Niagara 4

Features, compatibility & licensing

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Topics

- Niagara 4 overview
- Niagara AX-Niagara 4 compatibility
- Software maintenance (SMA)
- Licensing

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niagara4

- Cutting-edge user interface
- Find, visualize data to maximize building efficiency
- Shorter integration time
- Easily create secure systems
- Improved developer experience

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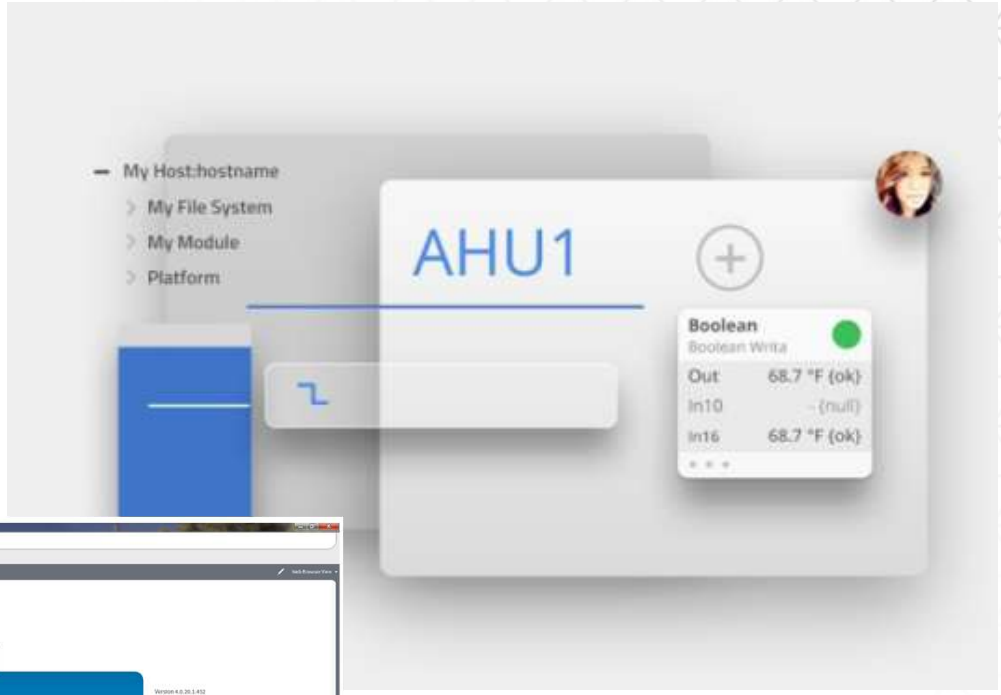
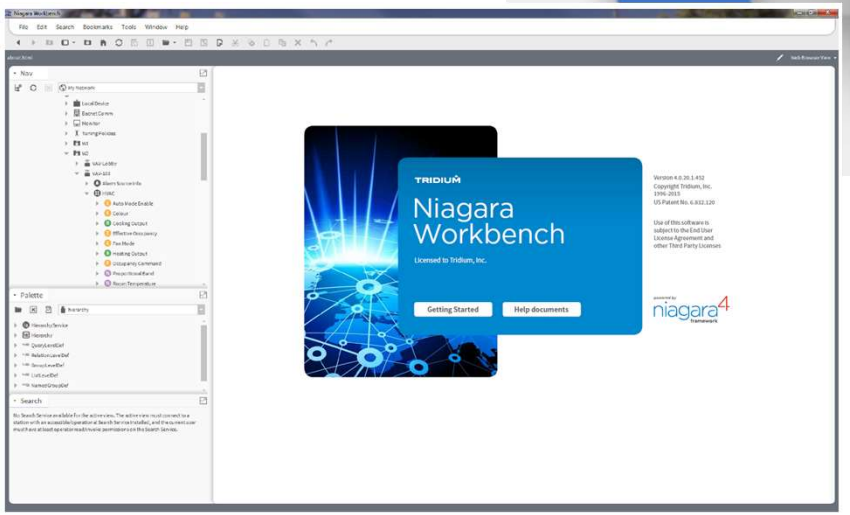
User interface

UX framework

- Modern design language
  - Clean and crisp
  - Deliberate use of color
- HTML5 technology
  - Common end user views
  - No browser plug-in required





