

WIRELESS SENSING PLATFORM FOR IoT

**INTELLIGENCE AT THE
NETWORK EDGE**



B+B SMARTWORX

Powered by

ADVANTECH

MACHINES HAVE BEEN TALKING TO MACHINES FOR DECADES...

BUT, THE INTERNET OF THINGS HAS TRANSFORMED THAT CONVERSATION.

Consequently, what was once a simple process suddenly became complicated. What had been straight-forward very quickly became complex.

We have made it simple again by enabling connected intelligence... starting at the network edge.



INTELLIGENCE AT THE NETWORK EDGE IS A VERY **SIMPLE** CONCEPT.

PUT THE **DECISION** CLOSE TO THE ACTION.



Advantech B+B SmartWorx offers an easy-to-use, complete wireless sensor connectivity platform for the rapid deployment of scalable, intelligent, reliable IoT networking in remote and demanding environments.

Unlike a traditional SCADA application where sensors and edge devices are simply passive conduits for raw data, edge decision making delivers a more effective network.

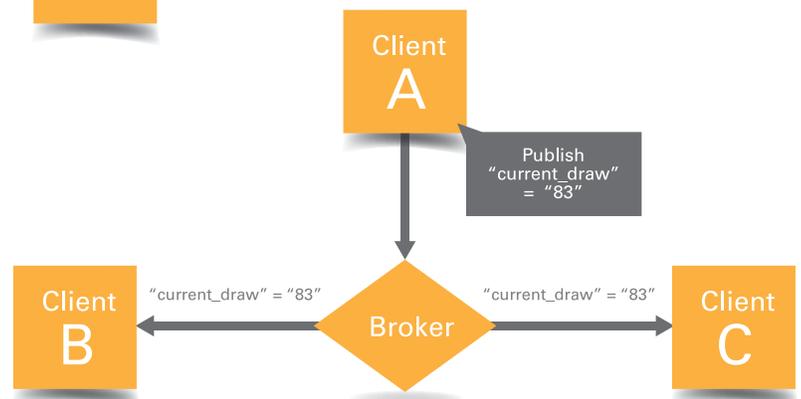
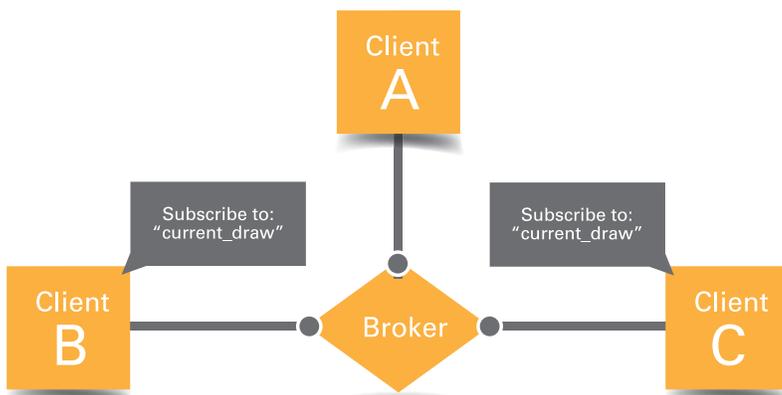
Now, using iterative control limits and gateway data aggregation to support applications closer to the

network edge, M2M evolves from machine communication to machine decision making. The Wzzard™ Intelligent Sensing Platform brings this intelligence to the network starting at the sensor, creating a more responsive, reliable and efficient network.

USING THE IoT READY PROTOCOL, MQTT, SEMANTIC SENSOR DATA IS DELIVERED TO THE APPLICATION LAYER OVER A SECURE, SCALABLE, RESILIENT WIRELESS SMARTMESH IP MESH NETWORK.

Smart processing starts at the edge of the network.

