icon	Caption/Format	Description
	Note	Additional information.
	Example	Example scenario.
	Important	Vital additional instructions or links.
	Caution	You could lose recording footage or you must pay close attention to setting changes.
	<b>Bold, Arial Font</b>	Graphic User Interface term (button, menu, window, option) or keyboard item.
	<i>Italic, Arial</i>	Emphasis, new term, or an external reference.

# Document Suite

**Table 2. Aimetis documents and videos**

Document Name	Links
Symphony Release Notes	<a href="https://www.aimetis.com/Xnet/downloads/documentation.aspx">https://www.aimetis.com/Xnet/downloads/documentation.aspx</a>
Symphony Installation Guide	<a href="https://www.aimetis.com/Xnet/downloads/documentation.aspx">https://www.aimetis.com/Xnet/downloads/documentation.aspx</a>
Symphony Administration Guide	<a href="https://www.aimetis.com/Xnet/downloads/documentation.aspx">https://www.aimetis.com/Xnet/downloads/documentation.aspx</a>
Symphony Analytics Guide	<a href="https://www.aimetis.com/Xnet/downloads/documentation.aspx">https://www.aimetis.com/Xnet/downloads/documentation.aspx</a>
Symphony Client User Guide	<a href="https://www.aimetis.com/Xnet/downloads/documentation.aspx">https://www.aimetis.com/Xnet/downloads/documentation.aspx</a>
Knowledge Base Articles	<a href="http://www.aimetis.com/Support/knowledgebase.aspx">http://www.aimetis.com/Support/knowledgebase.aspx</a>
Case Studies	<a href="http://www.aimetis.com/Solutions/customers-case-studies.aspx">http://www.aimetis.com/Solutions/customers-case-studies.aspx</a>
White Papers	<a href="http://www.aimetis.com/Solutions/whitepapers.aspx">http://www.aimetis.com/Solutions/whitepapers.aspx</a>
Application Video Samples	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Recorded Webinars	<a href="http://www.aimetis.com/Events/webinars.aspx">http://www.aimetis.com/Events/webinars.aspx</a>
Product Tour	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Supported Video Devices List	<a href="http://www.aimetis.com/Support/supported-video-devices.aspx">http://www.aimetis.com/Support/supported-video-devices.aspx</a>
Licensing	<a href="http://www.aimetis.com/Symphony/default--licensing.aspx">http://www.aimetis.com/Symphony/default--licensing.aspx</a>
FAQ	<a href="https://www.aimetis.com/Xnet/Support/faqs.aspx">https://www.aimetis.com/Xnet/Support/faqs.aspx</a>

# Aimetis Xnet Portal

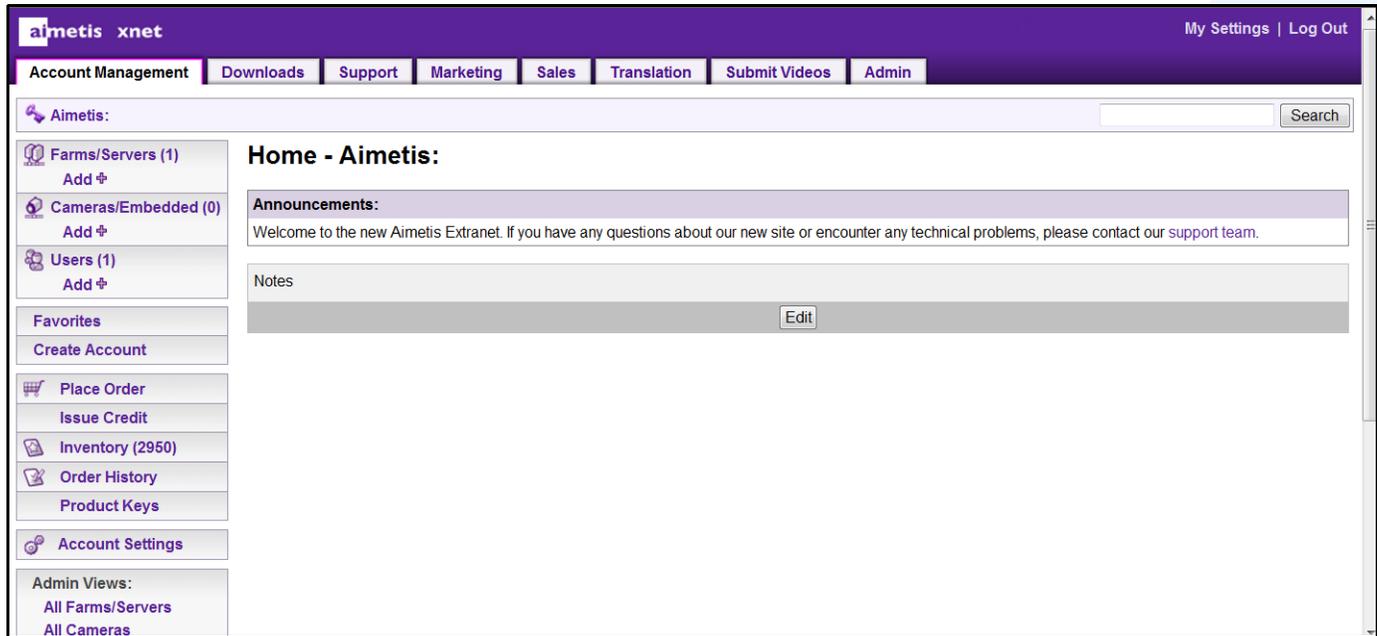


Figure 1. Aimetis Xnet home page

Xnet is the Aimetis Online Portal: [www.aimetis.com/Xnet](http://www.aimetis.com/Xnet)

You can :

- Order Licenses
- Manage Sub-Partner Accounts
- Access Technical Support & Downloads
- Access Sales & Marketing Tools
- Access Aimetis Software Translation



**Note:** Access to tools depends on account type, for example, Distributor, Certified Partner, Authorized Partner, End-User. For instructions, see [Table 3 on page v](#).

Table 3. Instructions for using the Xnet

Xnet Instructions	Links
Xnet Training Manual - Resellers	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Recorded Webinar - Xnet Training - Distributors	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>

**Table 3. Instructions for using the Xnet**

<b>Xnet Instructions</b>	<b>Links</b>
Recorded Webinar - Xnet Training - Channel Partners	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Xnet Training Manual - Distributors	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Aimetis Symphony Architectural and Engineering Specification	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>
Hardware Benchmarks guidelines for 10, 20, 40 and 200 camera systems.	<a href="https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx">https://www.aimetis.com/Xnet/Marketing/collateral-library.aspx</a>

# Contact Us

**Table 4. Contact links, addresses, phone numbers**

Contact Type	Description
About Aimetis	<a href="http://www.aimetis.com/Company/default.aspx">http://www.aimetis.com/Company/default.aspx</a>
Contact link	<a href="http://www.aimetis.com/Company/contact.aspx">http://www.aimetis.com/Company/contact.aspx</a>
Support link	<a href="http://www.aimetis.com/Support/default.aspx">http://www.aimetis.com/Support/default.aspx</a>
Americas	Aimetis Headquarters 500 Weber Street North Waterloo, Ontario, Canada N2L 4E9 Phone: +1866-544-2804 or +1 519-746-8888 Fax: +1 519-746-6444
EMEA	Aimetis GmbH Am Prime Parc 7 65479 Raunheim Germany Telefon: +49 (0) 6142 207 98 60 Fax: +49 (0) 6142 207 98 89 <a href="http://www.aimetis.de">www.aimetis.de</a>
Asia - Pacific	Aimetis China Rm. 1328 Yunsun Tower 2025 Zhongshan West Road Xuhui, Shanghai China 200235 Phone: 86-21-6182-6916 Fax: 86-21-6182-6777

---

# Table of Contents

<b>Overview .....</b>	<b>1</b>
<b>Installation .....</b>	<b>2</b>
Licensing .....	3
Moving from Trial Licence to Full License .....	4
<b>Camera Setup .....</b>	<b>8</b>
<b>How to Access Aimetis People Counter Application on Your Camera .....</b>	<b>10</b>
<b>How to Use the Aimetis People Counter Interface .....</b>	<b>11</b>
<b>How to Set Up Person Size and Object Line Crossing .....</b>	<b>14</b>
<b>How to Generate Reports .....</b>	<b>15</b>
<b>How to Use the Advanced Options .....</b>	<b>17</b>
<b>Troubleshooting .....</b>	<b>21</b>
Moving the Camera .....	24
<b>Collecting Data Remotely from the Aimetis People Counter .....</b>	<b>27</b>
Structure of the HTTP Request .....	27
Script .....	28
Command for extracting data .....	31
Command for extracting daily data .....	32
Command for extracting 2 days hourly data .....	33
Command for extracting 2 months daily data .....	34
Command for extracting monthly data .....	35
Command for resetting counters .....	36
<b>Legal .....</b>	<b>37</b>

# Aimetis People Counter 2.1

## Overview

- [“Installation” on page 2](#)
- [“Licensing” on page 3](#)
- [“Camera Setup” on page 8](#)
- [“How to Access Aimetis People Counter Application on Your Camera” on page 10](#)
- [“How to Use the Aimetis People Counter Interface” on page 11](#)
- [“How to Set Up Person Size and Object Line Crossing” on page 14](#)
- [“How to Generate Reports” on page 15](#)
- [“How to Use the Advanced Options” on page 17](#)
- [“Troubleshooting” on page 21](#)
- [“Collecting Data Remotely from the Aimetis People Counter” on page 27](#)
- [“Legal” on page 37](#)

## Installation



**Important:** Aimetis People Counter **2.1** is compatible only with Axis cameras based on the **ARTPEC-4 CPU** (chip) and that support **ACAP** (AXIS Camera Application Platform).

