

The cost to build
device-to-enterprise
solutions just went
down...

AXponentially

@niagara^{**AX**}

Application Development Made Smarter... Stronger... Faster

Niagara^{AX} Framework is Tridium's next generation software framework for building device-to-enterprise applications and Internet-enabled products. The Framework provides a unified development platform to easily build Internet-enabled products and software applications that control and manage diverse "smart" devices across an enterprise in real time. It makes application development smarter, stronger, faster... significantly reducing your costs.

Smarter applications that provide valuable information

Niagara^{AX}'s open, Java-based Framework creates a common environment that connects to almost any embedded device imaginable, regardless of manufacturer or communication protocol. The system then models the data and behavior of the devices into normalized software components, providing a seamless, uniform view to the enterprise via a wide variety of XML-based enterprise connectivity options and open API's.

Solution: Applications that access and control more devices.

Stronger tools that empower users

Niagara^{AX} includes a comprehensive, graphical toolset that enables non-programmers (domain experts) to build rich applications in a drag-and-drop environment. By wiring Niagara components together, developers build control strategies, alarming, and scheduling applications as well as browser-based displays and reports. And for programmers, Niagara provides extensive open APIs, allowing developers to extend the behavior of the platform and create their own unique products, applications, plug-ins, data views and business application logic.

Result: Application development made easy.

Faster time-to-market with Web-services applications

Niagara^{AX} reduces development time by merging automation, IT and Internet technologies in a single solution. The Framework builds in the resources you need to implement advanced Web-services applications - TCP/IP, HTTP, XML, SOAP, oBIX - so your applications can read data, send commands, respond to alarms, etc., in real time... anytime, anywhere from a standard Web browser.

Bottom Line: Web-enabled applications for real-time control, device management and M2M.

A Comprehensive Software Platform Designed to Create Smart Device Applications

Niagara^{AX} provides a single, unified development platform where "smart" devices access and connect to each other, enterprise systems and the Internet.

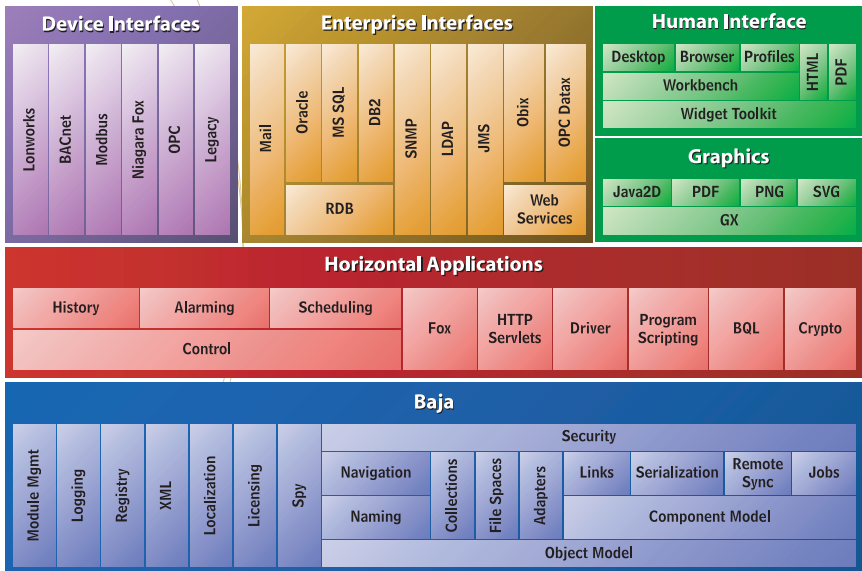
The AX-vantage

Integrating geographically dispersed, multi-vendor devices into interoperable applications is a time-consuming and expensive endeavor. With Niagara^{AX}, it's already done for you. Whether you are an OEM looking to create service-level applications and Internet-enabled products that meet customer demands, or a business seeking ways to improve the management and performance of your assets, Niagara is the pre-built solution that gets you there faster.

Pre-Built for Development Speed

- Protocol Agnostic
- Open APIs
- Vendor Neutral
- Web-enabled
- Integrated Toolset

Niagara^{AX} Software Stack



Benefits to Application Developers

- Move products to the Web
- Develop new service offerings
- Faster time-to-market for new products and services
- Increase functionality and value of existing systems
- Bid more projects
- Improve customer satisfaction
- Reach new markets

Benefits to End-Users

- Preserve existing system investments
- Manage systems in real time via the Internet
- Reduce operational costs
- Choose "best-of-breed" devices
- Select add-on applications from third-party suppliers
- Extend capabilities of existing systems

Comprehensive, Unified Development Environment

The Niagara^{AX} Framework provides a unified development environment across the entire solution stack – from Internet-enabled smart devices to enterprise-side applications. It starts by normalizing the data and behavior of the individual smart devices through a unique, patented component model. As a result, developers building end-to-end solutions become more productive by being able to work in the same code base and with the same tools across the entire product stack.

