eWON
MACHINES CAN TALK

Application User Guide

AUG 071 / Rev. 1.2

Polling Data from a BACNET/IP device

How to use the BACNET IO Server to poll data from a BACNET/IP device

ASHRAE BACnet™

support.ewon.biz

Table of Contents

1. Objective

The objective of this document is to explain how the eWON Flexy can poll data variables out of one or more BACNET/IP devices.

Polling BACNET/IP data variables can be resumed in four steps :

- Linking the eWON Flexy with the BACNET/IP Device
- Configuring the eWON Flexy BACNET IO Server
- Creating tags in the eWON Flexy
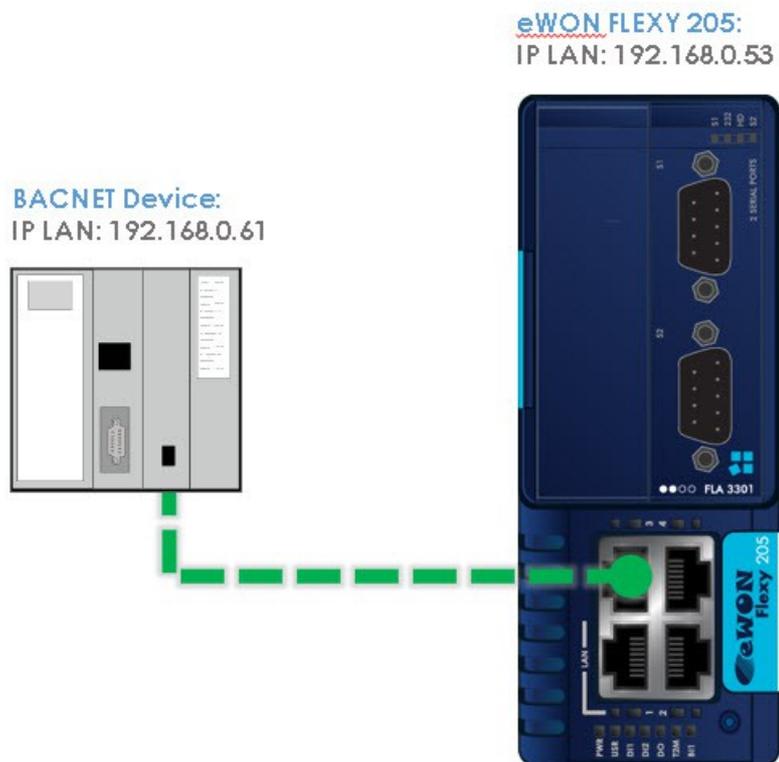- Monitoring tags

- Note -

Advanced explanations are indicated by this icon

2. Hardware requirements

In order to follow this guide you'll need:

- An eWON Flexy
- A PC to connect the eWON Flexy through its web interface
- A device acting as a BACNET/IP Server

3. Software requirements

Software configuration:

The eWON Flexy is configured through its web interface. Which is accessible with any modern web browser as shown here below:

- Firefox 15+
- Chrome 16+
- Safari 6+
- Edge 13+
- IE 11

Additionally, we suggest you to download the *eBuddy* companion tool available on our website : http://support.ewon.biz/

This tool allows you to list all the eWON Flexy on your network and execute changes such as IP address change, firmware upgrade or device recovery (if required).

Firmware Version

This guide targets devices running a firmware version 12.2 or higher.

4. Protocol compatibility

The eWON Flexy supports the BACNET/IP protocol (based on UDP/IP) to poll data from devices acting as BACNET/IP Servers.

5. Configuring the IO Server

- Connect your PC to one of the LAN ports of the eWON Flexy

- Open the web browser and enter the IP address of the eWON Flexy

- Log into the eWON Flexy web interface

- Go to Tags menu on the left hand side

- Click on the IO Servers option and a supplementary menu will be displayed

- Select the IO Server "Bacnet" inside the IO Server list

- Additionally, there is an address helper feature that turns green when the address is correct and red the address is wrong

General Setup

| eWON Bacnet Device ID: | | 0..4194303, leave empty to get a value assigned automatically |
| eWON Bacnet Device ID: | | 1024..65535, default is 47808 |

Topic A ☑ Enabled

| Destination Device Type and Address: | | Enter Bacnet Device ID |

[0..4194303]   Device ID

| Poll Rate: | | Default: 2000 |
| Write Priority: | | Value between 1 (highest) and 16 (lowest) or 0 (no priority specified) |

Topic B ☐ Enabled

Destination Device Type and Address:		Enter Bacnet Device ID
Poll Rate:		MS	Default: 2000
Write Priority:		Value between 1 (highest) and 16 (lowest) or 0 (no priority specified)

Update

Main Settings

Parameters	Description
eWON BACNET Device ID	This number must be unique in your BACNET network. Type the BACNET device ID of the eWON Flexy or leave it blank to let the eWON Flexy choose a device ID.
eWON BACNET Port	Select the UDP port used for the BACNET IP communication.

