BARIX
THE VOICE OF SIMPLICITY

Barix Milestone guide

Software Manual

About integration of Barix products in Milestone XProtect software

Manual version V01.58

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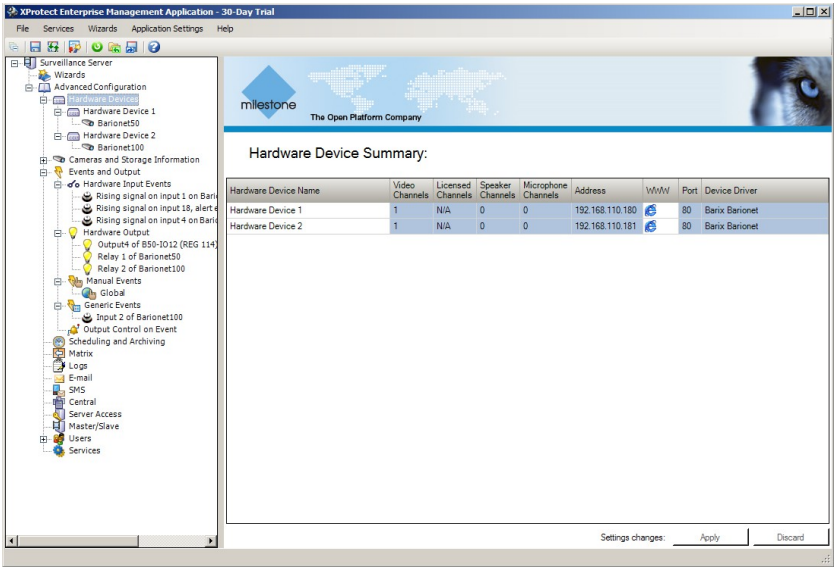
1 Introduction

1.1 About Milestone XProtect® software

XProtect is a leading network video management software product, developed by Milestone Systems.

Milestone introduced support for Barix Barionet, Annuncicom and Exstreamer product families into the XProtect platform in early 2012, enabling customers to easily add intercom, paging and I/O monitoring and control functions to their VMS.



All the screenshots in this guide are from Milestone XProtect Enterprise V8.1a but it´s recommended to use the latest version of the Milestone XProtect software with the latest device pack (minimum Version 6.6 !).
In other XProtect versions it could look different.

Even newer Milestone VMS system (e.g. 2019) support Barix products, but there the legacy devicepack has to be used !!

2 Barix products in Milestone XProtect

2.1 Supported Barix devices

Exstreamer family:

The Exstreamer 100, 105, 200, 205 and P5 are supported in XProtect systems with the Milestone legacy device pack. The Exstreamer must have the ABCL IP-Intercom firmware minimum v1.12 (better higher) loaded, else the Milestone XProtect software cannot discover the device.

The Exstreamer family offers a 1-way IP Audio stream for Paging/Public Address.

Annuncicom family:

The Annuncicom 100 and the Annuncicom 200 are supported by the Milestone legacy device pack. The Annuncicom must have the ABCL IP-Intercom firmware minimum v1.12 (better higher) loaded, otherwise the Milestone XProtect software cannot discover the device.

The Annuncicom 100 & 200 have 2 inputs and 1x relay output, which are supported by Milestone. The Annuncicom family offers 2-way IP Audio streaming for Listening, Paging /Public Address, and IP Intercom.

The Annuncicom family offers 2-way IP Audio capability for Intercom, Paging/Public Address and audio supervision.

Barionet family:

Barionet 50 & Barionet 100 are supported, as also the IO12, X8 and R6 extension modules. The extension modules are daisy-chained as slave units to a master Barionet via RS485.

A single XProtect I/O device software license supports one Barionet plus connected extension modules with up to 200 inputs and 200 outputs.

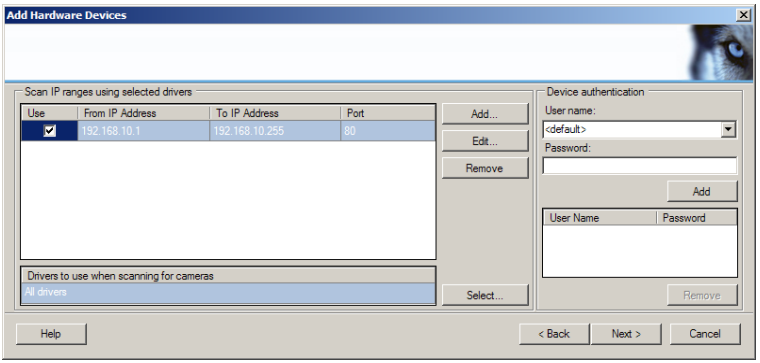
The Barionet family provides GPI/O capability for monitoring and control.

2.2 How to integrate Barix Audio products in XProtect

XProtect is a modular software, with separate components for setup and day to day operation. Therefore, before Barix devices can be used with XProtect, they must be integrated todefined to the system using the Management Applicationand they must be configured.

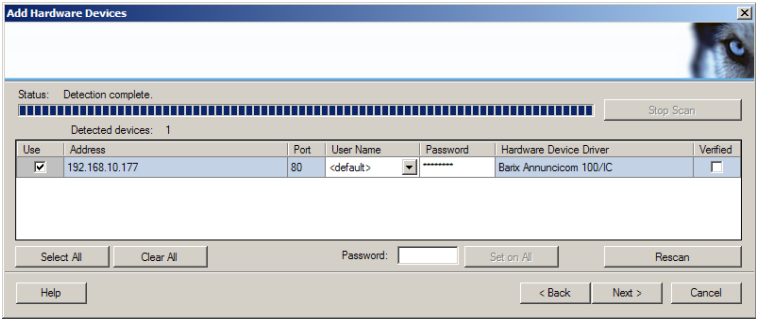
First ensure that the Barix audio devices have the ABCL IP-Intercom firmware minimum v1.12 (better higher) loaded, otherwise the Milestone XProtect software cannot discover them.