Aimetis People Counter **2.0** is compatible only with Axis cameras based on the **ARTPEC-3 CPU** (chip) and that support **ACAP** (AXIS Camera Application Platform).

---

## Procedure

### To install the Aimetis People Counter on your camera:

1. Browse to <https://www.aimetis.com/xnet>
2. Log in to your Aimetis Xnet account. If you do not have an account, create one before continuing.
3. Within the Aimetis Xnet, click on the **Downloads** tab.
4. Click **Aimetis People Counter** on the left. You will see a list of downloads for the Aimetis People Counter.
5. Download the file ending in **eap**. This is the installation package.
6. Connect to your camera using your Web browser.



**Note:** If the computer you are using to access the internet does not have access to your AXIS camera, switch to a computer that does before continuing. Transfer the installation package to this computer.

---

7. Click **Setup**, and then **Applications**.
8. Click **Browse** and select the file you saved from AIMETIS.
9. Click **Upload Package**. The application appears in the list.
10. Under **Installed Applications**, select **Aimetis People Counter**.
11. Click **Start**. In the left pane, under **Applications**, click **Aimetis**. The **Application Settings: Aimetis People Counter** page opens. Click **Main Page**.

## Licensing

Do not use the **License** link under Aimetis at the left. The Aimetis People Counter does not use the licensing functionality provided by AXIS.

1. In the **Application Settings: Aimetis People Counter** page, click **Main Page**. A new browser window opens displaying the Aimetis People Counter.

aimetis.com/xnet.' Below this is a form with a label 'License Key:' and an input field. A 'Submit' button is located below the input field. At the bottom of the form, it says 'The MAC address for this camera is: 00-40-8C-90-3E-56'." data-bbox="132 240 711 401"/>

aimetis

You must have a valid license to run this application.

Licenses can be retrieved from [aimetis.com/xnet](http://aimetis.com/xnet).

License Key:

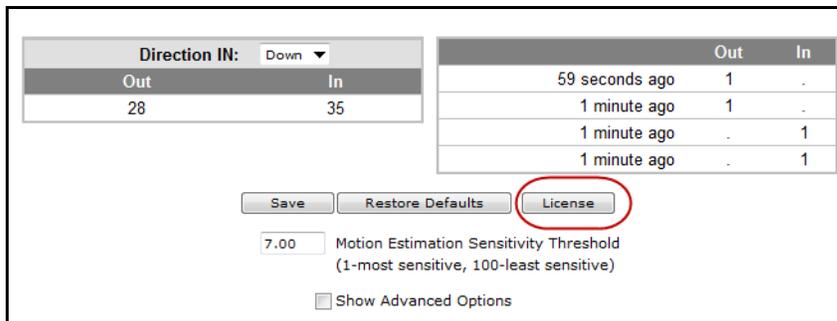
Submit

The MAC address for this camera is: 00-40-8C-90-3E-56

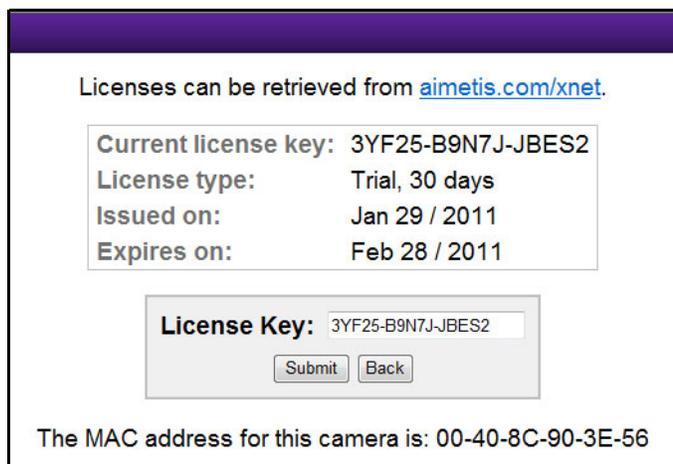
- If the computer you are using does not have Internet access:
    - a. Write down the MAC address at the bottom of the page.
    - b. Return to the **Aimetis Xnet** and select the **Account Management** tab.
    - c. In the **Cameras/Embedded** section, click **Add**.
    - d. Click **Continue** on the right.
    - e. Enter the MAC address you wrote down and enter a name for this camera.
    - f. Go to [step 4](#).
2. Click the **Licenses can be retrieved from [aimetis.com/xnet](http://aimetis.com/xnet)** link. A new browser window opens to the **Register Camera** page of the Aimetis Xnet.
  3. (Optional) Your camera's name should be filled in automatically. You may change the name to make it easier for you to recognize this camera in the future.
  4. (Optional) If you have a license available, you may select it by entering a quantity of one. Otherwise you will be issued a trial license.
  5. Click **Register Camera**. A message verifying that your camera has been registered is displayed.
  6. Click **View Camera**. You will see a page listing information about the camera you have registered.
  7. Write down or copy the value under **License Key**. This is your license key.
  8. Return to the window displaying the **Aimetis People Counter** and enter the license key.
  9. Click **Submit**. You will see a page verifying that your license key is valid and your software is licensed.

## Moving from Trial Licence to Full License

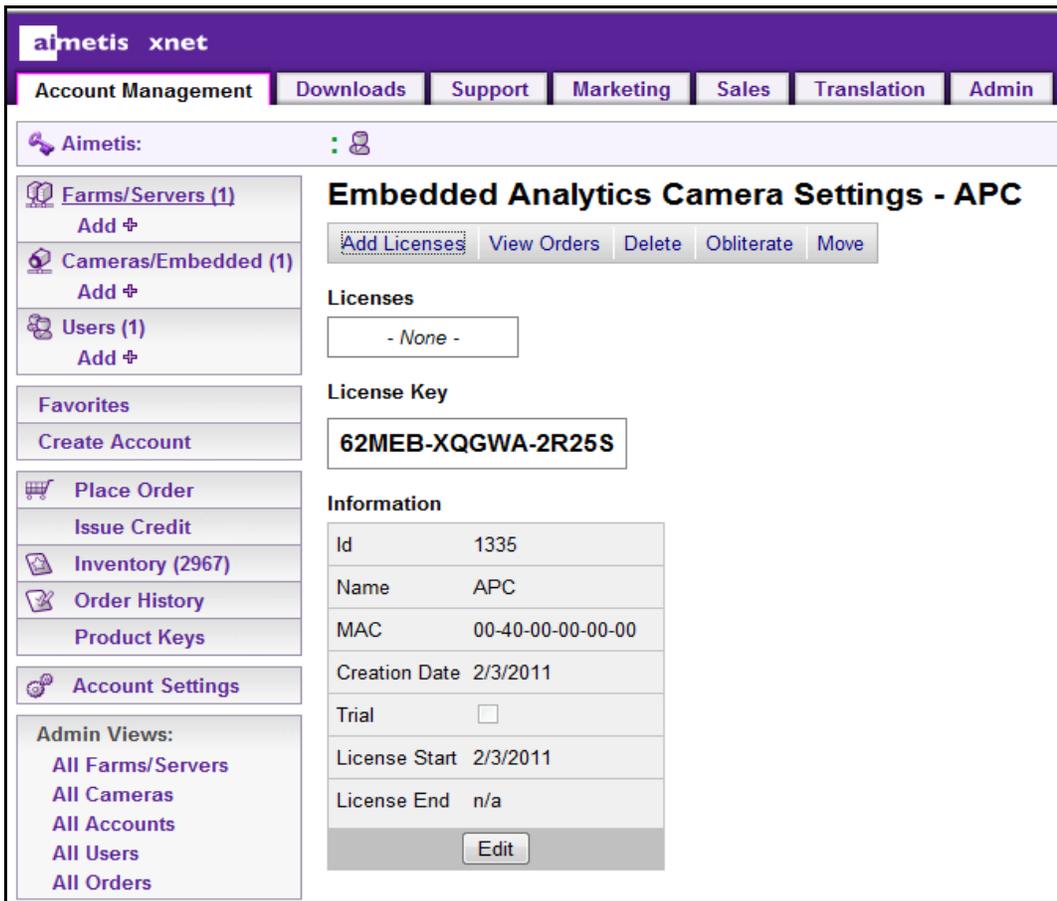
1. In a web browser, enter the IP address of your camera. The camera interface opens.
2. Open the **Aimetis People Counter** interface. See "[How to Access Aimetis People Counter Application on Your Camera](#)" on page 10.
3. Click the **Setup** tab. Below the video image, click the **License** button.



