

Frequently Asked Questions

How do I verify BACnet communications using YABE?

To verify that the unit controller is properly running BACnet (either MSTP or IP), first find and download/install the program called Yet Another BACnet Explorer (YABE) online. Then, follow the steps below. There are sections below that are specific to BACnet MSTP and IP respectively. Make sure to verify which method of BACnet your controller is running.

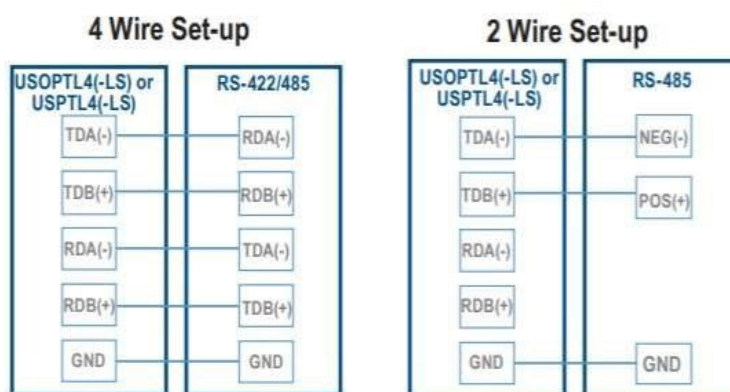
Connecting via BACnet MSTP

An RS-485 to USB Converter is necessary to connect to YABE via BACnet MSTP.

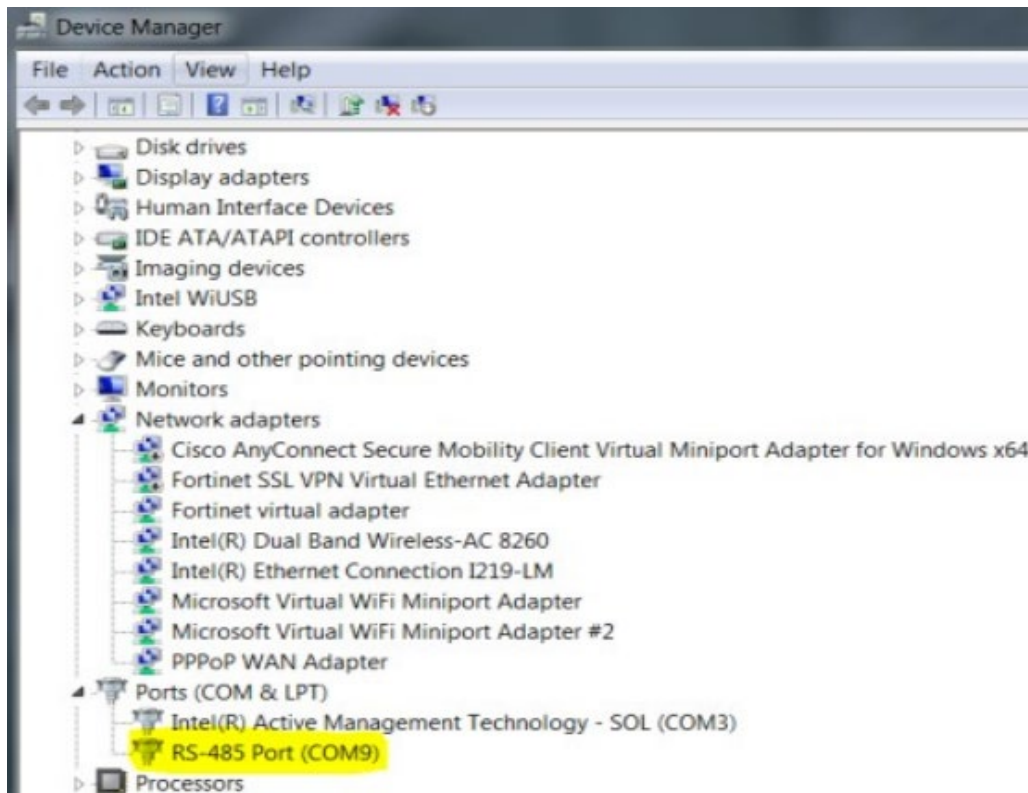
1. Remove the site's BACnet MSTP wires from the controller.
2. Connect the wires on the RS-485 converter to the controller at the positive (+) and negative (-) terminals for BACnet MSTP.
 - a.
3. Cycle power to the unit.
4. Depending on which RS-485 to USB converter you are using, make sure it is set-up correctly with the 2-wire or 4-wire.
 - a. If you are only trying to receive the data on the link to create a capture, then use RD connections with 2-wire set-up.
 - b. If you are going to send packet commands (ex. YABE) then you will want to use the 4-wire set-up.