2.2.1 Defining the Barix devices to XProtect



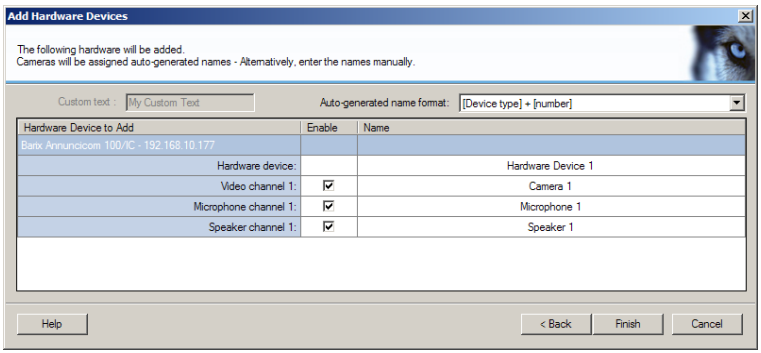
In the Xprotect management application, click „Add New Hardware device“. In the „Add Hardware Devices“ window that appears select „Advanced“ mode and click „Next“.

The next window allows you to set an IP address range and the device type, which XProtect will try to discover. This discovery process also works with the default values, so just click „Next“, to start the discovery process.



The next window displays all the discovered devices. Select the Barix Exstreamer / Annuncicom you are configuring, and then click „Next“. Note: XProtect may also display devices that have been discovered previously, but it will not let you select them. (You will be unable to put a tick in the 'use' tick box.)

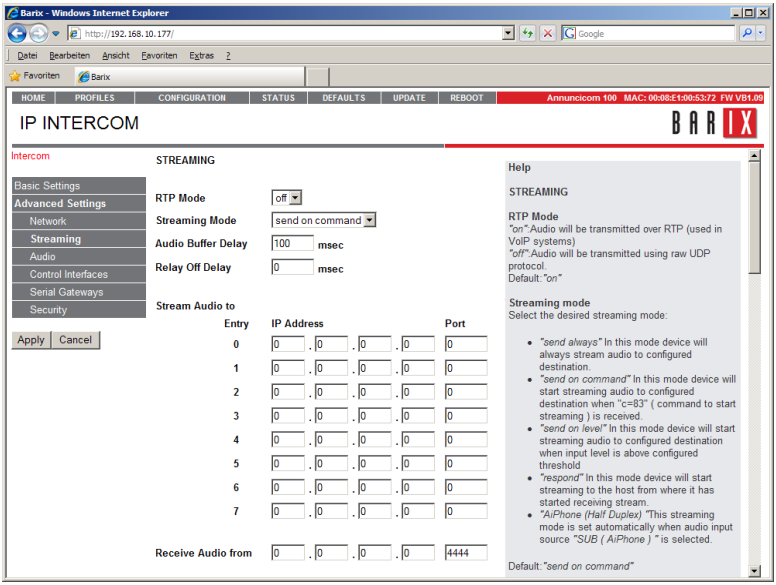
XProtect then displays an overview of the added hardware and potential sub-functions. Click „Finish“ to finish this procedure. The hardware is now added, but it cannot be used before the settings are saved and it is initialized.



To save the settings and initialise the devices, restart the XProtect surveillance services (click or select 'Restart all services' from the file menu).

2.2.2 Configuring Barix Audio devices for use with XProtect

First make sure your Barix Exstreamer or Annuncicom has the ABCL IP-Intercom firmware minimum v1.12 (better higher) loaded, else the Milestone XProtect software will not be able to discover it. This firmware is available on www.barix.com.



The Milestone XProtect software will automatically configure the following settings of Barix audio devices that it discovers:

- RTP Mode (under the „Streaming" tab, set to „off")

- Streaming Mode (under the „Streaming" tab, set to „send on command")

- Encoding (under „Audio" tab, changed to „uLaw / 8kHz ")

The port number from „Receive Audio from IP:Port" is read by the Milestone software and used for all communication to the device. The customer can change this setting if another port number is necessary (e.g. because of firewall settings). For XProtect to be able to talk to "All Speakers", it is necessary to set the audio receive port on each device to

a different value.

If more than one Barix audio device is used and the function „Talk to : All Speakers“ is used then all Barix audio devices need a different „Receive Audio from“ - port number! When only talking to one Barix audio device then all devices can have the same „Receive Audio from“ port.

The port number of „Stream Audio to IP:Port“ should **always** be 0 or at least different from the „Receive Audio from IP:Port“, otherwise the communication with the Milestone XProtect Smart Client software will not work properly.

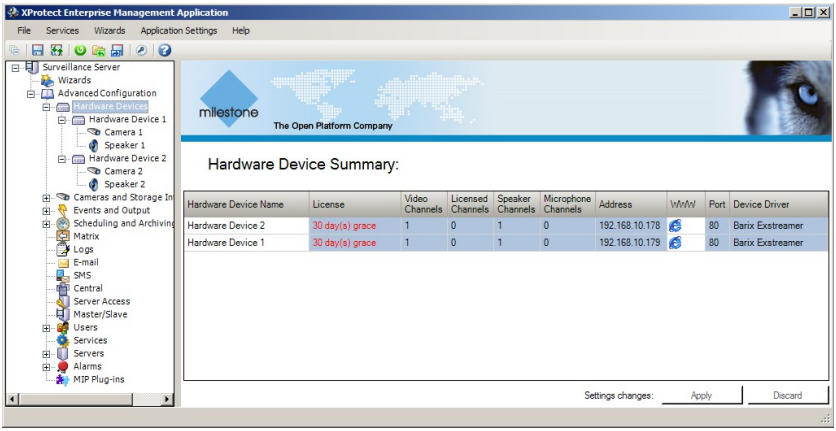
When an Barix encoder device (Annuncicom) is used then make also sure the right audio input source is configured in the Barix device setup, because the Milestone software will read this setting from the device too.

