Niagara 4.11

New features for MAC36NL

Why we update Niagara on MAC36NL?

Appeal

Latest & Greatest Features in Niagara

Innovate

Targets Customers Who Need New Functionality

Perform

Library updates, bug fixes, security enhancements

Niagara Framework
Always Evolving – 4.11

Niagara 4.11 brings exciting new features that continue to evolve Niagara's key tenets of visualization, rapid deployment, security, Edge, connectivity, certification and IT compliance.

Visualization

WebWiresheet
WebChart Enhancements

Connectivity

BACnet/SC
Archive History Provider

Security

Critical Support/Enhancements
TLS 1.3

Deployment

Edge Tools Updates
Optimized JACE® Memory
Added Support Infrastructure

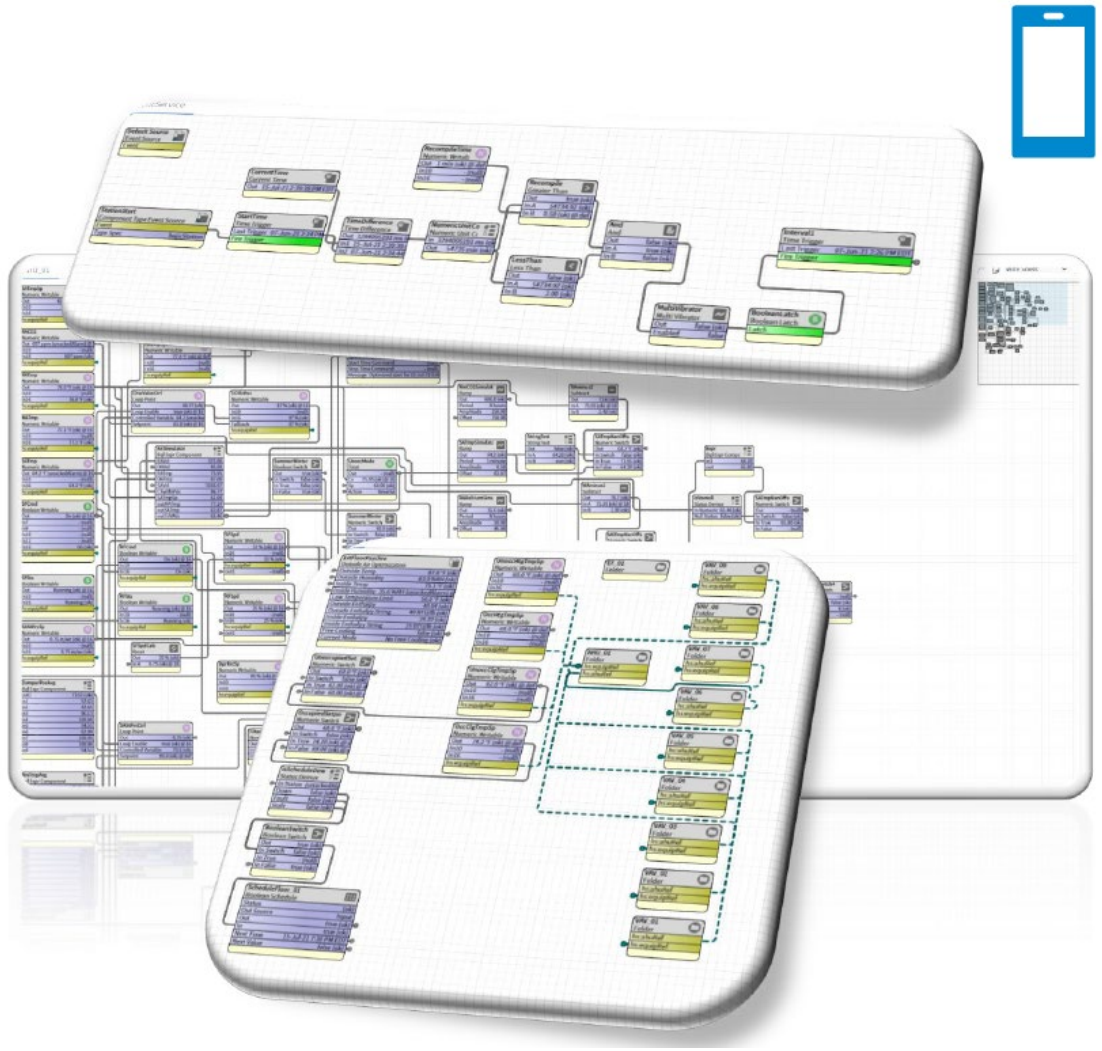
Certification & Compliance

Archive Alarm Provider

Visualization - WebWiresheet

WebWiresheet is a native HTML5 configuration tool which extends the power of the Workbench Wiresheet Application into a Browser Environment

