

Manual – TrueView People Counter™ for Windows

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Document history

January 22, 2007 1.00	Initial version
April 30, 2007 1.1	Changes for People Counter version 1.1
June 8, 2007 1.1.2	Describes activation, no CamID
July 27, 2007 1.1.5	Property sheets for options dialog
Aug 13, 2007 1.1.5.2	Definition of SQL table
Dec 17, 2007 1.1.9	Autostart

Overview

TrueView People Counter™ for Windows is a stand alone software for the Windows operating system running on standard PCs. The software is intended for shops and other indoor environments where you need to count people. It allows you to connect a single (network or USB) camera to a PC or a POS system. TrueView People Counter™ is equipped with several powerful features such as

- 1) **Two ways counting** – the module simultaneously differentiates and counts people moving upwards and downwards in the camera's field of view.
- 2) **Reporting** – seamless integration with TrueView Report™, a statistical software package for viewing and exporting historical data that can be installed on your PC.
- 3) **Web Reporting** – automatically export all counting to SQL server from all TrueView People Counter™ in your system. This functionality requires a dedicated server running TrueView Web Report™.
- 4) **Adjustable counting line** – set if people should be counted when passing a virtual line in the middle of the image, further up in the image or further down in the image.

Easy to set up, with this software you can instantly monitor your customers per hour, day or week over the network. Integrated with your network, it supports your staff planning and entrance management. With the TrueView People Counter™ you may collect data such as customer flows, trend analyses, evaluation of advertising and promotions and enhance your strategic marketing decisions through effective monitoring of customer traffic. Improve your network video surveillance system with new cost-efficient possibilities.

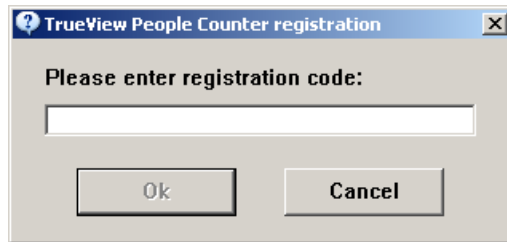
There are two ways to use the data from the TrueView People Counter™, either monitor the real-time data feed, or by viewing or exporting the historical data when needed.

Installation

- 1) Install a single camera to your PC according to the instructions from the manufacturer. You can use any camera that has a DirectShow driver, whether it is a network camera, USB connected web camera or an analog camera together with a frame grabber. If you want to use an Axis network camera together with People Counter, please install this DirectShow filter on your PC:
<http://face.cognimatics.com/~trobro/CognimaticsNetCam.msi>
- 2) Install TrueView People Counter™ on your computer by double clicking the installation file and go through the guided installation process. In some distributions TrueView Report™ is also installed.
- 3) Fasten the camera tightly to the ceiling at a height of at least 3.5 meters above the floor (*This depends on the type of lens and camera used. The persons must be at least 30 pixels wide and not cover more than 50 % of the image width*). The camera lens should be facing straight down. Make sure that the camera focus is set to make people below the camera as sharp as possible.
- 4) Start TrueView People Counter™ from the Start menu by pressing **Start** in the bottom left corner of your screen, then **all programs -> TrueView People Counter -> Count**. (If this is the first time you start the application, please read chapter **Product activation**).
- 5) You should now see the video images from the camera. Before using the application, the person size needs to be configured (see chapter called **People size configuration**).
- 6) A red line will appear across the video image when the system is running. If the screen is black, then either the **STOP** button has been pressed or there is no camera.
- 7) Rotate the camera so that the line is perpendicular to the normal walking direction. The line should be where you want to count people.
- 8) The software will count people passing over the red line that runs across the image from left to right. The software differentiate between people passing up or down in the image. This makes it possible for you to get precise knowledge of which direction people are moving.
- 9) Make sure that no doors or similar items are ever crossing the line. If a door is opened towards the camera then place the camera further away from the door.
- 10) Try to avoid placing the camera where it can be subjected to strong direct sun light or reflections.
- 11) Before using the application, the person size needs to be configured (see chapter called **People size configuration**).

Product activation

When starting the application for the first time, a dialog for entering the registration code will be shown. You should have received a registration code from the reseller of the product.



