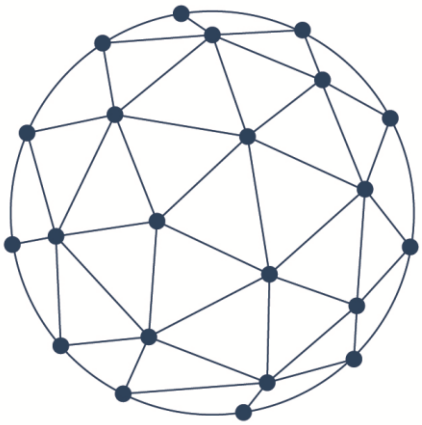


SGSE

Soluciones Globales de Seguridad Electrónica

MOXAIO MONITOR

Installer and User Manual

Content

1. Document versions

Version	Date	Author	Changes in the version
1.0	08/2021	SDA	First version (English)
1.1	06/202	CLL	Second version (English & Spanish)

2. Introduction

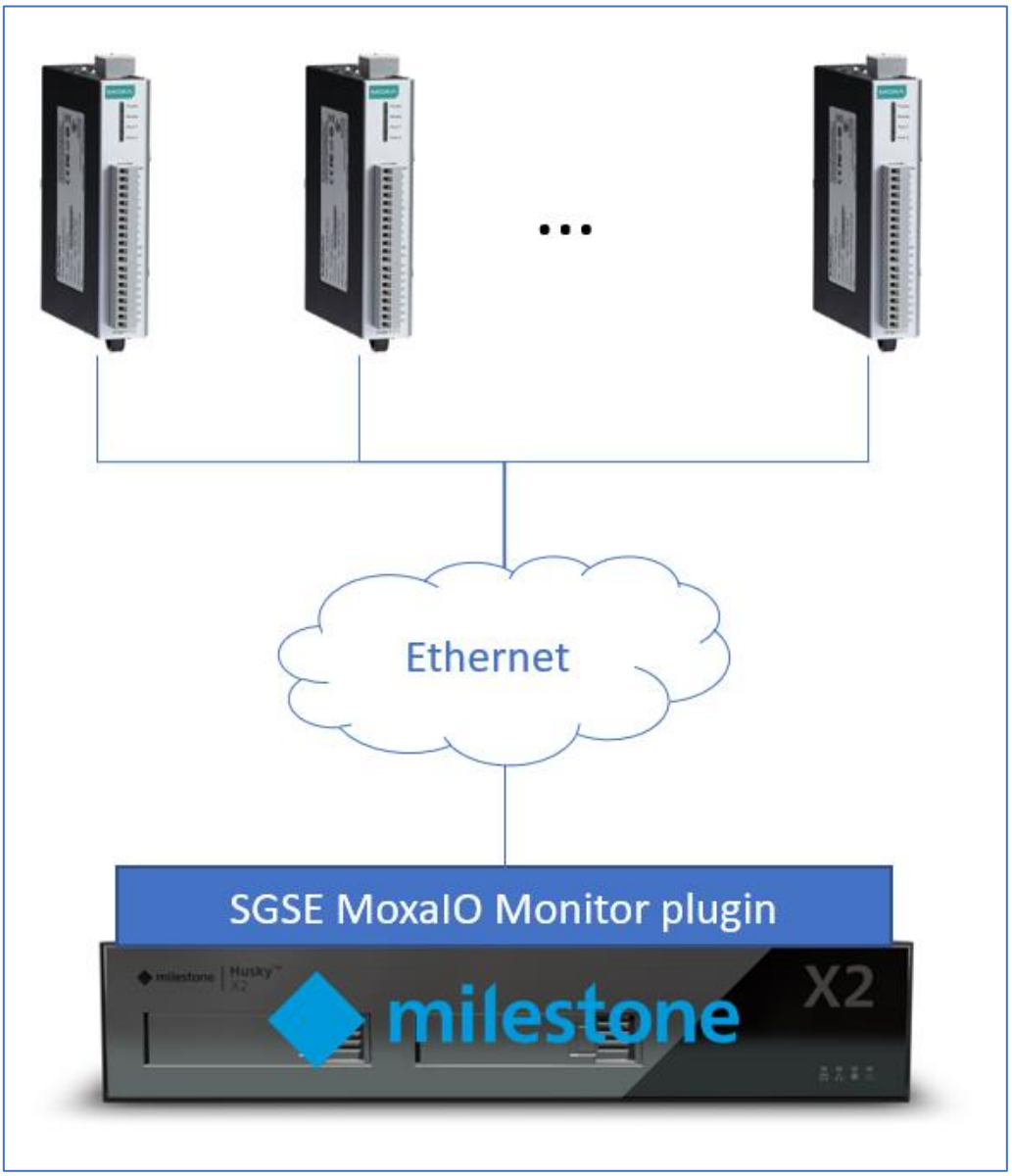
The purpose of this document is to explain the operation, installation and use of the software solution called "*MoxaIO Monitor*".

This solution consists of a plugin that allows to monitor the status of Moxa ioLogik E1210 series (E1210 and E1210-T) E1211, E1214, E2210 devices and their inputs and outputs from the user interface and the working environment of the XProtect® platform, by Milestone.

In this way, the monitoring of the Moxa ioLogik inputs is available together with the advantages of the XProtect® VMS for video and alarm management.

3. Solution architecture

The architecture of the solution is described in the scheme below:



Through the Ethernet network, the plugin connects to the Moxa ioLogik devices that have been configured at the Management Client, and requests periodically for the status of the inputs and outputs. The Moxa ioLogik device must have the Restful API settings enabled. Only the inputs defined as Digital Inputs will be supported (inputs defined as Counters are not supported), and the outputs (digital outputs and relays) must be configured as “DO”, never as “Pulse Output”. The basic configuration for this plugin to work will be described later in this document.

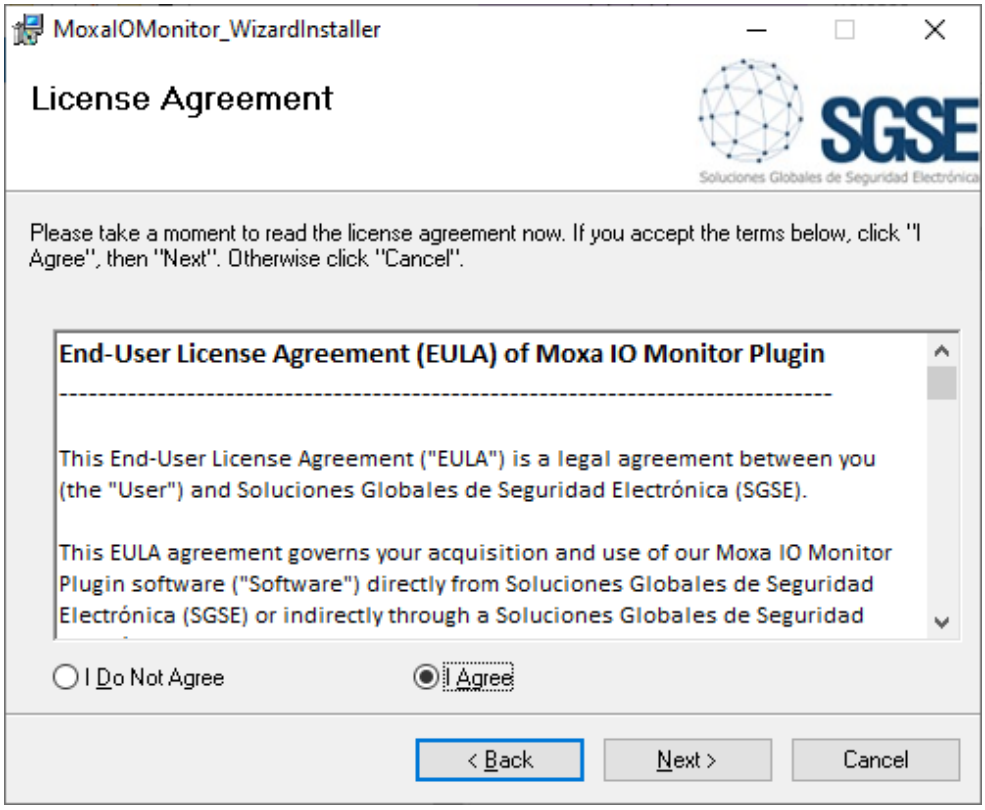
You will be able to freely specify which inputs and outputs from the panel you want to import in Milestone to be monitored.

Once the communication is established, it will inform you with a Milestone Event, and will start requesting the status of the device inputs and outputs. If the connection is lost, the plugin will also inform you with a Milestone event.

