ThingsPro 2

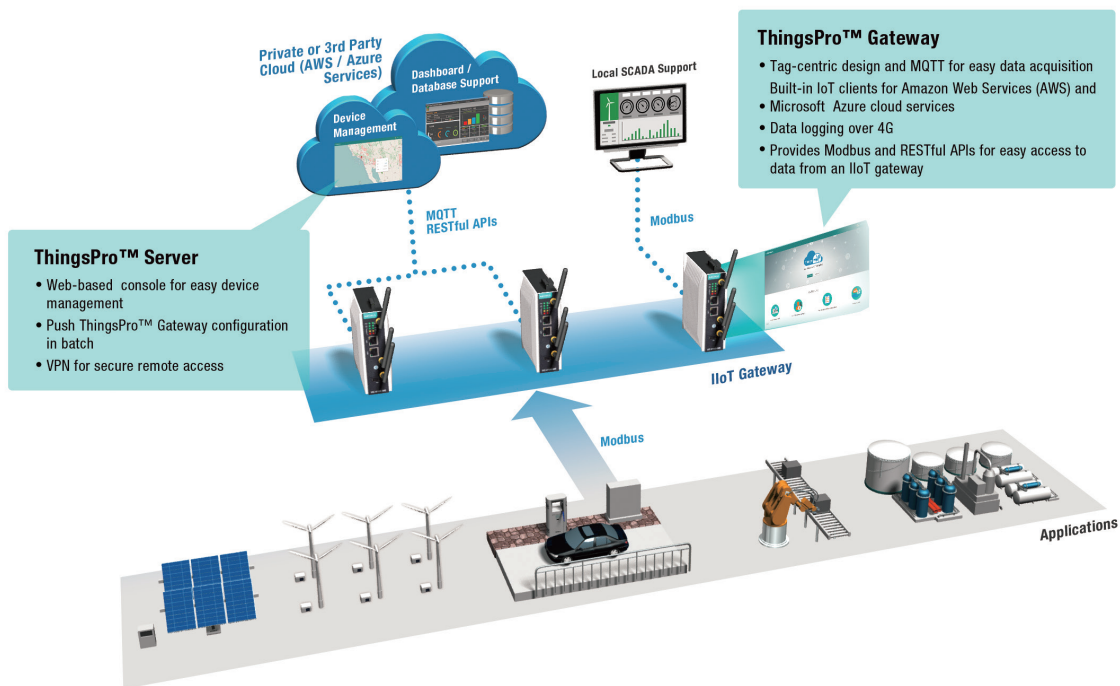## *Intelligent data acquisition and device management platform*

> Acquire big data from edge to core efficiently and easily
> Enable edge intelligence for a smarter Industrial IoT field site
> Manage and access your assets anywhere, anytime
> ThingsPro Gateway: An intelligent Industrial IoT gateway platform
> ThingsPro Server: A centralized device management platform

: Introduction

To help you accelerate development of your industrial IoT applications and create a smarter field site, Moxa's ThingsPro suite offers two versatile software packages: ThingsPro Gateway, an intelligent industrial IoT gateway, and ThingsPro Server, a centralized device management platform. The ThingsPro suite enables Modbus connectivity for data acquisition and processing, MQTT support for lightweight edge-to-core data transmission, a wireless manager for wireless networking configuration, and device management. Configuration just takes a few steps, allowing you to focus on your applications instead of complex integrations.

ThingsPro helps you handle the complexity and diversity that comes from combining information technology and operational technology for industrial IoT applications by offering a high-level Modbus API in C and Python, as well as a modern RESTful API for you to easily develop software applications to extend or enhance the capabilities of Moxa's industrial IoT gateway.

ThingsPro suite provides smart DAQ, rapid development, and easy management, and is specially designed to accelerate your Industrial IoT development by simplifying deployment, helping you create a smarter field site.