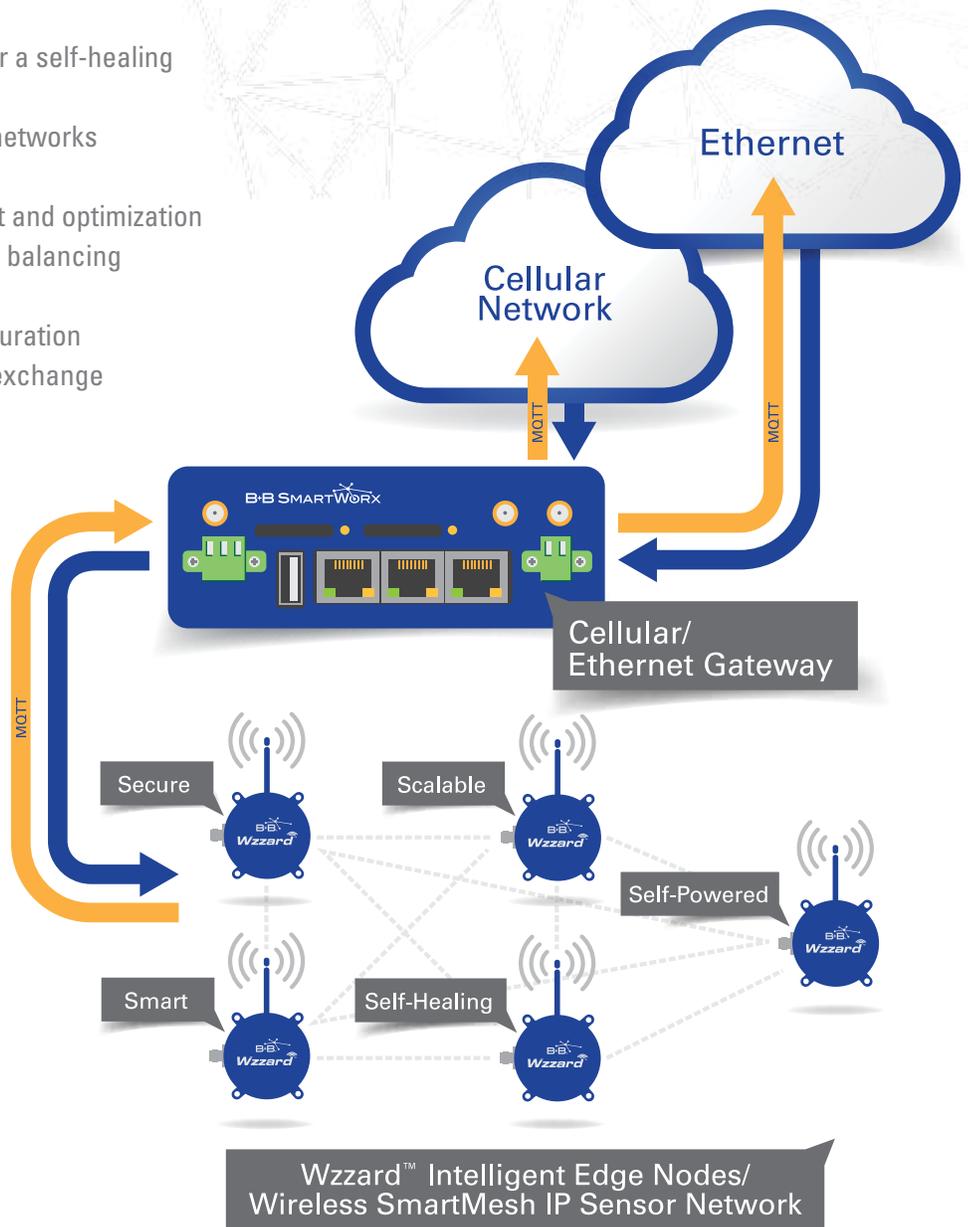
Wzzard uses the lightweight, publish/subscribe messaging transport MQTT protocol for sensor communications. MQTT is an extremely simple messaging protocol created for M2M and IoT applications over wireless networks. Because of its efficient distribution of information to single or multiple receivers, low power usage and minimized data packets, it is ideal for mobile or remote locations.



SMARTMESH IP IS DEFINING THE WAY TO CONNECT SMART DEVICES.

SmartMesh IP is based upon the wireless IEEE 802.15.4e standard. SmartMesh IP creates full-mesh networks, sometimes referred to as “mesh-to-the-edge” networks. SmartMesh IP networks use a “triple-play” of wireless mesh technologies - time diversity, frequency diversity, and physical diversity - to assure reliability, resiliency, scalability, power source flexibility, and ease-of-use. At the core, the technology is an intelligent mesh network with advanced algorithms and power saving technologies that enable powerful features not available from other WSN providers including:

- Auto-forming mesh technology for a self-healing and self-sustaining network
- Scalability to large, dense, deep networks
- Ultra low power consumption
- Deterministic power management and optimization
- Dynamic bandwidth support, load balancing and optimization
- Network management and configuration
- Zero collision low power packet exchange



WZZARD™ INTELLIGENT EDGE NODES

EASY, EFFICIENT AND EFFECTIVE + EASY TO DEPLOY + EASY TO MANAGE

Wzzard Intelligent Edge Nodes connect your sensors to wireless SmartMesh IP networks. They accommodate external sensors with a variety of interface options that include general-purpose analog inputs, digital input/output and thermocouple.

The Wzzard Intelligent Edge Node collects data from the sensor, then organizes and transforms that data into useful and relevant information easing the processing burden on upstream resources. Configurable by smart phone or tablet, nodes can minimize data traffic by only communicating exceptions to specified threshold or pre-determined alert levels. If the gateway is using the cellular network, this reduces the cost of the data plan. Configuration options can also include geolocation, device name and uptime to format data for easier analytics. With the use of control time synchronization, the Intelligent Edge Node can be programmed to maximize battery life. (For example, if the publish interval is set at 60 seconds, the battery life is more than a year.)

- IP67 rated for outdoor use
- Battery powered with power wiring options
- M12 conduit
- Magnetized or screw mount options
- UV impact resistant enclosure



SPECTRE™ NETWORK GATEWAY

The award-winning Spectre Network Gateway provides Internet connectivity via wired Ethernet connections or the cellular data networks.

