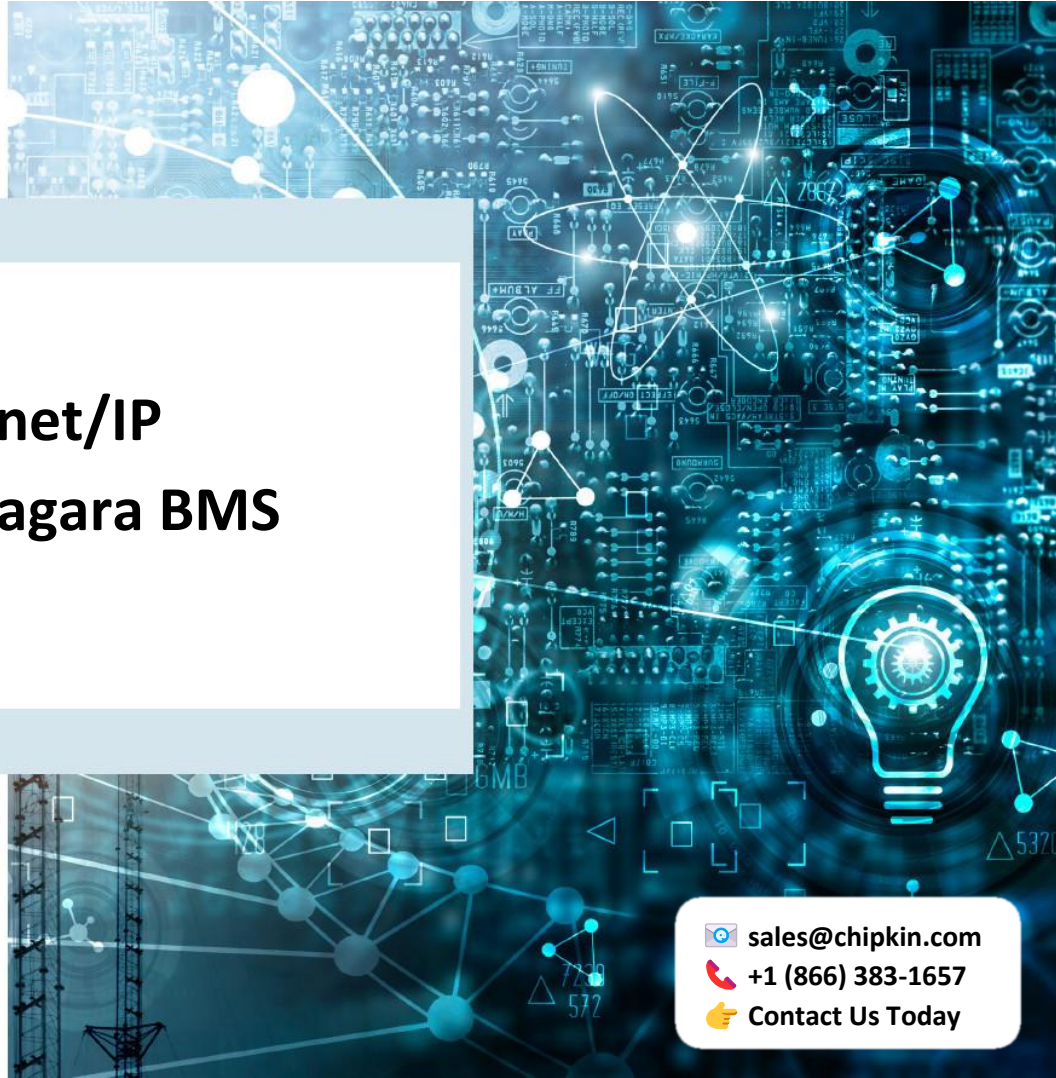




Case Study

Metasys N2 to BACnet/IP Integration for a Niagara BMS

sales@chipkin.com
+1 (866) 383-1657
Contact Us Today

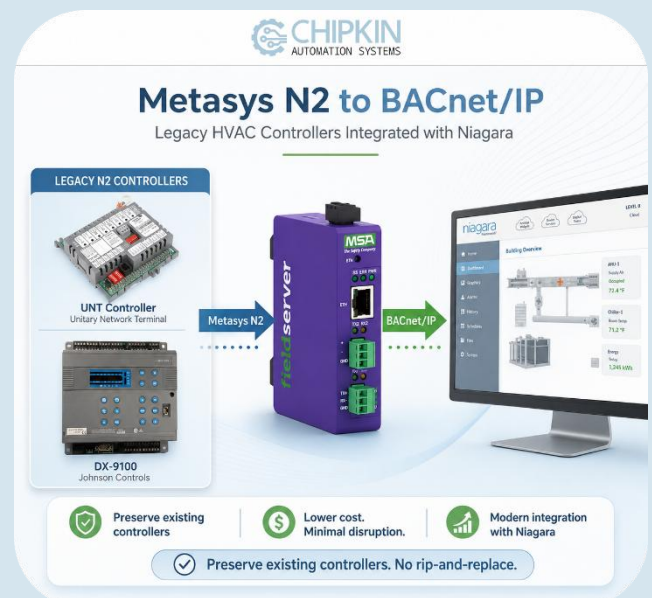
Overview

A North American controls integrator needed to connect an existing Johnson Controls Metasys N2 HVAC network to a modern Niagara-based building management system using BACnet/IP.

The site contained primarily Johnson Controls UNT controllers along with several DX9100 controllers communicating over an RS-485 N2 network. Although the controllers were still operating reliably, they could not communicate directly with the site's modern BACnet/IP supervisory system.

Chipkin used a FieldServer QuickServer to bridge the legacy Metasys N2 network to BACnet/IP, allowing the existing HVAC equipment to remain in service while making its operating data available to Niagara.

The result was a practical modernization path that extended the life of the existing control system without requiring a costly replacement of the installed N2 controllers.



The Challenge