Private or 3rd Party Cloud (AWS / Azure Services)

Dashboard / Database Support

Local SCADA Support

ThingsPro™ Gateway
- Tag-centric design and MQTT for easy data acquisition
- Built-in IoT clients for Amazon Web Services (AWS) and Microsoft Azure cloud services
- Data logging over 4G
- Provides Modbus and RESTful APIs for easy access to data from an IIoT gateway

Device Management

MQTT RESTful APIs

Modbus

ThingsPro™ Server
- Web-based console for easy device management
- Push ThingsPro™ Gateway configuration in batch
- VPN for secure remote access

IIoT Gateway

Modbus

Applications

: ThingsPro Packages

ThingsPro Gateway:
An Intelligent Industrial IoT Gateway
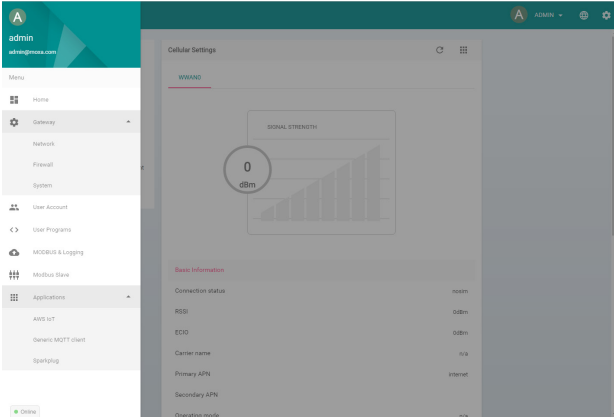
ThingsPro Server:
### A Centralized Device Management Platform
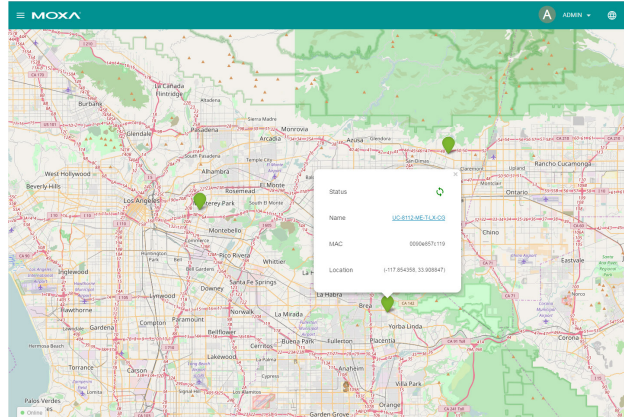
- Ready-to-run Modbus to MQTT functionality to simplify data acquisition tasks for industrial automation applications.
- Modbus TCP/RTU gateway for acquiring data from your field devices.
- Modbus slave support for easy integration with SCADA.
- Cellular configuration and routing for convenient setup of LTE networking.
- Modbus and RESTful APIs for rapid development.
- Built-in support for popular IaaS (Infrastructure as a Service) providers to boost integration of cloud-based data analysis applications.

- Map-view of field site gateways or devices for visual device and asset management.
- Role-based account management to manage groups of gateways or devices by location or organization.
- Organize maintenance tasks such as firmware upgrades with a task queue for better planned execution.
- Offline configuration tool for mass deployment.

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ThingsPro Gateway

Intelligent industrial IoT gateway
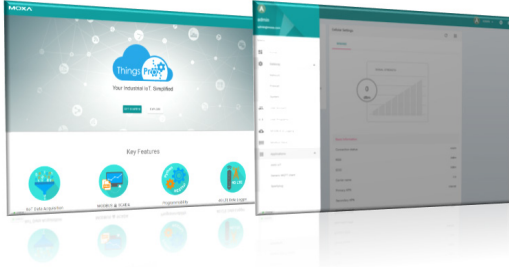
> Modbus polling engine with easy-to-use web-based UI for data acquisition from end devices in an industrial automation field site
> Supports the MQTT IoT protocol to connect fieldbus data to your cloud-based IoT application
> Built-in IoT client for popular IaaS (Infrastructure as a Service) providers 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

Moxa's ThingsPro Gateway is a software package specially designed for industrial IoT field sites. There is no need for extensive Modbus or MQTT knowledge; in just a few steps, you can easily configure and manage remote Modbus/RTU and Modbus/TCP data acquisition, MQTT communication between a Moxa IIoT gateway and your cloud database or application, and wireless networks, including LTE communication.

