EvolvePlus Pty Ltd

Wireless People Counter With Remote Data Viewing

Installation Guide & Operating Instructions

Models: PRx20W1 – PTx20
PRx10W1 – PTx10

Version Date: March 2016

Table of Contents

Overview – PRx20W1 – PTx20-1 (Bi-directional)

The PRx20W1 - PTx20-1 is bi-directional people counter. The principle is based on the interruption of a horizontal infrared beam.

The transmitter PTx20-1 transmits the infrared beam to the receiver "PRx20W1". When this infrared beam is interrupted, e.g. by a person, the receiver detects this and will increase the internal counter.

The PRx20W1 is direction sensitive, which means that counts in both directions are captured and stored/transmitted separately. Distortion or a blocked counter is also reported.

The counter can run for approximately 1 year on a set of batteries without compromising the counting distance.

The captured sensor data from the PRx20W1 will find its way to the Sensor Server software through the universal gateway SNG10E device. The presentation of the captured sensor data can be viewed on a PC's Internet Browser. The count data provided allows for easy statistical count reporting across year/day/month/day/hour time periods.

Overview – PRx10W1 – PTx10-1 (Uni-directional)

The PRx10W1 – PTx10-1 is uni-directional people counter. The principle is based on the interruption of a horizontal infrared beam.

The transmitter PTx10-1 transmits the infrared beam to the receiver "PRx10W1". When this infrared beam is interrupted, e.g. by a person, the receiver detects this and will increase the internal counter.

The PRx10W1 is not direction sensitive, which means that counts in both directions are captured and stored/transmitted together. Distortion or a blocked counter is also reported.

The counter can run for approximately 4 years on a set of batteries without compromising the counting distance.

The captured sensor data from the PRx10W1 will find its way to the Sensor Server software through the universal gateway SNG10E device. The presentation of the captured sensor data can be viewed on a PC's Internet Browser. The count data provided allows for easy statistical count reporting across year/day/month/day/hour time periods.

Specifications

Mechanical

Dimensions	116.4 x 68.6 x 22.3 mm
Material	ABS black

Electrical

Power supply	2 x 1.5V AA
Battery life	
• PRx20W1 & PTx20-1	up to 2 years
• PRx10W1 & PTx10-1	up to 4 years

Power consumption	
• PRx20W1 & PTx20-1	approximately 120uA
• PRx10W1 & PTx10-1	approximately 60uA

Maximum counting distance between counters	
• PRx20W1 & PTx20-1	Up to 6 m feet (unobstructed)
• PRx10W1 & PTx10-1	Up to 8 m feet (unobstructed)

Available RF frequency	915 MHz (optionally available in 868 MHz and 2.4 GHz)
Wireless range to SNG10E	20 to 30 m (unobstructed)

Delivered content

- Wireless Receiver (PRx20W1 or PRx10W1)
- Wireless Transmitter (PTx20-1 or PTx10-1)
- Magnet key hanger
- Screwdriver
- 2 x Screws to lock covers
- 2 x Mounting plate
- 4 x 1.5v AA Battery
- Quick installation guide

Installation of Wireless Counters

1. Unpack and check included parts:

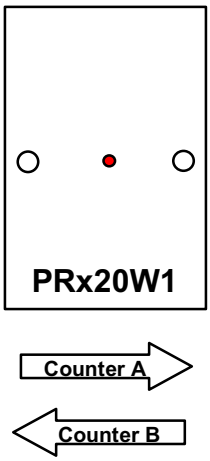
- PRx20W1 or PRx10W1 (Receiver)
- PTx20-1 or PTx10-1 (Transmitter)
- Magnet keyhanger
- Screwdriver
- 4x AA Alkaline batteries
- Quick installation guide

2. Place the batteries

- Use the screwdriver to open the case and place the batteries in the PRx20W1/PTx20-1 or PRx10W1/PTx10-1.
- Check the polarity when placing the batteries.
- When the batteries are placed into the PTx20-1 or PTx10-1 the red LED at the front will blink twice meaning a startup.
- On the PRx20W1 or PRx10W1 the red LED will blink once when placing the batteries.

3. Determine the direction (Internal Counter A and Counter B) - PRx20W1 ONLY

The PRx20W1 has two counters inside, one for each direction described as Counter A and Counter B. The drawing below displays the direction for each counter:



4. Counter alignment

NOTE: Correct alignment should be achieved before permanent mounting.

- The receiver contains an alignment feature which helps you to point the transmitter to the receiver.
- The PRx20W1 or PRx10W1 must receive the infrared beam being transmitter from the PTx20-1 or PTx10-1. Therefore, the 2 units must be mounted directly in line with each other.
- To enable the alignment mode slide the magnet on the top of the receiver (PRx20W1 or PRx10W1).

- When the red LED on the PRx20W1 or PRx10W1 is constantly illuminated, the two units facing each other are properly aligned.
- The alignment mode automatically stops after 1 minute. The mode can be stopped manually by sliding the magnet over the PRx20W1 or PRx10W1 again.

Accuracy of the People Counter

The accuracy of the counter will be higher when the distance between the transmitter and receiver gets smaller. When one or more persons pass the infrared beam at once, the People Counter will increase the count value by one.

5. Positioning the Receiver and Transmitter

- Place the PRx20W1 and PTx20-1 (or PRx10W1 and PTx10-1) opposite each other on a wall or an other steady object
- The PTx20-1 should point to the PRx20W1 **OR** the PTx10-1 should point to the PRx10W1

6 Registering the counter into a Sensor Network Gateway device (SNG10E)

- In order to see counting data the PRx20W1 (or PRx10W1) should be registered to a Sensor Network Gateway device (SNG10E).
- The Sensor Network Gateway device (SNG10E) must be placed in registering mode using the SNG Tool Software. (please refer to the SNG10E manual how to do this)
- Take out the batteries and insert them again, when powering up the PRx20W1 (or PRx10W1) sends a registering call. The PRx20W1 (or PRx10W1) should then appear in the list of the Sensor Network Gateway device (SNG10E).

Positioning of Wireless People Counters

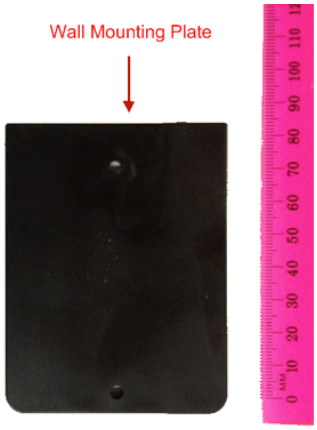
A single set of the People Counters are supplied with 2 units:

- PRx20W1 (or PRx10W1) - Infrared Receiver
- PTx20-1 (or PTx10-1) - Infrared Transmitter

These units needed to be installed facing each other so that the infrared "beam" can be transmitted between the units. The ideally distance between the counter units is up to 4 metres.

The units can be discretely mounted on walls, poles or any other fixed objects. For additional security some organisations mount the units behind walls, with holes drilled into the wall to allow the infrared beam to pass between the transmitter and receiver.

To allow for the easy installation of the PRx20W1 (or PRx10W1) and PTx20-1 (or PTx10-1), the units are supplied with a Mounting Plate.



Detach the mounting plate from the rear of the units by sliding the plate up.

The mounting plate can be attached to the fixed object using the supplied screws.

The units are then attached to the mount plates by sliding back of the units over the mount plates.

Note: in some cases organisations have used double sided Velcro tape to affix units to the fixed objects, which allows them to test the counting distance before attaching the units to the walls with screws.

Troubleshooting

The People Counter does not count
Check the alignment of the PRx20W1 (or PRx10W1) and PTx20-1 (or PTx10-1) or replace the batteries. The PRx20W1 (or PRx10W1) needs to receive the infrared beam from the PTx20-1 (or PTx10-1).

The red LED on the PRx20W1/PRx10W1 is blinking
In this situation the PRx20W1 detects disturbance from the environment. Find the source of this disturbance which could be another infrared source like spot lights.
When disturbance is detected correct counting cannot be guaranteed.

Additional information

Be aware of infrared light from other sources like bright lights and infrared devices. When the PRx20W1 (or PRx10W1)receives infrared from other sources, instead of the PTx20-1 (or PTx10-1), unexpected behaviour could be the result.

Due to the strong field of AM anti-shoplifting systems it is recommended to place the People Counter at least 1 metre away from an AM system.

The measurement width of 5 metre willl be decreased when the infrared signal from the PTx20-1 (or PTx10-1) to the PRx20W1 (or PRx10W1) goes through glass.
To increase the distance the switch on the PTx20-1 (or PTx10-1) can be set to the high position. Note: When the switch is on the high position the battery life will decrease.

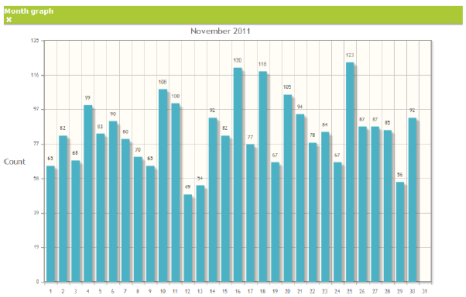
Accuracy of the People Counter
The accuracy of the counter will get higher when the distance between the PRx20W1 (or PRx10W1) and PTx20-1 (or PTx10-1) gets smaller. When more persons interrupt the infrared signal at once the People Counter will increase the count value with one.

Overview –Sensor Network Gateway (SNG10E)

The SNG10E is the universal gateway for RF Wireless People Counters. The SNG10E can be configured to receive data from up to 10 sources, and each source can contain multiple sensors. Setup of the SNG10E is performed using a USB connection and a web-based software tool (SNG Tool).