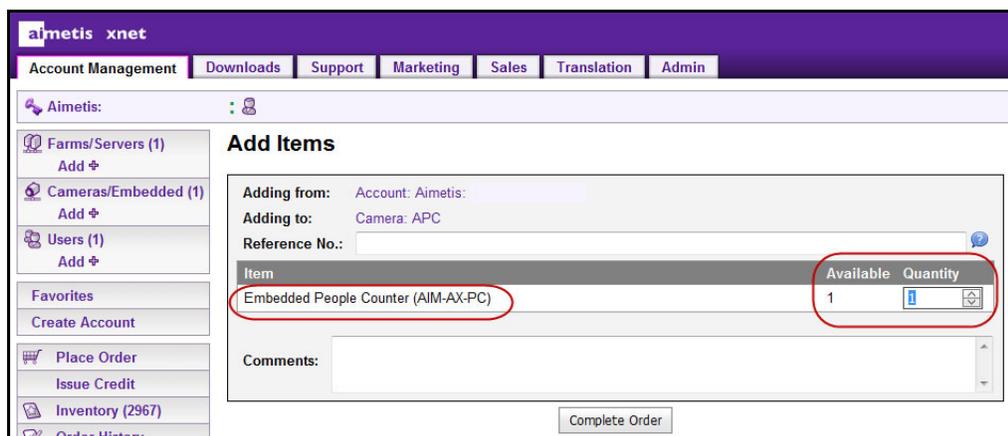
4. The **License** dialog box opens. Click the [aimetis.com/xnet](http://aimetis.com/xnet) link.



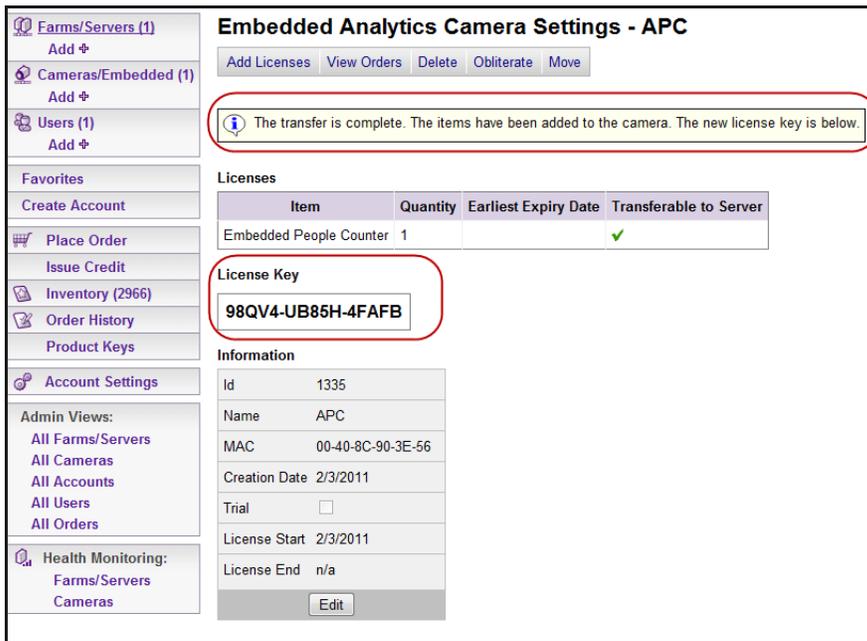
5. The Xnet portal opens to the camera license page. (You may have to log in to the Xnet first.)



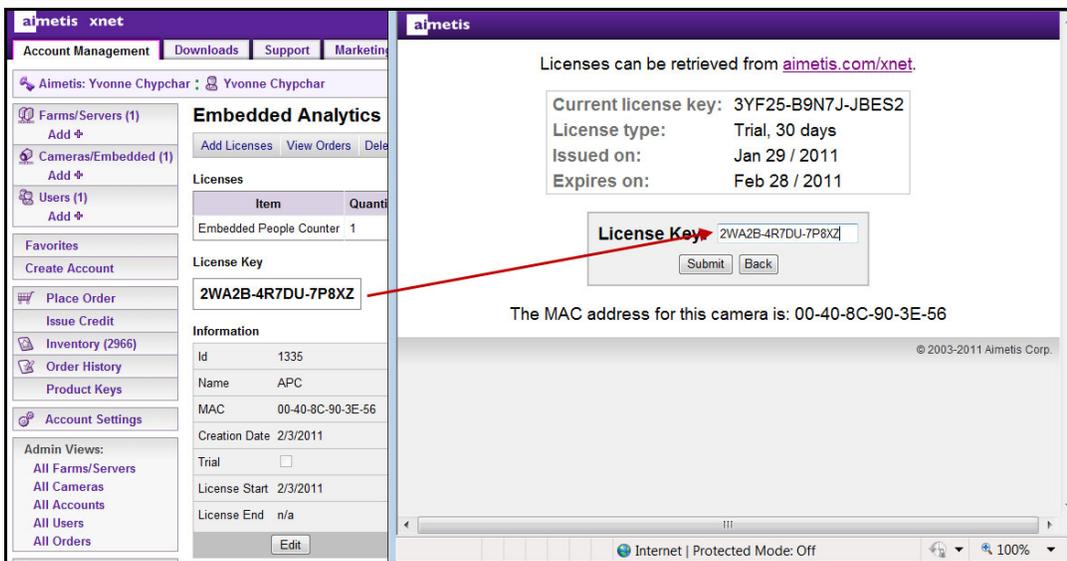
6. Click **Add Licenses**. The **Add Items** screen opens.



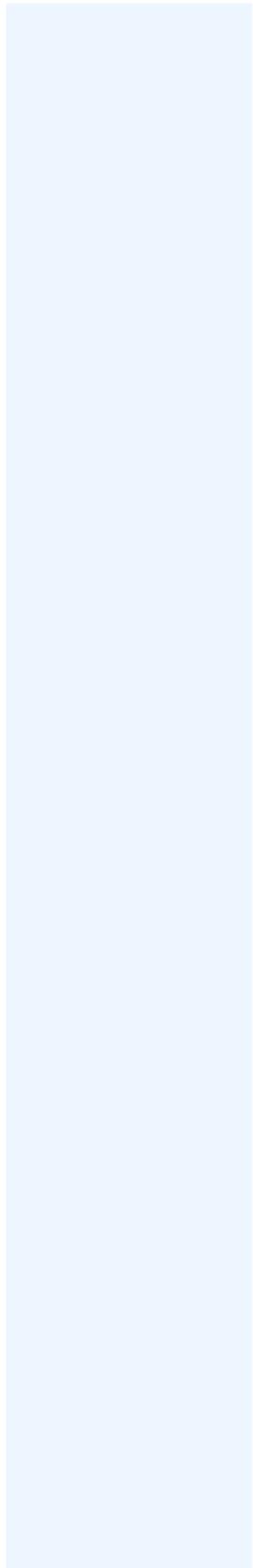
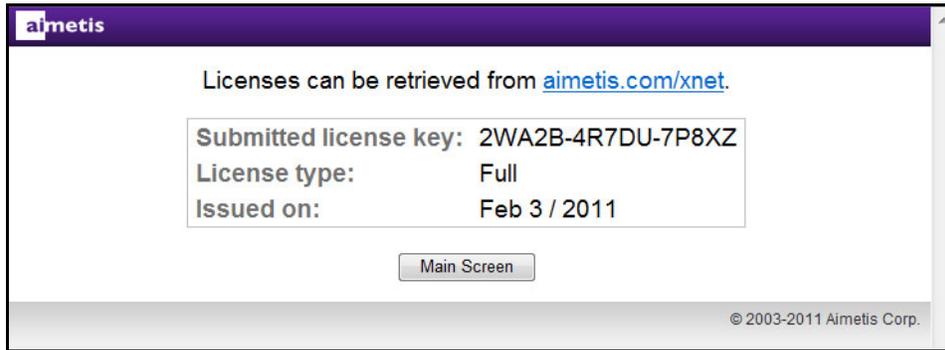
7. Select the quantity of licenses for the **Embedded People Counter**, and click **Complete Order**.



