

BACnet/IP Quick Start Guide

[Setup the Thermostat](#)

[Enabling the BACnet Service](#)

[Quick Verification using a BACnet Explorer Tool](#)

[Interacting via BACnet using Yabe](#)

[IMPORTANT NOTE](#)

[Device Discovery](#)

[Changing Writable Values](#)

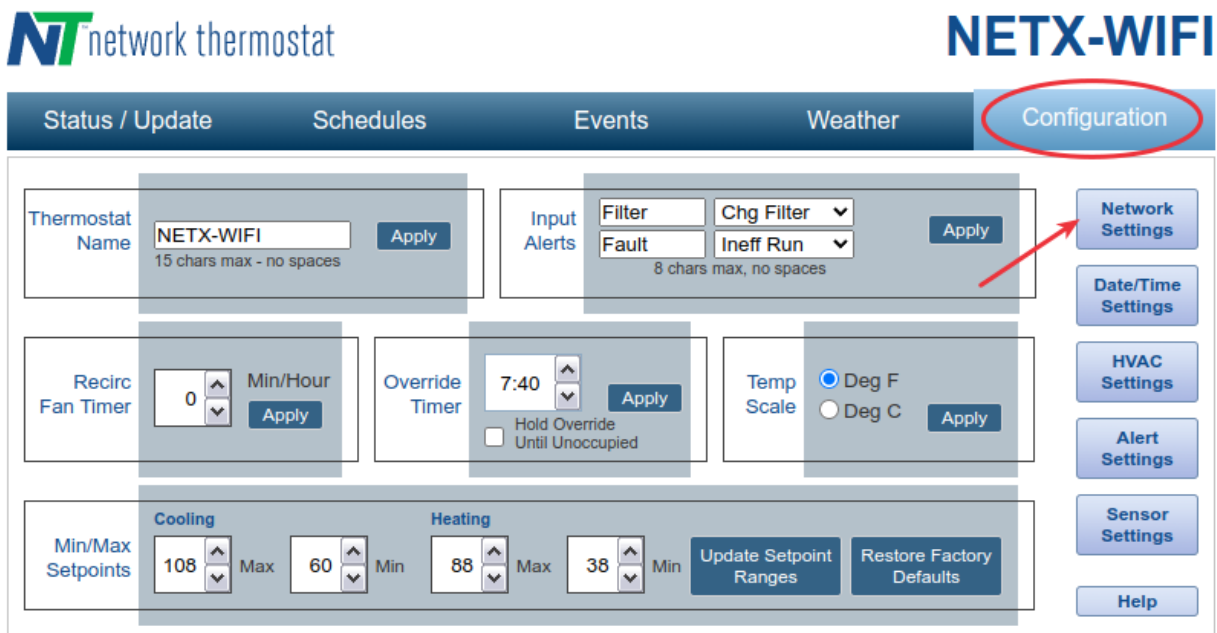
[Subscribing to COV](#)

Setup the Thermostat

Familiarize yourself with the thermostat's embedded pages, and set it up accordingly. Documentation can be accessed on the unit via the Help buttons or using [this link](#).

Enabling the BACnet Service

Login to the thermostat's local web server by navigating to its IP address. On top right click on Configuration, and then on the right hand side menu, click on Network Settings:



From that page, click on the Service Settings button on the right hand side menu:

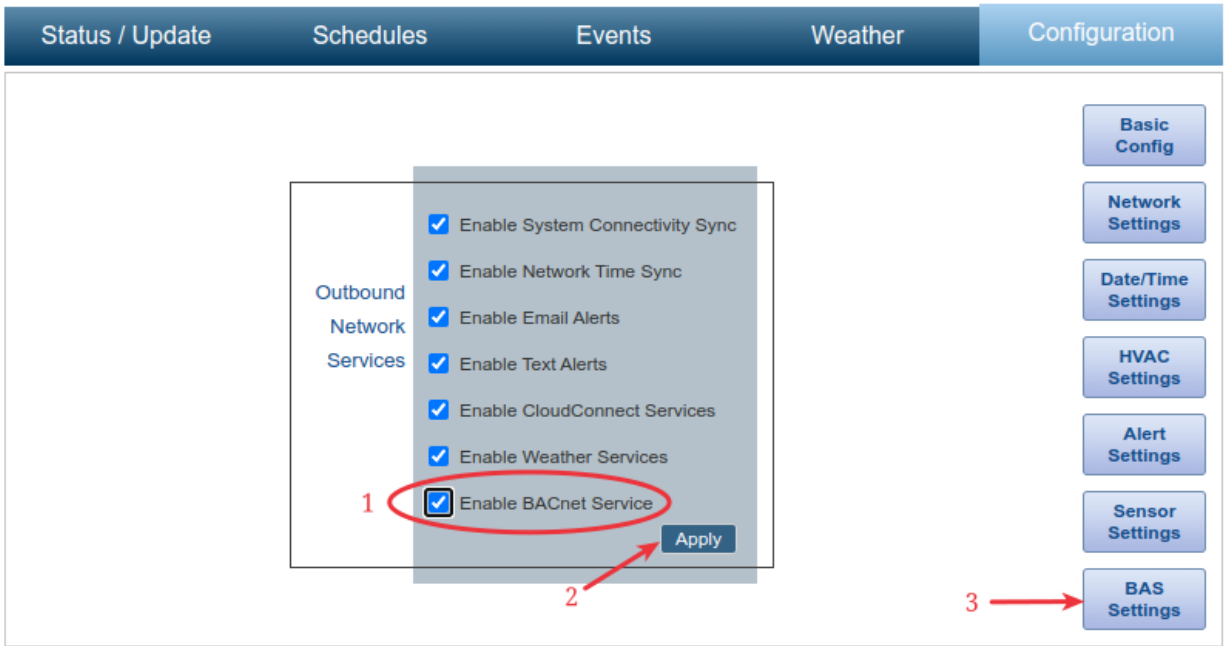
The screenshot displays the configuration page for a NETX-WIFI device. The interface is divided into several sections:

