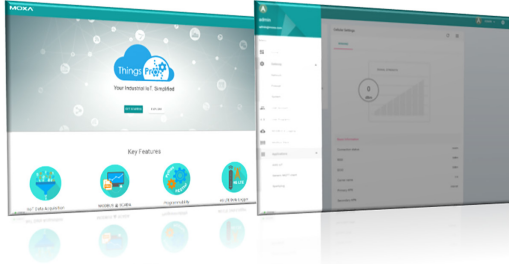# ThingsPro Gateway for AWS IoT

IIoT DAQ software platform with built-in AWS IoT Device SDK

> Modbus polling engine with easy-to-use web-based UI for data acquisition from end devices in an industrial automation field site

> Supports the MQTT IoT protocol to connect fieldbus data to your cloud-based IoT application

> Built-in AWS IoT Device SDK with web interface to accelerate your IoT application development

> Wireless manager handles the task of connecting your field devices to a wide area network (WAN)

> RESTful API and Modbus API for access to all the software functions of ThingsPro Gateway

: Introduction

Amazon's AWS IoT (https://aws.amazon.com/iot-platform/) is a leading Internet of Things web service that provides users with a cloud platform and services for building IoT applications. Amazon not only manage's your cloud storage infrastructure, they also make it easy for you to work with your connected devices and the data generated by those devices. Amazon's AWS Greengrass (https://aws.amazon.com/greengrass/) software provides network security for managing connected devices.

Moxa provides an easy-to-use web interface and RESTful API for use with Moxa's ThingsPro Software Suite, which can be integrated with AWS IoT to offer an intelligent data acquisition and device management software platform.

Moxa's ThingsPro Gateway is an IIoT software platform that makes data acquisition easy by providing a web interface for configuring and managing Modbus data acquisition, LTE connectivity, and MQTT communication. This software turns eligible Moxa edge computers into intelligent edge platforms that greatly reduce the effort needed to develop IIoT applications. With ThingsPro Gateway, you can build an edge-to-cloud data transmission and process platform that not only brings your raw or processed edge data back to your enterprise or cloud database, but also allows you to focus on developing software with Moxa's RESTful API or Modbus API to build a smarter field site. In addition, you may install the AWS Greengrass Core directly on your IIoT Gateway Starter Kit for use with ThingsPro Gateway.

Note: The AWS Greengrass Core provides local services (e.g., storage), command, and control of AWS Greengrass devices running the AWS IoT Device SDK. See the AWS Greengrass FAQs (https://aws.amazon.com/greengrass/faqs/) for the detailed technical dependencies required when using the AWS Greengrass Core. Moxa's IIoT Gateway Starter Kit comes with the required software packages pre-installed, and meets the kernel configuration required by the AWS Greengrass Core.

## : Additional Resources

Moxa Tech Notes for ThingsPro:
- **How to Build an IoT Application with Moxa's ThingsPro and AWS IoT Service**
  https://www.moxa.com/doc/tech_notes/Moxa_Tech_Note---ThingsPro_AWS_IoT_Application.pdf
- **Getting Started with AWS IoT on Moxa UC-8100-LX Using Embedded C SDK**
  https://www.moxa.com/doc/tech_notes/Moxa_Tech_Note---ThingsPro_AWS_IoT_Application.pdf
- **How to Use ThingsPro Gateway to Publish Processed Edge Data to AWS IoT**
  https://www.moxa.com/doc/tech_notes/Moxa_Tech_Note---How_to_Publish_Processed_data_to_AWS_IoT.pdf

Useful AWS Resources:
- **AWS IoT SDKs and Tools**
  https://aws.amazon.com/tools/
- **AWS Green Grass SDKs and Tools**
 https://aws.amazon.com/documentation/greengrass/

: Important Features

Easy-to-Use Modbus DAQ
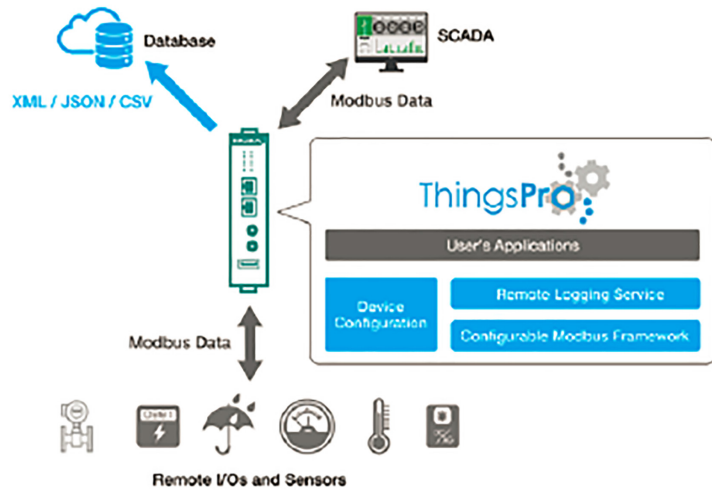
- Build Modbus device templates that can be used anywhere you want
- Use Tag editor to set up unique identifiers for I/O points
- Unlimited tag support
- Custom tag management
- Set up a data polling table with your desired time interval and upload logs to a cloud database or application
- json, xml, and csv upload profiles supported