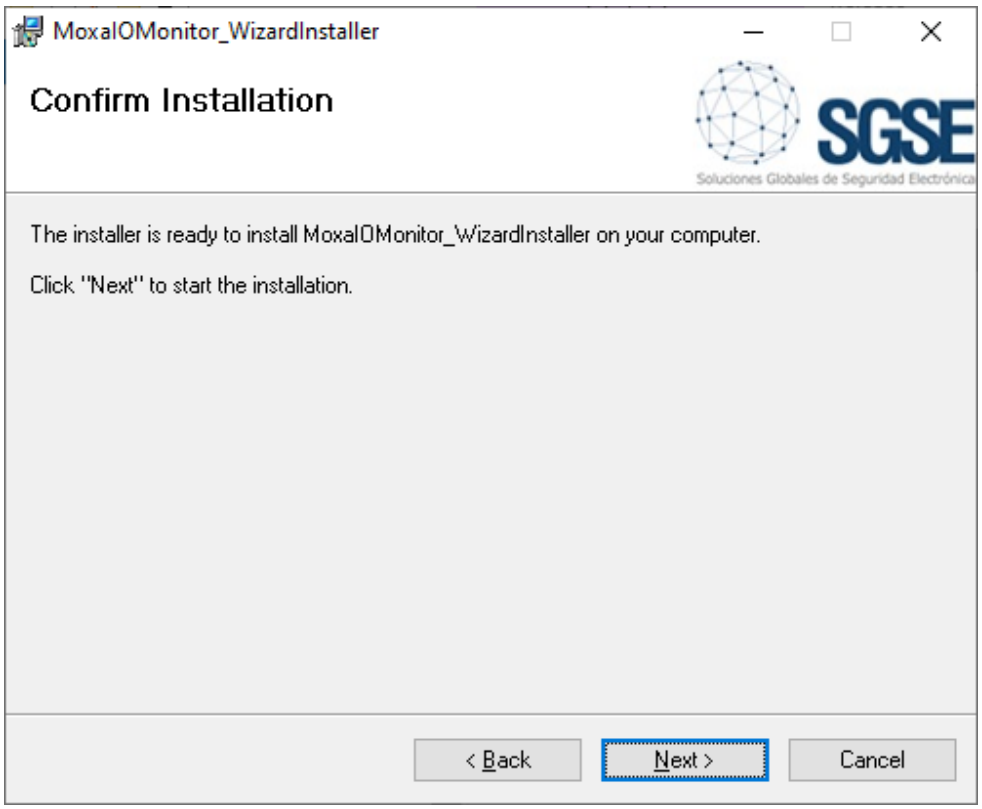
4. Installation

To install the plugin, simply execute with administrator rights the installer " MoxaIOMonitor Installer.msi" provided by SGSE or downloaded from the Milestone Marketplace. The process is automatic. Throughout the different screens of the installer, we will only have to accept the End User License Agreement, a mandatory condition to be able to use the plugin.

Click “Next >” to start the installation process.

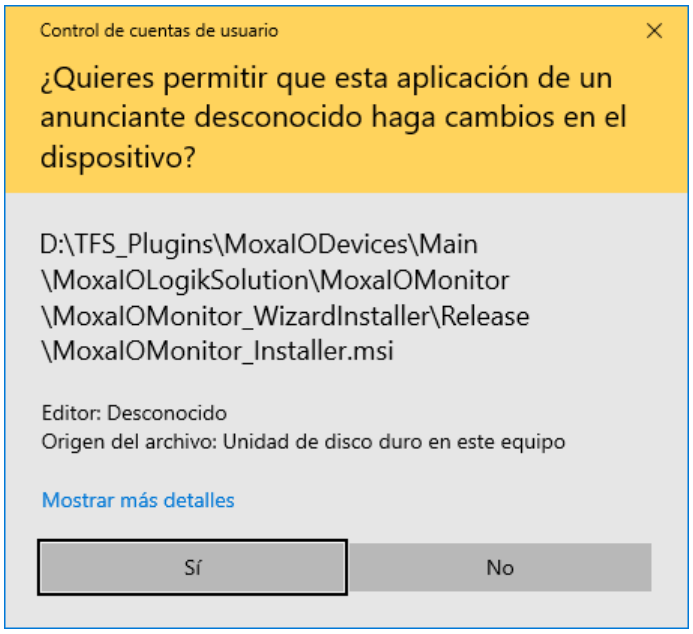


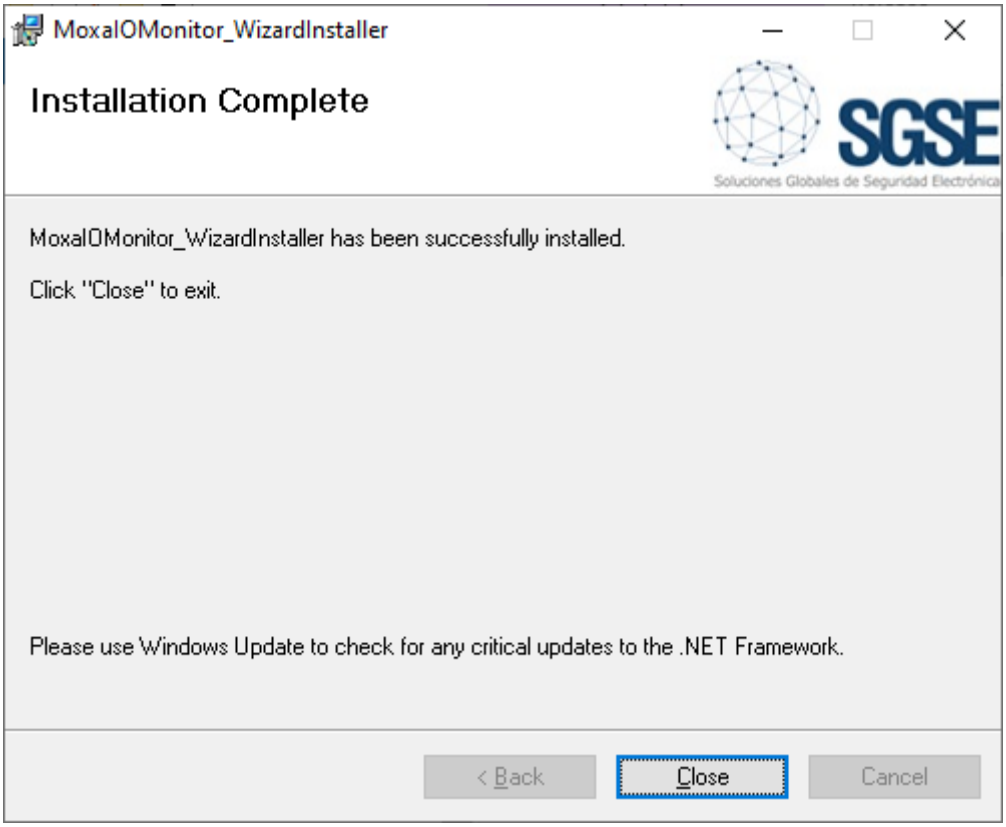
You will have to read and accept the End User License Agreement to proceed with installation.



Click “Next >” to proceed and install the plugin files.

If Windows User Account Control is enabled, you may have to allow the installer to go ahead with installation.





Once the process is finished, you can click “Close”. The plugin is already installed!

5. Licensing

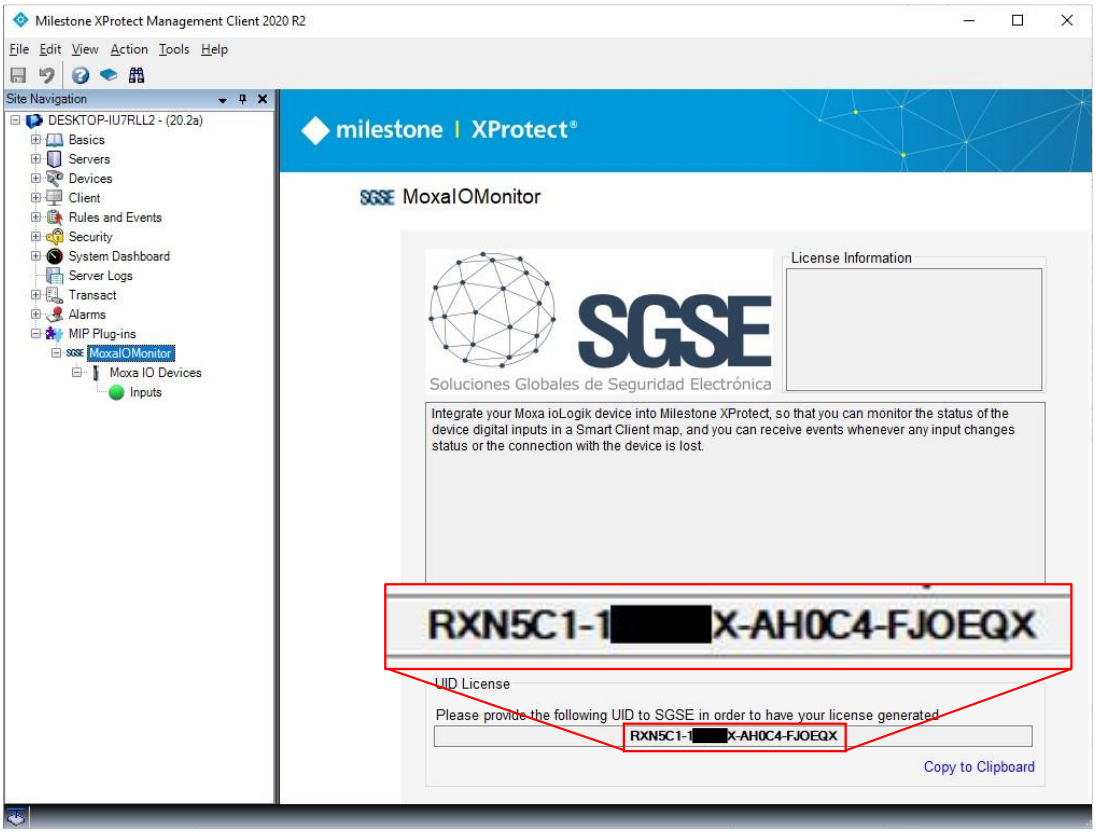
The plugin needs a license to run. Each device must be licensed. These licenses are generated by SGSE. The procedure to obtain the license file corresponding to the acquired license is described below.

