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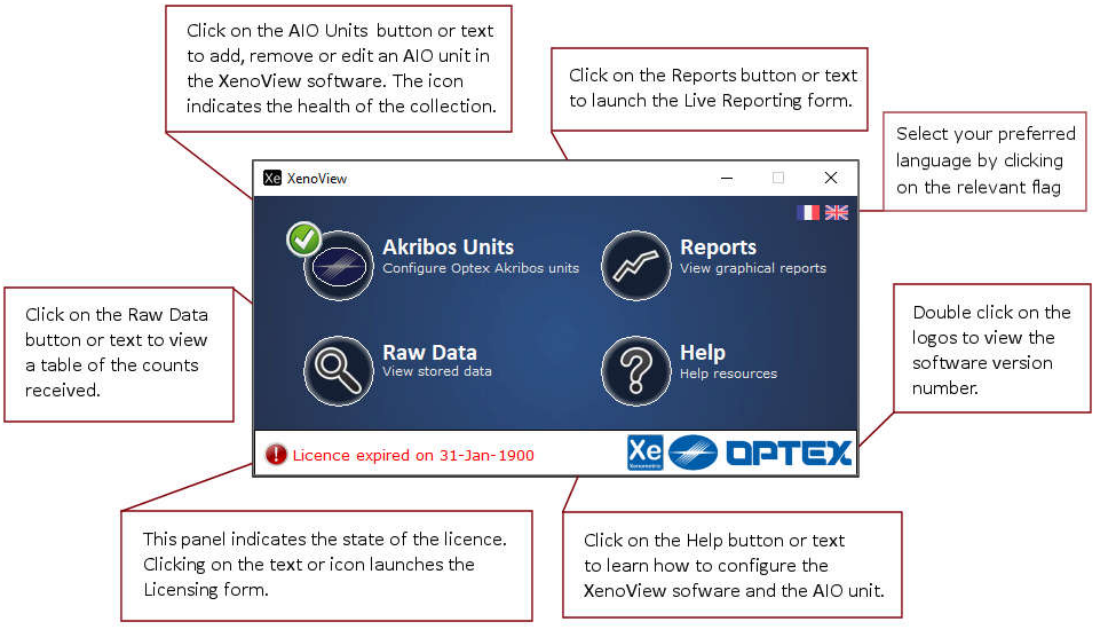
1 Introduction

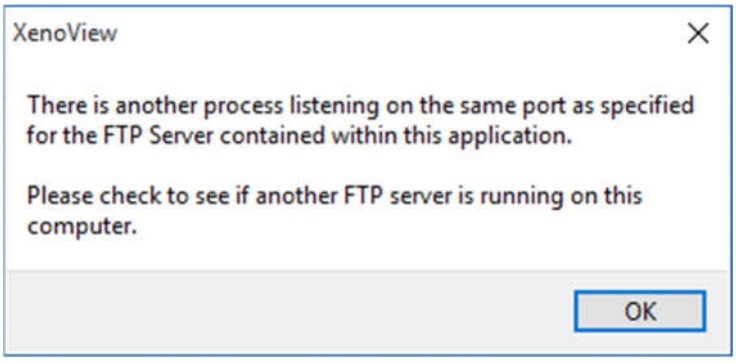
XenoView is a standalone application that has been designed to collect and report Optex Akribos data. The application will only collect data whilst the program is running. Xenometric's fuller product, X-Server, is capable of running whilst the control application is not running. Xenometric's X-Server also has a complete compliment of web reporting, data outputs and email reporting. This application has limited functionality, but is very simple to install and use.

2 The Main Form

When the application is launched, the main form will be displayed.



If the following message box is shown, the computer has another application or service that is listening on the FTP port (default port 21). It will be necessary to either change the listening port in the XenoView software or disable the software that is currently listening on this port.

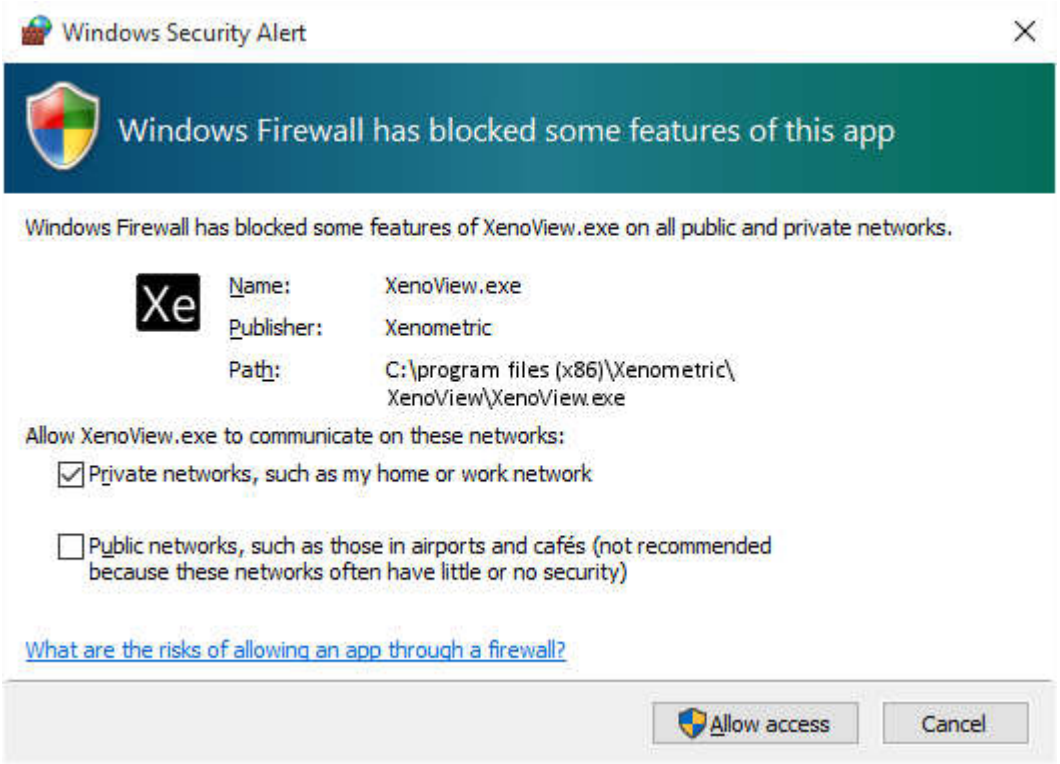


3 Windows Firewall

When you run the XenoView software for the first time, Windows may ask you to allow some features through the firewall.

If the Akribos unit is on the same local network as the computer running the XenoView software, then only the 'Private Networks' option need be ticked.

If the Akribos is installed on the Internet, or another network, and is not being routed through a NAT device, then you may need to tick the 'Public Network' option. Please consult your network administrator if you are not sure.

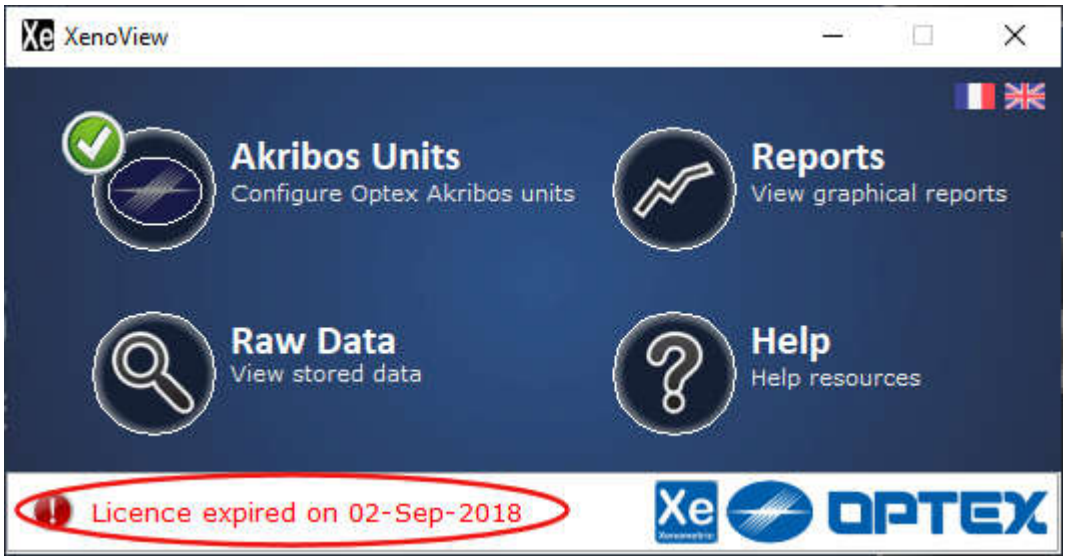


If your computer has a 3rd party firewall installed or you sit behind a network firewall, you may need to open the FTP port on the firewall. By default, this port is 21.

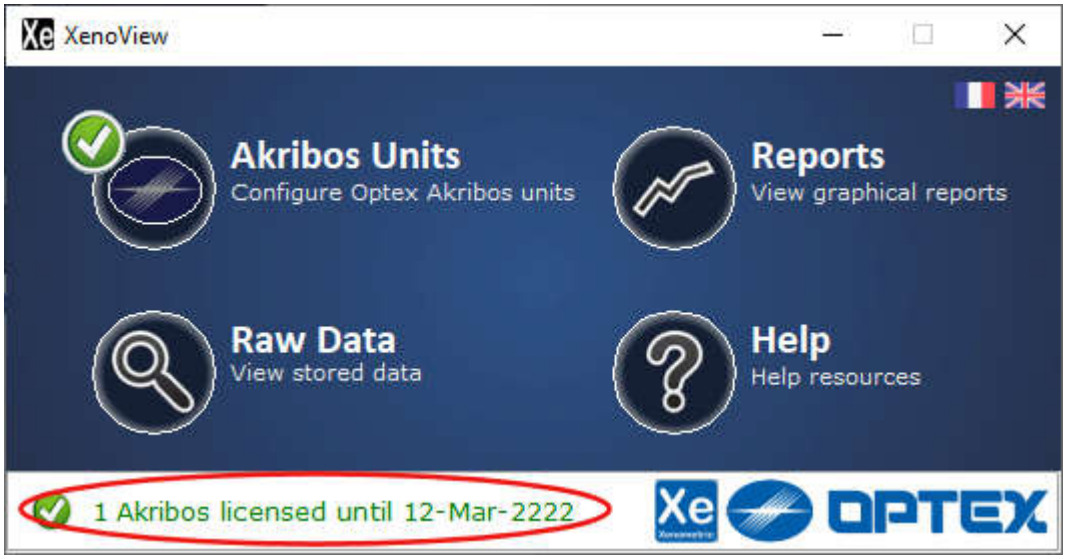
4 Licensing the XenoView software

There is no immediate requirement to license the software as a temporary licence can be created that will last for 5 weeks (1 week of historic data and 4 weeks of new data).

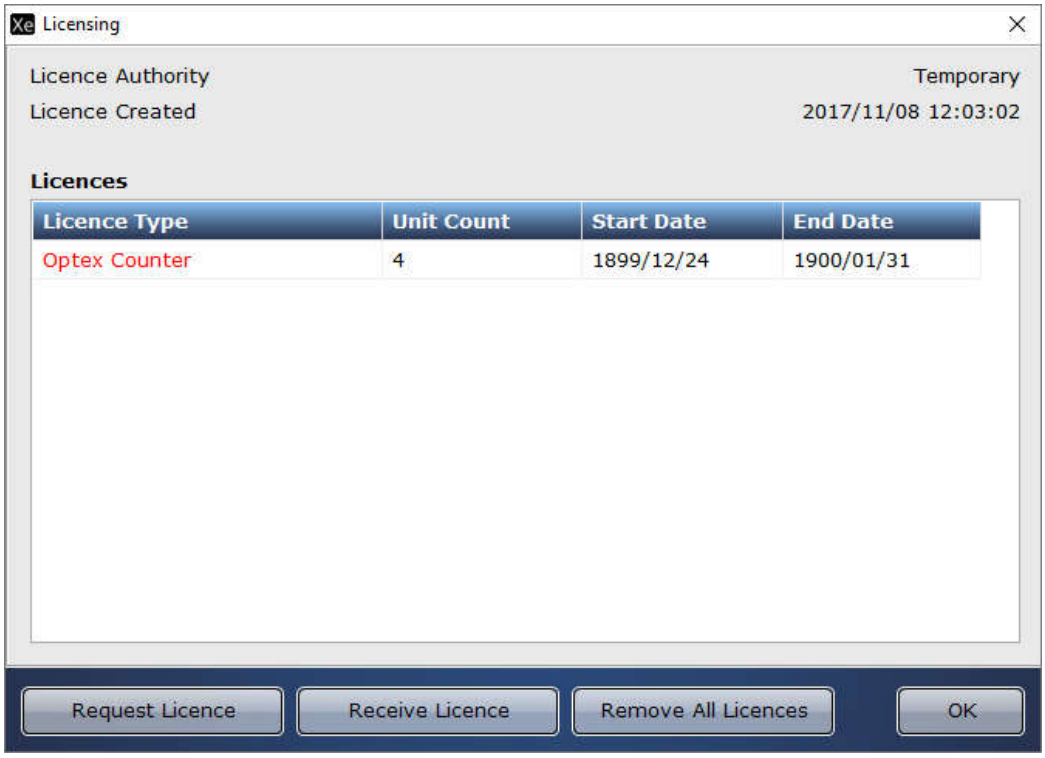
The state of the licence is shown at the bottom of the main form. The image below shows a licence that has expired.



The image below shows a licence that will expire on the 28th October 2015, but is currently valid.

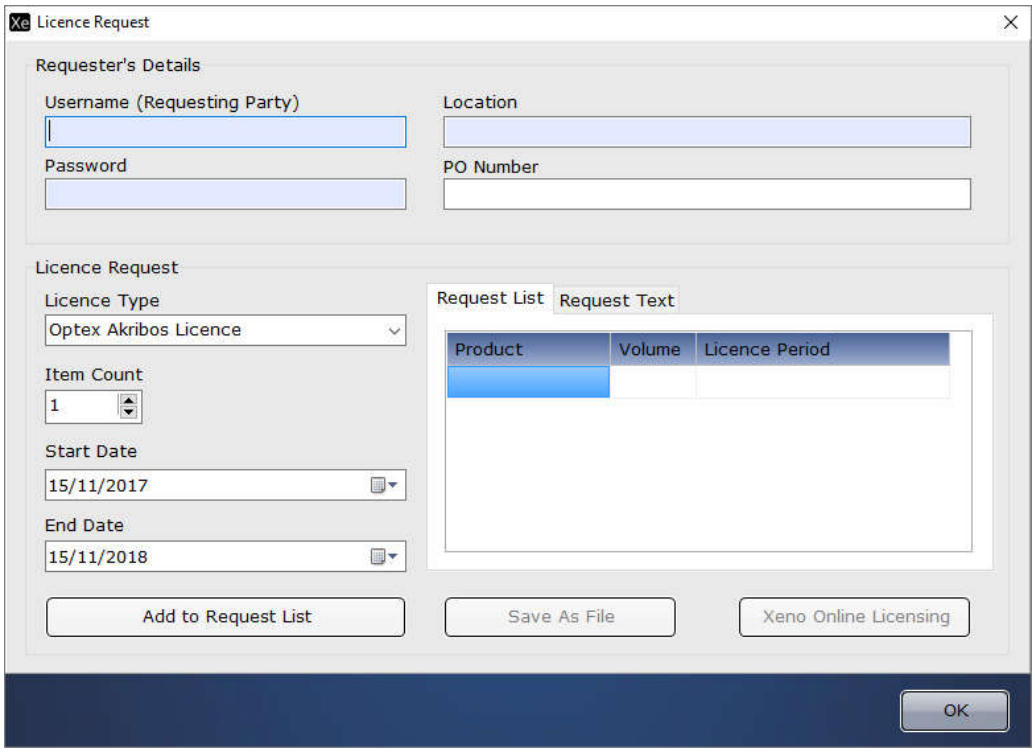


Clicking on the area within the red ellipse will invoke the Licensing form. From this form you can request a new licence, apply a licence that you have been given or clear the current licence.