If the relay output is to be used, then the „Relay Off Delay“ should be 0 (zero). Also note that Milestone can switch the relay for maximum 5 seconds.

2.2.3 Using a Barix Exstreamer device

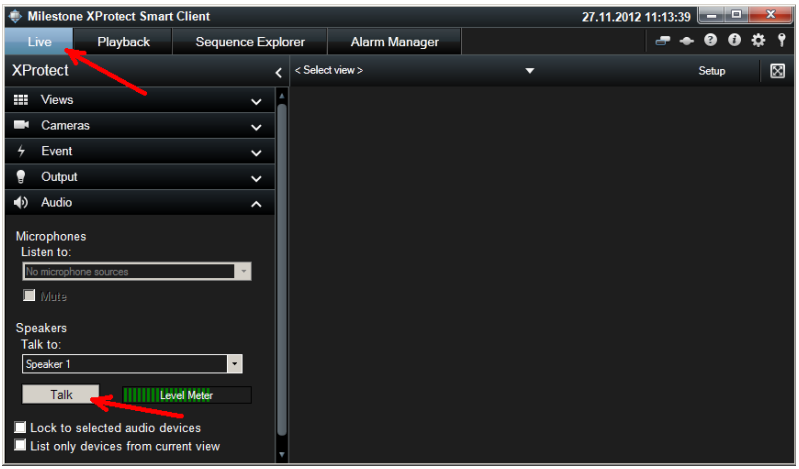
After the Barix Exstreamer hardware is added it appears in the „Hardware Device Summary".

When you initialize the Barix hardware, the XProtect software auto-configures the Barix Exstreamer devices and itself.



If you change e.g. the port number in the Barix Exstreamer web setup, then Milestone XProtect will reconfigure itself, but for safety reasons the XProtect services should be restarted after changing the configuration in the Barix device (by clicking).

To talk to an Exstreamer is pretty simple. Start the Milestone XProtect Smart Client.



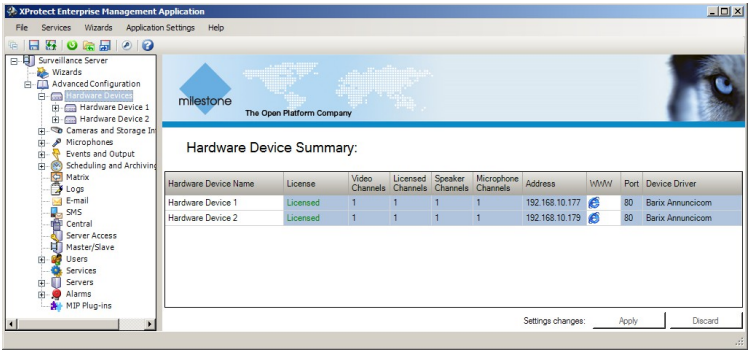
Select the „Live“ tab, and in the „Audio“ section „Talk to:“ field, either select an individual Exstreamer speaker, or „all speakers“. To start making an announcement **click „Talk“ and keep this button pressed while talking.** Releasing the „Talk“ button will end the announcement.

Note, if more than one Barix audio device is used and the function „Talk to : All Speakers“ is used then all Barix audio devices need a different „Receive Audio from“ - port number! When only talking to one Barix Audio device then all devices can have the same „Receive Audio from“ port. This is an important consideration when commissioning the Barix devices for use with XProtect.

2.2.4 Using a Barix Annuncicom device

After the Barix Annuncicom hardware is added it will appear in the „Hardware Device Summary“.

When you initialize the Barix hardware, the XProtect software will auto-configure the Barix devices and itself.



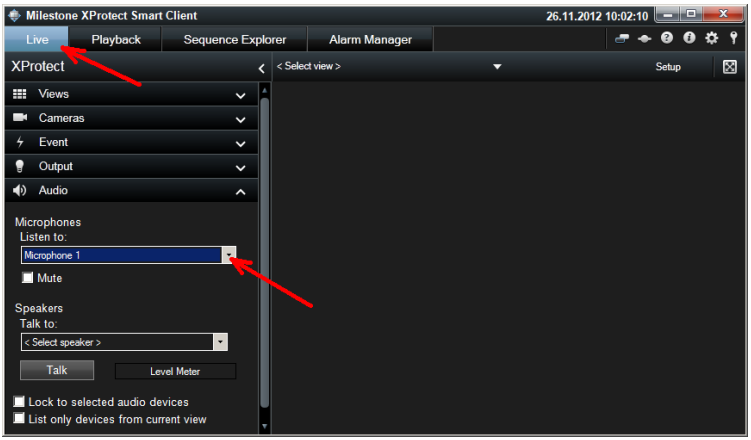
For example, if you change the port number in the Barix Annuncicom´s web setup, Milestone XProtect reconfigures itself, but for safety reasons, the XProtect services should be restarted after changing the configuration in the Barix device (click).

To listen live to an Annuncicom´s audio stream or to talk to an Annuncicom device, use the Milestone Smart Client software.

On Windows operating systems it is recommended to create an exception in the Windows firewall to get the streaming from Barix device to the Milestone server properly working!