A. Getting a UID

In order to generate the license, you must provide the corresponding UID. This UID is a unique identifier to which the license is bound.

To get this code, you have to run XProtect® Management Client from the Event Server machine after installing the plugin and go to the corresponding menu item (*MIP Plugins > MoxaIO Monitor*).

In that screen, when the plugin is not licensed, you will see the corresponding UID.



Please provide this UID to SGSE, and you will get your license file generated.

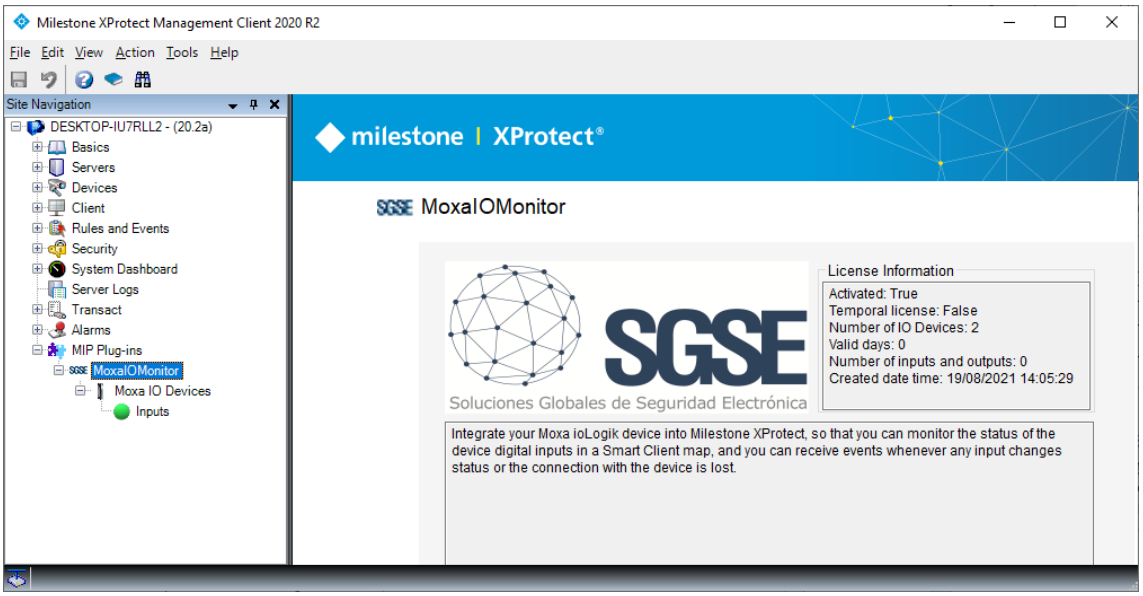
B. Applying the license

Please copy the license file "*Licencia.lic*" into the plugin folder. By default:

```
C:\Program Files\Milestone\MIPPlugins\MoxaIOMonitor\
```

After applying the license, Event Server must be restarted so that changes take effect, and we can use the plugin.

Once the license is applied, the Management Client interface will show the license information:



Workstations: Smart Client or Management Client

If you are running Smart Client or Management Client on PCs different than the Event Server, then you will need license files for those PCs too (these are free of charge).

To generate the UID in machines, different from the Event Server, where you are running the Management Client, do the same procedure as with Event Server.

To generate the UID in a workstation where you don't have XProtect® Management Client, but you will be only using Smart Client instead, you will have to use the SGSE tool, "*UID Generator*" to obtain the UID.

Please, contact SGSE to get this tool.

Send these UID identifying the PC where they were generated. This identification is for you to know where to place the licence file that SGSE will send you back.

6. Configuration

The plugin has been designed to simplify as much as possible its configuration process, so that the start-up is as simple as possible for the installer.

You just have to enable Restful API at the device, and then configure the IP, port and model of the Moxa ioLogik device in Milestone and select which inputs and outputs you want to monitor from the device. You can also change the interval between status requests (change this value carefully, as it may affect the performance or the user experience).

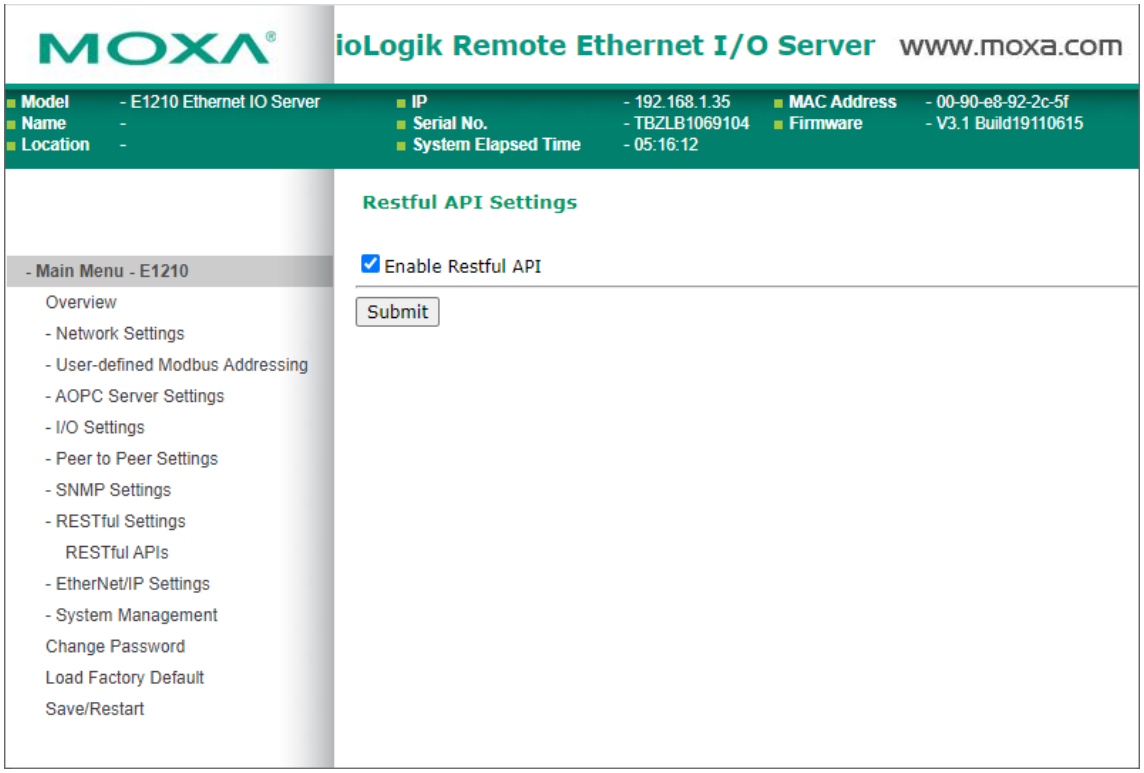
6.1 Moxa ioLogik configuration

In order to enable the API that the plugin uses for integration, you will have to check the corresponding feature in the device configuration.

Please access the device web configuration (through a web browser or the Moxa's *ioSearch* tool) and go to:

Main Menu → RESTful Settings → RESTful APIs

And then check the Enable Restful API option:

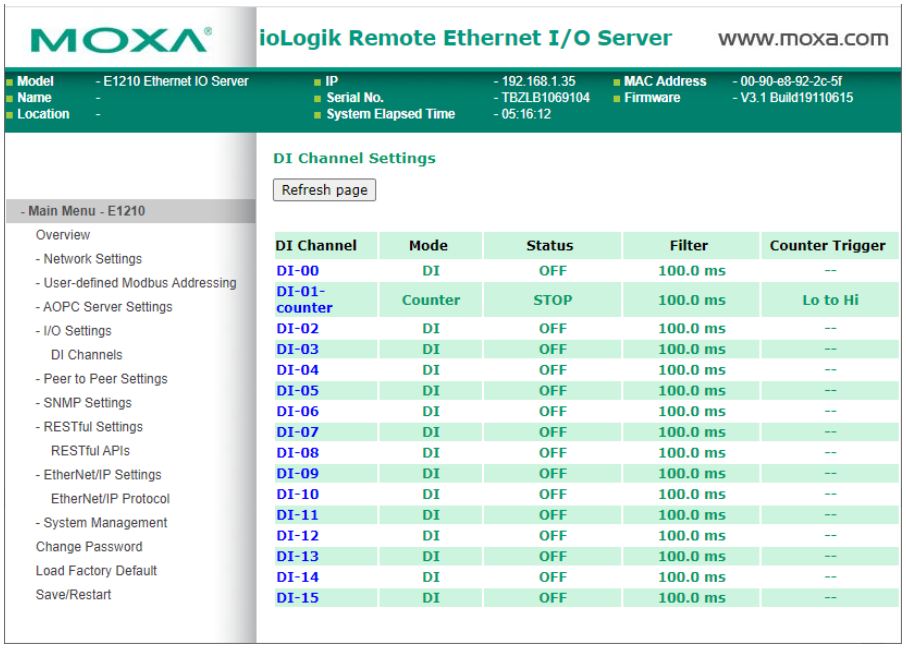


IMPORTANT: In the case of the Moxa E2210 device, it isn't possible to activate the RESTful API, since it doesn't have it. The plugin will communicate with the device through CGI commands.