**** IMPORTANT ** Each registration code can only be used once.** Be careful when deciding which computer to install TrueView People Counter on, because you will not be able to change your mind when the application has been installed and you have used up your registration code. If you format your hard drive and install Windows again, you should normally be able to use the same registration code as before when installing TrueView People Counter again on the same computer. But if you change any important hardware in your computer you might need to contact Cognimatics AB for re-activation of the application.

Enter your registration code and press **Ok**. If the registration code was correct you will be shown the activation dialog.



Click on the blue text with the mouse pointer to open that URL in a web browser. Make sure that the **Registration code** and **Installation ID** are the same on the web page as in the activation dialog. Press the button on the web page to see your activation code, enter it into the dialog and press **Ok**.

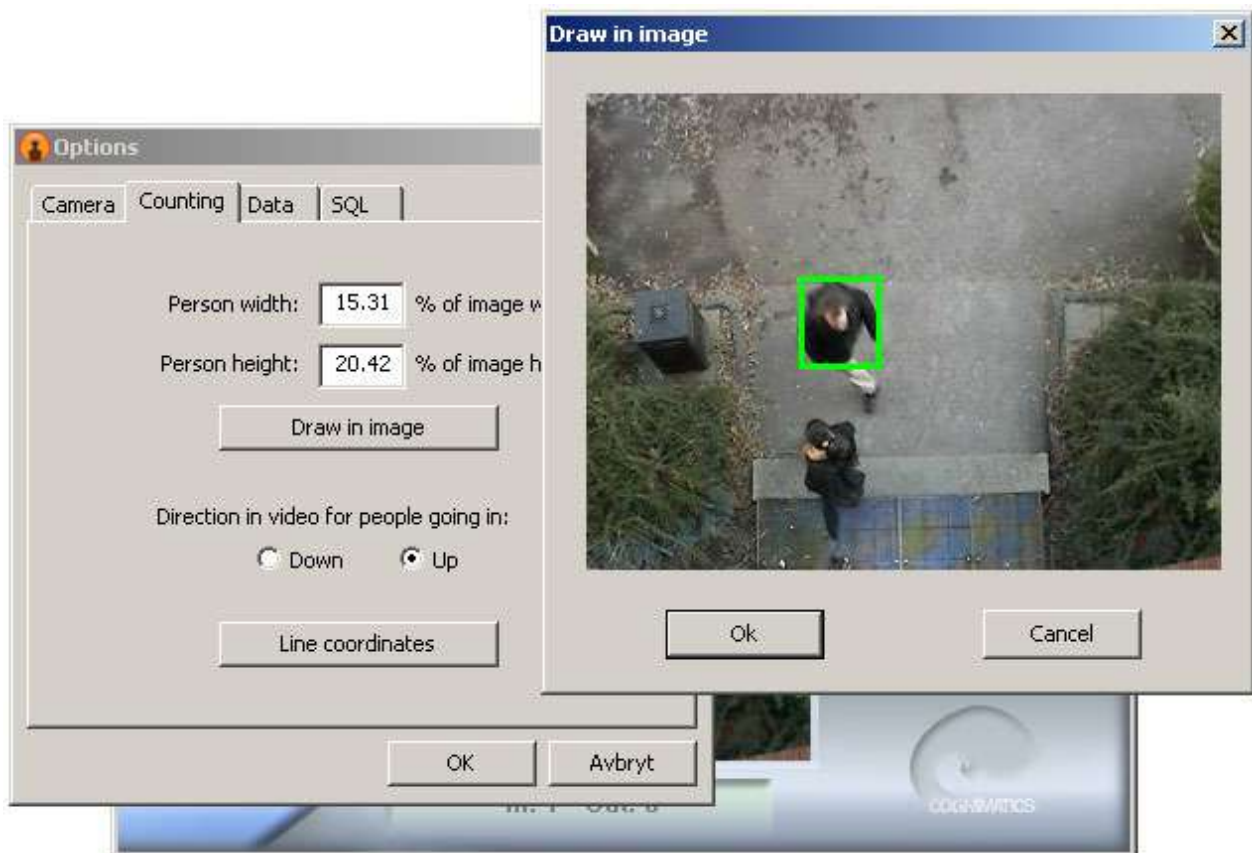
If you intend to use more than one camera on a single PC, you will need to add one more paid license to People Counter for every extra camera. Select **Enable one more camera** from the **License** menu to bring up the registration dialog again.



