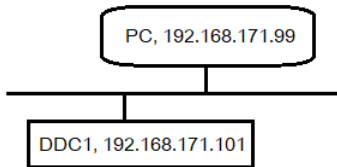
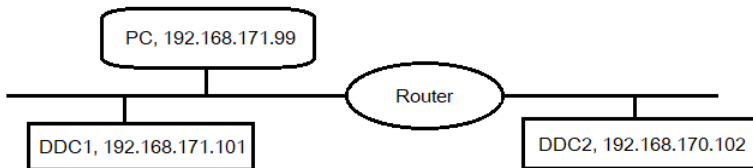


## TT231201 – OPEN - BACnet Foreign Device Configuration

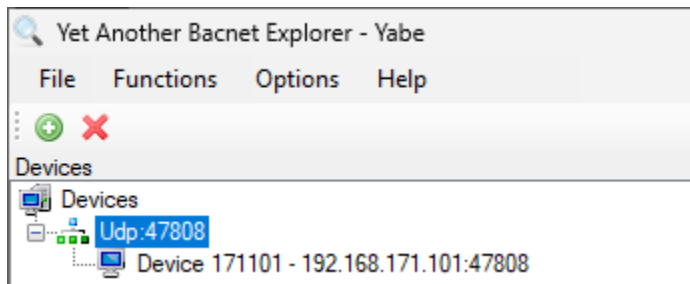
1. In TT231101, we show you how to setup BBMD in OPEN controller. In this document, we will show you how to setup BACnet Foreign Device.
2. Normally BACnet software/controller can only communicate within the same subnet, like this.



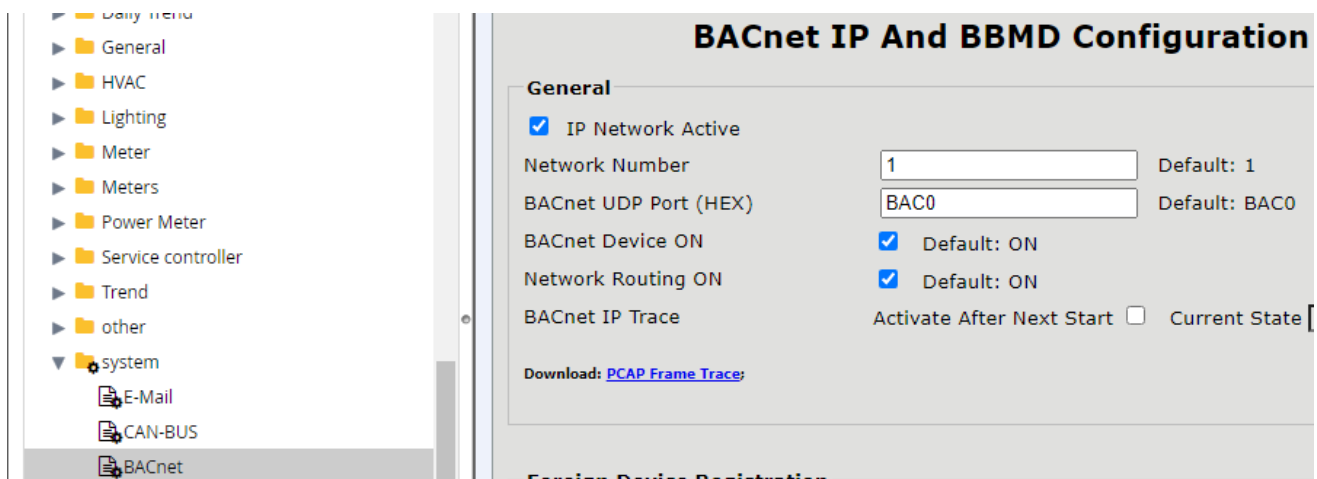
3. If you've BACnet device that are on another subnet, like below, then you will not be able to communicate with it directly.



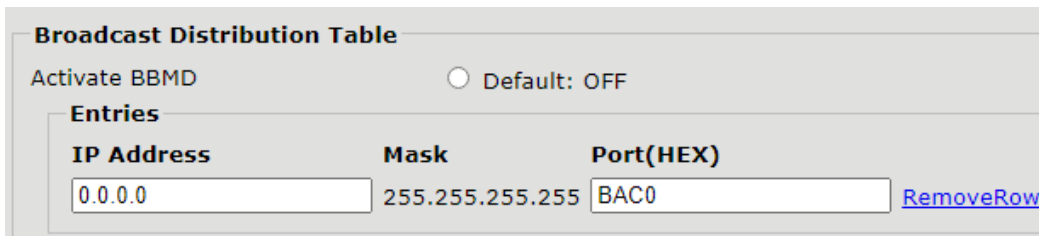
4. When you use a BACnet viewer (e.g. YABE) to search the devices on the network, you will only see those that are on the same subnet, like below.