Easy-to-Use Modbus DAQ
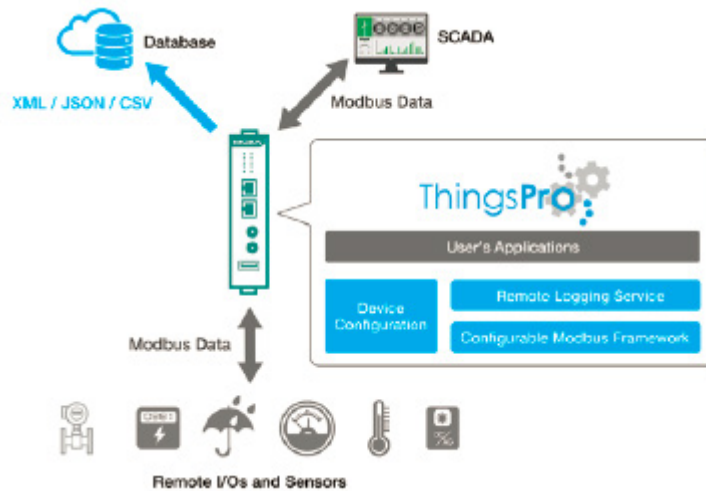
- Every time you want access a new Modbus device, just build a template once then use it everywhere.
- Tag editor to set up unique identifiers for I/O points.
- Unlimited tag support.
- Supports custom tag management.
- Set up a data polling table with your desired time interval and upload logs to a cloud database or application.
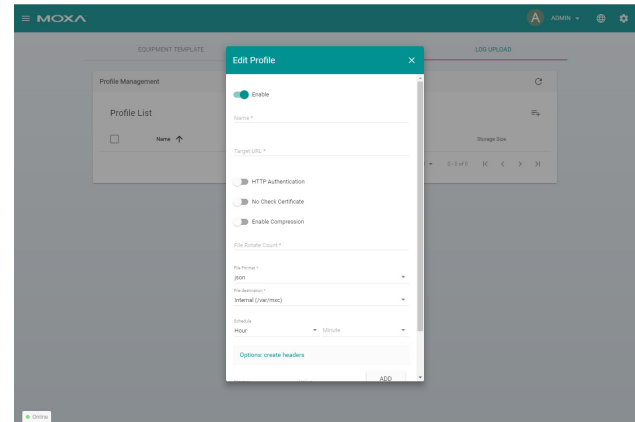- json, xml, and csv upload profiles are supported.
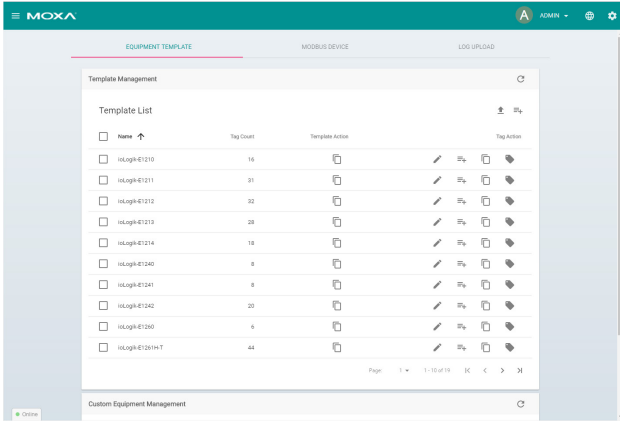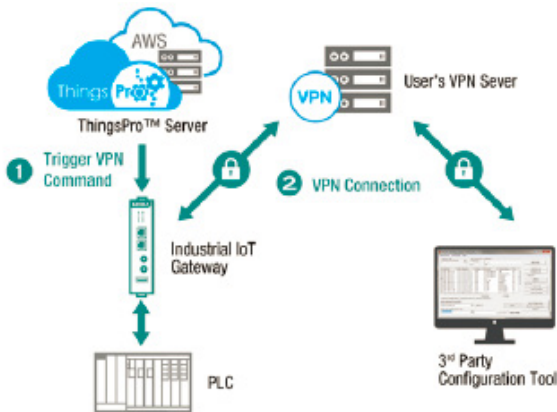
Modbus Device Template
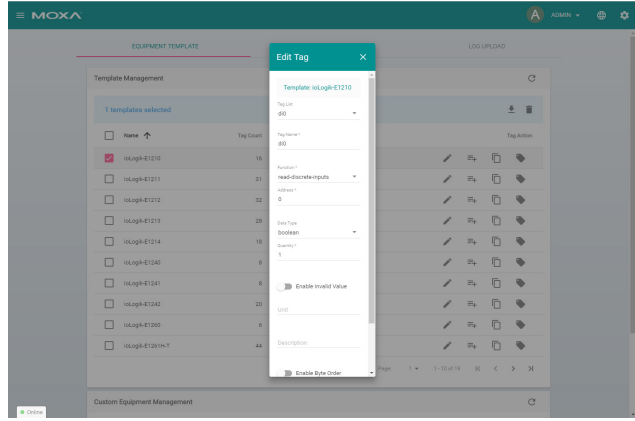