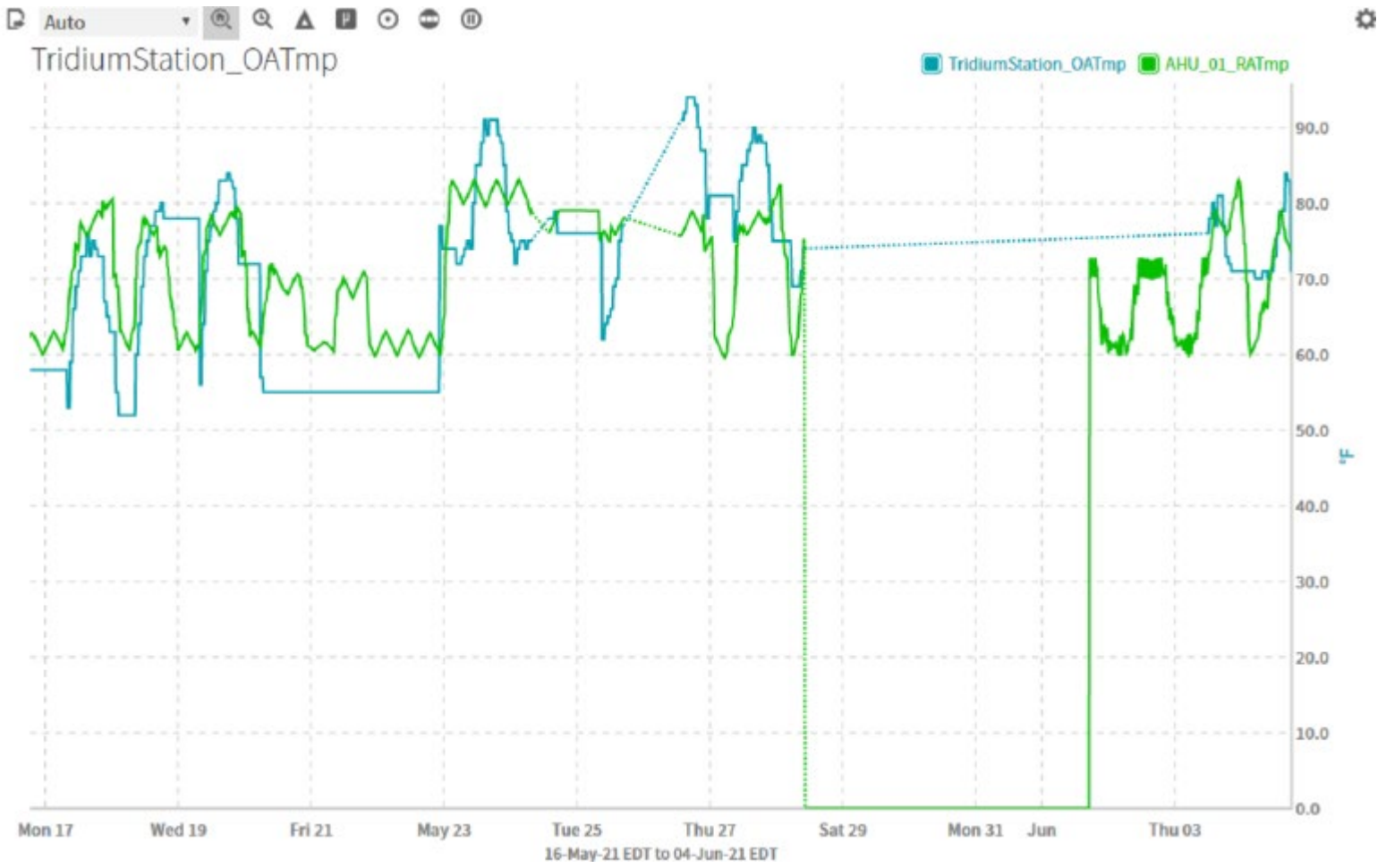
- Reduces truck rolls
- Improved user experience
- Enhances your workflow efficiency
- Provides Added Flexibility – create and configure using a mobile device



Visualization - WebChart Enhancements

In Niagara 4.11, WebChart has never been more powerful and performant!

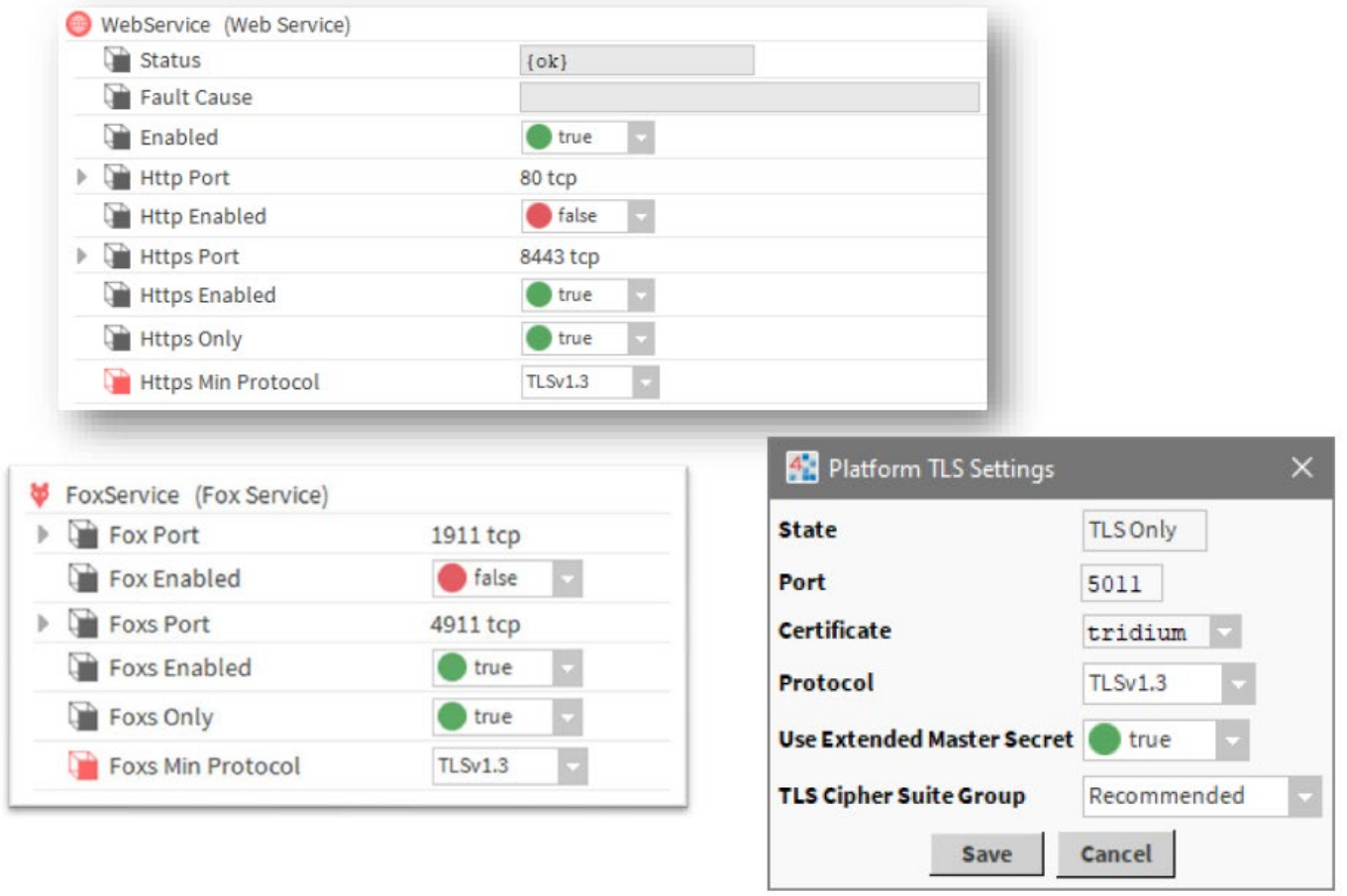
- Provides Interpolation of Missing or Invalid Data
- Choose from a variety of visualization options
- Improved UX and workflow efficiency for end users such as Energy Managers, Building O&M Personnel, Facility Engineers