5. To communicate BACnet controller on the other subnet, we normally need to setup BBMD in one of the controllers on each subnet. However, many of the 3<sup>rd</sup> party BACnet devices in the market do not support BBMD. One solution is to add an OPEN controller to act as BBMD and communicate with the 3<sup>rd</sup> party BACnet devices on the network.
6. If you only have one 3<sup>rd</sup> party BACnet device, then another solution is to use BACnet Foreign Device if it is supported in the 3<sup>rd</sup> party BACnet device. In this document, we will show you how to configure BACnet Foreign Device using OPEN controller, as an example.
7. First, we access the controller "192.168.171.101" using Chrome, go to "System", "BACnet", to enable BBMD.



8. Scroll down until you see “Broadcast Distribution Table”.



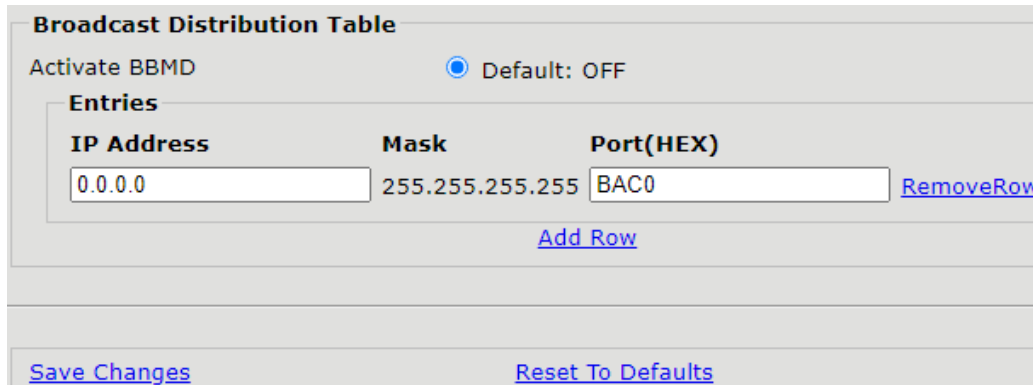
**Broadcast Distribution Table**

Activate BBMD ☐ Default: OFF

**Entries**

IP Address	Mask	Port(HEX)	
0.0.0.0	255.255.255.255	BAC0	<a href="#">RemoveRow</a>

9. Activate BBMD. There is no need to set the IP address of the controller on the other subnet, as it doesn't support BBMD. Click “Save Changes”.



**Broadcast Distribution Table**

Activate BBMD ☒ Default: OFF

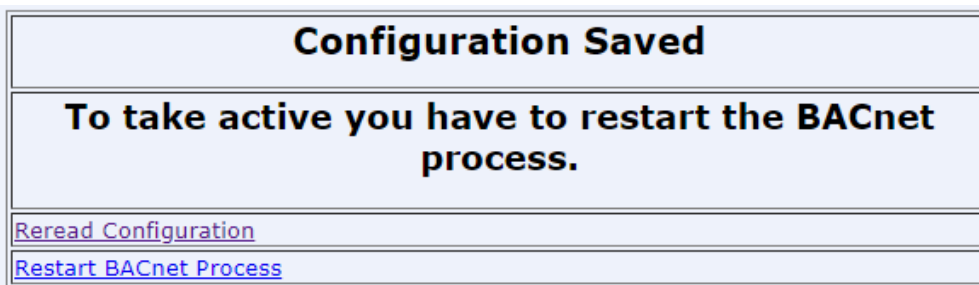
**Entries**

IP Address	Mask	Port(HEX)	
0.0.0.0	255.255.255.255	BAC0	<a href="#">RemoveRow</a>

[Add Row](#)

[Save Changes](#) [Reset To Defaults](#)

10. Click “Restart BACnet Process” and wait until it's finished and return to the “BACnet IP and BBMD Configuration” page.



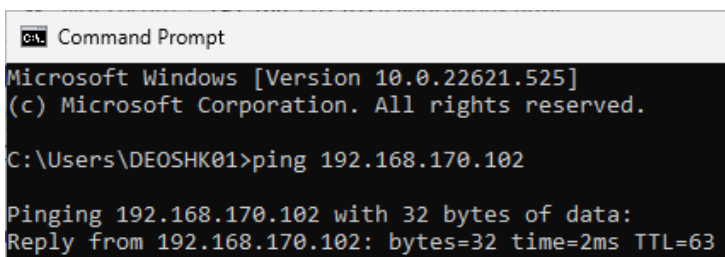
**Configuration Saved**

**To take active you have to restart the BACnet process.**

[Reread Configuration](#)

[Restart BACnet Process](#)

11. Next, we will setup “Foreign Device” for the controller “192.168.170.102” on the other subnet. Please make sure you can access the controller on the other subnet, for example, you can ping it successfully.