Tag Editor
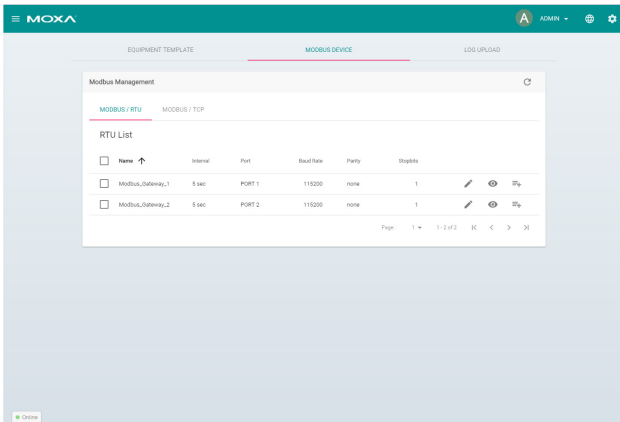
Data Polling Setup

Log Upload

Network, Firewall, and System Configuration

- Set up and monitor cellular strength.
- Support for keep-alive checks.
- Supports DHCP Server for Ethernet ports.
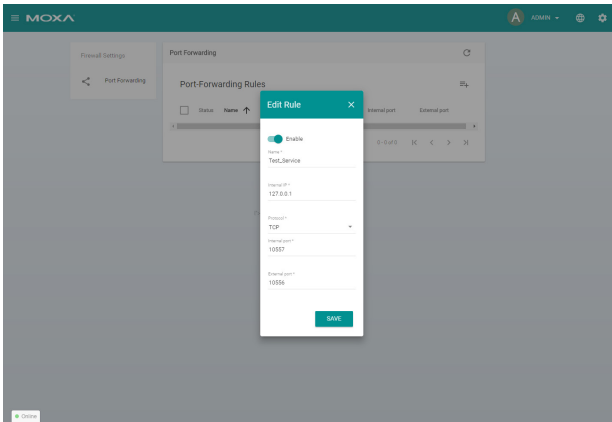- Supports OpenVPN client to build a secure tunnel for data transmission to a remote server.

