CHIPKIN

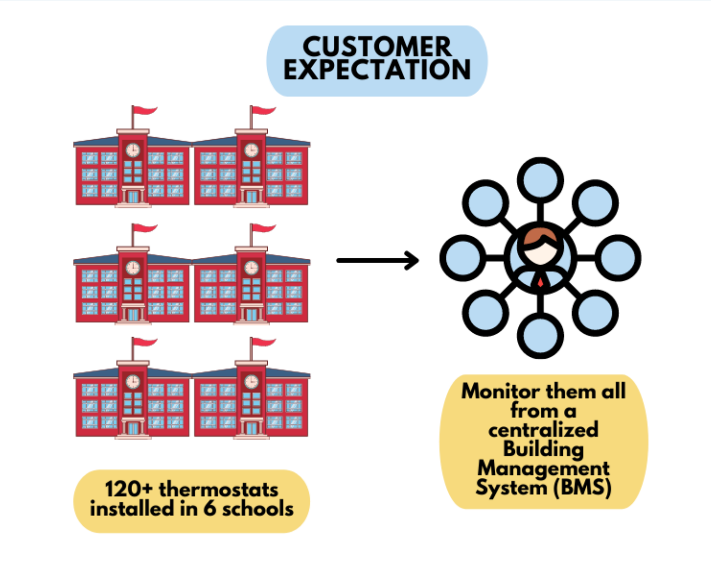
CASE STUDY

USING A FIELDSERVER TO READ DATA OFF AN API (USING HTTP) AND THEN SERVE IT AS BACNET/IP

OVERVIEW

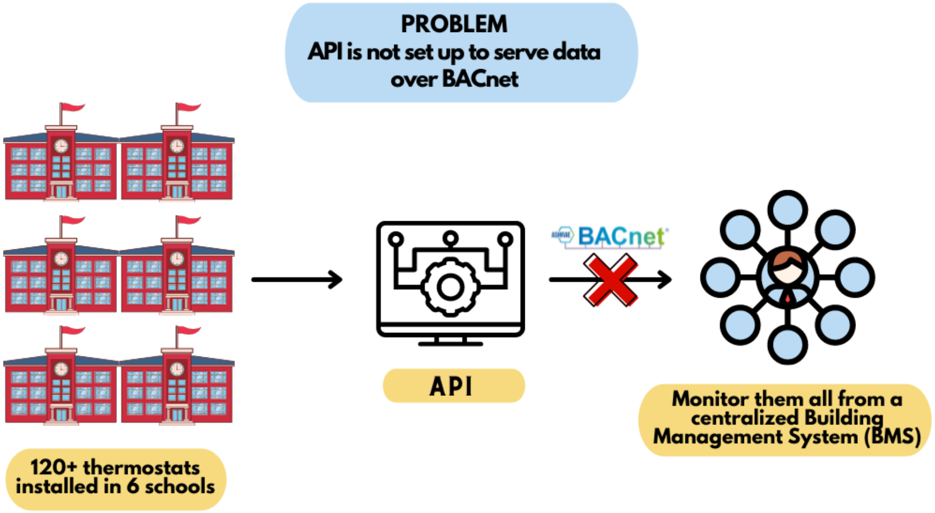
A customer came to Chipkin through our website's contact us form (www.chipkin.com) with an integration project for six schools in California. In those schools, the client had a total of 120+ thermometers (in various buildings on campus) installed. Each of these thermometers reported data points such as temperature, setpoint (present value), schedule, etc.

The thermostats were installed by Pelican Wireless. The data from those devices is continuously sent to a base station, wirelessly. From there, the base station sends the data, again, wirelessly, to a Pelican online API. This API allows the thermostat's data to be read anywhere that has an internet connection.


CUSTOMER EXPECTATION
120+ thermostats installed in 6 schools
Monitor them all from a centralized Building Management System (BMS)

The customer's main goal was to be able to poll the data from the thermostats and to have the ability to read, write, and monitor all thermostats from a centralized Building Management System (BMS).

