

ThingsPro 2

IIoT Gateway and Device Management Software Solution



Features and Benefits

- Simplifies transfer of Modbus device data to the MQTT broker in cloud applications
- Built-in client and SDK support for online SCADA services
- Built-in clients for popular cloud platforms Aliyun, AWS, and Azure
- Network manager to connect your field devices to a WAN
- RESTful API and Modbus API for access to all functions of the ThingsPro Gateway software

Introduction

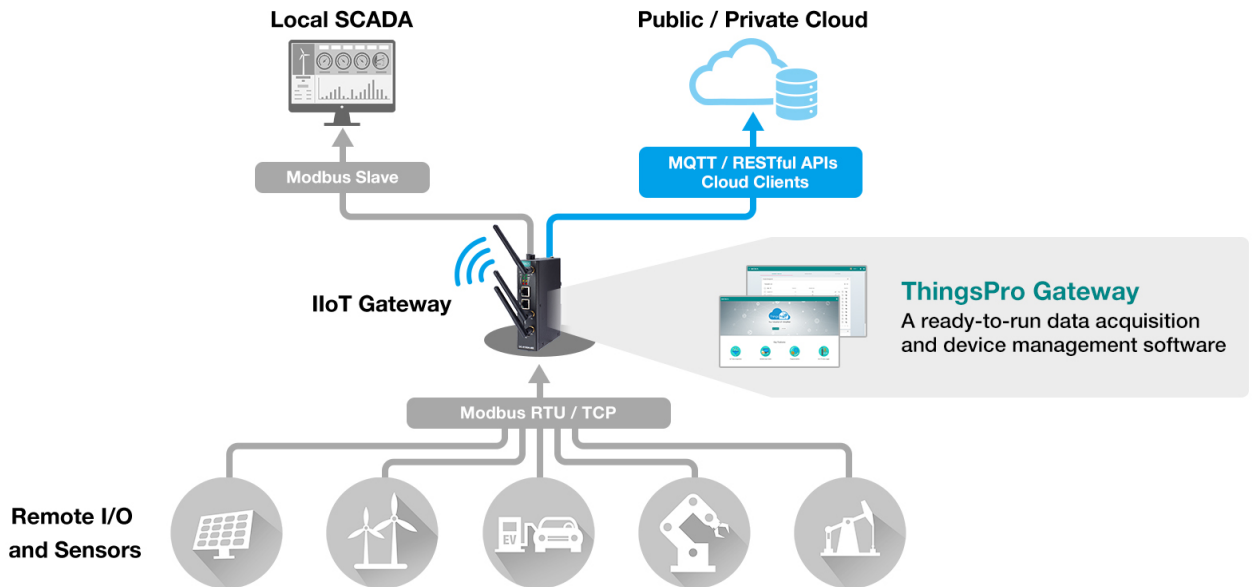
To help accelerate development of your industrial IoT applications and create a smarter field site, Moxa's ThingsPro Gateway software enables Modbus connectivity for data acquisition and processing, MQTT support for lightweight edge-to-cloud data transmission, and device configuration for system and network settings of supported edge gateways. Configuration just takes a few steps, allowing you to focus on your applications instead of complex integrations.

ThingsPro Gateway helps you handle the complexity and diversity that comes from combining information technology and operational technology for industrial IoT applications by offering high-level Modbus APIs in C and Python, as well as modern RESTful APIs for you to easily develop software applications to extend or enhance the capabilities of Moxa's Industrial IoT gateway. ThingsPro provides smart data acquisition, rapid development, and easy management, helping you create a smarter field site.

Additional Features and Benefits

- Modbus polling engine with easy-to-use web-based UI for data acquisition from end devices deployed in industrial field sites
- Simplifies transfer of Modbus device data to the MQTT broker in cloud applications
- Built-in client for popular PaaS (Platform as a Service) providers to accelerate your IIoT application development. Currently supports Aliyun (Alibaba Cloud, only available in ThingsPro Gateway V2.5.0 and above), AWS IoT Core, and Azure IoT Hub (only available in ThingsPro V2.3 and above)
- Built-in client/SDK support for online SCADA service, currently supports Sparkplug for the Ignition platform, and Wonderware Online (only available in ThingsPro V2.3 and above)
- Wireless manager tool handles the task of connecting your field devices to a WAN
- RESTful API and Modbus API for access to all software functions of ThingsPro Gateway

System Architecture



Easy-to-use Modbus Data Acquisition

- Every time you want to access a new Modbus device, just build a template once and then use it everywhere
- Tag editor to set up unique identifiers for I/O points
- Supports custom tag management