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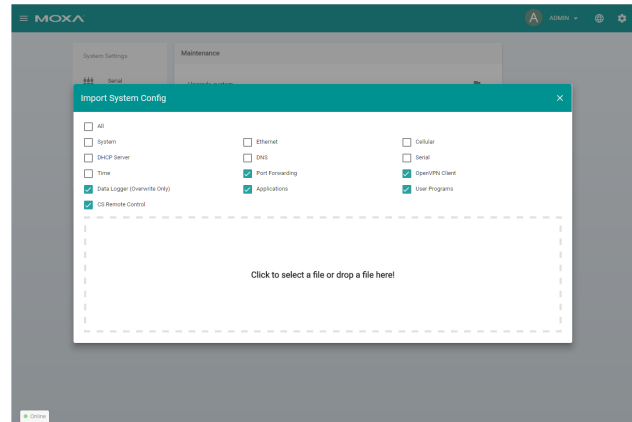- Import system configuration from another ThingsPro Gateway.

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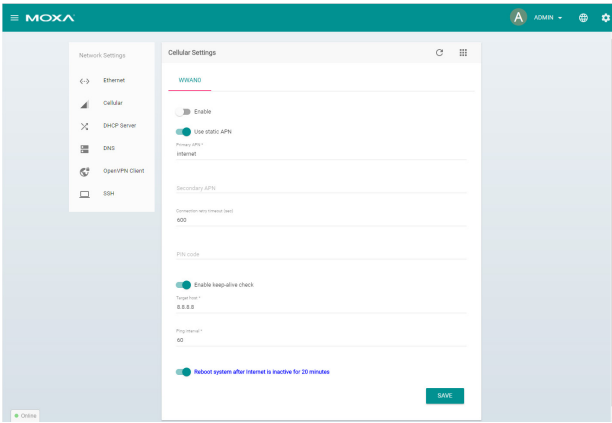
Cellular Configuration
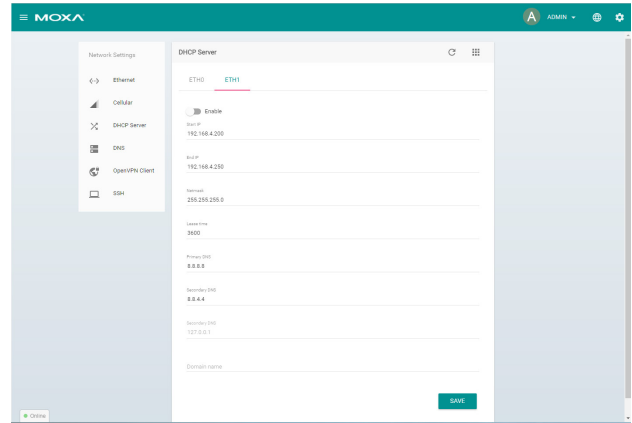