The SNG10E is be powered by a universal USB power adapter. The SNG10E can upload and store the sensor data on the server via an Ethernet cable connection.

The presentation of the data can be viewed on a PC's Internet browser via the SensorServer software application running on a Windows based server (or workstation). There is an option for a custom made data export to CSV.



SNG10E Specifications

Mechanical

Dimensions	73 x 117 x 24 mm
Material	standard ABS grey

Electrical

Power	5V through USB connector
Power consumption (approx.)	300 mA
Available RF frequency	915 MHz (optionally available in 868 MHz and 2.4 GHz)
Wireless range to People Counter	20 to 30 m (unobstructed)

Delivered content

- SNG10E
- USB Cable
- Ethernet Cable
- Power Supply
- SensorServer Software Application (Free downloadable)
- Quick Installation Guide

Overview - SensorServer Software

Download available from: http://www.sdinternational.nl/support/downloads

Software Contents

This software package contains a collection of applications and services.

Services that will be installed are:

- SensorDatabase (MySQL database server)
- SensorWebserver (Apache HTTP server)
- SensorServer
- SensorScheduler

Extra tools included in package:

- SNG Tool (To configure SNG10E)
- Central Management
- Easy Reports
- USB Sensor Config (To configure USB Stick Counters)
- USB Mem Import (To upload count data from USB Stick Counters)

3rd Party software which are included in this package are:

- MySQL database server
- Apache HTTP server
- PHP
- JQuery

Visit the website of each package for the license information.

MySQL database server
A database in the MySQL server will be used to hold the configuration of the system and to store the collected data from connected sensors and other devices and/or software.
Apache HTTP server
Most userinterfaces in this software package are webbased. The Apache HTTP server is used to serve those interfaces to the webbrowser on the client pc.
PHP
PHP is the scripting language which takes care of the server side userinterface actions. Some of these actions are, reading and writing to the database, reading/writing configuration files, communication over TCP/IP sockets.
JQuery
This is a javascript library which enables rich applications in the webbrowser. This library is compatible with the modern webbrowsers which are common these days.

Minimum system requirements

- Microsoft Windows® 7, Server 2008R2 and above [1]
- Minimum of 1 Gb memory[2]
- 5 Gb Free disk space[3]
- USB port for configuring the SNG10E
- Microsoft .NET Framework 2.0, 3.5[4]
- Webbrowser[5]

The software is tested on different platforms and systems. When you having difficulties installing the software on your system please contact your local distributor for support.

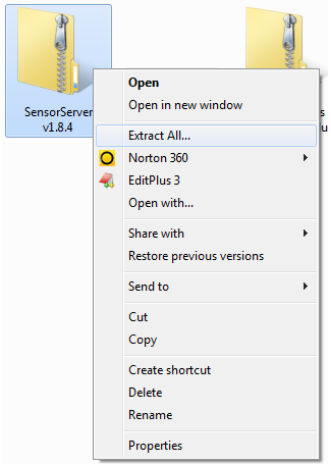
**1: Windows Windows 7, Windows 2008R2 all 32 bit and 64 bit versions*
**2: Depending on Windows® version and other services running on the system*
**3: Database can grow in to gigabytes depending on how many sensors are used*
**4: .NET Framework 2.0 must be installed prior to installing the SensorServer. Can be downloaded from www.microsoft.com*
**5: The software is tested on InternetExplorer v9+, Firefox v30+, and Chrome v30+*

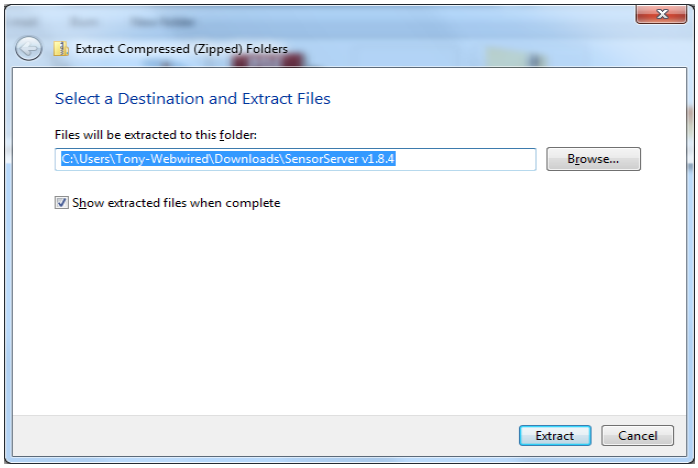
Setup

Download and install SensorServer Software

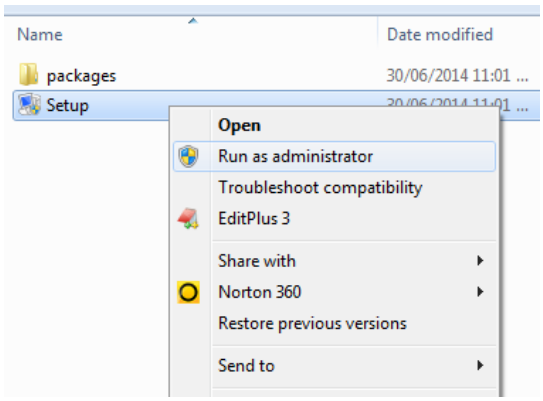
Download the latest version from: http://www.sdinternational.nl/support/downloads.

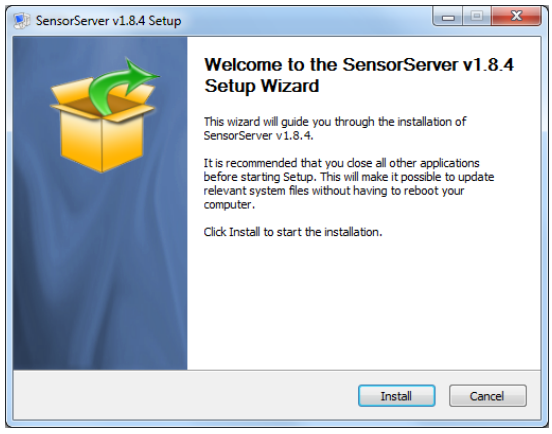
Extract the contents of the zip file to a temporary folder on your system.

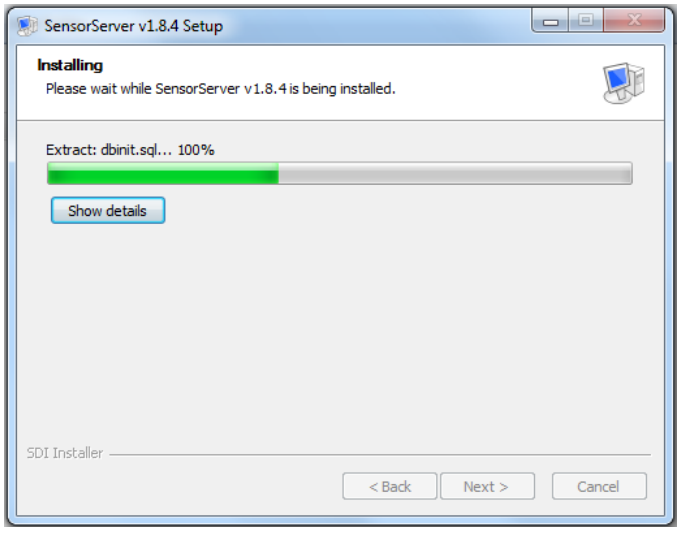




Run the Setup.exe and follow the on-screen instructions to complete the installation.







Note: The version displayed on the screen shots can differ from the downloaded version.
Follow the on-screen instructions to complete the installation.

Network Firewall (Windows Firewall)

Before continue configuring the system please be sure the SensorServer software can communicate over TCP port 55555 - Your network/system administrator can help you to configure the firewall.

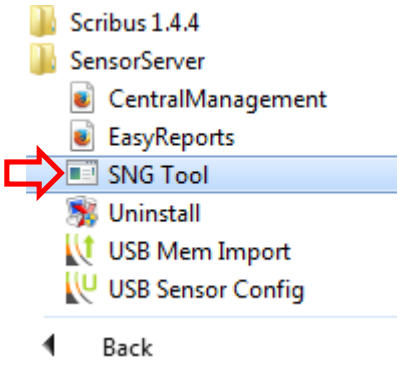
Check the Appendix in the final section of this manual for more information about the Windows Firewall.

Sensor Network Gateway (SNG10E) Configuration – First time setup

Use the **SNG Tool** to configure the network settings and register wireless counter sensors [PRx20W1 (or PRx10W1) and PTx20-1 (or PTx10-1)] into the SNG10E. The SNG Tool will enable you to create names, positions and locations for you specific to your installation.