Network, Firewall, and System Configuration
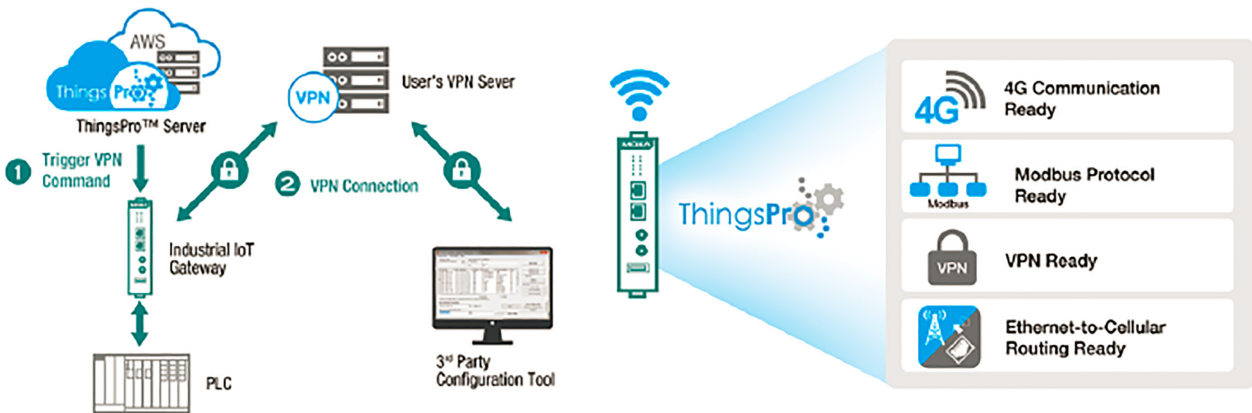
- Set up and monitor cellular strength
- Supports keep-alive checks
- Supports DHCP Server for Ethernet ports
- Supports OpenVPN client to build a secure tunnel for data transmission to a remote server

- Set up port-forwarding rules to create a simple firewall
- Configure system settings such as Time, GPS, Serial Ports, and GPS location though a web UI
- Import system configuration from another ThingsPro Gateway

Modbus Slave and Third Party IaaS Engine for Remote Data Acquisition

- Enable Modbus Slave to allow your local SCADA system to poll data from end devices that are attached to ThingsPro Gateway

- Set up an MQTT client to pub/sub your acquired data to/from any MQTT broker
- Supports other MQTT-based third party services

Modbus and RESTful API 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's easier than ever to enhance or extend ThingsPro Gateway functions and integrate them into your software application

IIoT Gateway   User's Applications
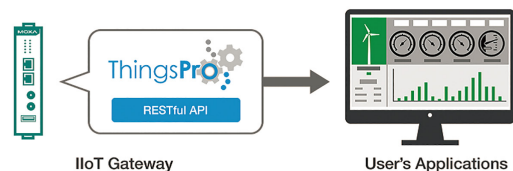
: Ordering Information

For Mass Production

ThingsPro Gateway

ThingsPro-GW: Term license for the ThingsPro Gateway software; the license permits users to install the software on a single eligible ThingsPro device (sold separately; see below for details)
Note: Eligible ThingsPro devices must be purchased separately; a separate license must be purchased for each eligible device.

The AWS IoT Device SDK and a web interface are integrated into ThingsPro Gateway to make it easier for users to configure and use the software.

Package Checklist
- ThingsPro Gateway installation SD card
- Quick installation guide (printed)
- Warranty card

Eligible Devices (sold separately)

Series	Model Name	Product Ver.	Firmware Ver.
UC-8100 Series	UC-8112-LX	2.0.0	2.0
	UC-8112-LX1	2.0.0	2.0
	UC-8112-ME-T-LX	2.0.0	2.1
	UC-8112-ME-T-LX1	2.0.0	2.1
	UC-8112-ME-T-LX-US-LTE	2.0.0	2.1

Note: ThingsPro Gateway supports the listed firmware versions or higher.
Note: Additional series/models will be supported as ThingsPro Gateway is updated. Check Moxa's website for the most up-to-date information.

For Evaluation Purposes

IIoT Gateway Starter Kit

UC-8112-LX-STK: UC-8112-LX development kit with ThingsPro Gateway software (ThingsPro-GW) pre-installed
Note: Each account may order a maximum of two IIoT Gateway Start Kits.

The AWS IoT Device SDK and a web interface are integrated into ThingsPro Gateway to make it easier for users to configure and use the software. In addition, the kernel configuration and required software packages are pre-installed to meet the technical dependencies of the AWS Greengrass Core.

Package Checklist
- UC-8112-LX computer
- ThingsPro Gateway: ThingsPro-GW software package (pre-installed in the UC-8112-LX)
- Console cable
- Power jack
- Power adapter
- Quick installation guide (printed)
- Warranty card