May 26, 2022

WEBS N4.11 FEATURES OVERVIEW

PRESENTER'S NAME
PRESENTER'S TITLE

Honeywell

WEBS N4.11
FEATURES OVERVIEW

Honeywell

WEBS N4: ALWAYS EVOLVING – 4.11

WEBs N4.11 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

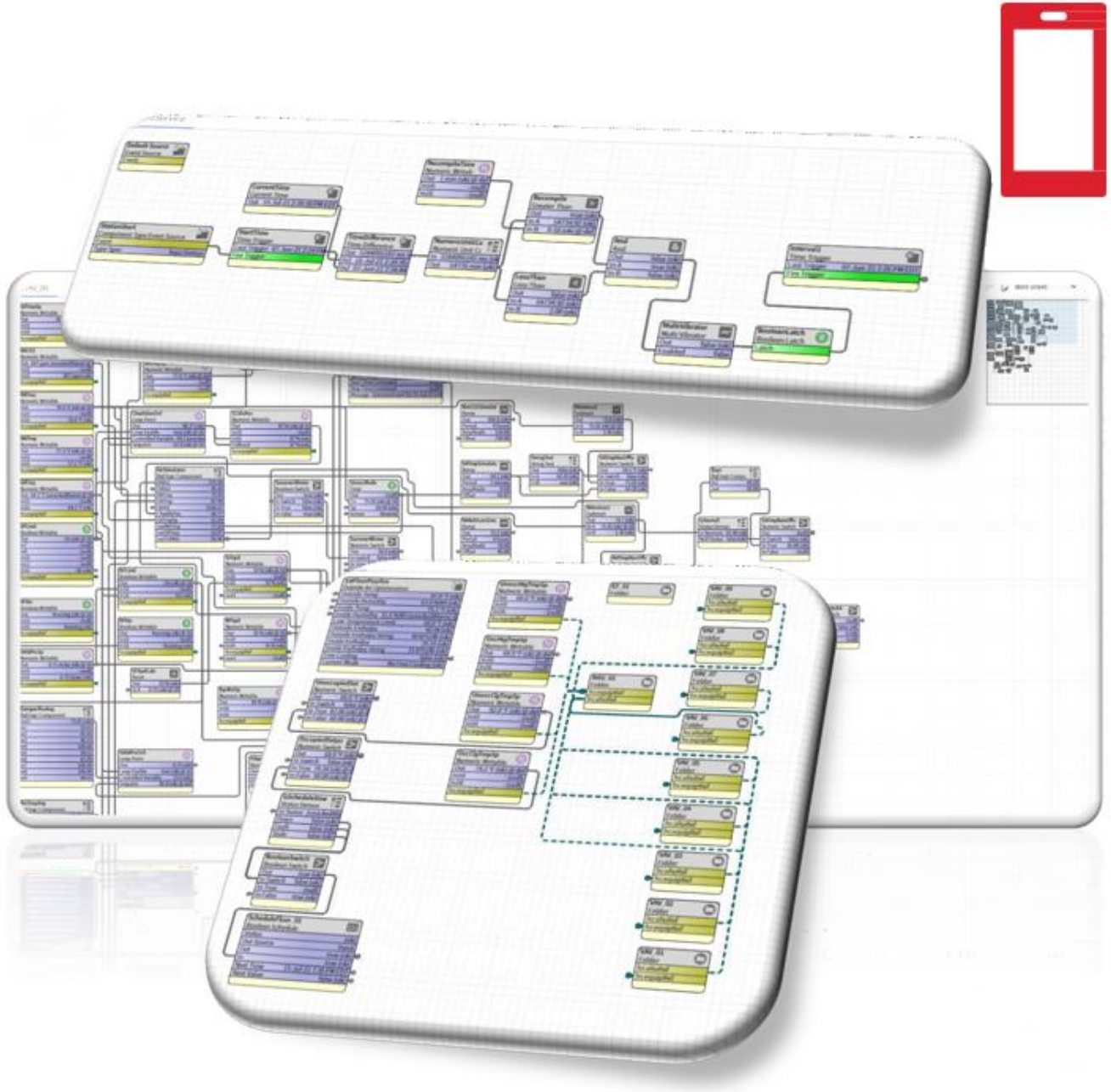
Archive Alarm
Provider

WEBS N4.11 VISUALIZATION

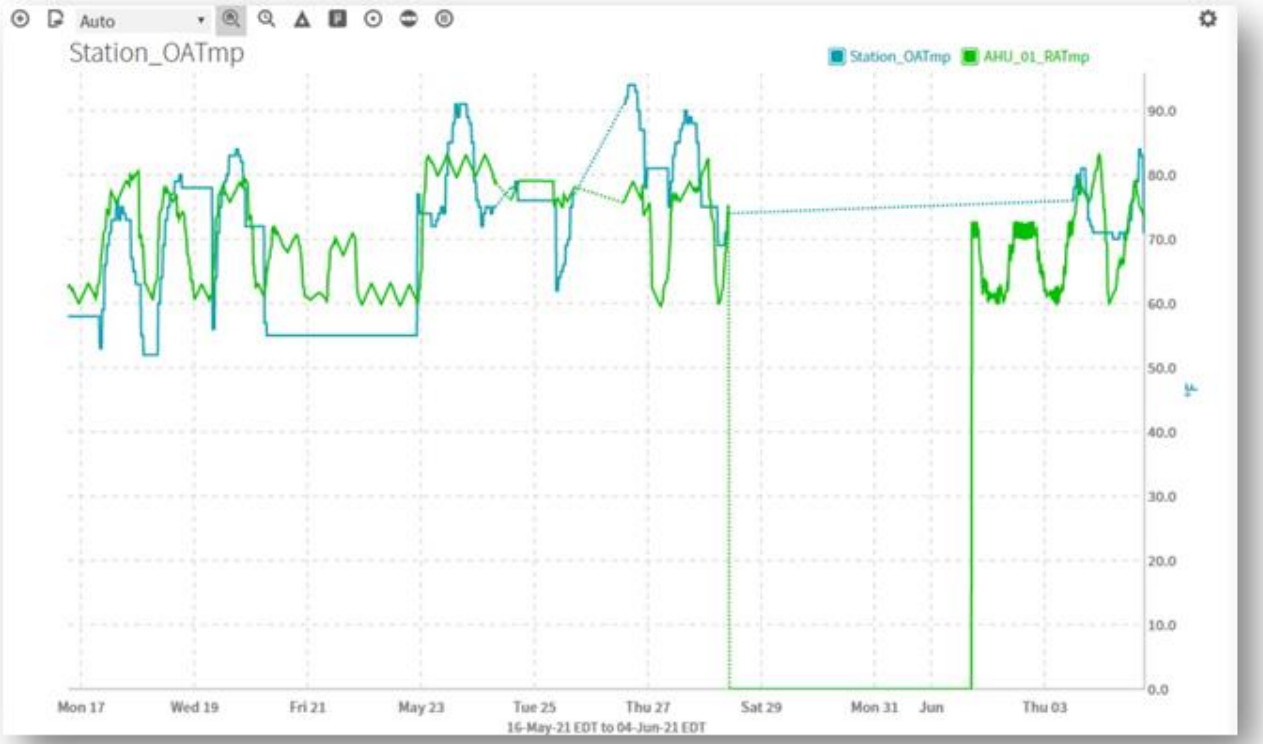
