



CONNECT

BBMD – What is it?

BACnet – What is a BBMD? Why do we need one?

BBMD = BACnet Broadcast Management Device

BACnet MSTP Network

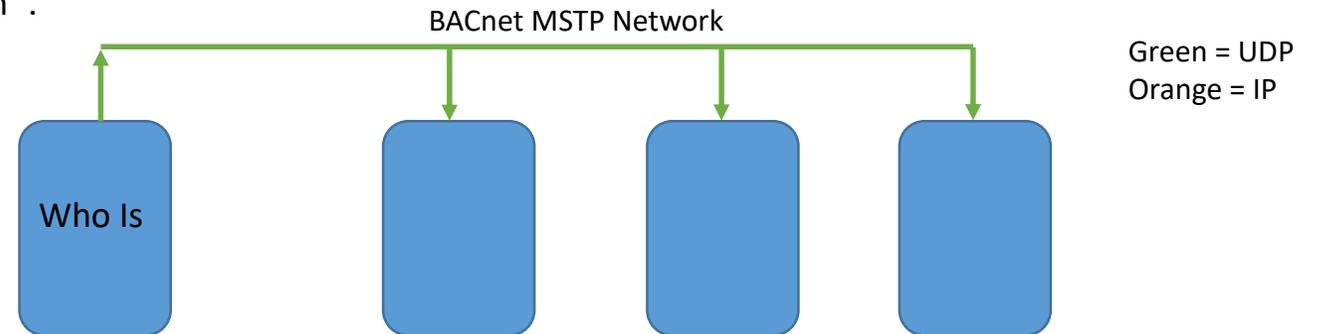
BACnet devices listen on a UDP port for BACnet messages. BACnet messages are in UDP format.

All BACnet devices must use the same UDP port to communicate with each other. Typically the UDP port used is 47808.

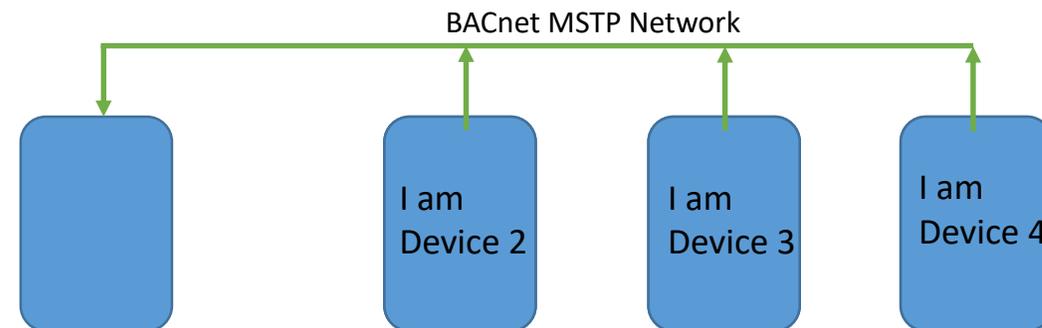
BACnet uses broadcast messages meaning a message is not addressed to a single address but is “broadcast” to the entire network.

Some examples are BACnet service messages called “Who-Is and I-Am”.

A BACnet device may broadcast the “Who-Is” message and all BACnet devices that receive that message will answer “I-Am”.



Using these BACnet services a BACnet device may learn the identity of another BACnet device or all of the BACnet devices on the same subnet.



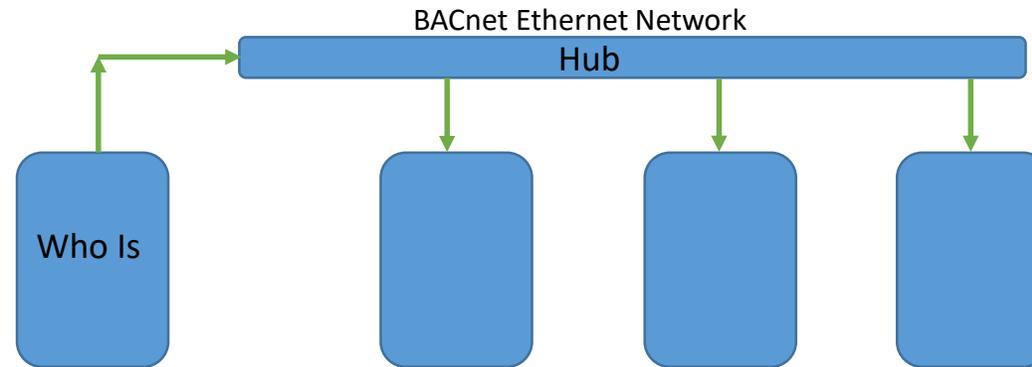
As long as the network allows the passage of UDP broadcast messages this method works well.

BACnet – What is a BBMD? Why do we need one?