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User interface

Mobile

- Common design language
- Unified experience between desktop, tablet and phone

- HTML5 technology
  No native app required

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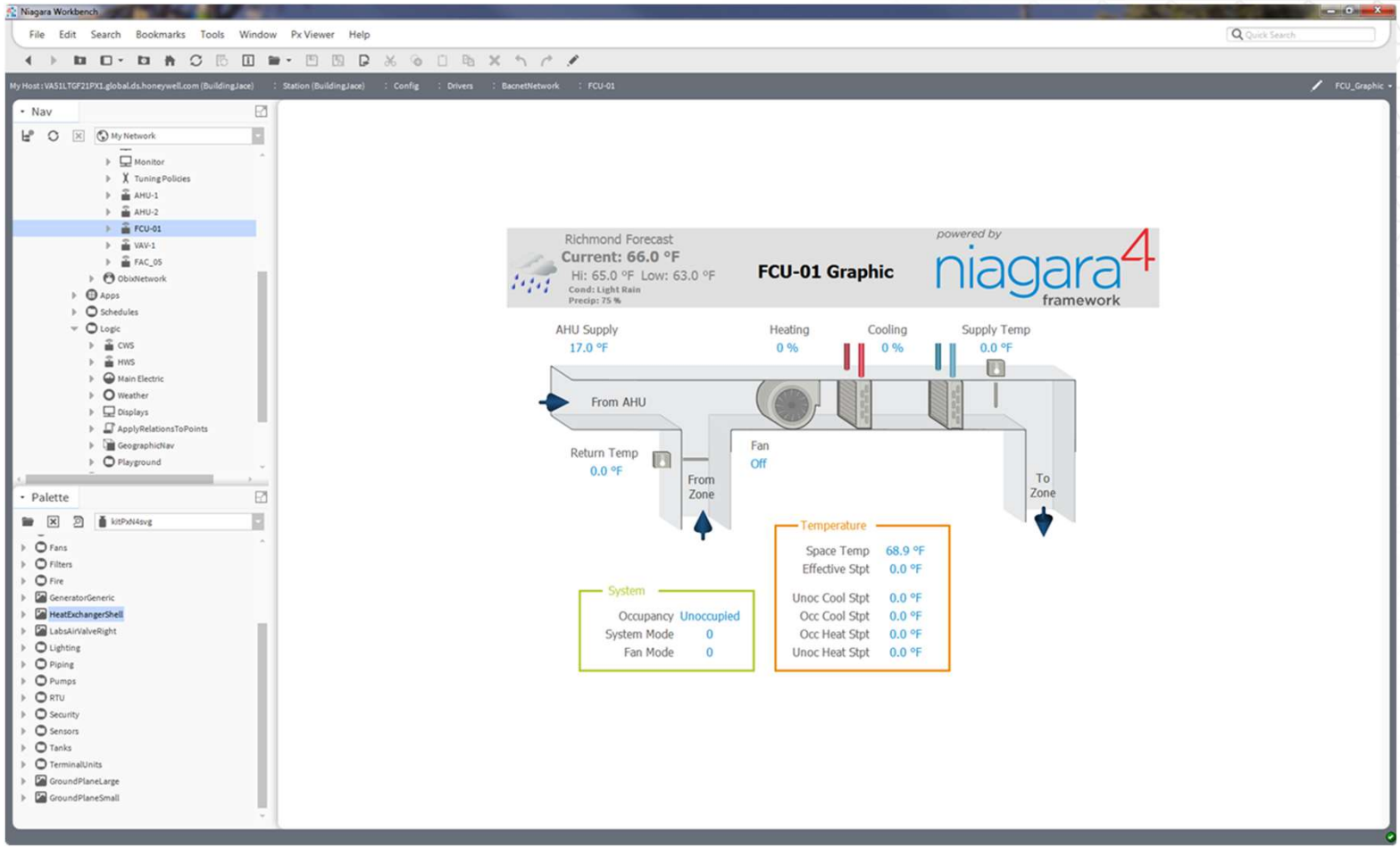
User interface

SVG Graphics Library



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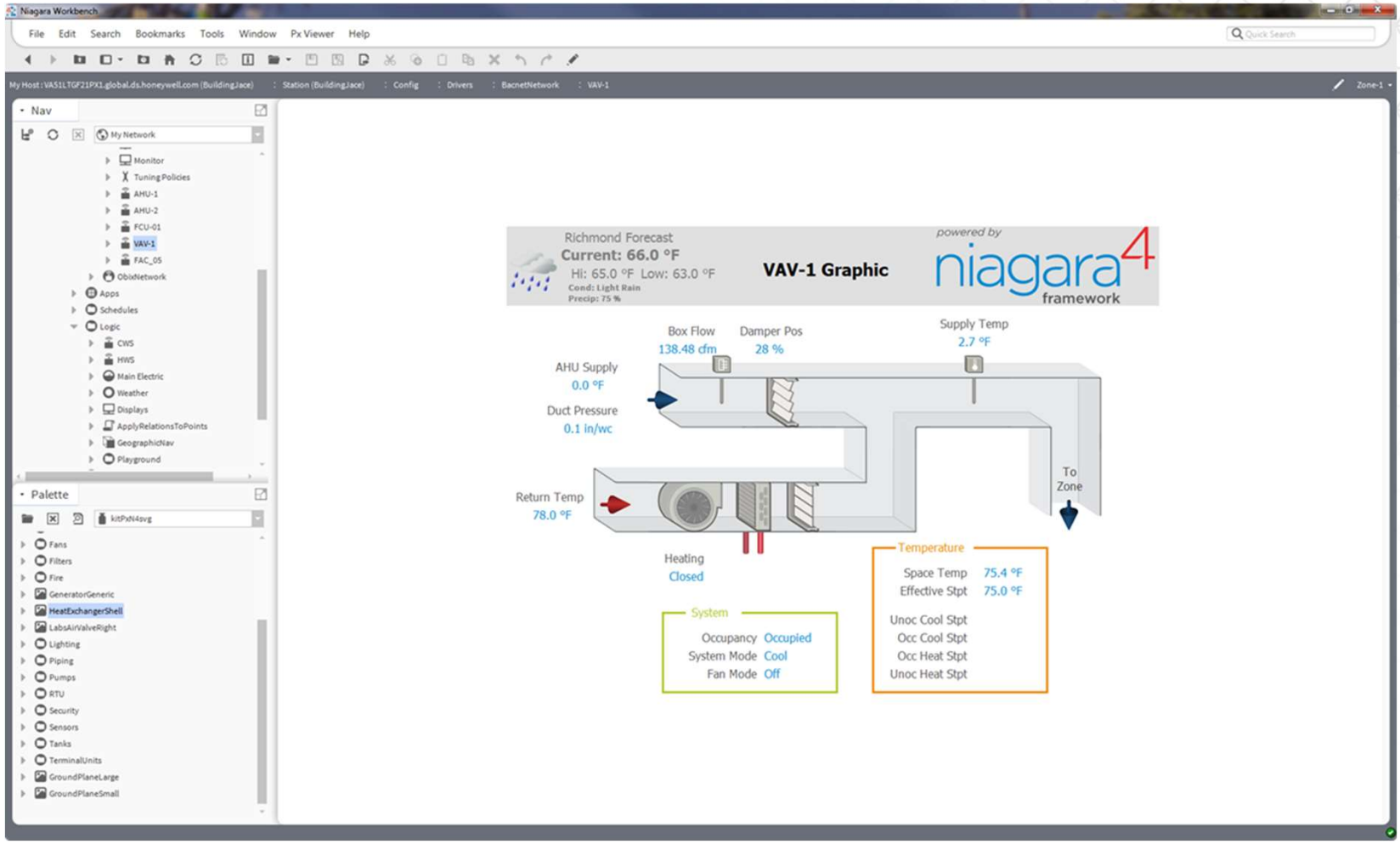
User interface