Security – TLS V1.3

TLS 1.3 is the latest standard for secure communications over IP

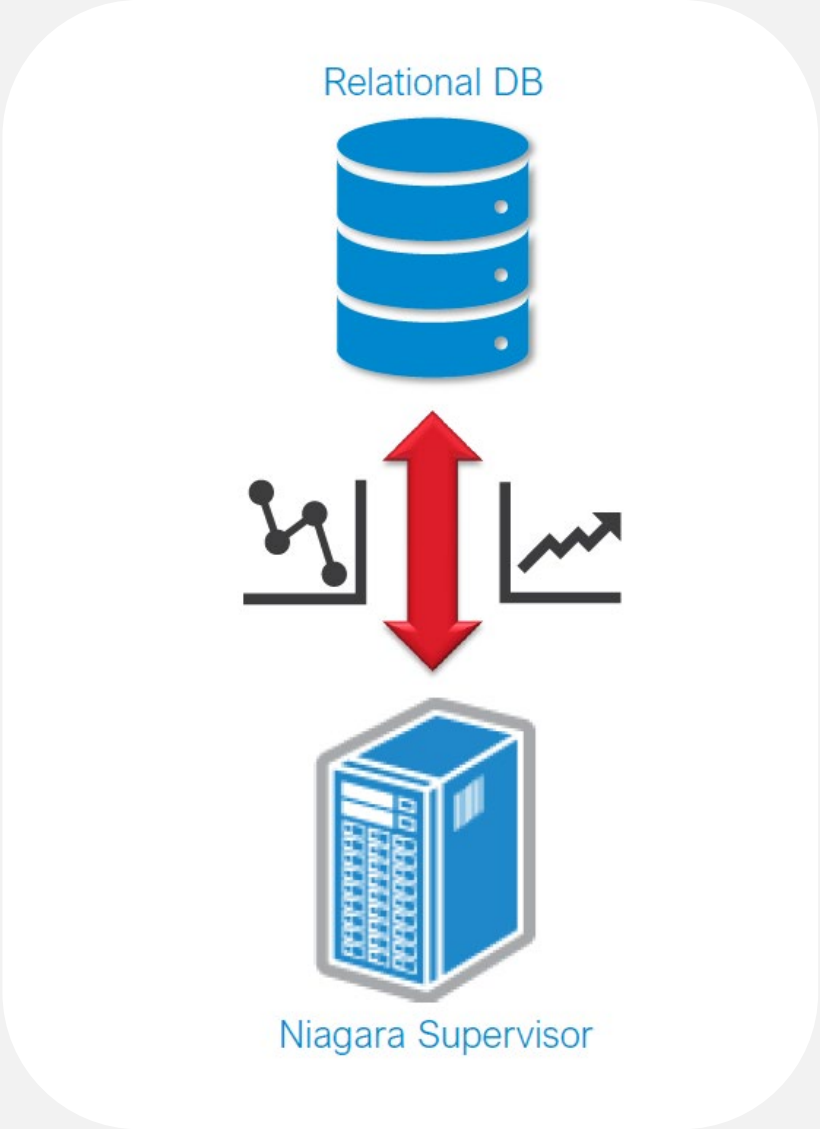
- Enhances Station Performance
- Critical Enabler for BACnet/SC
- Features a stronger security profile than TLS 1.2



Connectivity - Archive History Provider

The Archive History Provider streamlines access to years of historical Niagara data stored in a relational database (RDB) for rapid visualization and analysis.

