# our products
## are open 4
# innovation

**VYKON**
by **TRIDIUM**

# connecting minds and machines™

niagara
framework

The Niagara Framework has fundamentally changed the way devices and systems connect to people—and the ways people can control and optimize those machines.

With over a million instances worldwide, Niagara is quickly becoming the operating system of the Internet of Things. Its open API, open distribution business model and open protocol support give you the freedom to choose how you work, what you build and with whom you partner. Niagara enables you to connect and control devices, while normalizing, visualizing and analyzing data from nearly anywhere or anything.

From buildings and data centers to manufacturing systems and smart cities, the Niagara Framework improves strategic decision-making, allowing for optimized performance and cost reductions that can help businesses be more competitive and more profitable. With Niagara 4, the JACE® controller, VEC 10 and third-party devices 'Powered by Niagara', the opportunity to achieve operational excellence is even greater than before.

*Niagara's truly open environment harnesses the power of the Internet of Things in ways never before imagined or possible*

# open 4
## performance

Niagara 4 continues the legacy of the Niagara Framework® in exciting ways. It's less reliant on browser plug-ins, faster and easier to use. Now end users can directly access, analyze and act on a wide range of operational data. A truly open framework, Niagara 4 delivers a variety of notable improvements to help businesses take full advantage of the Internet of Things, including advanced visualization and new search, security and navigation tools.

**Niagara 4 is less reliant on browser plug-ins, featuring an intuitive HTML5 interface**

## INTUITIVE USER INTERFACE

Niagara 4 features a bold and intuitive new interface. Modern and easy to use, the platform utilizes HTML5 to provide an array of rich features. Our powerful new UI framework makes the user experience simpler and more robust, giving users maximum control of their data and decisions.

The optimized workflow allows users to find and visualize data points quickly based on a powerful tagging system. New features include a built-in search function, customizable charting and visualization, role-based security, real-time troubleshooting and rapid navigation.

Niagara 4's use of HTML5 provides a user interface that makes it easier for systems integrators to create and maintain customized views for end users.
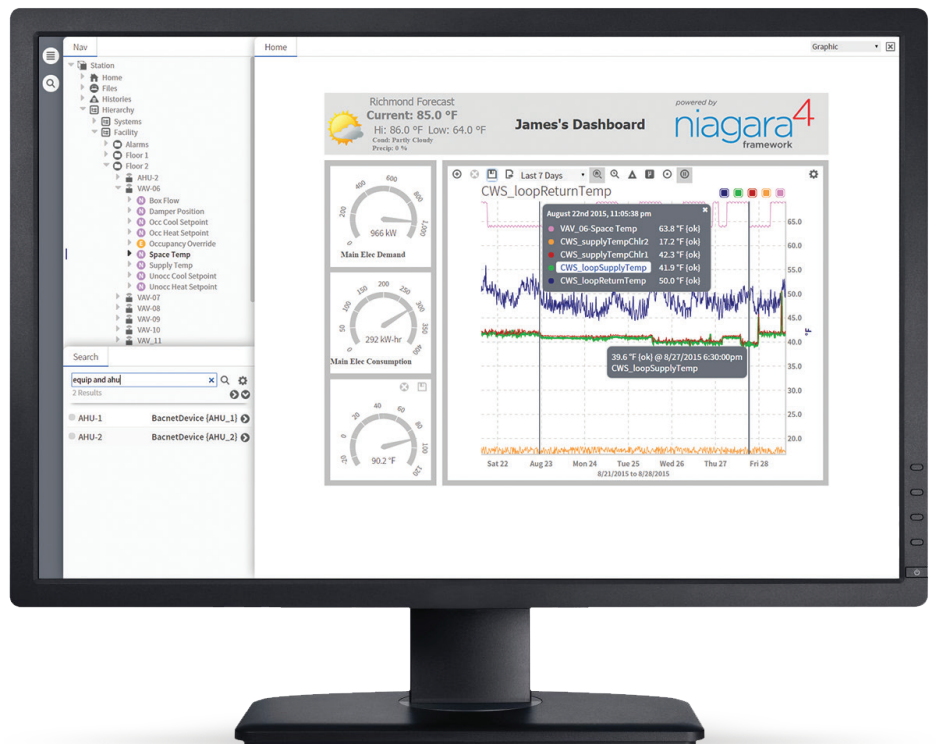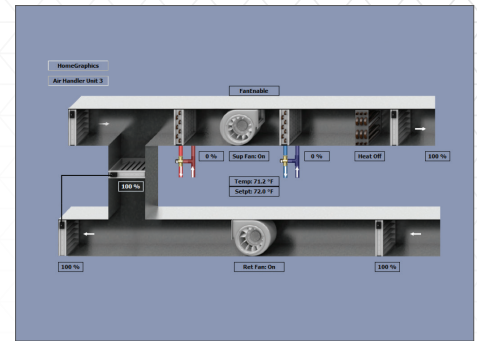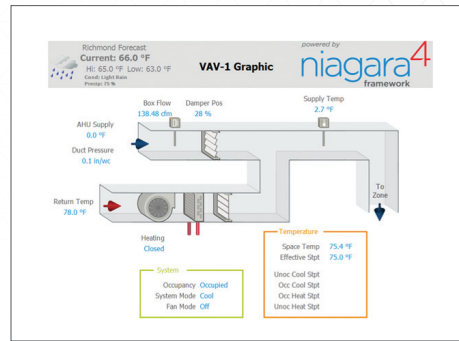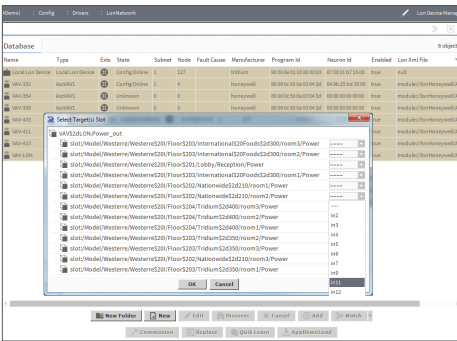
## MORE DATA AT YOUR FINGERTIPS