DHCP Server Settings


Port Forwarding

Import System Configuration by Module

Modbus Slave and Third Party Iaas Engine for Remote Data Acquisition

- Enable Modbus Slave to allow your local SCADA 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 brokers.
- Supports other MQTT-based third party services.
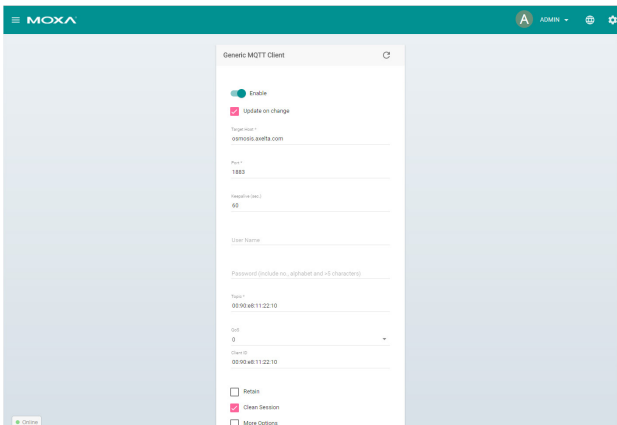
Generic MQTT Client
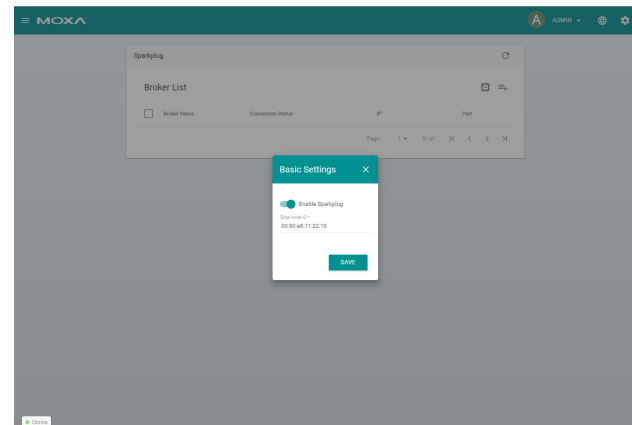
Third Party MQTT Broker-Sparkplug

www.moxa.com

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 is easier than ever to enhance or extend ThingsPro Gateway functions and integrate them into your software application.

IIoT Gateway

User's Applications
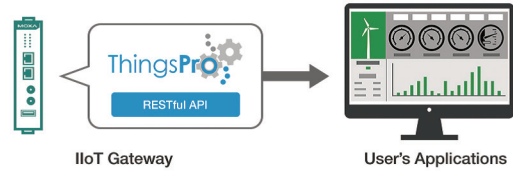
: Ordering Information

ThingsPro Gateway

ThingsPro-GW: ThingsPro Gateway software with a term license that enables use with eligible ThingsPro devices
Note: ThingsPro Gateway can be used without ThingsPro Server.

Package Checklist

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

: Eligible Devices

ThingsPro Gateway supports the following devices by default:

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.

ThingsPro Server

Device/Asset Management Platform
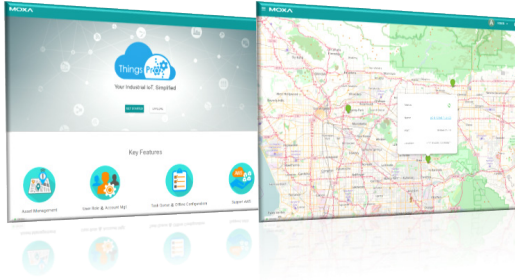
> Locate and access your devices using a map view for easy management
> Remotely perform management tasks such as firmware upgrades, configuration changes, and user program uploads
> Management tasks can be run on demand or according to a schedule for better utilization
> Account management tool provides role-based access control

: Introduction

Moxa's ThingsPro Server is a software package specially designed for Industrial IoT field site device management. The interactive map view helps keep track of your devices in a visual manner, and provides convenient access to a device's status and configuration.

Asset Management

- Interactive map view to locate and manage your ThingsPro Gateways.
- View a device's status and change its configuration remotely through a web UI.