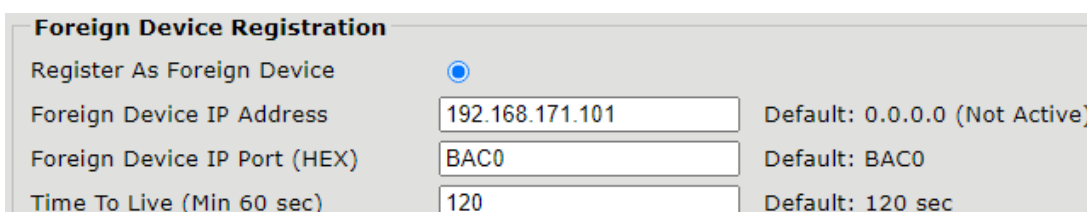


```
Microsoft Windows [Version 10.0.22621.525]
(c) Microsoft Corporation. All rights reserved.

C:\Users\DE0SHK01>ping 192.168.170.102

Pinging 192.168.170.102 with 32 bytes of data:
Reply from 192.168.170.102: bytes=32 time=2ms TTL=63
```

12. Access the controller “192.168.170.102” using Chrome, go to “System”, “BACnet”. Activate “Register As Foreign Device”, set the IP address of the BBMD controller on the other subnet. Click “Save Changes”. Click “Restart BACnet Process” and wait until it's finished and return to the “BACnet IP and BBMD Configuration” page.



**Foreign Device Registration**

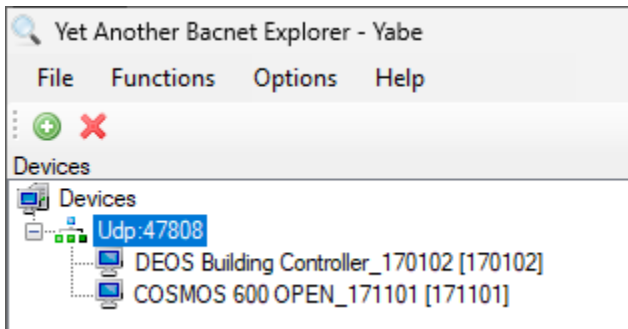
Register As Foreign Device ☒

Foreign Device IP Address  Default: 0.0.0.0 (Not Active)

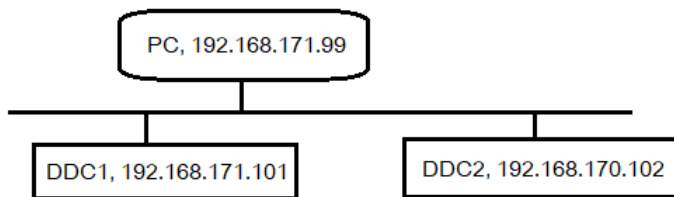
Foreign Device IP Port (HEX)  Default: BAC0

Time To Live (Min 60 sec)  Default: 120 sec

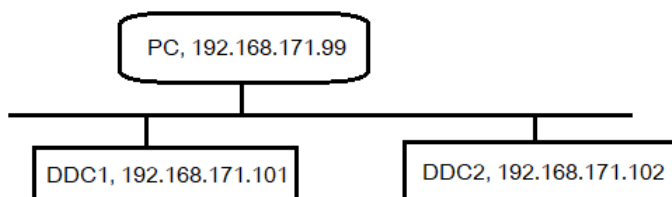
13. Now you'll be able to see the BACnet controller "192.168.170.102" using Foreign Device Registration.



14. Please note the BACnet devices with different IP address and/or subnet mask, like below, cannot communicate when they're connect together on the same network (without a router).



15. This won't work even after you setup BBMD and Foreign Device as above. A possible solution is to change the DDC2 IP to "192.168.171.102" (same subnet as the other BACnet devices).



16. BACnet communicates on UDP protocol, the server listens on UDP port 47808 by default. This port number is reserved by IANA, and has been chosen to be remembered in hexadecimal form - BAC0. You may need to setup the router to allow/enable this (UDP port 47808) communication on both sides of the network.

17. Please note that you need to set the gateway correctly in both controllers, for example

Q Filter entry							
	Controller program	Information	Description	Program version	IP address	Subnet mask	Gateway
1	DDC101	OPEN 600 EMS		1.064d	192.168.171.101	255.255.255.0	192.168.171.1

Q Filter entry							
	Controller program	Information	Description	Program version	IP address	Subnet mask	Gateway
1	DDC102	OPEN 600 EMS		1.086e	192.168.170.102	255.255.255.0	192.168.170.1