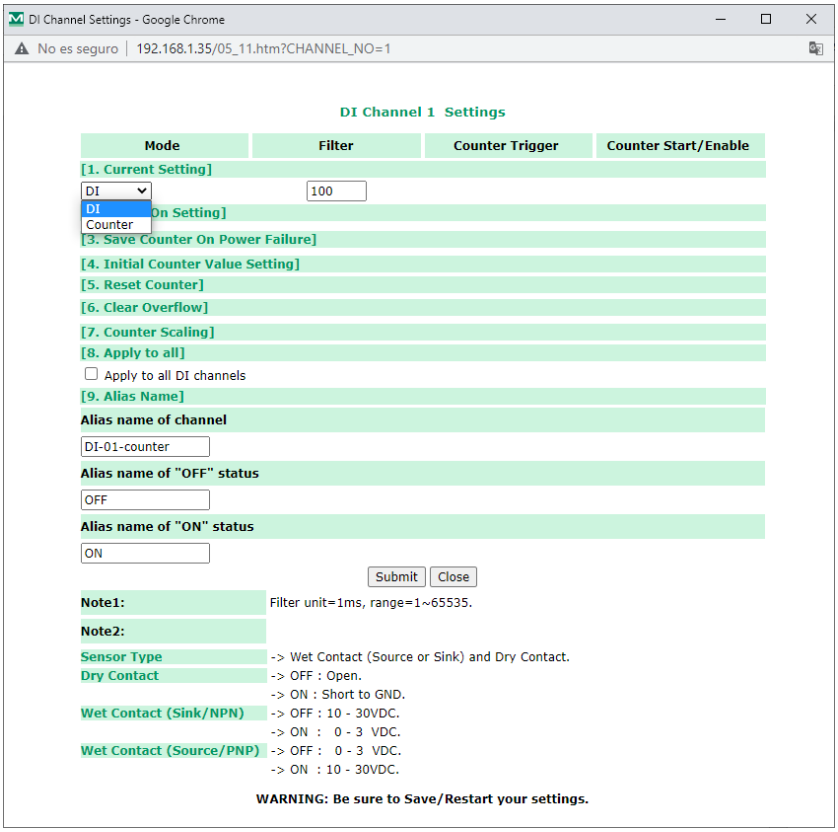
The Digital Input channels that the plugin will monitor will be only those defined with "DI Mode". Channels defined as "Counter Mode" will be ignored by the plugin.

To check this configuration, please go to:

Main Menu → I/O Settings → DI Channels



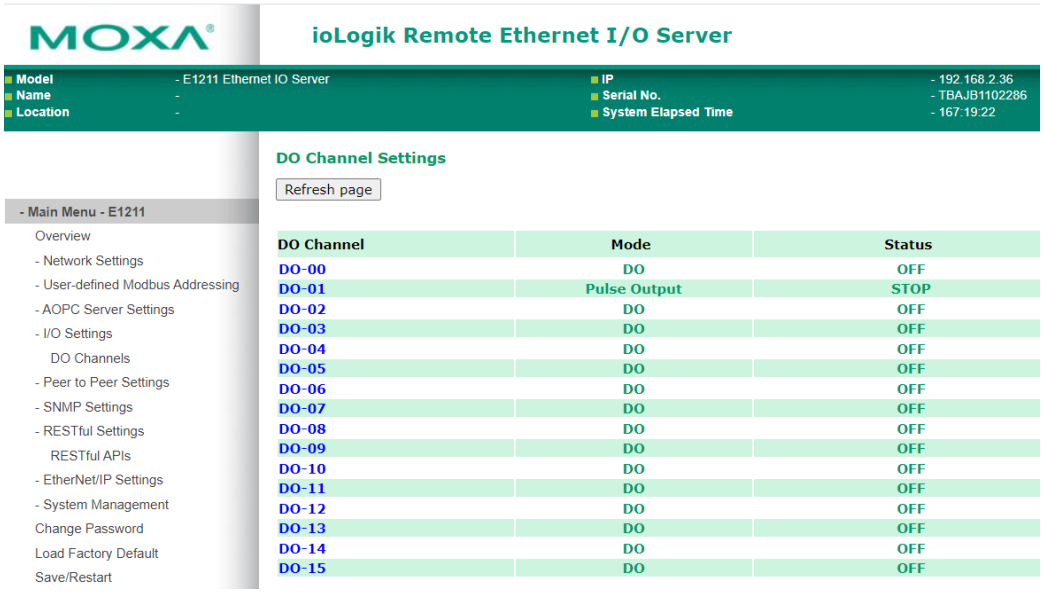
From this page you can click on any of the blue names of the channels and change operation mode to "DI".



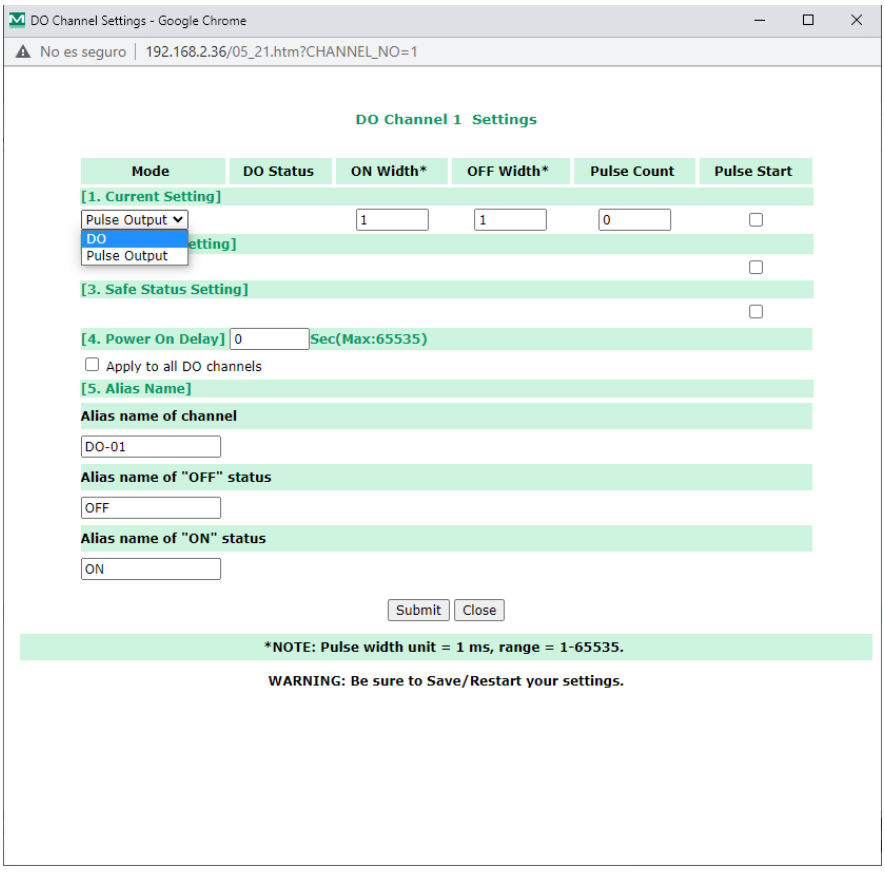
Also, the Digital Output channels that the plugin will monitor will be only those defined with “D0 Mode”. Channels defined as “Pulse Output” will be ignored by the plugin.

To check this configuration, please go to:

Main Menu → I/O Settings → D0 Channels



From this page you can click on any of the blue names of the channels and change operation mode to “DO”.