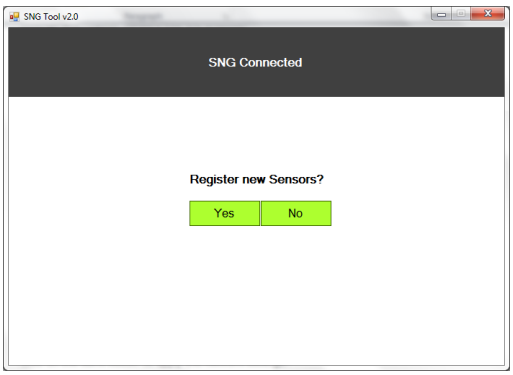
To start the USB Sensor Configuration

1. Select SNG Tool application from **Start → All Programs → SensorServer → SNG Tool**

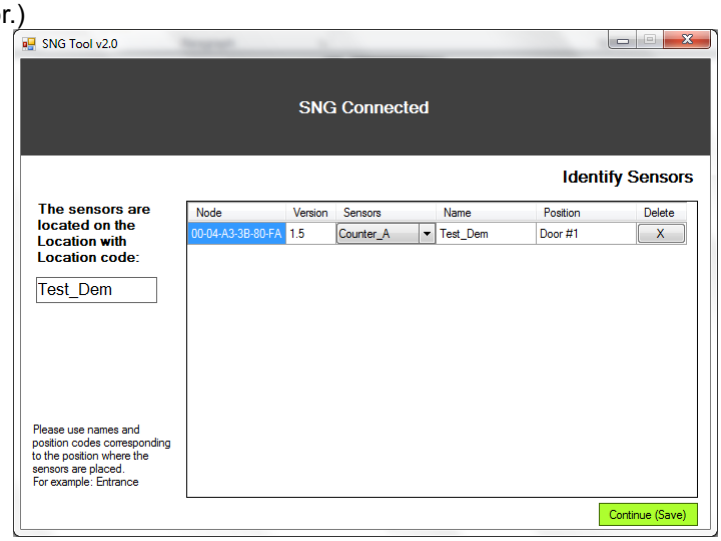


Note: On the support site (http://www.sdinternational.nl/support/downloads) you can find the latest standalone version of the SNG Tool. To use the standalone version of the SNG Tool extract the downloaded zip file of the SNG Tool and run the SNG Tool.exe to start the application.

2. Connect the SNG10E with the supplied USB cable to the computer to start the configuration.
3. Ensure that wireless counter sensors [PRx20W1 (or PRx10W1) and PTx20-1 (or PTx10-1)] are in close proximity to the SNG10E and the batteries are inserted correctly.



4. Select '**Yes**' to register a new wireless people counter sensor. (Select '**No**' if not registering an additional sensor.)



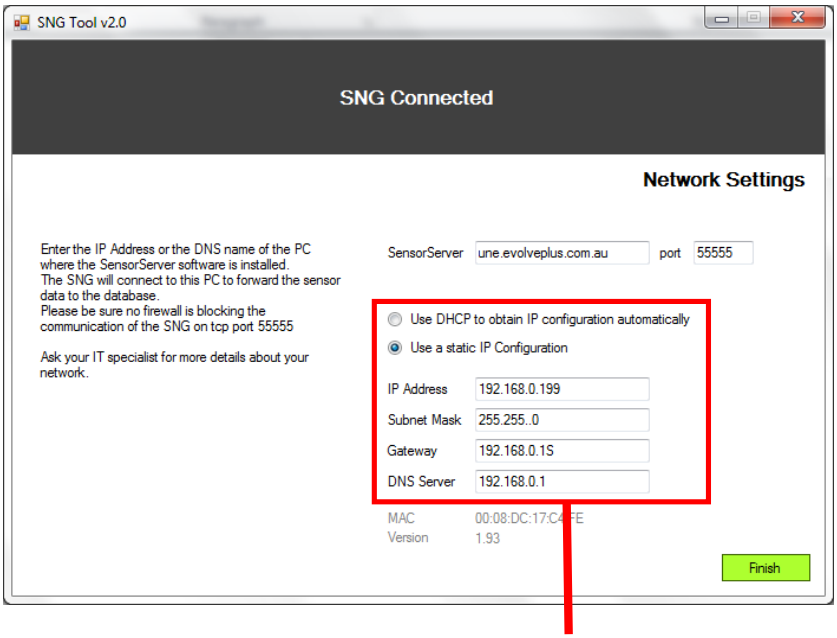
5. The SNG Tool will then display the wireless people counter sensor once the automatic identifying signal is sent from the counters. (this may take up to 2 or 3 minutes depending on the local conditions) *See Note**
6. Click in the fields to enter the Location Code of the People Counter, which can be the name of your building for example**.** The Name can be the same as the location if desired.
7. Click in the position field to enter the Position of the People Counter, which can be "front door" for example.
8. Press **Continue(Save).**

Note: If the Wireless People Counter does not automatically appear in the 'Identify Sensors' screen, remove and immediately replace the batteries of the PRX20W1 (or PRx10W1) Counter. The Wireless People Counter should then become visible in the list.*

Press **Continue**

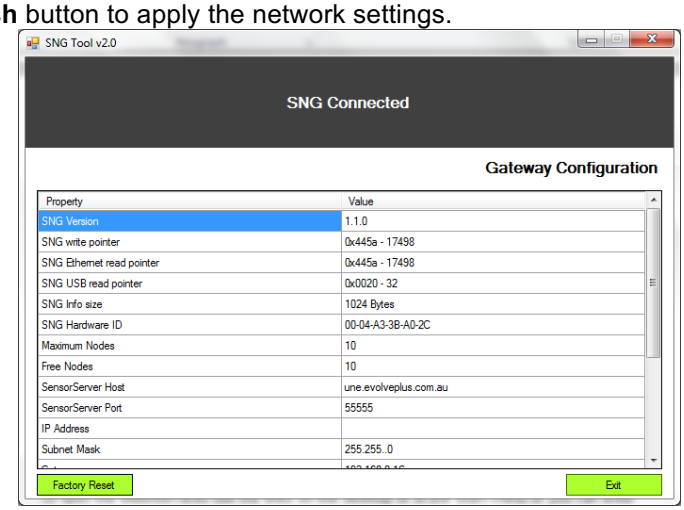
Network settings:
The SensorServer address is the IP address or DNS Name of the PC or Server where the SensorServer software is installed.
The default port for the SensorServer is 55555.

Note: If a PC Workstation on the network is used to run the SensorServer software, please ensure that it is assigned a static IP address. If a static IP address is not assigned to the PC Workstation, it 'may' change its IP address during a network blackout or reset and the SNG10E will not be able to identify the SensorServer software unless the SNG10E is re-configured.



Please enter the correct IP settings for the SNG10E or use DHCP. Ask your system administrator for these settings.

9. Click on the **Finish** button to apply the network settings.



10. Review the Gateway Configuration settings. Click **Exit**.
11. Disconnect the USB connector cable from the SNG. The USB connector cable cannot be used as permanent power supply. The USB connector cable can only be used to configure the SNG10E with the SNG Tool Software.

Sensor Network Gateway (SNG10E) – Network Connection

Connect the Sensor Network Gateway device (SNG10E) to the network using the supplied ethernet cable and USB connection power supply. For optimal RF connection with the wireless people counters ensure that there is at least 20cm clearance around the SNG10E.

With the Ethernet Cable connecting the SNG10E to the Local Area Network (LAN) and the power source coming from a power outlet, a green light should illuminate in the middle of the back panel of the SNG10E.

Example of power supply and network ethernet cable connection in order to operate

Sensor Location Validation

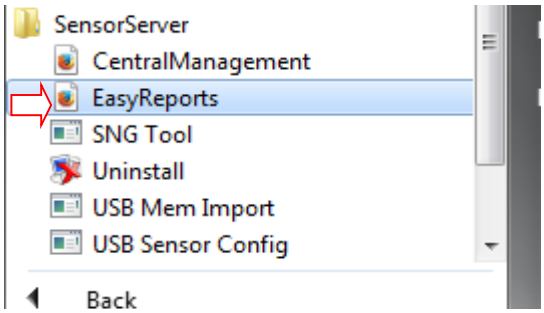
With the sensor counters registered and the SNG10E configured and connected correctly, the SNG10E will automatically connect to the SensorServer software.

If the SNG10E is configured and connected correctly the new Sensor Counters, Positions and Locations will be created automatically on the SensorServer software.

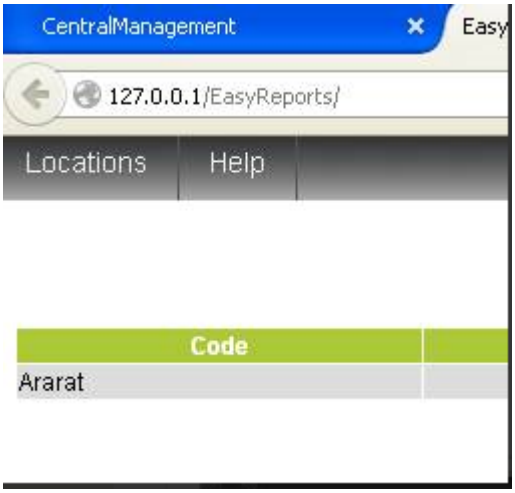
Data which is collected from sensor(s) will be received and stored into the SensorServer database. After a Location is added automatically by the system it will immediately visible in the EasyReports.

EasyReports application

1. Select EasyReports from Start → All Programs → SensorServer → EasyReports



2. The EasyReports application will load displaying the location name in the ‘Code’ column. Click the location name to retrieve more information.



EasyReports is the web based reporting tool which makes the collected sensor data visible using tables and charts.
To open the EasyReports click on the EasyReports desktop icon or menu option in your Start menu. You can also open the EasyReports by entering the following address in the web browser:
http://localhost/EasyReports or http://ipaddress/EasyReports
Contact your system administrator to get the IP address of the PC on which the software is installed.

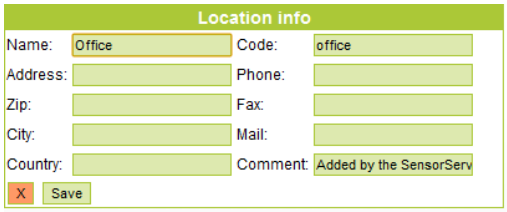
CentralManagement

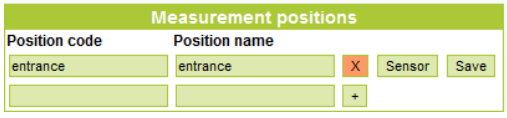
The CentralManagement is the webbased environment from where the system is managed.
During installation the CentralManagement is used to 'validate' the automatically created Locations.

