Opto 22 announces Node-RED on *groov* IIoT application development appliance at IoT Solutions World Congress @IOTSWC http://op22.co/2f9WuD4

See groov bridge the gap between existing industrial assets and infrastructure, and the digital world of cloud computing and information technology in Hall 1 Stand F725; Node-RED software development environment now included in the industrial HMI/dashboard/data logging groov® Box.

Temecula, CA - October 25, 2016 – Industrial automation manufacturer and Internet of Things application toolset provider Opto 22 announces immediate availability of the Node-RED development environment running on the *groov* Box industrial appliance, significantly decreasing IIoT application development time and complexity. Node-RED makes it easier to prototype, develop, and deploy applications for connecting physical assets to cloud applications and IT systems.

With the addition of the Node-RED development environment, *groov* is the ideal toolset for IIoT application developers. *groov* fuses together an industrially rugged hardware platform, data visualization for mobile and web clients, robust industrial automation protocol support including Modbus/TCP and OPC UA, and advanced data flow processing. Add these to its ability to connect multiple data sources including devices, databases, and third-party APIs (application program interfaces), and *groov* becomes a single, cohesive, cost-effective, and powerful platform for nearly any IIoT or edge computing application.

"When we first conceived of Node-RED, we were excited about its simplicity and ability to lower the technical bar, allowing people to focus on creating rather than just doing," said Nick O'Leary,

Emerging Technology Specialist at IBM and co-inventor of Node-RED. "Now Node-RED is being adopted by well-established, forward-looking companies in the industrial automation space, like Opto 22. It's exciting to see the interest in Node-RED in a wide variety of industries."

Rapid IIoT Application Prototyping

Linking technology assets and services together to build IIoT applications often requires layers of complex software development and long development cycles that quickly erode IIoT application ROI. Node-RED running on the *groov* appliance enables nearly anyone to rapidly prototype and develop IIoT applications to connect data streams from industrial assets to IT assets, bridging the gap between the worlds of physical equipment and digital computing systems.

Developers now have the ability to prototype applications on maker boards such as Raspberry Pi and then seamlessly deploy them to an industrial-grade suite of products capable of functioning in mission-critical and harsh industrial environments.

Node-RED for IIoT

Node-RED is an innovative visual wiring tool to connect edge computing systems such as industrial automation controllers to cloud services such as Amazon Web Services™ (AWS) IoT, IBM® Watson IoT™, and Microsoft® Azure® in new and interesting ways. Created by Nick O'Leary (@knolleary) and Dave Conway-Jones (@ceejay) of IBM Emerging Technologies (@ibmets), Node-RED is an open-source, cross-platform technology available on GitHub.com and npmjs.org, and is currently available for a variety of platforms, including OS X®, Microsoft Windows®, Linux®, and Raspberry Pi™, and cloud offerings like IBM Bluemix® and AT&T® Flow. Built on the popular Node.js JavaScript runtime, Node-RED benefits from a large Node-RED library—containing over 600 prebuilt and ready-to-deploy nodes—allowing IIoT application developers to leverage existing software code and deploy it directly into their applications.

Node-RED is part of the JS Foundation which is a Linux Foundation Project. The JS Foundation is committed to help JavaScript application and server-side projects cultivate best practices and policies that promote high quality standards and broad, diverse contributions for long-term sustainability.

What is *groov?*

groov is a zero-programming, web-based way to build, deploy, and view effective, scalable operator interfaces and system dashboards to monitor and control systems and equipment using mobile devices and other computer-based systems. These operator interfaces can be viewed on almost any mobile device or computer regardless of its manufacturer, operating system, or screen size, including smartphones, tablets, PCs, and even smart high-definition televisions.

For mobile devices like iPhones, iPads, and Android-based smartphones and tablets, a *groov* View app for iOS and Android is available free of charge on the iOS App Store and Google Play Store. The *groov* View app provides a native mobile experience for operator interfaces built with *groov*. These interfaces can also be viewed in the mobile device's built-in web browser.

groov can augment existing human-machine interfaces (HMIs) and Supervisory Control and Data Acquisition (SCADA) systems by making important information available to authorized users at any time and in any location. Users can also receive event-based email messages, for example when a connected machine or system needs attention.

groov is available as either the standalone *groov* Box, an industrially hardened hardware appliance, or the PC-based *groov* Server for Windows software. In addition to Modbus/TCP networking, *groov* supports OPC Unified Architecture (OPC UA) to communicate with a variety of machines and systems on the plant floor, including PLCs, DCSs, PACs, databases, and OPC-DA servers. *groov* also communicates directly with Opto 22 SNAP PAC System controllers.

Node-RED on *groov*

Node-RED is securely accessed on the *groov* system through the authenticated Node-RED admin interface running on the *groov* Box appliance over HTTPS. The Node-RED admin interface provides a host of helpful features to application developers, including:

- Build and modify Node-RED flows in the Node-RED Editor; install additional nodes such as mysql and weather
- Add or update security certificates
- Manage the Node-RED runtime
- Monitor resource usage for both Node-RED and the groov appliance
- View and download Node-RED logs

- View, back up, and restore Node-RED project files

Lowering the Technical Bar

The Node-RED development environment offers a gradual and easily approachable learning curve for users of all levels and requires few or no programming skills. Instead, Node-RED takes advantage of pre-programmed, reusable code blocks called *nodes.* These nodes make IIoT application development simpler, easier to repeat, and faster to scale. Through a visual browser-based, drag-and-drop interface, Node-RED allows IIoT application developers to focus on identifying an opportunity and developing a solution, rather than building the components of an application from scratch.

Advanced JavaScript functions can also be created within the editor using a Function node. A built-in library lets developers save useful functions, templates, or node flows for re-use. The flows created in Node-RED are stored using the widely known JSON format, which can be easily imported and exported for sharing with other developers and applications, promoting the idea of social application development.

Node-RED nodes for Opto 22 SNAP PAC R-series and S-series programmable automation controllers are included in the *groov* appliance's Node-RED software. They can also be downloaded directly from http://flows.nodered.org/node/node-red-contrib-pac.

Pricing and Availability

Node-RED is open-source and free. Node-RED is offered by Opto 22 in the *groov* Box at no additional charge. Existing GROOV-AR1 *groov* Box appliance users simply need to update their *groov* Box with *groov* Admin version R1.570.44 to obtain this new technology for data flows and IIoT applications (visit http://manage.groov.com for software updates). For new *groov* Box appliances, pricing and availability can be found at http://groov.com/get-groov/.

About Opto 22

Opto 22 designs and manufactures industrial control products and Internet of Things platforms that bridge the gap between information technology (IT) and operations technology (OT). Based

on a core design philosophy of leveraging open, standards-based technology, Opto 22 products are deployed worldwide in industrial automation, process control, building automation, industrial refrigeration, remote monitoring, and data acquisition applications. Designed and manufactured in the U.S.A., Opto 22 products have a worldwide reputation for ease-of-use, innovation, quality, and reliability. For over 40 years OEMs, machine builders, automation end-users, and information technology and operations personnel have and continue to trust Opto 22 to deliver high-quality products with superior reliability. The company was founded in 1974 and is privately held in Temecula, California, U.S.A. Opto 22 products are available through a global network of distributors and system integrators. For more information, contact Opto 22 headquarters at +1-951-695-3000 or visit www.opto22.com. Follow us on Twitter, Facebook, LinkedIn, YouTube.

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