The Licensing form shows the state of the current licence and provides a button to request a new licence, receive a licence that has been provided or to remove the existing licence.

This button invokes the Licence Request form.



If you have been provided with a Username and Password for *Xeno Online Licensing*, then type these strings into the relevant fields.

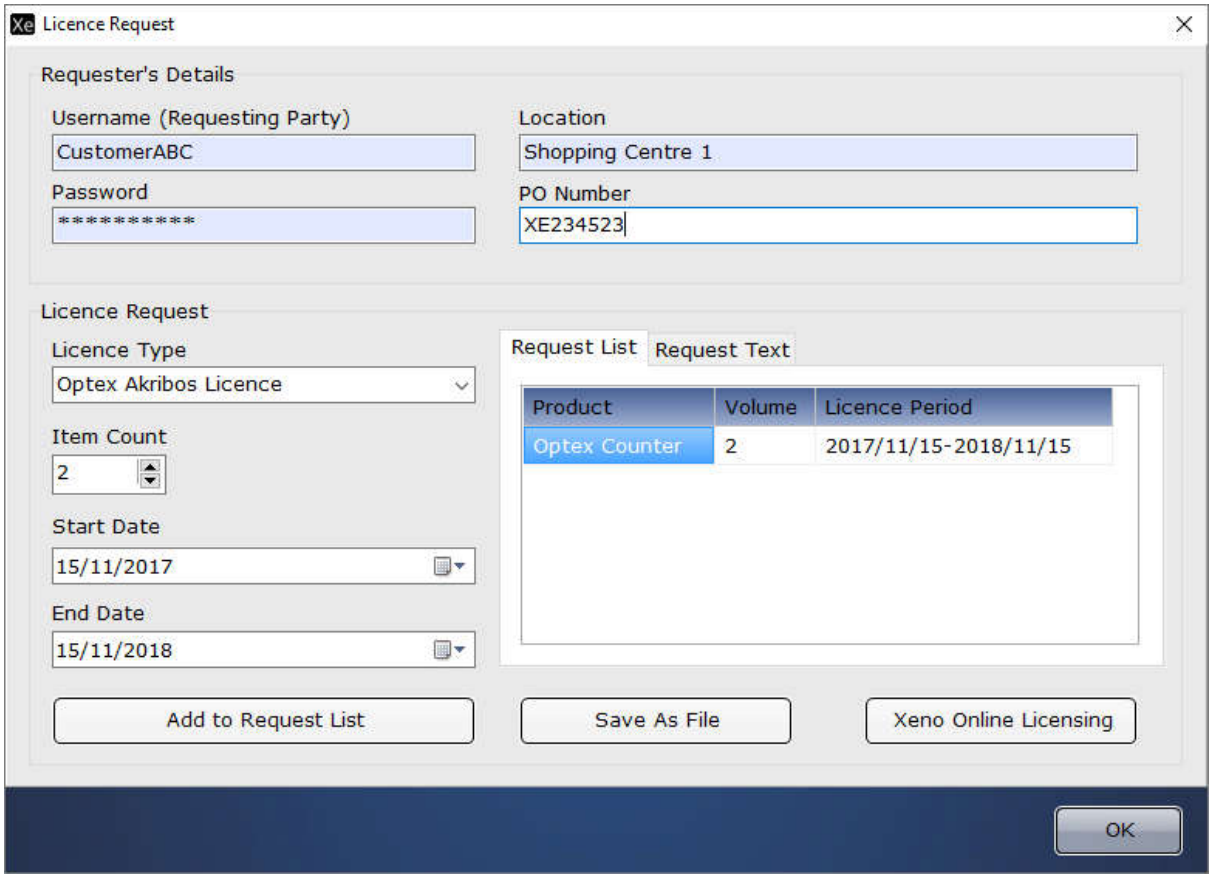
If you don't have a Username/Password, write the name of your company in the Username field. The password can be left empty.

Supply a name for the location. This is to help Xenometric identify the licence. You can provide a code if you do not wish to disclose the true location.

If you have a PO Number for this installation, please add it to the relevant field. This information is optional.

Adjust the Item Count for the number of 'Optex Akribos Licences' that you require.

Set the date range for the licence to last and then click on the 'Add to Request List' button. This will add the item to the Request List.



If you have an account for *Xeno Online Licensing* you can click on the 'Xeno Online Licensing' button to activate the software. If the automated licensing mechanism is successful. The Licence Receive form will be shown. This can be used to apply the new licence. See the *Licence Receive* section of this document for more information.

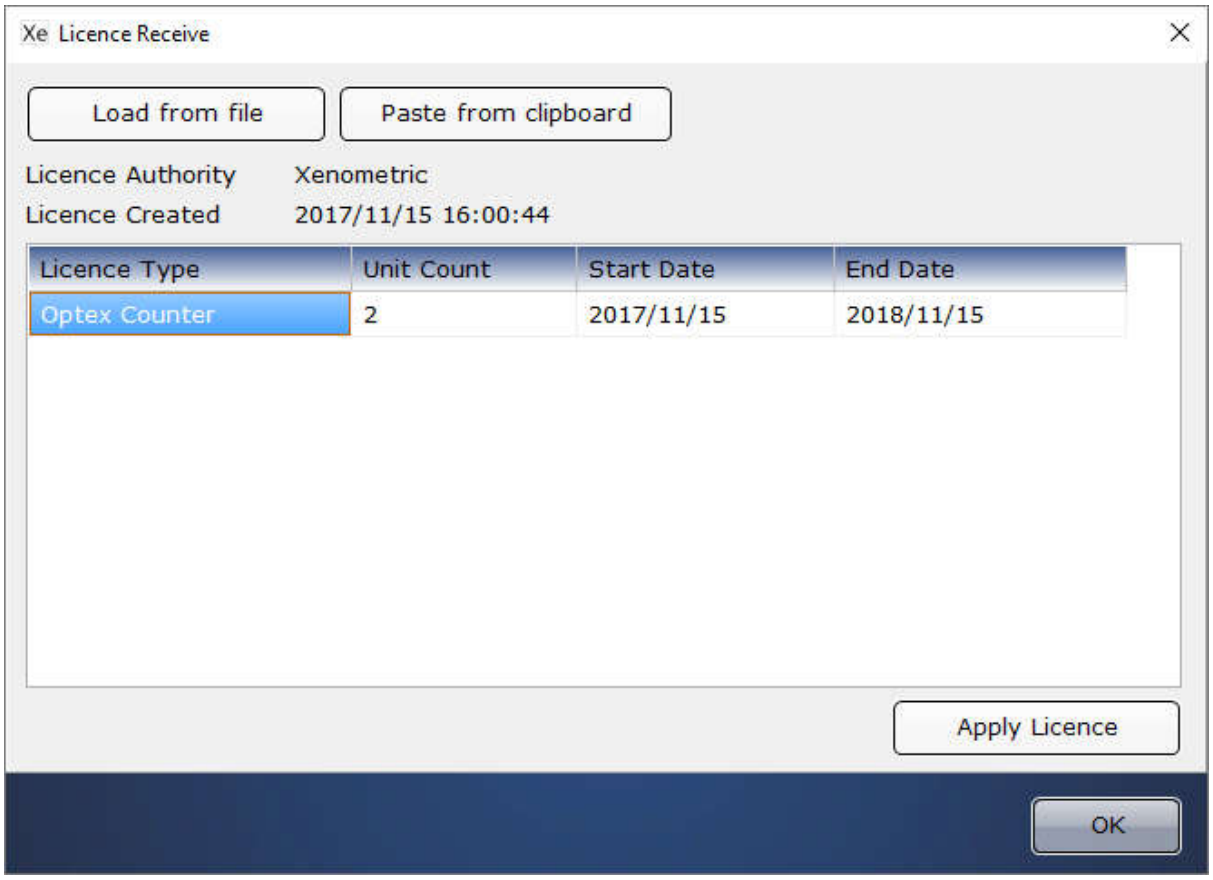
If the *Xeno Online Licensing* fails, there will be an error message shown.

If you do not have a *Xeno Online Licensing* account, you can licence the product by saving the licence request file and sending it to **licensing@xenometric.com**. To save the licence request file, click on the 'Save As File' button. You can then save the XML file and send it using your own email software. It is also possible to view the Licence Request text, which can be copied and pasted into an email.

Once the request xml has been sent to Xenometric you will need to wait for Xenometric to send a response file. We will endeavour to do this as quickly as possible.

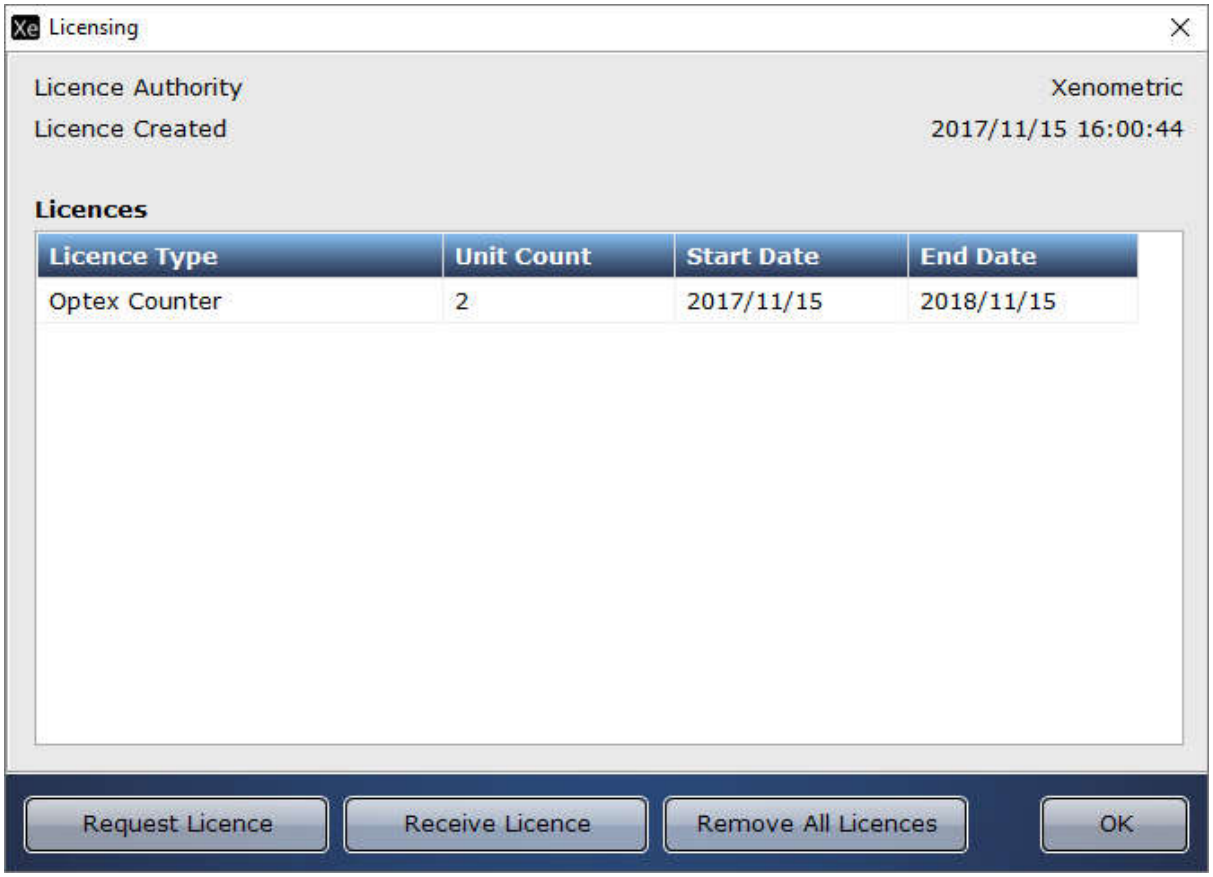
Once Xenometric has sent you the licence response file you can close the Licence Request window and open the Licence Receive window by clicking on the 'Receive Licence' button the Licensing window.

If you have used *Xeno Online Licensing* the Licence Receive window will be populated with the licence requested. Click the 'Apply Licence' button and then close the window.



If you have been sent a licence by email, click on the 'Load from file' button and select the XML file that you have received from Xenometric. This will populate the windows. You can then click on the 'Apply Licence' button before closing the window.

The main licence form will update to show your new licence data.



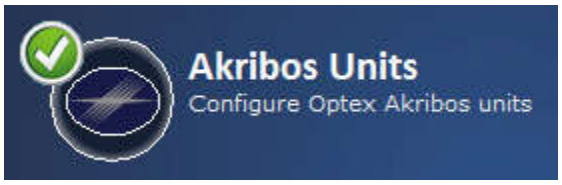
If there any problems with a licence, you can remove all licences and try again.

Clicking on the Remove All Licences button will reset the licence back to the 4 week free licence that was installed with the product.

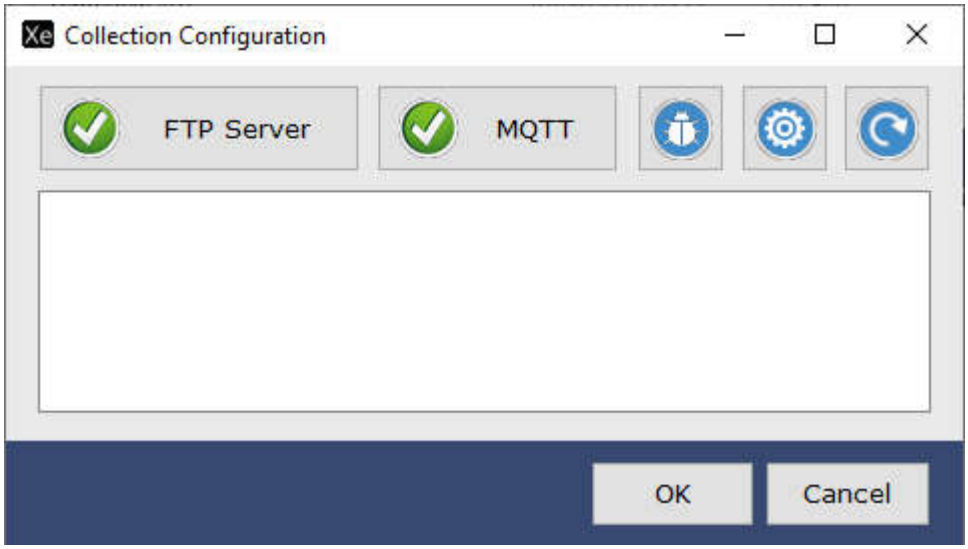
A new licence can be applied on top of the existing licence at any time.