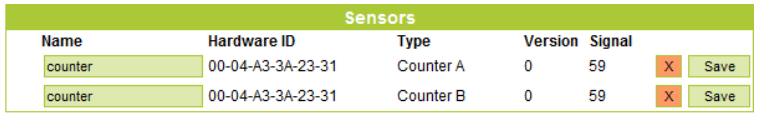
To open the CentralManagement click on the CentralManagement icon on the desktop or menu option in your Start menu. You can also open the CentralManagement by entering the following address in the webbrowser:
http://localhost/CentralManagement or http://ipaddress/CentralManagement

Contact your system administrator to get the IP address of the PC on which the software is installed.

By clicking on the Locations button in the top menu the CentralManagement will show you the new locations .
Click on the OK button to accept the new location or click on the Edit button to accept and edit the new location.
When the *Edit* button is clicked you can start editing the location details.







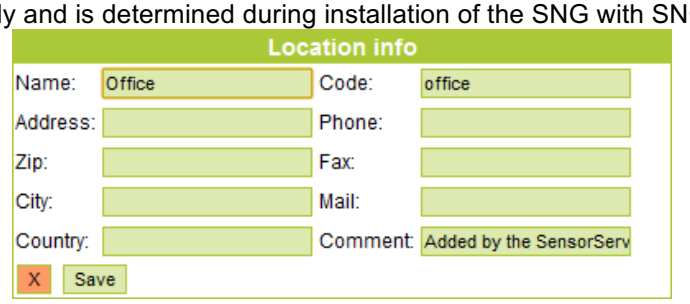
Location Management

To Edit an location click on the Locations->Edit item in the top menu.
Using the Search field you can find the Location you want to Edit. Enter the Name, Location Code or the City of the Location in the search field.
Note: When you click on search without a search query, all the Locations will be displayed.

Look for the Location you want to edit in the Search results and click on the Edit button.

Location Info

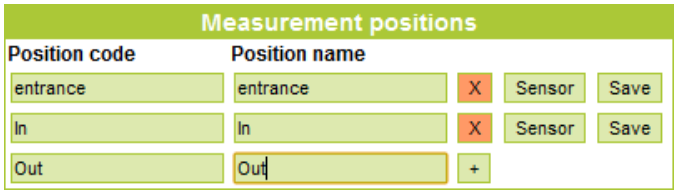
This section contains the main information about a location.
The Code field is read only and is determined during installation of the SNG with SNG Tool.



Measurement Positions

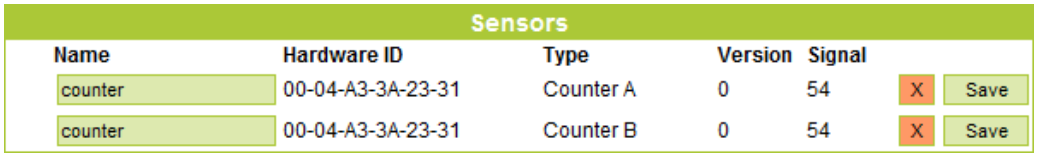
Each location contains at least one Position.
A Position is a place on the Location where Sensors are installed for example the entrance of a building. One or more sensors can be linked to a position. The sum of the count values of all the sensors on a position will be visible in the EasyReports.

Positions are automatically created by the system when an SNG connects to the SensorServer. To create positions manually just enter an unique administrative code and a name for the new position.



Sensors

Each Location can have multiple Sensors which are all linked to one or more Positions.



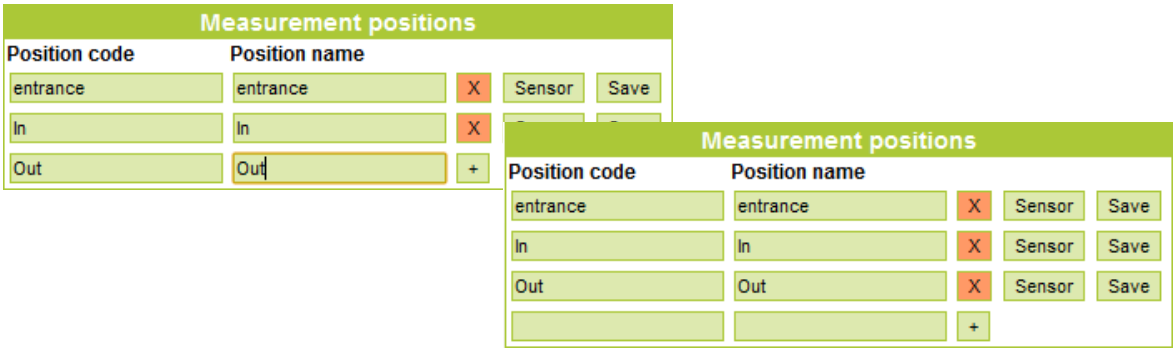
The name of each sensor can be changed. Don't forget to click on the Save button when you have changed the name of a sensor.

If you want to delete a sensor, when for example the sensor is moved, you can click on the red button with the 'X'.
Note: When you delete a sensor all the collected data of the sensor will also be deleted.

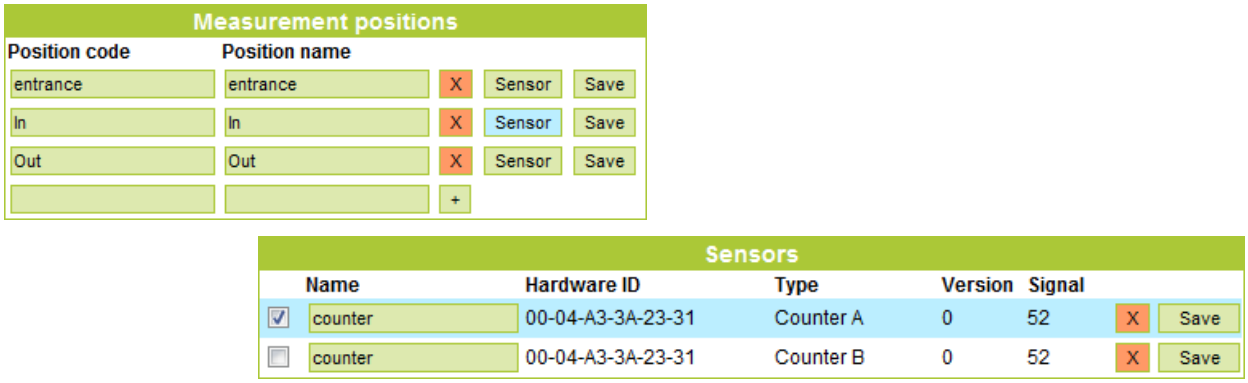
Grouping sensors

Using positions it is possible to group multiple sensors.
Each position can have one or more sensors linked to it. For example you can create an In and Out position and link the Bi-Directional People Counters Counter A and Counter B to the In or Out Position.

In the example below In and Out positions are created.



Linking a sensor to a position is very easy: Just click on the Sensor button and select the Sensors which you want to link to the Position.



To stop the Linking function click again on the Sensor button behind the position.

Deleting Locations/Positions/Sensors

To delete a Location, Position or Sensor click on the red 'X' button behind the item you want to delete.
A Location can only be deleted when there are no Sensors and Positions on the Location.
A Position can only be deleted when there are no Sensors linked to the position.

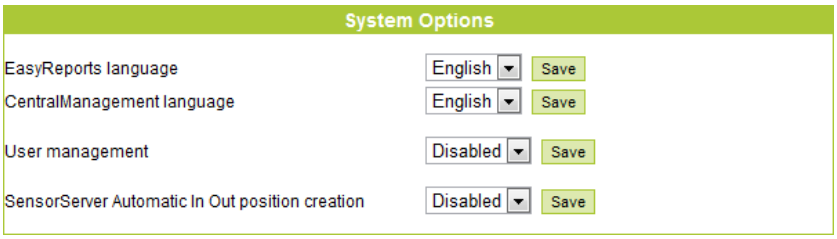
Note: When you remove a Sensor all the collected data of that sensor will also be deleted.

Always be sure if you want to delete something, there is no undo function to get the data back. As an extra precaution the software let you confirm before something will be deleted.

Tools

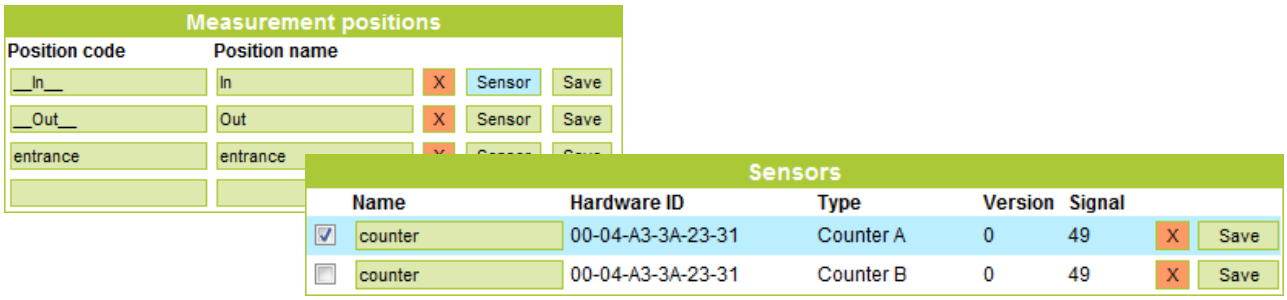
System Options

Via the menu item Tools->Options you have the possibility to change some system settings.