WEBWIRESHEET

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



WEBCHART ENHANCEMENTS



In WEBs N4.11, 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

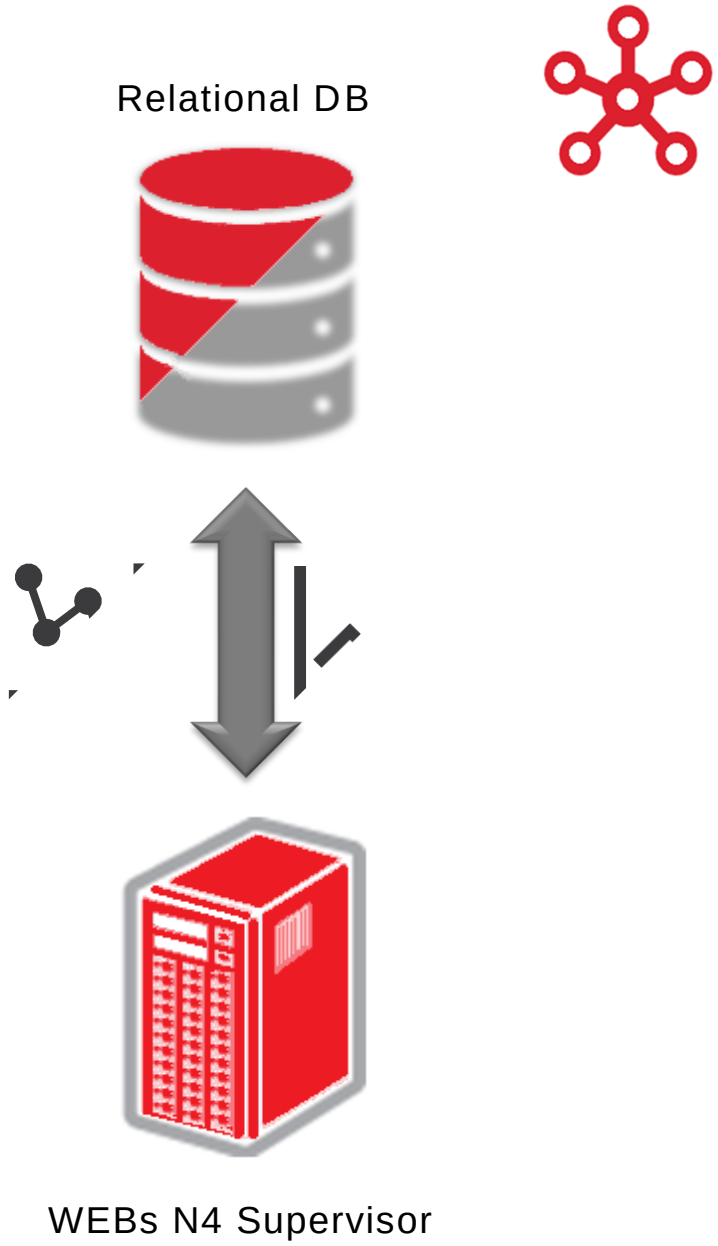
WEBS N4.11 CONNECTIVITY

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



WEBS N4.11
BACNET/SC

WHAT IS BACNET SECURE CONNECT?