5 Configuring the XenoView software to accept Akribos data

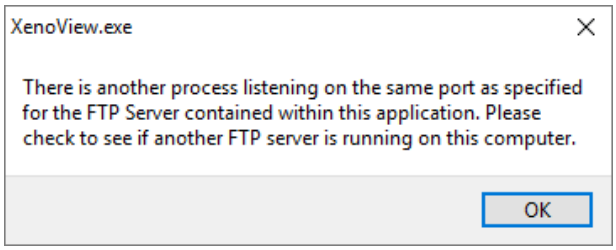
Click on the Akribos Units button on the main form to launch the Collection Configuration form.

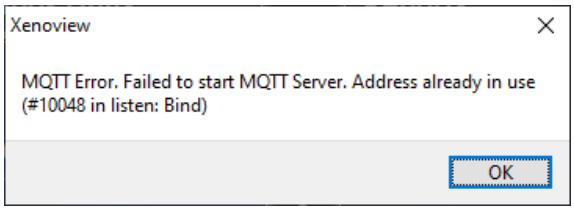


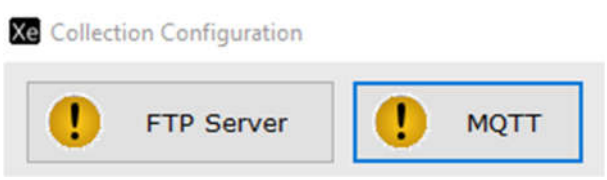
The Collection Configuration form will be initially empty of Akribos units, but will show whether the internal FTP server and MQTT server is operational. FTP is necessary for the Akribos to be included in the XenoView software. MQTT is optional to add real-time counting. MQTT is only necessary if you intend to use the Live screen or Access Control screen.



If there is a problem with the software collecting data, it is likely that another piece of software listening on the defined FTP port (default port 21) or MQTT port (default 1883). If this is the case, there will be a warning message shown and the XenoView will show a warning icon for both FTP and MQTT.



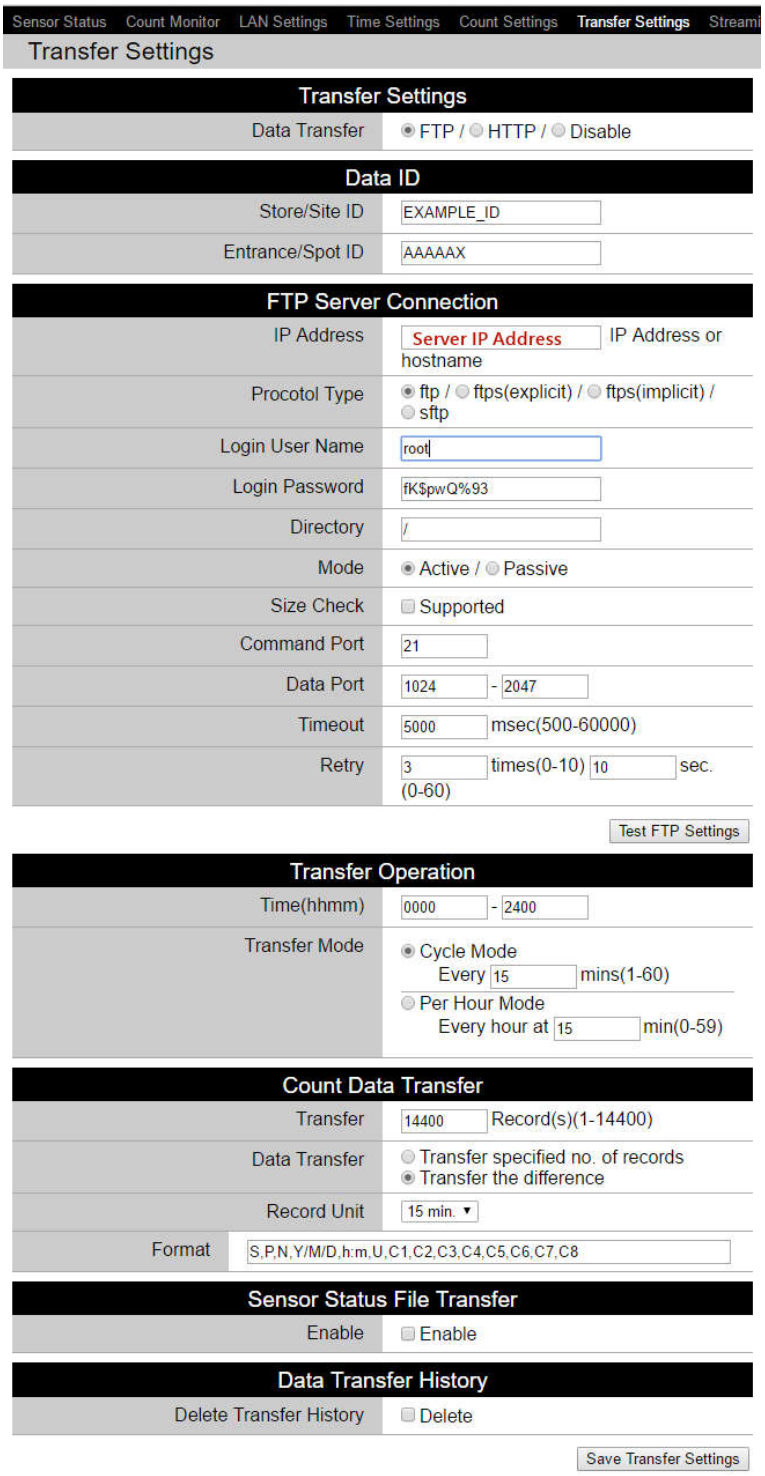




5.1 Configuring the FTP mechanism

5.1.1 Akribos FTP Settings (Transfer Settings)

Use a web browser to navigate to the IP address of the AKRIBOS unit to be configured, e.g. http://192.168.0.10. Click on the **Transfer Settings** link along the top of the page. The following page will be displayed.



Transfer Settings

- Data Transfer – There are two options, FTP and HTTP. Xenometric supports both protocols, but this manual focuses on FTP data delivery. Please contact Xenometric if you wish to use HTTP. For FTP transfer, simply ensure that the FTP radio button is checked.

Data ID

- **Store/Site ID** – This should be an alphanumeric string of at least 6 characters in uppercase format. This ID can be the same as the Xeno Site ID, which is discussed later in this manual. The Store/Site ID should be unique to this site. No other site should use the same ID.
- **Entrance/Spot ID** – This should be an alphanumeric string of at least 2 characters in uppercase format. This string uniquely identifies a counter within a building. No two counters in the same building (same Site ID) can have the same Entrance/Spot ID. An example for counter 1 might be AA, counter 2 might have an ID of AB, counter 3 might have an ID of AC etc. The example above shows a more complex ID of AAAAAX. In this instance a little more information about zoning has been embedded in the ID. Adding extra detail to the ID is optional.

FTP Server Connection

- **IP Address** – This is the IP address of the server on which the X-Server software is installed.
- **Protocol Type** – If the AKRIBOS unit and X-Server are on a private network then there is probably no need to use a secure FTP connection. The 'ftp' option is safe. If the FTP data is to traverse the Internet then it may be advisable to use a secure connection. In which case select 'ftps'.
- **Login User Name** – root
- **Login Password** – fK$pwQ%93
- **Directory** – If the counts are to be delivered to the root directory of the FTP account then use '/' (without quotes). If a subdirectory needs to be specified then provide the path, e.g. '/counts' (without quotes).
- **Mode** – If there are firewalls in place between the AKRIBOS and X-Server then it may be necessary to use FTP passive mode. For most situations, active mode is fine.
- **Size Check** – Leave this item ticked.
- **Command Port** – This will default to port 21, unless the FTP Server has been configured to listen on a different port.
- **Data Port** – Data port range represents the range of ports that the AKRIBOS can use to connect to the FTP Server's ports. The AKRIBOS will open two ports in the range 1024-2047 that will connect by default to the FTP Server's ports 21 and 20.

- **Timeout** - Apply a timeout of 60 seconds, which should be entered as 60000
- **Retry** – Leave as default.

FTP Transfer Operation

- **Time (hhmm)** – This should have the range 0000 – 2400
- **Transfer Mode** – The cycle mode should be selected and a value of 15 mins applied.

Count Data Transfer

- **Transfer** - This value can be set to 14400 records.
- **Data Transfer** – This should be set as 'Transfer the Difference'.
- **Record Unit** – The dropdown should be set to 15 min.
- **Format** – The format should be specified as S,P,N,Y/M/D,h:m,U,C1,C2,C3,C4,C5,C6,C7,C8
  This represents the following codes.

Code	Description
S	Store/Site ID
P	Entrance/Sport ID
N	Serial Number
Y/M/D	Date in YYYY/MM/DD format
H:m	Time in HH:MM format
U	AKRIBOS status
C1	Count 1 IN
C2	Count 1 OUT
C3	Count 2 IN
C4	Count 2 OUT
C5	Count 3 IN
C6	Count 3 OUT
C7	Count 4 IN
C8	Count 4 OUT

Each line in the file sent from the Optex AKRIBOS to the X-Server will look something like this
EXAMPLE_ID,AAAAAX,00101445,2013/07/30,19:41,g,0000,0001,0000,0000,0000,0000,0000,0000

Sensor Status File Transfer

- **Enable** – This should be ticked, although it is not currently used by the X-Server.

Data Transfer History

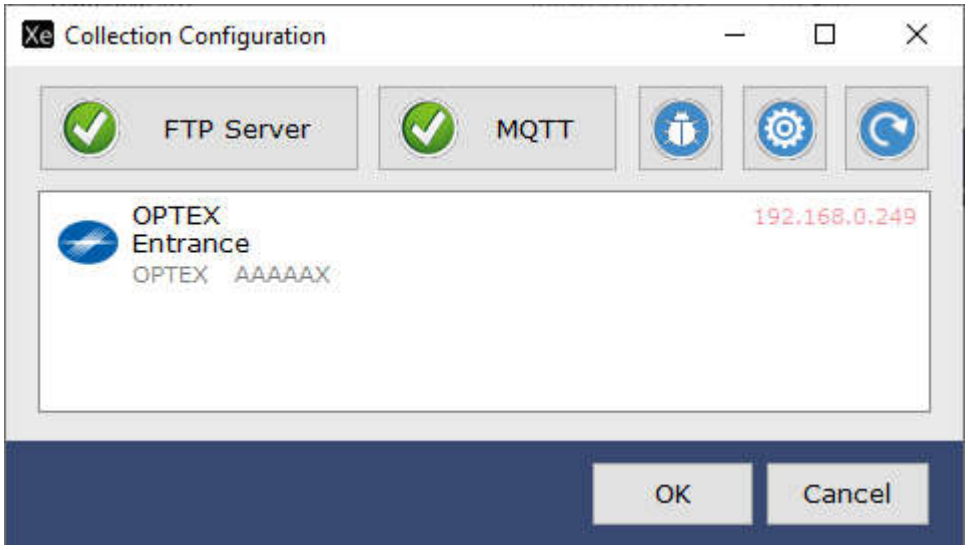
- **Delete Transfer History** – This can be left unticked.

Click on the Save Transfer Settings button to store the configuration.

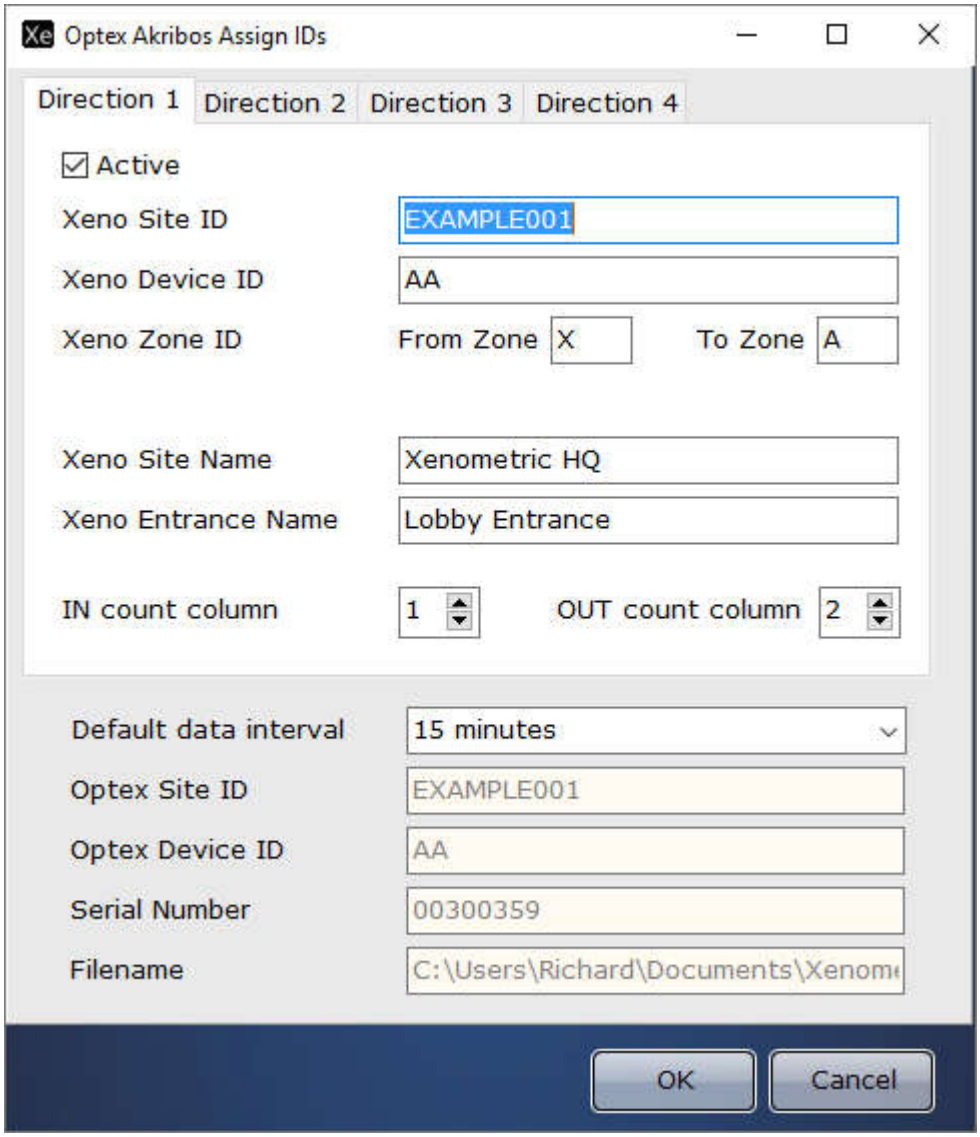
The FTP connection can be tested by clicking on the Test FTP Settings button in the FTP Server Connection section of this page. A successful connection will be shown by a message on a green background at the top of the page. An unsuccessful attempt will be shown with an error message on a red background. A failure is most likely caused by 1. The FTP Server in X-Server is not yet configured or running, 2. There is a firewall blocking the FTP ports, or 3. The FTP Server port in X-Server is being used by another program.