8. A message is displayed indicating that the license transfer is complete. Copy the license key number and paste it into the **License Key** field of the **License** dialog box in the **Aimetis People Counter** screen.



9. Click **Submit**. The new license type (**Full**) is displayed. Click **Main Screen** to close the license information.

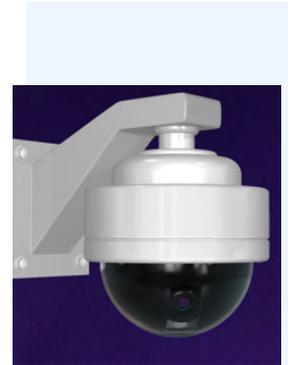


# Camera Setup

Consider all of the factors described in [Table 1](#) when setting up your camera for use with the Aimetis People Counter.

**Table 1. Camera Setup**

Subject	Recommended Setup
<p><b>Camera Height</b></p>	<ol style="list-style-type: none"> <li>1. Install the camera <b>90 degrees</b> overhead at a <b>minimum height of 9 feet (3 metres)</b>. A different height is possible depending on the zoom capabilities of your camera. The most common problem is that the camera is installed too low. People will appear very large and to be moving very fast.</li> <li>2. The <b>Person Size</b> box should be no more than 1/3 the size of the screen and no less than 1/5 of the size of the screen.</li> <li>3. Although a video appears continuous to our eyes, it really is capturing images in frames. To count a person, the camera must capture at least 3 frames - the person before the line, crossing the line, and after the line. In normal operation, the Aimetis People Counter processes around 10 frames per second.</li> </ol>
<p><b>Lighting</b></p>	<ul style="list-style-type: none"> <li>• <b>Poor lighting</b> causes the camera to increase the sensitivity of the sensors, thus generating more noise in the video, which may result in false counts.</li> <li>• <b>Shiny objects</b>, like a shiny floor may reflect light/shadows from a surrounding area and generate false counts.</li> <li>• <b>Sunlight from outside</b>, occasionally obscured by moving clouds will cause shadows to cross a counting line. Depending on the angle of an indoor light or the sun, the shadows of people walking by a counting line can trigger false counts.</li> </ul> <div data-bbox="391 1335 1227 1745" style="text-align: center;"> </div>
<p><b>Storage</b></p>	<p>Historical data is stored on the camera at a resolution of 1 minute. Depending on the camera model and traffic, storage space allows for up to 10 years or more of data.</p>



**Table 1. Camera Setup (Continued)**

<b>Subject</b>	<b>Recommended Setup</b>
<b>Saving Data</b>	The data is saved once per hour. In case of a power failure, you may lose up to 1 hour of historical data. Your camera does not have an internal disk for massive storage, so saving data once per hour extends the life of memory when compared with a system saving once every 15 minutes.
<b>FPS</b>	Ideally, the video analytic should be running 10 to 11 FPS to provide accurate data.
<b>Settings and Historical Data</b>	Re-installation of the video analytic does NOT delete all settings and historical data.
<b>Web Access</b>	Use only with IE7 and later.

# How to Access Aimetis People Counter Application on Your Camera

## Procedure

### To access the Aimetis People Counter application on your camera:

1. In a web browser, enter the IP address of your camera. The camera interface opens.
2. Click the **Aimetis People Counter** link at the bottom of the camera interface. The **Aimetis People Counter** interface opens.
  - Alternatively, in the camera interface, click **Setup**, and then **Applications**. Click **Packages** and select the **Aimetis People Counter** option. The **Aimetis People Counter** interface opens.

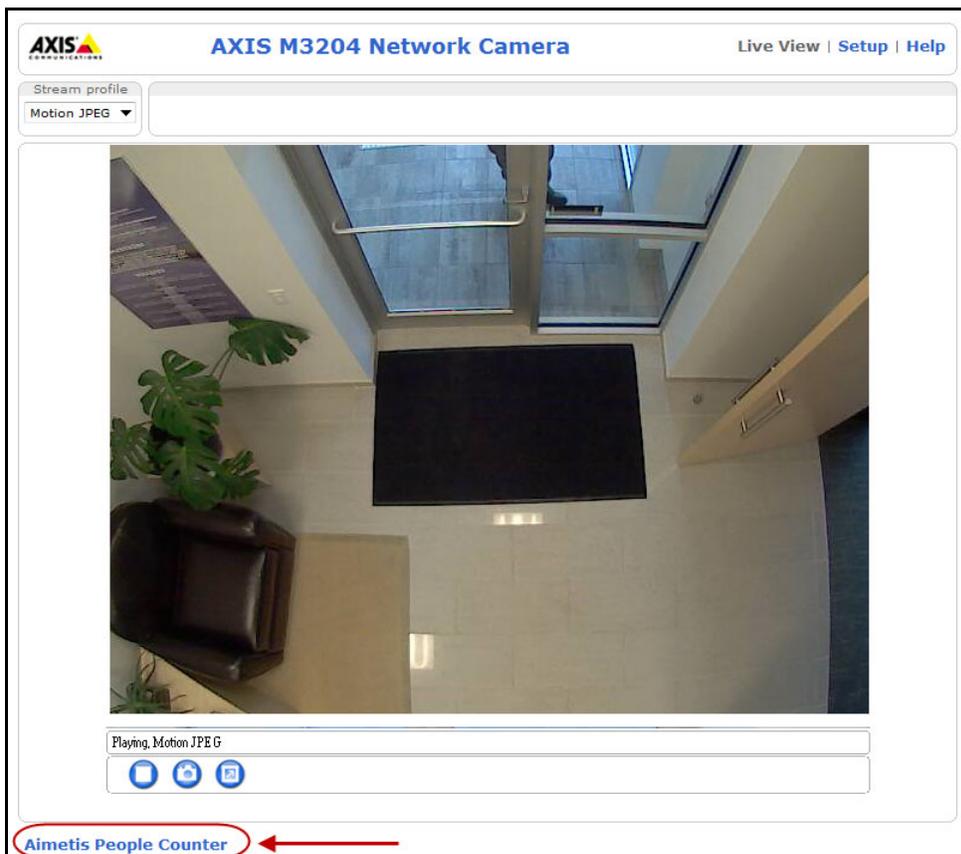


Figure 1. Aimetis People Counter link

3. When accessing the Aimetis People Counter for the first time after installation, you will be asked for a valid license. Follow the on-screen instructions. See [“Licensing” on page 3](#).

# How to Use the Aimetis People Counter Interface

The Aimetis People Counter interface has 6 tabs:

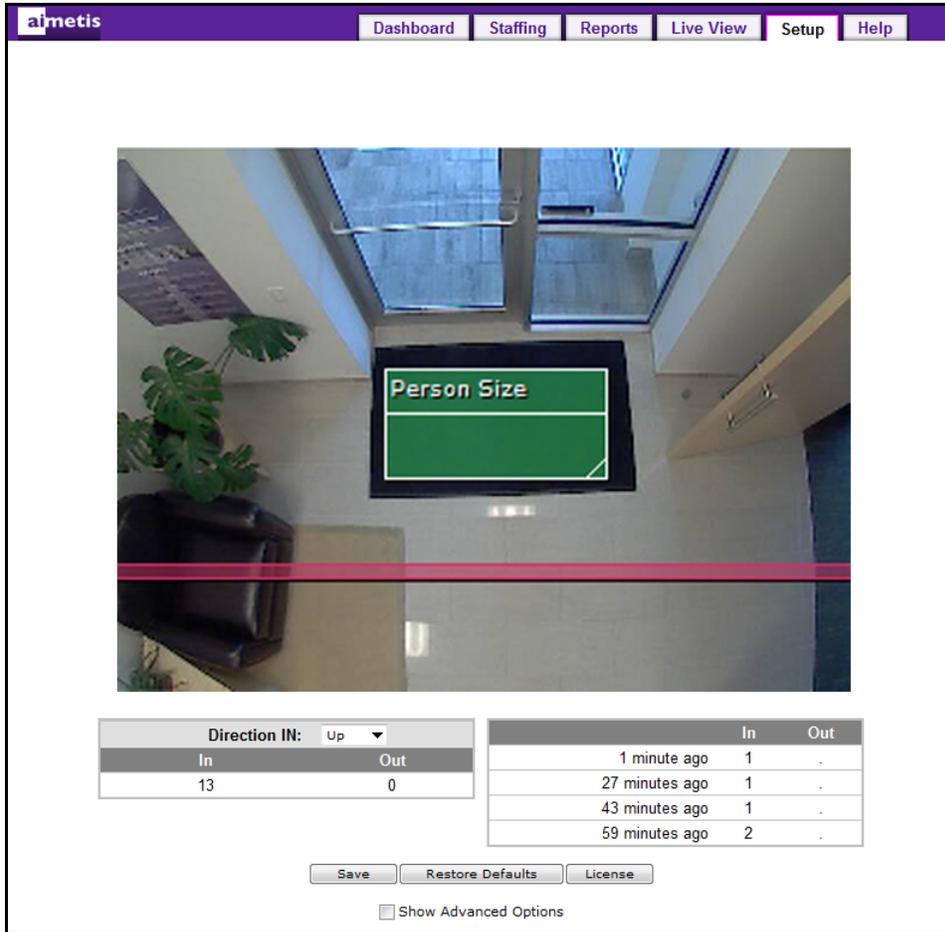


Figure 2. Aimetis People Counter interface

Table 2.

