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Important changes are listed in **Document revision history** at the end of this document.

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BACnet Broadcast Management Devices (BBMDs)

In this document, the term "routers" refers to any i-Vu® device that can communicate on the Ethernet, such as an i-Vu® Open Router, i-Vu® Open Link, or i-Vu® XT Router/BACnet Link, TV-MPCXP, or Carrier® ChillerVu™.

If your system has multiple routers that reside on different IP subnets, you must set up one router on each IP subnet as a BACnet/IP Broadcast Management Device (BBMD).

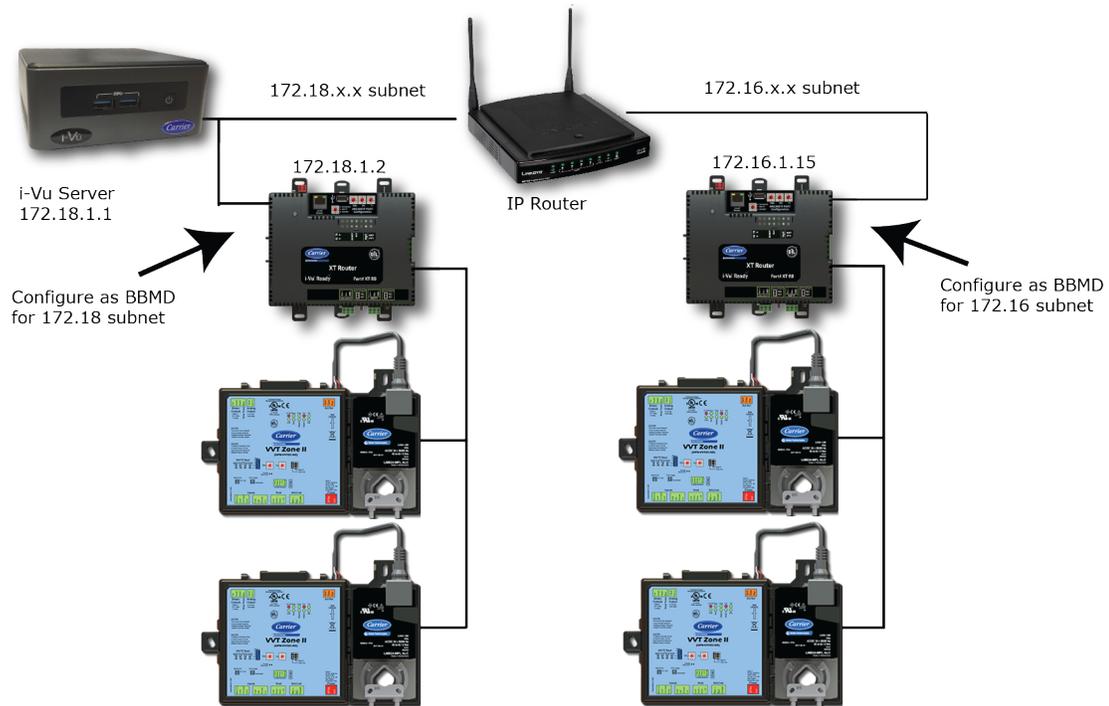
Every subnet with a router must have a BBMD configured in order for broadcasts from routers on that subnet to reach the rest of the routers on the network.