5.1.2 XenoView FTP Settings

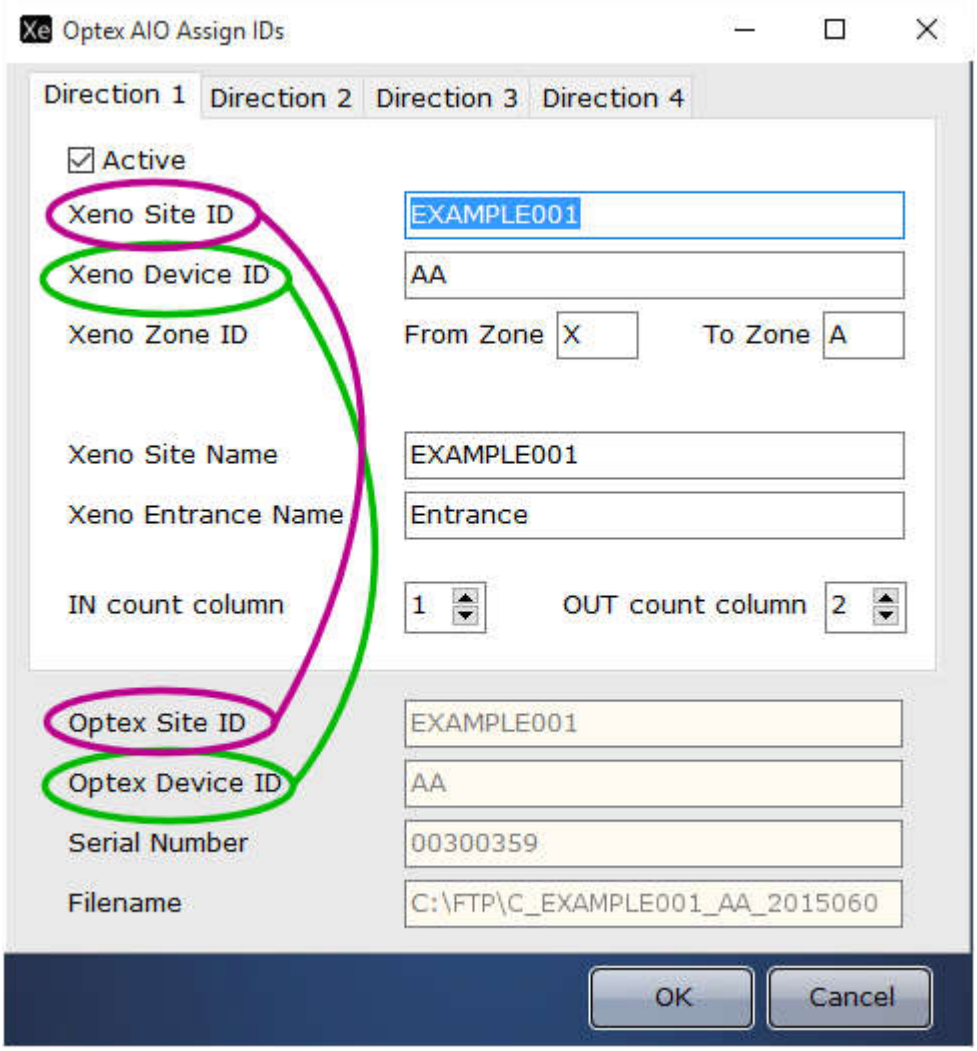
The XenoView software is constantly listening for connections from Akribos units. As soon as an Akribos unit connects and delivers data, the XenoView will add this unit to its list of counters. You can also click the Refresh button (far right) to check for new units. Make sure the XenoView is licensed, else you may not be able to add sensors.



In order to assign friendly names or add extra count lines, it is necessary to edit the default settings for each Akribos. You can do this by double-clicking on the relevant item in the Collection Configuration window. The following window will then be shown.



The Site ID and ID and Device ID are shown for the Xenometric settings at the top and Optex settings below. The Optex settings match those input into the Akribos' configuration. Although you can change the Xeno Site ID and Device ID, it is recommended that you keep them the same as the values used on the Akribos.

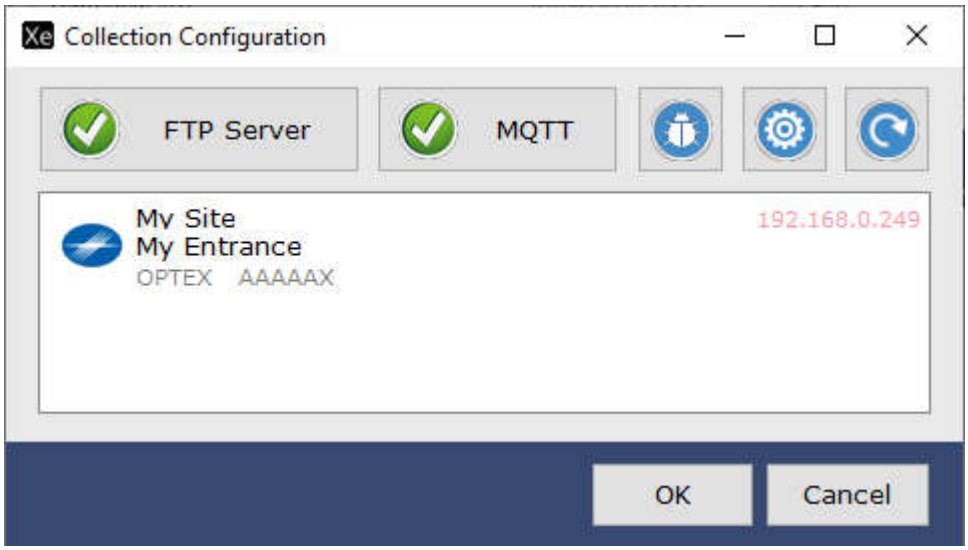


The Xeno Site Name and Xeno Entrance name can be given any name. These values are used to report data in a friendly way.

The Akribos is capable of counting across 8 boundaries. This equates to a possible 8 count items per interval. The default is for just 2 items, which would usually equate to In and Out. If your installation utilises more than 2 lines on an Akribos it will be necessary for you to complete some of the other pages on this form. Each page is labelled; Direction 1, Direction 2, Direction 3 and Direction 4. You can select the column for each count, where the column number is the index number (1 – 8) of the lines on the Akribos. Please contact Xenometric or Optex if you are unsure of how to use this advanced feature.

Once you have completed all the details for all count directions (usually just Direction 1), you can click on OK to save your changes.

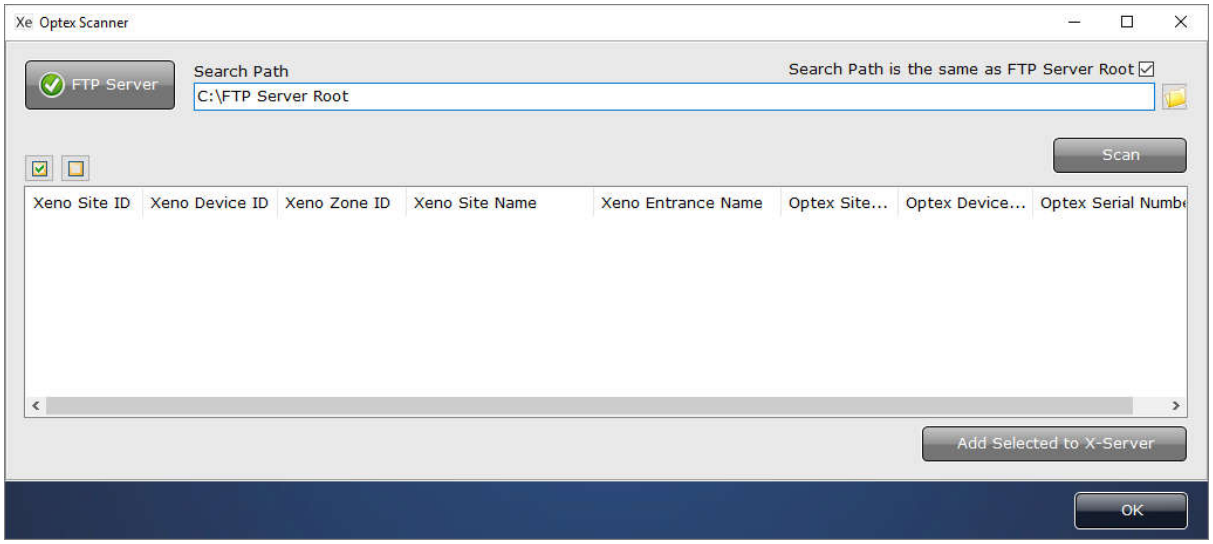
The new names will now be shown on the Akribos Configuration form.



In the example above, I have named the site ‘My Site’ and the entrance ‘My Entrance’. These names will be used in any output or reporting to identify the entrance.

The Site ID (OPTEX) and Device ID (AAAAAX) have been left as they were configured on the Akribos.

There is an Advanced section that can be used for diagnostic purposes. The use of this feature is not covered in this manual. Please contact Xenometric for more information.

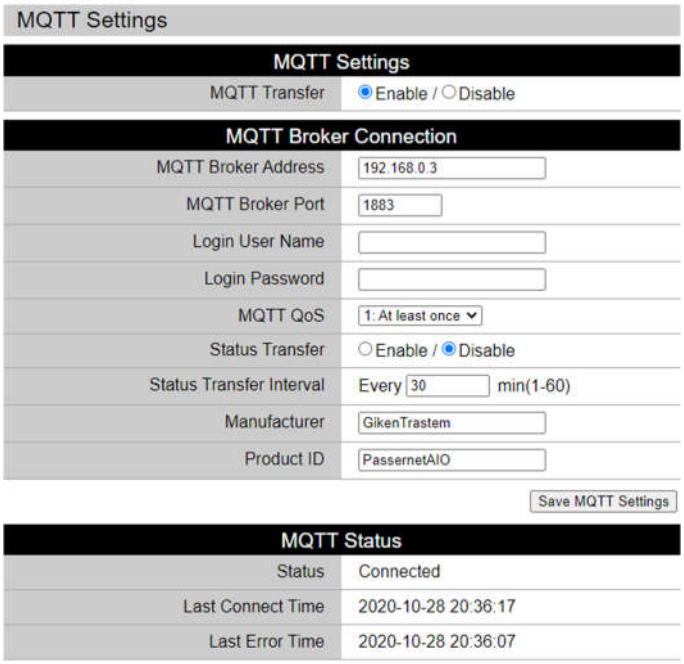


5.2 Configuring the MQTT mechanism

If you require real-time data to be sent from the Akribos to XenoView, you can activate the MQTT Transfer.

5.2.1 Akribos MQTT Settings

The majority of the MQTT options can be kept as default.



MQTT Settings

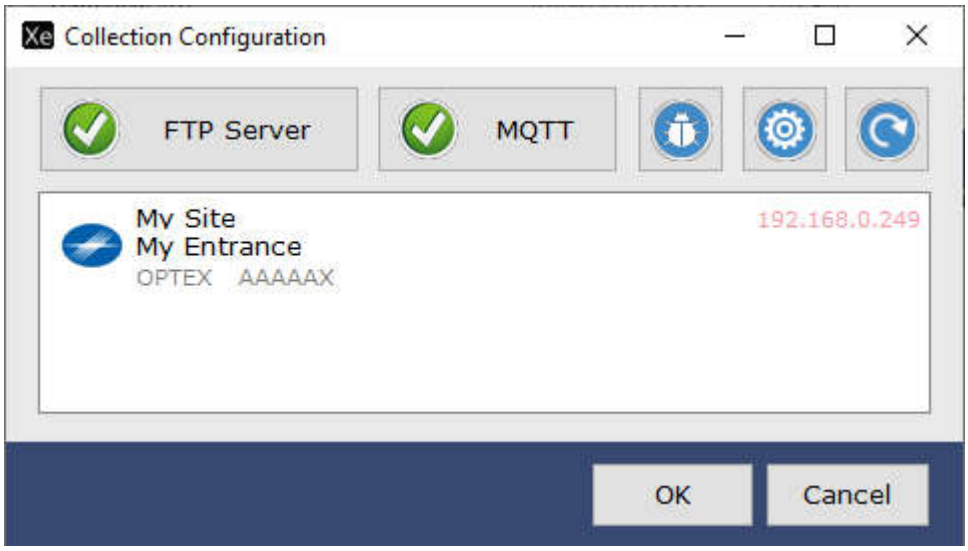
MQTT Transfer	Set this option to ‘Enable’.

MQTT Agent Connection

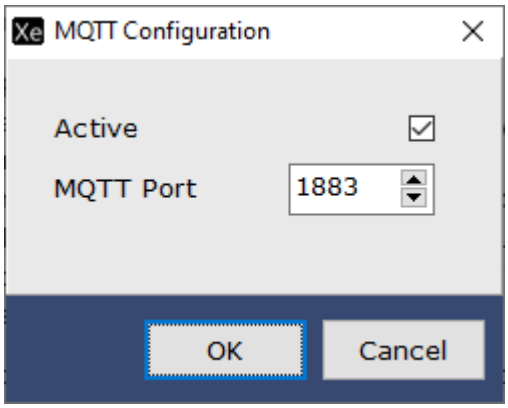
MQTT Agent Address	This is the IP address of the XenoView computer
MQTT Agent Port	This must match the port that XenoView is listening on. Default is 1883
Login User Name	Leave empty
Login Password	Leave empty
MQTT QoS	Leave as ‘1. At least once’
Status Transfer	Disable
Status Transfer Interval	30 mins
Manufacturer	GikenTrastem
Product ID	PassernetAIO

5.2.2 XenoView MQTT Settings

Configuring XenoView to listen for MQTT messages is simple, but first you must complete the FTP mechanism, else XenoView will ignore the MQTT messages.



Click on the MQTT button to launch the MQTT Configuration form.

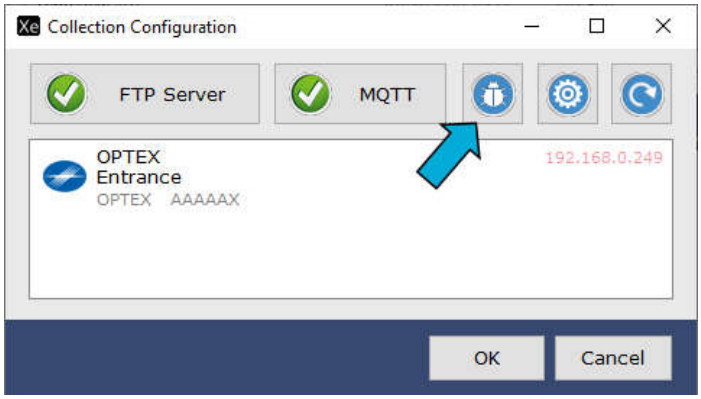


Make sure the Active checkbox is ticked and the port number matches that chosen in the Akribos. The default is 1883. Click OK to save your selection.