6.2 Plugin configuration

Compatible device models

The plugin supports the following models that have been tested in a Milestone XProtect instalation:

- ✓ Moxa E1210
- ✓ Moxa E1211
- ✓ Moxa E1214
- ✓ Moxa E2210

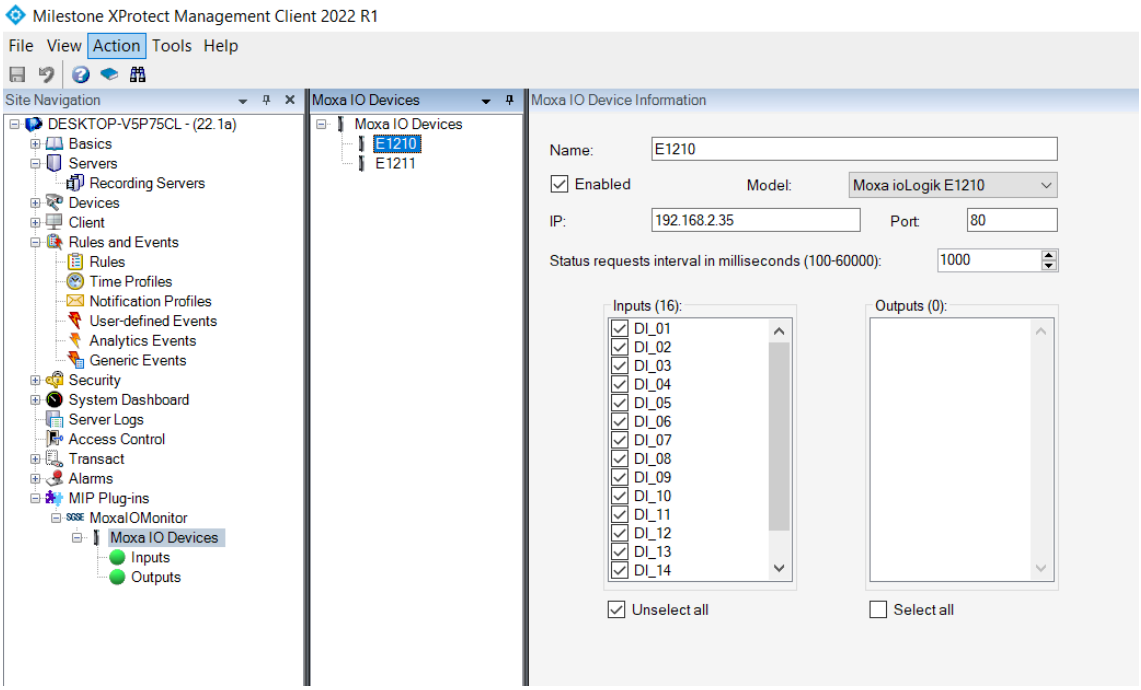
Set up a device

To set up a Moxa ioLogik device in Milestone, the procedure is extremely simple.

You just have to assign a name to the device, to identify it in the system, select device model in combo box, and configure the needed parameters to allow the plugin to connect to the device over Ethernet.

The connection is established by plugin, and the needed parameters are the following, that must match the parameters set at the panel:

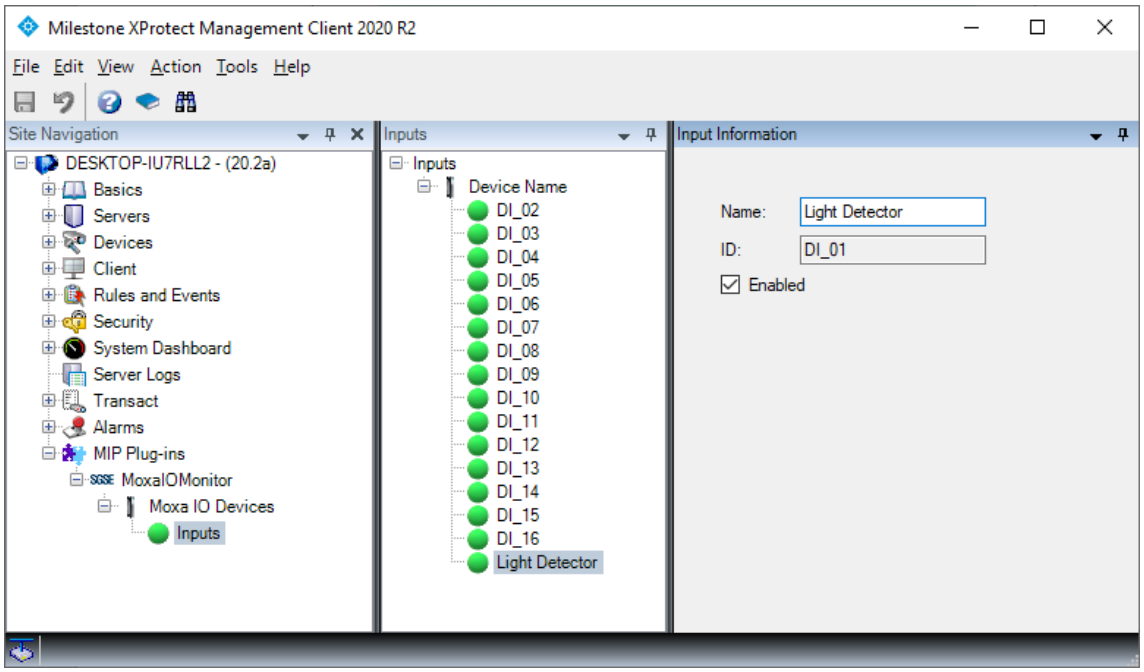
- IP address of the Moxa ioLogik device.
- Port to connect to the Moxa ioLogik RESTful API. Unless instructed to do so, leave it as default (80).
- The time interval (in milliseconds) between request for input status.
- Check the inputs you want to monitor from that device.



The plugin will automatically create in Milestone the items corresponding to the device itself and the selected digital inputs These items will be accessible from the interface of Management Client and from Smart Client maps.

Digital inputs name

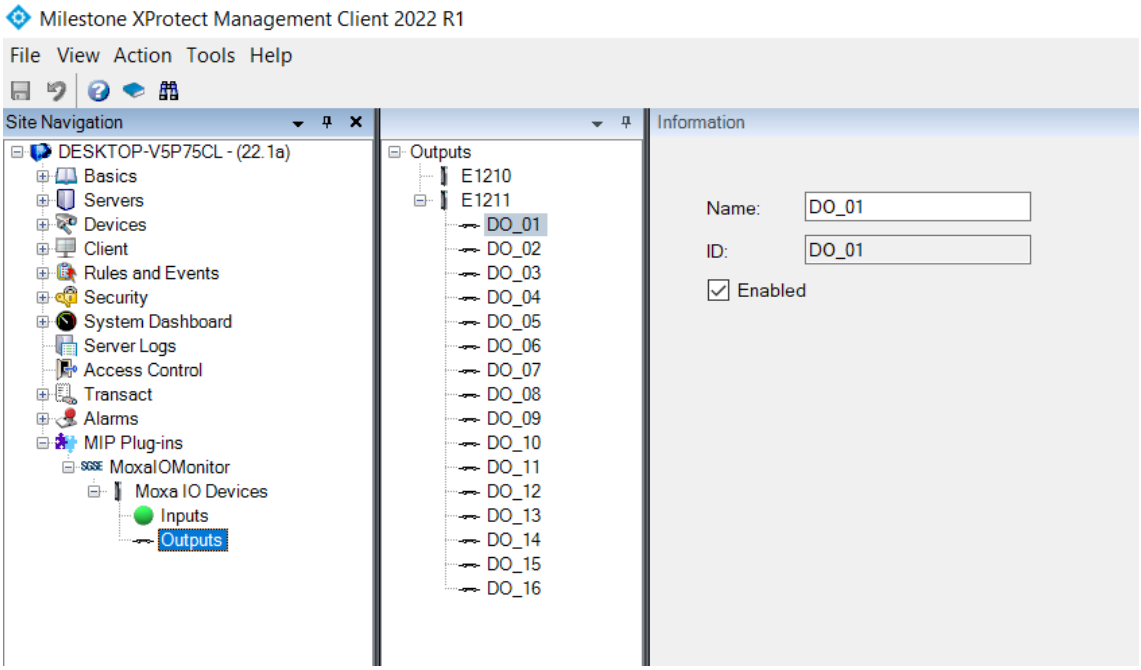
The plugin allows you to change the name of the inputs. By default, they get a name with the prefix “DI_” and then the corresponding input from 1 to 16 (for example: DI_01, DI_16), which is the internal ID of each input.



If you want to change the name of the input for a better understanding of your security system, then you can select each input in the Management Client menu and freely give it the desired name.