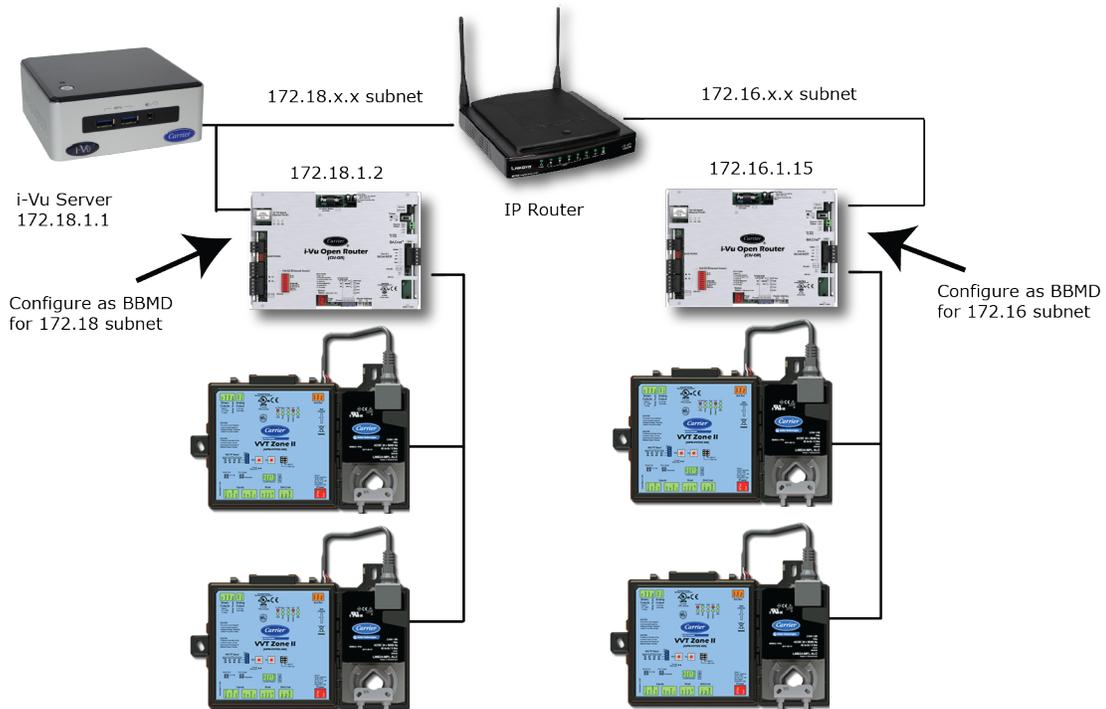
NOTES

- The i-Vu® Standard or Plus application - If the i-Vu® web server is on a separate subnet than the rest of the routers, the internal router must be assigned a routable IP address and configured as a BBMD.
- The i-Vu® Pro application - If the i-Vu® Pro server is on a separate subnet than the rest of the routers, you must register it as a foreign device to a router acting as a BBMD device.

Use the **BBMD Configuration Tool** to:

- Write/read the **Broadcast Distribution Table (BDT)** of each BBMD device
- Allow controllers on one subnet to communicate with controllers on other subnets
- Enable the i-Vu® application to see, upload, or configure controllers on different subnets





To set up BBMD's using the BBMD Configuration Tool

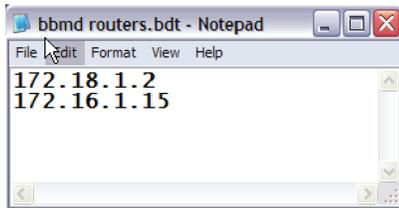
- 1 Assign an IP address, subnet mask, and default gateway for each router on the IP network. For detailed instructions, see the router's *Installation and Start-up Guide*.
- 2 Acquire the **BBMD Configuration Tool** from the Tech Tools USB drive or from either of the *Carrier Control Systems Support Sites* <http://www.hvacpartners.com/>, <https://accounts.ivusystems.com/>. This is a stand-alone executable file and no installation is necessary.
- 3 Make a list of the IP addresses for each router that will function as a BBMD in your system.

In the above illustration, the Carrier router, address 172.18.1.2, must be configured as a BBMD for the 172.18 subnet, while the Carrier router, address 172.16.1.15, must be configured as a BBMD for the 172.16 subnet.

CAUTIONS

- Define only one BBMD per subnet. Multiple BBMDs on an IP subnet disrupt network communications.
- Unless explicitly modified, the UDP Port for BACnet/IP is 0xBACO (47808). Do not change this parameter unless you made a change in the router.

- 4 In a text editor such as Notepad, create a list of the routers that will be BBMDs. List each IP address on a separate line. (Maximum of 50 IP addresses per file)



- 5 Save the file to your folder of choice with a .bdt extension instead of .txt.

