Open Gateway

User Manual

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Getting Started

1.1 About Open Gateway

Open Gateway is a function embedded in Uticor's IIoT products for connecting with cloud platforms. By using Uticor's IIoT products as an open gateway, data from end devices such as sensors can be transmitted to the cloud for analysis and storage. Open gateway is available in Uticor's IoT gateways, including the IMG series and ORIO, serial service devices, and routers.

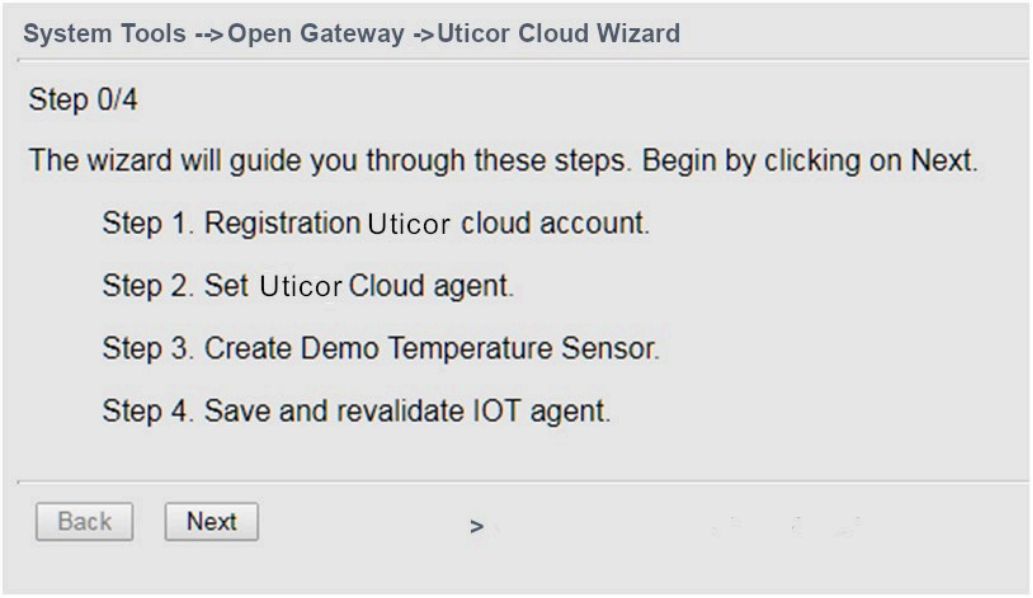
1.2 Software Features

- Convert industrial protocols to IOT protocols
- Support various cloud platforms
- Rule engine for edge computing
- Docker engine supports user programming
- Web interface for management

1.3 Cloud Settings

1.3.1 Uticor Cloud Wizard

Uticor's Open Gateway supports public clouds and private clouds through a variety of protocols. Uticor Cloud Wizard will guide you through the installation of the open gateway step by step. Go to Open Gateway Inside under System Tools and open Uticor Cloud Wizard, and then follow the instructions.