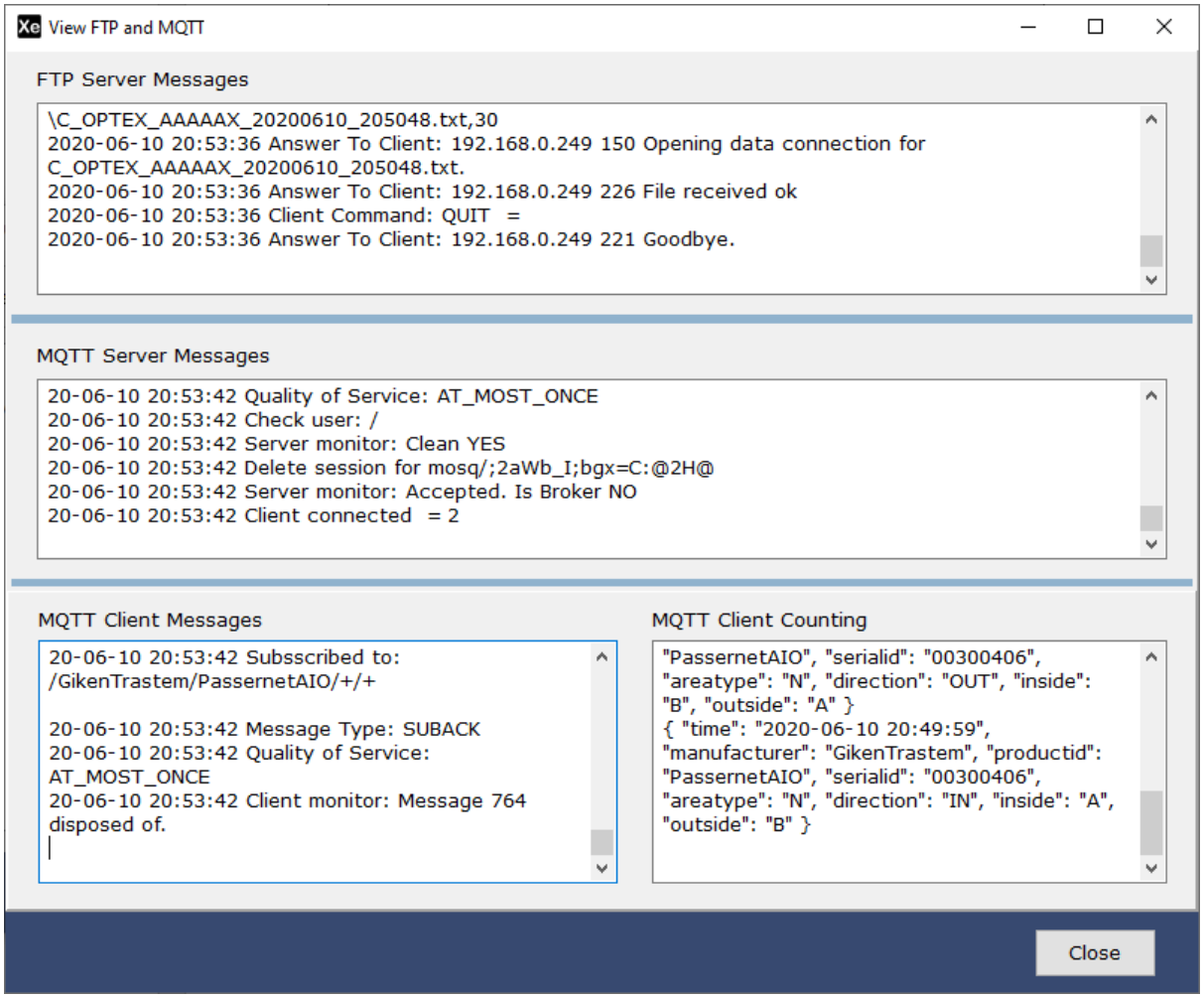
5.3 Debugging the FTP and MQTT

If you've configured the Akribos and XenoView, but something's not working you can debug the messages sent between the Akribos and XenoView. First make sure that there is no firewall blocking the ports (FTP default 21 and MQTT default 1883) and that all the config is correct in the Akribos and XenoView.

To launch the debug window, click on the bug icon.



You should see data in several of the windows of the debug form.



There are 4 panels on the form. The top panel shows all FTP messages. The other 3 are for the MQTT mechanism.

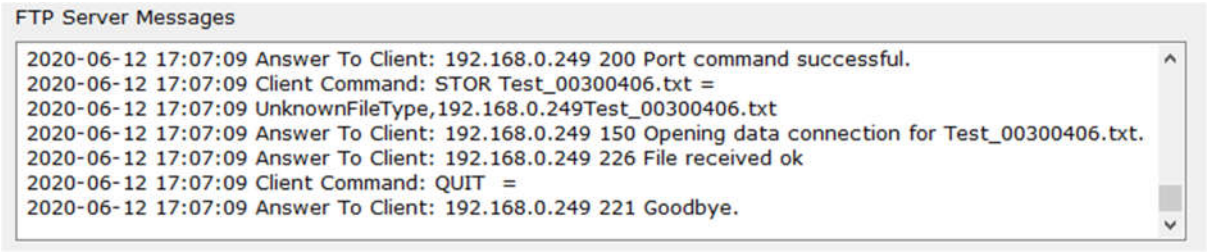
5.3.1 Debugging FTP

The first thing to try is to click on the Akribos' Test FTP Settings button.

If the test is successful, you will see the test file being sent. There will be a line like

STOR Test_00300406.txt = where the number in the filename is the serial number of the Akribos.

Here is an example of a successful test.



If the test fails, you can inspect the messges in this window. If there are no messages, then the Akribos could not connect. If the password or other parameter is wrong, the text in the window may help you decide the source of the problem. E.g.

2020-06-12 17:12:47 Answer To Client: 192.168.0.249 530 Login incorrect.

Example of successful data delivery

If there are messages in this window and they come from an Akribos, then there is most likely not a problem with the FTP mechanism. Any problems are more likely to be due to a configuration error in the Transfer Settings page of the Akribos.

If there are no messages, then there are a lot of potential causes. Here are some of the most likely causes,

1. There is a firewall blocking the Akribos from sending data on the FTP port into the XenoView computer.

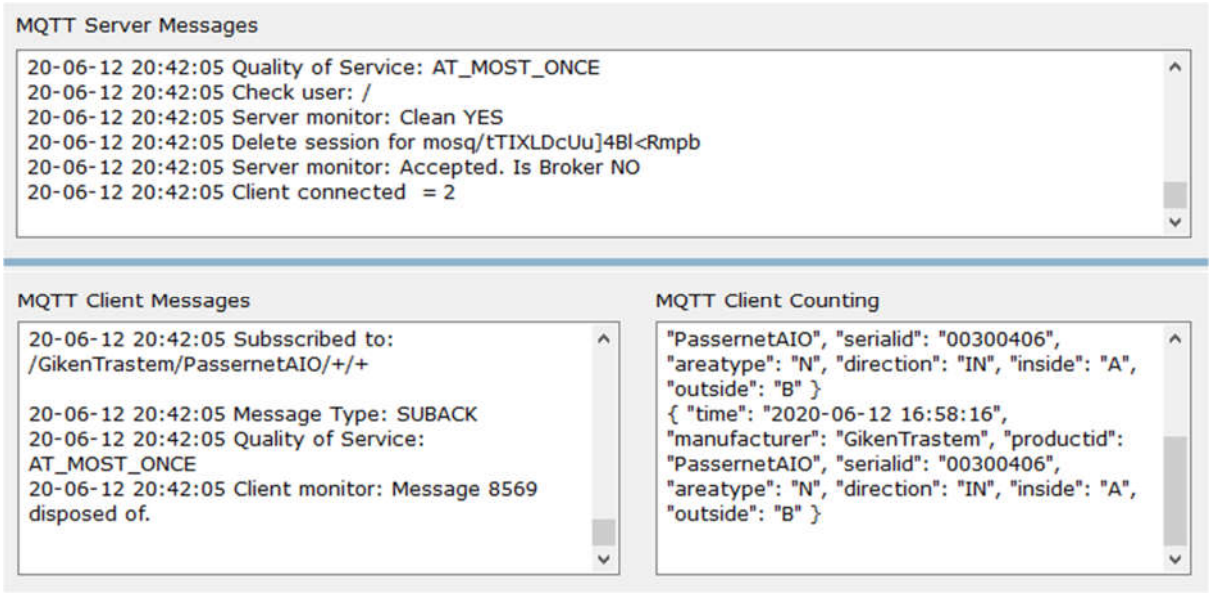
2. The Akribos is configured to send to the wrong IP address or the port selected does not match the port used in XenoView.

3. You've accidentally chosen HTTP instead of FTP or you've selected FTPS(explicit or implicit) or SFTP, which are not supported in XenoView.

5.3.2 Debugging MQTT

The Akribos is an MQTT Client. XenoView is an MQTT Server and an MQTT Client. This is necessary as MQTT Clients talk to each other via an MQTT Server. For XenoView to talk to an Akribos, the MQTT Client in XenoView needs to talk to the MQTT Client in the Akribos. This is facilitated by the MQTT Server in XenoView.

The MQTT clients (Akribos and XenoView) and server (XenoView) all talk on the same port. This is port 1883 by default (Note: Xenometric use 18883 for our XenoCloud service). If you have not changed the default port in the Akribos or XenoView, it will be using 1883.



As a general rule, seeing messages in all 3 windows means that everything is working well.

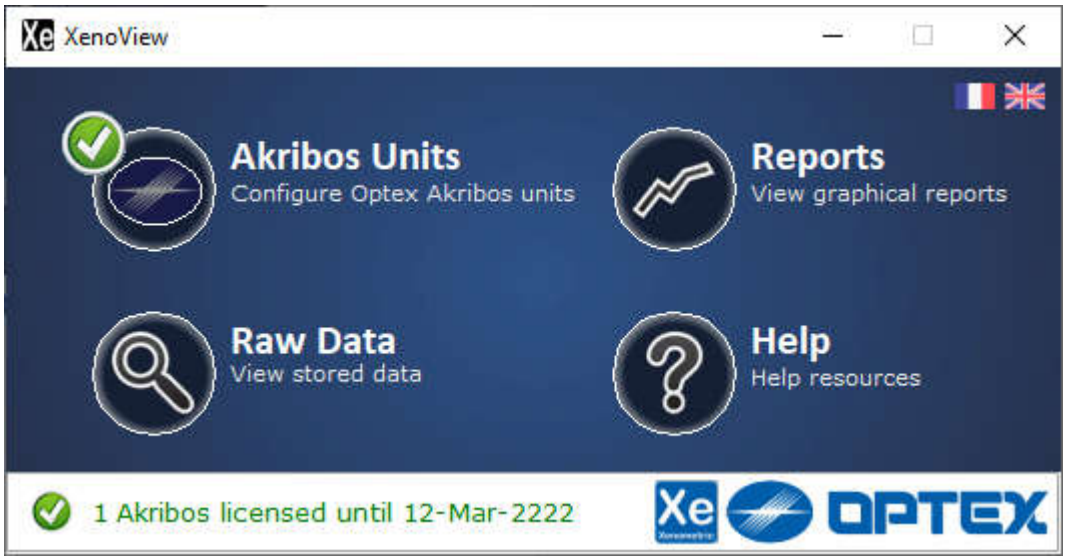
When someone walks under the Akribos it will create some messages in the MQTT Client Counting windows (bottom right). If you are seeing messages in this window and the date/time stamp looks good, then there is unlikely to be a problem.

If you have messages in the MQTT Server Message and MQTT Client Messages windows, but not in the MQTT Client Counting window, then either no one has walked under the Akribos or there is an MQTT problem.

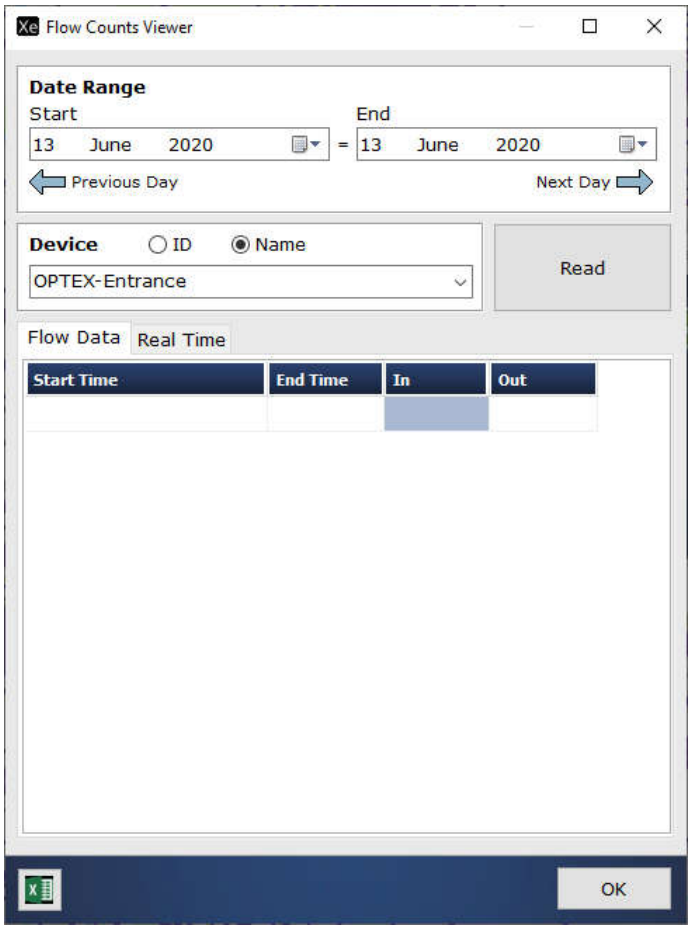
Determining the cause of any MQTT problem will require analysis of the messages in the windows.

6 Raw Data

The raw counts from all the connected Akribos cameras can be viewed by clicking on the Raw Data button on the main control form.



This will launch the Flow Counts Viewer form.

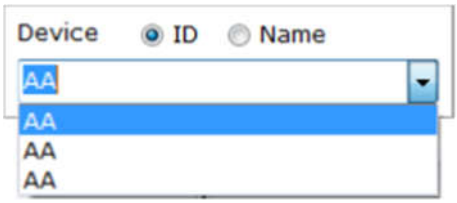


6.1 Aggregated Data

Single or multiple days' data can be requested by use of the 'Date Range' controls. The start date must be less than or equal to the end date. It is possible to shift both the start and end dates by one day backwards or forwards by use of the 'Previous Day' and 'Next Day' buttons. There is also an = button. This changes the End date to match the start date.

The device whose data is to be viewed can be selected by two different identities.

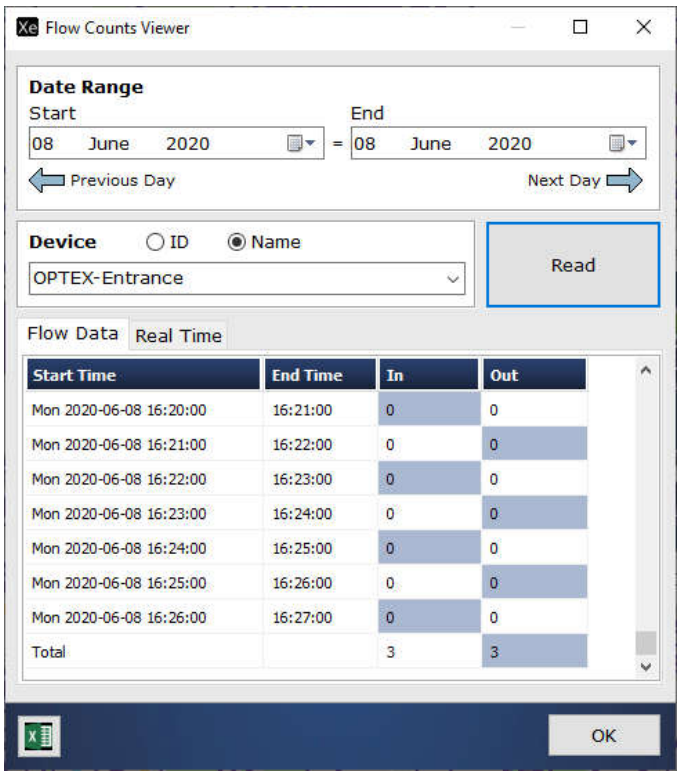
The default method of identifying a device is a combination of the device's display name and device name. This combination provides a string that is most likely to be recognised by an operator.