People size configuration

In order to make TrueView People Counter™ work properly it is important to set the average size of persons to be counted. Press the **OPTIONS** button to bring up the **Options** dialog, select the **Counting** tab. Then there are two different ways to configure the person size:

- 1) Writing the width and height of persons directly in the two edit-boxes.
- 2) You can also configure the person size in a graphical interface. Make sure that a person is under the camera and that the camera is running in People Counter. Select **Draw in image** and a snapshot is taken. If you are not satisfied with the snapshot, press **Cancel** and then **Draw in image** again. Place a green rectangle over the person by moving the mouse pointer to the top left corner of the person, then press and hold the left mouse button, drag the mouse pointer to the bottom right corner of the person and release the left mouse button.



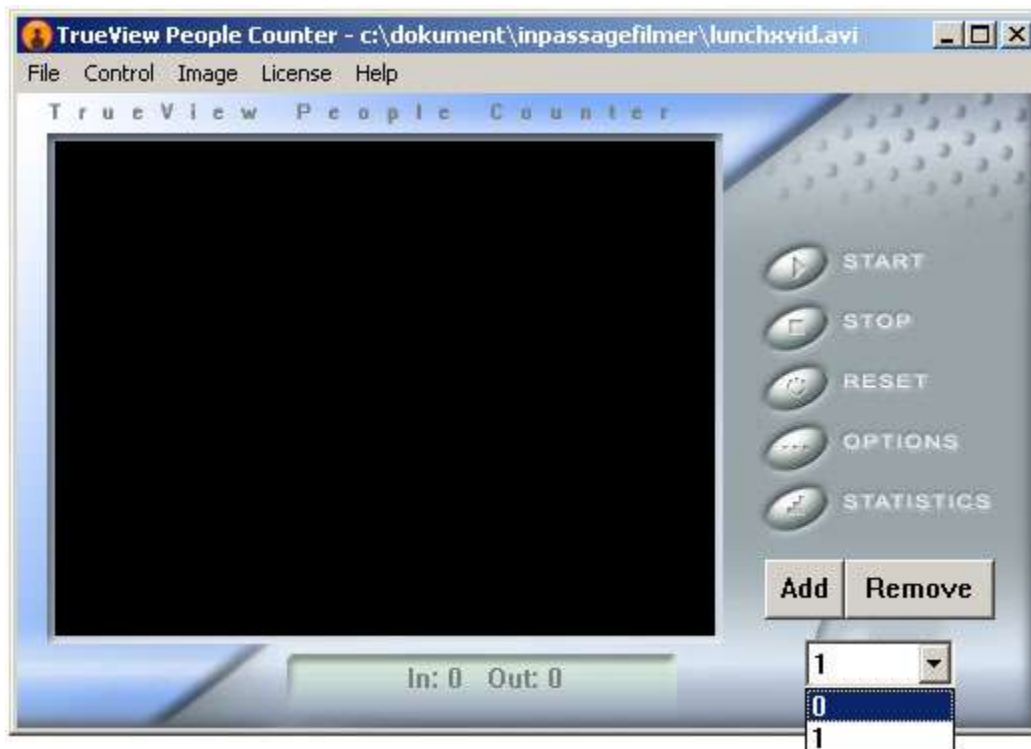
Multiple Cameras

It is possible to have several cameras running at once in the People Counter application, but one paid license per camera is needed. When you start up People Counter for the first time, it will be limited to one camera only and the controls for multiple cameras will not be visible. To enable more cameras, select **Enable one more camera** from the **License** menu and enter another registration code and activation code. The controls for multiple cameras will then become visible and you can have a maximum of two cameras running simultaneously. To increase the maximum number of simultaneous cameras, repeat the process by selecting **Enable one more camera** from the **License** menu again.

The performance of the computer will determine how many cameras it is feasible to have running simultaneously, but it is generally not recommended to have more than four of them. It is theoretically possible to have up to 99 cameras running simultaneously, but more than four will reduce the frame rate for each camera and thus reduce the counting accuracy.

After adding at least one extra license, you can add and remove cameras with the two new buttons in the bottom right corner of the application window. You can switch between visible cameras by using the pull-down menu below the buttons. The counting will be running even if a camera is not visible.

In the **Options** dialog, the first two tabs (**Camera** and **Counting**) contain settings that only affect the currently visible camera. The other two tabs (**Data** and **SQL**) contain settings that affect all of the cameras.



