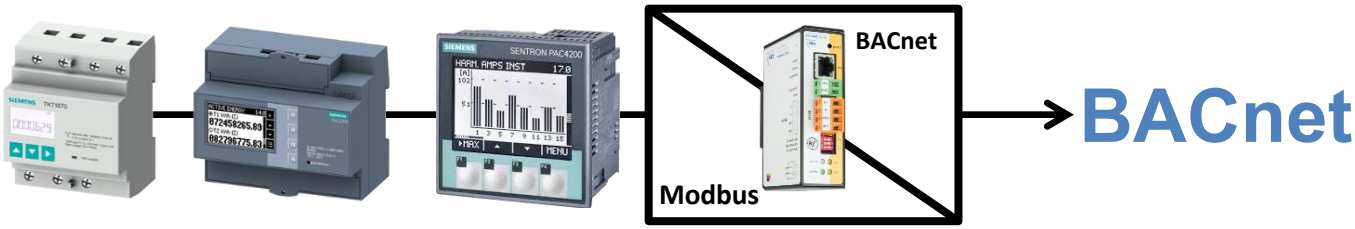
Integrate PAC measuring device to BACnet



Depending on the type, PAC devices are equipped with Modbus TCP, Modbus RTU or M-Bus communication and cannot be integrated directly into BACnet.

A connection is still possible in particular for Modbus RTU and TCP variants via gateways. This can be used to connect several Modbus devices and represent a central transition point in a BACnet network.

This example shows the connection of Modbus devices to BACnet via the MBS Single-X, Standard Universal Gateway: https://www.mbs-solutions.de/standard-gateway

Index of contents

1. Connection example: 2

2. Gateway Configuration 2

2.1. General network settings 2

2.2. Parameterization of Modbus TCP devices 3

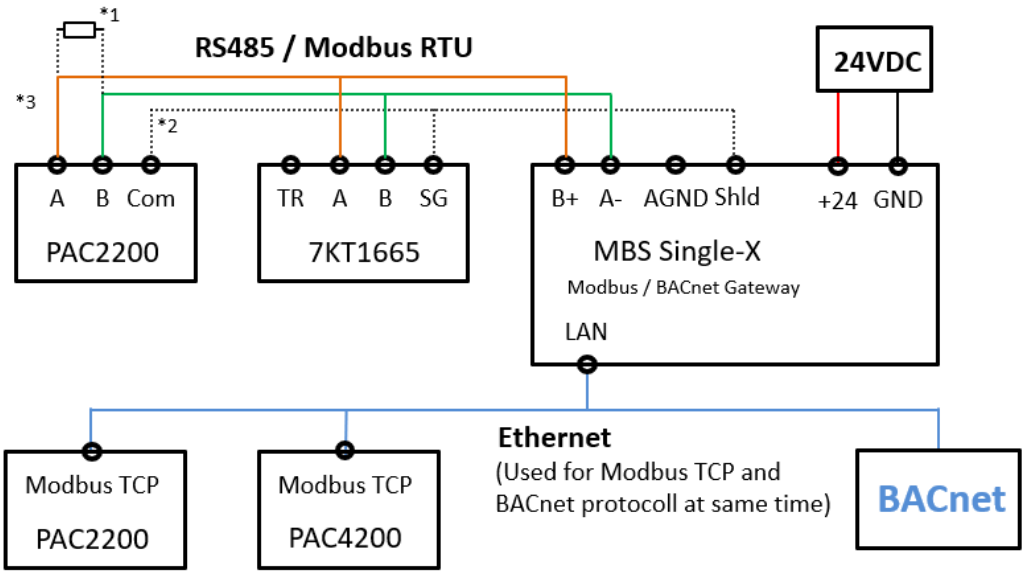
2.3. Parameterization of Modbus RTU devices 5

3. Parameterization of BACnet datapoints 7

3.1. Dispatch datapoints 8

4. BACnet communication test 9

1. Connection example:



* 1: 120-Ohm termination resistor. Use is optional and depends on the installation.
* 2: Ground. Use is optional and depends on the installation.
* 3: Use a shielded cable for installation.