Digital outputs name

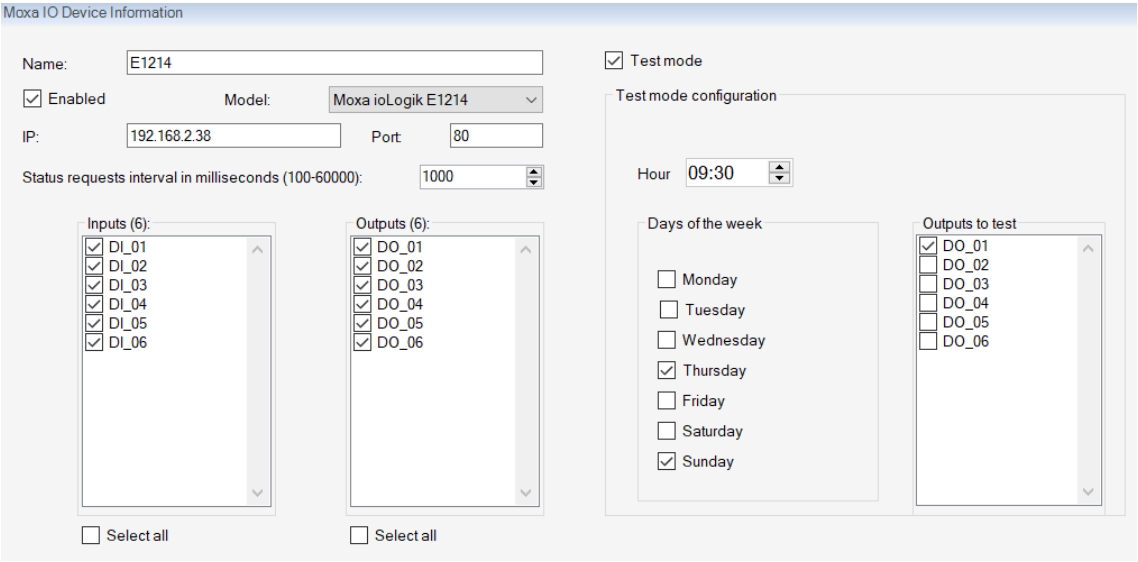
It works the same way as inputs. They have an autogenerated ID and it is possible to change their name



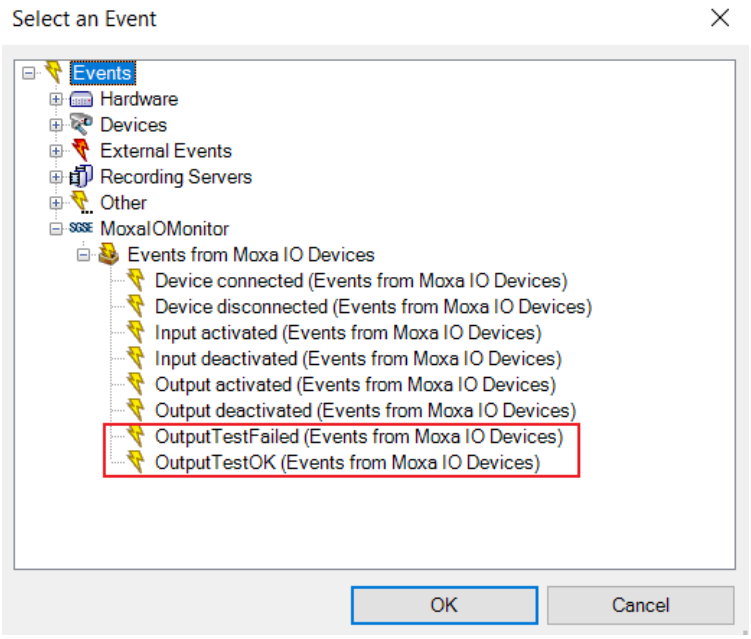
Test mode

MoxaIOMonitor plugin includes a tool that allows to test periodically a Moxa Device with outputs. It is possible to select one or more outputs, set time and days of the week, and test device behaviour when a command to change the outputs status is sent. This is designed to check if the device is broken, blocked or in an anomalous status and needs to be restarted.

In this example the first output will be tested at 09:30 every Thursday and Sunday.



If the test fail, an event will be triggered. It can be used to configure rules. Another event will be triggered if the test is successful to.

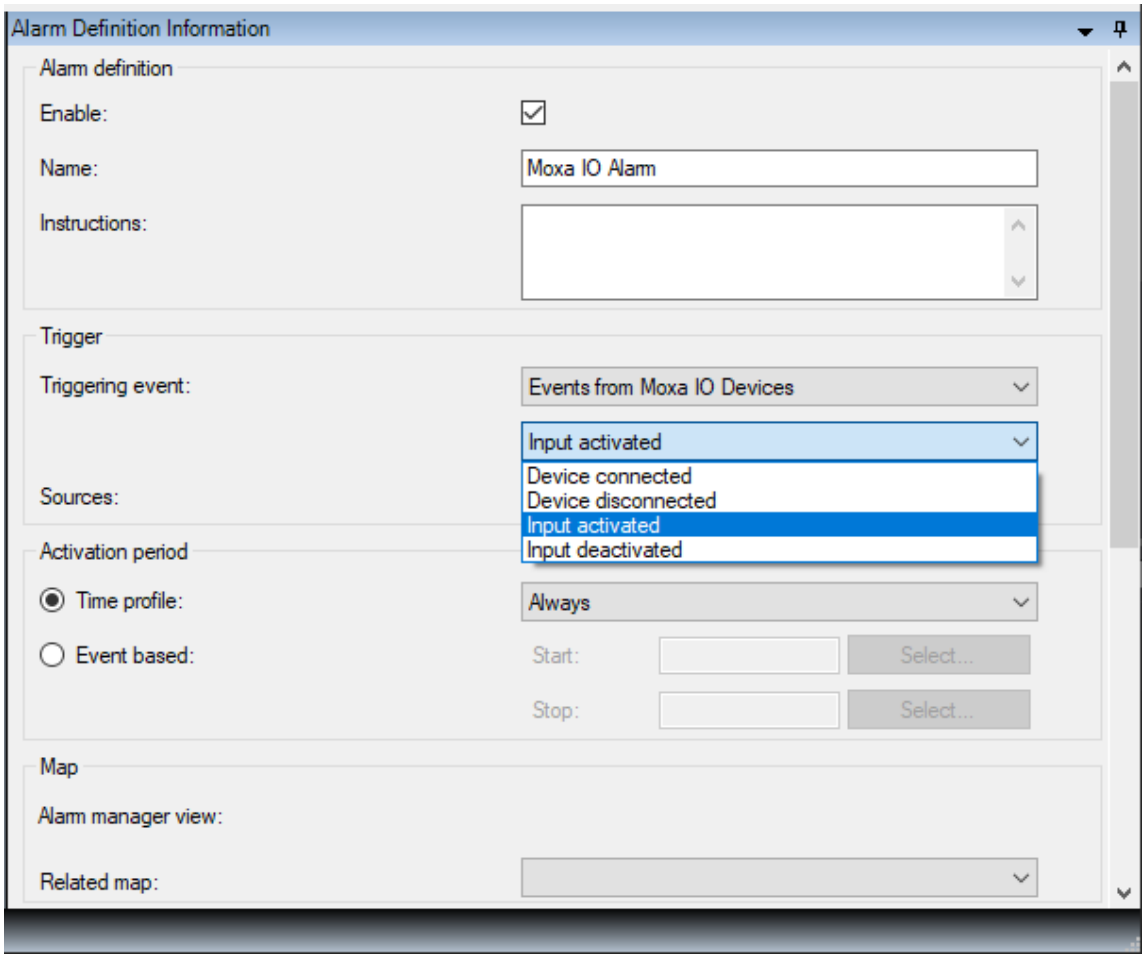


If more than one output is configured in test mode, every output will be tested individually and will trigger its own event.

Alarms definition

This plugin adds some event definitions to Milestone, corresponding to the events that the device sends.

Each event can be defined in Milestone as an alarm. You just have to go to “Alarm definition” section, within Management Client, create a new alarm whose triggering event is an event from the “Moxa ioLogik Events” group, and define the item(s) from which we want this event to be considered an alarm.

