Overview

Wattstopper now offers BACnet® support through any model of IC-II InFusion controllers. BACnet® (**B**uilding **A**utomation and **C**ontrols **net**work), communication protocol was developed by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). BACnet® is a registered trademark of ASHRAE. BACnet is an ISO global standard, American national standard, European pre-standard, and is used in more than 30 countries. This data communication protocol (set of communication rules), was created by ASHRAE to standardize communication with building automation system components. BACnet objects must have at least the following three properties:

- Object Identifier
- Object Name
- Object Type

BACnet resources
www.bacnet.org (http://www.bacnet.org)
www.ashrae.org (http://www.ashrae.org)

BACnet Features

BACnet may take advantage of complex operations via a single button press and release through Design Center tasks on the InFusion system. This makes BACnet an even more powerful tool for building consolidated control. The InFusion system can talk to many devices, only part of which are BACnet enabled objects, via tasks assigned to buttons.

BACnet Object List and Control

The BACnet enabled objects supported on the InFusion Controller System are:

- Loads – (*and* load status)
  - Please note that Infusion loads do not support a *Priority* table. For the Analog Value, the last value received, regardless of priority, will be the percentage the loads will turn on. For loads setup as relays, within the InFusion system, any percentage other than 0% will turn the loads full on.
- Buttons – (*and* button status)
  - Each button supports a pressed and released state. To control a button, it is important that both states are set. To simply trigger a button, set the value to *Active*, then immediately set the value to *Inactive*. To have a button mimic another button or contact, tie the button value to both the contacts *Active* and *Inactive* state so both values are set appropriately.
- Occupancy Status

Object Instance	Object Alias	Read/Write	Object Function
AV1 - AV20000	**Load** Level percentage	Read/Write	Dimming level of load specified by its VID. Range = 0 to 100%.
BV1 - BV20000	**Button** state	Read/Write	Button state of object specified by its VID. (Pressed or released). Active = pressed.
BI1 - BI20000	**Occupancy** Sensor status	Read	Occupancy status of sensor, (Occupied or unoccupied). Active = occupied.

System Requirements

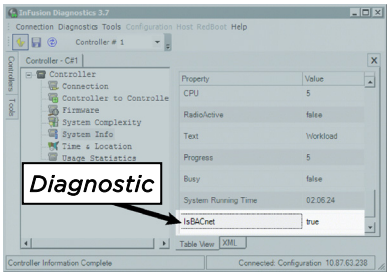
NOTE: *Only one BACnet enabled controller is needed in a project*. BACnet enabled controllers are compatible with InFusion, Design Center systems version 3.7.1 or higher. For new projects it is recommended that firmware and software be kept to the most current release available.

BACnet Remote Access Setup

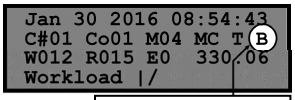
In order to use BACnet from outside the premise, the security settings on the project's IP router/gateway will need to be modified. Use the technique commonly referred to as "Port Forwarding." The default port to Forward is port 47808, however it is possible to forward another port as seen in *Image 1* below. The selected port is forwarded to the IP address of the BACnet enabled InFusion controller

InFusion Controller BACnet Setup

No setup is required for a BACnet enabled controller. BACnet enabled controllers are setup before shipping. Only one BACnet enabled controller is needed in multi-controller systems. Controllers may be connected to each other via the *Controller Bus* as long as the BACnet enabled controller is connected to the local network. BACnet enabled controllers may be identified by the BACnet enabled label on the front of the controller look for label shown at right.



BACnet enabled controllers may be also be identified using *InFusion Diagnostics*. In *Design Center* click on *System* | *Diagnostics*. In diagnostics select the *Diagnostics* drop down menu and select *Controller Information*. In the report, highlight *System Info* and scroll down to *Is BACnet true* or *false*.