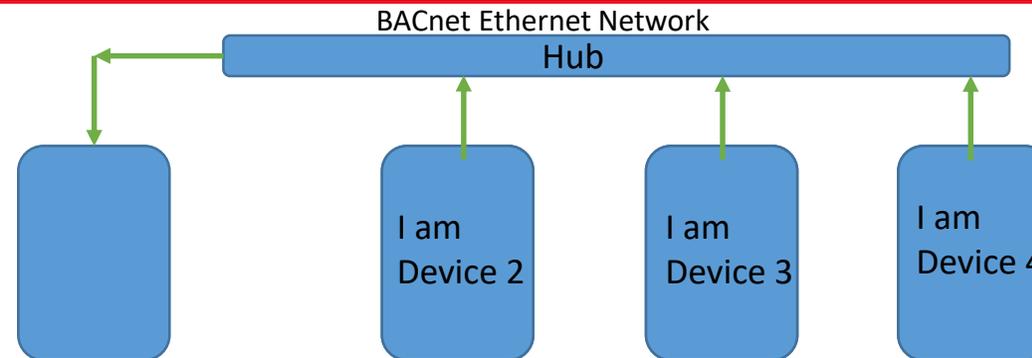
BBMD = BACnet Broadcast Management Device

BACnet Ethernet Network

A hub will pass any message from one port to all other ports.



Green = UDP
Orange = IP

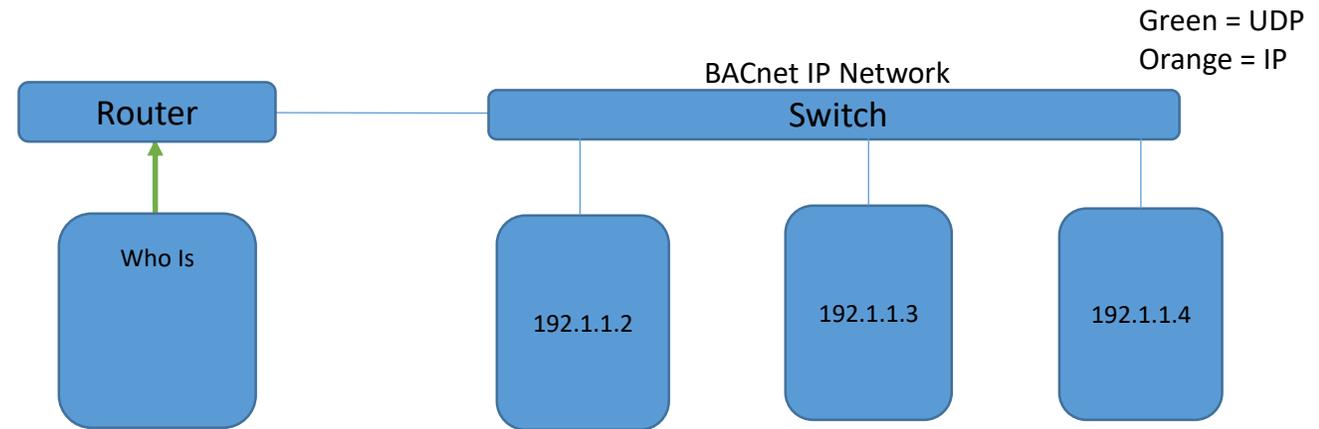


BACnet – What is a BBMD? Why do we need one?

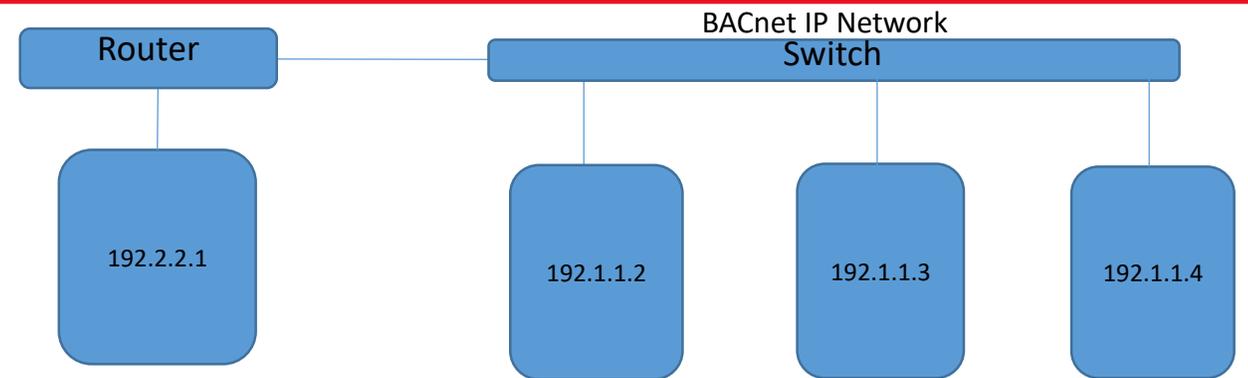
BBMD = BACnet Broadcast Management Device

BACnet IP Network

The problem is that Internet Protocol “IP” Routers and Switches will block broadcast messages. They simply will not allow a broadcast message to pass through.