SVG Graphics Library



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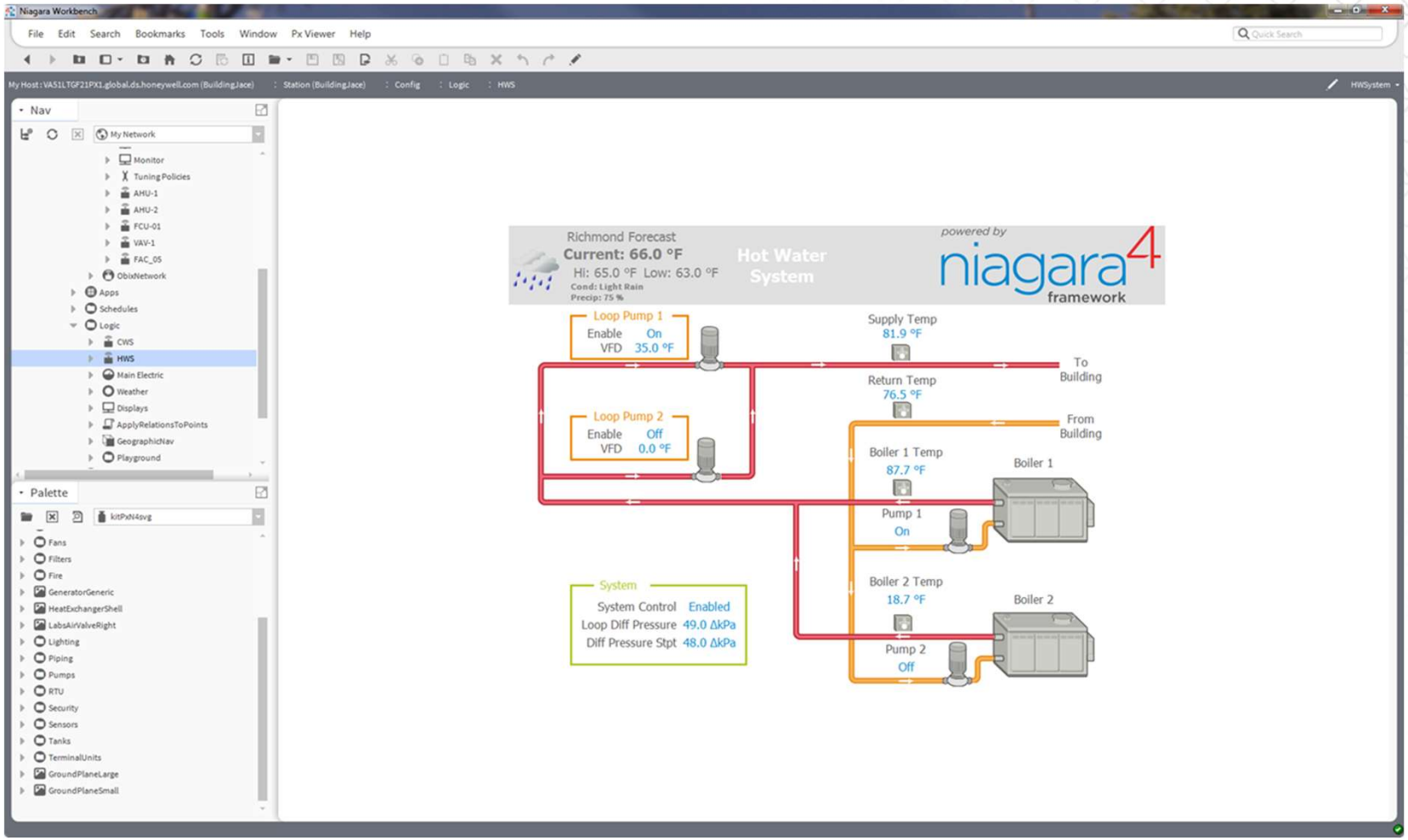
User interface

SVG Graphics Library



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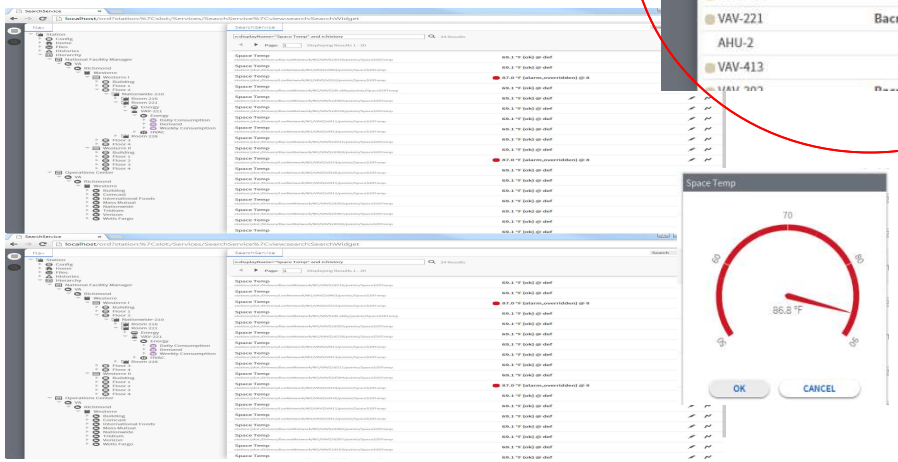
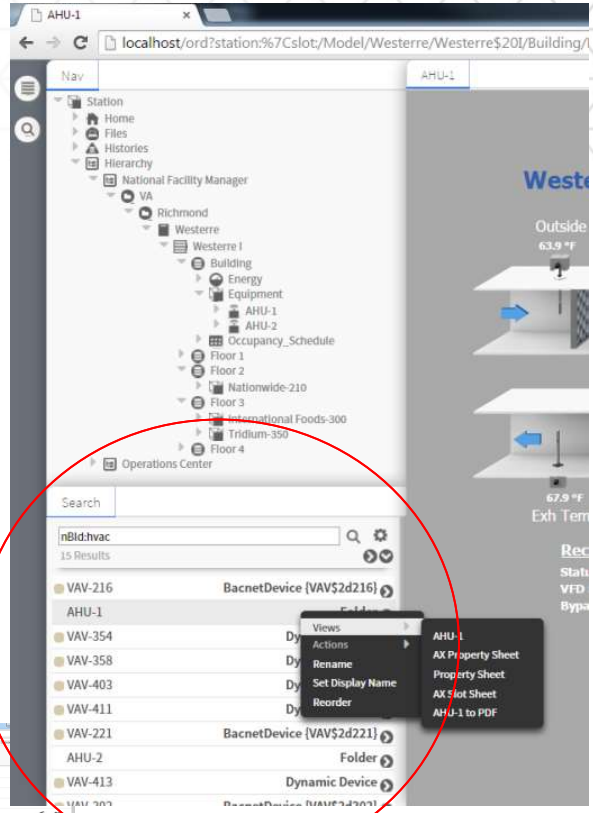
Find and visualize data