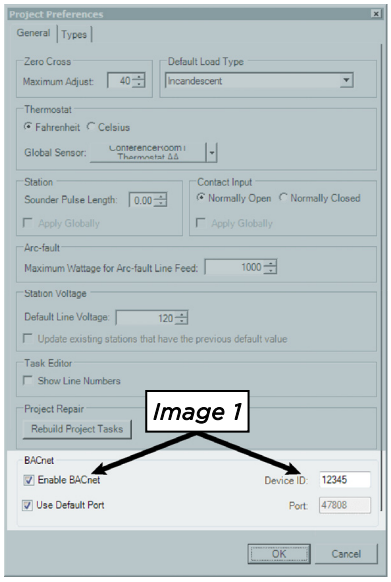
BACnet enabled Controllers display the letter B

On controllers with display, BACnet enabled may also be identified by the letter ***B*** in the display.

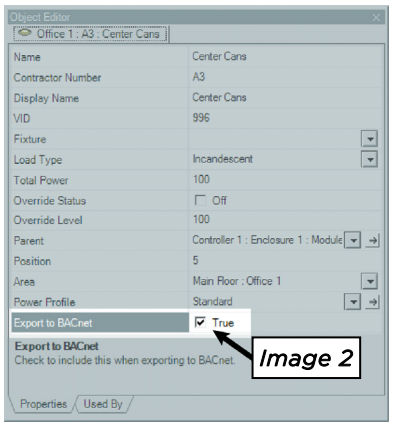
Design Center BACnet Setup

In Design Center –

1. Click on *Settings* | *Project Preferences* | select the *Enable BACnet* checkbox.
2. Enter a numeric Device ID.
   a. If multiple projects are using BACnet on the same network make sure this number is unique
3. Click on Use Default Port (default = 47808) or enter another port if a different port is assigned.

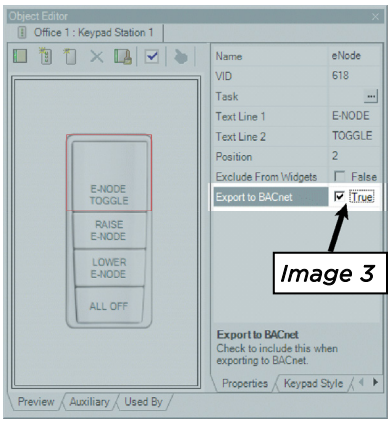


4. With steps 1 and 2 complete, complete step 3 by selecting which *loads, buttons*, and *occupancy* tasks are wanted for BACnet use.

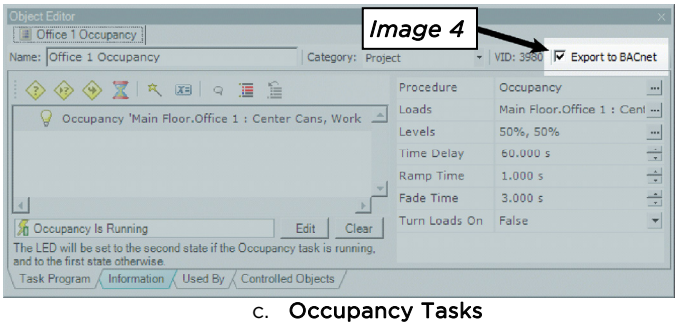


a. **Loads**

5. Set to ***True*** for ***Export to BACnet***, allowing the BACnet software to discover the objects. See ***Image 2, Image 3,*** and ***Image 4***.



b. **Buttons**



c. **Occupancy Tasks**

5. The next time the InFusion system is programmed it is ready for BACnet control.

BACnet Interface Systems

Systems are setup locally on specific projects for the interface items wanted. InFusion controllers must be polled for present values to update – updated information is not automatic.

Design Center *BACnet Points* Report

In Design Center run the *BACnet Points* report (right) to assist the BACnet integrator. With the project file open click on Reports | BACnet Points and the report will be generated - settings may be adjusted (live). This report includes:

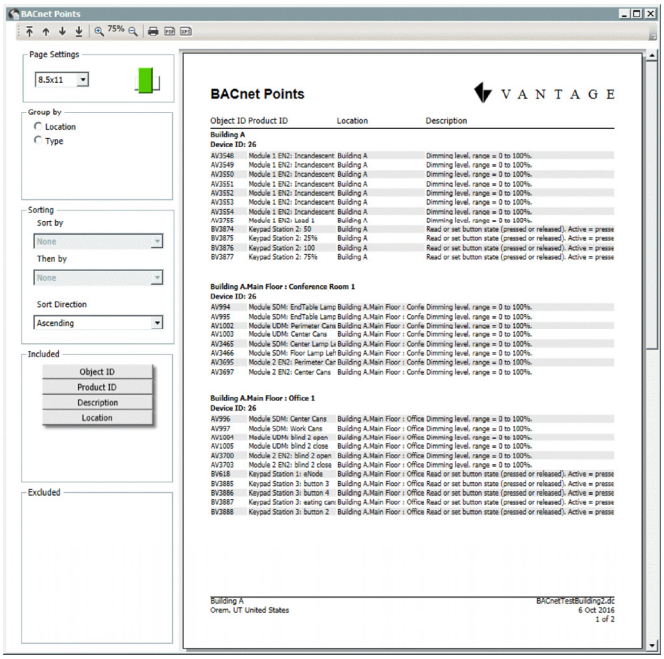
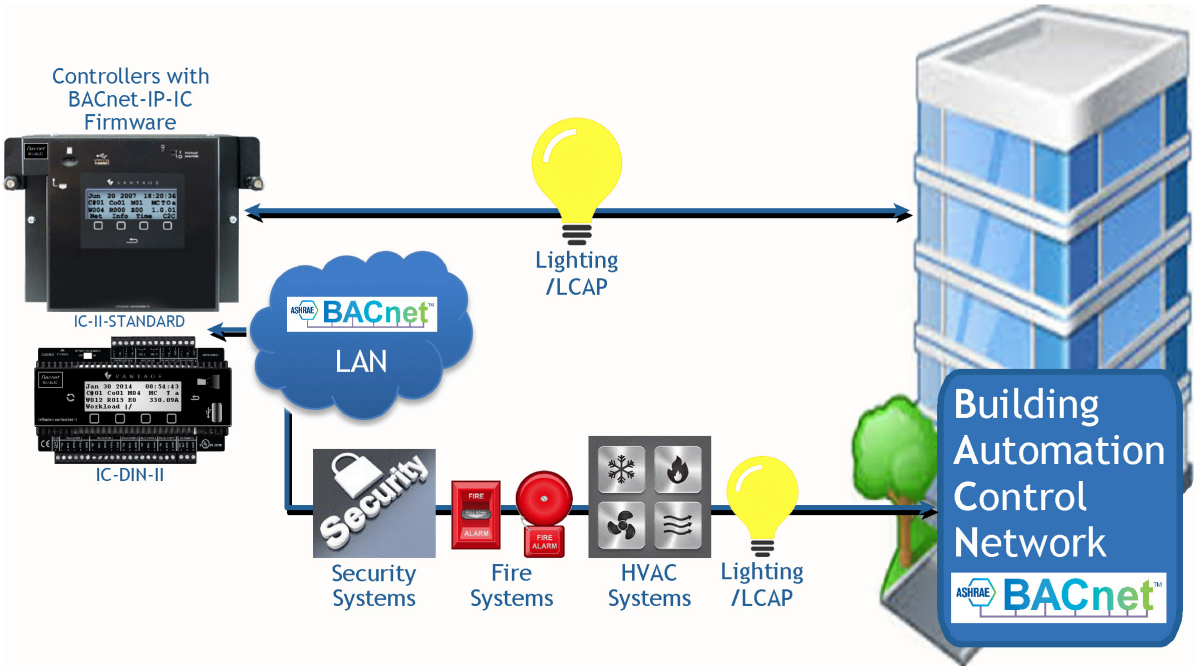
- Object ID
- Product ID
- Description
- Location
- Page Settings (size)
  - 8.5x11
  - 11x17
  - 18x24
- Group by
  - Location
  - Type
- Sorting
  - Ascending
  - Descending
- Included (double click to move)
  - Object ID
  - Product ID
  - Location

Description

- Excluded (double click to move)
  - Object ID
  - Product ID
  - Location
  - Description

The Report may then be:

- printed,
- saved as PDF,
- saved as XPS.



Riser Diagram