- Navigation Bar:** Includes tabs for Status / Update, Schedules, Events, Weather, and Configuration (which is currently selected).
- Network Settings:** A table of network parameters:

MAC Address	01:23:45:67:89:AB
HTTP Port	80
ASCII Port	10001
	<input checked="" type="checkbox"/> Enable Login
	<input checked="" type="checkbox"/> Enable DHCP
IP Address	192.168.1.10
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
- Wi-Fi Settings:** A table of Wi-Fi parameters:

SSID	NETWORK_A
Security Mode	WPA2-PSK
Pass Phrase
- Right-Hand Side Menu:** A vertical stack of buttons for various settings: Basic Config, HVAC Settings, Date/Time Settings, Alert Settings, Sensor Settings, BAS Settings, and Service Settings. A red arrow points to the Service Settings button.

Enable the BACnet service from the list and click Apply:



From the right hand side menu, click on the **BAS Settings** button to configure BACnet specific options:

BACnet Configuration [Service is Enabled]

Field	Value	Description
BACNET SERVICE PORT	47808	Default 47808 (recommended)
INSTANCE NUMBER	1342249	From 0 to 4194302 inclusive
TEMPERATURE UNITS	Fahrenheit	Independent of Display Units

Here you can configure the device's BACnet Port and Instance Number and whether it exposes temperatures to BACnet in Fahrenheit or Celsius.

The port can be changed between the typical 47808 (BAC0 in hex) all the way up to 65535. Changing either port or instance number from the embedded web pages will require a device reboot, which will happen automatically when the Update and Restart button is clicked.

Apart from the port, the other options can also be configured writing to the associated BACnet properties, also there's an [associated help page which can be accessed here](#).

Set the desired options accordingly and then click on **Update** to persist the values.

Quick Verification using a BACnet Explorer Tool

If you don't use a BAS system or prefer to do a quick test on the unit, you can install a BACnet explorer tool to interact with the thermostat on the local network.

Yabe 1.2.2 is precisely such a tool, and its installer may be downloaded for free [here](#).

Interacting via BACnet using Yabe

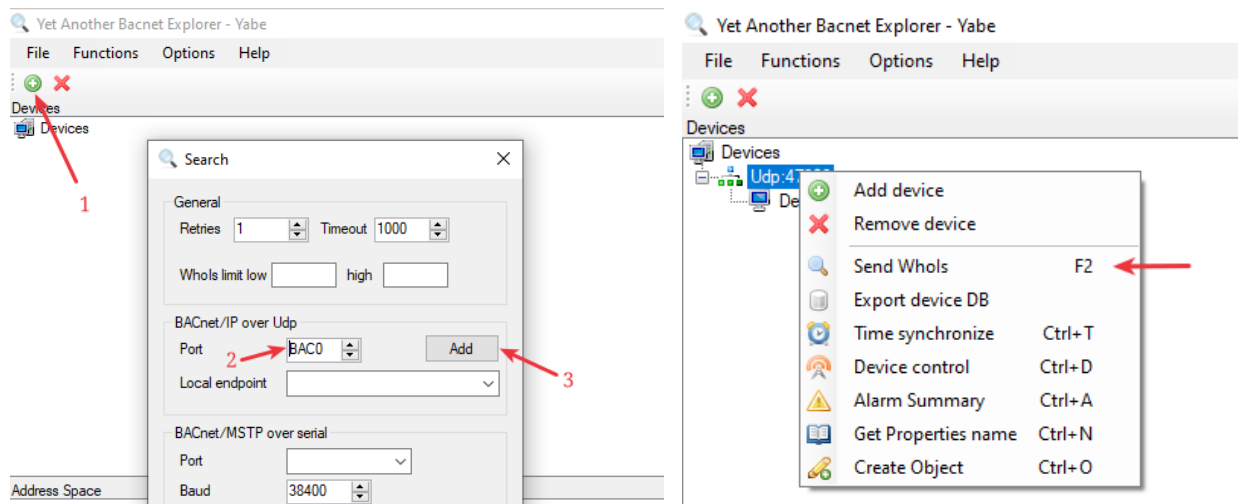
The following sections describe the procedure to interact with the thermostat using the tool mentioned above.