By enabling the User management users need to login on the EasyReports to be able to see the statistics.

The *SensorServer Automatic In Out position creation* is by default Disabled. When Enabled the SensorServer will automatically create In and Out positions when the software automatically creates a new Location.
The sensor of type Counter A will automatically linked to the In position and Counter B to the Out position.



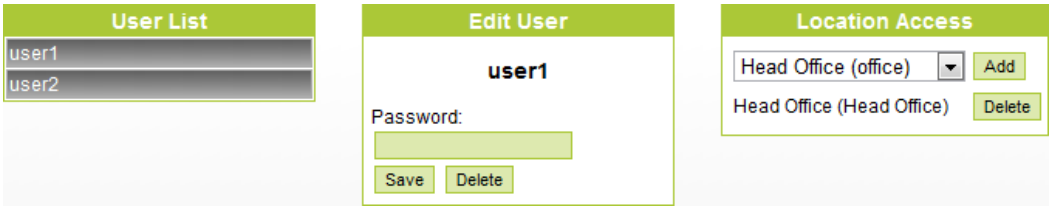
The Position codes for the automatically created In and Out positions are: __In__ and __Out__

User management

When the *User Management* is Enabled in the System Options users need to login into the EasyReports to get access to a location.

On the Use Management page (Tools->Users) new user accounts can be created which can get access to one or more locations.
To add a user enter a Username and a Password and choose which Location the user can access on the EasyReports.

The User List contains all the available user accounts. Click on a user in the list to change a user account.
In the Location Access box Locations can be added or deleted to which the user has access to,



CSV Export
To integrate the collected data into a 3rd party application like Microsoft Excel or into your own business application a CSV Export feature is included with the SensorServer.

Multiple exports can be created which can be configured via the Modules->CSV Export menu item.

Click on the Add new CSV export button to create a new CSV Export configuration

An export configuration stores information about the export which will be used by the CSV Export application.

Below the description of each field:

- **Name:** The name of the export configuration. This name is used for executing the export.
- **Header:** This is the first line in the export file.
- **Path:** Location on the PC where the CSV export file needs to be stored for example: C:\Export
- **Filename:** The filename of the CSV Export
- **Append:** When not checked every time the export is executed the existing file will be overwritten.
- **Separator:** The separator used to separate each column in the export
- **Quoted string:** When checked all text fields will be surrounded with the "character.

To execute the export run the following command:
C:\Program Files\SensorServer\Apps\CSVExport.exe export_name

or on 64bit operating systems:
C:\Program Files (x86)\SensorServer\Apps\CSVExport.exe export_name
Where export_name is the name of an export configuration.

To schedule the export you can make use of the Scheduling features of Microsoft Windows.
Note: *By default the configured export configurations will create an hourly export of the current day when the export is executed.*

Please contact EvolvePlus Pty Ltd when another type of export is desired.

EasyReports

EasyReports is the webbased reporting tool which makes the collected sensor data visible using tables and charts.

To open the EasyReports click on the EasyReports on the start → programs →SensorServer menu. You can also open the EasyReports by entering the following address in the webbrowser:
http://localhost/EasyReports or http://ipaddress/EasyReports
Contact your system administrator to get the IP address of the PC on which the software is installed.

Location list

To get a list of the available Locations in the system click on the Locations item in the menu. When the User Management is Enabled you need to login to get access to your Locations.

The list only contains the 'validated' locations.

Code	Name	Code	Name
L0001	Miami	05	Amsterdam
L0002	Berlin	002	Berlin
L0003	Zurich	001	Miami
L0004	New York	0004	New York
L0005	Amsterdam	L0003	Zurich

By default the location list is ordered by the time a location was added to the system.
To change the order click on the table header: Code, Name, Address, Zip, City or Country to order on these items.

To view the statistics of a Location just click on the Location.

Location Page

On the Locations page you see the main location info, the report selection menu and an overview of the Measurement Positions on the location.

Location info					
Name	Utrecht	Address		City	Utrech
Code	NL002	Zip		Country	NL
Phone		Fax		Mail	
Comments	Added by the SensorServer				

The Location Info table is straight forward and shows you the main information of the location.

Positions

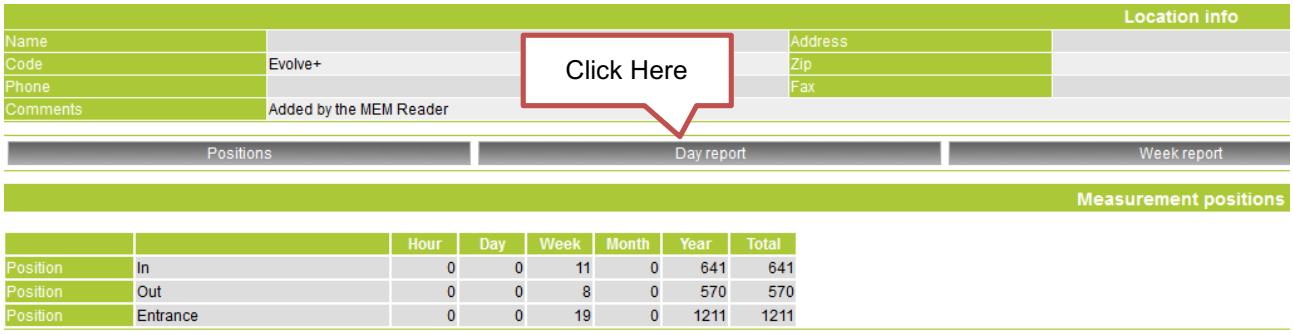
A position is a group of sensors on a location. The total count value of all the sensors on the position is the position value which is shown in the overview.
Click on a position to expand the list of sensors which are linked to that position.

		Hour	Day	Week	Month	Year	Total
Position	In	32	265	1845	8172	35780	35780
Position	Out	28	243	1740	7689	32963	32963
Position	Main Entrance	60	508	3585	15861	68743	68743

Reports

Reports can be displayed using the Day, Week, Month and Year report buttons. Each report shows count values with different time intervals.

Day Report



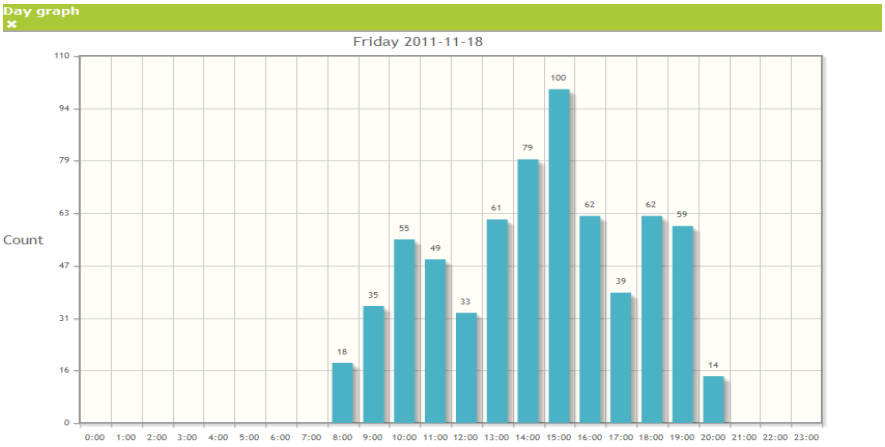
		Hour	Day	Week	Month	Year	Total
Position	In	0	0	11	0	641	641
Position	Out	0	0	8	0	570	570
Position	Entrance	0	0	19	0	1211	1211

With the Day Report you can see the hourly values per day of a complete month.
Before you see the count values you need to select a Position and optionally a Sensor.

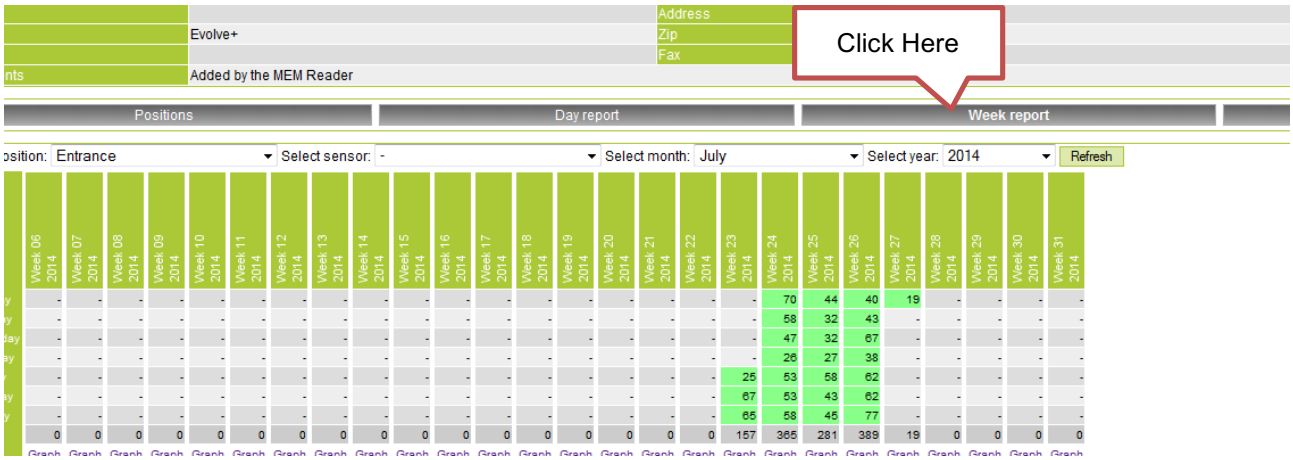
Selecting only a Position will display a table containing the total count value of all the sensors on that position.
Selecting a Sensor will display the count values of the Sensor.