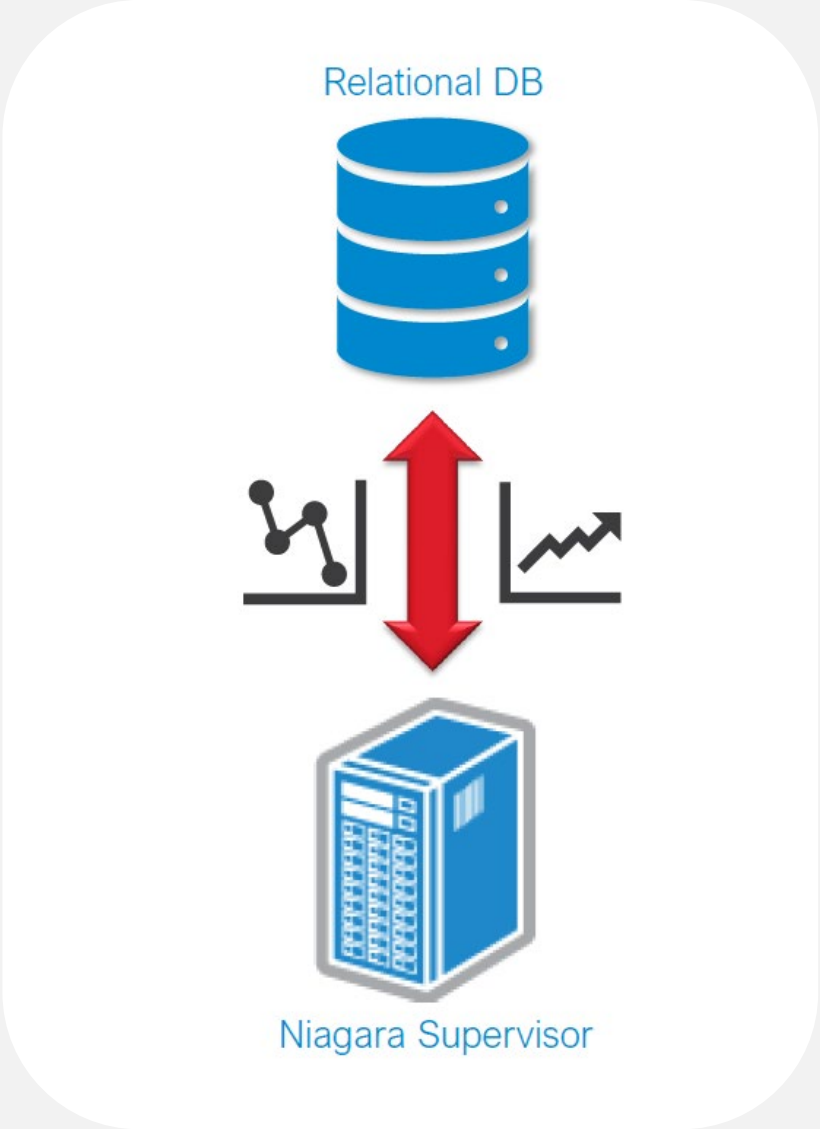
- Removes the need to Import Histories to the Supervisor for Visualization
- Instantly query years of archived data and baseline against new locally stored data
- Enables well-informed analyses of equipment operation
- Improves facility systems operational efficiency
- Supported using MSSQL, MySQL and Oracle DBs



Compliance - Archive Alarm Provider

The alarmOrion Archive Provider will enhance the stability of customer building systems while also providing a compliance mechanism for CFR 21 part 11.

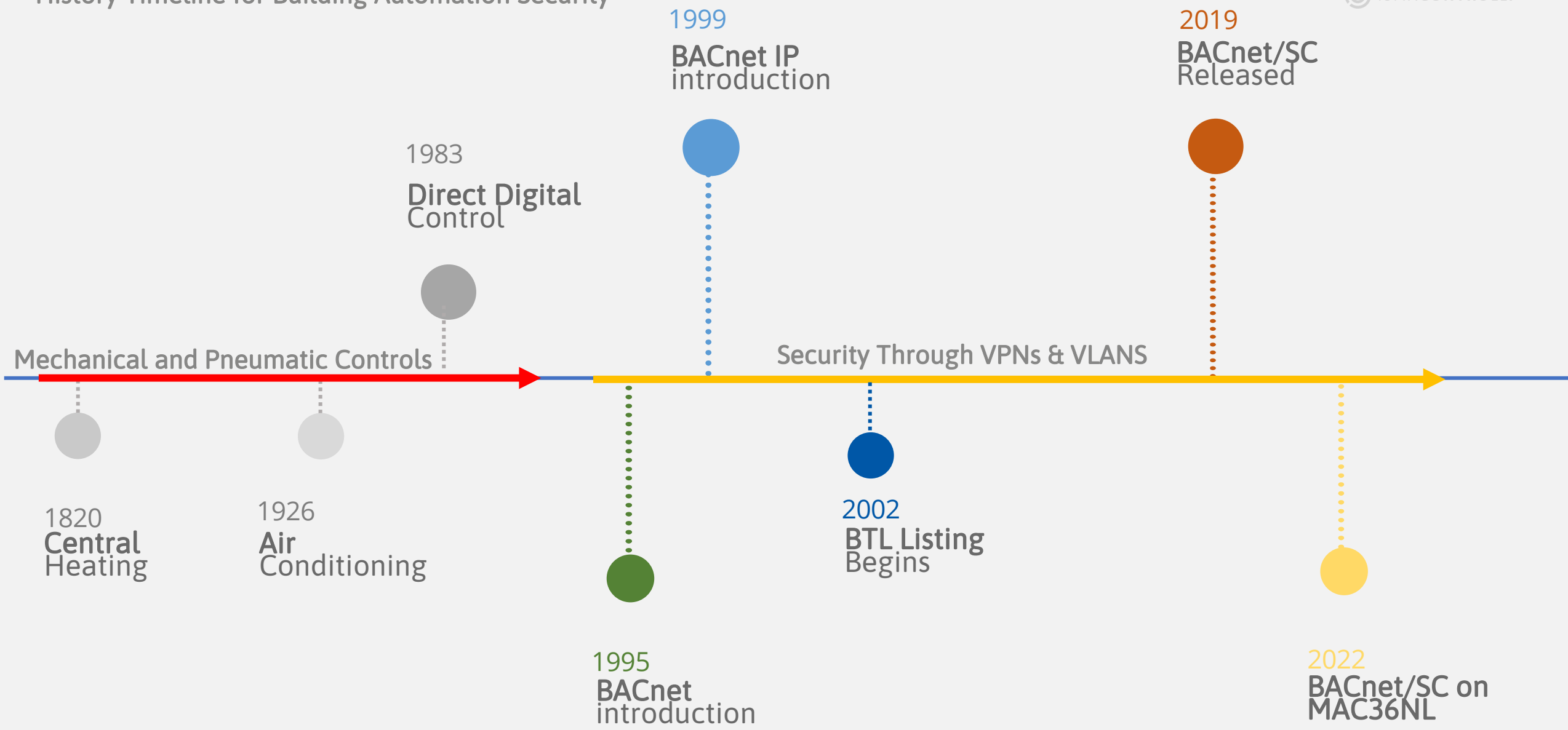
- Enables more well-informed analyses of equipment operation
- Improves facility systems operational efficiency
- Provides a compliance mechanism for CFR 21 part 11
- Quickly query closed exported alarm records