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.

- 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?

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)

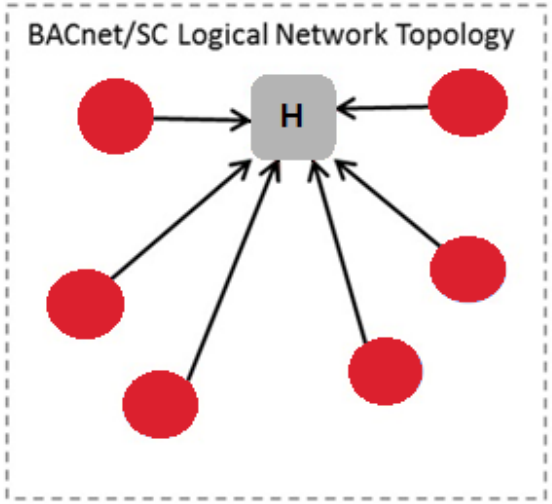
A node can be a…

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

A node has the option of…

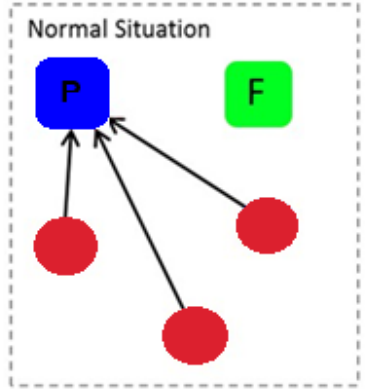
- Performing direct connections to other nodes in addition to going through a hub

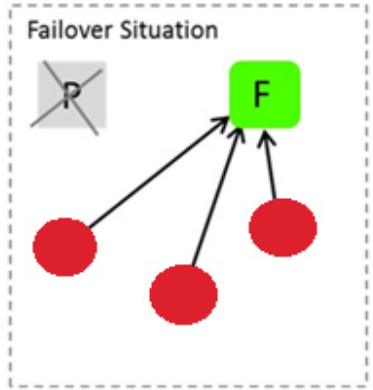
Hub-and-Spoke Design



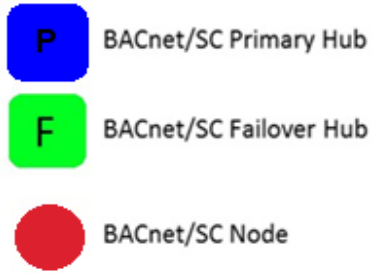
From ASHRAE's BACnet Secure Connect *A Secure Building Infrastructure for Building Automation*