Tab/button	Description and usage						
<b>Dashboard</b>	Displays counter data in graphical form for the last hour, last day, and last week. If you hover your mouse on the graph, specific <b>In</b> and <b>Out</b> and <b>Time</b> statistics are displayed. <b>No data</b> (grey box) indicates that the application was not run for that period. <b>Zero counts</b> indicates that the application was running but no people crossed the counting line						
<b>Staffing</b>	Displays counter data for the last week. For example, in a store setting, determine when more staffing might be required. <b>No data</b> (grey box) indicates that the application was not run for that period. <b>Zero counts</b> indicates that the application was running but no people crossed the counting line.						
<b>Reports</b>	Generate a report ( <b>Table</b> or <b>Chart</b> form) based on minutes, hours, days, or months, for a specific period ( <b>From</b> and <b>To</b> dates using a calendar). For details, see <a href="#">"How to Generate Reports" on page 15</a> .						
<b>Live View</b>	Displays live camera feed with ongoing count updates. <ul style="list-style-type: none"> <li>In some cases, you can use the ongoing <b>In</b> and <b>Out</b> counts to determine the counting accuracy. For example, if the camera is setup overhead the only entrance used by customers, then the difference between the two amounts (<b>In</b> and <b>Out</b>), divided by the higher count, tells you the precision of counts. Using the example below <math>(\text{Out } 956 - \text{In } 948) = 8</math> missed counts out of 956. <math>(8/956 = .0083)</math> is less than 1% missed counts. <div data-bbox="651 1190 958 1276" data-label="Table"> <table border="1"> <thead> <tr> <th colspan="2">Direction IN: <span style="float: right;">Down ▼</span></th> </tr> <tr> <th>Out</th> <th>In</th> </tr> </thead> <tbody> <tr> <td>956</td> <td>948</td> </tr> </tbody> </table> </div> </li> <li>Clicking <b>Reset Count</b> is like resetting the trip odometer in a car. The total tracked mileage is NOT reset to 0, just the instance of the trip. Clicking <b>Reset Count</b> sets the displayed values of the current counts in the <b>Live View</b> and <b>Setup</b> tabs. Historical data is not changed when the counts are reset.</li> </ul>	Direction IN: <span style="float: right;">Down ▼</span>		Out	In	956	948
Direction IN: <span style="float: right;">Down ▼</span>							
Out	In						
956	948						
<b>Setup</b>	Where your setup up the <b>Person Size</b> , position the counting line, and tune the application for higher accuracy.						
<b>Help</b>	Provides basic information about the application environment where Internet is not available.						
<b>Save</b> button	Save your setup settings.						

**Table 2. (Continued)**

Tab/button	Description and usage
<b>Restore Defaults</b> button	Restore the configuration to recommended default settings.
<b>License</b> button	View license information. <div data-bbox="412 506 1214 867" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>aimetis</p> <p>Licenses can be retrieved from <a href="http://aimetis.com/xnet">aimetis.com/xnet</a>.</p> <p>Current license key: DTVVQ-6R4J4-KGDVU                      License type: Trial, 150 days                      Issued on: Jan 1 / 2011                      Expires on: May 31 / 2011</p> <p>License Key: DTVVQ-6R4J4-KGDVU  <input type="button" value="Submit"/> <input type="button" value="Back"/></p> <p>The MAC address for this camera is: 00-40-8C-A6-65-6D</p> </div>

## How to Set Up Person Size and Object Line Crossing

The **Person Size** box is a graphical representation of the potential size of a person within the camera scene. You adjust the box in the **Setup** tab. The width of the **Person Size** box is the most important aspect of setting up a correct count. The box should be no less than 1/5 of the screen and no more than 1/3 of the screen. The height of the box has no impact.

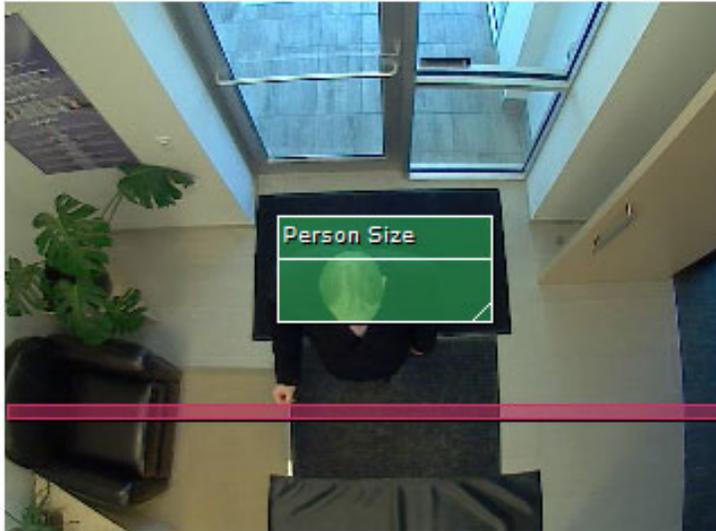


Figure 3. Person size box

### Procedure

#### To setup of the video analytic:

1. Click the **Setup** tab. The image displayed is from a live view.
2. Drag the horizontal red counting line such that it delineates the required area that people will be crossing.
3. Select the direction of people moving from the **Direction IN** drop-down list.
4. Expand the **Person Size** box such that the box is NOT less than 1/5 of the screen and NO more than 1/3 of the screen.
  - Optionally, move the green **Person Size** box over a person (perhaps standing still for a moment) and resize the box such that the box size matches the average person size.
  - You do not have to drag the box over the counting line. The **Person Size** box position is not important. Only its size is important.
5. Click **Save**. If you do not click **Save**, your changes will not take effect. When you click **Save**, the **Person Size** box is placed in the middle of the red counting line.

# How to Generate Reports

You can generate a report (Table or Chart form) based on minutes, hours, days, or months, and **From** and **To** specific dates using a calendar.

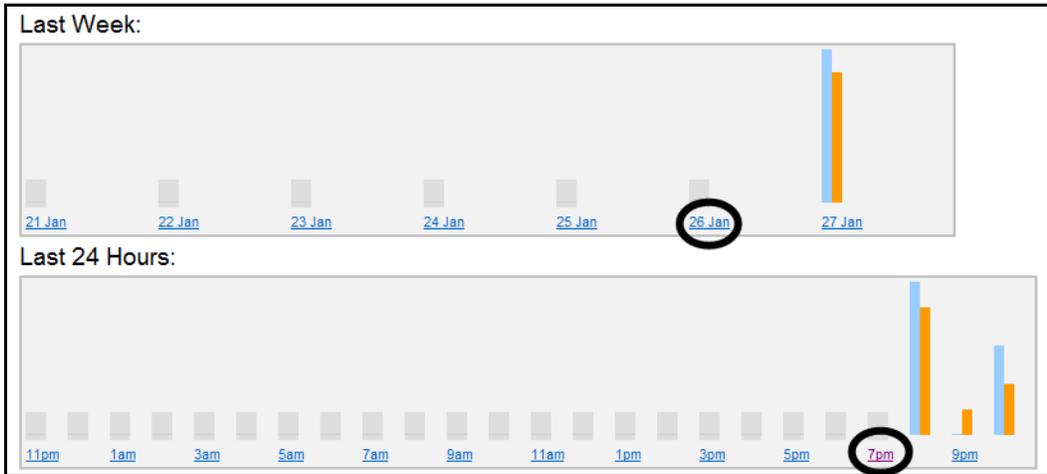


Figure 4. Detailed reports available by clicking on links for Last 24 Hours and Last Week reports