IMPORTANT NOTE

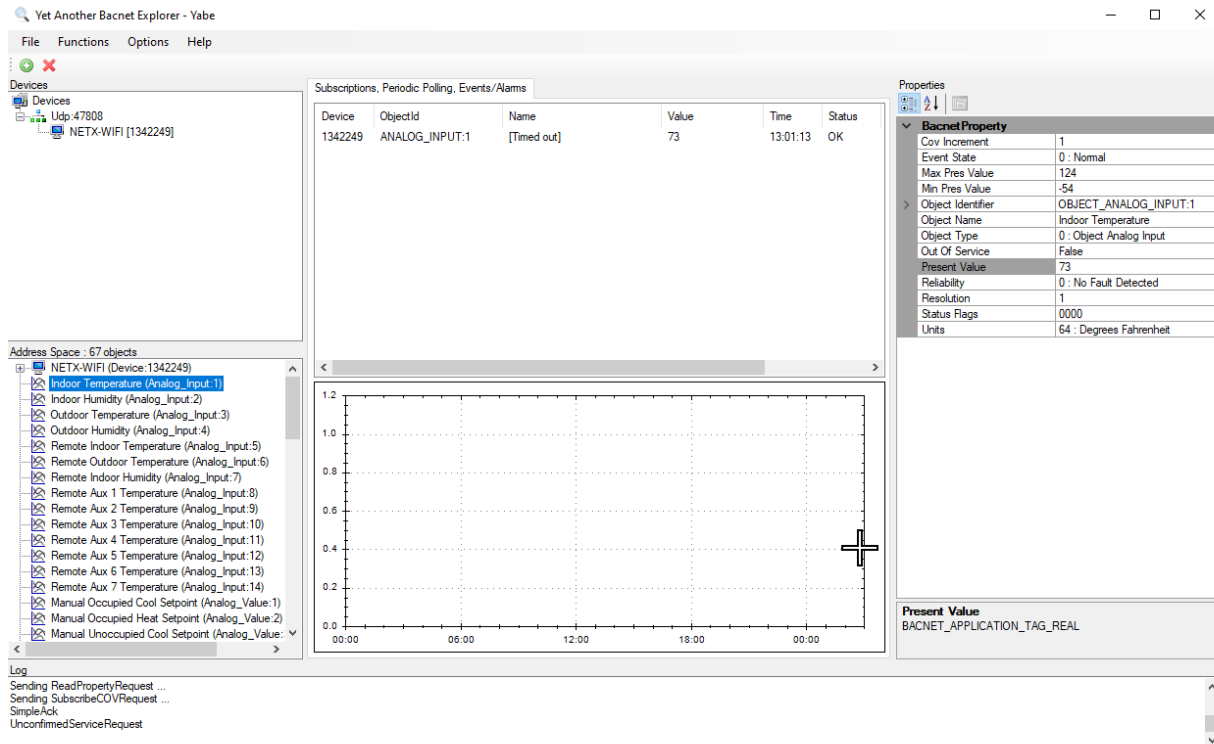
The thermostat supports rich scheduling capabilities outside of BACnet. You need to disable this and set it to **Manual Mode** in order to use BACnet schedules instead. **You can do this by toggling the 'Manual Operation' [AV2] over BACnet to true (1)**. This will allow the expected BACnet schedules behavior to operate as expected.

Device Discovery

Having configured the instance number in the aforementioned steps, and making sure the thermostat is on and connected to the network, open up Yabe, and in the top left corner click on the Add (+) button, and then on Add in the BACnet/IP over UDP section. The default settings of the application (port 0xBAC0) should work correctly, and a broadcast message to locate devices sent. If that fails you can right click the UDP:47808 list element on the left and select Send Whols from the menu to retry.



The thermostat will now appear as a device, and clicking on it will populate the available objects on the bottom left corner. Subsequently clicking on list items in said bottom left list will load the object information on the right hand side of the application.



Changing Writable Values

While inputs, such as sensors, don't support changing their values from BACnet for obvious reasons, most values, such as set points and settings do (for example HVAC Lock Screen Setting).

Pick the object you want to change the value of on the bottom left list, and on the right hand table that appears to the right of the application, manually edit the Present Value and press enter.

Subscribing to COV

Most objects support change of value, and the device can handle up to 16 subscriptions at any given time. To use the feature in Yabe, right click the object you want to monitor on the bottom left list and select **Subscribe**, a new entry should appear in the middle section of the application showing the value and any changes as they take place. Note that not only inputs (like sensor readings) but also values (such as set points) can be monitored this way.

To test it out you may want to subscribe to one of the set point properties (for example Manual Occupied Cool Setpoint or its heat counterpart), and change the set point as described in the previous section.