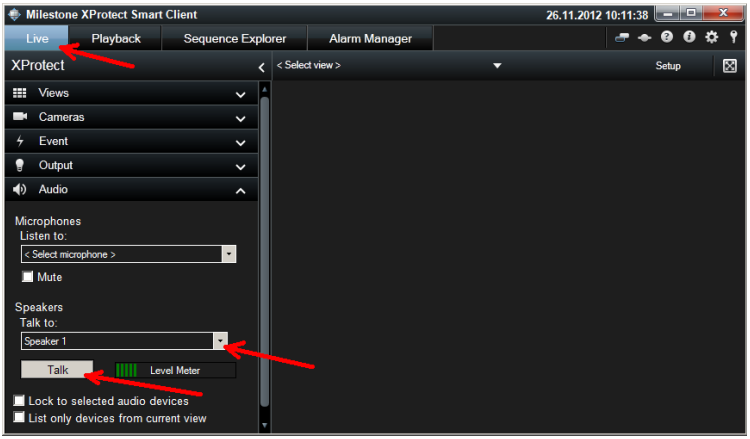
2.2.4.1 Listen to an Annuncicom

In the „Audio" section „Listen to:" field, select the target device: the live playback of the Annuncicom stream starts and will continue until the device is deselected.



2.2.4.2 Make an announcement to an Annuncicom

Set the desired target in the „Talk to:" field. Press and hold the „Talk" button and make the announcement. To finish, release the „Talk" button.



In some less cases it could be a different behavior at the first (after device reboot) attempt to talk to the device, but therafter it´s normalizing.

2.2.4.3 Two-way conversation with an Annuncicom

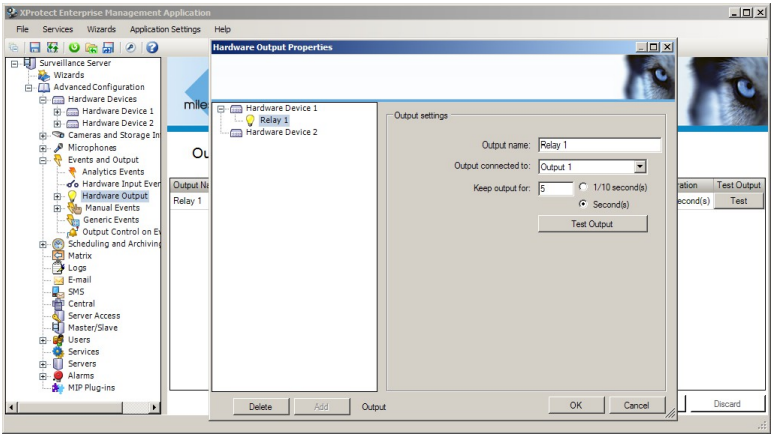
You can communicate in both directions by selecting the target Annuncicom in both the „Listen to:“ and „Talk to:“ fields.

On the „Playback“ tab, audio recordings can be listened to, consult the XProtect manual for more information.

2.2.4.4 Toggling an Annuncicom relay output

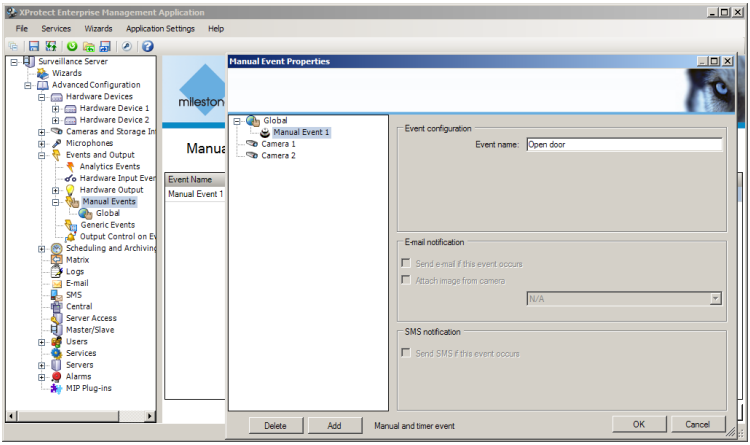
The Annuncicom has an integrated relay output, which for some applications can be useful to switch remotely, e.g. to activate a door buzzer from the Milestone Smart Client application.

First the output must be defined in the XProtect Management application: Right click on „Hardware Outputs“ and select „Add New Output“. In the window that appears, select the device, then click on „Add“; you can now assign a name and duration for the output. To finish the process click „OK“.

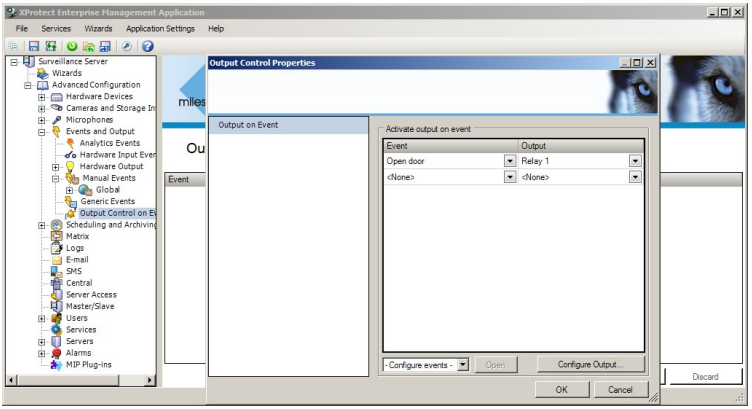


On newer Milestone VMS systems this looks a bit different.