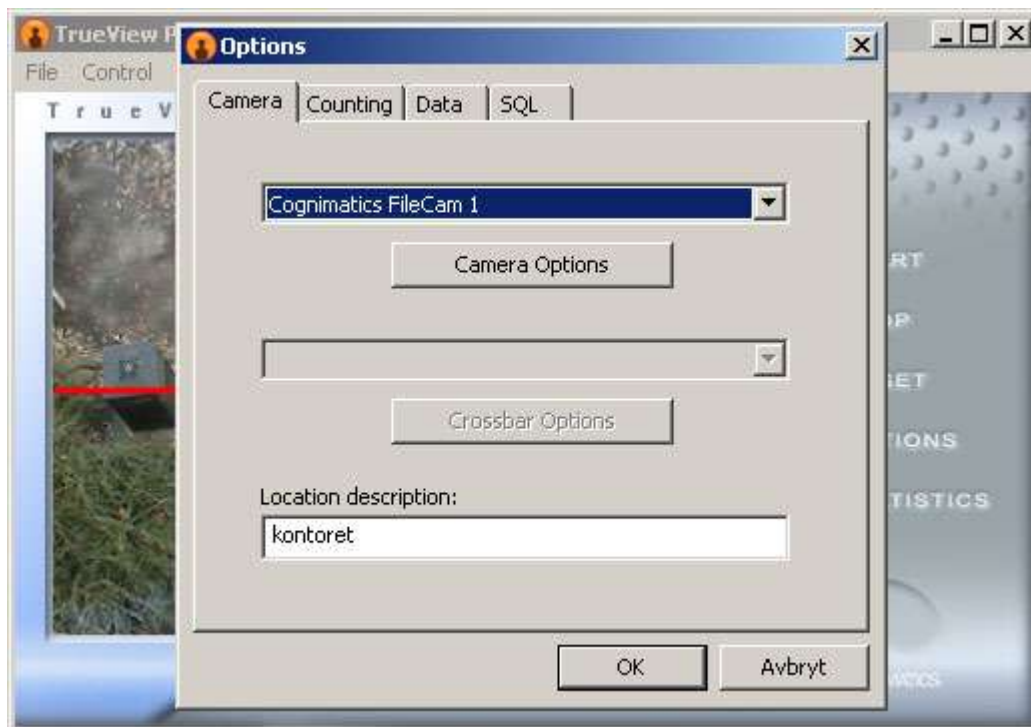
Other configuration

Press the **OPTIONS** button to bring up the **Options** dialog. There are four different tabs to choose between in the top of the options dialog.

Camera:

If you have added extra licenses to People Counter and are running several cameras at once, the settings under the **Camera** tab refer to the currently selected camera (the one that is shown). Camera settings for the other cameras will not be affected, to change them you must select another camera before pressing the **Options** button.

