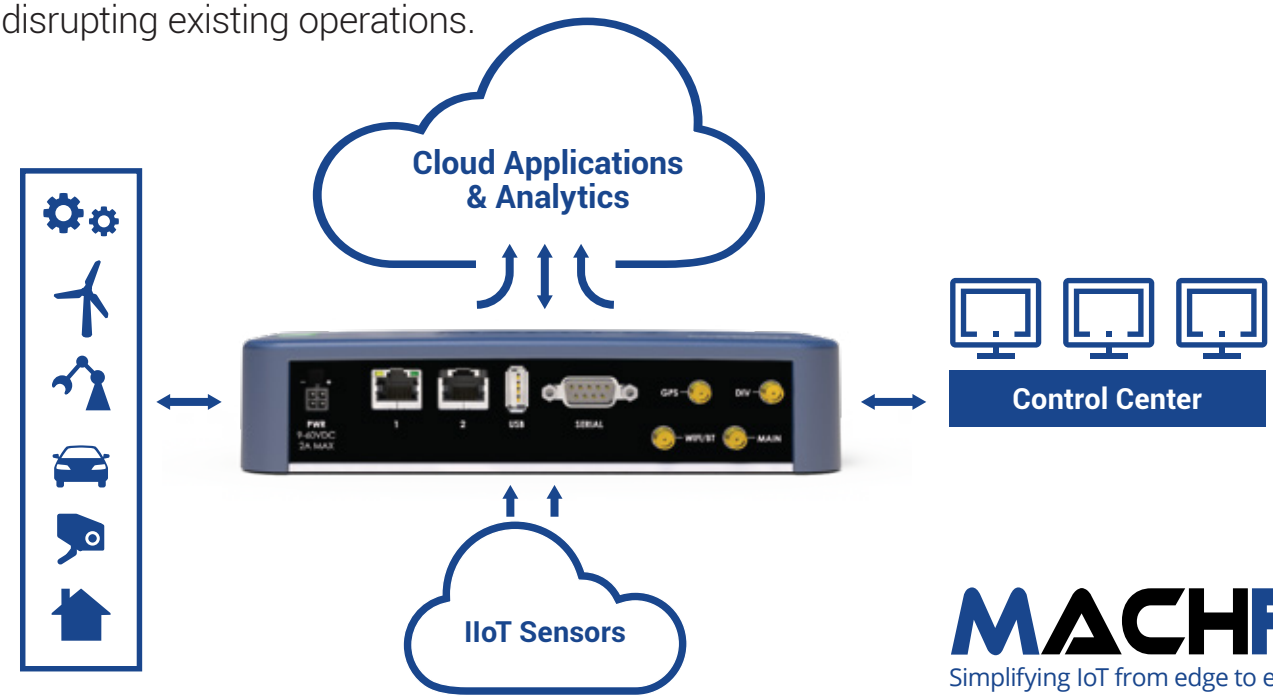
MACH-3 INDUSTRIAL

IoT GATEWAY

The MACH-3 IIoT Gateway is designed for critical infrastructure and industrial applications. It provides a secure connection to industrial controllers, process automation and smart grid assets in the field. The Gateway simplifies connecting and managing devices and provides a secure sandboxed application framework for processing sensor and controller data. The Gateway provides cloud and SCADA connectivity to controllers and sensors speaking legacy and modern protocols. The result is all the benefits of IIoT and analytics without disrupting existing operations.

Applications:

- Distribution Automation
- SCADA
- Well Head Automation (O & G)
- Smart Water and Agriculture
- Modbus Industrial Controllers



MACHFU

Simplifying IoT from edge to enterprise

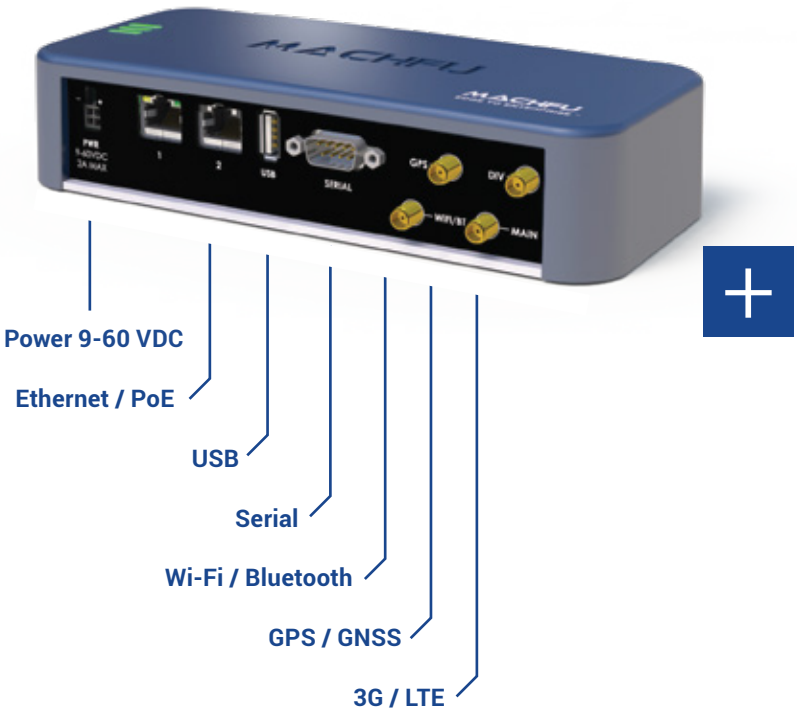
Enabling a graceful transition to IIoT.