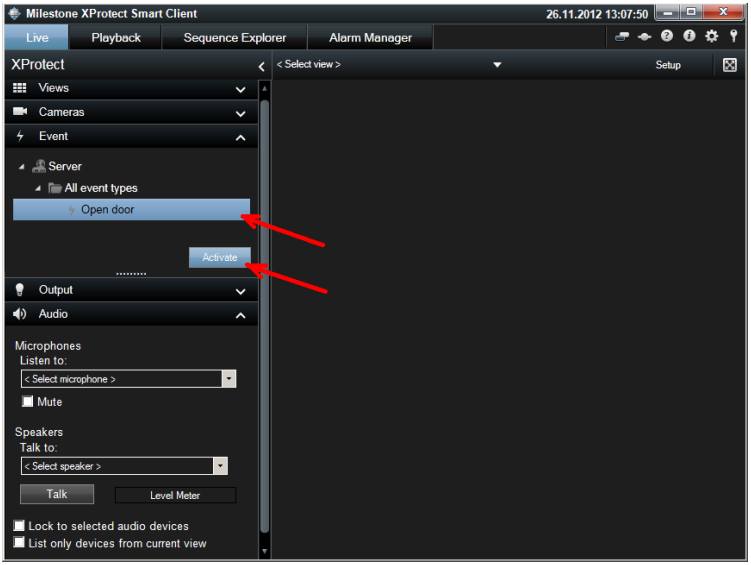
The next step is to define an event to activate the relay: Right-click „Manual Event“, select „Add New Manual Event“, then select either “Global”, or a specific device, now clicking on “Add”: define a name for the event, before clicking on “OK” to save the details.



Now the defined output and event must be associated together. Right-click on „Output Control on Event“ and click „Properties“. Now select your created event and output and click „OK“.



As with all configuration changes in XProtect, before it can used, the new values must be saved and the XProtect surveillance services must be restarted (click).



Using the XProtect Smart Client software (under Live / Event) you can then activate the event to fire the relay.

Note, when using the relay output, then „Relay Off Delay“ in the Annuncicom Setup (under Streaming) should be 0 (zero). Also note, Milestone XProtect can switch the Annuncicom relay for maximum 5 seconds.

Note, the AiPhone interface of the Annuncicom200 is not supported in Milestone XProtect, because it cannot be used in full-duplex mode.

2.3 How to integrate a Barix Barionet in XProtect

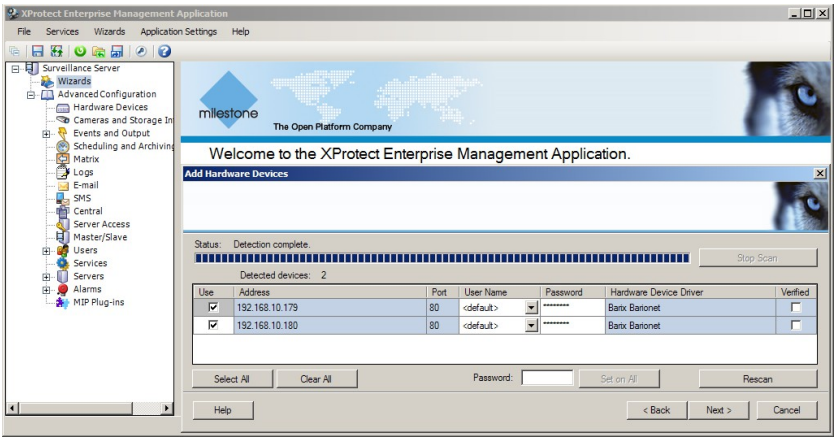
2.3.1 Set up process overview

Do the following steps to set up Barionet devices in XProtect:

- In XProtect:
  - Discover the hardware
  - Define inputs / generic event(s) to be monitored
  - Define output(s) to be used
  - Define automated processes
- On the Barionet: define the UDP control IP:port

2.3.2 Set up steps in detail

To integrate a Barix Barionet in XProtect, use the function „Add New Hardware device" in XProtect. In the window that appears, select „Advanced" mode and click „Next". Confirm and start the device-discovering process by clicking „Next".



From the discovered devices, select your Barionet(s) and finish the procedure by clicking „Next".

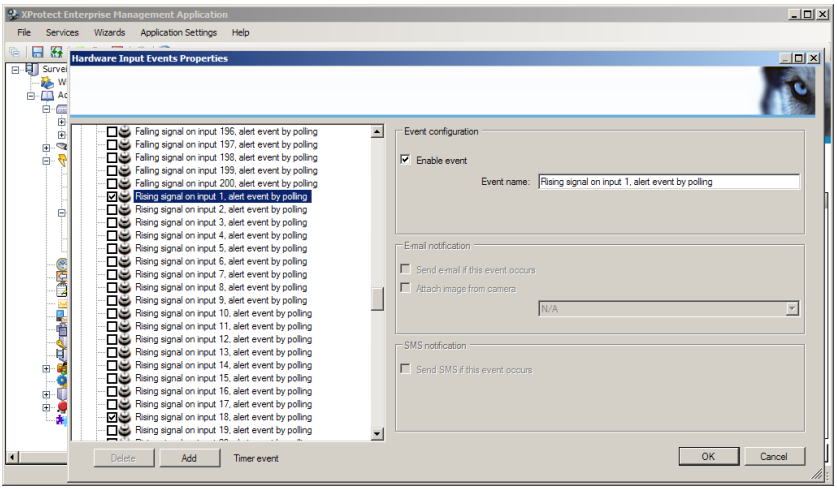
The next step is to add the required Barionet IOs using the „Events and Output“ functionality in the XProtect software.

Now it depends what exactly you will do with the Barionet.

When observing the Barionet inputs only, then you have to add an „Hardware Input Event“. When you will control the Barionet outputs/relays, then a „Hardware Output Event“ is necessary.

In a later step in the Output control section an output can be linked with a „Hardware Input Event“ or with a „Generic Event“ or with a „Manual Event“. Note, all three are optional, only one of these is required to trigger an output. But also multiple events can be used to control the same output.

To add a Barionet input, right-click „Hardware Input Event“ and select „Add New Input Event“.