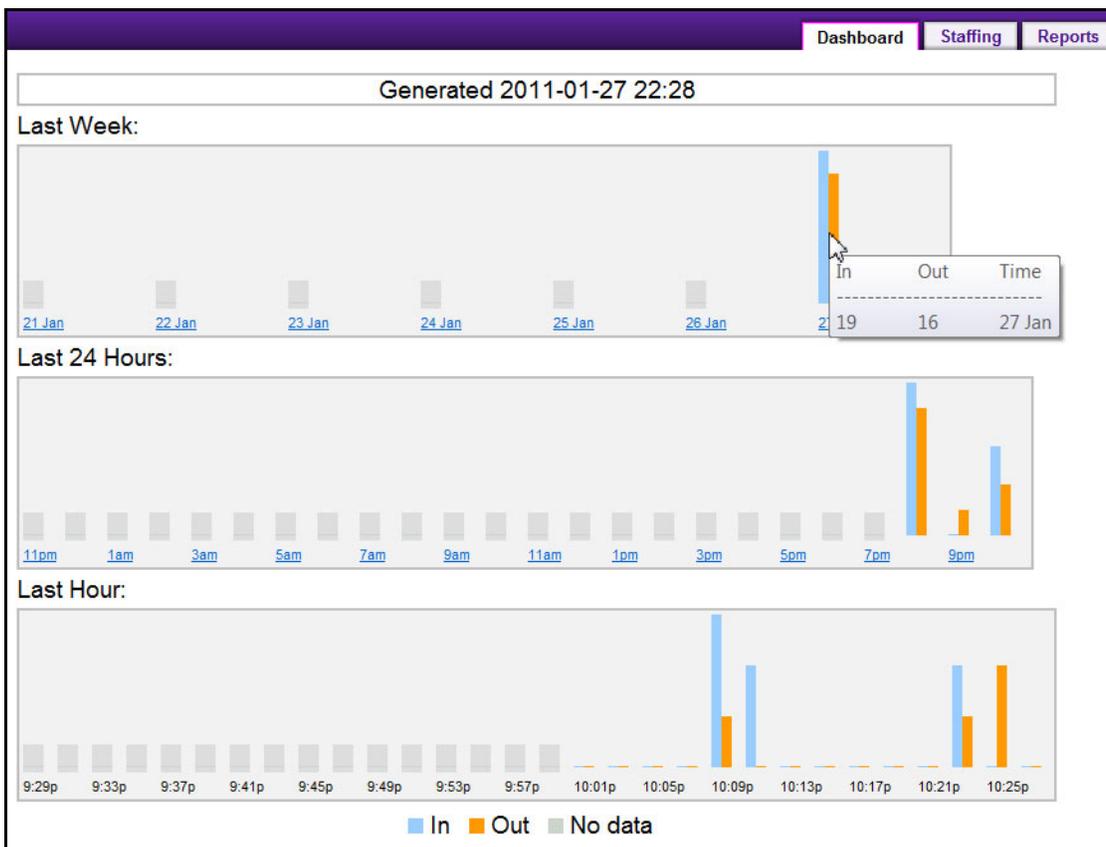


Figure 5. Hover mouse over bar chart for statistics

## Procedure

---

### To generate a report:

1. Click the **Reports** tab.
2. Select a format in which to display the collected data - **Chart** (histogram) or **Table**.
3. Click the **From** and **To** dates to select a date range from the calendars.
4. Select whether to generate a report based on intervals of **Minutes, Hours, Days, Months**.
  - For **Minutes** or **Hours**, select the **From** and **To** hours.
5. Click **Update**. The Chart or Table (format you selected) is displayed.
  - In **Table** format, it might appear that you have incomplete data for the current interval, displayed as **n/a** for “not available.” Click on the **n/a** link. Some data will be available for that interval (minute/hour/day/month).
  - If the interval is too large, an error message is displayed: “This report has too many records (number of records).”

## Procedure

---

### To export the data:

1. After generating your report in **Table** format, click **Export Data**. A file manager opens.
  - If you click **Open** and your computer has MS Excel installed, the data is exported in Excel format. The MS Excel program opens automatically displaying the data in a worksheet. You can then save the data using that program.
  - If you click **Save**, the data is saved as text, comma-separated (.csv). You can open the file with MS Excel or another application for viewing text.

### Power Failure and Correct Counts

Because the Aimetis People Counter saves counters on a hourly basis, there may be up to an hour loss of counter data when a power failure occurs; the lost data will appear in the reports as “n/a” or grey rectangle on charts.

## How to Use the Advanced Options

Most of the time, the default settings on your counter are sufficient, but in special cases you might need to adjust some options.

### Procedure

#### To display the advanced options:

1. Click the **Setup** tab.
2. Select the **Show Advanced Options** check box.
3. For usage, see:
  - [“Table 3. Advanced Options - General and Motion Estimation”](#) on page 18
  - [“Table 4. Advanced Options- Object Width”](#) on page 19
  - [“Table 5. Advanced Options - Object line crossing duration”](#) on page 20

FPS:11.00

Direction IN: Up		In	Out
In	Out	2 minutes ago	2
0	2		

Save Restore Defaults License

7.00 Motion Estimation Sensitivity Threshold (1-most sensitive, 100-least sensitive)

Show Advanced Options

**General**

Enhanced Logging

**Motion Estimation**

Marginalize

**Object Counting**

Consider only contiguous segments

1.00 Object line crossing duration (seconds, 1 to 10)

0.40 Min object width ratio (0 to 1)

0.50 Min object length ratio (0 to 1)

1.70 Max object width ratio (1 to 10)

1.40 Max object length ratio (1 to 10)

Multiple object support in width (side-by-side)

Multiple object support in length (consecutive)

Figure 6. Advanced options visible

**Table 3. Advanced Options - General and Motion Estimation**

<b>Option</b>	<b>Description</b>	<b>Default Setting</b>
Motion Estimation Sensitivity Threshold	Tracks only consistent motion. Increasing this setting will reduce false alarms caused by tree branches and other objects in the background that move randomly because of wind.	4.00
Enhanced Logging	Allows the camera to register all its activities in the form of logs (for debugging and troubleshooting purposes). It can, however, impact performance. It is recommended that you leave enhanced logging off (unselected).	Off
Marginalize	When this option is selected, the video engine becomes less sensitive to varying colors. As a result, the speed of computational process increases but counting accuracy is lowered. This option was specially created for the Aimetis development team. It is recommended that you leave this option off (unselected).	Off
Consider only contiguous segments	It is highly recommended that you keep this option off (unselected). The video engine is far more robust with this option turned off. If the environment in which you are attempting to count specific objects is extremely noisy with a variety of moving objects, you could turn this option on (selected); however, be aware that it may result in multiple counts for one object.	Off

Table 4. Advanced Options- Object Width

Option	Description	Default Setting
Multiple object support in width (side-by-side)	<p>Used in cases where more than one person can be crossing the line side-by-side. This feature prevents the video engine from counting a group as one person.</p> <p>If the option is off (unselected), then a group of people will be counted as one person.</p> <p>Also, if the option is off (unselected), the value in the <b>Max Object Width Ratio</b> option becomes irrelevant.</p>	On
Min object width ratio	<p>Establishes the minimum acceptable width, with respect to the <b>person size box</b>, the video engine should take into consideration in order to recognize a moving object. The default value 0.40 means that the smallest person will populate at least 40% of the box width. If a person is less than this range (smaller than 40% of the box width) the video engine will ignore that person.</p>	0.40
Max object width ratio	<p>Note: <b>Multiple object support in width</b> must also be enabled.</p> <p>The default value 1.70 means that the biggest possible person should not exceed the person size box by 1.7 times, that is, a ratio of 1 person to 1.7 times the size of the <b>person size box</b>. If a person with a width of 3 times the <b>person size box</b> walks through the counting line, the video engine will recognize the person as two people.</p> <ul style="list-style-type: none"> <li>• Increase this number if one person is being counted as two side-by side-people.</li> <li>• Decrease this number if two side-by-side people are being counted as one person.</li> </ul>	1.70

Table 5. Advanced Options - Object line crossing duration

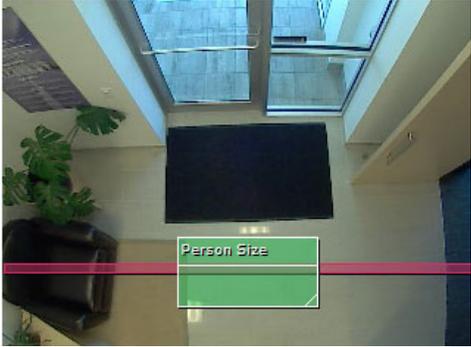
Option	Description	Default Setting
Object line crossing duration (seconds, 1 to 10)	<p>Defines the object length in the time dimension: the time it takes for an object to cross the line.</p> <ul style="list-style-type: none"> <li>• Increase this number if one person is counted as two back-to-back people.</li> <li>• Decrease this number if two back-to-back people are counted as one person.</li> </ul>	1.00
Multiple object support in length (consecutive)	<p>Used in cases where more than one person can be crossing the line, that is, people following each other in tandem, with little gap in between individuals. This feature prevents the video engine from counting a group as one person.</p> <p>If the option is off (unselected), then a group of people will be counted as one person.</p> <p>Also, if the option is off (unselected), the value in the <b>Max Object Length Ratio</b> option becomes irrelevant.</p>	On
Min object length ratio	<p>The ratio of time (with respect to <b>Object line crossing duration</b>) that is required to detect an object. For example, assuming 10 FPS analysis rate, enough motion must be detected in at least 2 consecutive frames in order to count a person (as well as in at least 4 pixels width).</p> <ul style="list-style-type: none"> <li>• Increase this number if one person walking at regular speed is counted as two people.</li> <li>• Decrease this number if people are walking very quickly and no one is counted.</li> </ul>	0.50
Max object length ratio	<p>The ratio of time (with respect to <b>Object line crossing duration</b>) that is required to consider that a <i>new</i> object is coming behind without any gap.</p> <p>Example: If people are walking with strollers/shopping carts, try a ratio of 2.5 so that the stroller/cart is not counted as another person.</p> <ul style="list-style-type: none"> <li>• Increase this number if one person is counted as two back-to-back people.</li> <li>• Decrease this number if two back-to-back people are counted as one person.</li> </ul>	1.40