Typical Hub Operations

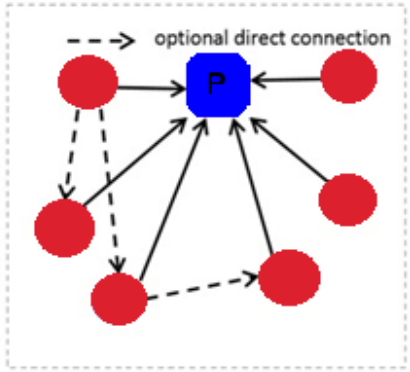




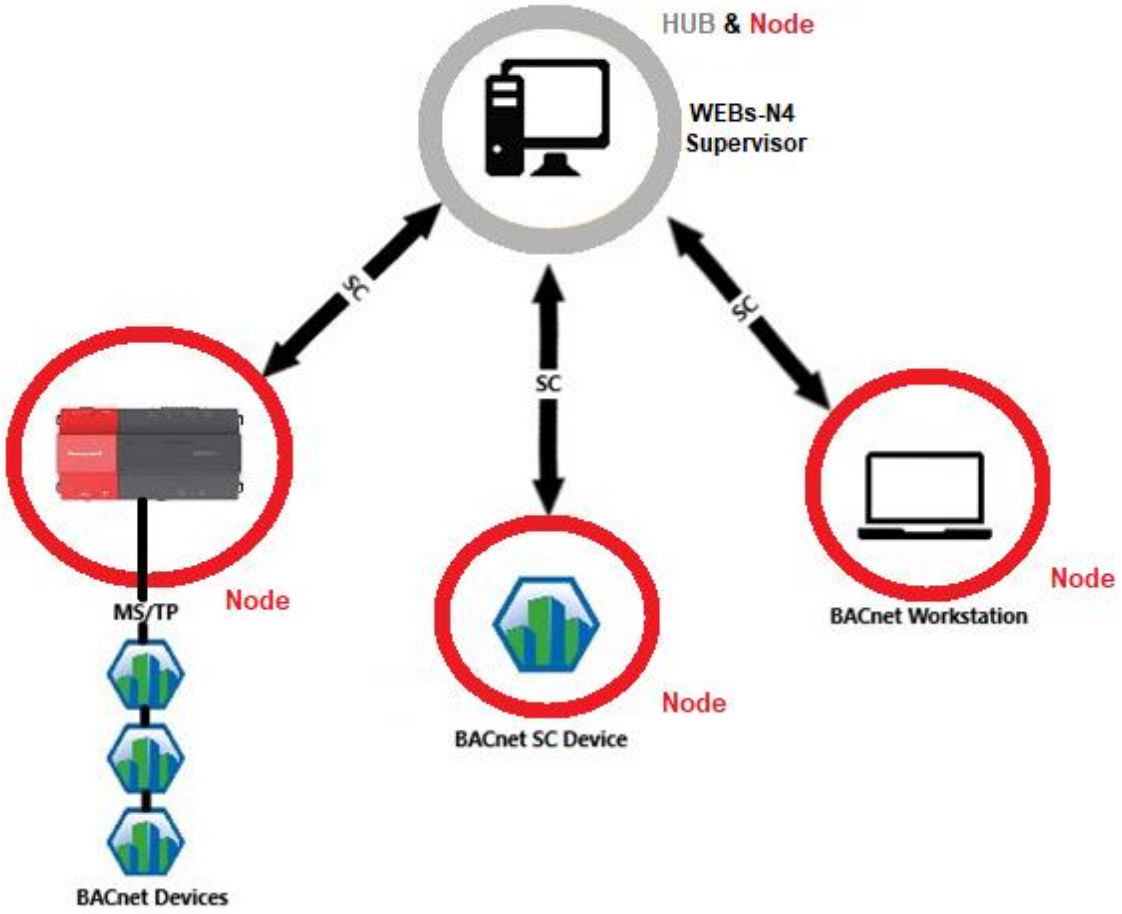
Legend



Node Direct Connections



BACNET/SC ARCHITECTURE IN WEBS N4



BACnet/SC Network

Includes…

- Devices that support BACnet/SC
- BACnet Operator Workstation that supports BACnet/SC
- BACnet/IP and/or BACnet MS/TP Devices – Requires BACnet/SC to BACnet/IP and/or MS/TP router(s) for legacy connections