The Device ID is not particularly well suited to discriminate between devices across multiple sites. This is due to the fact the many devices, belonging to different sites, can have the same Device ID.

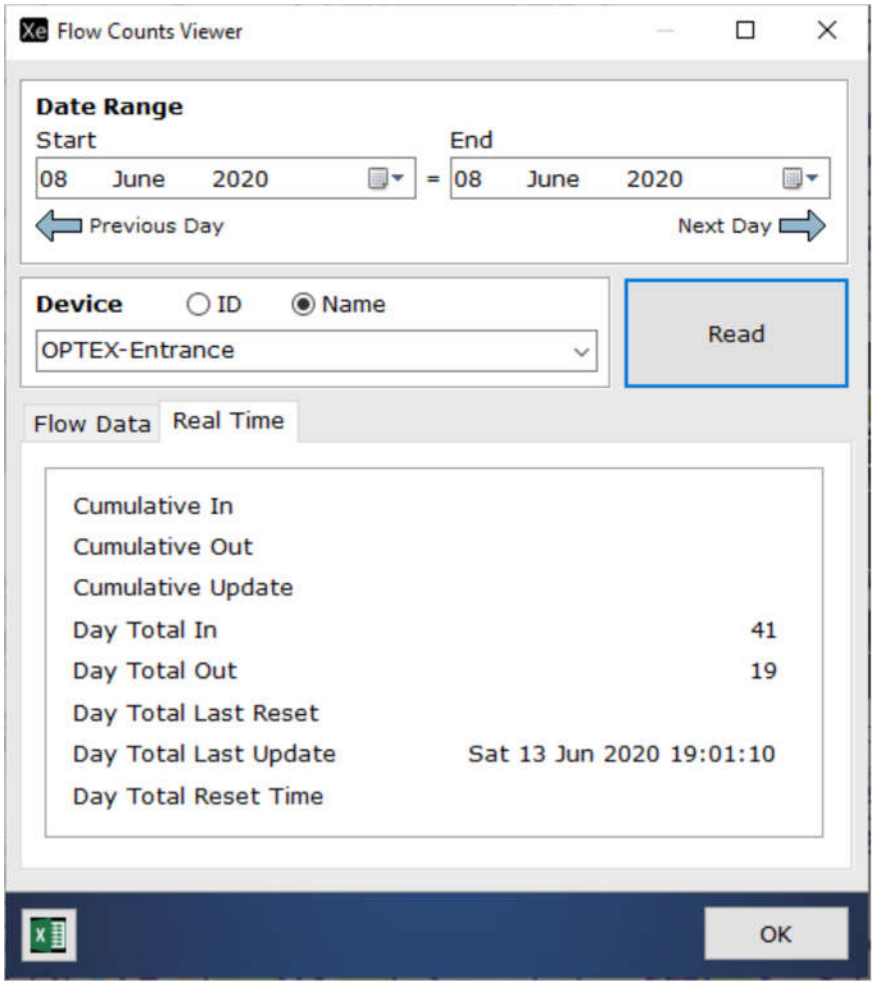
The 'All' checkbox dictates whether inactive devices will be shown.

Clicking on the 'Read' button will load all the counts for the chosen device into the viewer.



6.2 Real-time Data

Click on the Real Time tab to change the view from aggregated data to real-time.

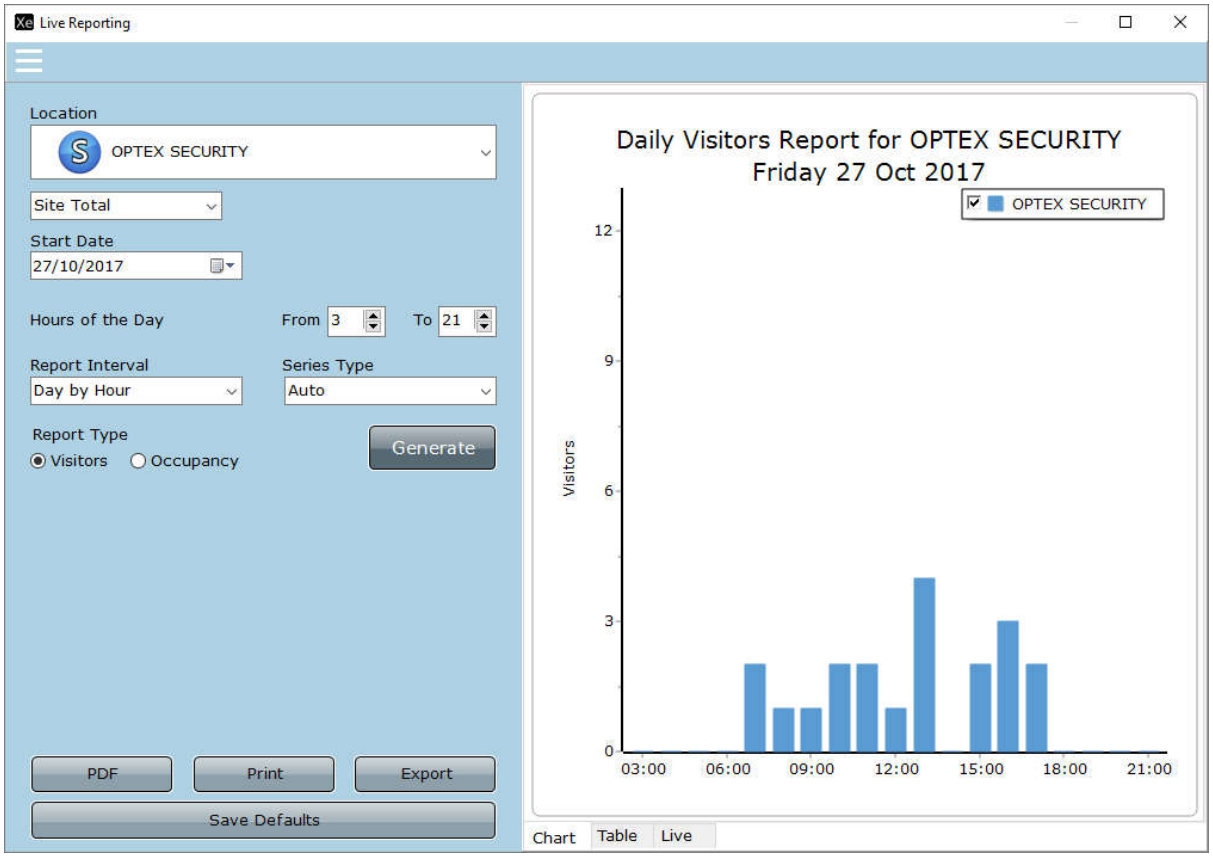


You can see the current day's In and Out counts and last update time.

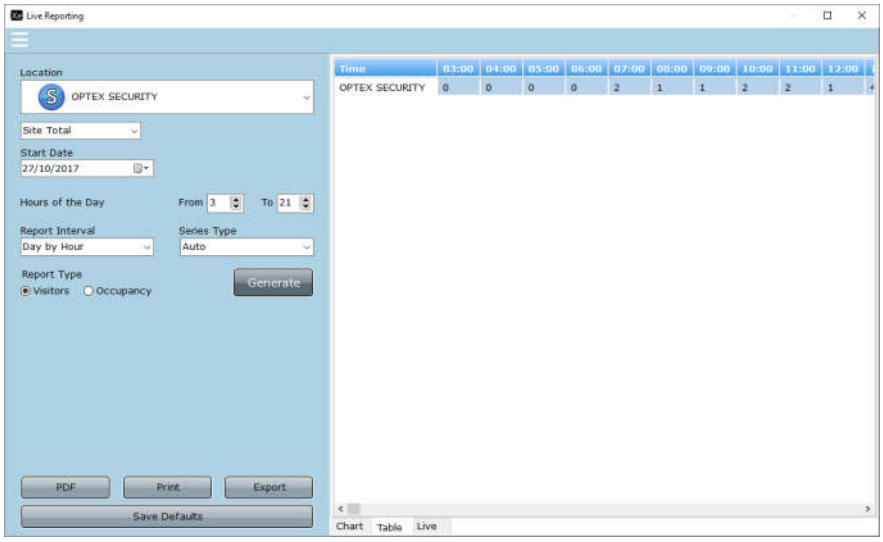
7 Reports

Click on the Reports button on the main control form to launch the Live Reporting window.

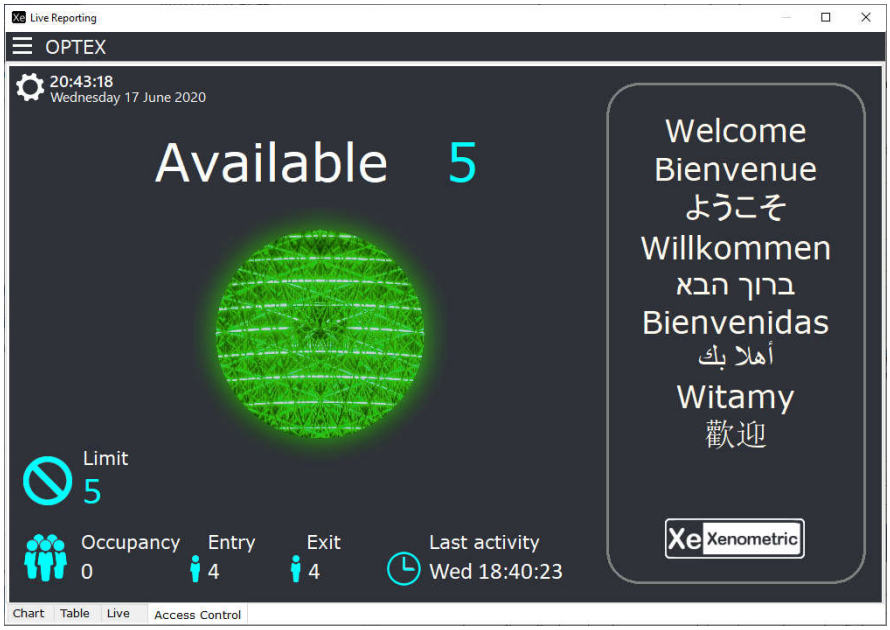
The Reporting window will default to today's date and the first site in the list of sites.



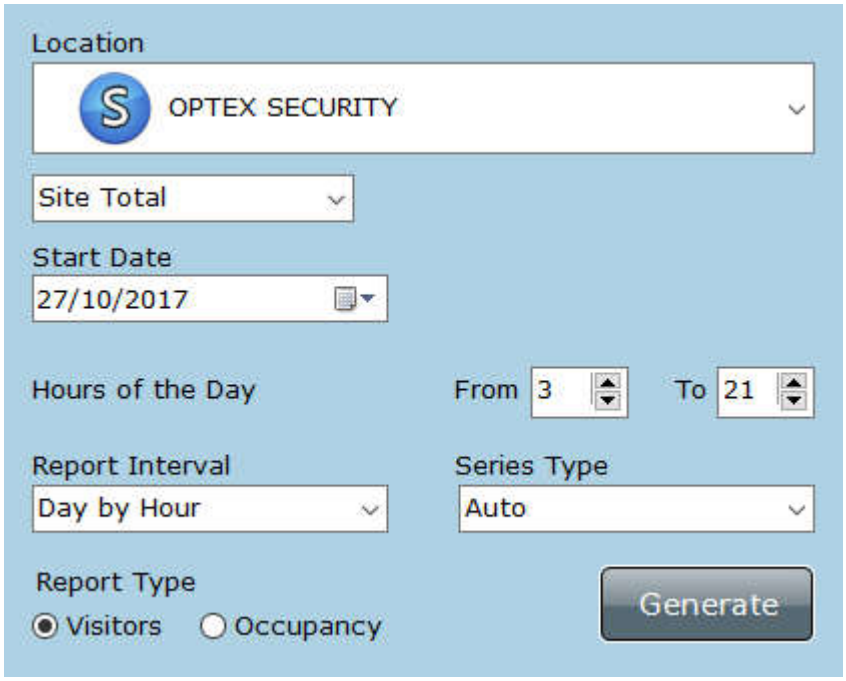
There are separate tabs shown for the Chart, Table, Live and Access Control.


Live Reporting
Location
OPTEX SECURITY
Site Total
Start Date
27/10/2017
Hours of the Day
From 3
To 21
Report Interval
Day by Hour
Series Type
Auto
Report Type
Visitors
Occupancy
Generate
PDF
Print
Export
Save Defaults
Time
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
OPTEX SECURITY
0 0 0 0 2 1 1 2 2 1
Chart
Table
Live

Live Reporting
Location
OPTEX SECURITY
Site Total
Start Date
27/10/2017
Hours of the Day
From 3
To 21
Report Interval
Day by Hour
Series Type
Auto
Report Type
Visitors
Occupancy
Generate
PDF
Print
Export
Save Defaults
18:56:45
Wednesday 15 November 2017
Visitors 20
Occupancy 10
Max Occupancy
10
Wednesday 15 Nov 2017 12:00
Chart
Table
Live


Live Reporting
OPTEX
20:43:18
Wednesday 17 June 2020
Available 5
Limit
5
Occupancy
0
Entry
4
Exit
4
Last activity
Wed 18:40:23
Welcome
Bienvenue
ようこそ
Willkommen
ברוך הבא
Bienvenidas
أهلا بك
Witamy
歡迎
Xe Xenometric
Chart
Table
Live
Access Control

7.1 Report Parameters

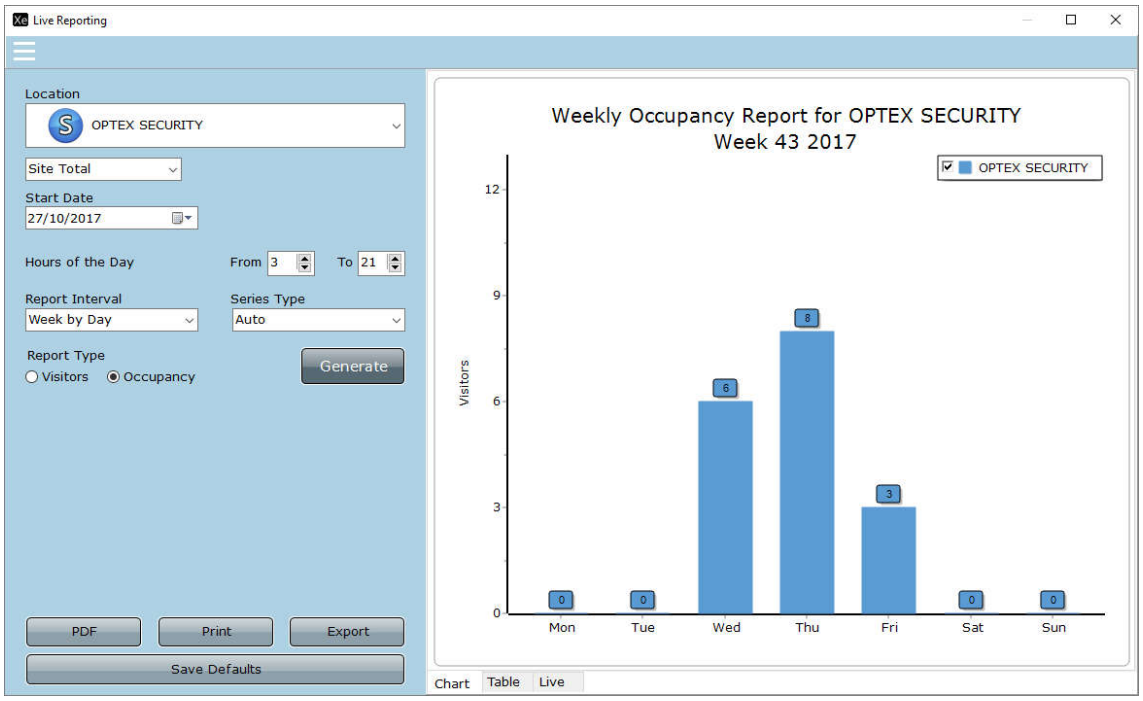


The Location dropdown is used to select the location to be reported.