Integrators can provide an interface that empowers users to do more on their own. Because devices, systems and data points can be tagged in Niagara 4, users can easily conduct a station-wide search of the most important elements in their operation.

This one-tool solution utilizes tag hierarchies to automatically integrate all data in a navigation tree. Using a standardized dictionary of tagged elements, users choose which points to monitor directly. Users can utilize the standardized dictionary to drive consistency in their building automation systems.

With a simple point-and-click or drag-and-drop, users can create customized charts, allowing them to instantly find and display critical information from their desktop, tablet or mobile device. Systems integrators no longer necessarily need to re-engineer new dashboards each time a customer requirement changes. Building real-time dashboards is straightforward, allows for immediate troubleshooting and quickly displays data with attractive visualizations.

## POWERFUL SECURITY

Niagara 4 takes a "defense-in-depth" approach to Internet of Things security. Building on the security of previous Niagara versions, Niagara 4 is secure by default. Authentication requires users to choose strong credentials, and both data in motion and sensitive data at rest are encrypted. Using Role-Based Access Control (RBAC) Niagara 4 makes user permissions completely configurable and easy to assign. Niagara 4 can also be integrated with existing enterprise identity and access management systems via common protocols, such as LDAP and SAML. Niagara 4 also enforces third party module signing, eliminating the risk that modules may have been tampered with or come from an untrustworthy source. A built-in Security Dashboard provides a comprehensive and actionable view of the security posture of your Niagara environment. All user actions and security-related events are recorded in Niagara's security log for traceability.

## EASIER INTEGRATION

Niagara 4's new templating feature enables tags to be applied to devices quickly, and allows applications to be prebuilt against a set of standardized templates which then can be quickly created and reused. In other words, once a template is made, it can be redeployed as often as needed in other instances. The result is not only a more functional design for users but also reduced integration time across the board.

## FASTER, MORE POWERFUL DEVELOPMENT

Developers will find improved documentation, a rich open API library, BajaScript 2.0, semantic data modeling via tags and other ready-made tools to greatly speed and support development. In addition, the need for specialized training in the Niagara user interface is reduced—anyone familiar with open Web development can now create a custom UI in Niagara. Niagara 4's new features and public APIs make it easier to extend, develop and build upon the framework.