For this scenario, **the WEBs N4 Supervisor** is the…

- Primary Hub

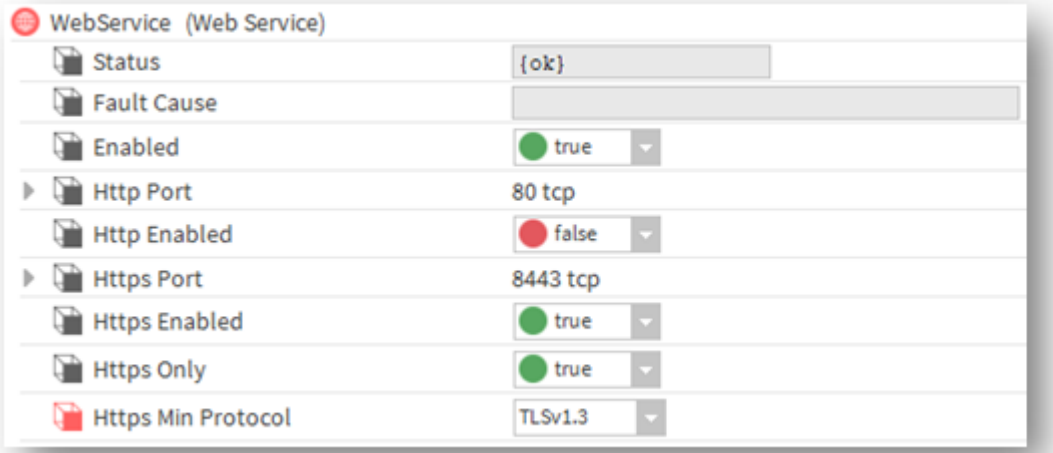
The WEB-8000 can also serve as the…

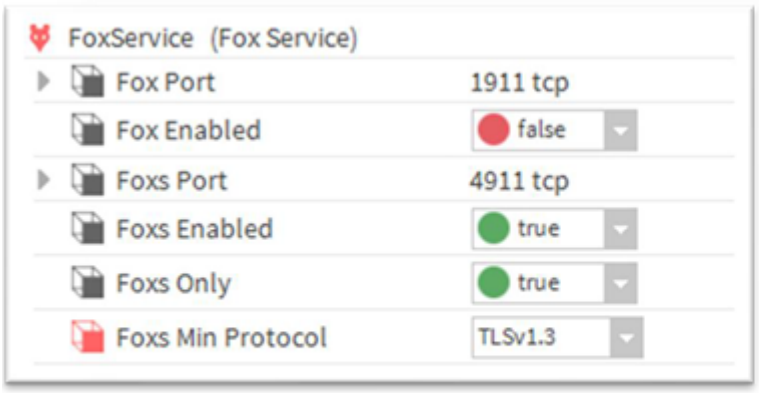
- Primary OR Failover Hub

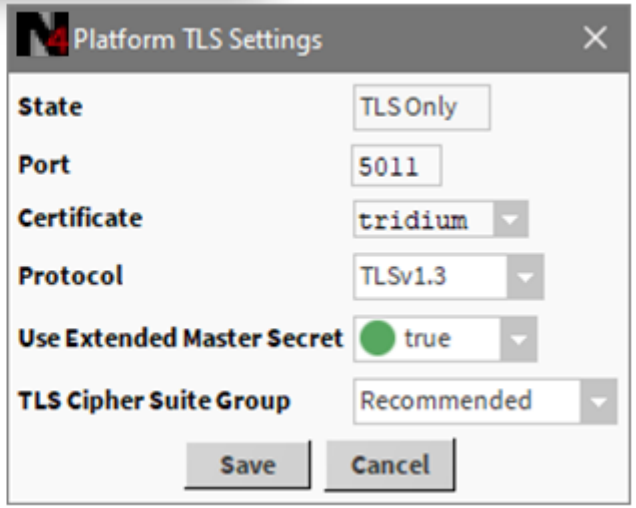
From ASHRAE's BACnet Secure Connect
A Secure Building Infrastructure for Building Automation

WEBS N4.11 SECURITY

TLS 1.3

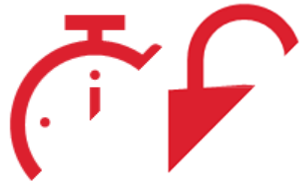




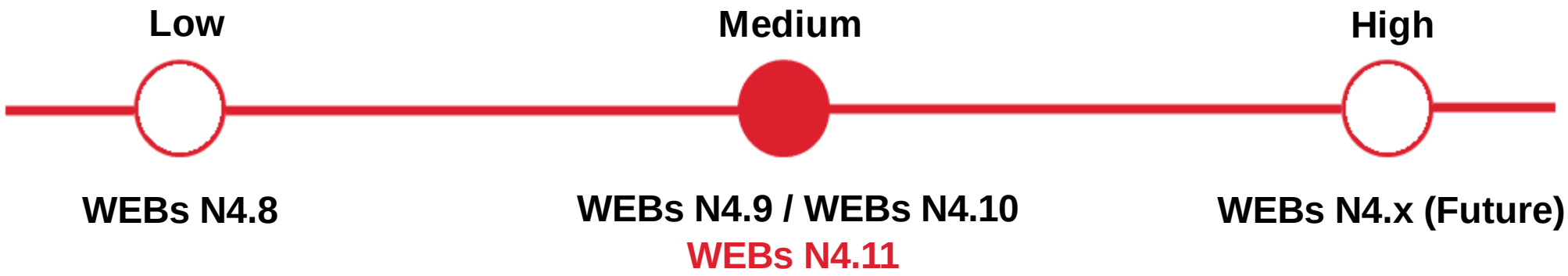


- **TLS 1.3 is the latest standard for secure communications over IP**
  - Enhances Station Performance
  - Critical Enabler for BACnet/SC
  - Features stronger security profile than TLS 1.2