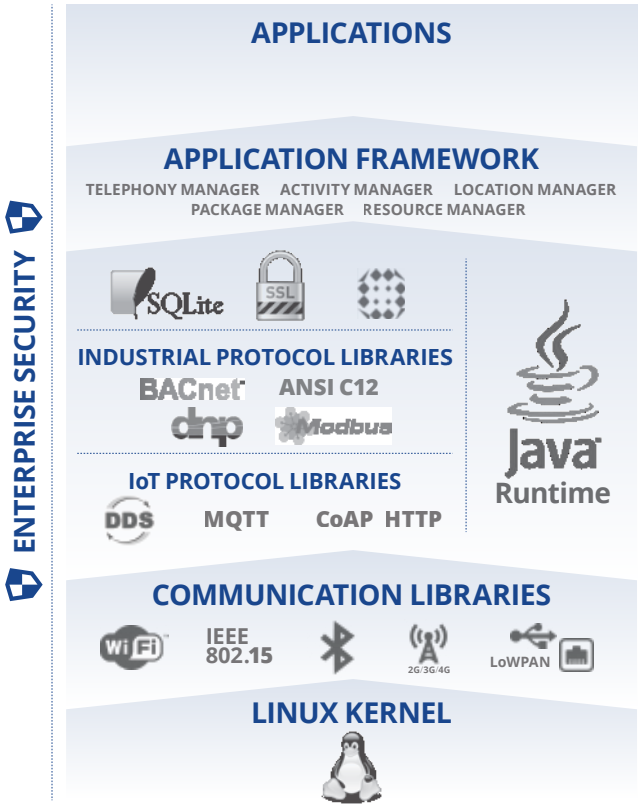
Benefits

- **Graceful Transition to IIoT: Software defined platform that** supports legacy systems and IIoT
- **Simplifying system integration:** Unifies cellular, wired and endpoint wireless connectivity
- **Advanced Networking:** VLAN, VPNs,stateful firewall, port forwarding and ethernet bridging
- **Advanced Security:** Multi-dimensional security features for network connectivity, users, devices and applications.
- **Power Management:** Low power design and granular controls of resources provides a rich set of peripherals with best in class power draw
- **Unify and simplify systems:** Embedded industrial protocols simplify exchange of data between systems
- **Consolidating the functionality of multiple physical boxes:** Sandboxed application framework creates functionality of multiple physical boxes reducing cost and increasing productivity

Key Features

- Wired and Wireless interfaces simplify system integration
- Advanced Networking including VPNs, dynamic firewall, routing, VLAN, and tunneling enabling industrial devices to connect to existing industrial applications
- Advanced GPS/GNSS enables Geolocation applications
- IEEE1588 precision time protocol enables synchronizing smart grid and industrial assets and events over large geographic topologies
- Endpoint wireless interfaces that enable connecting to proprietary and standards based field area networks creating a unified end to end system
- Library of industrial protocols enables conversion between disparate industrial devices and mapping of devices to IIoT web based systems
- Library of IIoT protocols enabling secure exchange of data from Device to Device (D2D), Device to Server (D2S) and Server to Server (S2S)
- Secure embedded application space enables consolidating the functionality of multiple physical boxes and integration services into a single box