Spectre is built for plug-and-play simplicity with extensive remote management, deployment and customization options. It is a robust, flexible gateway designed for easy deployment in demanding environments. The Spectre cellular version creates secure connections in locations where cable connections are impractical. Configuration of the gateway can be done via a password-protected Web interface and to ensure safe communication, Spectre supports the creation of VPN tunnels using IPsec, OpenVPN and L2TP. Spectre also supports DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS, and many other functions.



AN ANSWER ALWAYS STARTS WITH A QUESTION AND A SOLUTION ALWAYS STARTS WITH A PROBLEM.

Where does your network need to go? And what does your business need to know?

While sharing common concerns, application solutions can be as unique as each customer. With the right sensor choice, and the right analytics – Wzzard brings it together with intelligent connectivity.

Explore these applications and more at advantech-bb.com

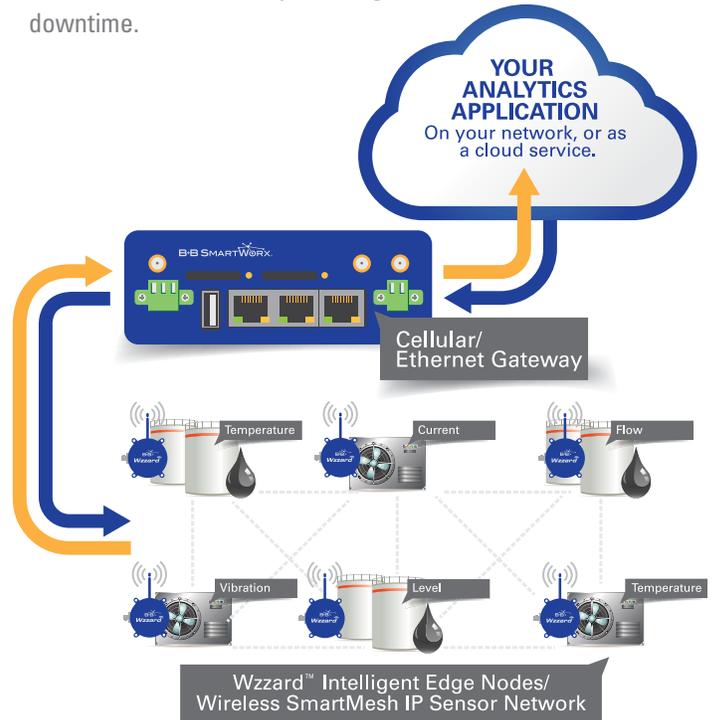


"We deploy systems around the world in some pretty inhospitable environments. Having fool-proof installation makes it easy for local technicians to get the application up and running. That's invaluable."

G. – System Integrator

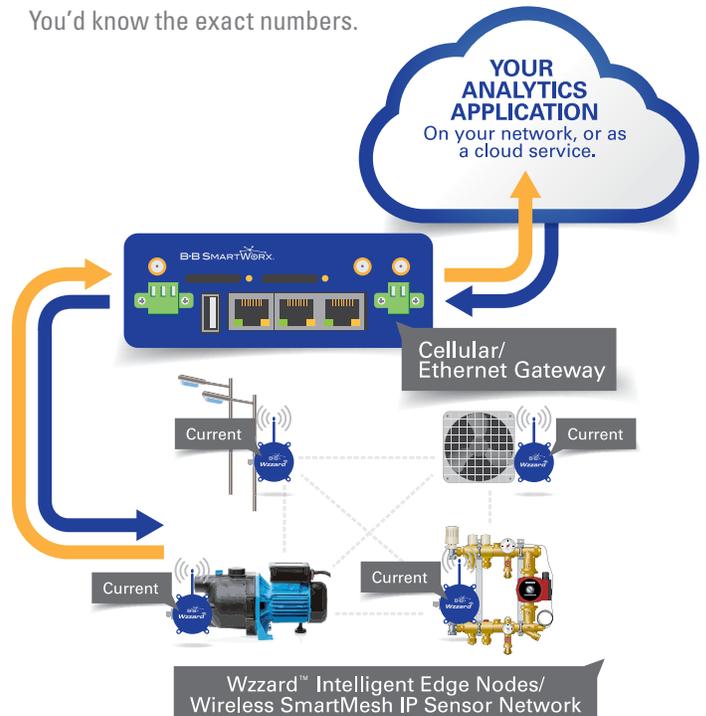
Smart Sensing Technology for Machine Condition Monitoring

Monitoring and measuring very simple parameters in and around a valuable piece of equipment can prolong its useful life while simultaneously slashing maintenance costs and downtime.



Smart Sensing Technology for Energy Efficiency

Electricity is one of the easiest resources to waste. But if you measure power consumption at a discrete level you can determine exactly what each device and process consumes. You won't be estimating your true energy costs anymore. You'd know the exact numbers.





THE POWER OF PARTNERSHIPS

Delivering an IoT solution starts with having the right team at the table.

Advantech B+B SmartWorx provides easy to deploy, standards-based, intelligent connectivity in association with partners around the world.

We believe excellence can only come from expertise – and expertise comes from a strong Eco-System of Technology Partners. Working together delivers on the promise of optimized performance. From the asset to the analytics, connectivity is the glue that enables network intelligence.

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