FOGHORN AND WIND RIVER BRING ANALYTICS AND MACHINE LEARNING TO THE EDGE

Delivering Breakthrough Edge Intelligence with Real-Time Management of Industrial IoT Devices on an Ultrareliable Platform

Wind River® and FogHorn Systems have partnered to help organizations harness the power of their Industrial Internet of Things (IIoT) data. FogHorn's expertise is in delivering data analytics and machine learning as close to the data source as possible. Wind River Helix™ Device Cloud adds extensive and essential support for performing key activities such as deploying, monitoring, servicing, updating, and decommissioning IoT devices. At the infrastructure layer, Wind River Titanium Control provides an application-ready platform built for the demanding needs of industrial control systems run through on-premise clouds. Any combination of these three products delivers huge value to our joint customers. Using all three together, joint customers can solve the biggest challenges in IIoT today: getting analytics and machine learning as close as possible to the devices generating the data, managing thousands to hundreds of thousands of end points across their product lifecycle, and ensuring that their virtualized infrastructure delivers the flexibility, performance, reliability, and security required by today's IIoT projects.

DATA WHEN AND WHERE YOU NEED IT

Every IIoT deployment requires an analytics component to transform data into actionable insights. Historically, this function was performed in a centralized cloud-based system or data center that would receive and analyze data from edge devices. Many connected IIoT devices rely on bandwidth-constrained Internet connections, so sending all generated data to a centralized system isn't efficient or cost-effective. Today, with the compute power at the edge, devices can more quickly process, analyze, and act upon data they are generating in real time.

FogHorn and Wind River have joined forces to offer embedding edge intelligence directly into small-footprint IoT devices combined with secure, enterprise-grade device lifecycle management to provision, monitor, and maintain a high volume and variety of edge devices.

CREATING THE INTELLIGENT EDGE

With this partnership, the companies offer FogHorn's breakthrough Lightning™ edge analytics and machine learning platform combined with Wind River industry-leading software, including Device Cloud, Titanium Control, and Wind River Linux. This unique offering will

Ecosystem Component
Edge Analytics

Solution
FogHorn Lightning Platform

Value

- Leading compact, advanced, and feature-rich edge intelligence solution

- Data processing at or near the data source

- Ability to process data onsite, generate insights, and publish only relevant data to the cloud

WHEN IT MATTERS, IT RUNS ON WIND RIVER

accelerate the competitive imperative industrial organizations face to harness the power of their IIoT data. FogHorn allows organizations to place data analytics and machine learning as close to the data source as possible, while Wind River provides the technology to support manageability of edge devices across their lifecycle, virtualization for workload consolidation, and software portability via containerization.

Joint customers can take advantage of these innovative tools to:

- Deploy FogHorn edge intelligence software on any device with any processing and any operating environment, including control systems, motion sensors, edge gateways, and high-performance servers.
- Perform secure device lifecycle management, including deployment, monitoring, servicing, managing software updates, and decommissioning through Device Cloud.
- Leverage the most innovative, proven virtualization solution available in the market, delivering ultra-low latency and high reliability on a flexible platform that scales to your business needs.
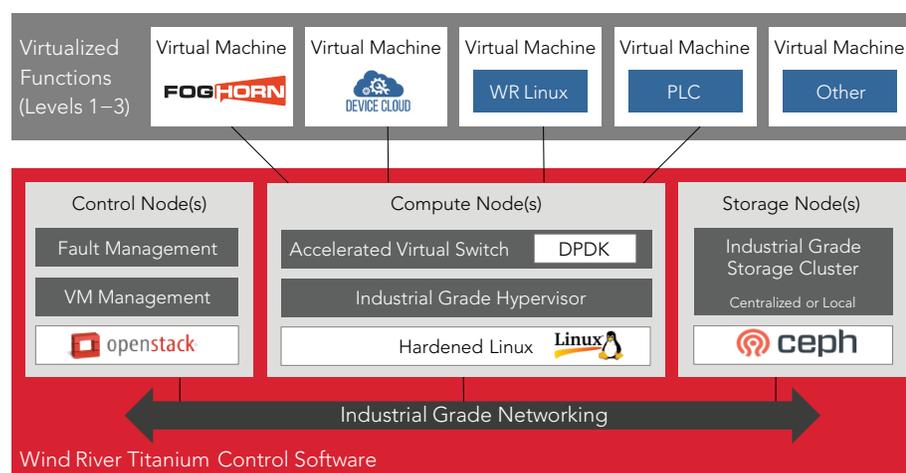