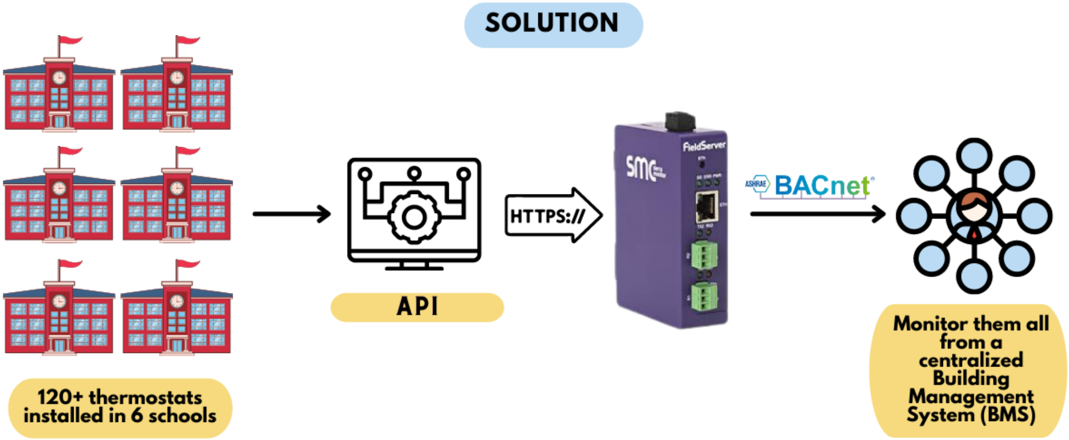
Unfortunately, the BMS could only communicate with BACnet IP and the Pelican API could not communicate with that protocol.


PROBLEM
API is not set up to serve data over BACnet
120+ thermostats installed in 6 schools
API
BACnet
Monitor them all from a centralized Building Management System (BMS)

THE SOLUTION THAT CHIPKIN PROPOSED

To solve this problem, Chipkin suggested using a FieldServer (QuickServer) which could read the values from the Pelican API (over HTTP) and serve them over BACnet/IP locally. Since the local BACnet Network is connected to the BMS, it would allow the BMS to Connect to the Pelican API.

To achieve this, Chipkin would develop a new custom driver for the FieldServer QuickServer to facilitate communication between the two systems: web HTTP & BACnet/IP.


SOLUTION
120+ thermostats installed in 6 schools
API
HTTPS://
FieldServer
SMC
BACnet
Monitor them all from a centralized Building Management System (BMS)

CHALLENGES CHIPKIN FACED

One of the main challenges we faced was that certain points read from the API contained words (strings) instead of values. The QuickServer is unable to read/serve string values. The points that contained the string values were system run status, fan, and schedule. The strings coming from the API for these points were either “On,” “Off,” or “Auto.”

Chipkin overcame this by assigning numerical values to these strings for the QuickServer to read properly. For example, when the API sent the word “On” we translated that string to be the value of ‘1’, “Off” was given the value of ‘2’ and “Auto” became ‘3’.

Also, if one of these values was written to the QuickServer, Chipkin would translate the value back to a string and then sent the string back to the API.

The second challenge Chipkin faced was the large number of data points that needed to be read/served within the QuickServer. The integration required a unique configuration file written by Chipkin on a scale that could handle many points across six different schools with 120+ thermostats. Knowing the FieldServer Platform to the source code level, Chipkin was able to generate a configuration file of this magnitude, while others may have struggled or simply would not have been able to make such a file.

CUSTOMER ADVANTAGES FOR USING CHIPKIN AUTOMATION SYSTEMS

Chipkin Automation Systems is an expert in the field of protocol-to-protocol communications. We were equipped to understand the customer's needs from day one. Since our inception in the year 2000, we have been instrumental in helping clients with their building integration projects.

We are experts in BACnet, REST API, FieldServer, and data communication – which meant we were able to assure our customer that we could do the project and solve any challenges that could arise.

KEYWORDS

HTTP, Rest API, SOAP, BMS, BACnet, Modbus, Gateway Conversion, Translation, School Districts, Temperature, Thermostats, Setpoints.

ABOUT US

Chipkin™ is a building and industrial automation protocol expert. We develop, configure, install and support gateways (protocol converters), data loggers and remote monitor and control applications.