Tagging and search

- Quickly search for data using tags
- Drag ‘n’ drop data into other views
- Supports any dictionary
  - Niagara entities implicitly tagged
  - Multiple dictionaries allowed
  - Create custom dictionaries
- Supports relationships between tags





Niagara search pane

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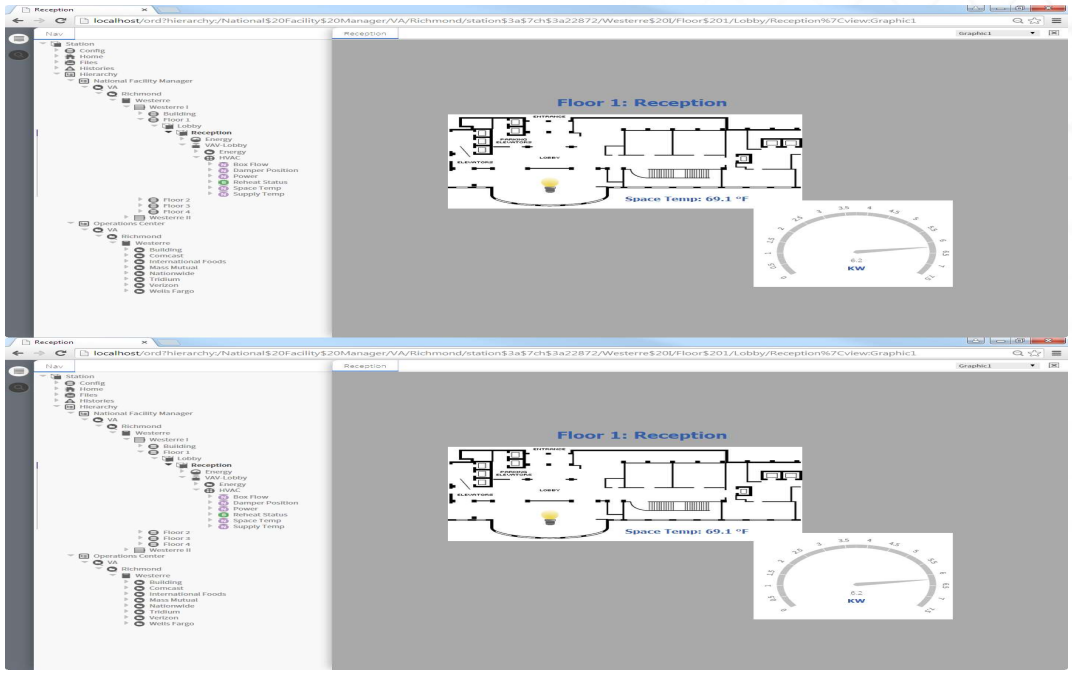
Find and visualize data

Navigation

- Navigation hierarchy based on tags
  - Tag relationships define structure
  - Multiple hierarchies to match user role
- Devices / points auto-populate



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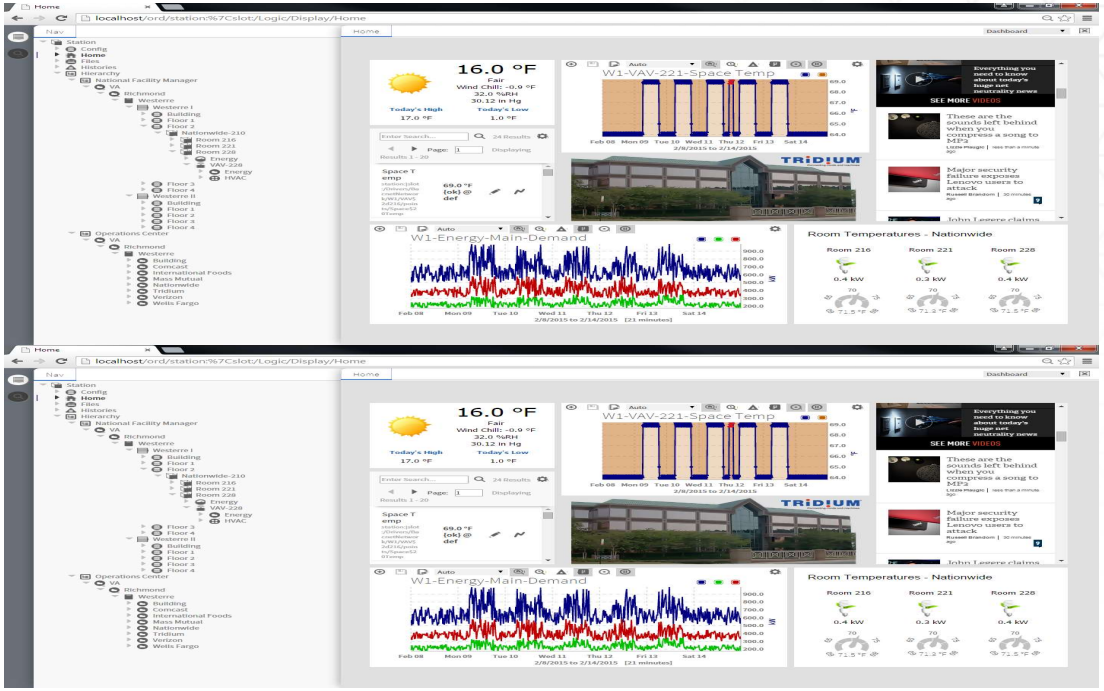
Find and visualize data

Dashboards

- Drag ‘n’ drop data onto dashboard in real time
- Supports web browser as a widget
- Users can save custom dashboards to view later