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*Niagara 4*

# key features

- **Modern UX framework and design language (HTML5)**

- **End users are able to easily customize dashboards**

- **Advanced charting and visualization**

- **Data tagging**

- **Tag-based navigation**

- **Device and application templating**

- **Data cleansing capabilities**

- **Niagara station search**

- **Workbench workflow improvements**

- **Role-Based Access Control (RBAC)**

- **Pluggable authentication schemes**

- **Improved UI developer experience (BajaScript 2.0)**

- **Station templating**

- **Niagara AX to Niagara 4 station migration tool**

- **Tag based graphics**

- **Security Dashboard**

- **Single Sign On**

- **Provisioning to operate on multiple Niagara stations simultaneously**

- **Single tool to program and deploy JACE, Edge, and Supervisors**

# a modular approach 4
# global design

Optimized for Niagara 4, the JACE controller features a global design that functions with legacy systems and has the ability to scale for future needs.

## EFFICIENT GLOBAL DESIGN

The modular design of the JACE controller makes it easy to install, integrate and deploy. Tool-less installation with expansion capability reduces installation complexity and improves flexibility. Systems integrators can focus on engineering solutions, not assembling components. And their lives will be simplified with a global power supply and improved access to standard enclosures.

## JACE 9000 INCREASED PERFORMANCE

With a quad core processor and double storage and ram, the JACE 9000 offers increased performance and capacity with faster bootup and station load time. The JACE 9000 is fully compatible with existing expansion models and the same footprint as past models allows for seamless replacement for future updates. The JACE 9000 will be offered with and without the wireless interface to support your deployment needs.

## OPTIMIZED FOR NIAGARA 4

The JACE controller leverages the exciting new features of Niagara 4. It adds to the enhanced user experience, maximizing Niagara 4's key advantages: pure Web interface based on HTML5 with HTML5 views, responsive UI, charting and data visualization, a common design language, better reporting, robust security and improved device management.

### *JACE Controller*
# key features

- Powerful Niagara 4 hardware platform with easy software upgrade capability

- Modular hardware design for fast and easy installation

- Expandable with up to four option modules

- 24VAC/DC—standard global power supply

- Standard open drivers included

- Easy to select the right capacity license

- Intuitive user interface

- Digitally signed code, validated at run-time

- Security Dashboard provides actionable view into security posture

- Configurable security mechanisms for attack prevention (lockouts, password strengths, etc.).

- JACE 9000: Enhanced performance with quad core CPU and 64-bit operating system


JACE 8000


JACE 9000

**With simple configuration, tool-less installation, low-cost integration and high-powered performance, the JACE controller is a dramatic evolution in connecting and controlling devices worldwide.**

# seamless
# conversion

VYKON has engineered Niagara 4 and the JACE® controller
to be easy to add to, or upgrade from, your current Niagara-based systems.

Our native Niagara Fox protocol will work between a legacy Niagara install and a Niagara 4 install enabling a staged upgrade process to provide as little down time as possible.

For those making the conversion to our most up-to-date products, VYKON offers a station conversion tool that will modify legacy Niagara station to a Niagara 4 station.

Please note, converted stations will require third-party vendors to provide updated modules for Niagara 4 versions of their offering.

## *Legacy Niagara*
## compatibility summary

- Fox network compatibility between Niagara AX and Niagara 4

- Station conversion tool to convert Niagara AX stations to Niagara 4 stations (.bog files)

- JACE 8000 will run all versions of Niagara 4

- JACE 9000 will run Niagara 4.13 or higher

- Public APIs

# TRIDIUM

## open *4*
## the internet of things

The reach of the Niagara Framework® is global—and growing daily. Our pioneering innovations have created a large and active community of innovative developers, integrators, consultants, manufacturers, resellers and end users who understand that Niagara is an essential part of the Internet of Things.

That's the power of open, and the future of innovation.

Niagara 4 and the VEC 10 controller are available through a wide variety of original equipment manufacturers. Our open distribution business model and open protocol support allow a vendor-neutral application compatible with devices and systems throughout the world.

To learn more about how to purchase, install and start using Niagara 4,, Niagara Edge 10, JACE 8000, JACE 9000, or if you are an original equipment manufacturer and would like to add them to your suite of offerings, please contact us.

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