	Tuesday 2011-11-01	Wednesday 2011-11-02	Thursday 2011-11-03	Friday 2011-11-04	Saturday 2011-11-05	Sunday 2011-11-06	Monday 2011-11-07	Tuesday 2011-11-08	Wednesday 2011-11-09	Thursday 2011-11-10	Friday 2011-11-11	Saturday 2011-11-12	Sunday 2011-11-13	Monday 2011-11-14	Tuesday 2011-11-15	Wednesday 2011-11-16	Thursday 2011-11-17	Friday 2011-11-18	Saturday 2011-11-19	Sunday 2011-11-20	Monday 2011-11-21	Tuesday 2011-11-22	Wednesday 2011-11-23	Thursday 2011-11-24	Friday 2011-11-25	Saturday 2011-11-26	Sunday 2011-11-27	Monday 2011-11-28	Tuesday 2011-11-29	Wednesday 2011-11-30
0:00 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 - 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 - 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 - 7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8:00 - 9:00	0	16	17	0	18	0	0	19	6	19	26	17	0	26	22	24	27	18	17	0	0	26	13	25	5	0	0	28	25	24
9:00 - 10:00	0	81	42	87	86	0	47	77	80	47	40	78	0	20	38	37	44	35	67	0	60	28	42	25	50	98	0	31	51	40
10:00 - 11:00	0	55	50	53	116	0	33	71	54	79	63	110	0	36	47	46	74	55	93	0	41	46	44	59	44	81	0	49	37	56
11:00 - 12:00	0	49	43	75	133	0	38	69	73	63	54	88	0	31	36	40	45	49	142	0	44	30	29	45	60	165	0	35	41	35
12:00 - 13:00	0	58	37	53	112	0	24	41	36	35	42	57	0	39	36	33	54	33	131	0	21	34	26	38	47	122	0	40	41	33
13:00 - 14:00	0	24	41	56	126	0	24	70	79	43	55	86	0	52	42	75	56	61	141	0	32	36	46	60	59	166	0	37	45	60
14:00 - 15:00	0	92	60	98	136	0	88	101	94	76	80	139	0	72	57	118	79	79	167	0	51	57	61	52	67	194	0	84	72	85
15:00 - 16:00	0	117	83	64	149	0	94	98	91	64	59	109	0	71	100	88	69	100	202	0	63	42	71	83	51	134	0	65	65	100
16:00 - 17:00	0	66	37	83	146	0	75	51	65	63	63	98	0	49	50	61	65	62	111	0	77	59	57	53	66	98	0	38	45	42
17:00 - 18:00	0	35	41	48	4	0	34	42	56	34	63	10	0	49	41	65	31	39	7	0	32	41	43	23	49	6	0	30	15	39
18:00 - 19:00	0	41	27	50	0	0	58	37	45	43	44	0	0	49	33	35	47	62	0	0	45	50	45	42	39	0	0	43	47	43
19:00 - 20:00	0	0	7	46	0	0	3	20	3	3	43	0	0	0	12	10	4	59	0	0	3	1	6	3	71	0	0	3	0	2
20:00 - 21:00	0	0	0	1	0	0	0	0	0	0	20	0	0	0	0	0	0	14	0	0	0	0	0	0	3	0	0	0	0	0
21:00 - 22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00 - 23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00 - 0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	634	485	714	1026	0	518	696	682	569	652	794	0	494	514	632	595	666	1079	0	469	450	483	508	611	1064	0	483	484	559

To see the hourly values in a chart click on the total of a day.

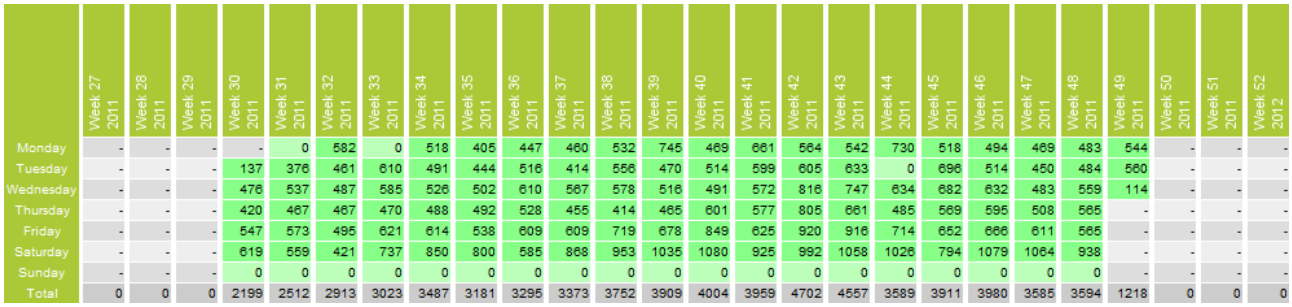


Week Report



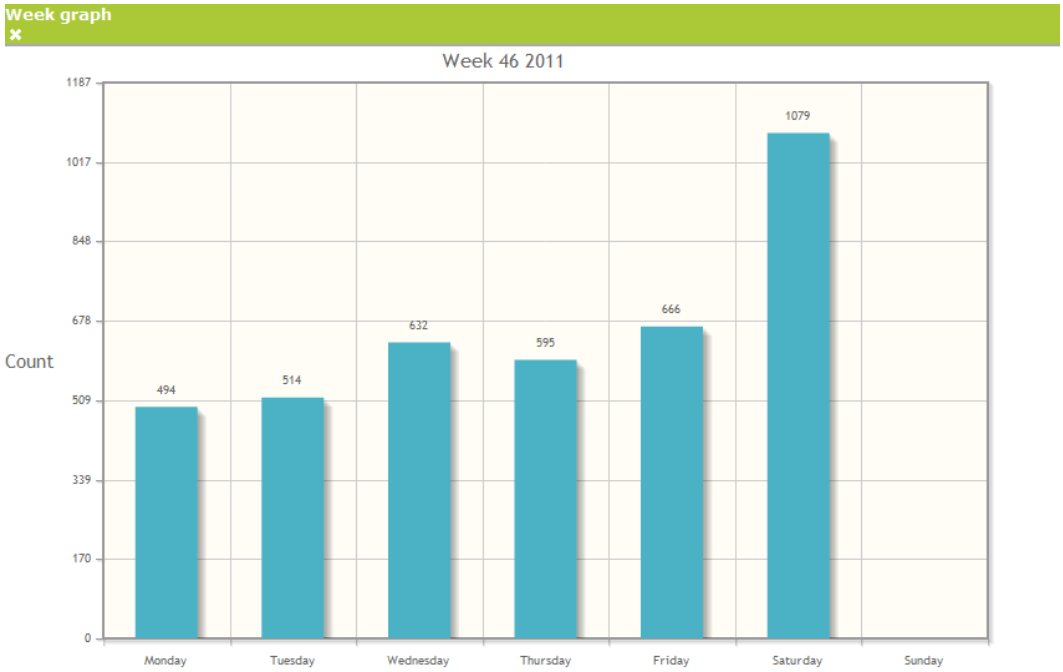
On the Week Report you see the daily totals for every week.

By default the table shows all the weeks of the current month and the weeks before. When selecting a different month the table will again show the weeks of the selected month and the weeks before.

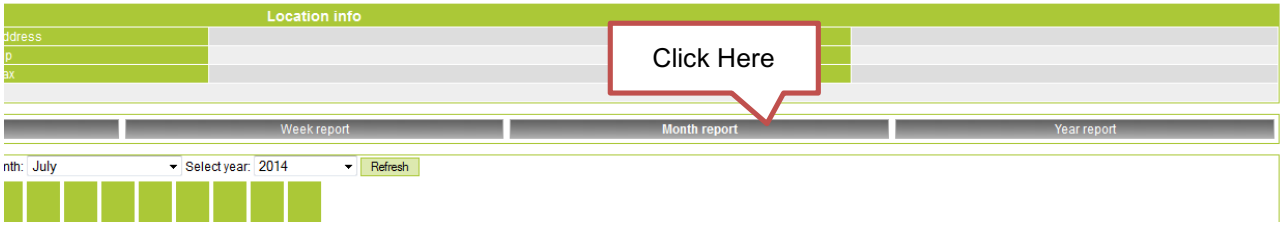


	Week 27 2011	Week 28 2011	Week 29 2011	Week 30 2011	Week 31 2011	Week 32 2011	Week 33 2011	Week 34 2011	Week 35 2011	Week 36 2011	Week 37 2011	Week 38 2011	Week 39 2011	Week 40 2011	Week 41 2011	Week 42 2011	Week 43 2011	Week 44 2011	Week 45 2011	Week 46 2011	Week 47 2011	Week 48 2011	Week 49 2011	Week 50 2011	Week 51 2011	Week 52 2012
Monday	-	-	-	-	0	582	0	518	405	447	460	532	745	469	661	564	542	730	518	494	469	483	544	-	-	-
Tuesday	-	-	-	137	376	461	610	491	444	516	414	556	470	514	599	605	633	0	696	514	450	484	560	-	-	-
Wednesday	-	-	-	476	537	487	585	526	502	610	567	578	516	491	572	816	747	634	682	632	483	559	114	-	-	-
Thursday	-	-	-	420	467	467	470	488	492	528	455	414	465	601	577	805	661	485	569	595	508	565	-	-	-	-
Friday	-	-	-	547	573	495	621	614	538	609	609	719	678	849	625	920	916	714	652	666	611	565	-	-	-	-
Saturday	-	-	-	619	559	421	737	850	800	585	868	953	1035	1080	925	992	1058	1026	794	1079	1064	938	-	-	-	-
Sunday	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Total	0	0	0	2199	2512	2913	3023	3487	3181	3295	3373	3752	3909	4004	3959	4702	4557	3589	3911	3980	3585	3594	1218	0	0	0

Click on the Total value of a week to show the chart of that week.