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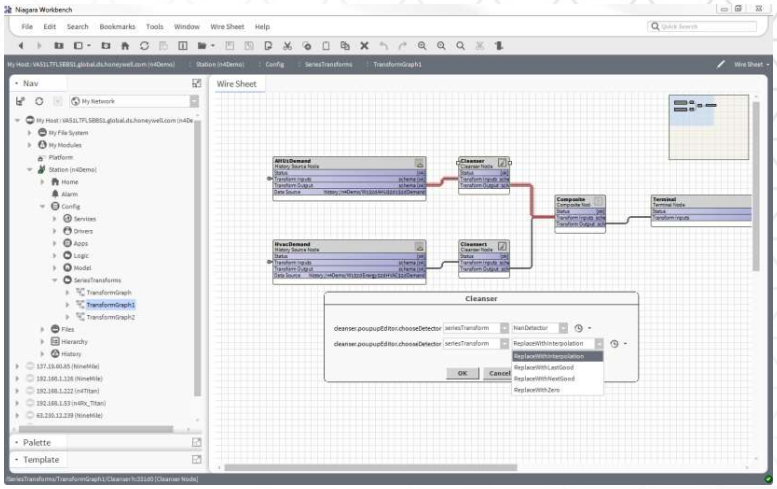
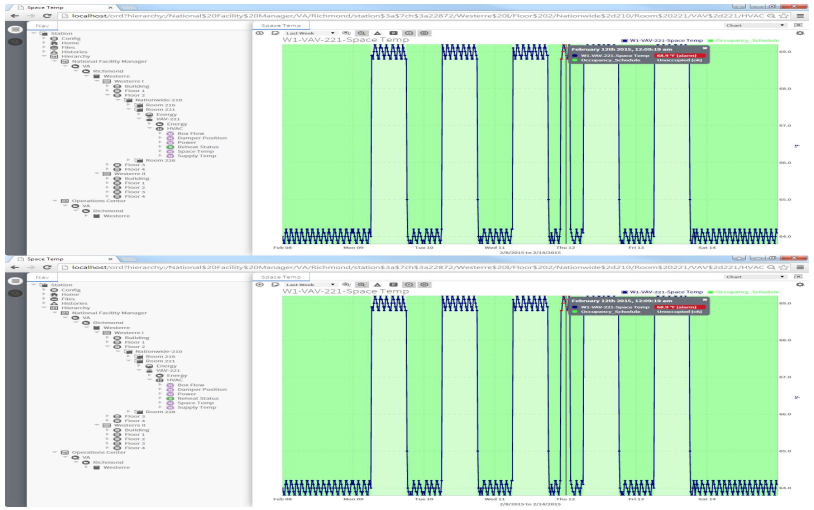
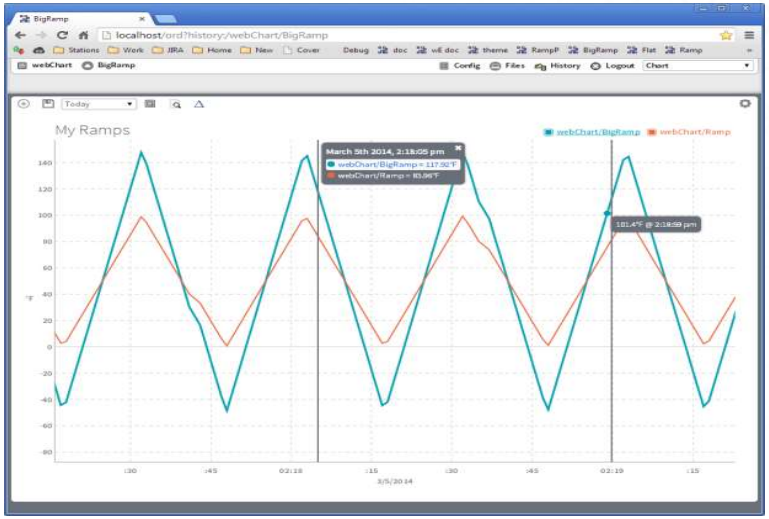
Find and visualize data

Charts

- Drag ‘n’ drop data onto charts
- Easily compare multiple points
- Point status visible on chart
- Save charts for later use
- Data cleanser for handling bad data







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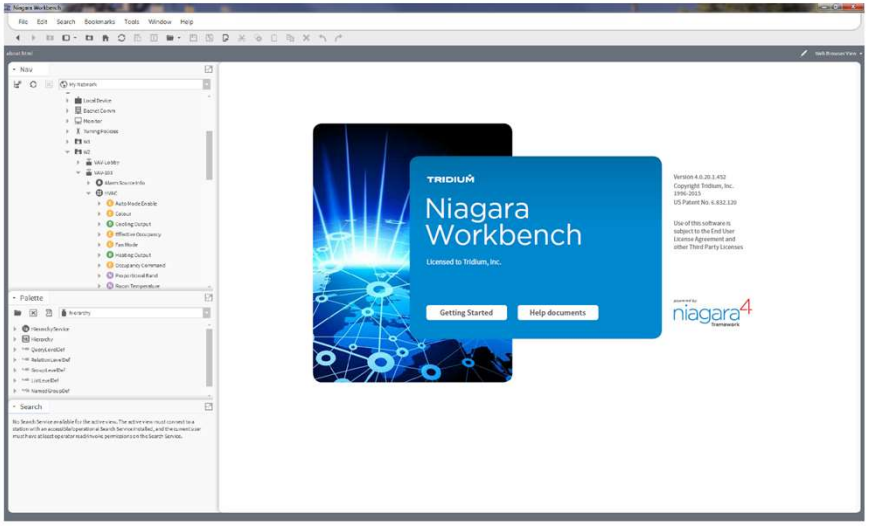
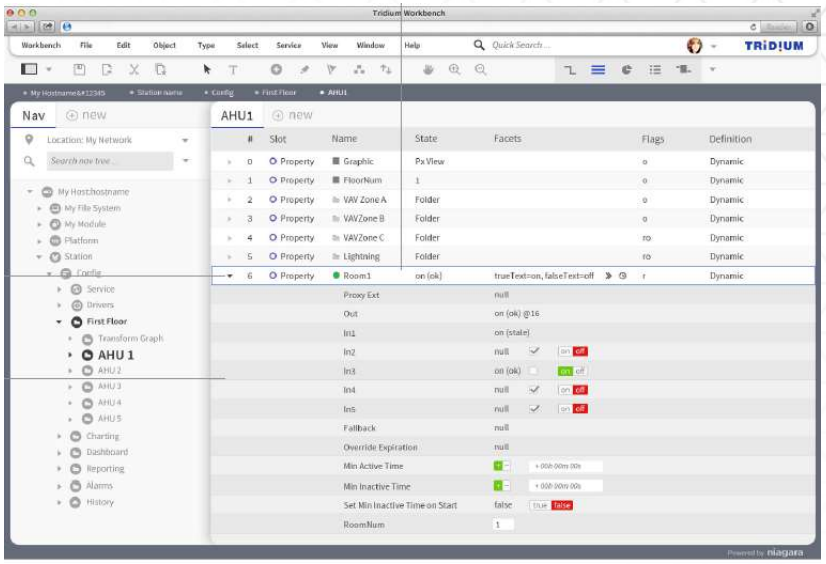
Faster integrations