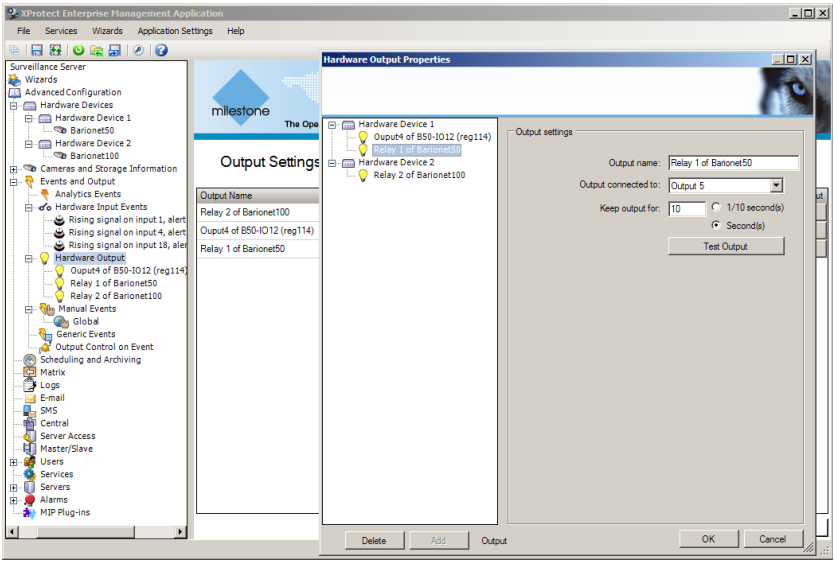
Choose the desired inputs and the right activation level („Rising“ or „Falling“). You can also configure email or SMS notifications on a triggered Barionet input.

The XProtect software uses the „state-change“ information on the TCP command port for input detection, e.g. statechange,201,1

XProtect connects to fix (not configurable) the TCP command port 12302. During XProtect startup or re-initialization, the software connects to the Barionet automatically and changes the Barionet setup to „TCP protocol add subscription = with getio/setio" and then it subscribes the inputs 201- 400 on the Barionet, so all these inputs will report state changes over TCP to the XProtect server.

XProtect register mapping (five examples) :

XProtect Input 1 = Barionet register 201 (first digital input of the Barionet)
XProtect Input 2 = Barionet register 202 (second digital input of the Barionet)
XProtect Input 3 = Barionet register 203 (third digital input of the Barionet)



XProtect Input 4 = Barionet register 204 (fourth digital input of the Barionet)
…...
XProtect Input 99 = Barionet register 299 (virtual Barionet register)To add a Barionet output/relay, right-click „Hardware Output" and select „Add New Output".

The XProtect software uses HTTP/CGI commands (e.g. /rc.cgi?o=101,50) to set the outputs. The web server port is configurable in XProtect.

How Barionet output registers are mapped to the XProtect outputs :

Output1 = Barionet register 101 (Barionet(100) digital output1)
Output2 = Barionet register 102 (Barionet(100) digital output2)
Output3 = Barionet register 103 (Barionet(100) digital output3)
Output4 = Barionet register 104 (Barionet(100) digital output4)
Output5 = Barionet register 1 (Barionet relay 1)
Output6 = Barionet register 2 (Barionet relay 2)
Output7 = Barionet register 107
Output8 = Barionet register 108

then it continues until Output 100 = Barionet register 200

Output101 = Barionet register 11

then it continues until Output190 = Barionet register 100

Output191 = Barionet register 105
Output192 = Barionet register 106
Output193 = Barionet register 3 (Barionet50 relay 3)
Output194 = Barionet register 4 (Barionet50 relay 4)
Output195 = Barionet register 5
Output196 = Barionet register 6
Output197 = Barionet register 7
Output198 = Barionet register 8
Output199 = Barionet register 9
Output200 = Barionet register 10

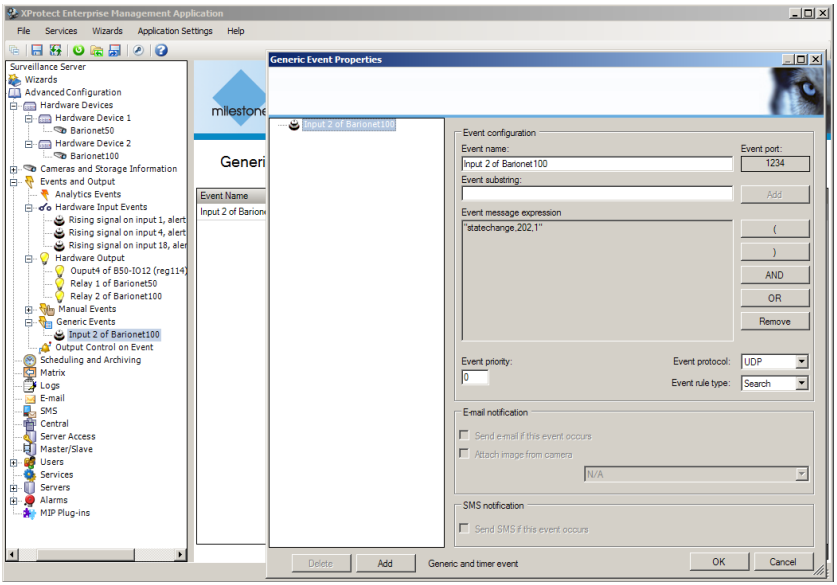
Attention, the Barionet relays 1 & 2 are mapped to Milestone XProtect output 5 & 6 !

The relays 3 and 4 of the Barionet 50 are mapped to Milestone XProtect output 193 and 194.

If an additional Barionet R6 extension is connected to the Barionet, then this R6 relays are mapped to Barionet register 11 and following. For these use Milestone output 101 and following.