Distributed Architecture

Gone are the days when developers had to connect all of the data from devices back to a “server in the sky” to build Web-based applications. Niagara^{AX}’s architecture allows applications to be dispersed to multiple distributed computing devices that work cohesively as one system. And Niagara^{AX} is designed to support large-scale applications that run across large numbers of devices or sites.

Scalable

Niagara^{AX} is unique in its ability to scale for use on different platforms. Developers can deploy the Framework in low-cost embedded devices designed to be built into individual equipment systems, and can use it to build server-side applications. And for maximum flexibility at the enterprise level, Niagara can be used on a wide variety of hardware/OS platforms including Microsoft® Windows XP®, Linux™ and Solaris®.

Integrated Control Capability

Niagara^{AX} includes a comprehensive control engine to execute applications ranging from local-loop control to system-wide global strategies and sophisticated business logic. This built-in capability allows your applications to execute real-time control, process alarms, convey events back to the end-user and initiate real-time response across different systems.

Internet-Enabled

Support for Internet communications and Web services is infused throughout Niagara^{AX}, not added on. As a result, your business quickly can develop and deploy Web-enabled monitoring, control and service applications with a single toolset.

Extensible

Niagara^{AX} is highly flexible, enabling your developers to extend the capabilities of the platform without being dependent on Tridium as the supplier. Open APIs, extensive sample source code and comprehensive documentation provide developers with the means to create custom applications specific to their business/industry and even license their own proprietary developments.

Unifies the entire development environment

The AX-Factor – Unified Modeling of Diverse Systems and Data

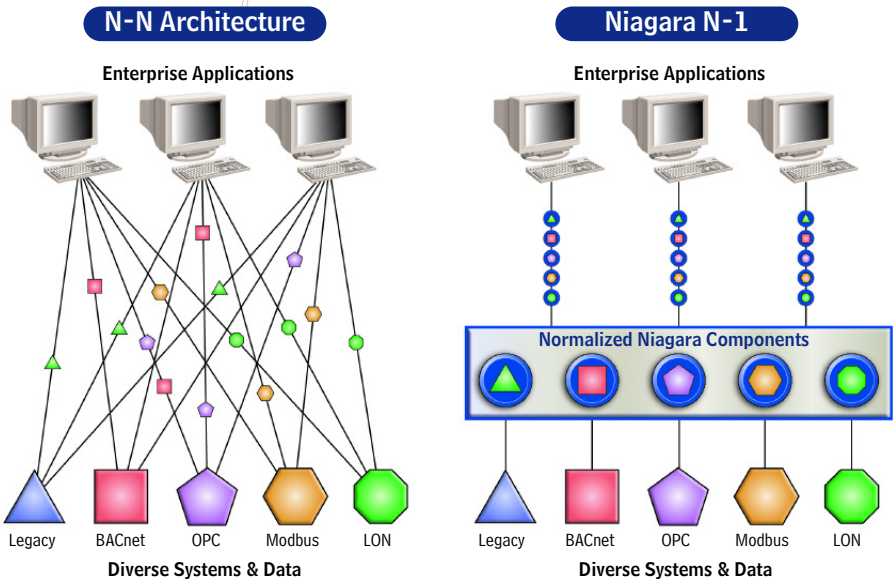
Niagara^{AX} introduces a new factor into the equation of device-related application development – the Niagara Component Model. Niagara components provide the foundation, which unifies the entire development process, allowing developers to learn and work in one consistent environment whether developing software to run on small embedded devices or large scale server-side applications.

Object Modeling

Niagara^{AX}'s component object model makes it possible for diverse connected systems to talk to each other and to the enterprise. The Framework takes the data elements from the various devices – inputs, outputs, setpoints, schedules, control parameters, etc. – and processes these items into normalized software components. This conversion normalizes the attributes of the devices (both data and behavior), creating a database of objects that talk to and work coherently with each other in real time.

An N-1 Architecture

By transforming the data from diverse external systems into normalized components, Niagara^{AX} creates an N-1 development architecture that provides substantial benefits over gateway-based integration methods that suffer the complexity of an N-N architecture. The benefit – any device or system normalized by Niagara immediately becomes compatible with any other system connected to the Framework, providing true inter-system interoperability and uniform data presentation to enterprise applications. As a result, developers don't have to spend any time creating, testing and revalidating multiple gateways.