The customer wanted to preserve the site's existing Johnson Controls N2 controllers while integrating their data into a modern Niagara environment.

The network included a mixture of UNT and DX9100 controllers serving heat pumps throughout the building. The QuickServer needed to communicate with these legacy controllers over Metasys N2 and present their points as BACnet/IP objects that Niagara could discover, organize, and use.

The challenge went beyond simply making the devices discoverable. During commissioning, several UNT controllers were visible through the integration, but their point values were not populating correctly. The configuration therefore needed to correctly map the different N2 controllers and their point data so that Niagara received meaningful values from each piece of equipment.

The integration had two primary objectives:

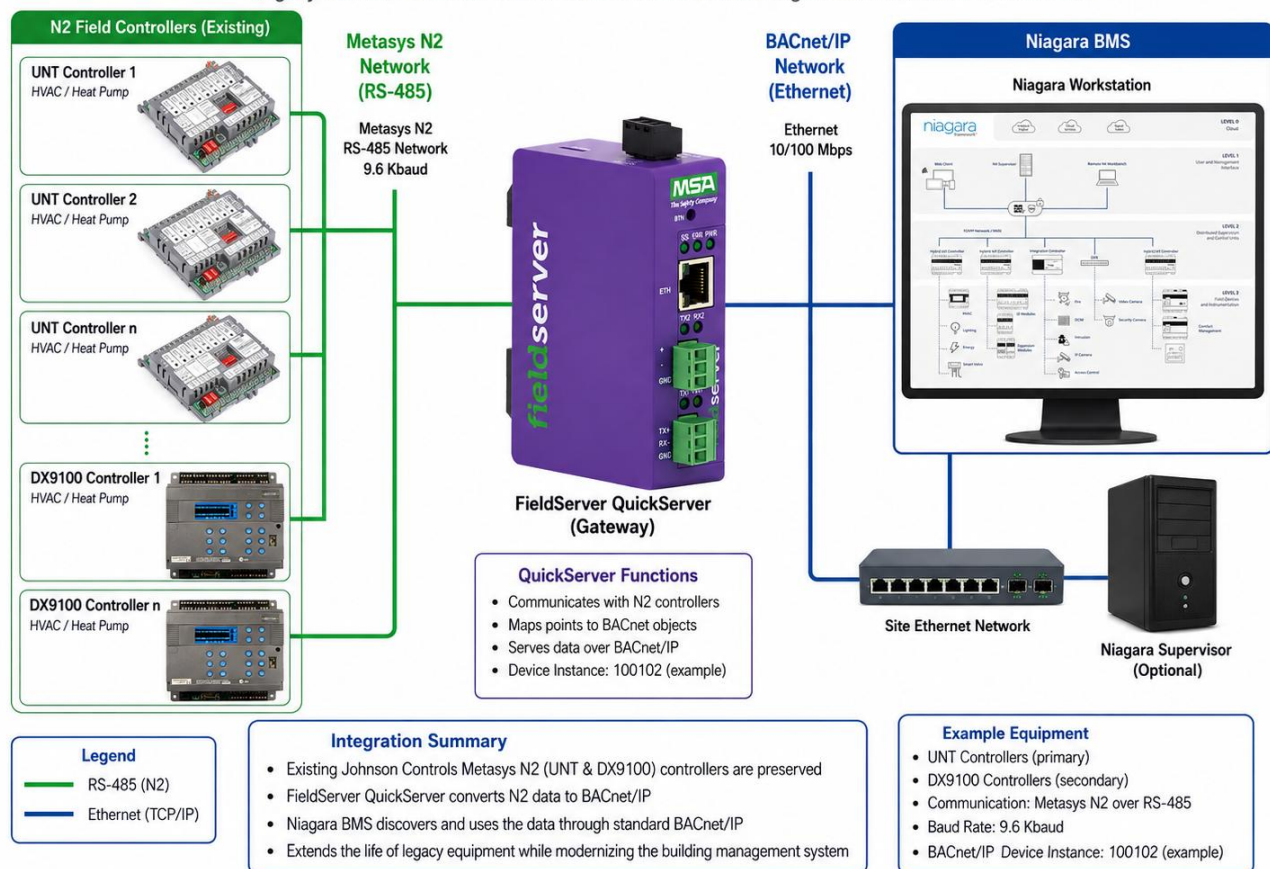
1. Convert the existing Metasys N2 HVAC data into a structured BACnet/IP representation for Niagara.
2. Ensure that the BACnet objects returned reliable point values from the different legacy N2 controller types.