Reports can be run for a single day (Day by Hour) or a week (Week by Day). The start date determines the single day or the week to which the date belongs.

For many systems it is not necessary to show all hours of the day. The hours to be shown can be constrained by changing the start and end hours.

The Visitors and Occupancy radio button can be changed to show either the standard people counts (Visitors) or an estimation of the people in the zone and how long they stay in the zone (Occupancy).

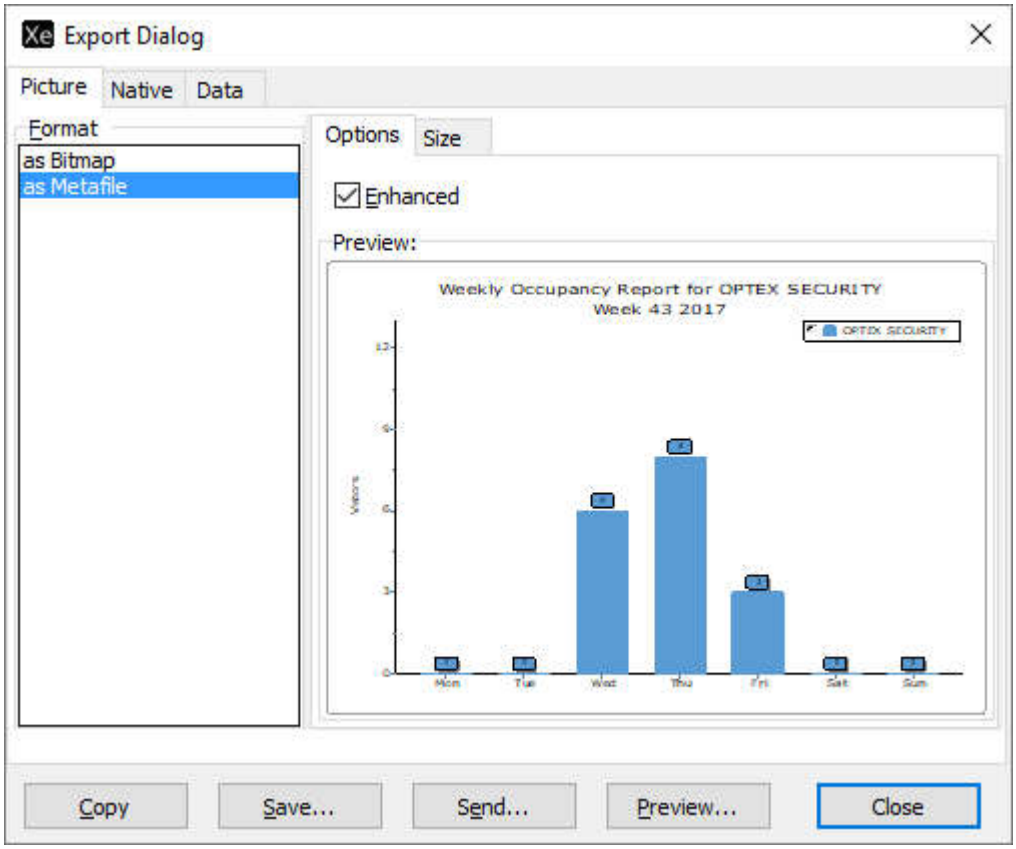


The occupancy figures are estimates and are not to be taken as exact representations of the true number of people in an area and how long they stay there. The figures should not be used for health and safety considerations, as the error can be too high for meaningful use. Please read Xenometric's document on Occupancy (http://www.xenometric.com/occupancy.aspx) to fully understand how the figures are calculated and why they are only an estimate.

The Save Defaults button will store and options that you have set, such as; Hours of the Day, Site selected, Report Type (Visitor/Occupancy) and whether the window is full-screen.

Export

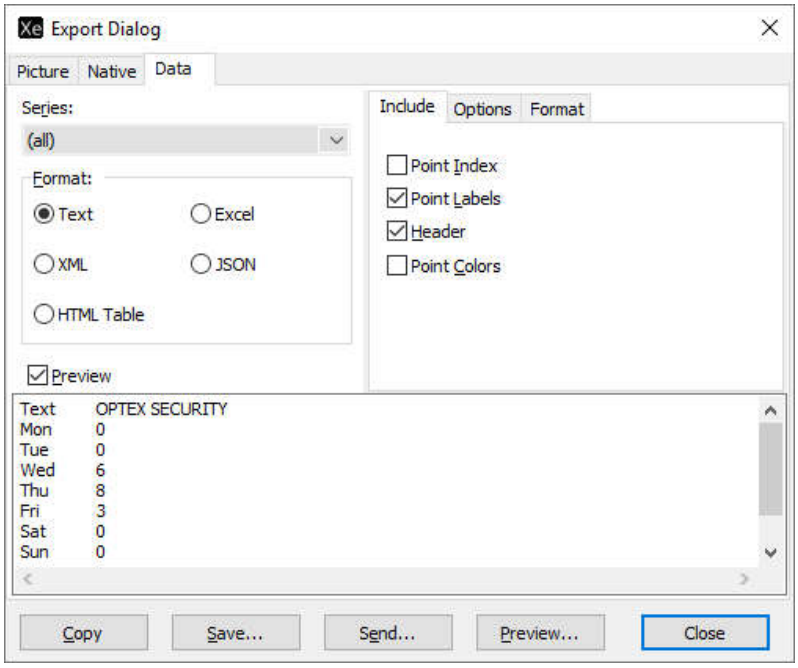
The Export button launches the Export Dialog.



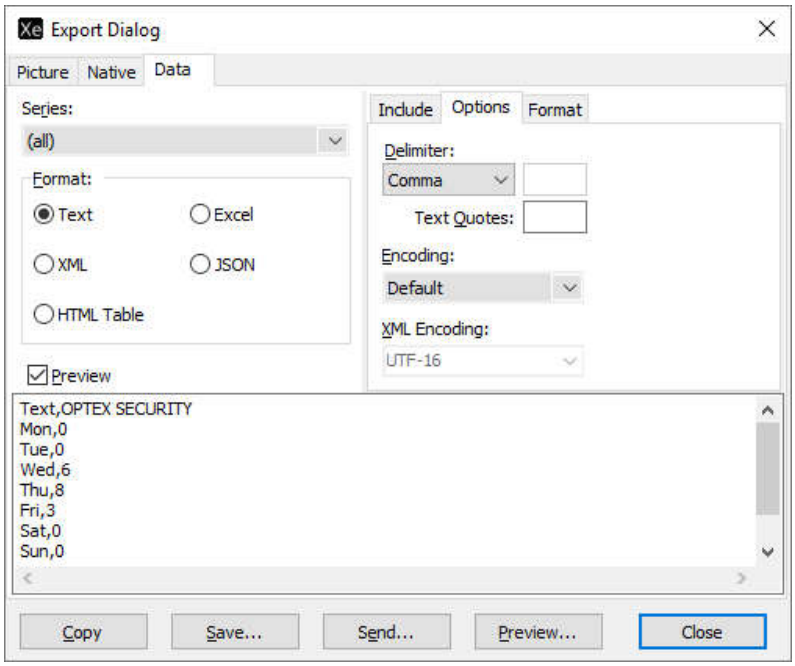
From this dialog it is possible to output the chart as an image (Picture tab), as chart data (Native) or as raw data (Data). The Native tab is not interesting as this format is not useful for most people. The image and raw data output are useful for exporting to other applications.

An image of the current chart can be output in bitmap or metafile format. For most applications, the bitmap format will be a more accurate representation of the image. There are numerous controls for tweaking the image, but these are largely unimportant. The Preview button allows the image to be sent directly to any image viewers installed. Alternatively, the image can be saved, copied to the clipboard or sent to an email application.

The Data tab of the Export Dialog provides several formats of raw data output. The data to be exported can be selected by choosing from the many options available. The example below shows an XML format.



This example shows a standard CSV format.

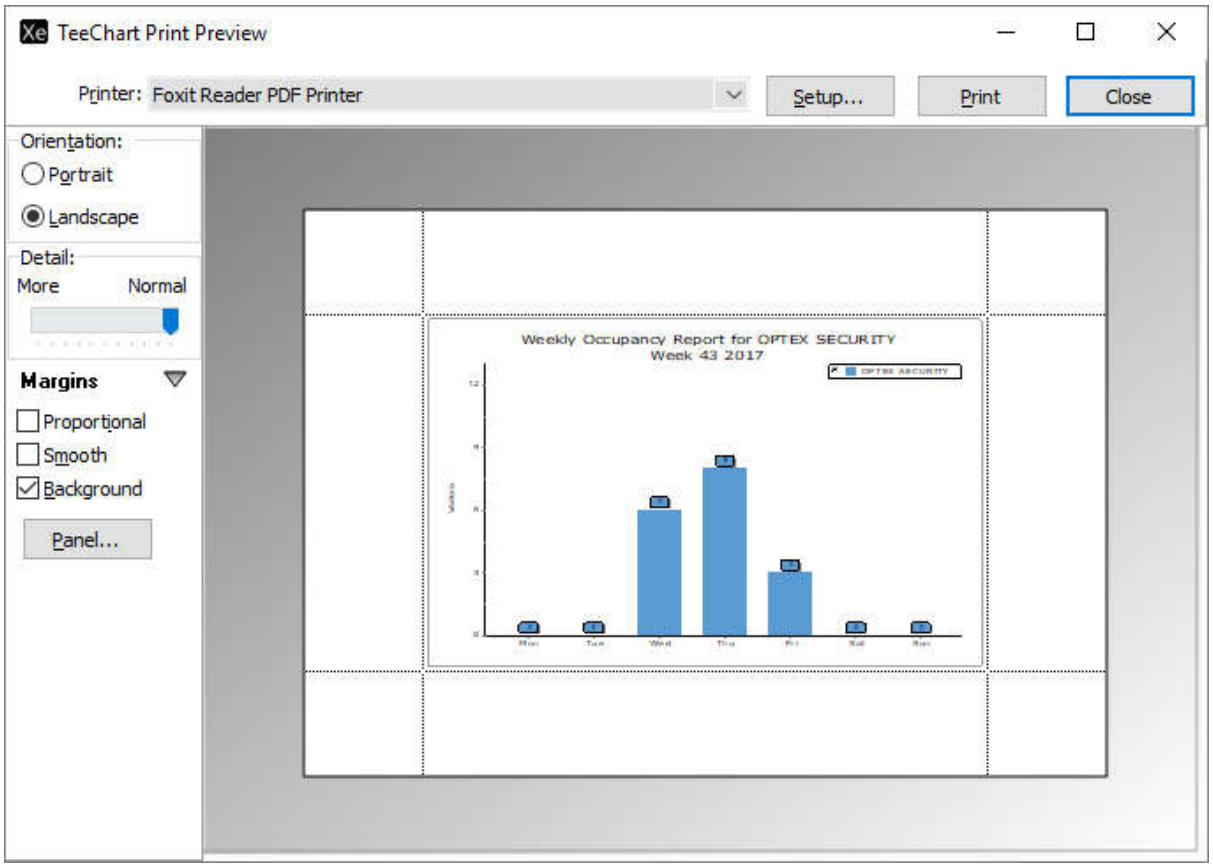


There are options to copy to the clipboard, save the file, send to an email client and preview in a text window.

Note: The integration of this software with Excel and other 3rd party software is not guaranteed. Outputting to a text format, such as CSV or XML, and then importing into your application, may prove more reliable.

Printing

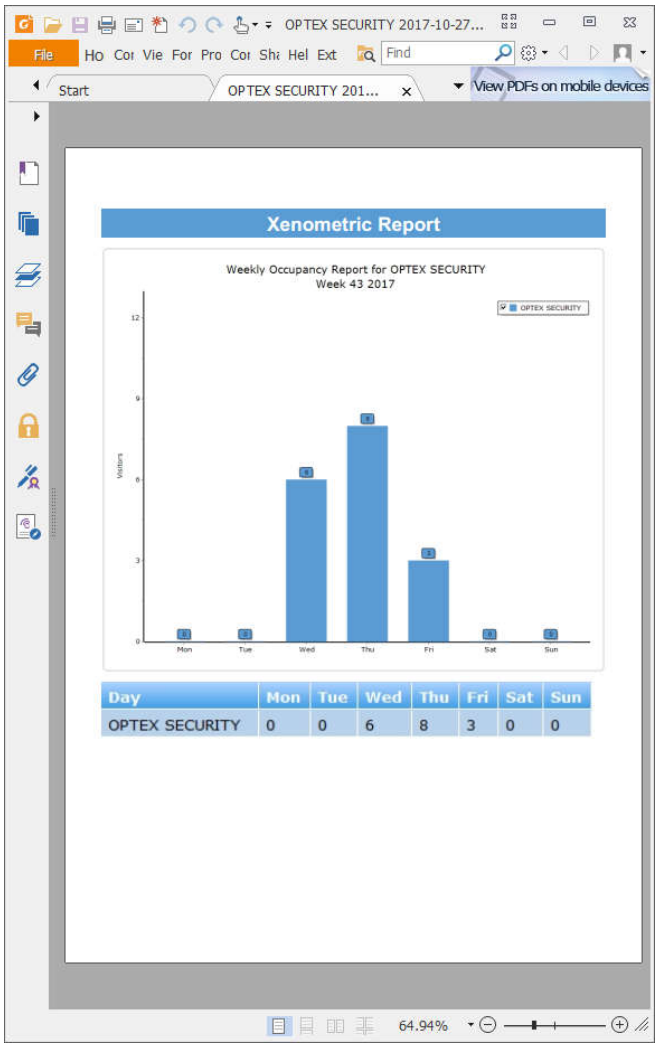
Clicking on the Print button will invoke the Print Preview window.



There are several options to help achieve the print style you want. You can print to a printer or to a print driver that saves the image as a PDF file (as above).