- Upload custom programs to a target ThingsPro Gateway and manage them from ThingsPro Server.
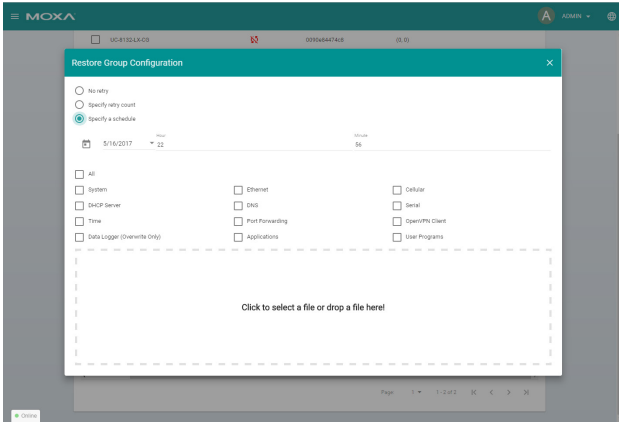- Change your server's Modbus DAQ and MQTT configuration over the Internet.
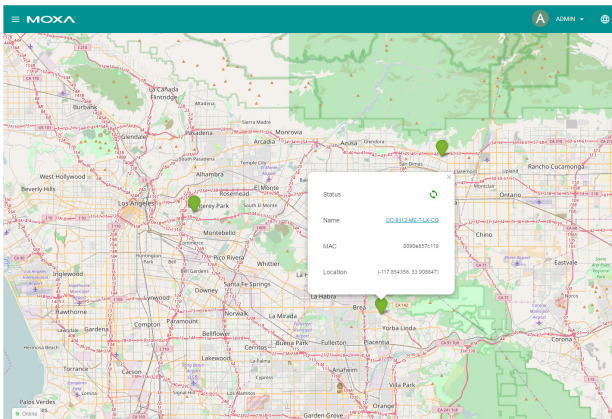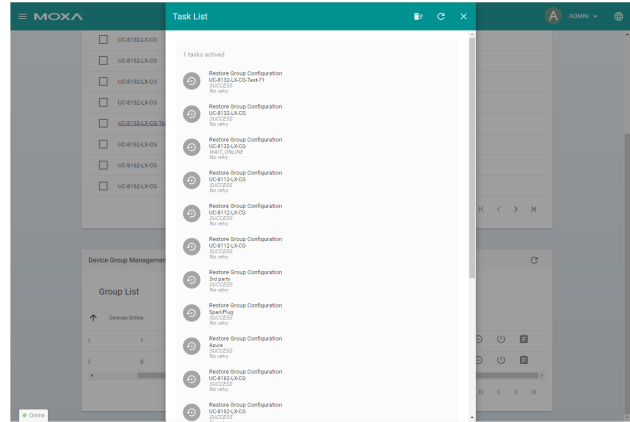

Interactive Map View
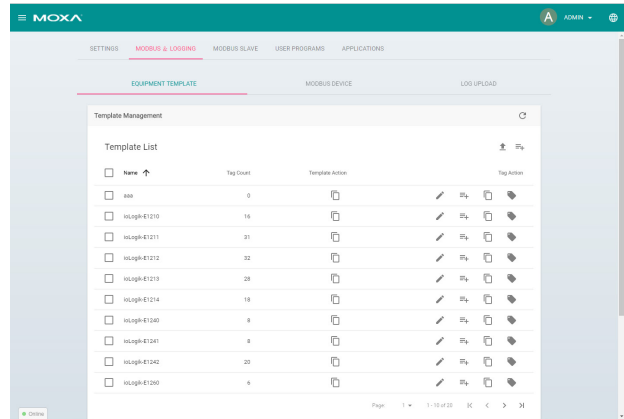
Remote Configuration

Task Queue and Schedule

- Execute remote management tasks according to your schedule or on demand.

- Device grouping features allow you to execute tasks for a group of devices at the same time.

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Schedule Task

Task Queue

User Role Account Management

- Create administrator and user-level accounts to control access rights to your Industrial IoT Gateways.
- Developer Administrator (Root)
  > Create/delete sub account
  > Highest administrative authority
- Administrator
  > Manage devices
  > Schedule batch tasks
  > Manage user accounts
- Users
  > Read-only

Developer Administrator (Root)
- Create / delete sub accounts
- Highest administrative authority

Administrator
- Manage devices
- Schedule batch jobs
- Manage user accounts

User
- Read only

System Requirements

ThingsPro Server can be deployed on an AWS (Amazon Web Service) EC2 Instance. We recommend using an "AWS EC2 Instance t2.small" for managing 300 nodes (ThingsPro Gateway).

Note: For more information about ThingsPro Server, please contact your regional sales representative.