To poll data registers out of your BACNET device, you need to define at least one **Topic**. Topics are meant to allocate common properties to a group of tags

The topic settings (except the Poll Rate) are optional and can be defined in the Tag address as well. This allows you to poll more than 3 BACNET devices. Leave them blank if you define them in the Tag address.

Topic Settings

Parameters	Description
Device ID	Type the device ID of the device to poll. There is no IP address to define for the device as the BACNET IP protocol can detect the BACNET devices on the network using an UDP Broadcast packet. Note that the IP address of the BACNET device must still be in the same range as the eWON Flexy IP address
Poll rate	Type the poll rate for this topic (in milliseconds). Default : 2000 ms
Write Priority	Type a write priority value. (0 or blank : no priority defined, 1 : highest priority, 16 : lowest priority)

6. Tag Creation

- On the left hand menu, please select the option **Value** under the Tags menu
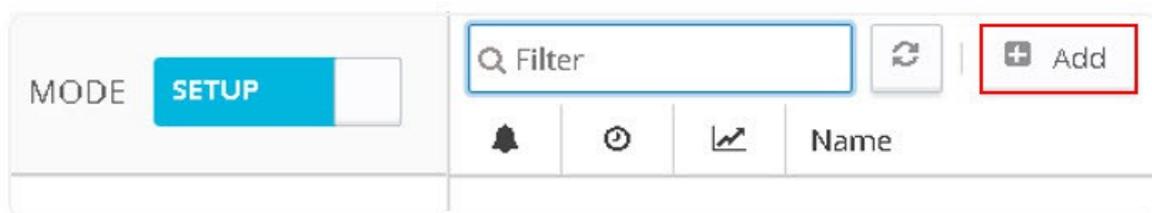- Switch to **Setup MODE**
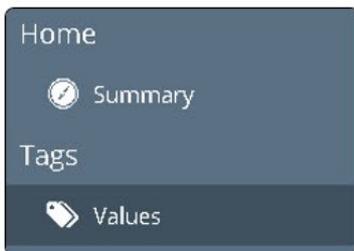
- Click on Add (+)

- Once the create a new Tag window opens proceed to enter the parameters of the Tag you want to create.
- Enter a **Tag Name** – free text, no spaces, no symbols, -, =, %, $, @, # etc
- Select **Topic Name** the topic you just created in previous step

Define the address of the Tag, the address of the Tag is composed of four parameters :

- Object Type (mandatory)
- Instance Number (mandatory)
- Property of the object (optional. If not defined, the property "Present Value" is used)
- Device ID (optional if defined in the topic settings)

Object Type

Here is the list of the supported object types :

Object Type	Tag type ???
ANALOG_INPUT (0)	Analog Input
ANALOG_OUTPUT (1)	Analog Output
ANALOG_VALUE (2)	Analog Value
BINARY_INPUT (3)	Binary Input
BINARY_OUTPUT (4)	Binary Output
BINARY_VALUE (5)	Binary Value
INTEGER_VALUE (45)	Integer Value
POSITIVE_INTEGER_VALUE (48)	Positive Integer Value
ACCUMULATOR	Accumulator Value

Instance Number

The instance number defines the ID of the object you want to access to.

Property of the object

An object is composed of different properties. These properties can be accessed through different Tags. You have therefore to define which property you want to access for your Tag. If no property is defined, the property "PRESENT_VALUE" is used.

Here is the list of the property you have access to :

Value	Description
PRESENT_VALUE (85)	Present Value
OUT_OF_SERVICE (81)	Out of Service
COV_INCREMENT (22)	Cov Increment
DEADBAND (25)	Deadband
HIGH_LIMIT (45)	High Limit
LOW_LIMIT (5)	Low Limit
Any numerical ID	Numerical ID