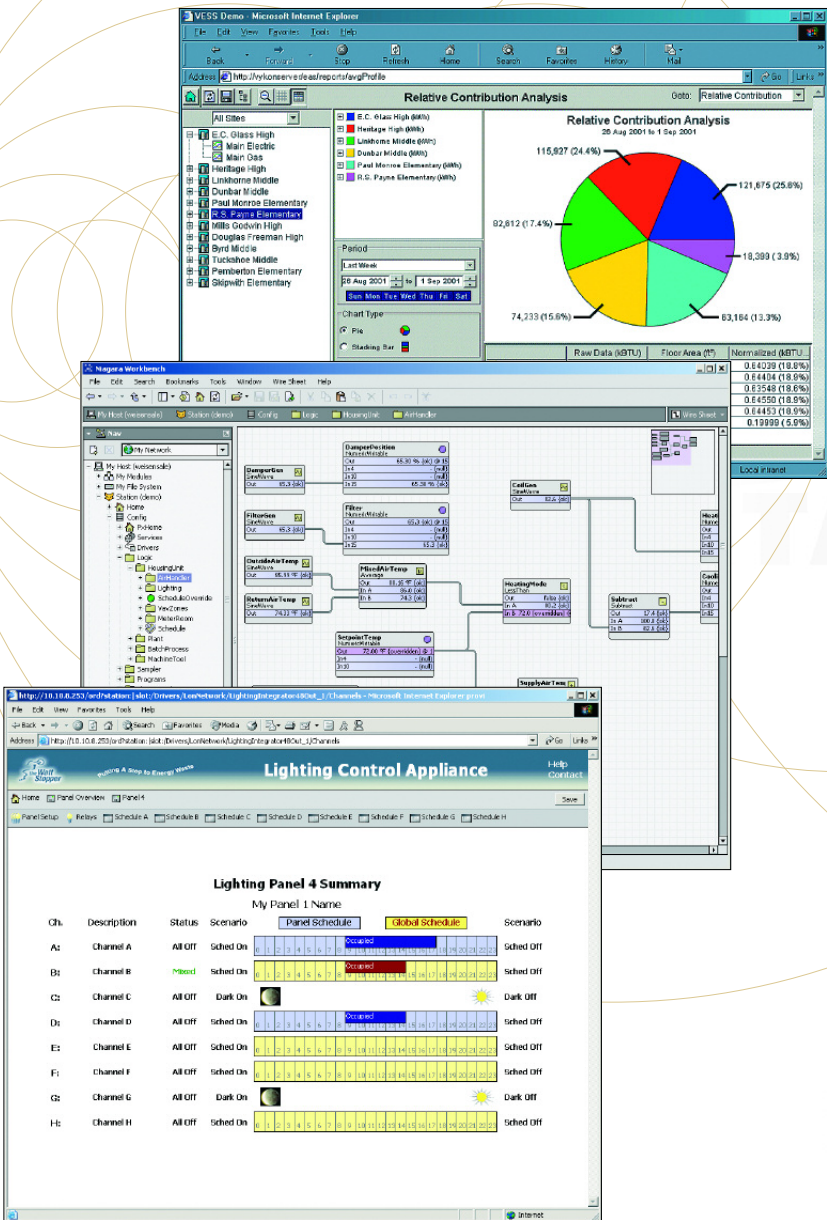
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Proven in Multiple Applications In Multiple Markets

Applications in AXtion

Niagara^{AX} is proven – adopted in multiple markets to create solutions for real-time monitoring, control and M2M applications. Money-saving... revenue producing applications like energy management, maintenance repair operations (MRO), service bureaus, total facilities management and “cradle-to-grave” product support services that enhance customer satisfaction, lower costs and generate new revenue streams.

- Energy Management Services
- Facilities Management
- Building Automation
- Security Automation
- Remote Asset Management
- Home/Residential Automation
- Service Bureau Operations
- Industrial Automation
- MRO
- Telecommunications



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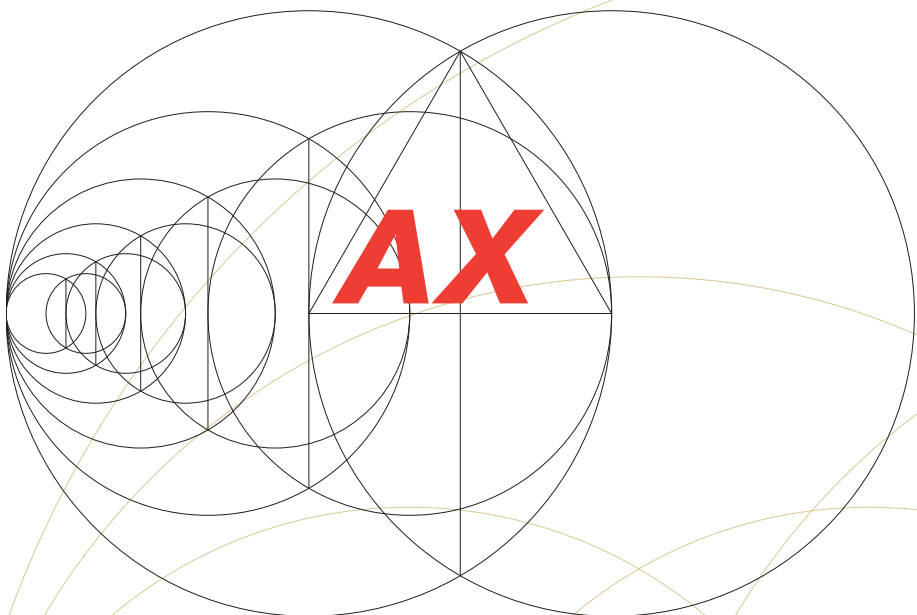
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