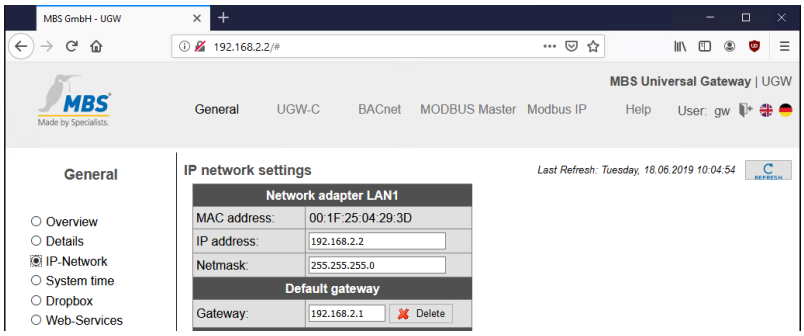
2. Gateway Configuration

The MBS Gateway can be modular equipped with the required protocol drivers. This should be decelerated by ordering the device. In this case it's equipped with 3 protocol drivers: BACnet, Modbus TCP and Modbus RTU.

A detailed documentation of the used gateway can be found on the website of the manufacturer.

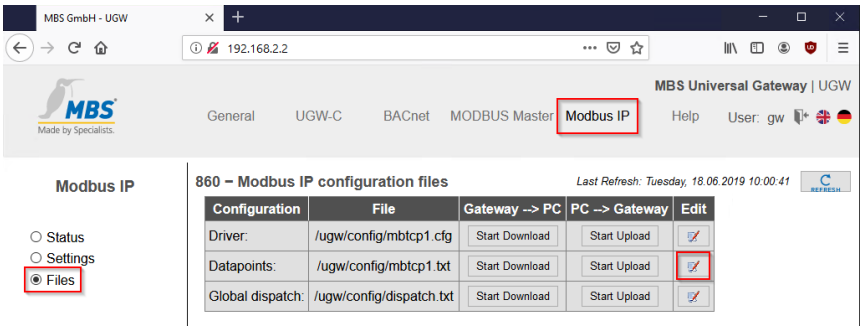
2.1.General network settings

Ensure the configured IP settings are fitting to your network and measuring devices:



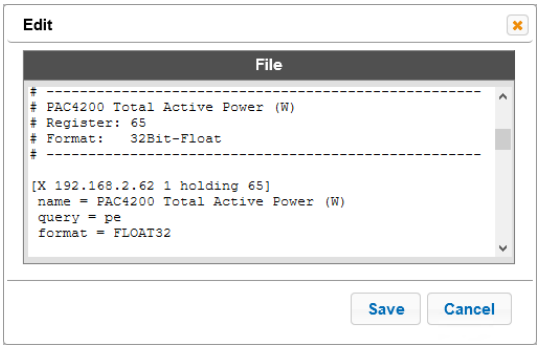
2.2.Parameterization of Modbus TCP devices

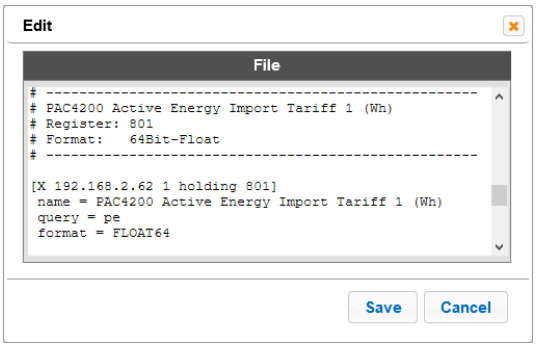
Each datapoint which should be read from an PAC device must be configured:

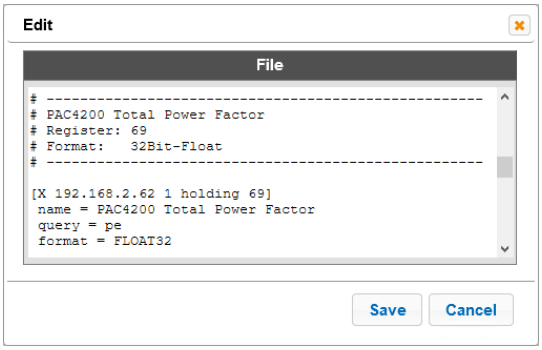


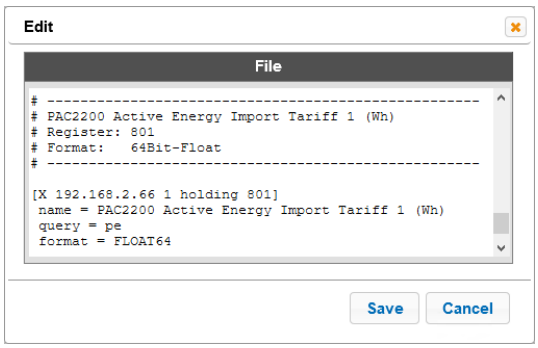
For this, open the datapoint configuration file and add all required datapoints referring to the Modbus register settings of device:

Examples:







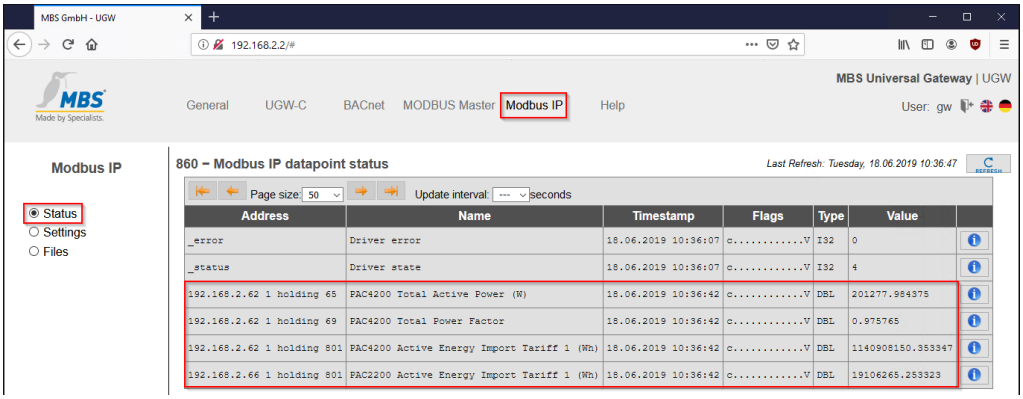


A detailed description for is available online:
https://www.mbs-support.de/modbus-tcpip

See also the PAC device manuals for required Modbus address details:
https://support.industry.siemens.com/cs/de/en/ps/19733/man

Integrate PAC measuring device to BACnet

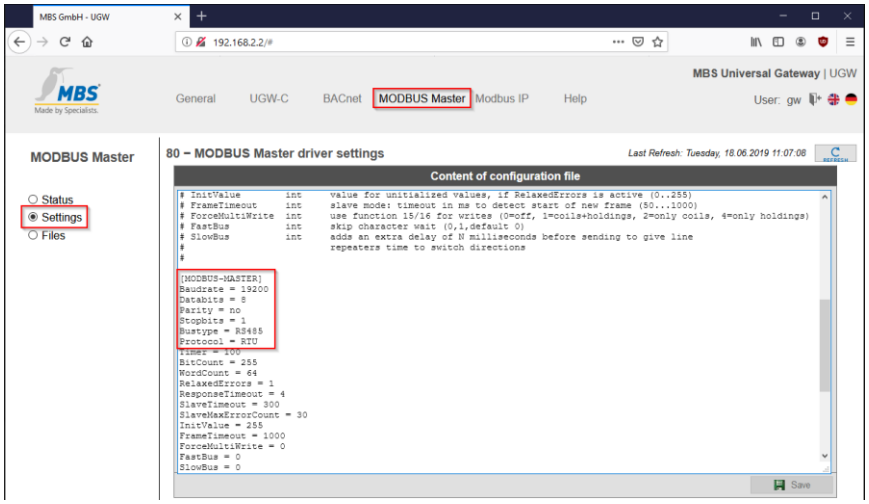
Finally save your configuration, restart the gateway and check the status of configured values:



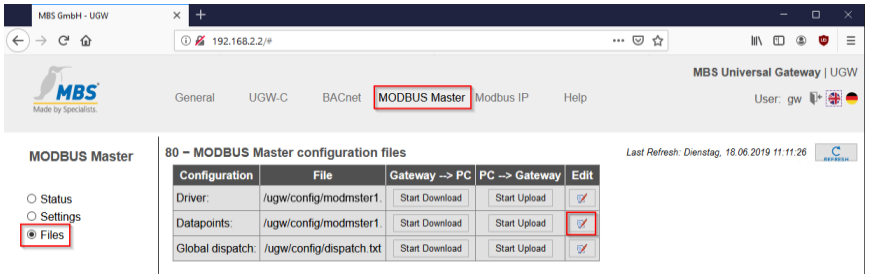
If all devices are connected and configuration is successful the accessed values from devices are shown.

2.3.Parameterization of Modbus RTU devices

Set RTU communication settings regarding your device configuration:

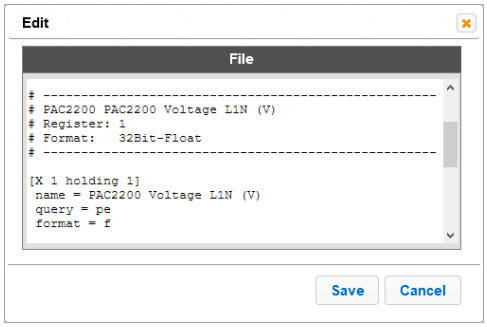


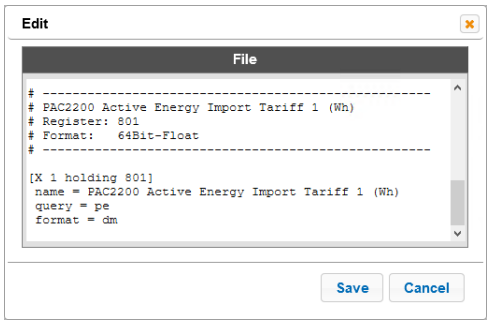
Each datapoint which should be read from an PAC device must be configured:



For this, open the datapoint configuration file and add all required datapoints referring to the Modbus register settings of device:

Examples:



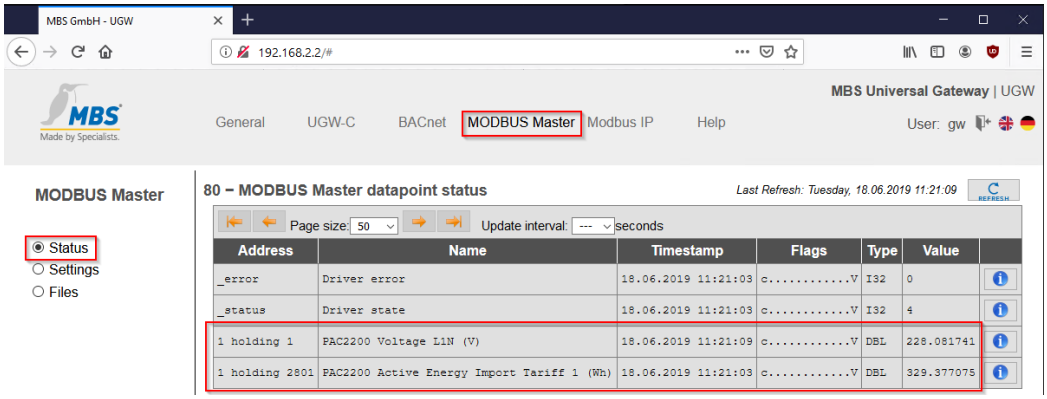


A detailed description for is available online:
https://www.mbs-support.de/modbus-master-seriell?rq=modbus

See also the PAC device manuals for required Modbus address details:
https://support.industry.siemens.com/cs/de/en/ps/19733/man