Month Report

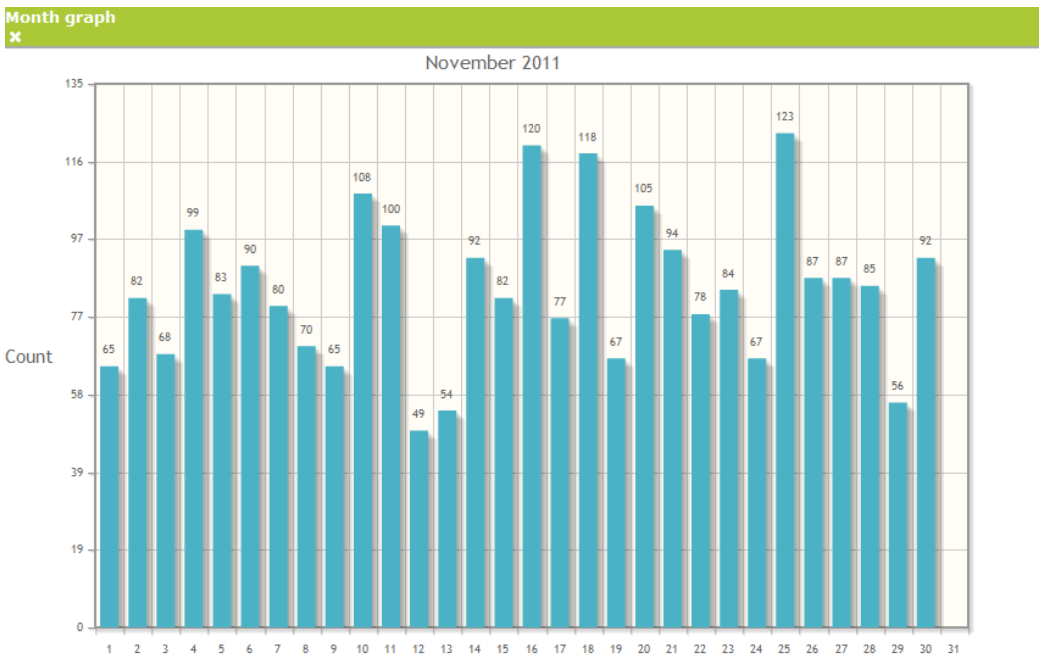


The Month Report gives an overview of the daily count values of complete months.

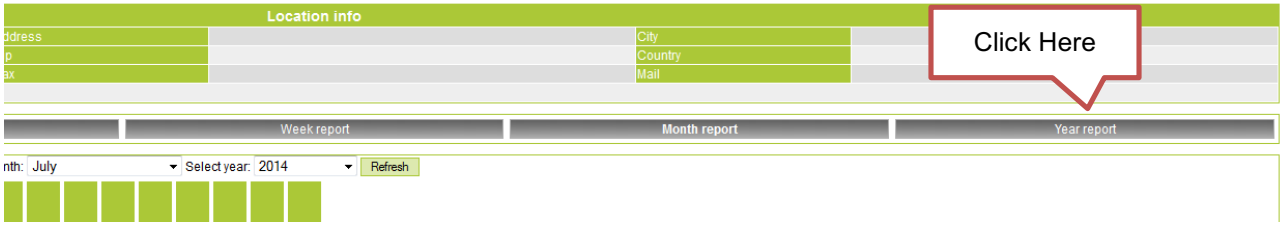
Select position: Main Entrance | Select sensor: - | Select month: November | Select year: 2011 | Refresh

	March 2010	April 2010	May 2010	June 2010	July 2010	August 2010	September 2010	October 2010	November 2010	December 2010	January 2011	February 2011	March 2011	April 2011	May 2011	June 2011	July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	73	65	95	136	105	77
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	43	82	134	88	70	132
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	57	68	79	137	103	80
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	80	99	80	97	77	99
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	91	83	65	99	111	90
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	93	90	81	91	54	68
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	127	80	75	60	99	84
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	85	70	92	64	73	61
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	99	65	105	75	110	201
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	57	93	108	143	83	98	117
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	136	53	99	100	76	75	67	70
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	68	80	49	65	107	87	130
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	88	316	54	70	94	77	106
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	77	113	92	129	62	81	99
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	79	123	82	77	75	70	105
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	104	71	120	113	66	68	189
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	66	62	77	109	79	112	91
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	99	78	118	184	65	81	68
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	113	85	89	67	109	80	125	23
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66	60	51	105	86	115	88	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	74	140	94	114	84	74	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68	75	70	78	90	117	86	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	104	113	84	118	87	76	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	240	95	67	127	79	129	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	84	98	123	322	99	326	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	49	75	87	94	90	162	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	61	97	87	101	131	67	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	58	110	85	97	76	89	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	76	79	56	88	84	90	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	98	93	92	102	93	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	-	93	-	91	66	-	-
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1321	2419	2986	2527	3311	2754	2855	1890

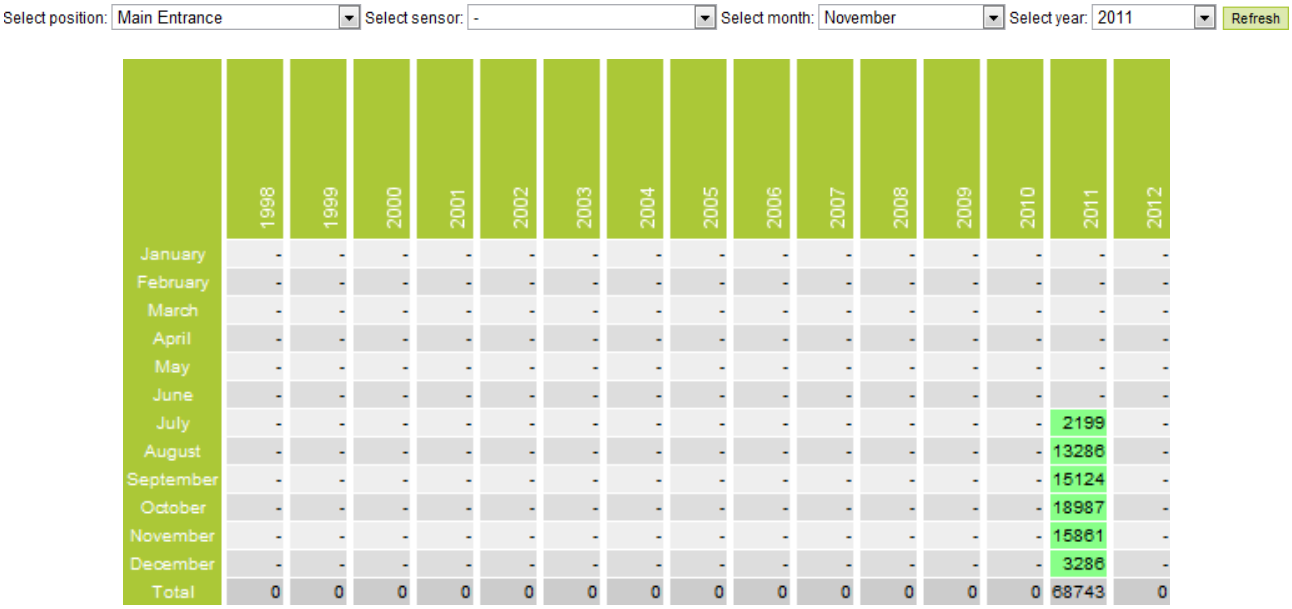
Click on the Total of a month to display the chart of that month.



Year Report

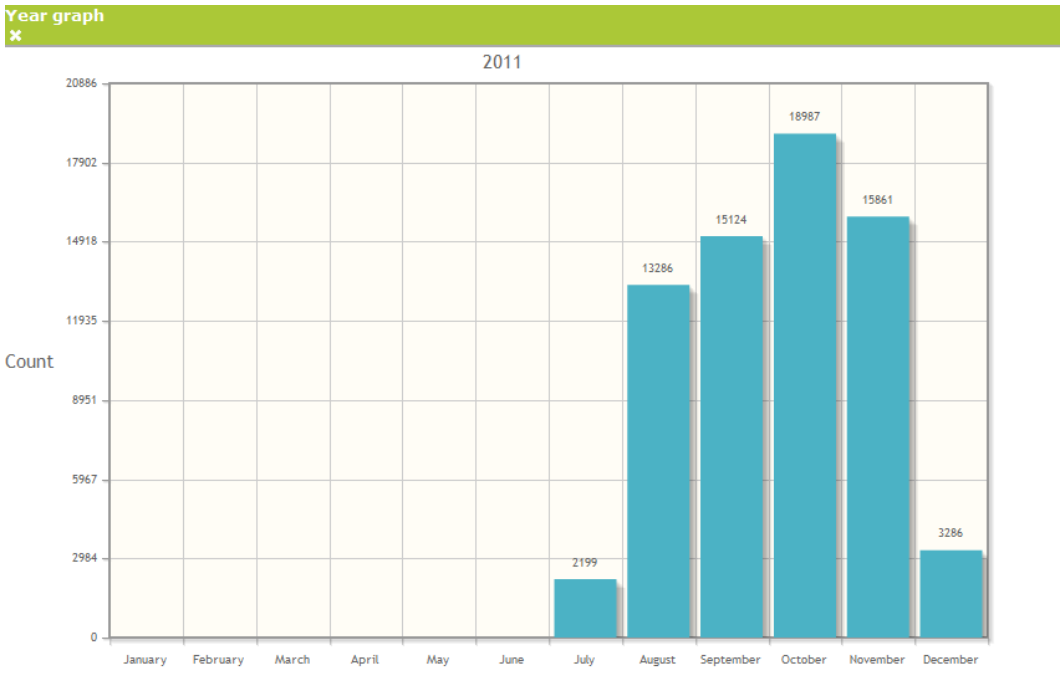


The Year Report displays the total montly values.