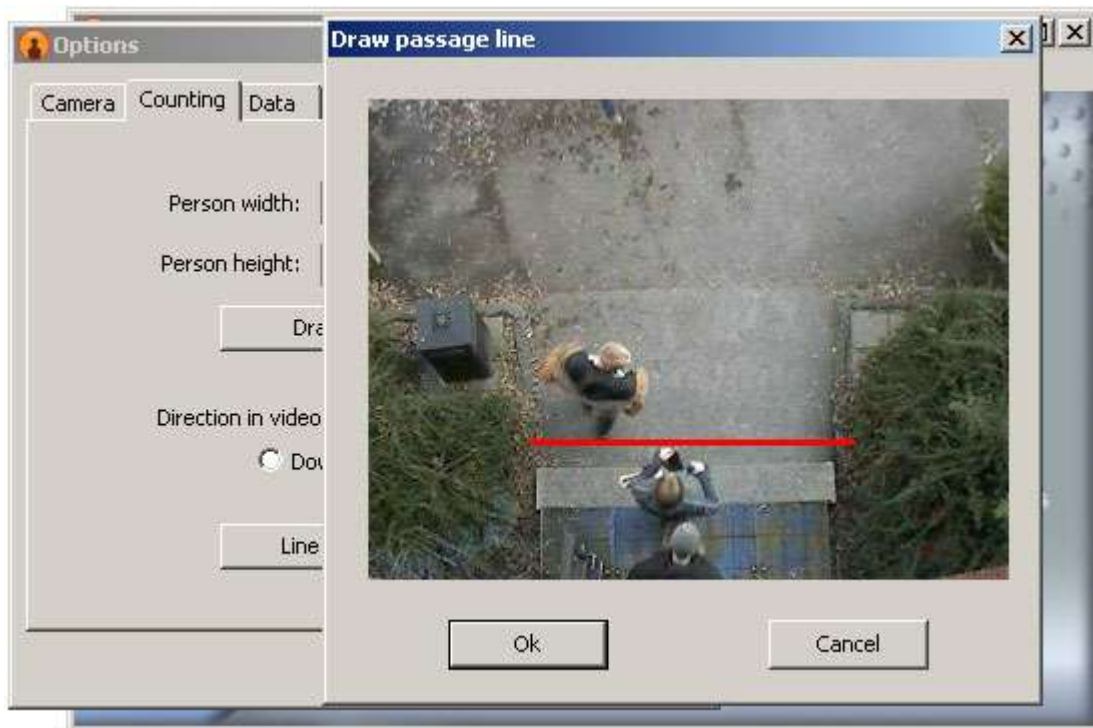
- 1) The uppermost dropdown menu lets you select camera. If no camera is connected to your PC, this option will be disabled. If you want to use an Axis network camera together with People Counter, please install this DirectShow filter on your PC:
<http://face.cognimatics.com/~trobro/CognimaticsNetCam.msi>
- 2) **Camera Options** lets you set options for your selected camera. If no camera is connected to your PC, this option will be disabled.
- 3) **Crossbar Options** lets you set options for any crossbars on your PC. (A crossbar can typically be found on TV or frame grabber cards. It let's you choose between different inputs, e.g. composite or S-Video.) If no crossbar can be found on your PC, this option will be disabled.
- 4) **Location description:** The name of the data set in TrueView Report for data saved from this camera.



Counting:

If you have added extra licenses to People Counter and are running several cameras at once, the settings under the **Counting** tab refer to the currently selected camera (the one that is shown). Counting settings for the other cameras will not be affected, to change them you must select another camera before pressing the **Options** button.

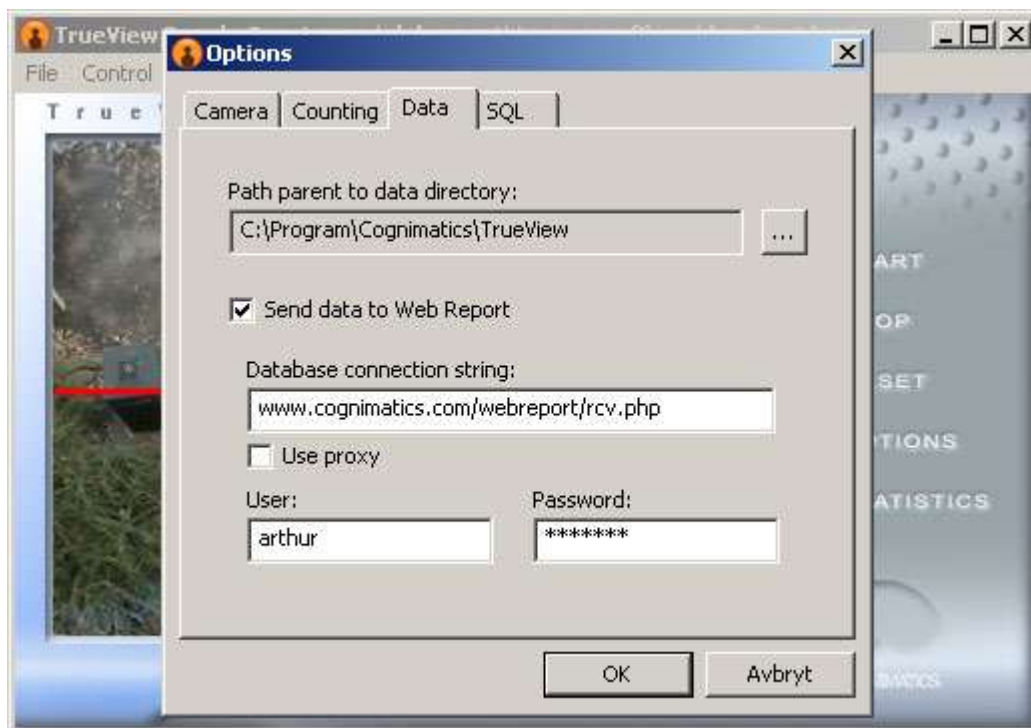
- 1) **Person width:** Average width of persons to be counted, expressed as percentage of the image width.
- 2) **Person height:** Average height of persons to be counted, expressed as percentage of the image height.
- 3) **Draw in image:** Make sure that the camera is running in People Counter. Select **Draw in image** and a snapshot is taken. If you are not satisfied with the snapshot, press **Cancel** and then **Draw in image** again. Place the green square anywhere in the image by moving the mouse pointer to where you want the top left corner of the square to be, then press and hold the left mouse button, drag the mouse pointer to where you want the bottom right corner of the square to be and then release the left mouse button.
- 4) **Direction in video for people going in:** Select whether people going down or people going up in the image should be counted as going in. People going in the opposite direction will be counted as going out.
- 5) **Line coordinates:** Make sure that the camera is running in People Counter. Select **Line coordinates** and a snapshot is taken. If you are not satisfied with the snapshot, press **Cancel** and then **Line coordinates** again. Place the red line anywhere in the image by moving the mouse pointer to where you want the left edge of the line to be, then press and hold the left mouse button, drag the mouse pointer to where you want the right edge of the line to be and then release the left mouse button.