BACnet/SC

Supported on MAC36NL

History Timeline for Building Automation Security

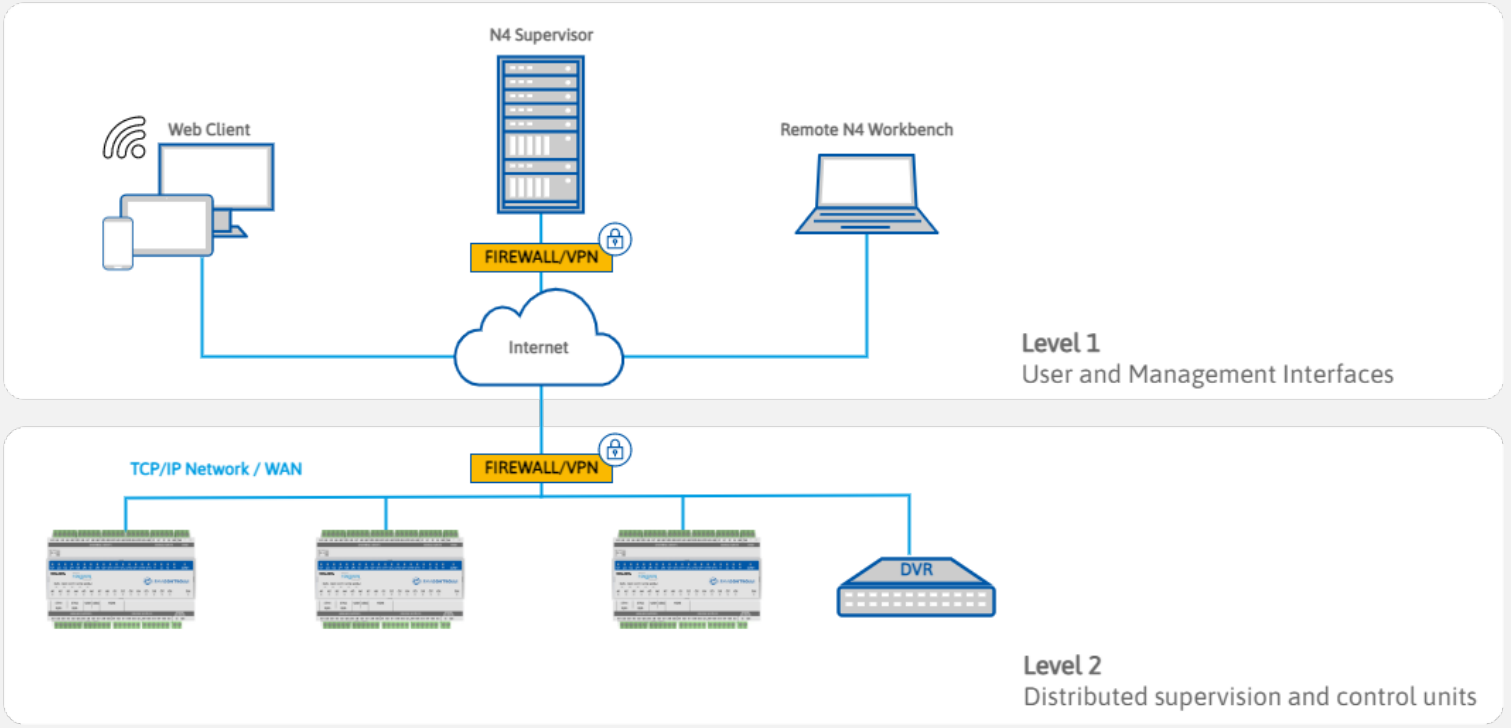


Building Security

How have we been securing buildings with protocols such as BACnet?

