Robust System Design for Your IIoT Applications From the Edge to Cloud

Background

Industrial IoT (IIoT) is now being used in various distributed applications such as smart city, oil and gas, and power, that require operations in remote harsh environments. Maintaining normal operations in these applications is a challenge because dispatching personnel on site to manually inspect field device and troubleshoot issues will only increase the system downtime and cost.

With robust hardware design and rich software functions, Moxa IIoT gateways are ideal for use in remote harsh operating environments and help in reducing unplanned system downtime.

Customer Requirements

Oil storage tanks need to be monitored in real time using data from multiple sensors that measure temperature, oil level in the tank, and gas concentration among other parameters. This data is then transferred to a cloud platform via IIoT gateways for real-time monitoring. Hence, IIoT gateways play an important role in the whole process. When choosing an IIoT gateway, operators need to look for industrial-grade certified gateways that enable continuous connectivity from the edge to the cloud. The gateways should also be optimized for remote upgrades to protect against security vulnerabilities and reduce system downtime.

Why Moxa

Robust Hardware Design

Collaborating with industry partners around the world, Moxa is dedicated to providing certified, robust, industrial-grade computing solutions for mission-critical applications for harsh operating environments.

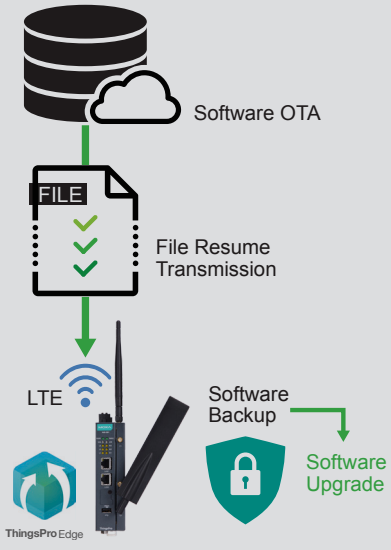
Robust Software Design—OTA Upgrade

It is important to make sure IIoT gateways do not disconnect while a upgrade or patch application is in progress, especially in distributed application scenarios.

OTA Upgrades

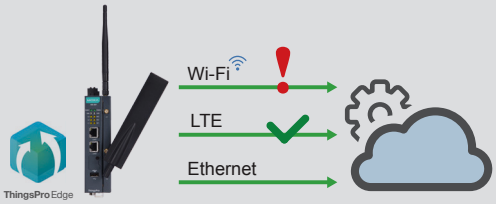
Most IIoT gateways are installed in remote, unmanned, and harsh environments where network communication mostly relies on LTE connectivity. However, LTE connections are still intermittent. When pushing new software upgrades to remote IIoT gateways, operators need to worry about the expense of LTE transmissions and possible upgrade failures.

- Data transmission resume function saves unnecessary transmission fee
- Software backup ensures quick system restoration in remote areas (available in AIG series)



Reliable Data Transmission via ThingsPro Edge

ThingsPro Edge can detect the status of a network connection. During an unexpected disconnection, apart from the basic retry function, ThingsPro Edge can automatically switch between the transmission interfaces, Wi-Fi, LTE, and Ethernet, to ensure uninterrupted data transmission.



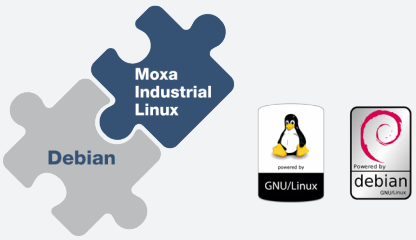
Store and Forward to Ensure Data Integrity

In the event of an unexpected disconnection, edge data is be securely stored in the IIoT gateway and sent to the cloud when the connection is restored.

Security Support

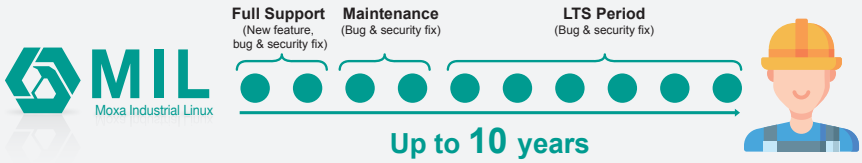
Moxa Industrial Linux (MIL) is a Debian-based distribution based on the standard Linux kernel and supports Debian packages for:

- Debian's time-tested and field-proven stability
- Advanced packaging tools (APT) based mechanism for remote device upgrades



MIL comes with long-term support (LTS) that includes:

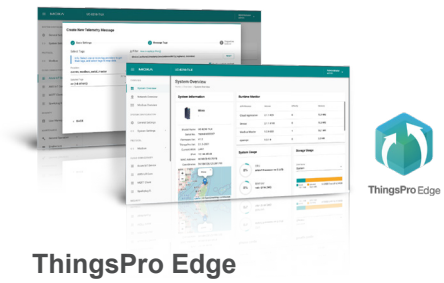
- Up to 10 years security support
- Fixes for security vulnerabilities



Moxa Products

AIG-300 Series

Compact Arm-based IIoT gateways for space-critical automation applications



ThingsPro Edge

IIoT gateway software for device-to-cloud connectivity

MIL
Moxa Industrial Linux

Moxa Industrial Linux

Moxa's Debian-based industrial-grade stable Linux distribution for long-term projects