# Troubleshooting

Table 6. How to resolve issues

Problem	Reason	Fix
False counts	Shadows	<p>Shadows can generate false counts, for example, sunlight from outside, occasionally obscured by moving clouds will cause shadows to cross a counting line. Depending on the angle of an indoor light or the sun, the shadows of people walking by (but not crossing) a counting line can trigger false counts.</p> 
	<p>Incorrect camera placement. In this example, the opening and closing of the door may cause false counts.</p> 	<p><b>How to tell if you have set the camera height correctly:</b>            The <b>Person Size</b> box should be no more than 1/3 the size of the screen and no less than 1/5 of the size of the screen.</p>

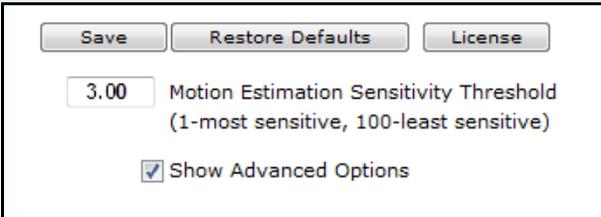
Table 6. How to resolve issues (Continued)

Problem	Reason	Fix
	<p>Incorrect counting line placement. For example, this counting line is too close to the door.</p> 	<p>In general, it is better to put the counting line further away from the door, so that people do not stop on the counting line.</p> 
<p>Multiple counts for the same person</p>	<p>Person size is set too small</p>	<p>Increase the <b>Person Size</b> box. The <b>Person Size</b> box should be no more than 1/3 the size of the screen and no less than 1/5 of the size of the screen.</p>
<p><b>CPU is too busy</b> message</p>	<p>Not enough processing resources. Indicated by lower FPS rate.</p>	<ul style="list-style-type: none"> <li>• Ensure that Motion Detection is turned off.</li> <li>• Limit the <b>Maximum frame rate</b> to 11 FPS per viewer:             <ol style="list-style-type: none"> <li>1. In the <b>Axis Network Camera</b> screen, click <b>Setup</b>. The <b>Basic Setup</b> screen opens.</li> <li>2. In the left pane, click <b>Video &amp; Audio</b>. The <b>Video Stream Settings</b> screen opens with the <b>Image</b> tab active.</li> <li>3. In the <b>Video Stream</b> section, select the <b>Limited to</b> option. Enter <b>11</b> in the text box.</li> <li>4. Click <b>Save</b>.</li> </ol> </li> <li>• Ensure that the Aimetis People Counter is the only application running on the camera at the time. To verify how many applications are running:             <ol style="list-style-type: none"> <li>1. In the <b>Axis Network Camera</b> screen, click <b>Setup</b>. The <b>Basic Setup</b> screen opens.</li> <li>2. In the left pane, click <b>Applications</b>. The <b>Application Packages</b> screen opens.</li> <li>3. Review all the applications listed under the <b>Application</b> column and check whether they are listed as <b>Running</b> under the <b>Status</b> column.</li> <li>4. Select the package and click <b>Stop</b>.</li> </ol> </li> </ul>

**Table 6. How to resolve issues (Continued)**

Problem	Reason	Fix
	<p>(continued)                      Not enough processing resources.                      Indicated by lower FPS rate.</p>	<ul style="list-style-type: none"> <li>• Ensure that the number of client video stream connections is <b>1</b>.</li> </ul> <p>To determine the number of video stream connections:</p> <ol style="list-style-type: none"> <li>1. In the <b>Axis Network Camera</b> screen, click <b>Setup</b>. The <b>Basic Setup</b> screen opens.</li> <li>2. In the left pane, click <b>System Options</b>.</li> <li>3. Click <b>Support</b> and then <b>System Overview</b>. The <b>System Overview</b> screen opens.</li> <li>4. In the <b>Connected clients</b> row, the value beside <b>Video</b> indicates the number of streams.</li> </ol> <div data-bbox="800 905 1409 1226" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>System Overview</b></p> <p>Firmware version: 5.11.2</p> <p>IP address: 10.234.2.12 (static)</p> <p><b>Connected clients:</b> 2 Video 0 Audio <a href="#">(View log)</a></p> <p>Recently used bandwidth: 13.83 Mbit/s</p> <p><b>Security</b></p> <p>Defined users: 1      Anonymous access: Disabled</p> <p><b>Optional Network Services</b></p> </div>
<p><b>CPU is too busy</b> message. The Aimetis People Counter is slow when generating reports.</p>	<p>The Aimetis People Counter disables counting due to low CPU speed. Generating a report takes substantial processing power. This is true whether you are generating a report through the Reports tab or programmatically.</p>	<p>If requesting a report programmatically, limit your request to 1 per minute.</p>
<p>Missed counts</p>	<p>Camera not high enough. Consequently people appear larger and to be moving very fast.</p>	<p><b>How to tell if you have set the camera height correctly:</b></p> <p>The <b>Person Size</b> box should be no more than 1/3 the size of the screen and no less than 1/5 of the size of the screen.</p> <p>If you cannot adjust the height of the camera, adjust the zoom on the camera lens.</p>

**Table 6. How to resolve issues (Continued)**

Problem	Reason	Fix
	Person size is set too big	Reduce the <b>Person Size</b> box. The <b>Person Size</b> box should be no more than 1/3 the size of the screen and no less than 1/5 of the size of the screen.
	Black mat on floor with person in dark clothing crossing counting line 	Reduce the <b>Motion Estimation Sensitivity Threshold</b> option to 3 or 4 in the <b>Advanced Options</b> section. 

## Moving the Camera

If you power off and move the camera to another location, the **Aimetis People Counter** will automatically restart when the camera is powered on again.

However, resize the **Person Size Box** to adjust for people size at a potentially new height and sensitivity (light, floor reflections). See [“How to Set Up Person Size and Object Line Crossing”](#) on page 14.



### Example 1:

#### Camera CPU is too busy error message displayed.

The screenshot shows the Aimetis web interface in Internet Explorer. At the top, a red error banner reads: "Camera CPU is too busy! Check the manual for ways decrease CPU usage." Below the banner is a live video feed of a hallway with a sign that says "Person Size". A red arrow points from the error message to the FPS value "FPS:7.66" in the bottom left corner. The interface also includes a navigation menu (Dashboard, Staffing, Reports, Live View, Setup, Help) and a data table for direction counts.

Direction IN:		Out	In
Out	In	12 minutes ago	1
956	948	13 minutes ago	1
		13 minutes ago	1
		16 minutes ago	1

**Issue:** In this example, the **FPS** of 7.66 is too low. It should be running at 11 FPS or higher.

**Note:** FPS rate displayed only if the **Show Advanced Options** check box has been selected.

**Solution:** See "Table 6. How to resolve issues" on page 21 for all solutions related to **CPU is too busy** message.

- "Ensure that Motion Detection is turned off." on page 22
- "Limit the Maximum frame rate to 11 FPS per viewer:" on page 22
- "Ensure that the Aimetis People Counter is the only application running on the camera at the time. To verify how many applications are running:" on page 22
- "If requesting a report programmatically, limit your request to 1 per minute." on page 23

**Example 2:**

**People with shopping carts not counted correctly.**

**Solution:**

In the **Advanced** options **Object Counting** section, change the Max object length ratio to 2.50. This will account for the person plus the shopping cart.

## Collecting Data Remotely from the Aimetis People Counter

The following (“[Script](#)” on page 28) is a sample script for extracting counter data from the Aimetis People Counter application running on an Axis camera.

The script uses the **Wget** utility program for performing HTTP requests to the Axis camera.

A brief description of **Wget** can be found here: <http://en.wikipedia.org/wiki/Wget>

### Structure of the HTTP Request

```
http://<CamIP>/local/VE170/rep.csv?<Query>
```

Where:

- **CamIP** is the IP of the Axis camera
- **Query** defines the detail level and period for the counter data to be extracted

The query follows the standard rules for any HTTP query. The following fields can be used:

- **StartYear**
- **EndYear**
- **StartMonth**
- **EndMonth**
- **StartDay**
- **EndDay**
- **StartHour**
- **EndHour**
- **DetailLevel**

All field values for date-time boundaries are inclusive, that is, data extracted for **StartDay=2&EndDay=4** includes the days 2, 3 and 4.