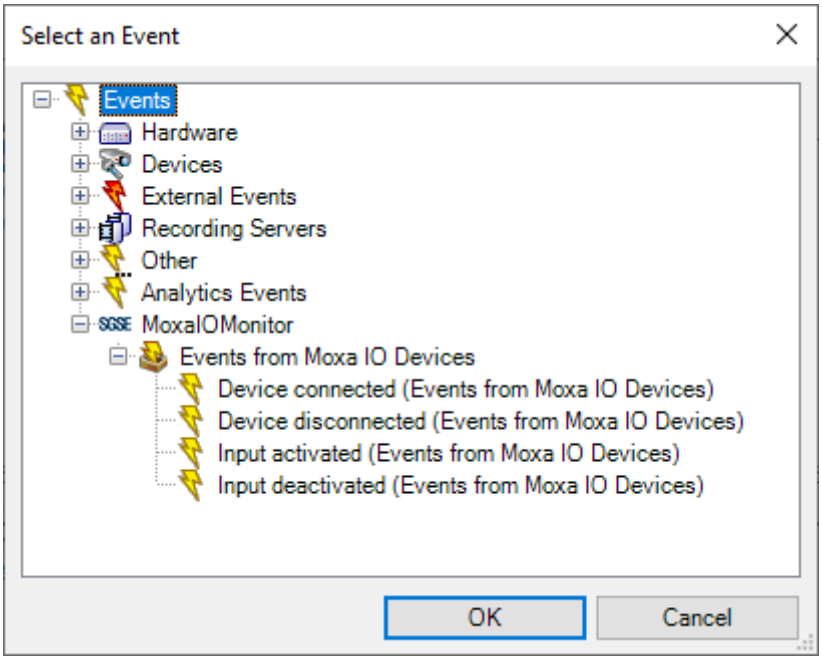


Rules: events

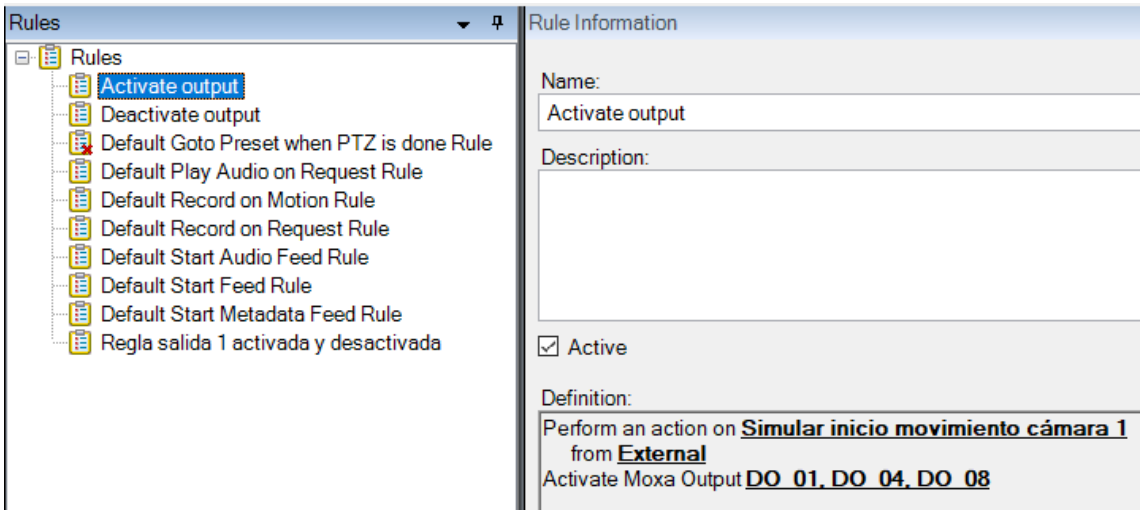
Those events can also be used to trigger Milestone rules. Just create a new rule and select as “Triggering Event” one of the events from those added by the plugin.

The events that the plugin supports for both rules and alarms are:

- Device Connected
- Device Disconnected
- Input Activated
- Input Deactivated



Also, It is possible to enable or disable outputs as consequence of a predefined event.

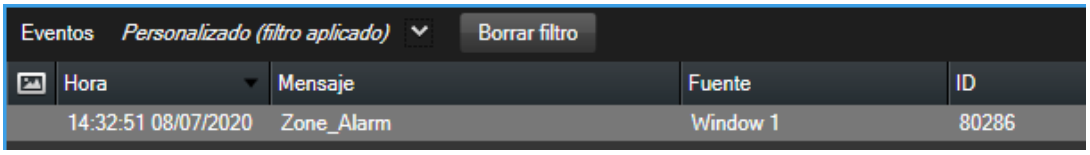


7. Operation

SPC Monitor plugin allows you to monitor the status of Moxa ioLogik device digital inputs.

A. Event/Alarm viewer

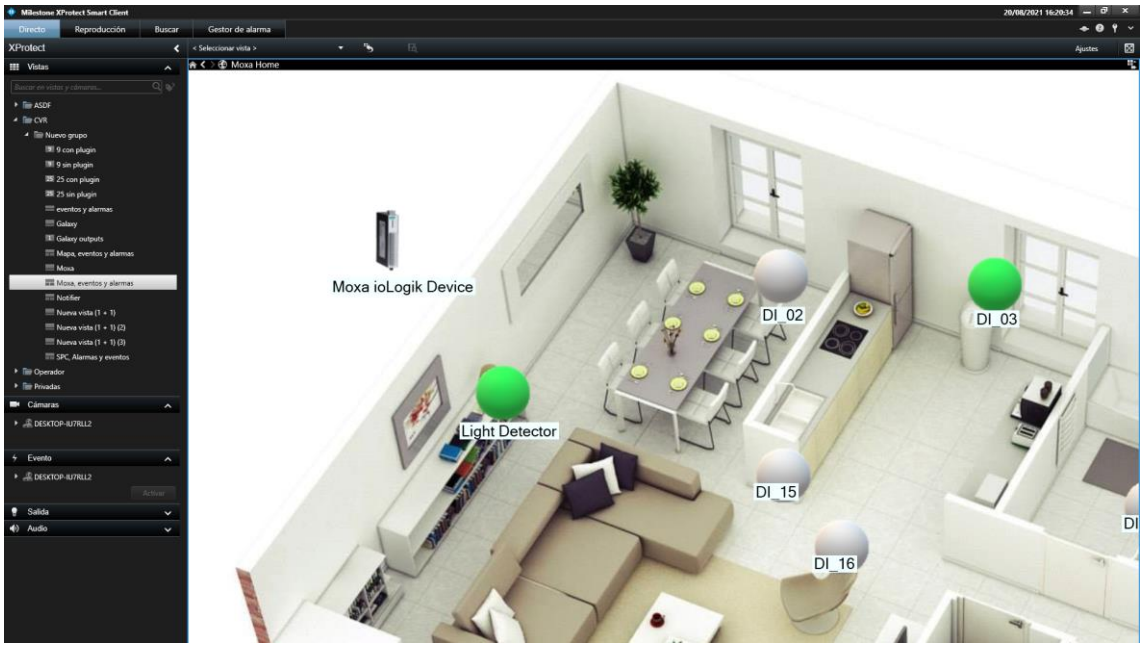
From the standard XProtect® events and alarms viewer, alarms and events coming from the Moxa ioLogik device can be viewed and managed. Thus, every activation and deactivation of any input in a Moxa ioLogik device will generate an event in Milestone. When the connection with the device is lost or restored, the plugin will generate an event to notify this fact.



B. Maps

The icons corresponding to the Moxa ioLogik device itself and any of its inputs or outputs can be added to a XProtect® map.

The icon of each input will show the state of the corresponding element according to the legend referenced below.



Status	Sample	Meaning
Activated		The digital input status is ON
Deactivated		The digital input is in idle status (OFF)
Unknown		The status of the digital inputs is unknown. The connection to the device has not been established or it has been lost.

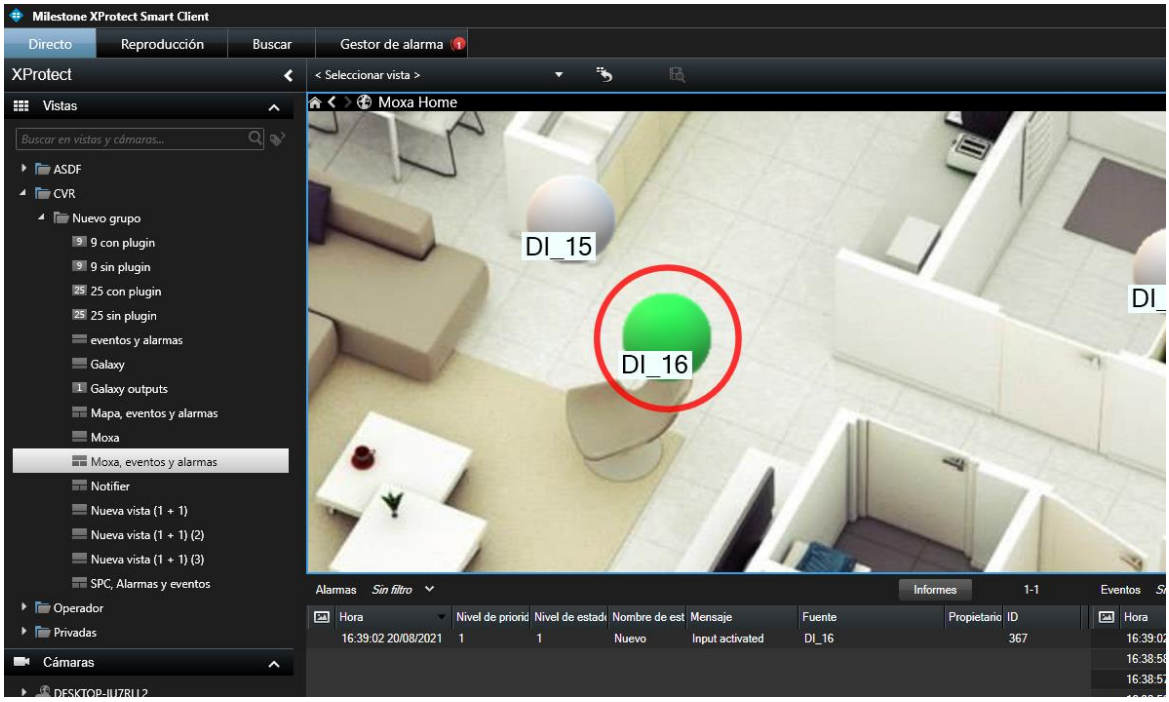
The device will also show through its icon the connection status.

Status	Sample	Meaning
Connected		The connection with the device has been established and is active.
Not connected		The connection with the device has NOT been established or it has been lost.

Connection lost might take around 30 seconds to be detected, as the plugin will do some attempts to connect to the device before considering that the connection has been lost.

Reconnection is faster (might take less than 10 seconds if the connection was lost by network problems, a bit longer if the device needs to restart).