Chipkin's Approach to the Solution

Chipkin configured the FieldServer QuickServer to communicate with the existing Metasys N2 network over RS-485 and serve the resulting data to Niagara over BACnet/IP.

Metasys N2 to BACnet/IP Integration for a Niagara BMS

Legacy Johnson Controls N2 Controllers Connected to Niagara via FieldServer QuickServer



1 Metasys N2 to BACnet/IP Mapping

The source network consisted primarily of Johnson Controls UNT controllers with several DX9100 controllers operating at 9.6 kbaud. The QuickServer was configured to poll the N2 devices and expose their data as BACnet/IP objects using the BACnet device instance specified for the site.

The BACnet objects were structured so the customer could organize them by equipment in Niagara, including individual heat pumps throughout the site. This provided a cleaner representation of the legacy HVAC equipment for graphics, alarms, trending, and ongoing operation.

2 Configuration and Point Validation

During commissioning, the customer identified several missing heat pumps and found that many UNT points were not returning values. Chipkin updated the configuration to include the remaining equipment and reviewed the behavior of the affected N2 controllers.

A FieldServer diagnostic was then collected from the operating site so Chipkin could examine the communication and point data in more detail. The review identified incorrect data-type assignments within the configuration. After those data types were corrected, the UNT point values populated properly.

This confirmed an important part of legacy system integration: successful protocol communication alone is not sufficient. The gateway must also correctly model the device and point data so the supervisory system receives usable values.

Results & Customer Advantages

The completed integration allowed the site's existing Johnson Controls Metasys N2 controllers to communicate with the Niagara supervisory system through BACnet/IP.

The final configuration provided complete heat-pump coverage, including the previously missing equipment, and reliable values from the UNT controllers after the data-type mappings were corrected. The customer subsequently confirmed that the issue had been resolved.

Key benefits included:

- **Metasys N2 to BACnet/IP integration** using a FieldServer QuickServer.
- **Continued use of existing UNT and DX9100 controllers** without a full field-controller replacement.
- **Niagara visibility** of legacy HVAC equipment through standard BACnet/IP objects.
- **Structured equipment organization** for heat pumps and associated control points.
- **Reliable point values** through correct N2 device and data-type mapping.
- **Reduced retrofit cost and disruption** compared with replacing the existing control system.

The project demonstrated how a FieldServer QuickServer can extend the useful life of a legacy Johnson Controls Metasys N2 installation by providing a modern BACnet/IP interface for Niagara while preserving the existing field equipment.