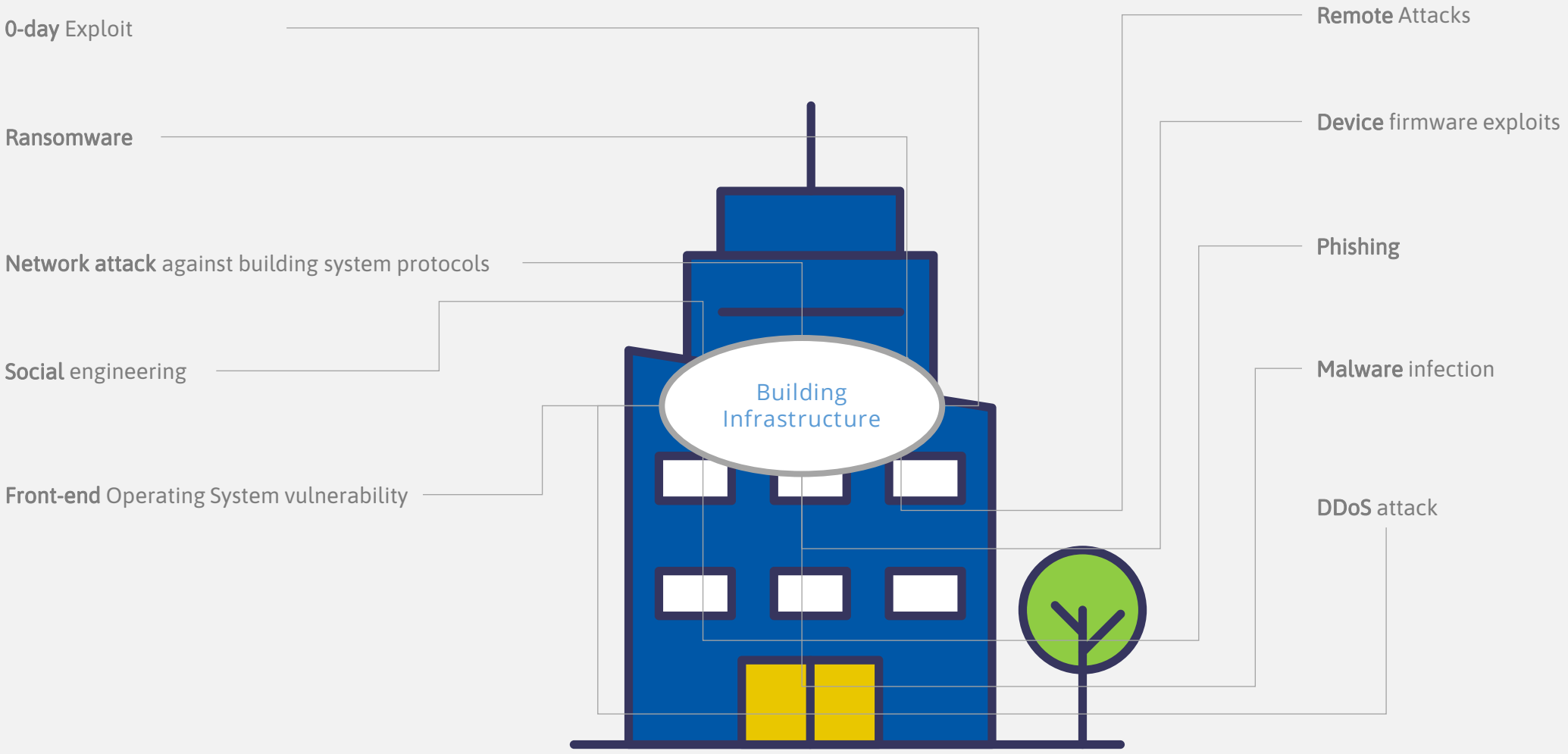
Traditionally, building network protocols are secured through:

- **Use of proprietary** protocols
  - Limits interconnectivity
- **Physical** separation
  - Difficult in modern topologies
- **Virtual** separation (i.e., VPN, VLAN)
  - Can be costly in both hardware and process complexity



Building Security

The Attack Surface is growing: the concern is not just building automation system vulnerability but BAS as an attack vector into enterprise it networks.



What is BACnet Secure Connect?
BACnet/SC

BACnet Secure Connect (BACnet/SC) is a new BACnet datalink that eliminates many of the concerns Owners, Facility Managers, and IT professionals have with BACnet today.

It eliminates the need for static IP addresses and network broadcasts while simplifying the configuration of its networks' parameters.

What is BACnet Secure Connect?
BACnet/SC

- **Provides enhanced security for your BMS network and associated devices**
  - Features encrypted communications
  - Full compatibility with all existing BACnet systems and devices through normal BACnet routing
- **Alleviates IT concerns related to BMS network management**
  - BACnet/SC provides a sophisticated network security solution that uses standards widely accepted by the IT community
  - BACnet/SC works easily with firewall devices that are common in IT infrastructure
    - Based on TLS 1.3
    - Uses standard HTTPS ports and standard WebSocket protocols
    - No UDP
    - Fixed IP Addresses are no longer required

How does BACnet/SC work?