7. Example of configuration

For this example, I used the BACNET IP Device simulator from "SCADA Engine"
http://www.scadaengine.com/downloads.html
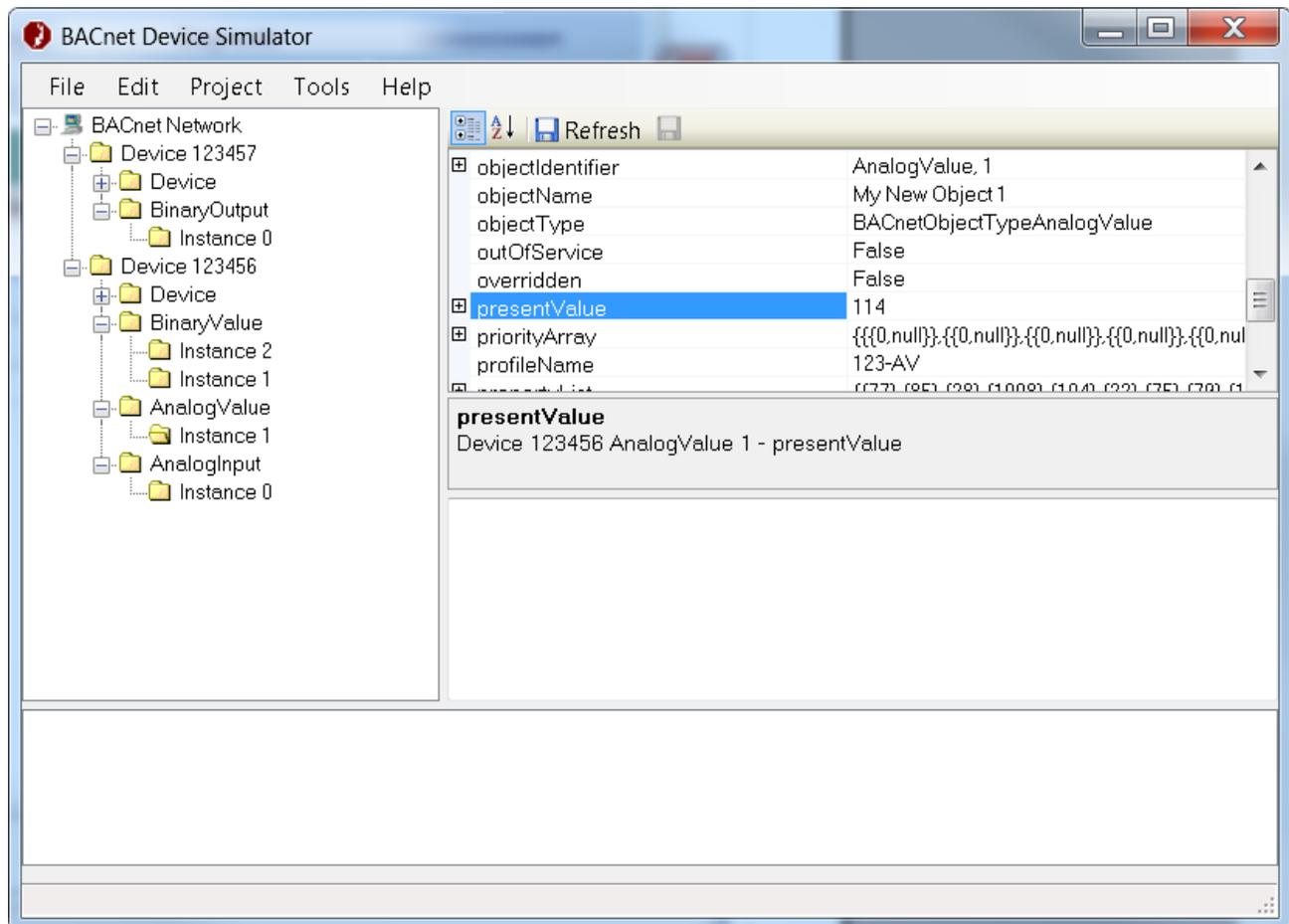
Device configuration :

General Setup

eWON Bacnet Device ID:	1787296	0..4194303, leave empty to get a value assigned automatically
eWON Bacnet Device ID:		1024..65535, default is 47808

Topic A ☑ Enabled

Destination Device Type and Address:	123456	Enter Bacnet Device ID
Poll Rate:	MS	Default: 2000
Write Priority:		Value between 1 (highest) and 16 (lowest) or 0 (no priority specified)

Topic B ☑ Enabled

Destination Device Type and Address:	1234567	Enter Bacnet Device ID
Poll Rate:	MS	Default: 2000
Write Priority:		Value between 1 (highest) and 16 (lowest) or 0 (no priority specified)

Update

Q Filter | ↻ | 🗐 Add ▾ | ⚙ Edit | ✖ Delete | 🔔 Configure Alarm actions

🔔	⊘	📈	Name	Type	IO Server	Topic	IO Address	💚	Value	Tag description
✓	✓	✓	TAG0	DWORD	BACNET	A	ANALOG_I...	❶	0	🔒

Revision

Revision History

Revision Level	Date	Description
1.0	26/01/17	Initial Version
1.2	06/07/18	New GUI

Document build number: 38

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