Data:

Settings under the **Data** tab affect all cameras, data from all cameras will be saved in the same file and sent to the same web server.

- 1) **Path parent to data directory:** A subfolder called **data** will be created in the selected parent folder, and in the **data** folder one folder for each camera will be created, containing a file called **Cache.ent** with all the data saved for that camera. Press the “...” button to bring up a folder tree to select the parent folder.
- 2) **Send data to Web Report:** Check this box if you want data to be sent to a Web Report server via HTTP. If not, the settings below this checkbox are irrelevant.
- 3) **Database connection string:** This URL will be called by People Counter to transfer the data to Web Report. The URL will typically end with “/webreport/rcv.php”.
- 4) **Use proxy:** Check this box if you want People Counter to try to use a proxy server when transferring data to Web Report. Will make the data transfer take longer time, but is required in some networks.
- 5) **User:** The Web Report user name that you use to log into Web Report and see the data from People Counter. Different users store data in different tables, therefore it is a requirement to specify the Web Report user here.
- 6) **Password:** Password for the Web Report user.



SQL:

Settings under the **SQL** tab affect all cameras, data from all cameras will be stored in the same database.

The target table in the SQL database must have these fields:

Field	Type	Null	Key	Default	Extra
cnttime	timestamp(14)	YES		NULL	
cntlocation	varchar(100)			NULL	
cntin	int(11)			0	
cntout	int(11)			0	

- 1) **Send data to SQL database:** Check this box if you want data to be sent to an SQL database via the Microsoft ADO layer. If not, the settings below this checkbox are irrelevant.
- 2) **ADO connection string:** A string with instructions for the Microsoft ADO layer regarding how to connect to the database. Example strings:

```
Provider=Microsoft.Jet.OLEDB.4.0;Data Source=c:\\database.mdb;
```

The string above will store data in a Microsoft Access file found at “c:\\database.mdb”. You need to create the database file with Microsoft Access first, but the table will automatically be created by People Counter.

This is a typical MySQL connection string:

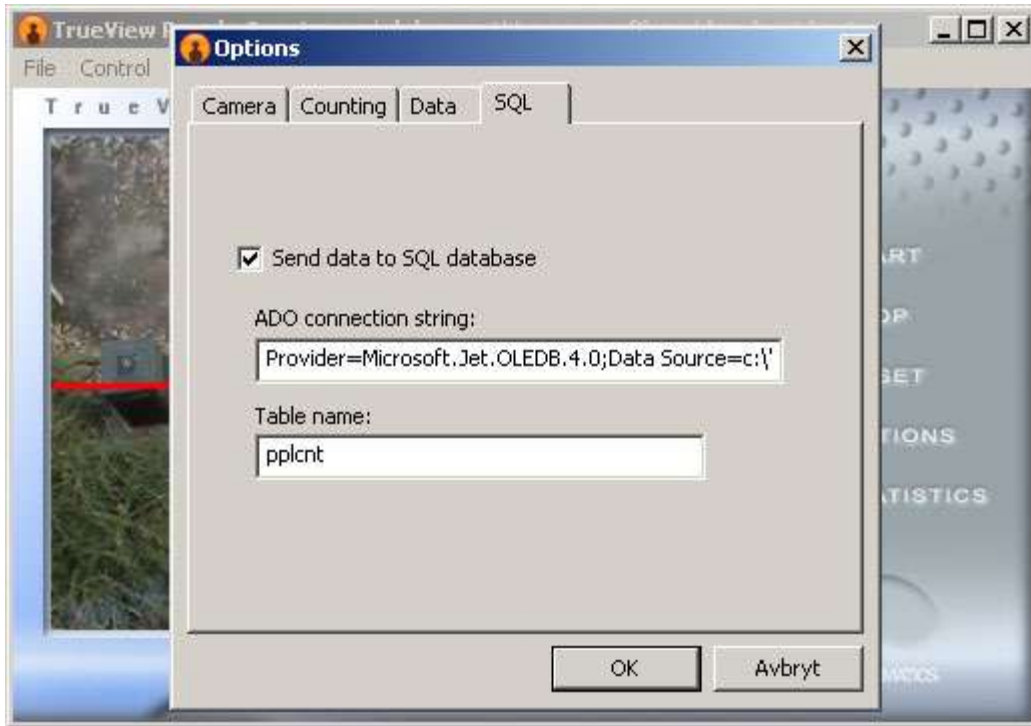
```
DRIVER={MySQL ODBC 3.51  
Driver};SERVER=some.server.com;DATABASE=db;UID=username;PWD=password;
```

The string above will connect to a MySQL server found at “some.server.com” using the MySQL ODBC driver that can be downloaded here:

<http://mysql.org/downloads/connector/odbc/3.51.html>

The ODBC driver above must be installed in order to enable a MySQL connection. The database specified in the connection string must already exist, but People Counter can automatically create the table if the account has the necessary permissions (grants).

- 3) **Table name:** Name of the table in which data from People Counter will be stored.



Counting

- 1) Select **START** to the right of the image to start counting. Video from the camera will be displayed, and a red line should appear across the video image, indicating the system is calibrated and ready to use. The number of registered passages is presented under the image. Data will be saved to disk every fifth minute.
- 2) Select **STOP** to the right of the image to stop counting. The camera will be turned off and the screen will turn black. Data will instantly be saved to disk whenever the counting is stopped.
- 3) Select **RESET** to the right of the image to set the counter to zero. This will not affect the data that is saved to disk (and can be viewed in TrueView Report™). The only way to reset data saved to disk is to manually delete the data file.

Statistics

Please see the manual for TrueView Report™ or TrueView Web Report™ for information about the statistics.

Autostart in system tray

During installation, a shortcut to TrueView People Counter™ is created in the **Startup** folder in the **All Programs** folder on the Windows start menu. People Counter will start each time the user logs in, and be minimized to the system tray so that the application does not require any attention from the user. If you wish to stop People Counter from starting automatically, just remove the shortcut **People Counter minimized** from the **Startup** folder. It can later be restored by copying the shortcut **Count minimized** from the **TrueView People Counter** folder in the **All Programs** folder on the Windows start menu.

Troubleshooting

- 1) If the graph in TrueView Report™ is not updated, close the application and then open it again.
- 2) If you can not see any video in TrueView People Counter™, then please uninstall all cameras from the PC and then install a single camera from the list of supported camera equipment.
- 3) If the application sometimes counts people twice, increase person width and/or height settings in the **Options** dialog.
- 4) If the application doesn't count all of the people that pass by under the camera, reduce person width and/or height settings in the **Options** dialog.
- 5) If sharp shadow edges are visible in the camera view then the count accuracy might be less than what it normally is.
- 6) If you want to use an Axis network camera together with People Counter, please install this DirectShow filter on your PC: <http://face.cognimatics.com/~trobro/CognimaticsNetCam.msi>

System requirements

- 1) At least Intel Pentium IV, Core 2 or equivalent CPU.
- 2) CPU speed at least 1.4 GHz for one camera.
- 3) At least 128 MB RAM for Win2000, 256 MB RAM for WinXP and 512 MB RAM for Vista.
- 4) Microsoft Windows 2000, XP or Vista.
- 5) At least 10 MB available free hard disk space.