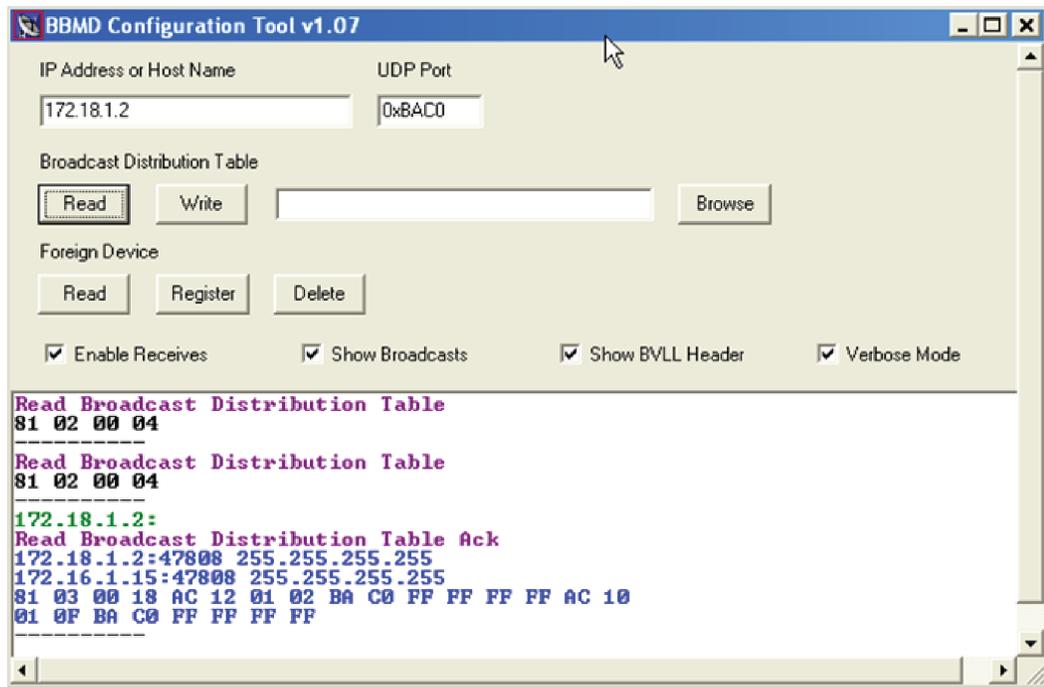
NOTE ".bdt" is a **Broadcast Distribution Table** file.

- 6 Open the **BBMD Configuration Tool**.
- 7 In the **IP Address** or **Host Name** field, type the IP address of the router that functions as the BBMD (BACnet Broadcast Management Device) for its subnet.
- 8 To check if the router has an existing BBMD table, click the **Broadcast Distribution Table Read** button.
- 9 If the **Broadcast Distribution Table** contains IP addresses that are not in your .bdt file, verify that they are valid BBMDs and, if so, add them to your .bdt file.