Network, Firewall, and System Configuration

- Set up and monitor cellular strength
- Support for keep-alive checks
- Supports DHCP Server for Ethernet ports
- Supports OpenVPN client to build a secure tunnel for data transmission to a remote server
- Set up port-forwarding rules to create a simple firewall
- Configure system settings such as time, GPS, serial ports, and GPS location through a web UI
- Import system configuration from another ThingsPro Gateway

Modbus Slave and Third-party PaaS Platform Connectivity for Remote Data Acquisition

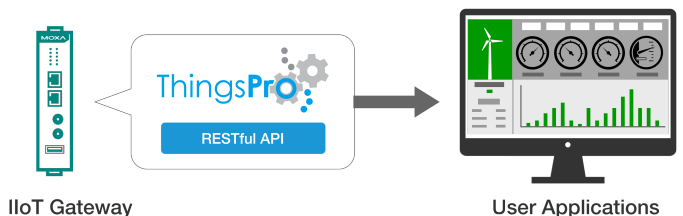
- Enable Modbus slave to allow your local SCADA system to poll data from end devices that are attached to the ThingsPro Gateway
- Set up an MQTT client to pub/sub your acquired data to/from any MQTT brokers
- Supports other PaaS or online SCADA service with built-in client/SDK and UI: AWS IoT, Azure IoT Hub (only available in ThingsPro V2.3 and above), Sparkplug for the Ignition platform, and Wonderware Online (only available in ThingsPro V2.3 and above)

Generic MQTT Client and Third-party MQTT Broker—Sparkplug

ThingsPro supports the MQTT IoT protocol so that you can transfer fieldbus data to your cloud-based IoT applications. Client interfaces for generic MQTT communication and to the third-party MQTT broker, Sparkplug, are provided.

Modbus and RESTful APIs for All Software Functions on ThingsPro Gateway

- Modbus API via C and Python provides access to ready-to-run data acquisition software functions
- High-level RESTful API allows you to retrieve or set ThingsPro Gateway device status and resources for better interoperability
- It is easier than ever to enhance or extend ThingsPro Gateway functions and integrate them into your software applications



For details on how to develop programs that integrate with our ThingsPro Gateway software, refer to our programming guide at <https://thingspro-programming-guide.netlify.com/>

User Role Account Management

Create administrator and user-level accounts to control access rights to device management functions.

**Developer Administrator (Root)**

- Token management for device identification
- All Administrator tasks

**Administrator**

- Manage devices
- Schedule batch jobs
- Manage user accounts

**User**

- Read only

Specifications

System Requirements

ThingsPro Gateway

Series	Eligible Devices		
	Model Name	Product Version	Firmware Version
MC-1100 Series	MC-1121-E2-T	1.0.0	1.1
	MC-1121-E4-T	1.0.0	1.1
UC-2100 Series	UC-2104-LX	1.0.0	1.2
UC-3100 Series	UC-3101-T-US-LX, UC-3101-T-EU-LX, UC-3101-T-AU-LX	1.0.0	1.1
	UC-3111-T-US-LX, UC-3111-T-EU-LX, UC-3111-T-AU-LX	1.0.0	1.1
	UC-3121-T-US-LX, UC-3121-T-EU-LX, UC-3121-T-AU-LX	1.0.0	1.1
UC-5100 Series	UC-5112-LX	1.0.0	1.1
	UC-5112-T-LX	1.0.0	1.1
UC-8100 Series	UC-8112-LX (Debian 8)	2.0.0	2.1
	UC-8112-LX (Debian 9)	3.0.0	3.1
	UC-8112-ME-T-LX (Debian 8)	2.0.0	2.2
	UC-8112-ME-T-LX (Debian 9)	3.0.0	3.0
	UC-8112-ME-T-LX1 (Debian 8)	3.0.0	2.2
	UC-8112-ME-T-LX1 (Debian 9)	4.0.0	3.0
	UC-8112-ME-T-LX-US-LTE (Debian 8)	2.0.0	2.2
	UC-8112-ME-T-LX-US-LTE (Debian 9)	3.0.0	3.0
UC-8100A-ME-T Series	UC-8112A-ME-T-LX	1.0.0	1.0
	UC-8112A-ME-T-LX-AP	1.0.0	1.0
	UC-8112A-ME-T-LX-US	1.0.0	1.0
	UC-8112A-ME-T-LX-EU	1.0.0	1.0

Note: ThingsPro Gateway supports the listed firmware versions or higher. Only Linux Debian is supported. For example, the MC-1100 Series only supports Linux Debian 8. Additional series/modules will be supported as ThingsPro Gateway is updated. Check Moxa's website for the most up-to-date information.

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