Workbench improvements

- Re-designed property sheet
- Integrated search
- Fewer clicks; more intuitive dialogs
- Important data stands out





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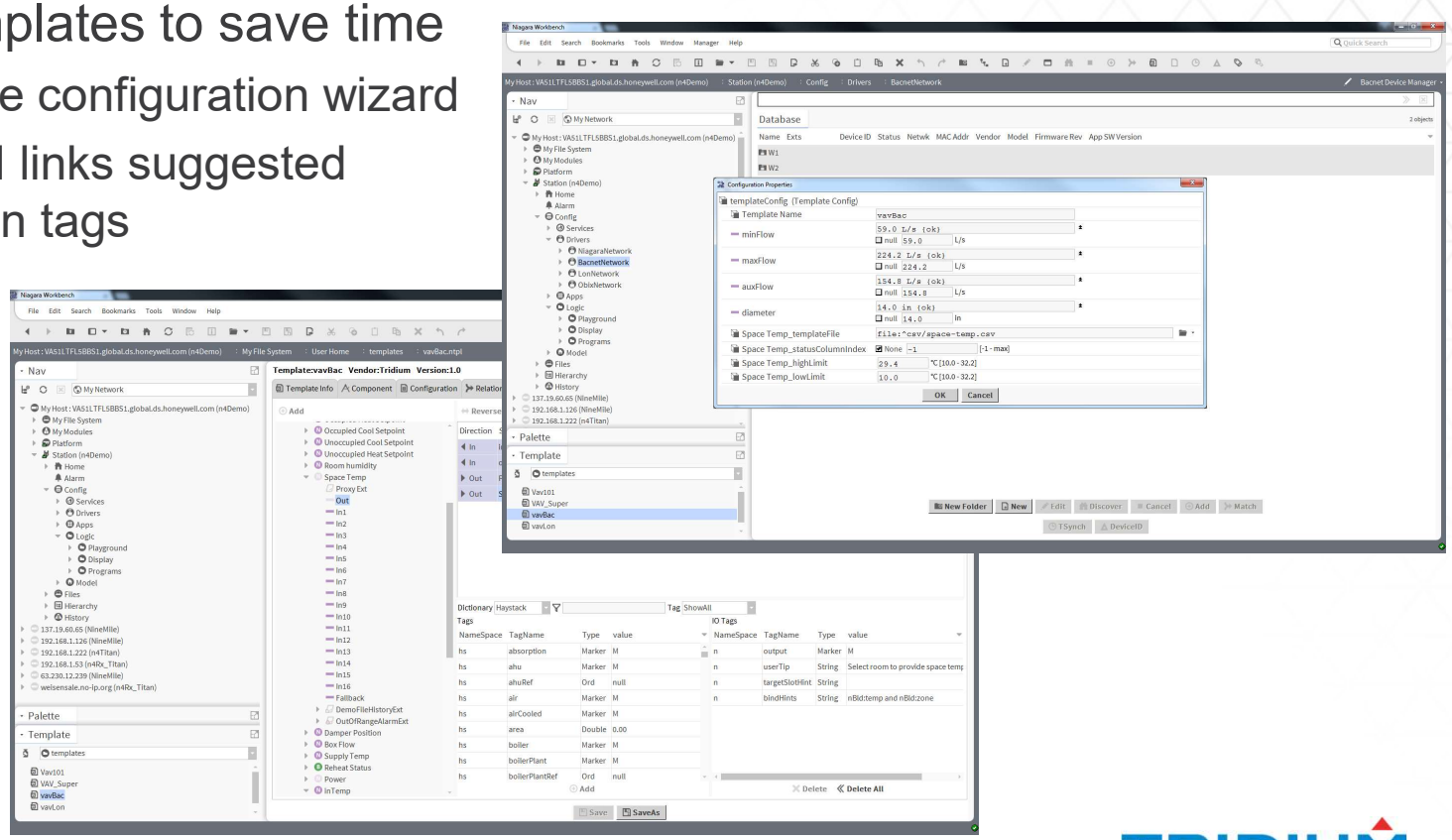
Faster integrations

Templates

- Create templates for common integrations
  - Tags, graphics and logic can be embedded in templates
- Deploy templates to save time
  - Template configuration wizard
  - External links suggested based on tags



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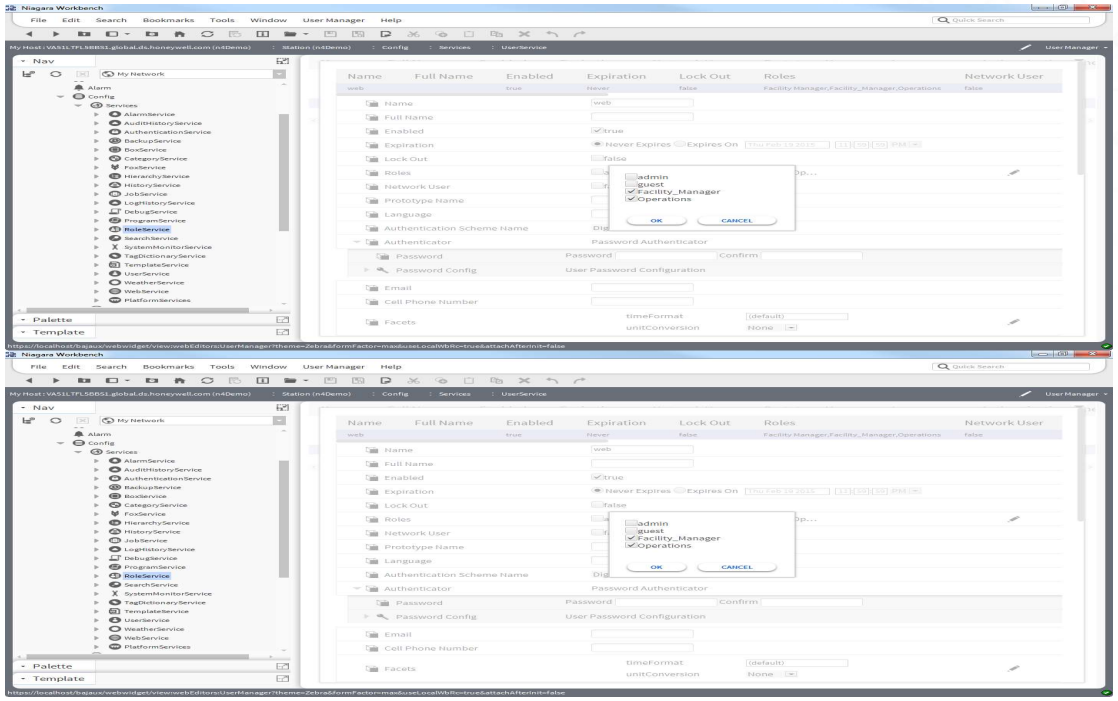
Security: new features