TD – Transmit Data

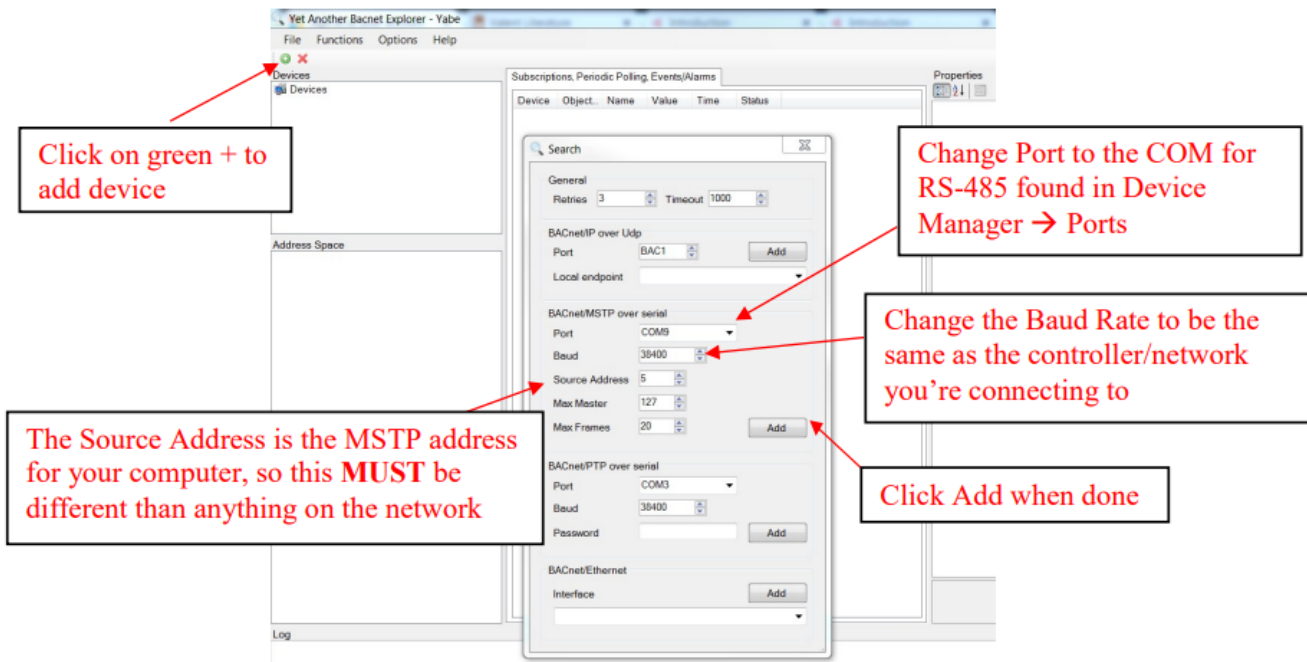
RD – Receive Data



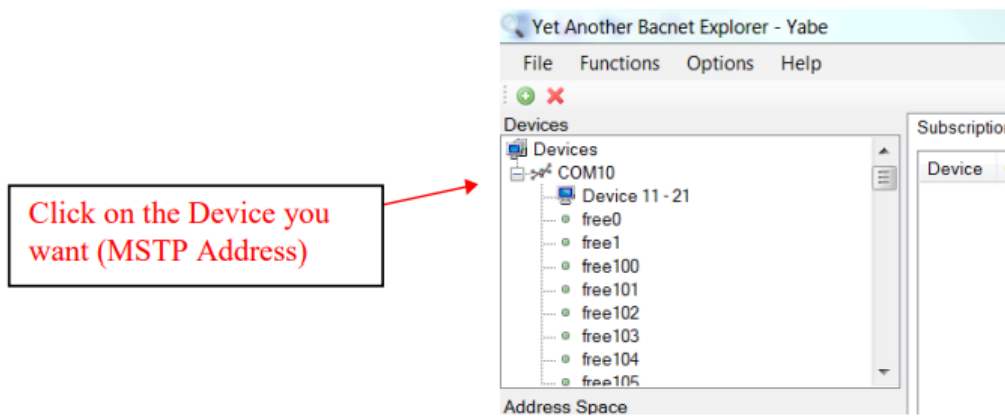
5. Verify the COM Port the USB is plugged into (should be located under Device Manager on a Windows OS).



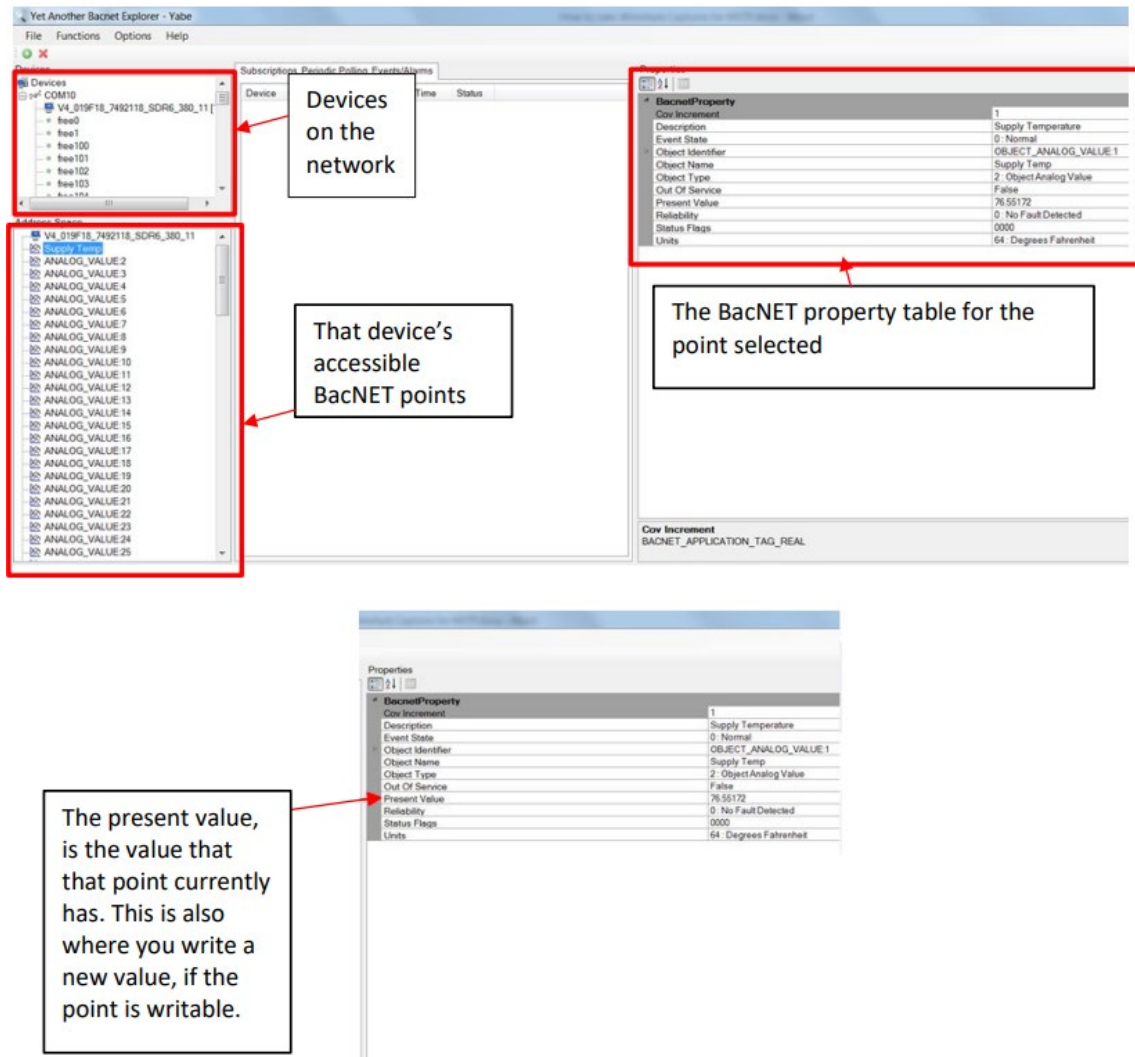
6. Open YABE, click the “add a device” button (the green + sign in the upper left corner), and enter the search credentials.
 - a. Change the Port to the COM# found in Step 5.
 - b. Change the Baud Rate to be the same as the controller you’re connecting to.
 - c. The Source Address will be the MSTP address for your computer, so this MUST be different than anything on the network (must be different from the controller or anything else connected to the BACnet MSTP network).
 - d. Click the Add button when all credentials are entered.