SECURING WEBS N4 - 3RD PARTY MODULE SIGNING



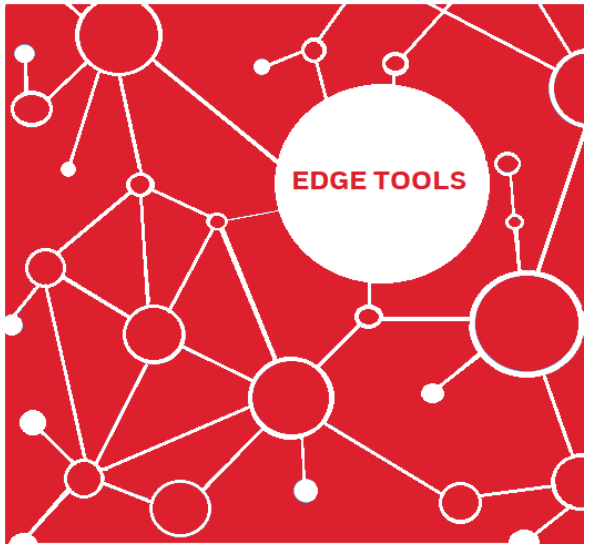
Default Verification Mode by Version

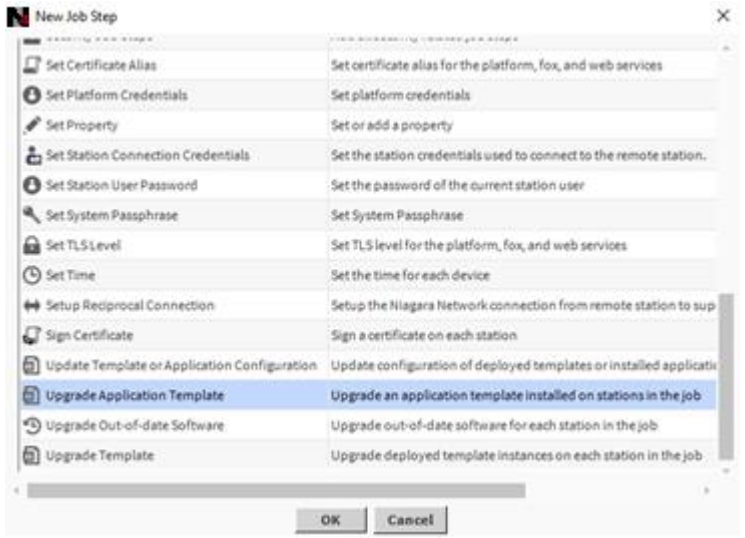


Verification Mode	Description
Low	Modules that are unsigned, untrusted, or have expired certificates will cause warnings but still function. Error if signed module modified after it was signed. Can be increased to Medium or to High.
Medium	All modules must be signed by valid, trusted certificate (may be self-signed). Can be decreased to Low or increased too High.
High	All modules must be signed with CA Certificate. Can be decreased to Medium.

WEBS N4.11 DEPLOYMENT

FACILITATING WEBS N4 AT THE EDGE





Reduce time spent installing, commissioning, and configuring multiple WEBs N4 devices with application templates and provisioning. The latest updates to Edge Tools include:

- ❑ Ability to export variety of application template configurations
- ❑ Provisioning job builder now shows more detail on job steps
- ❑ Provisioning job steps can now be edited prior to running the job

FACILITATING WEBS N4 AT THE EDGE

New Supervisor Edge Licensing Scheme for WEBs N4 Network connections

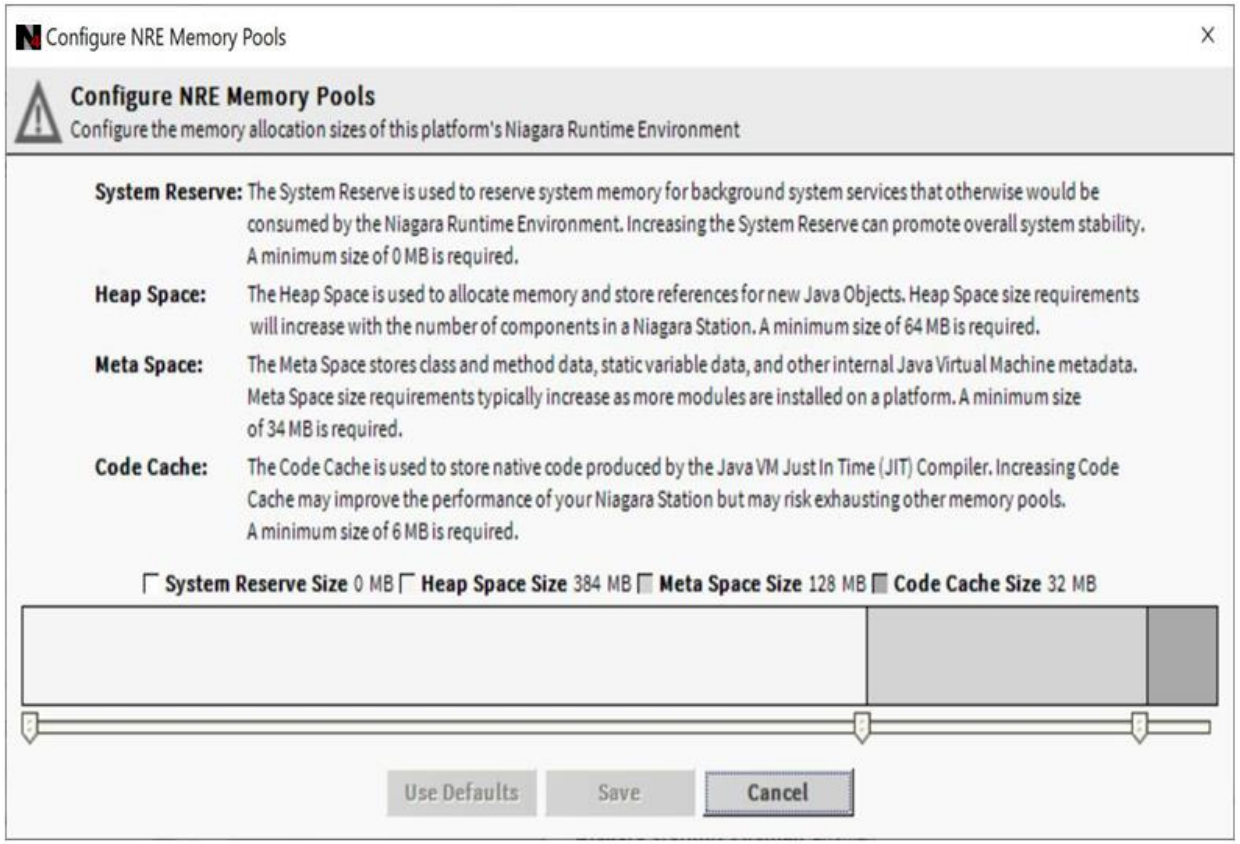
Allows you to connect 10 times more Edge devices to a Supervisor for the same price.