MACH-3 Gateway

Secure Applications

MACHFU Gateway Specification

Cellular WAN North America Certified Carriers	**Diversity SMA Connectors** **LTE, 3G** **AT&T, Verizon, Telus, Rogers**
WiFi	**IEEE 802.11 b/g/n SISO** **Adjustable output power (Max:17 dBm)** **Simultaneous WiFi Client and AP operation** **Access point for up to 8 clients** **WPA2-PSK Security**
BlueTooth	**Bluetooth 4.0 (+BlueTooth Low Energy)** **(Max: 12.5 dBm)**
GPS	**GPS/GNSS** **1 PPS time service for stable and traceable time reference**
Time Management	**NTP** **IEEE 1588 PTP**
Ethernet	**Two 10/100 Base-T RJ45**
USB	**USB 2.0 Type A**
Serial	**RS-232 Sub-D 9pin** **TCP/UDPTerminal Server**
Digital I/O (on Power Connector)	**Pull-up Contact Input**
Networking	**Configurable network interfaces assigned to LAN or WAN** **Ethernet IEEE 802.3, 802.1Q/VLANs** **IP Protocols TCP, UDP, ARP, DHCP Client/Server, ICMP**
Routing and Failover	**IP pass-through; NAT, SNAT, DNAT, Port Forwarding and Ethernet Bridging**
Industrial Protocols	**Modbus Serial, Modbus TCP, DNP3 serial, DNP3 TCP**
IoT Protocols	**MQTT, CoAP, HTTPS**
Security	**VPN: IPSec, IKEv2, NAT Traversal; SSL, Open VPN client, PPTP, L2TP (256 bits AES)** **Firewall Stateful L3-L4 Access Control List, Layer 2 MAC Filtering, NAT, Source NAT (Masquerading), Static NAT** **Secure Firmware, Digitally Signed Software**
Power	**Input Voltage: 9 to 60 VDC** **Idle 900mW; Typ 2W, Max 4W**
Environmental	**Operating Temperature: -40°C to +80°C / -22°F to +176°F** **Humidity: 90% RH @ 60°C**
Industrial Certifications	**FCC Part 15 and IC** **PTCRB** **Ordinary locations: UL 60950-1, 2nd Edition, 2014-10-14**
Wireless Interfaces/ Connectors	**Cellular: Dual SMA** **Single SIM** **Wi-Fi/Bluetooth: SMA** **GPS: SMA** **4 pin Microfit 3.0**
Device Management	**SNMP, Machfu GUI**
Product Warranty	**1 year standard, 5 years extended**

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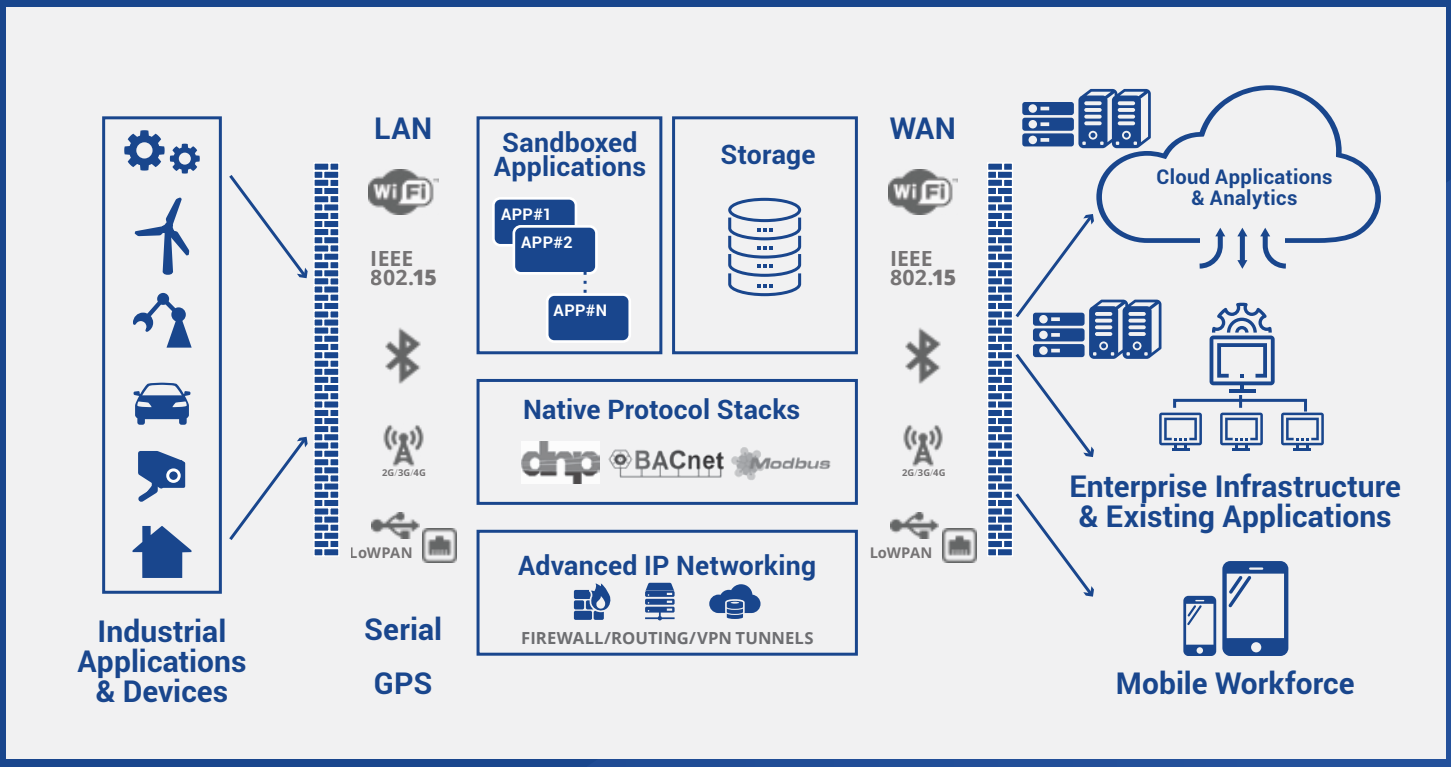

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