7. Select the device you want to add (the controller).



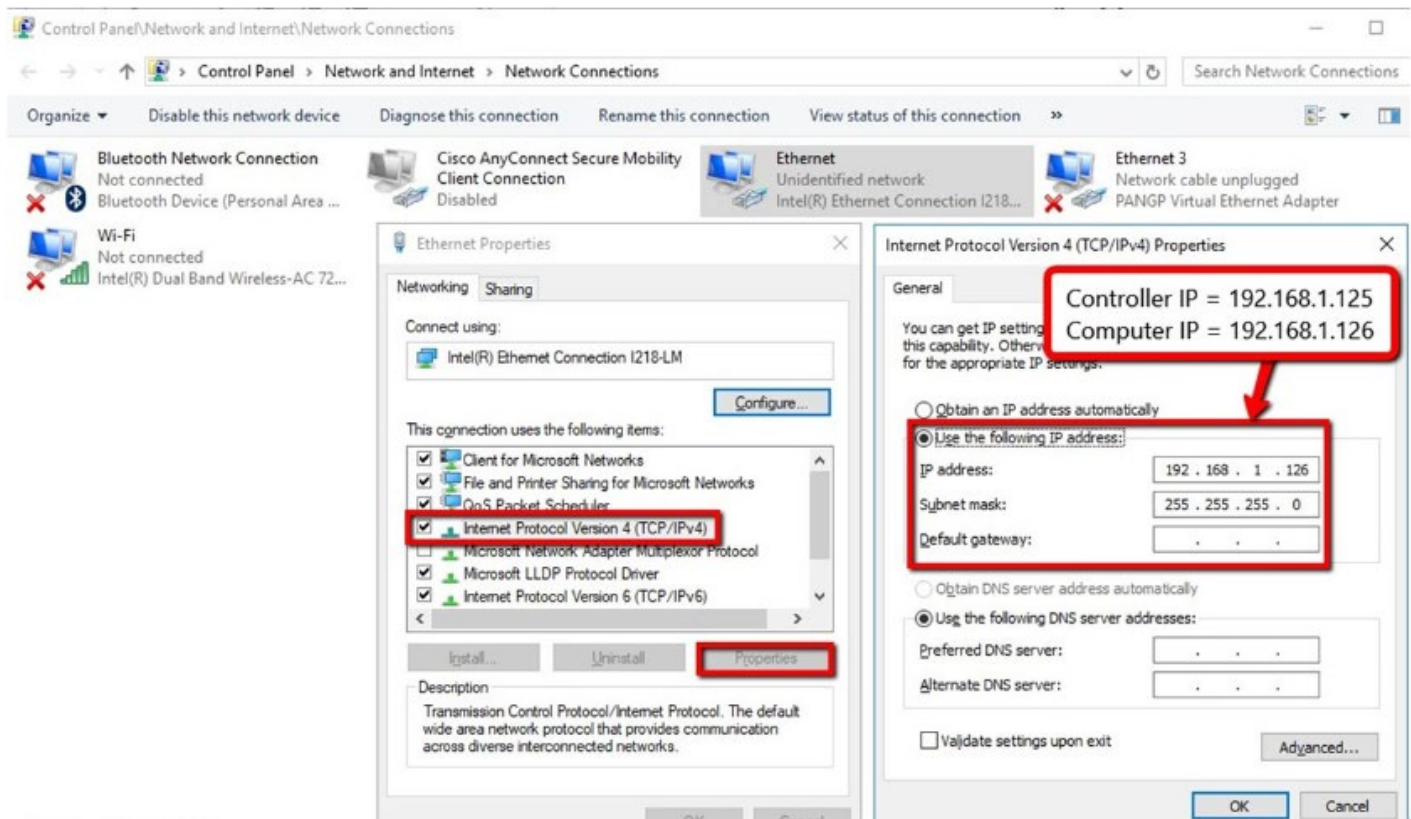
8. Once you click on the device, it should rename itself and populate a list of all BACnet points in the Address Space window (in the bottom left of the screen).
- If you click on a BACnet point, it will rename itself to the point's name instead of the generic "AV#, BV#, etc."
 - To see the current value of a point, look in the window on the right side of the screen labeled Properties. Inside of that window, there will be a line for the point's Present Value.



- If you were able to see the list of BACnet points and see present values for them, then the controller is successfully communicating over BACnet MSTP.

Connecting via BACnet IP

- Remove the site's BACnet IP cable from the controller.
- Connect the controller to your laptop using an Ethernet cable.
 - If connecting to a Carel controller it does not matter which of the two available Ethernet ports are used on the controller.
- Cycle power to the controller.
- Set a static IP address on your laptop. Designate an IP address that is similar to (but not identical to) the controller's IP address and match the controller's subnet mask. An example is shown below.



5. Verify the laptop can communicate to the controller by opening the Command Prompt and pinging the controller's IP address.
 - a. In the below example, the controller IP address is 192.168.1.125. A successful pinging attempt will look like this:

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Administrator: Command Prompt
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Windows\system32>ping 192.168.1.125