PDF

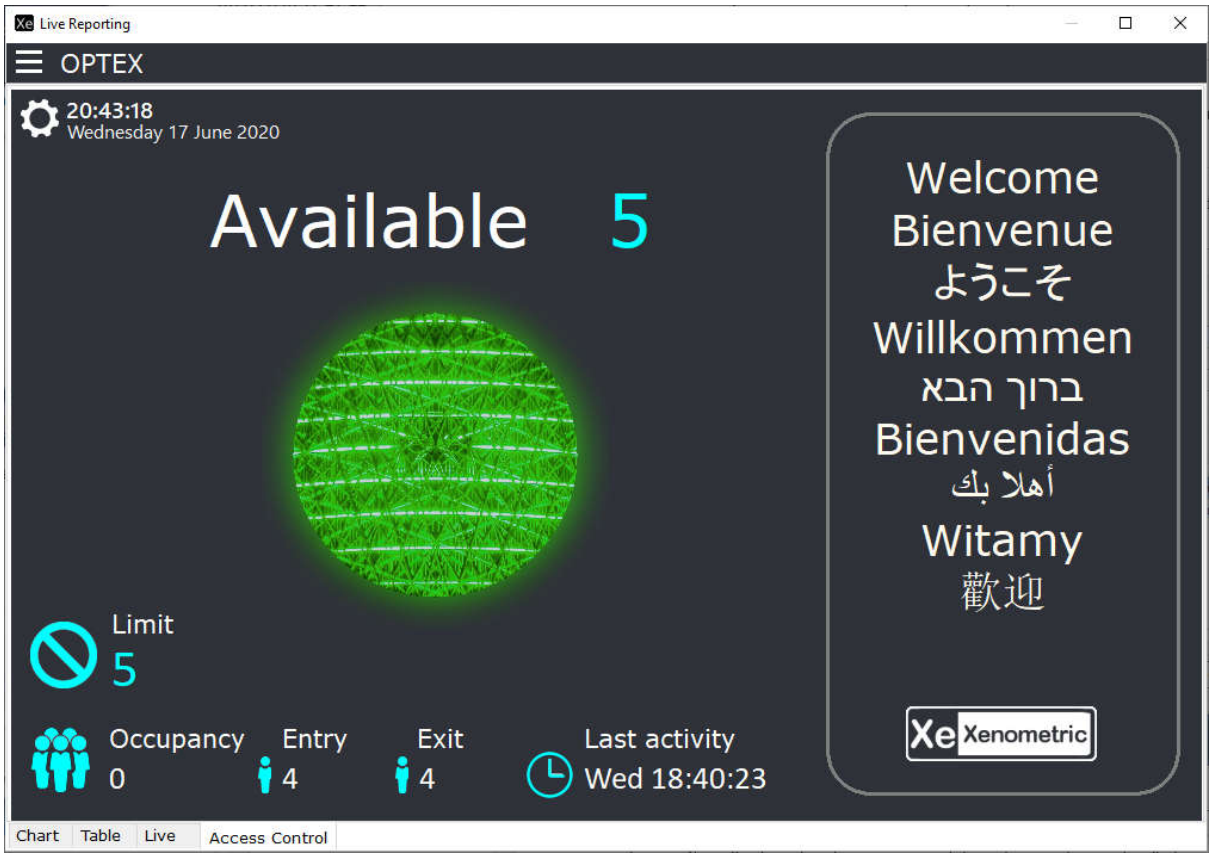
The PDF report can be accessed from the PDF button or by right clicking on the chart and selecting the menu item Export > PDF. This will create a PDF and launch your default PDF viewer software.



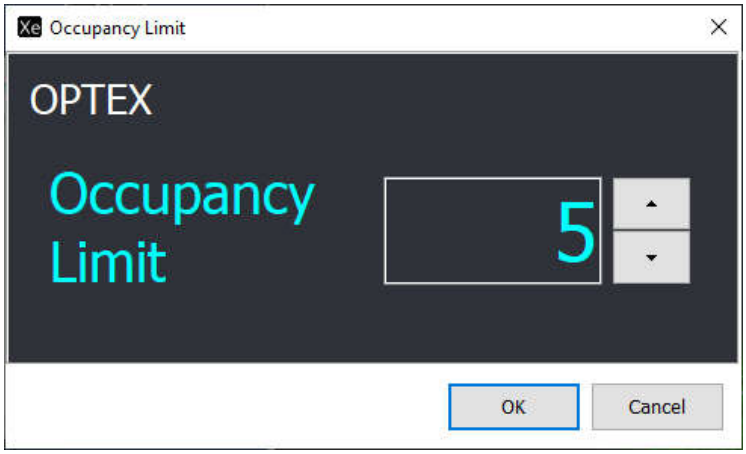
You can save the PDF from within your PDF software. The example above shows a report in the Foxit PDF Reader, which has greater functionality than the more popular Adobe Acrobat Reader.

7.2 Access Control

The Access Control screen is completely configurable and allows you to manually set the occupancy limit and reset the current occupancy.

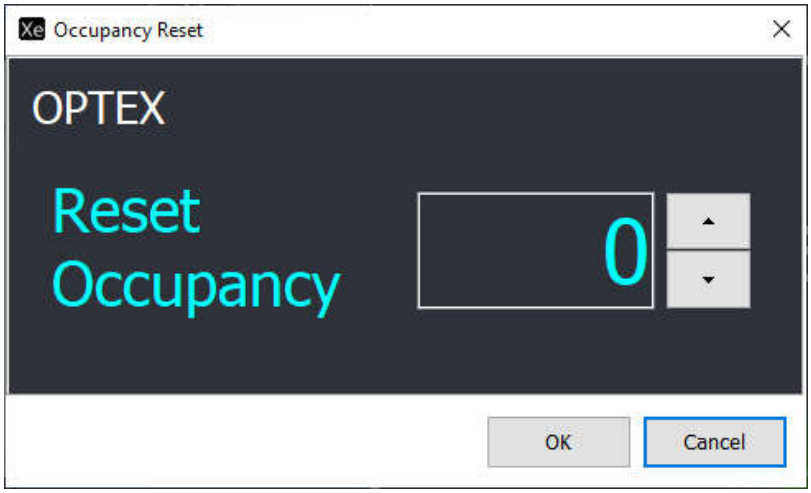


To set the occupancy limit, click on the Limit icon (circle with straight line through it) and you will see the Occupancy Limit form.



Change the value by typing a number or click the up/down buttons. Press OK to save your new occupancy limit.

Sometimes it may be necessary to override the occupancy shown in XenoView. To do this, click on the occupancy icon (group of people) and the Occupancy Reset form will be shown.

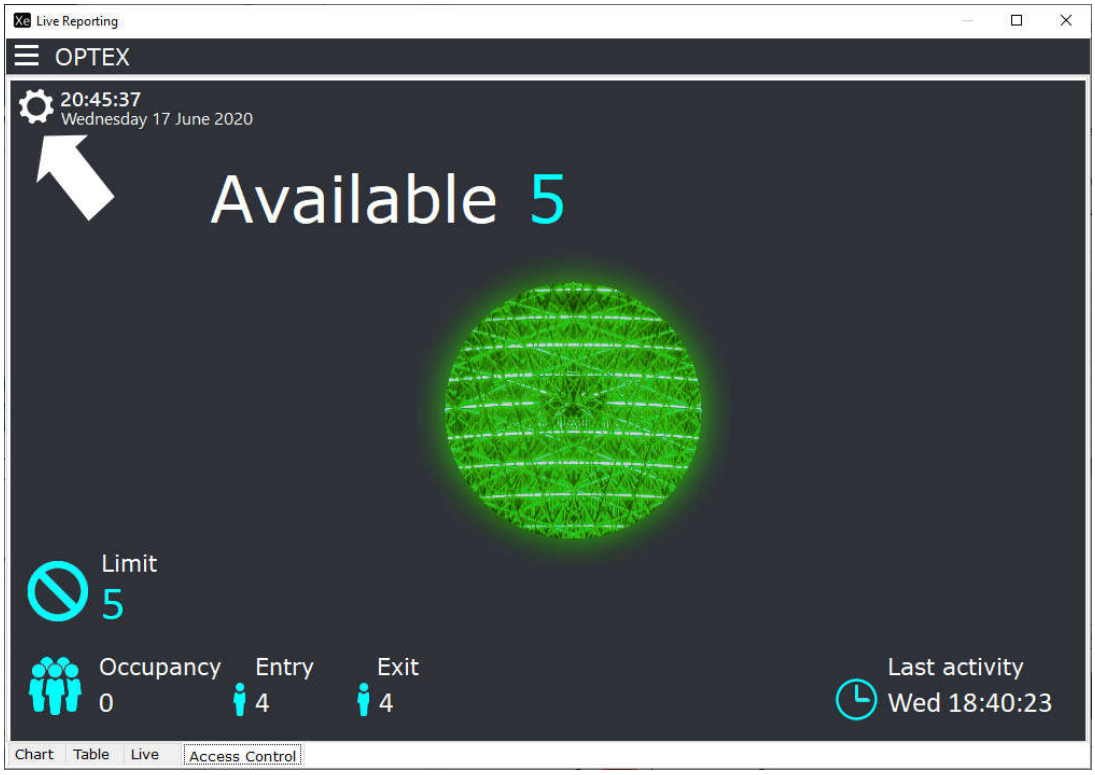


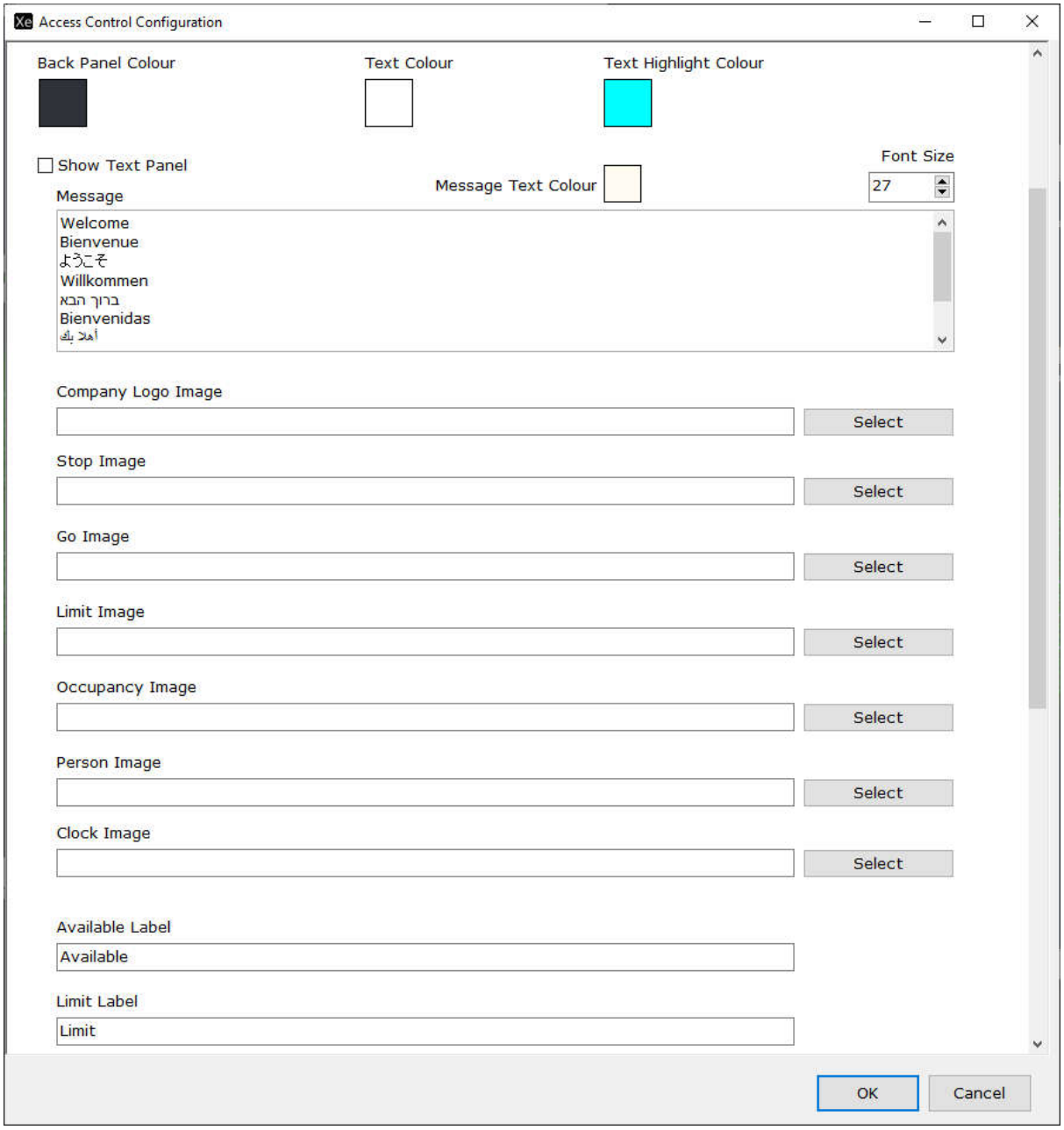
Change the value by typing a number or click the up/down buttons. Press OK to save your new occupancy value.

Manually changing the occupancy will adjust the real-time OUT counts. It will not affect the aggregate counts that are stored for reporting.

7.2.1 Personalising the Access Control display

Click on the cog image at the top left to show the Access Control Configuration.





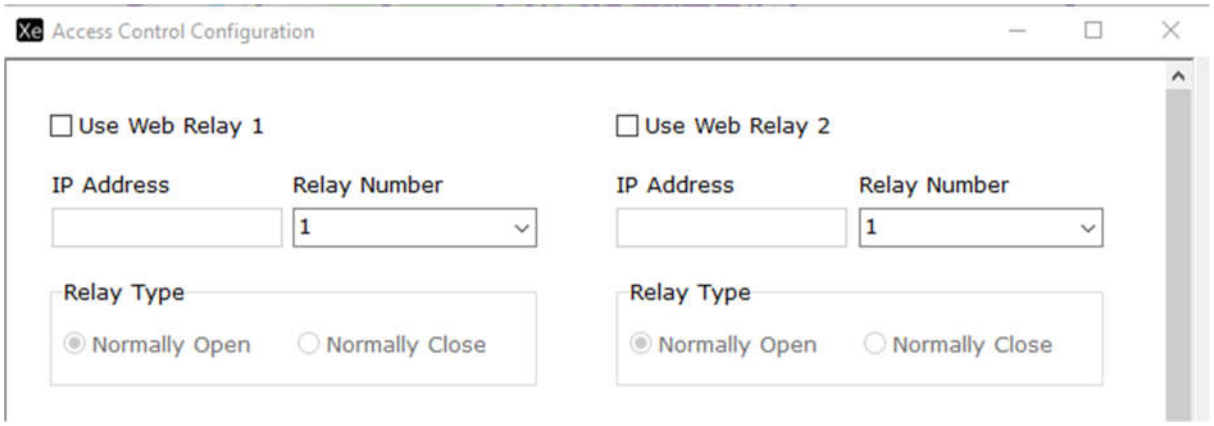
Scroll through this form to make changes to all text, colours, images and logos. Click OK to save.

The text panel on the right of the Access Control screen is optional. You can show or hide it and you can choose the text to be shown.

7.2.2 Adding WebRelay to the Access Control

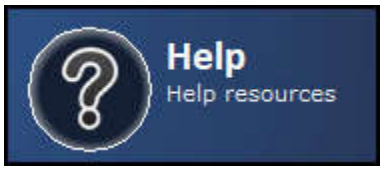
Click on the cog image at the top left to show the Access Control Configuration.

Then click on the Access Control button.



There are two WebRelay channels than can be controlled by XenoView. XenoView will open or close the relay when the occupancy limit is reached. You can choose which relay channel to control by supplying the WebRelay's IP address and the relay number on this module. A relay type that is normally open will keep the relay open until the occupancy limit is reached and the relay will be closed. A Normally closed relay will stay closed until the occupancy limit is reached.

8 Help



Clicking on the Help button on the main windows of the XenoView application will launch the Help windows. This window contains a copy of this manual and an annotated tab showing all the settings required to configure the Akribos to work with XenoView.

9 Contact

Please feel free to contact Xenometric using any of the following methods.

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info@xenometric.com

www.facebook.com/Xenometric

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