Alternatively, or in addition to the „Hardware Input" configuration, „Generic Events" can also be defined. To add a „Generic Event", right-click „Generic Event" and select „Add New Generic Event".

Note, it is not necessary to define a „Generic Event" and a „Hardware Input Event" in XProtect for the same Barionet input.



Generic Events allow you to search for defined strings in incoming network messages (on a configurable network port - TCP or UDP, port 1234 is default). The UDP „statechange" messages sent from a Barionet, or other network device (e.g. from Barix ICgraph software) can be used to trigger events.

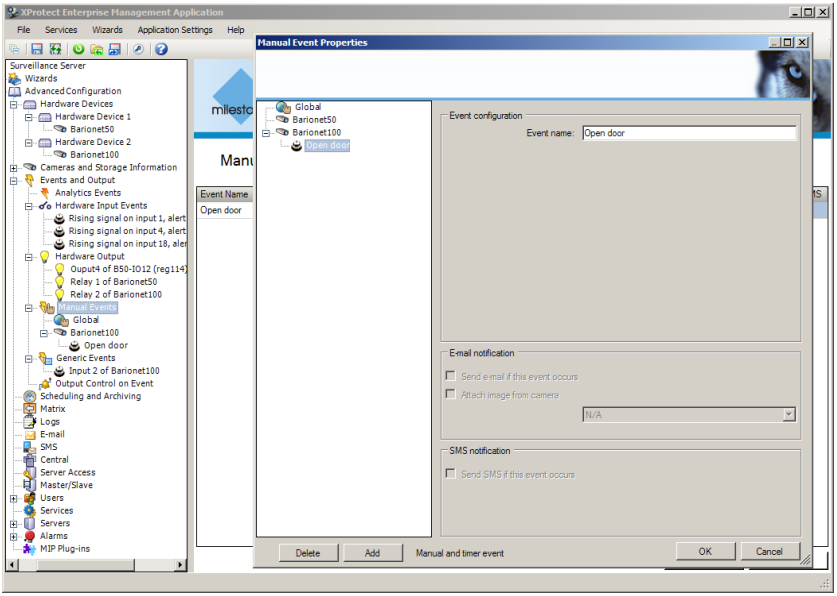
Note, when this feature is used with incoming network messages from the Barionet, the Barionet requires the following additional configuration:

<u>On the Barionet web UI, under CONTROL:</u>

- UDP info send to = IP address of the XProtect server
- UDP destination port = XProtect configured port number, e.g. 1234

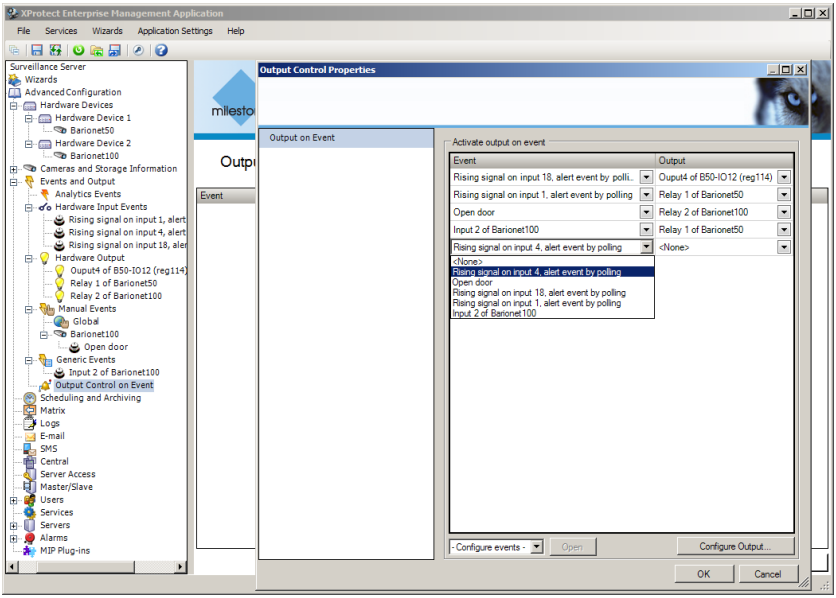
A „Manual Event" can be used to trigger the output/relay manually from the Smart Client software.

To add a „Manual Event“, right-click „Manual Event“ and select „Add New Manual Event“.

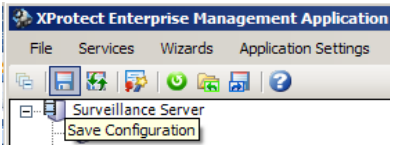


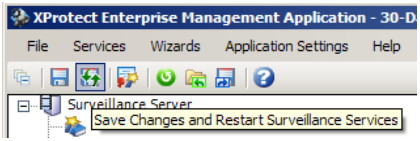
The „Manual Event“ is triggered in the same way from the XProtect Smart Client software as shown in section 2.2.4.4.

To automate processes, all the configured Input Events and Generic Events can be linked to configured outputs: Right-click „Output Control on Event" and select „Properties".



Note, after each change of the XProtect configuration, click „Save Configuration" and restart the XProtect services.