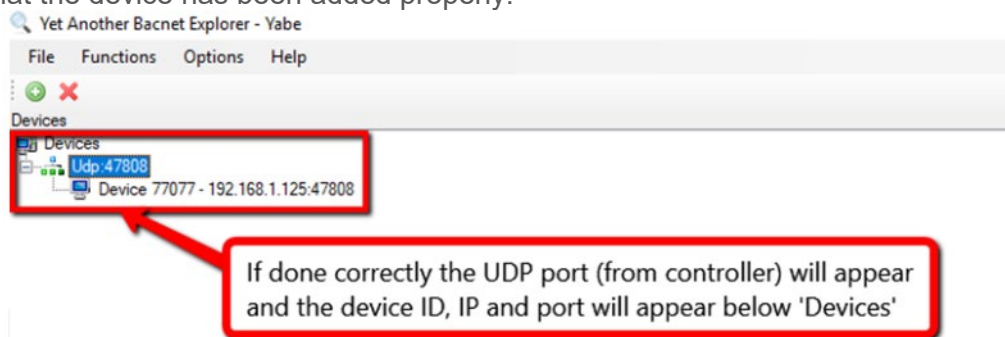
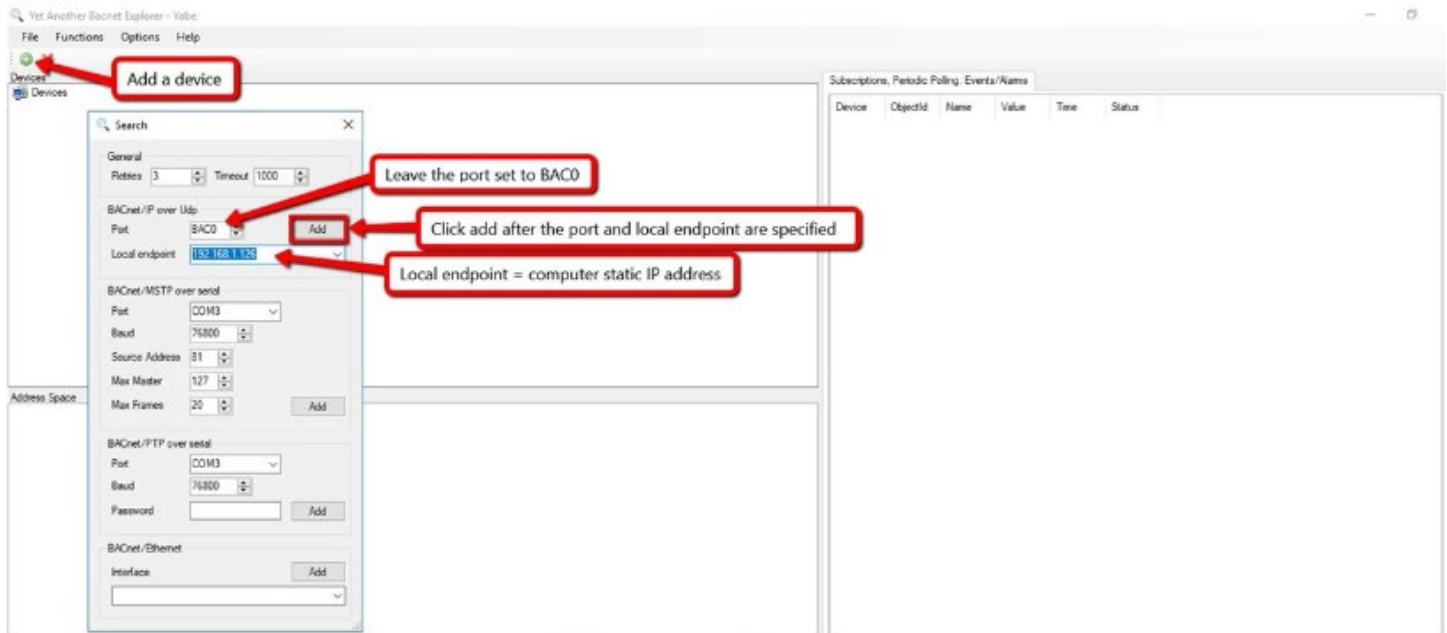
Pinging 192.168.1.125 with 32 bytes of data:
Reply from 192.168.1.125: bytes=32 time=5ms TTL=64
Reply from 192.168.1.125: bytes=32 time=4ms TTL=64
Reply from 192.168.1.125: bytes=32 time=5ms TTL=64
Reply from 192.168.1.125: bytes=32 time=4ms TTL=64

Ping statistics for 192.168.1.125:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 5ms, Average = 4ms