- Tridium module code signing
  - Verify module author and that code hasn't been altered or corrupted
- Role-based access control
  - Manage user roles and permissions with tags



Extensible platform

Developer support

- UX framework based on open web technology
  - HTML5, CSS3, JSON, etc.
  - BajaScript v2.0
- Improved public APIs
- Historian DB API
- Queryable tags enables app community
- Improved documentation and examples:

  https://www.niagara-community.com/articles/Product_Guide/Developer-Program-Services-Home

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Niagara 4 Features Summary

UI / visualization enhancements	• Move away from JAVA applet – convert key end user views • Hierarchical navigation (via tags) • New UX framework (HTML5) and design language • Workbench workflow improvements • Improve UI developer experience (BajaScript v2.0)
Reporting	• Customizable dashboards • Data cleansing capabilities – Series transform improvements • Advanced charting – Line and bar charts • Local Niagara station search/queries
Security	• Role-based access control • Code signing
Device management	• Device templating • Tagging
Licensing	• Capacity licensing
JACE® 8000 support	• WiFi • USB backup and restore
Niagara AX migration	• Station migration tool

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Niagara AX-Niagara 4 compatibility

- Network compatibility
  - Systems can have mix of Niagara AX and Niagara 4 JACE® controllers
  - Niagara network will work between Niagara AX and Niagara 4
    - v3.6u4, v3.7u1, v3.8R required
- Station conversion tool
  - Tridium will offer tool to convert Niagara AX stations to Niagara 4 stations
  - 3rd party modules can be converted when vendors provide Niagara 4 versions of their content
  - Converted stations may not work without updated 3rd party modules
- Developer APIs
  - Rare opportunity to make breaking changes to Niagara APIs
  - Developers will have to re-compile/re-factor their modules for Niagara 4
  - Most modules will only require minor re-factor for developers
  - N-driver driver framework supported – older driver frameworks deprecated
- Hardware
  - Runs on any JACE w/ hotspot VM (J3E, J6, J6E, J7)
  - Runs on the JACE 8000

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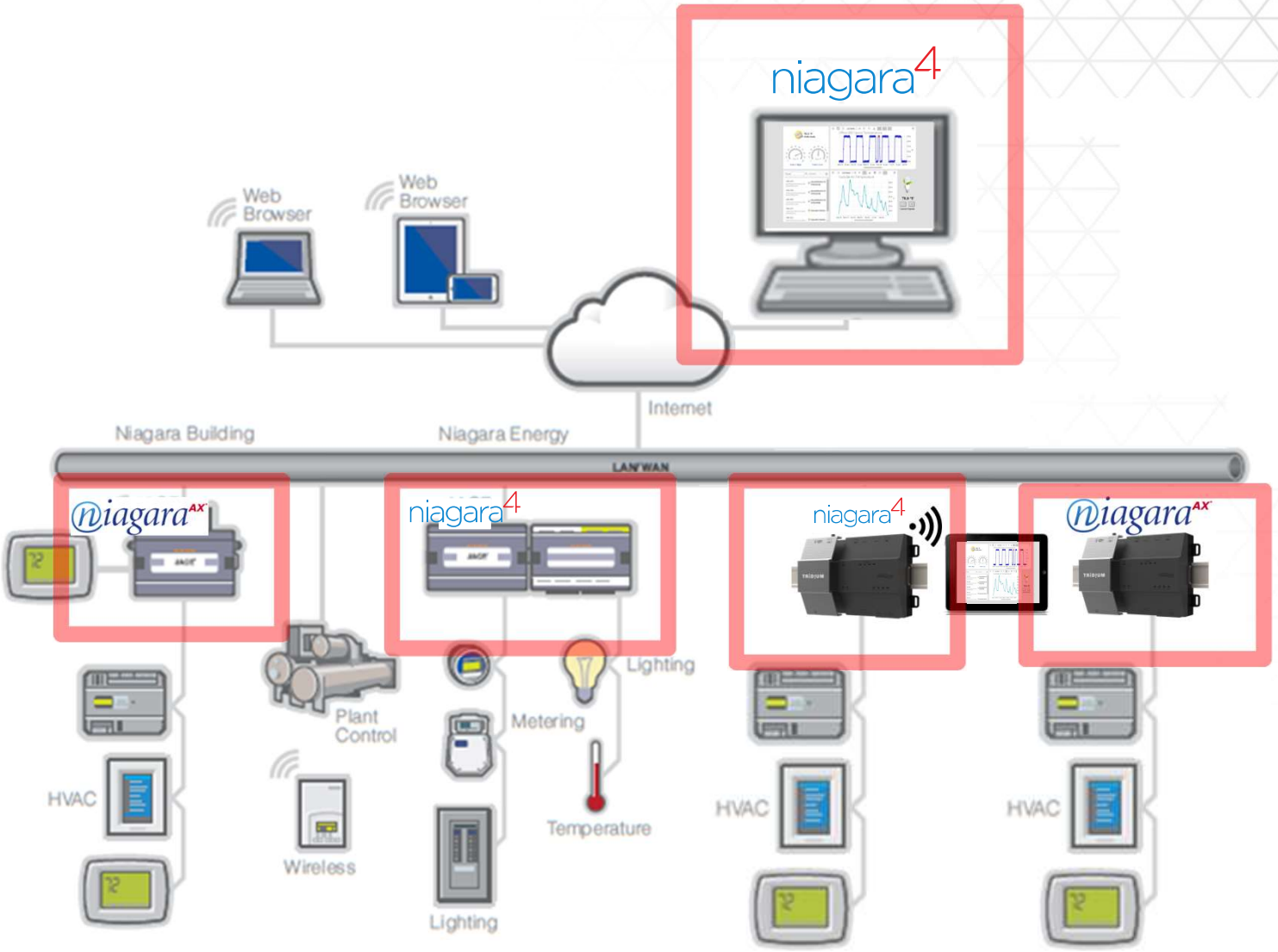
Niagara AX to Niagara 4 upgrade path



