

BAS BACnet/IP Integration

Bractlet helps building owners and their asset managers understand if their buildings are operating correctly, and identify, evaluate, and prioritize modernization and optimization investments. Bractlet’s software platform utilizes data from multiple sources, including control parameters and sensor readings from the on-site building automation system (BAS).

Integration with the BAS is achieved through Bractlet’s Gateway device. Below, You can find more details below on the integration process and what is needed to complete it.

The Hardware

Bractlet’s Gateway device uses compact Intel NUC hardware running a custom, stripped-down Linux distribution. It uses Bractlet’s proprietary software to poll for the present values of pertinent BACnet/IP points.

Getting Connected

The Gateway is connected to the BAS using a standard Ethernet/Cat 5 interface on the device. The Cat 5 connection should be made to a switch or router in the primary subnet of the network used by the BAS. In certain network topologies, it may be acceptable to connect into any controller on the network, but the main network switch/router is preferred.

How It Works

Once the Gateway is connected to the BAS network, Bractlet can test the connection by running a BACnet/IP discovery process. The Gateway will broadcast a “Who-Is” request to the network and all exposed BACnet devices will reply with their available points. Bractlet will then comb through the results to ensure that pertinent points are available and identifiable.

The Gateway will then be configured to trend the present values of the points selected by Bractlet. The trending works similarly to the discovery, but in a more pointed fashion. The Gateway will send a directed “Read Property” request to each point in the list to retrieve its present value. After each request is made, the Gateway waits for either a response or a timeout before moving on to the next request, ensuring that minimal communication burden is placed on the network. Once every point on the list has been polled, the trending process continues from the beginning of the list.

The trended data is queued locally on the Gateway before being sent to Bractlet’s servers using a cellular Internet connection. Thus, no wired Internet connection is required for the integration.

What We Need

For all integrations, including with systems that are already BACnet/IP-enabled, Bractlet requires the following:

- An IP address in the BAS network’s subnet, either assigned from a DHCP server or provided to Bractlet for static configuration
- A list of controller/equipment names and their corresponding BACnet device IDs (if the devices do not already have human-readable names)

The table below shows the pathways to integration for systems that are not natively BACnet. This table may not cover every integration. Please contact Bractlet to discuss less common integrations.

System	Protocol	Next Steps
Tridium Niagara	Various	<ul style="list-style-type: none"> • Acquire a BACnet license (if needed) • Create a BACnet export table and export pertinent points to the table (this can be done in a batched fashion)
JCI Metasys	N2	<ul style="list-style-type: none"> • Two different options: <ol style="list-style-type: none"> 1. Acquire BACnet license for JCI controller and export points 2. Install a 3rd party router to convert N2 to BACnet
Various	LON	<ul style="list-style-type: none"> • Install 3rd party hardware to convert LON points to BACnet