4.9 or earlier
1 WEBs N4 Network Connection = 1 Edge device

4.10
1 WEBs N4 Network Connection = 10 Edge devices

* Applies to 150 points-based license or less for Edge 10 and OEM devices 'powered by Niagara framework' - not applicable to JACE
* If devices are upgraded to >150 points, then licenses revert to full connection

OPTIMIZED WEB-8000 PERFORMANCE



WEBs N4 version	N4.9	N4.10	N4.11
System Reserve	192	208	**480**
Heap Space	384	360	**384**
Meta Space	48	56	**128**
Code Cache	16	16	**32**
RAM Disk	384	384	**0**

Prior to WEBs N4.11, alarms and histories were written to RAM disk then stored in flash. Refactoring this architecture has allowed for 384 MB of RAM to be reallocated to system use.

CIPER MODEL 30 RELEASES

Expandable and Non-expandable Licenses

As of August 2021 Release

CIPER MODEL 30 PATCH FILES COMING SOON

The CIPer Model 30 will have two patch releases NOT included in the supervisor packages:

- **One patch release at version 4.10u1**
- **One patch release at version 4.11**

These patch releases will add an enable/disable configuration item for the HOA switches, as well as fix defects.

CIPER MODEL 30 ENHANCEMENTS V4.10U1

CIPer Model 30 default settings for better control through adverse conditions.

Maintain better control through adverse conditions, such as power fluctuations, network interruptions, communication loss or controller. Setup defaults for outputs to control when control sequences are not available.

Example - Comm fail between CIPer Model 30 and I/O modules (e.g., construction inadvertently cuts comm cable)

The I/O modules will control the I/O to the comm loss value.

Example – Temporary Power Drop for the CIPer Model 30 and I/O modules (e.g., station restart, or chiller plant has a power outage)

The default output will be controlled within 30 seconds of boot up.

CIPER MODEL 30 RELEASES

Release v1.2.311 - WEBs N4.10.u1

A default output feature is included in the latest CIPer Model 30 programming tool. The feature enables each output of the CIPer Model 30 controller or Expansion I/O to be set to a specified state under the following conditions:

- When the controller's station is restarted.
- When the station is not able to communicate with the I/O hardware (either the controller board or expansion I/O module). Communication can be lost for a number of reasons, including, but not limited to:

- Device disabled
- Damaged wiring
- Niagara restarting
- Saved terminal configurations
- Device deleted
- Network deleted
- Niagara stopping
- Station deleted
- Device address
- Network disabled
- Niagara performing platform task

CIPER MODEL 30 RELEASES

Release (v1.0.10) - Managed Switch

- Switch port configuration options, such as enable/disable, MAC address filtering, and port diagnostics
- RSTP configuration enhancements
- WEBs N4.9
- Available for download from The Building Forum

Release (v1.0.11) - USB Adapter

- USB to serial adapter support for BACnet MSTP, Modbus
- WEBs N4.10
- Optional expandable license
- Available for download from The Building Forum
- Shipping from the factory since July 2021

ADAPTER FOR MODBUS AND BACNET MSTP

Adapter Requirements for CIPer Model 30

- USB to wire end RS-485 cable
- Must use either FTDI chipset (FT232 series) or Prolific chipset (PL2303).

Some specific adapters available on-line

- https://www.waveshare.com/usb-to-rs485.htm
- Engineering group recommends these (w/ Tx/Rx LEDs, two cable lengths):
  - ❿1.8m cable: https://ftdichip.com/products/usb-rs485-we-1800-bt/
  - ❿5m cable: https://ftdichip.com/products/usb-rs485-we-5000-bt/

CIPER MODEL 30 LICENSING

Expandable and Non-expandable Licenses

As of August 2021 Release

Unchanged

FACTORY-SHIPPED LICENSES

niagara licensing

Two factory-shipped models:

- Edge License/Unlimited SMA
- BACnet only
- Limited to 150 points, 3 devices
- Non-expandable

WEB-C3036EPUBNH – CIPer Model 30 Unitary

WEB-C3036EPVBNH – CIPer Model 30 VAV

As of WEBs N4.10, edge devices with less than 150 points, such as CIPer Model 30, count as 1/10th a Niagara device connection.