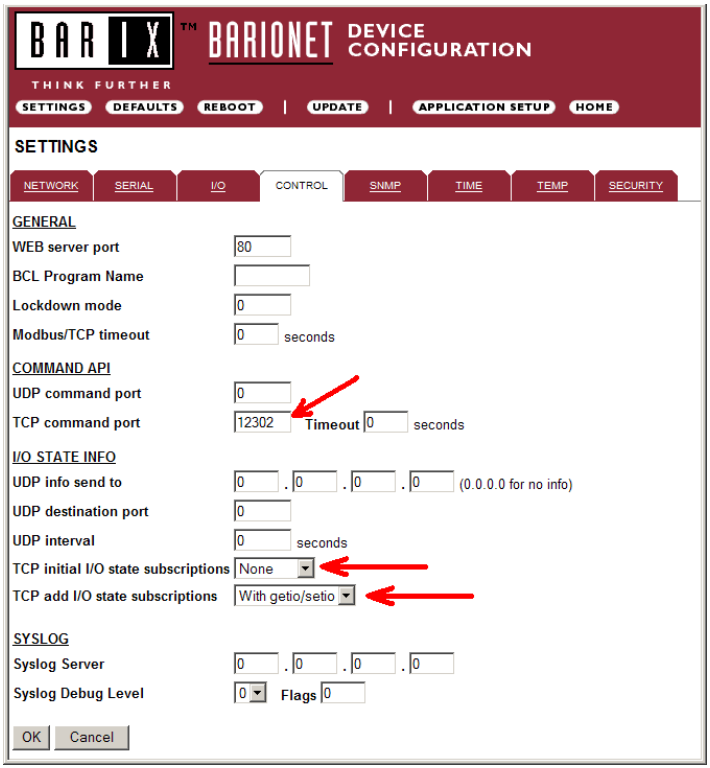




Note, if a Barionet extension unit is used with a Barionet or Barionet 50, each reboot of the Barix device requires an XProtect service restart/re-initialization (because of the IO subscription).

2.3.3 Configuring a Barionet for Milestone XProtect

Milestone XProtect auto-configures the Barionet when it is initializing the Barionet.



Three settings are checked/modified by Milestone on initialization of the Barionet :

TCP command port (e.g. 12302)
TCP initial IO state subscription (must be „None")
TCP add IO state subscription (must be „With getio/setio")

And of course the correct Webserver port must be defined in Milestone XProtect, otherwise XProtect cannot access the Barionet. If these settings are not configured by the Milestone VMS software, then please configure it manually.

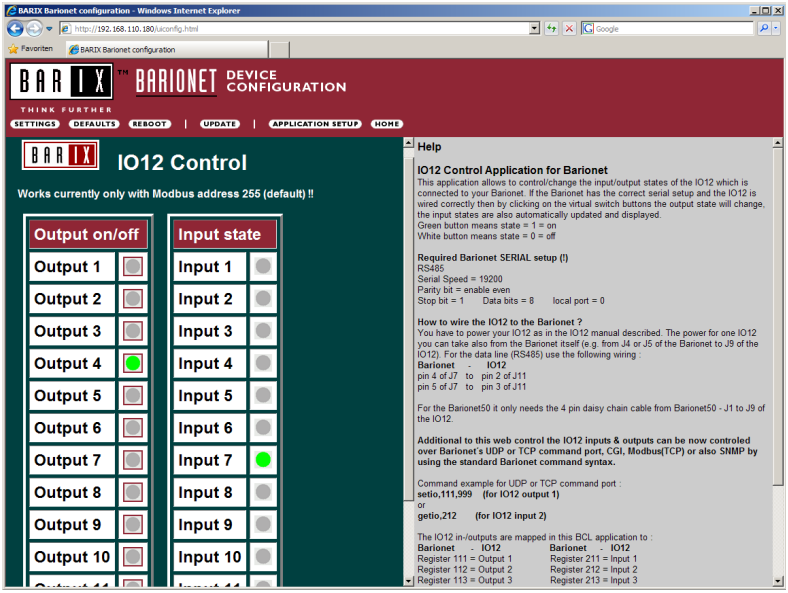
2.3.4 Barionet extension units

To expand the IO capabilities of the Barionet 100 or Barionet 50, Barionet extension units can be used.

There are three different modules available, the X8 (8 configurable inputs or outputs), the IO12 (12 inputs and 12 outputs) and the R6 (6 relay outputs).

To add an extension unit to the Barix Barionet or Barionet 50, you have to load a suitable BCL application in to the Barionet web server. Barix offers several such applications for free as working demos, e.g. the „IO12_Control" or „R6_Control" applications. In addition, applications to connect multiple extensions to a Barionet are available (e.g. "3xIO12 addressing tool" or the „R6 Addressing tool") or could easily be created.

To use Barionet extension units connected to a Barionet 50 with the XProtect software, the Barionet 50 needs firmware v2.00 or higher, the Barionet100 needs firmware v3.02 or higher (better).



To use an IO12 module with a Barionet 50, for example, do the following:

- make sure the Barionet 50 has minimum firmware version 2.00 or better higher.
- load the „IO12_Control“ application in to the WEB4 page of the Barionet 50 using the „Advanced Web Update“ function
- connect the IO12 module to the Barionet 50 using the 4-pin daisy-chain cable, then restart the Barionet 50
- set the SERIAL settings of the Barionet 50´s RS485 interface to **19200, 8, enable even, 1, local port=0**

After this, a click on the Barionet´s „Application Setup“ button and you will find the IO12 application and an online help with more information.

3 Troubleshooting

3.1 Problems with audio

If no audio is heard, despite following the setup steps outlined in this guide, the cause could be firewall related.

If the Microsoft firewall is active, or has no exception, then this could cause problems with audio, as the firewall will block the audio stream !

It is recommended to create an exception for the Milestone XProtect software and the Smart Client application on the Microsoft firewall, or to disable the Microsoft firewall totally, although this must be a last resort option and is not generally recommended.

Please make also sure all devices are properly licenced, check in the XProtect Management application under “Hardware Devices”.

Also make sure the XProtect **“legacy”** Device pack is installed on your Milestone installation and the correct Audio input source is selected in the Barix device setup.

3.2 Application performance issues

Make sure the XProtect PC matching the Milestone minimum requirements for operating system and the hardware.

4 Legal information

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For information about our devices and the latest version of this manual please visit www.barix.com

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