Integrate PAC measuring device to BACnet

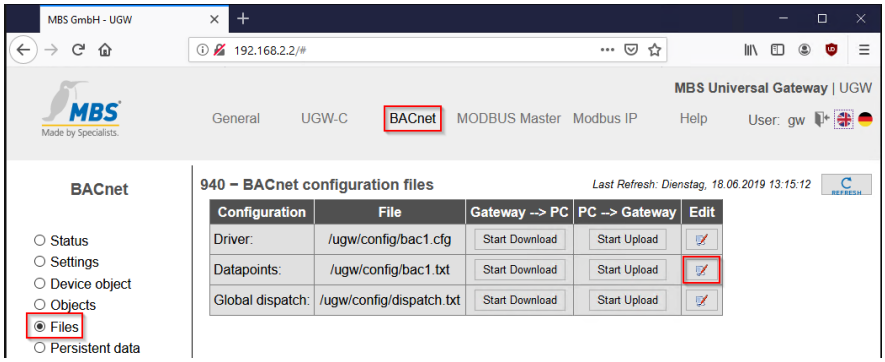
Finally save your configuration, restart the gateway and check the status of configured values:



If all devices are connected and configuration is successful the accessed values from devices are shown.

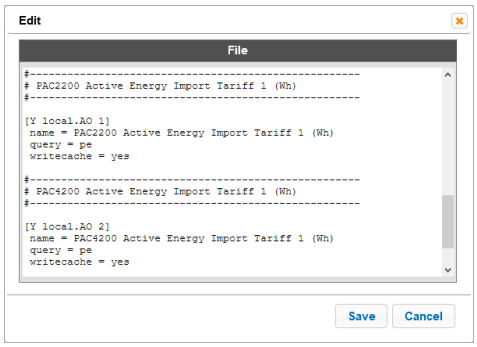
3. Parameterization of BACnet datapoints

For each value which should be available via BACnet a datapoint must be configured:



For this, open the datapoint configuration file and add all required datapoints.

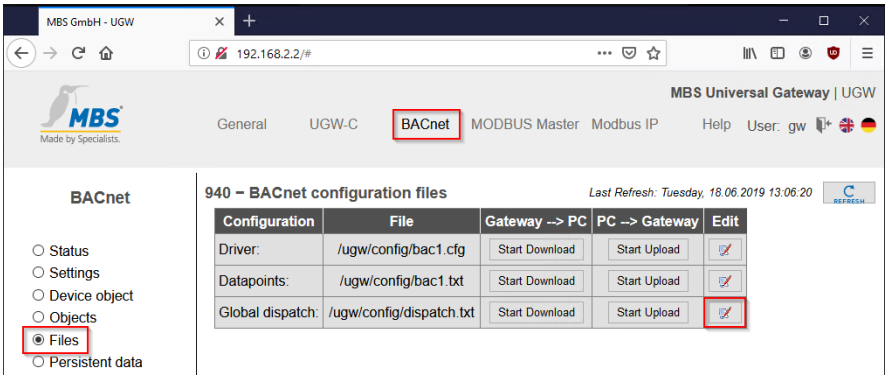
Example:



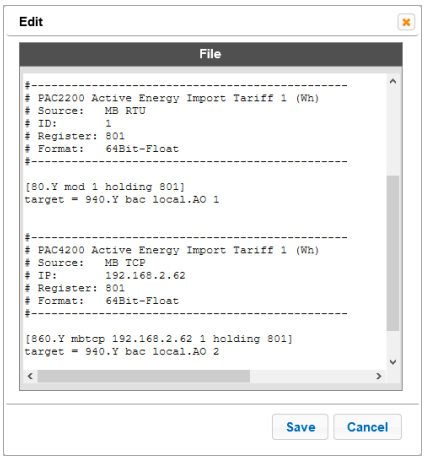
A detailed description for is available online:
https://www.mbs-support.de/bacnet

3.1.Dispatch datapoints

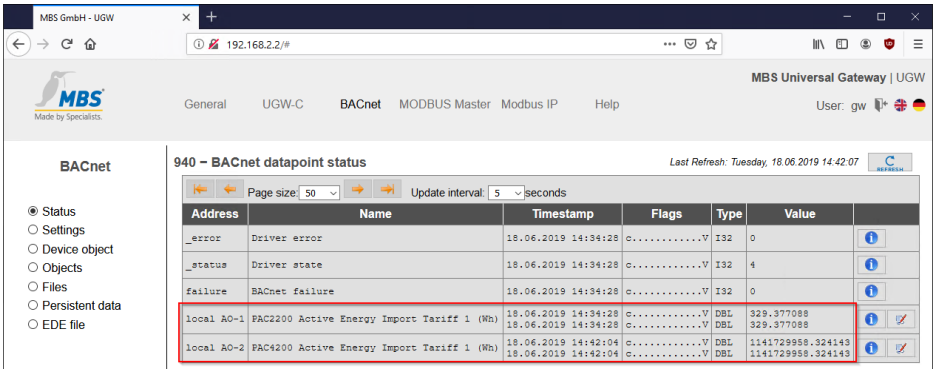
All created datapoints from Modbus devices must be linked to BACnet datapoints:



Example:

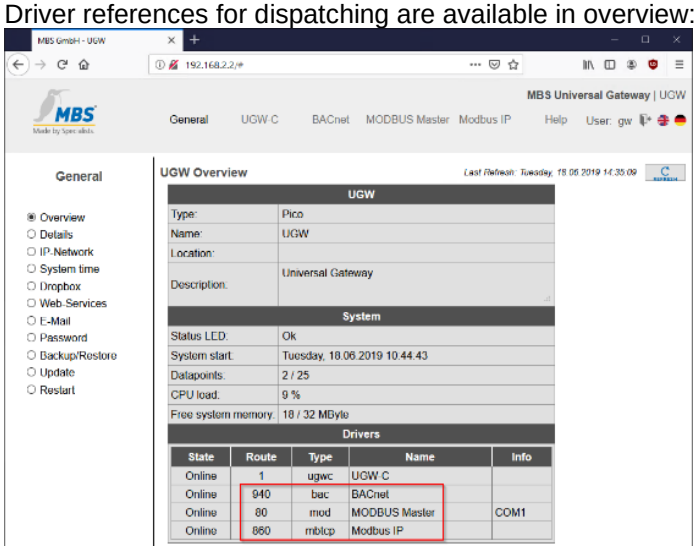


Finally save your configuration, restart the gateway and check the status of configured values:

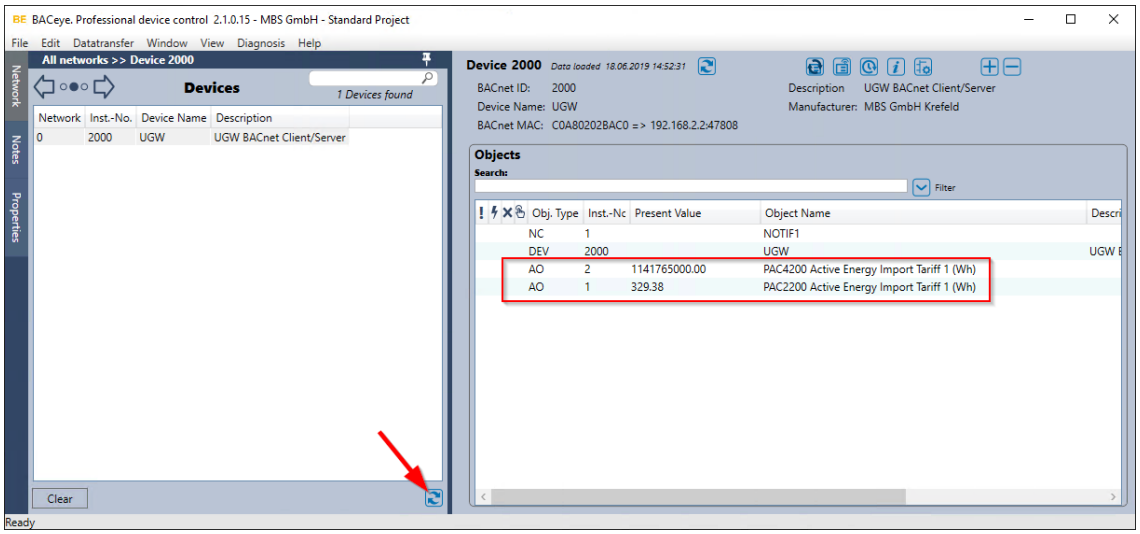


A detailed description for is available online:
https://www.mbs-support.de/der-dispatch-mechanismus

Driver references for dispatching are available in overview:



4. BACnet communication test

Test configuration by searching the network for BACnet devices and available values.

For this e.g. the Software BACeye can be used:
https://www.baceye.com/