Figure 1. Integrated edge compute platform for industrial applications

PARTNER: FOGHORN LIGHTNING

FogHorn brings a groundbreaking dimension to IIoT by embedding built-in edge intelligence and fog computing directly into small-footprint edge devices. At the core of FogHorn's technology platform is the world's most compact, advanced, and feature-rich complex event processor (CEP), which is revolutionizing IIoT. The software's extremely low overhead allows it to be embedded into a broad range of edge devices and highly constrained environments for maximum efficiency and speed.

FogHorn's Lightning product portfolio resides at the IIoT edge, greatly enriching the capability of any gateway, programmable logic controller (PLC), industrial PC, HMI device, or other edge system and delivering unprecedented low latency for onsite data processing, real-time analytics, machine learning, and AI capabilities.

The FogHorn platform is the world's most compact, advanced, and feature-rich edge intelligence solution. By enabling data processing at or near the source of sensor data, FogHorn eliminates the need to send terabytes of data to the cloud for processing. Instead, FogHorn can process the data onsite, generate insights, and publish only relevant data to the cloud for further analysis.

WIND RIVER: DEVICE CLOUD

Device Cloud is a device lifecycle management solution that shortens your time-to-value for managing the lifecycle of deployed IoT devices by providing purpose-built tools that reduce the cost and risk associated with managing industrial equipment. With Device Cloud, organizations can lower development and operations costs, accelerate deployment timelines, and focus development resources on creating differentiated products that stand up to the competition.

Device Cloud delivers secure, enterprise grade device lifecycle management so you can easily design your IoT solution with powerful edge capabilities when and where you need them, with performance that scales to meet your deployment needs.

Key features include:

- Extensive and essential support for key functions across the device lifecycle
- Flexible deployment options—support for private, hybrid, and public cloud deployments
- Zero touch onboarding—instantly manageable, hardened devices with Intel® Secure Device Onboard technology and Intel processors and gateways
- Extensibility—a rich set of device and cloud API to enable developers to complete tasks from integrating external services/applications to providing customer-specific user interfaces and workflows
- Powerful edge capabilities—total flexibility in how you get your data, where you send your data, and how your solution responds to your data based on events and changing conditions throughout your deployment

WIND RIVER: TITANIUM CONTROL

Titanium Control is an on-premise cloud infrastructure platform that delivers the uptime and performance needed for industrial applications and control services at any scale. When operational processes must not fail, Titanium Control ensures that your services run when, where, and how they need to, always.

Built from the ground up on principles of high performance, low latency, and high availability, Titanium Control provides:

- Flexibility and scale, delivering the same ultralow latency and availability from two nodes to 500 nodes
- Single node options providing a cost-optimized solution at the far edge of the network
- Uptime that meets or exceeds the reliability of traditional physical equipment

WIND

- Open architecture that enables the selection of best-of-breed hardware and software while avoiding potential vendor lock-in
- Software Defined Networking–compliant platform with support for OpenFlow-based controllers such as OpenDaylight
- Safe and secure availability of data for processing and analysis to realize the benefits of IIoT

SUMMARY

The FogHorn and Wind River partnership offers IIoT device manufacturers and end-user companies the ability to design, provision, and manage the intelligent edge with a best-in-class device management solution and a feature-rich intelligent edge platform. This powerful combination enables users to securely monitor deployed IIoT devices in real time; manage software updates and security patches; adopt machine learning at the edge to signal predictive maintenance; and increase asset life using smart, proactive maintenance practices.