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
January	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-	-	-	2199	-
August	-	-	-	-	-	-	-	-	-	-	-	-	-	13286	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-	15124	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-	18987	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-	15861	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-	3286	-
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	68743	0

To see the monthly values of a year in a chart click on the Total of a year.



Appendix

SensorWebserver port configuration

The SensorWebserver service is an Apache HTTP Server which is configured to listen on the default http port 80.

In cases where port 80 is already in use by another installation of a webserver on the system, the SensorWebserver port needs to be changed to another port number.
During this example we are going to use port 81 as the new port number.

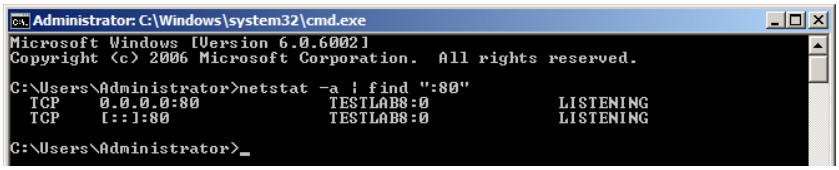
When port 80 is in use you will notice that the CentralManagement and EasyReports can not be found when opening in the webbrowser.
To determine if port 80 is already in use take the following steps.

Determine free and used ports

Open a Command Prompt by executing the *cmd* command. 

Use netstat to determine if port 80 is in use:

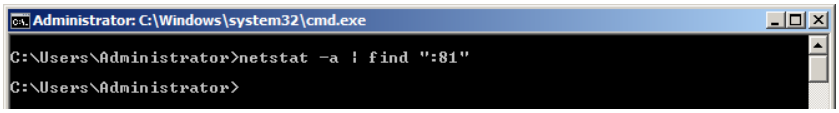
```
netstat -a | find ":80"
```



In the picture above you can see that something already is LISTENING on port 80.

To check if the new port is free we can use the same command:

```
netstat -a | find ":81"
```



When the command doesn't give any results, like in the image above, you know the port is not in use.

Change Webserver port

To change the webserver port open a texteditor like notepad with administrator rights and open the file:
C:\Program Files\SensorServer\Webserver\conf\httpd.conf

or on 64 bit systems:
C:\Program Files (x86)\SensorServer\Webserver\conf\httpd.conf

Change the line:

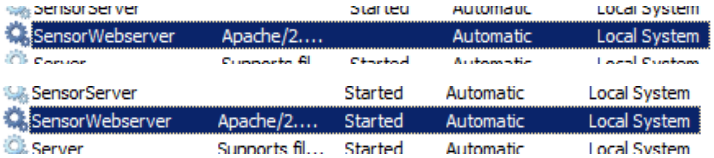
```
Listen *:80
```

to:

```
Listen *:81
```

Start the SensorWebserver

To start the SensorWebserver with the new port configuration open the Services Control Panel and find the SensorWebserver service.
Right click on the service to start the Webserver.



Updating shortcuts

Now the Webserver is running and using the new port configuration.

The URL to access the CentralManagement and EasyReports is now changed.
Instead of:

http://localhost/CentralManagement/
http://localhost/EasyReports/

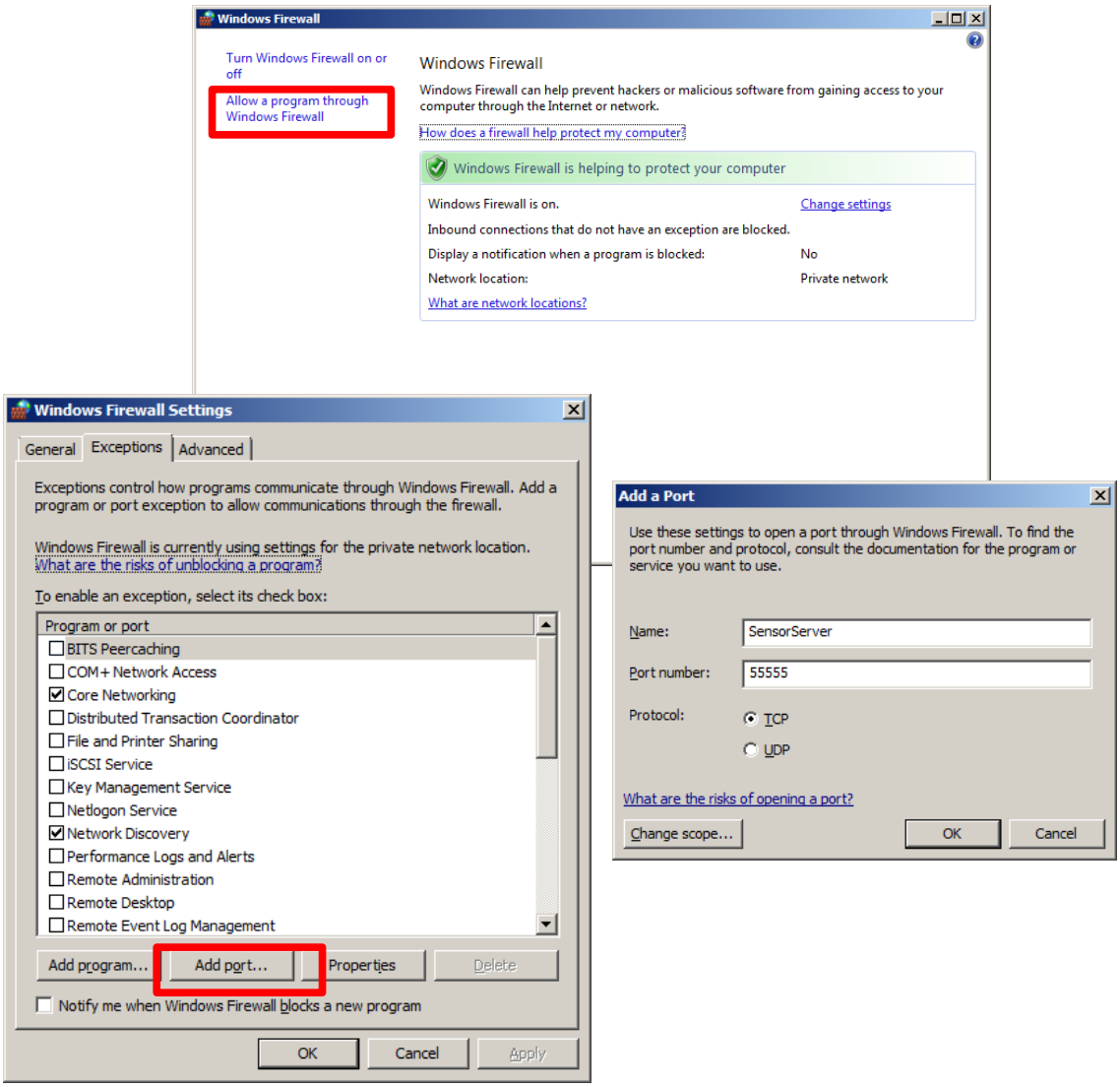
New situation:

http://localhost:81/CentralManagement/
http://localhost:81/EasyReports/

Shortcuts to the EasyReports and CentralManagement are placed on the Desktop and in the Start menu.

Windows Firewall

The SensorServer uses the network to communicate with SNG's. Default Windows installations do have the Firewall enabled. This firewall might block the communication with the SensorServer on TCP port 55555.



To add an exception to the firewall which allows communication over TCP port 55555. Click on the *Add Port..* button in the Firewall Settings to add the port.

Note: If you want to access the webinterface over the network you may also need to add an exception for TCP port 80 which is used by the SensorWebserver.

Backup

All the collected data and settings are stored into the database. In this section we describe how to create and restore a database backup using the MySQL command line utilities. *You can also install third party utiliies which enables easy backup of the MySQL database via a Graphical User Interface or you Web Browser.*

Create backup

To create a live backup from the database execute the following command.

```
"C:\Program Files\SensorServer\Database\bin\mysqldump.exe" -u sensor -q --single-
transaction data > "destination file"
```

for 64bit Windows Installations

```
"C:\Program Files (x86)\SensorServer\Database\bin\mysqldump.exe" -u sensor -q --single-
transaction data > "destination file"
```

`destination file` is the path and filename for the backup file. An existing file will be overwritten.

Note: Be sure that the user who is executing the backup has the sufficient rights to create a file on the desired location.

Example:

```
"C:\Program Files\SensorServer\Database\bin\mysqldump.exe" -u sensor -q --single-
transaction data > "c:\backup\backupfile.sql"
```

Note**:** Changes made in the database during the backup process are not included in the backup.

Restore backup

After a fresh installation of the SensorServer you can restore a backup.
A backup can be restored using the MySQL console application.

To start the MySQL Console execute the following command:

```
"C:\Program Files\SensorServer\Database\bin\mysql.exe" -u sensor
```

or for 64 bit Windows

```
"C:\Program Files (x86)\SensorServer\Database\bin\mysql.exe" -u sensor
```

When successfully started the MySQL console will be visible:

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2318 to server version: 5.0.27-community-log

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>
```

Use the following command to restore the backup.

```
mysql> source "path to databas backup file";
mysql> quit
```