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Software maintenance

Program summary

- 18 months included with every license (additional years can also be purchased up front)
- Gap charges apply if SMA purchases after expiration (5-year max)
- All update builds, patches and upgrades are provided as part of SMA

Value propositions

- Many end users explicitly ask for a maintenance program to reduce risk
- Distributors no longer worry about out-of-date versions sitting in stock
- System integrators can add SMA to service programs – additional value

Support period for Niagara AX

- Standard release: 4 years from release
- Long-term release: 7 years from release
- Niagara AX v3.8 is designated a long-term release
- Tech support available until product EOL

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Simple capacity-based licensing

Niagara AX portfolio:
3 hardware platforms

JACE 7
(~200 devices)

JACE 6E+Mem
(~80 dev)

JACE 6E
(~40 dev)

Software license

JACE 3E+Mem
(~20 dev)

JACE 3E
(~10 dev)

Software license

Drivers:
Ad hoc

BACnet | LON
Modbus | KNX
SNMP | CCN

Niagara 4 portfolio:
1 hardware platform: JACE® 8000

Software license

8200
(200 devices)

8100
(100 devices)

8025
(25 devices)

8010
(10 devices)

8005
(5 devices)

Drivers:
Standard included
Special – Ad hoc

BACnet | LON
Modbus | KNX
SNMP | CCN

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Simple capacity-based licensing

Niagara AX portfolio:
Ad hoc drivers

Supervisor-UNL
Supervisor-100
Supervisor-3

JACES managed

SoftJace

WorkBench

Niagara 4 portfolio:
Consistent capacity packs

JACES managed

Supervisor-UNL
Supervisor-100
Supervisor-10
Supervisor-3
Supervisor-2
Supervisor-1
Supervisor-0

Add JACEs or devices as needed

Devices managed

Drivers:
Ad hoc
500pt packs

BACnet | LON
Modbus | KNX
SNMP | DB drivers

Drivers:
Standard IP included
Special IP – Ad hoc

BACnet | LON
Modbus | KNX
SNMP | DB drivers

10, 25, 50, 100 device packs (50pts / device)

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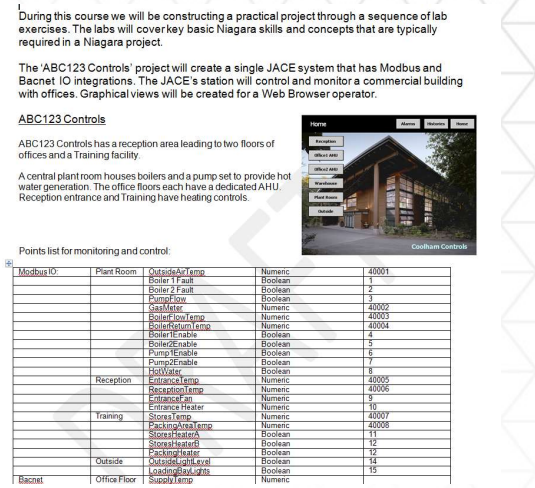
Niagara 4 Certification Training

Certification Training is a prerequisite for purchasing Niagara 4

- Several options based on credentials and role within the organization:
  - **Niagara AX certified**: Niagara 4 Cross-Over Web-based training and certification course; self-paced, completed online anytime, anywhere (Part # TRN-DLS-N4-WBT)
  - **New users or not certified:** Niagara 4 Technical Certification Program (TCP); 5-day, instructor-led program offered worldwide this fall (Part # TRN-CRS-N4-TCP)
  - **Coming soon:** Niagara 4 Developer Training and Certification for those who are Niagara AX certified. Program focuses on new, improved capabilities for developing on Niagara 4. Additionally, Developer Training for new developers.


During this course we will be constructing a practical project through a sequence of lab exercises. The labs will cover key basic Niagara skills and concepts that are typically required in a Niagara project.

The 'ABC123 Controls' project will create a single JACE system that has Modbus and Bacnet IO integrations. The JACE's station will control and monitor a commercial building with offices. Graphical views will be created for a Web Browser operator.

ABC123 Controls

ABC123 Controls has a reception area leading to two floors of offices and a Training facility.

A central plant room houses boilers and a pump set to provide hot water generation. The office floors each have a dedicated AHU. Reception entrance and Training have heating controls.

Points list for monitoring and control:

Modbus IO:	Plant Room	OutsideAirTemp	Numeric	40001
		Boiler1Fault	Boolean	1
		Boiler2Fault	Boolean	2
		PumpFlow	Boolean	3
		GasMeter	Numeric	40002
		BoilerFlowTemp	Numeric	40003
		BoilerReturnTemp	Numeric	40004
		Boiler1Enable	Boolean	4
		Boiler2Enable	Boolean	5
		Pump1Enable	Boolean	6
		Pump2Enable	Boolean	7
		HotWater	Boolean	8
	Reception	EntranceTemp	Numeric	40005
		ReceptionTemp	Numeric	40006
		EntranceFan	Numeric	9
		Entrance Heater	Numeric	10
	Training	StoresTemp	Numeric	40007
		PackingAreaTemp	Numeric	40008
		StoresHeaterA	Boolean	11
		StoresHeaterB	Boolean	12
		PackingHeater	Boolean	12
	Outside	OutsideLightLevel	Boolean	14
		LoadingBayLights	Boolean	15
Bacnet	Office Floor	SupplyTemp	Numeric	

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