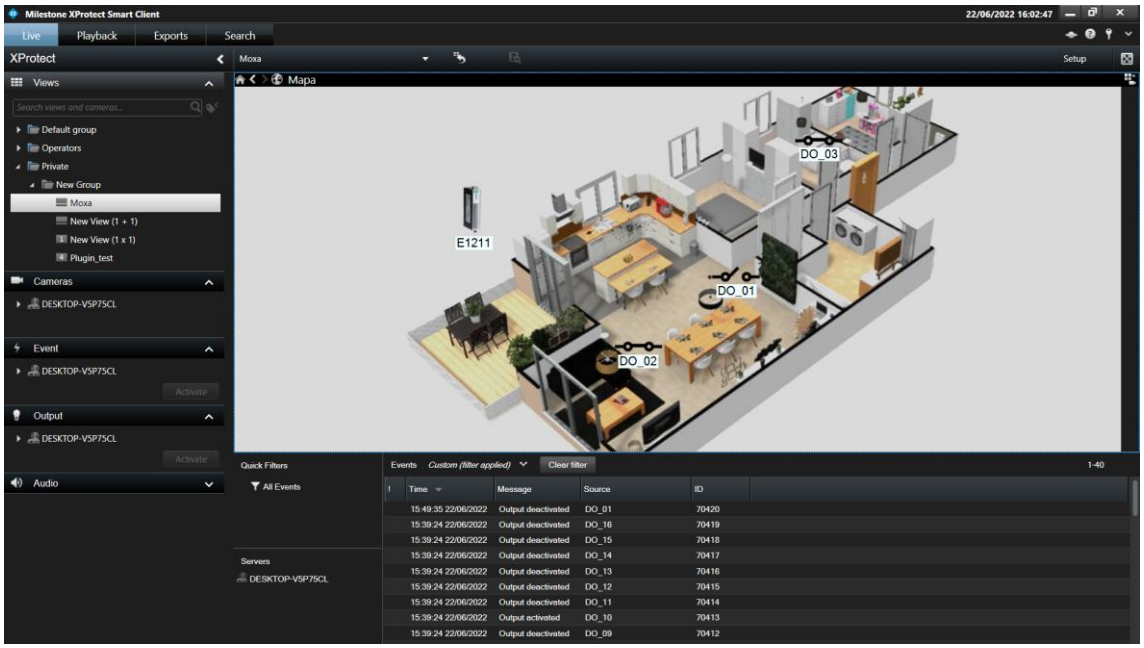
If an alarm is defined based on an event from a specific item (an input is activated, the connection to a device is lost), a red circle will signal the corresponding item in maps, as Milestone normally does.



Working with outputs is similar to work with inputs. They show the following icons depending of its status.

Status	Sample	Meaning
Activated		The digital output status is ON
Deactivated		The digital input is in idle status (OFF)
Unknown		The status of the digital outputs is unknown. The connection to the device has not been established or it has been lost.

In a map, they look like this.



We can activate and deactivate it doing right click over them.

C. Web Client and Milestone Mobile

These interfaces do not support maps.

However, alarms based in Moxa ioLogik device events can be received from these two interfaces if they have been defined in the Management Client.

8. Troubleshooting

Integrated systems

In case the integration does not work, please confirm the device and its firmware version to be plugin compatible. According to Moxa documentation, the following models and minimum firmware versions are required:

- Moxa ioLogik E1210 Firmware: V2.5 (std. version)
- Moxa ioLogik E1210-T Firmware: V2.5 (std. version)
- Moxa ioLogik E1211 Firmware: V2.5 (std. version)
- Moxa ioLogik E1214 Firmware: V2.5 (std. version)
- Moxa ioLogik E2210 Firmware: V2.5 (std. version)

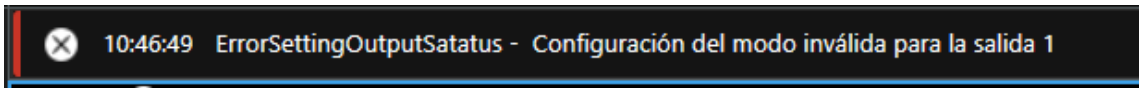
Previous device firmware versions do not support RESTful API protocol.

Compatibility has been tested with FW *V3.1 Build19110615* on a Moxa ioLogik E1210 device, due to unavailability of E1210-T (same product, only difference is temperature operation range). Compatibility is not granted if a different firmware version is used. Although later firmware versions should work properly, compatibility with each specific firmware version should be tested.

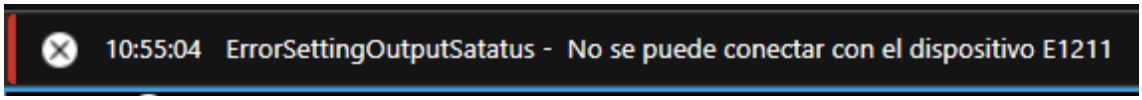
Required configuration

The RESTful API feature must be enabled in the device configuration. Please check the corresponding chapter of this manual.

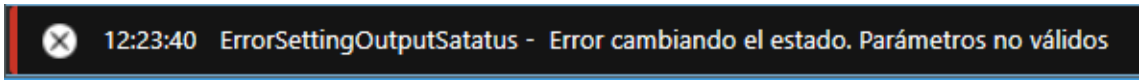
XProtect Smart Client error messages



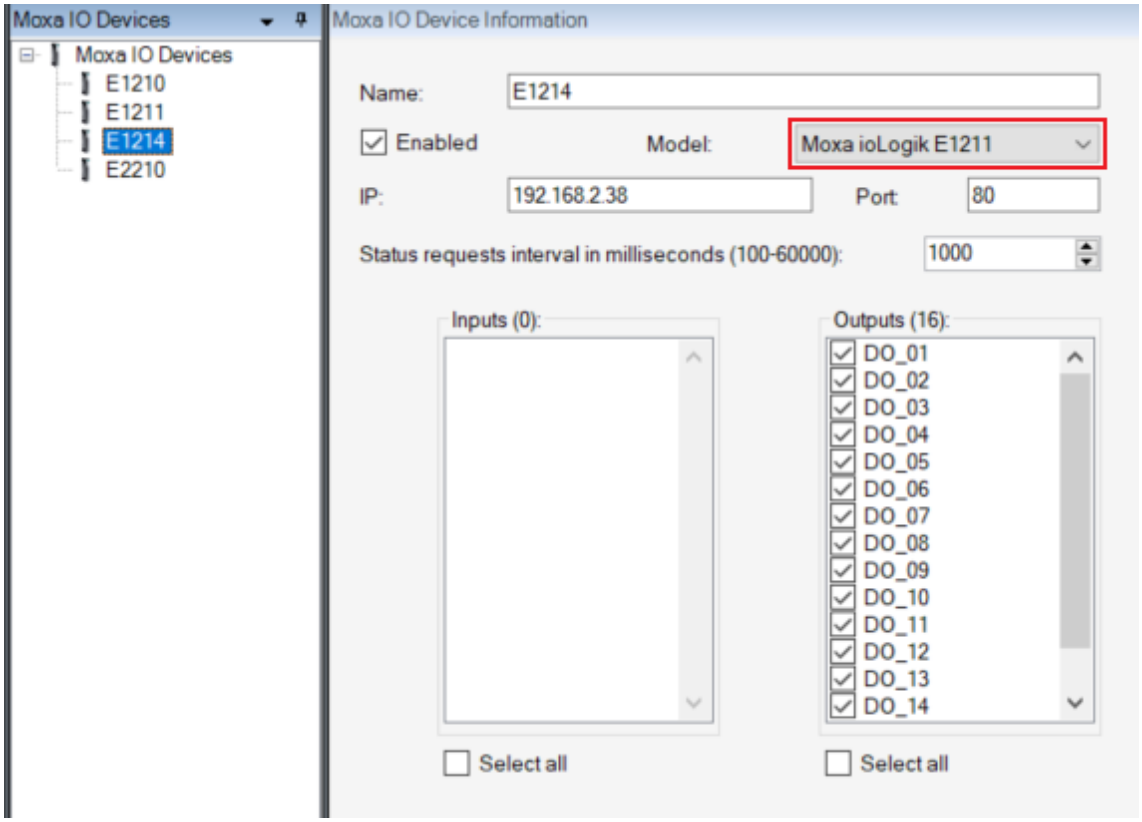
The most probable cause of this error is that the output mode is configured on “Pulse Output” instead of “DO”. It is explained at “Configuration” section.



This error message appears when it’s not possible to connect with de output device.



This error is caused by an invalid request to the device. It’s possible that device model is not properly configured in the Xprotect Management Client:



Other

- The plugin does not connect with the device:
  - Verify IP address of the device and the configured IP address at the plugin.
- The plugin connects but it does not trigger events nor change input icon status.
  - Please check that inputs are configured on “DI Mode” and not in “Counter Mode”.
- Map shows black circles with white crosses instead of expected icons.
  - When the device is created in Milestone, items are new in the system, so icons related to deleted items must be deleted from the map and added again.
- The system gets unstable, or the device stops responding
  - Please check that polling interval value is not too low (set it to default 1000 ms).
- Status changes take too long to trigger events and to be represented in the Smart Client Map
  - Please check that the polling interval value is not too high (set it to default 1000 ms).

More info

For more info, please visit plugin online information or contact SGSE in the email address info@sgse.eu.