NOTES

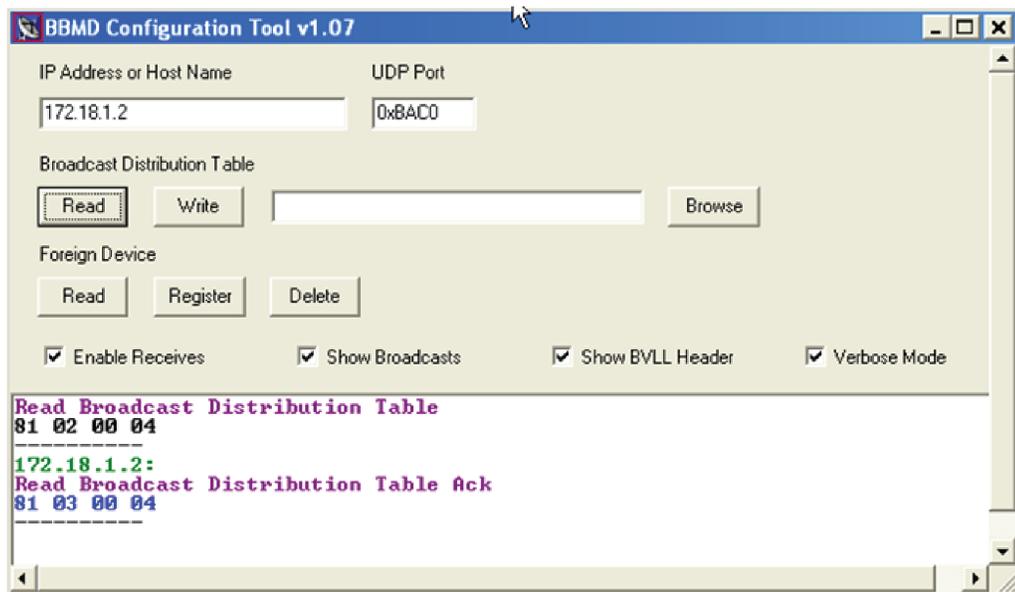
- o The BDTs in each BBMD should be identical. Repeat this entire process whenever a BBMD is added.
 - o If needed, disable the checkbox next to **Show Broadcast** to limit the amount of scrolling text that is displayed.
- 10 Click the **Broadcast Distribution Table Browse** button and select the .bdt file that you made in step 4.
- 11 Verify that the appropriate IP address is still in the **IP Address** or **Host Name** field.
- 12 Click the **Broadcast Distribution Table Write** button.
- 13 Click **Read** again to verify that the new .bdt file was written to the router. See example below.

NOTE If you have a large BDT, you may have to re-size the **BBMD Configuration Tool** window to see the **Broadcast Distribution Table**.



- Using the next IP address in the .bdt file, repeat steps 7 through 14 until every file has been updated.

NOTE To clear the BBMD entries from a router, follow the steps above using an empty (blank) .bdt file. A cleared BBMD table contains just the router's IP address without entries in the BBMD table, as shown below.



CAUTION You must wait at least 5 minutes before turning your i-Vu® server off or your changes are **not** saved.

Foreign device configuration

Foreign device registration for the i-Vu® Standard or Plus web server is not required.

If the i-Vu® Pro server is on a separate subnet than the rest of the routers, you must register it as a foreign device with a BBMD router on another subnet.

PREREQUISITE The router is set up as a BBMD.

- 1 On the i-Vu® Pro **System Options** tree, select **Connections**.
- 2 On the **Configure** tab, select **BACnet/IP Connection**.
- 3 If the **Status** column shows:
 - **Connected**, click **Stop**.
 - **Stopped** or **Design Mode**, go to step 4.
- 4 Type the i-Vu® Pro server's IP address in the **IP Address** field. (172.18.64.37, in the example above.)

NOTE If you have more than one network interface card, type the address that connects to the controller network.
- 5 Type the i-Vu® Pro server's subnet mask in the **IP Subnet Mask** field. (255.255.0.0, in the example above.)
- 6 Select **Force Registration** from the **Foreign Device** drop-down list.
- 7 Select the BBMD in the **Primary BBMD** field.
- 8 Click ► next to **Tuning Parameters**.
- 9 Keep the 600-second default value in the **Register FD Interval** field.

NOTE If the re-registration does not occur within this time, the BBMD will delete the i-Vu Pro server from its list.
- 10 Click **OK**.
- 11 If running i-Vu Pro Server (not i-Vu Pro Design Server), select the **BACnet/IP Connection**, then click **Start**.

If your system does not have any BBMD's

Follow the steps below to create pseudo BBMD's so you can register the server.

- 1 In the SiteBuilder application, double-click each BACnet router and check **Automatically Configure My BBMDs** on the **Address** tab.
- 2 In the i-Vu® Pro application, select any location on the navigation tree.
- 3 Run the manual command `bbmd update` to create a blank .bdt table in every router and mark them for download.
- 4 Download parameters to the routers.
- 5 Follow the steps above to register the i-Vu® Pro server as a foreign device to one of the routers.

Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*
5/14/20	Cover	Updated logo	C-D
12/12/19	Document	Updated to include i-Vu® XT and TruVu™	C-D

* For internal use only