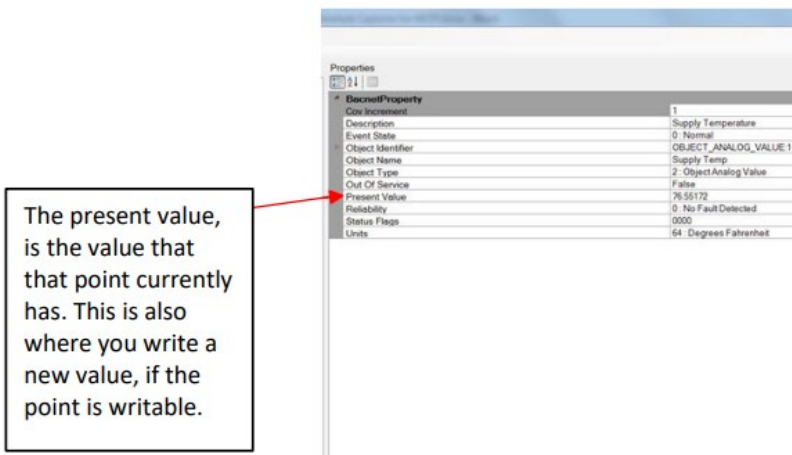
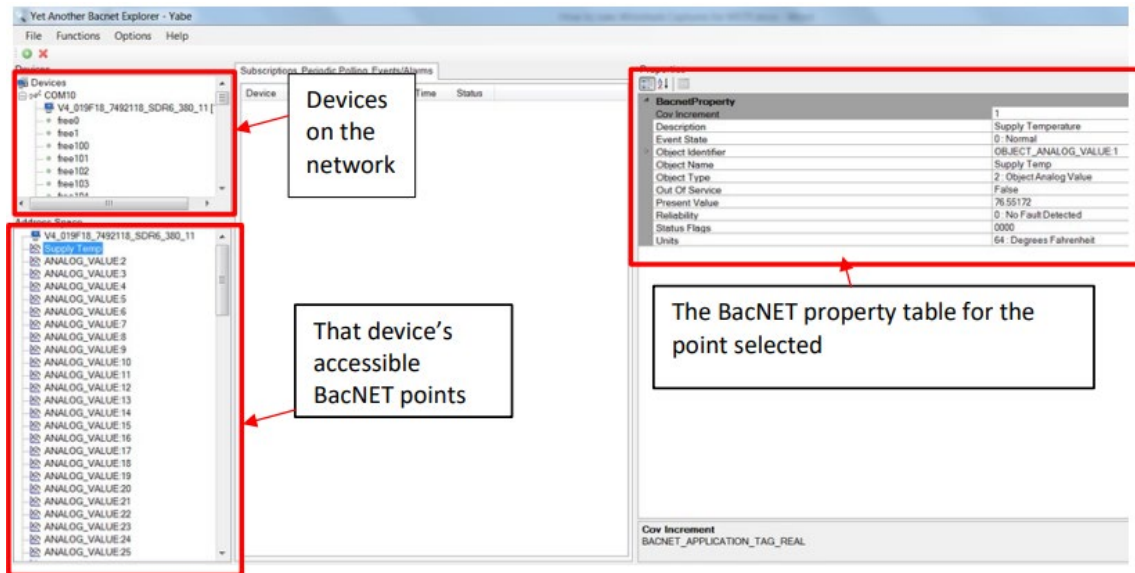
C:\Windows\system32>

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6. Open YABE and click on the add a device button. Set the port to BAC0 and local endpoint to your computer's static IP Address. Click the Add button when all settings are entered.



- a. If you click on a BACnet point, it will rename itself to the point's name instead of the generic "AV#, BV#, etc."
- b. To see the current value of a point, look in the window on the right side of the screen labeled Properties. Inside of that window, there will be a line for the point's Present Value.



- If you were able to see the list of BACnet points and see present values for them, then the controller is successfully communicating over BACnet MSTP.