Hub and nodes

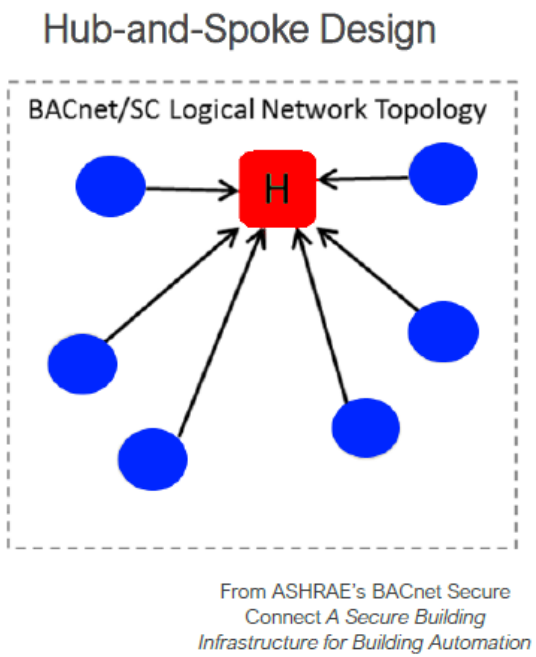
The hub…

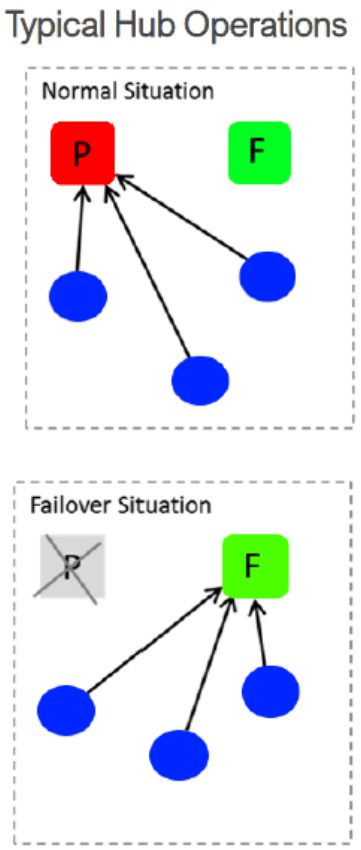
- **Directs traffic** between any number of connected nodes.
- Includes both Primary and Failover, which **provides redundancy**
- **Is required** for every BACnet/SC network (at least 1)

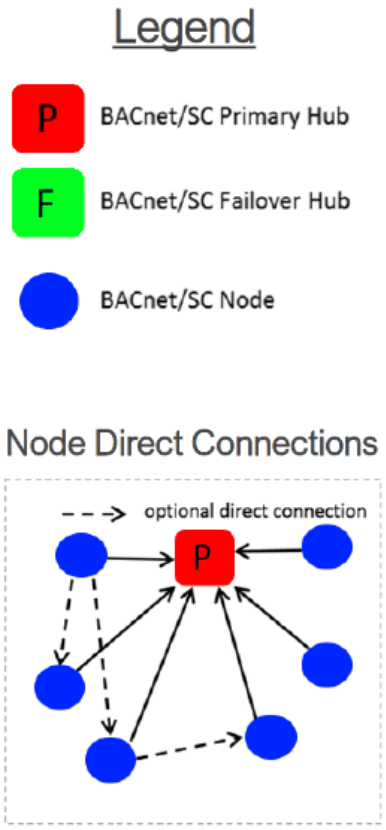
A node can be a…

- Controller
- A Thermostat
- Facility Workstation
- Router to an existing BACnet system

A node has the option of Performing direct connections to other nodes in addition to going through a hub