**Month** field value is 1 to 12, that is, **January=1, February=2, ... December=12**.

**Hour** field value is 0 to 23 corresponding to 12 am to 11 pm.

Possible values for **DetailLevel**

- **S**, the data is detailed for every minute
- **H**, hour
- **D**, day
- **M**, month
- **Y**, year

## Script

Copy and paste the following text into a **.bat** or **.cmd** file (Windows).

```
@rem Pull counter data from the Aimetis Embedded People Counter
```

```
@if "%1" == "" goto LbUsage  
@set VE170_IP=%1
```

```
@if "%2" == "" goto LbUsage  
@set VE170_User=%2
```

```
@if "%3" == "" goto LbUsage  
@set VE170_Pass=%3
```

```
@if "%4" == "" goto LbUsage  
@set VE170_Year=%4
```

```
@if "%5" == "" goto LbUsage  
@set VE170_MonthStart=%5
```

```
@if "%6" == "" goto LbUsage  
@set VE170_MonthEnd=%6
```

```
@if "%7" == "" goto LbUsage  
@set VE170_DayStart=%7
```

```
@if "%8" == "" goto LbUsage  
@set VE170_DayEnd=%8
```

```
@if "%9" == "" goto LbUsage  
@set VE170_HourStart=%9
```

```
@shift  
@if "%9" == "" goto LbUsage  
@set VE170_HourEnd=%9
```

```
@shift  
@if "%9" == "" goto LbUsage  
@set VE170_DetailLevel=%9
```

```
@shift
```

```
@if %9 == "" goto LbUsage
@set VE170_OutCSV=%9

@rem Initialize some more vars
@set VE170_OutLog=PullData.log
@rem Put together the HTTP request URL
@set
VE170_URL="http://% VE170_IP%/local/VE170/rep.csv?StartYear=% VE170_Year
% &EndYear=% VE170_Year%&StartMonth=% VE170_MonthStart%&EndMonth=%
VE170_MonthEnd%&StartDay=% VE170_DayStart%&EndDay=% VE170_DayEnd
%&StartHour=% VE170_HourStart%&EndHour=% VE170_HourEnd%&DetailLevel
=% VE170_DetailLevel%"

@echo.
@echo Download data from the Aimetis Embedded People Counter
@echo Camera IP: % VE170_IP%
@echo Start date-time:
% VE170_Year%- % VE170_MonthStart%- % VE170_DayStart%
% VE170_HourStart%:00
@echo End date-time:
% VE170_Year%- % VE170_MonthEnd%- % VE170_DayEnd%
% VE170_HourEnd%:00
@echo Detail level: % VE170_DetailLevel%
@echo file: % VE170_OutCSV%
@echo.

@rem Send request to the camera
@wget --http-user=% VE170_User% --http-passwd=% VE170_Pass%
--output-document=% VE170_OutCSV% --append-output=% VE170_OutLog%
% VE170_URL%

@rem Check result
@if errorlevel 1 goto LbFailed

@echo.
@echo Download Successful; Counter data downloaded to % VE170_OutCSV%
@echo.
@goto LbEnd

:LbFailed
@echo.
@echo Download FAILED; please check % VE170_OutLog%
```

```
@echo.  
@goto LbEnd  
  
:LbUsage  
@echo.  
@echo Usage:  
@echo.  
@echo PullData CamIP User Password Year MonthStart MonthEnd DayStart DayEnd  
HourStart HourEnd DetailLevel OutputCSV  
@rem      % 1 %2 %3  %4 %5  %6  %7  %8  %9  %10 %11  
%12  
@echo.  
@goto LbEnd  
  
:LbEnd
```

## Command for extracting data



### Example 3:

Sample command for extracting data for the period Nov.11 / 2010 11am – Nov.11 / 2010 2pm, with the resolution of 1 minute:

```
PullData 192.168.1.10 user pass 2010 11 11 11 11 11 14 S "2010-11-11 11am-2pm.csv"
```

Output file content:

```
Time,In,Out
11:00a,0,0
11:01a,0,1
11:02a,0,0
11:03a,0,0
...
...
1:33p,0,0
1:34p,3,2
1:35p,0,0
1:36p,n/a,n/a
1:37p,n/a,n/a
1:38p,n/a,n/a
...
...
1:58p,n/a,n/a
1:59p,n/a,n/a
```

**Note:** The **n/a** values indicate that the Aimetis People Counter was not running for the time slots defined on the left. This is an important feature of the people counter application; it keeps track of the periods of time when it was running or not.

## Command for extracting daily data



### Example 4:

Command for extracting daily data:

```
PullData 192.168.1.10 user pass 2010 11 11 10 11 10 12 D "2010-11-10 2days.csv"
```

Output file content:

```
Time,In,Out  
10 Nov,115,117  
11 Nov,41,34
```

**Note:** The output file holds data for Nov.10 and Nov.11 full days, because requested detail level is 'D', the start/end hour parameters are ignored.

## Command for extracting 2 days hourly data



### Example 5:

Command for extracting 2 days hourly data:

```
PullData 192.168.1.10 user pass 2010 11 11 10 11 10 12 H "2010-11-10 2days hourly.csv"
```

Output file content:

```
Time,In,Out
10am,9,10
11am,10,12
12pm,9,8
1pm,12,10
2pm,12,14
3pm,12,9
4pm,15,14
5pm,19,22
6pm,1,1
7pm,1,2
8pm,1,3
9pm,0,0
10pm,0,0
11pm,0,0
12am,0,0
1am,0,0
2am,0,0
3am,0,0
4am,0,0
5am,0,0
6am,0,0
7am,0,0
8am,7,3
9am,7,5
10am,11,9
11am,6,6
```

**Note:** The output file holds data between Nov.10, 10am – Nov.11, 11am because the requested detail level is 'H'.

## Command for extracting 2 months daily data



### Example 6:

Command for extracting 2 months daily data:

**PullData 192.168.1.10 user pass 2010 10 11 11 11 10 12 D "2010-11-11 2months daily.csv"**

Output file content:

```

Time,In,Out
11 Oct,n/a,n/a
12 Oct,n/a,n/a
13 Oct,n/a,n/a
14 Oct,n/a,n/a
15 Oct,n/a,n/a
16 Oct,n/a,n/a
17 Oct,n/a,n/a
18 Oct,n/a,n/a
19 Oct,n/a,n/a
20 Oct,n/a,n/a
21 Oct,n/a,n/a
22 Oct,n/a,n/a
23 Oct,n/a,n/a
24 Oct,n/a,n/a
25 Oct,2048,1187
26 Oct,3137,3223
27 Oct,378,2707
28 Oct,111,116
29 Oct,130,126
30 Oct,0,0
31 Oct,0,0
01 Nov,177,184
02 Nov,134,130
03 Nov,158,164
04 Nov,86,85
05 Nov,87,87
06 Nov,18,18
07 Nov,0,0
07 Nov,115,113
08 Nov,157,152
09 Nov,115,117
10 Nov,42,36
11 Nov,n/a,n/a

```

**Note:** Data shows that the application did not run for the period Oct.11-Oct.24. Nov.11 data is incomplete; therefore, it is **n/a** as well.

## Command for extracting monthly data



### Example 7:

Command for extracting monthly data:

```
PullData 192.168.1.10 user pass 2010 10 11 11 10 12 M "2010-11-11 2months.csv"
```

Output file content:

```
Time,In,Out  
October,5804,7359  
November,1088,1084
```

**Note:** The output file holds data for October and November full months, because requested detail level is 'M', the start/end day & hour parameters are ignored.

## Command for resetting counters



### Example 8:

Command for resetting counters:

```
http://<CamIp>/local/VE170/reset_counters.cgi
```

where **<CamIp>** with the camera IP.

If using a browser, user might be prompted to enter user name and password.

If using Wget, enter the following command:

```
wget --http-user=<user> --http-passwd=<pass> http://<CamIp>/local/VE170/reset_counters.cgi
```

where **<CamIp>** with the camera IP

**Important:** This command does not change the counter data stored internally by the APC, only the display feature.

## Legal

Copyright © 2013 Aimetis Inc. All rights reserved.

This guide is for informational purposes only. AIMETIS MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS DOCUMENT.

Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Aimetis Corp.

Aimetis may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Aimetis, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

Aimetis and Aimetis Symphony are either registered trademarks or trademarks of Aimetis Corp. in the United States and/or other countries.



**Important:** We are using the Slider in accordance with Section 4 **Redistribution** of the Apache License, Version 2 (<http://webfx.eae.net/license/asl2>).

---