

## Case Study

# Modbus RTU (RS485) - BACnet MSTP Integration

## Overview

Argus Controls and Green Leaf Medical approached Chipkin looking for help with integrating BACnet MSTP devices installed on their site and their Modbus RTU PLC. The BACnet MSTP devices were HVAC devices from Trane.

Our clients were not provided with very clear and accurate information about the Trane BACnet MSTP device and the respective BACnet points. On top of that, our client needed to integrate multiple Trane devices all with different configurations. Without accurate information, an integration like this can be very challenging.

The integration required our products to act as a BACnet MSTP client and obtain the points from Trane BACnet MSTP devices and then to serve the points over to the Argus PLC over Modbus RTU protocol. Then ultimately, Argus Controls PLC had to write the values on the data points (via our QuickServer device) back to the Trane BACnet MSTP HVAC devices to control the values on those points.



## Chipkin's approach to the solution

Chipkin recommended support, configuration, and consultation services to help with the problem installation.

As the first step, Chipkin helped the client in making sure that the data communications were good over both the segments of the data communications assembly – i.e., from Trane BACnet MSTP devices into the QuickServer device and then from the QuickServer device onto the Argus Controls Modbus RTU PLC.

Once the data communications were established, Chipkin offered to help the client achieve proper success with their write commands from Argus Control PLC (via QuickServer device) back to Trane BACnet MSTP devices.

It was at this point of troubleshooting where the lack of clarity and accuracy about the BACnet MSTP devices and the object IDs and object types of the points hosted by the BACnet MSTP devices played a challenging role. To help the clients in this situation, Chipkin first asked the clients to select only one Trane BACnet MSTP device which is located at a physical location within easy reach of the client to walk to and check and confirm the values for us. And then Chipkin concentrated the initial troubleshooting effort on that one device until we could finally identify and conclude that the possible issue was the lack of clarity and accuracy in the information about the BACnet MSTP devices which our clients had received from Trane.

After this, our client contacted Trane with the results from our troubleshooting session and Trane then provided them with proper information which was relayed to us. We made the proper updates to the configuration file as per the more accurate information that was provided which resolved all the problems the clients were facing.

Both our clients – Argus Controls and Green Leaf Medical - were very happy with the help and support they received from us (Chipkin).

**As a comment, the client provided Chipkin with the following kind words:**

“I should have wrote this message before Kevin, but all I can say is Hitarth worked diligently configuring and troubleshooting our BacNet setup with a dozen Trane units. He's made himself available to us with time he doesn't have, and helped us work through a very difficult project without the proper information up front.

It has been frustrating for sure, but we wouldn't have made the progress we have without Hitarths hard work, ownership of the process and true knowledge for how your devices function and interact. I'd pick him for the team every chance and look forward to working with him(hopefully) on our upcoming projects.”