NEW

OPTIONAL MODBUS

niagara licensing

For Modbus, order ***New* Part Number: FOC-EDGE-CONV**, free of charge

Converts existing license to BACnet & Modbus, *100* points, 3 devices

FOC-EDGE-CONV converts this	**To this**
WEB-C3036EPUBNH BACnet, 150 points, 3 devices	WEB-C3036EPUBMNH BACnet & Modbus, 100 points, 3 devices
WEB-C3036EPVBNH BACnet, 150 points, 3 devices	WEB-C3036EPVBMNH BACnet & Modbus, 100 points, 3 devices

Still an edge device, still counts as 1/10th a Niagara device connection

NEW

OPTIONAL EXPANDABLE LICENSE

niagara licensing

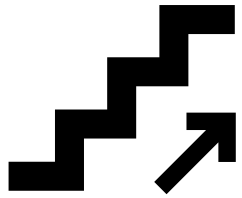
Order **PIN-EDGE-UPG** to upgrade from edge license to:

Expandable license that has 100 points, 5 devices

Expand with

- PIN-DEV-UP-1 50 points & 1 device
- PIN-DEV-UP-2 100 points & 2 devices

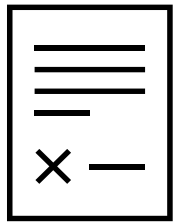
Can stack multiple PIN-DEV-UP



Requires SMA

SMA choices:

- SMA-0002-1YR
- SMA-0002-3YR
- SMA-0002-5YR

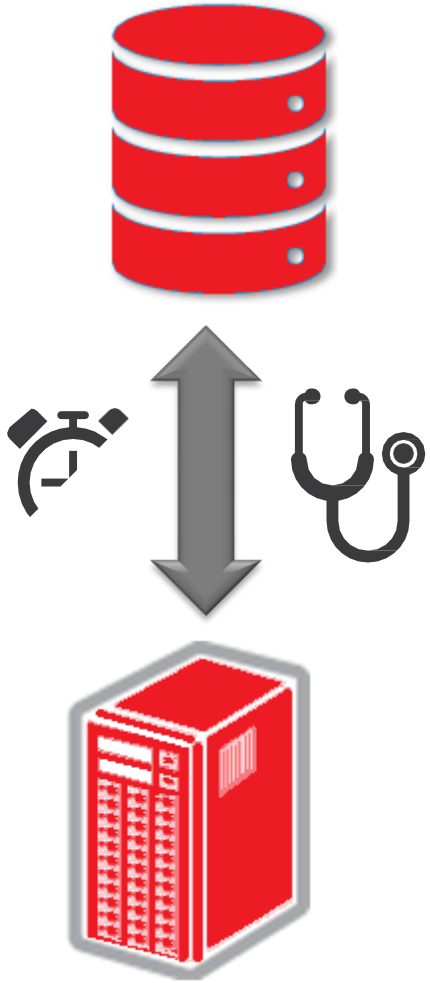


No longer an edge device, counts as 1 whole Niagara device connection.

WEBS N4.11
CERTIFICATION & COMPLIANCE

ARCHIVE ALARM PROVIDER

Relational DB (RDB)



WEBs N4 Supervisor

The Archive Alarm Provider enhances the stability of your building systems! Cleared alarms using the Alarm Orion Service will persist in a station during a loss of connectivity with your RDB. Upon reconnection, the Alarm Archive Provider will update your database tables with the application records.

- 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

SUPPORTED INFRASTRUCTURE

Keeping pace with advancing infrastructure to enable more efficient, long term support.

Supported Operating Systems

Windows
Windows 10, 64-bit Professional / Enterprise
Windows Server 2016
Windows Server 2019
Linux
Red Hat Enterprise Linux 7.x 64-bit
Red Hat Enterprise Linux 8 x 64-bit
Ubuntu Desktop & Server 20.04 LTS
Virtual Machine
VMWare ESXi 6.7

Mobile
iOS 12
iOS 13
Android 8 (Oreo)
Android 9 (Pie)
Android 10 (Queen Cake)

Supported Databases

SQL Database
MySQL Server 8.0 (mysql-connector-java-8.0.24)
MS SQL Server 2016 (v13)
MS SQL Server 2017 (v14)
MS SQL Server 2019 (v15)
SQL Database
Oracle 12c. 1/2
Oracle 18c
Oracle 19c LTS
Niagara SystemDB
Orient v3

Supported Browsers

Browser
Chrome (v85)
Firefox (v81)
Microsoft Edge (v85)
Web Launcher
Mobile Browser
Safari on iOS (v13.1)
Chrome on Android (v85)

New Additions Shown in Bold

UPDATED PHOTOID BADGE MANAGEMENT

HTML5 Photo Capture

- Photo Capture, Crop, Save

Card Template Management and Printing

- Updated card template management and printing that eliminates java dependencies

WEBS N4.11
SUMMARY REVIEW

WEBS N4: ALWAYS EVOLVING – 4.11

WEBs N4.11 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