The message timed out.



BACnet – What is a BBMD? Why do we need one?

BBMD = BACnet Broadcast Management Device

A BBMD has a Broadcast Distribution Table. “BDT” This is a list of the addresses of the destination BBMDs. The Sending BBMD adds the UDP Broadcast message ‘Who Is’ inside an IP Packet. That IP packet will include the Sender’s IP address as well as the Destination “BDT Table” IP addresses.

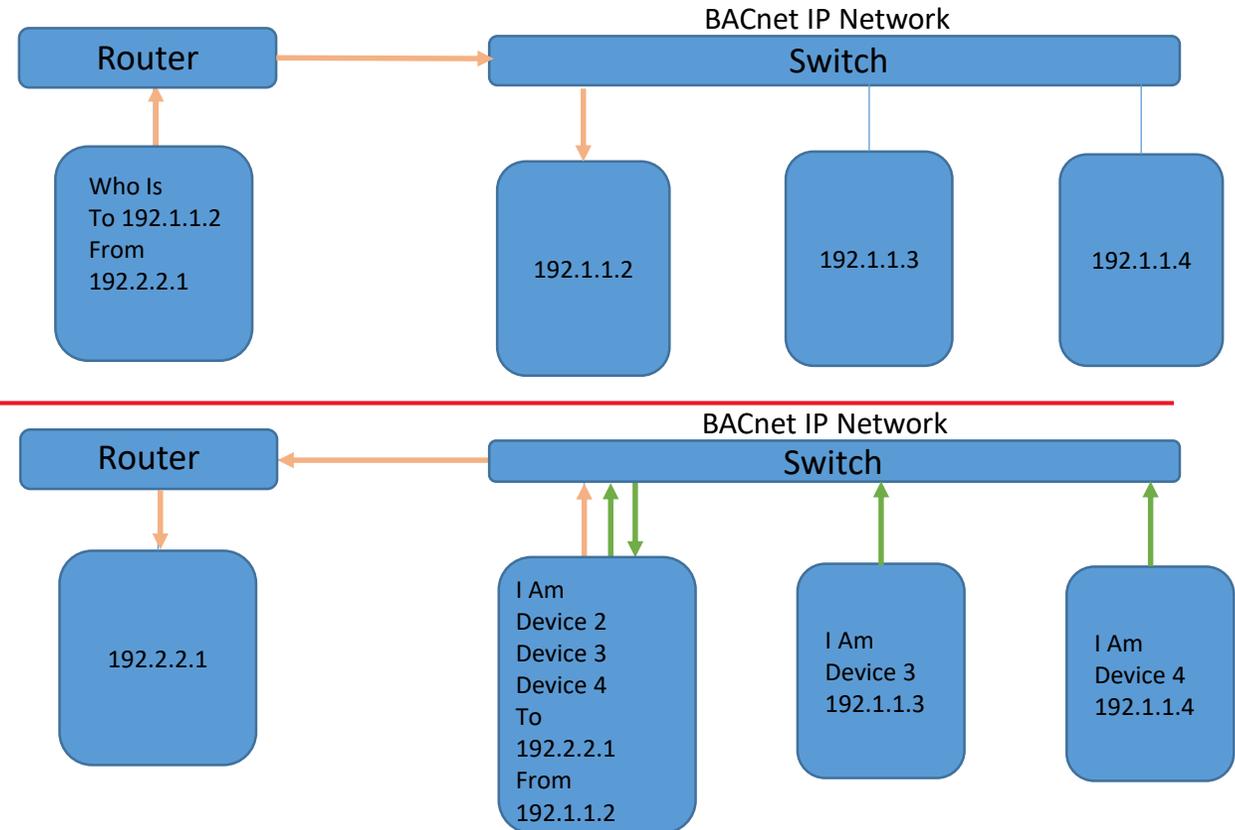
The IP Router recognizes that the IP address of the Destination is in it’s subnet and passes the message through.

The IP Switch also recognizes that the IP address of the Destination is connected to one of it’s ports and passes the message through.

1. The destination BBMD opens the IP packet and re-broadcasts the UDP Broadcast message ‘Who Is’.
2. That broadcast message is then passed through the switch to all ports whose connected device contains an IP address in the same subnet “192.1.1.x”.
3. These devices all respond with a broadcast “I-Am”.
4. The message is received by the connected devices which contain IP addresses in the same subnet “192.1.1.x”.
5. The destination BBMD now becomes a sending BBMD. It packages the UDP “I-Am” responses into an IP packet with the destination being all of the BBMDs listed in it’s BDT Table.
6. The Switch and Router pass that IP packet to the destination addresses.

BACnet IP Network

Green = UDP
Orange = IP





THANK YOU