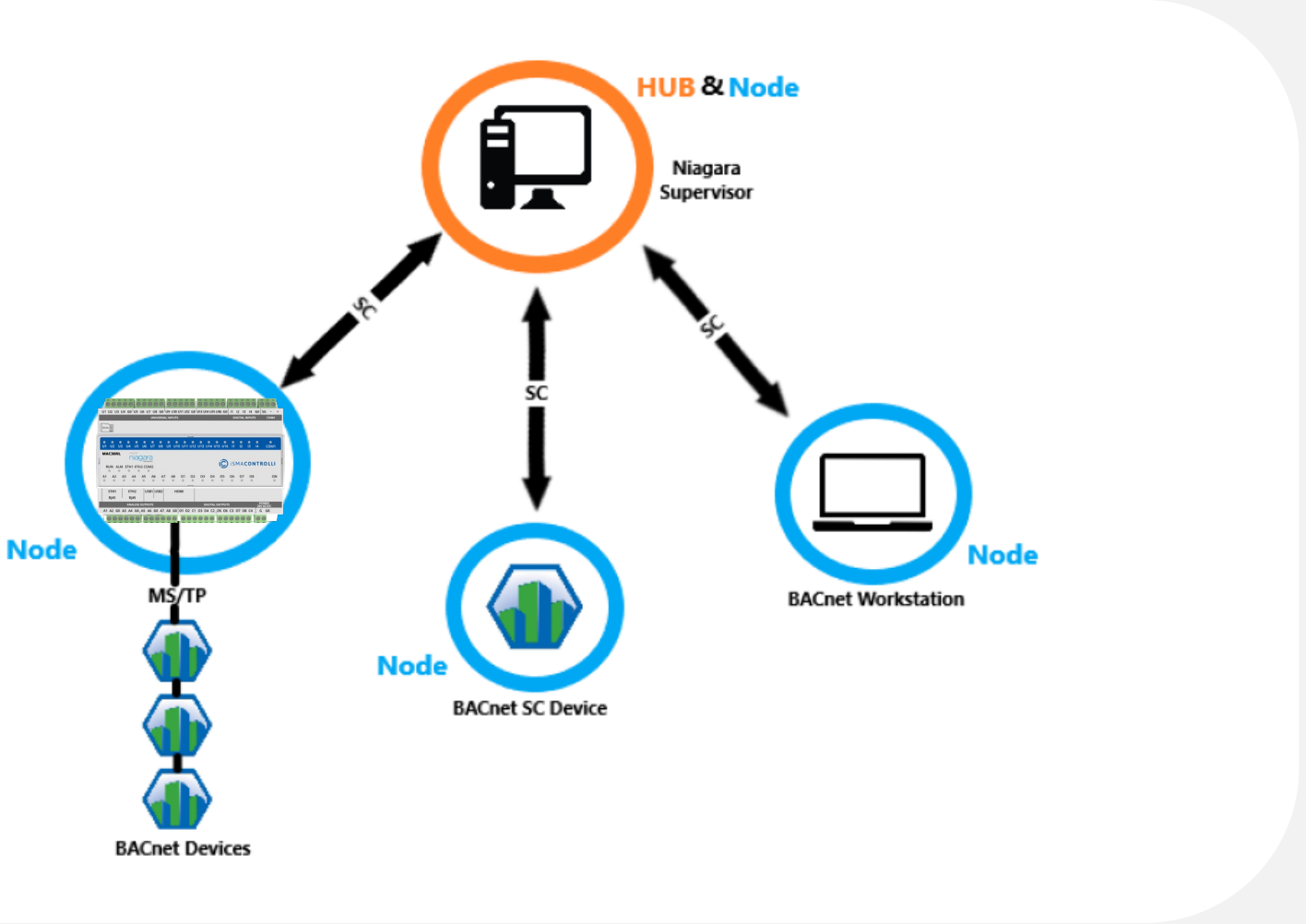
BACnet/SC Architecture in Niagara

What can be the hub:

- iSMA Supervisor
- MAC36NL
- JACE-8000

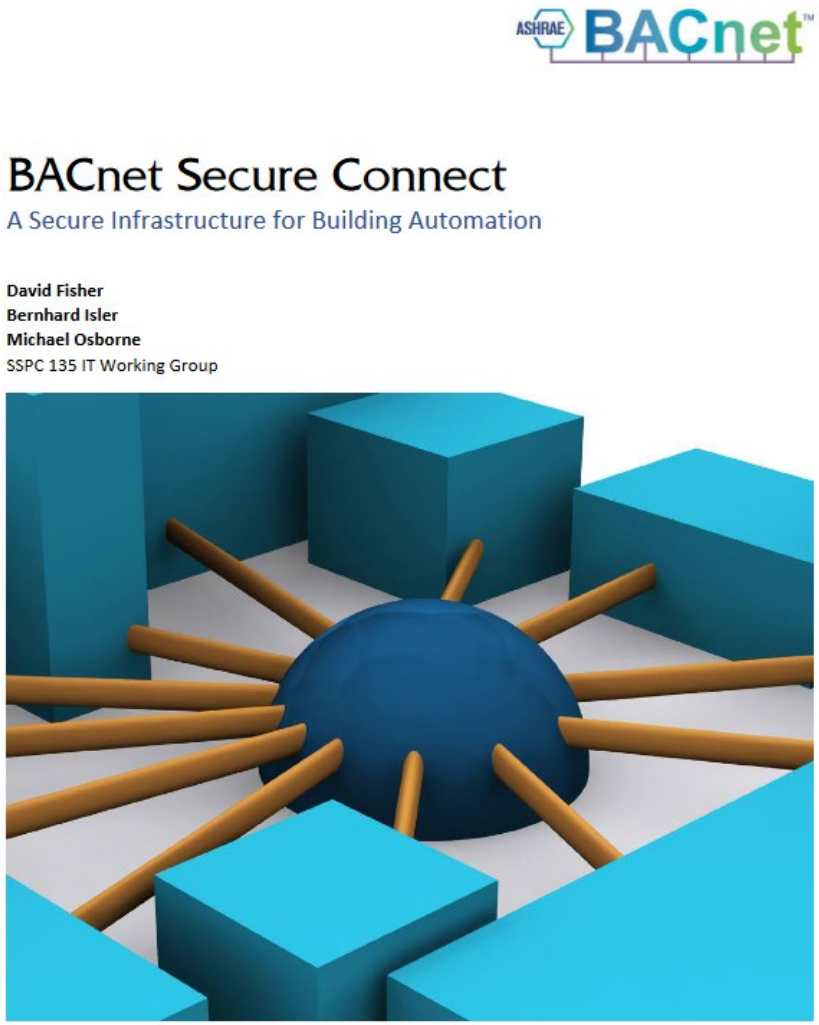
For this scenario:

- Legacy devices are connected to MAC36NL, which acts as a BACnet MS/TP to BACnet/SC router
- Niagara Supervisor is a Primary Hub
- MAC36NL can serve as primary or failover hub



The IT-friendly BACnet

BACnet Secure Connect (BACnet/SC) provides BA infrastructure that uses standard internet protocol and standard, widely used security methods, eliminating much of the concern and work for an IT department.



BACnet Secure Connect (BACnet/SC) White Paper

Voice of the Customer

MAC36NL - iSMA_IO - Improvement - reverse the DI (or any IO state)

MAC36NL - iSMA_IO - Improvement - Make Universal Input work as a Digital Input

MAC36NL - IEEE802.1X - access authentication functionality

New Functionalities in iSMA_IO module

New Functionalities:

- new **DigitalUniversalInput** component;
- **Polarity conversion** functionality added to DigitalInput and DigitalOutput components.

- **802.1x**, an IEEE standard for network access authentication is typically used in enterprises and campuses with large-scale networks to provide security, scalability and ease of management.

Functionalities added based on our customers' feedback