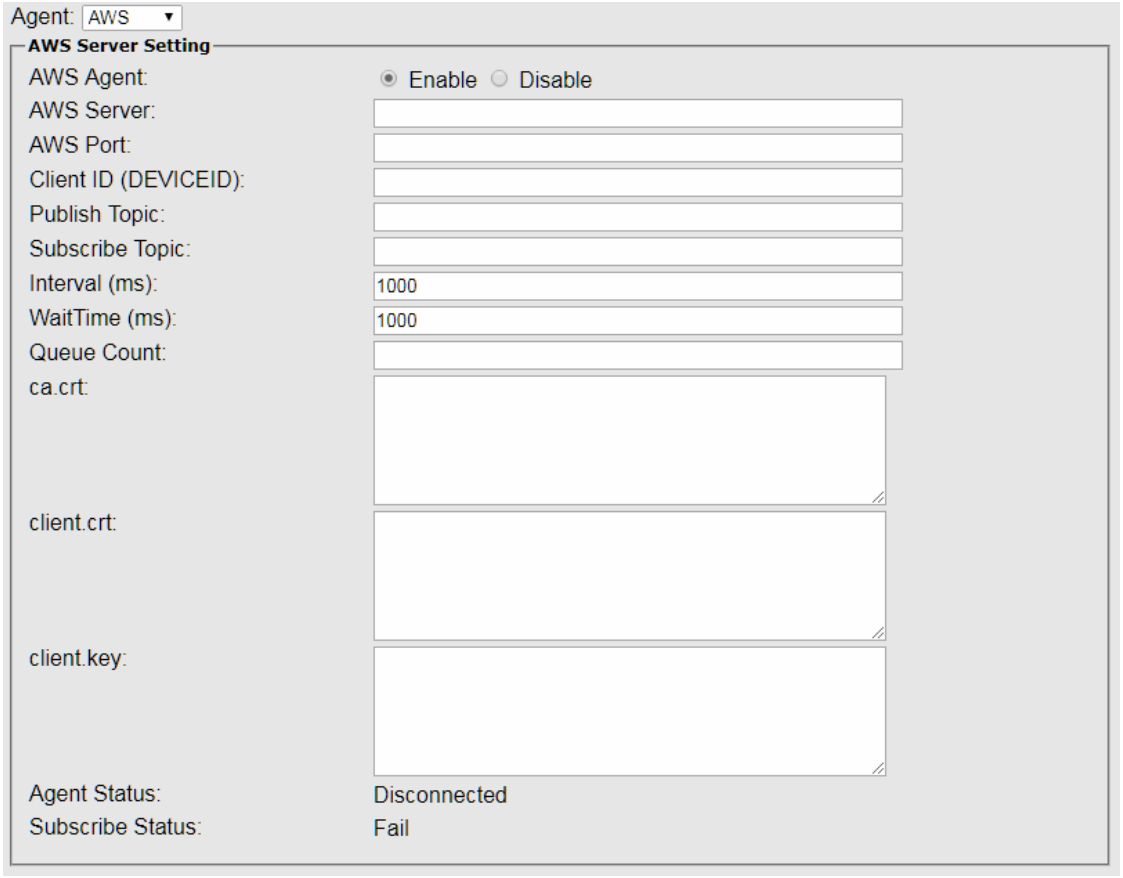


1.3.2 Cloud Agents

Uticor's Open Gateway supports various cloud agents. For the settings of each cloud agent, please refer to the following sections.

AWS

This page allows you to set up AWS connections. AWS (Amazon Web Services) is a bundled remote computing platform developed by Amazon. It provides cloud computing infrastructure over the Internet with storage, bandwidth and customized support for application programming interfaces (API). The open cloud platform is offered to individuals, companies and governments on a paid subscription basis. AWS resides on the same infrastructure as the host of Amazon's other Web properties, such as Webstore. It offers scalable and virtually unlimited computing, storage and bandwidth resources. The AWS IoT message broker implementation is based on MQTT version 3.1.1.

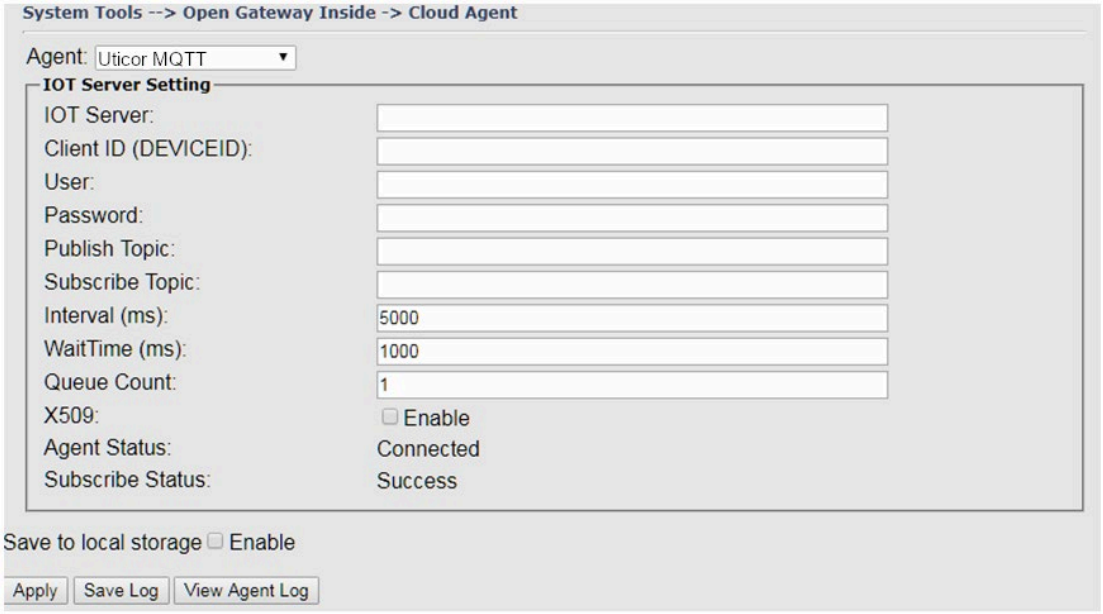


Label	Description
AWS Server	Enter AWS server URL or IP address.
AWS port	Enter the port number for the AWS server.
Client ID (Device ID)	Client ID / Device ID on PaaS.
Publish Topic	The topic to be published on PaaS.
Subscribe Topic	The topic to be subscribed on PaaS.
Interval (ms)	The interval time of a command to be sent.
Wait time (ms)	The wait time before a device times out.
Queue Count	Command to be sent in one MQTT packet.
CA Cert	Fill in the CA cert.
Client Cert	Fill in the client certification.
Client Key	Fill in the client key.
Agent Status	Connection/disconnection of the agent.
Subscribe Status	Status of the subscription.

Uticor MQTT

This page allows you to set up MQTT protocol. MQTT (MQ Telemetry Transport) is a simple and lightweight messaging protocol designed for constrained devices and low-bandwidth,

high-latency or unreliable networks. The aim of the protocol is to minimize network bandwidth and device resource requirements while ensuring reliability. This publish-subscribe-based messaging protocol has been widely used in IoT projects as an M2M protocol for millions of connected products.

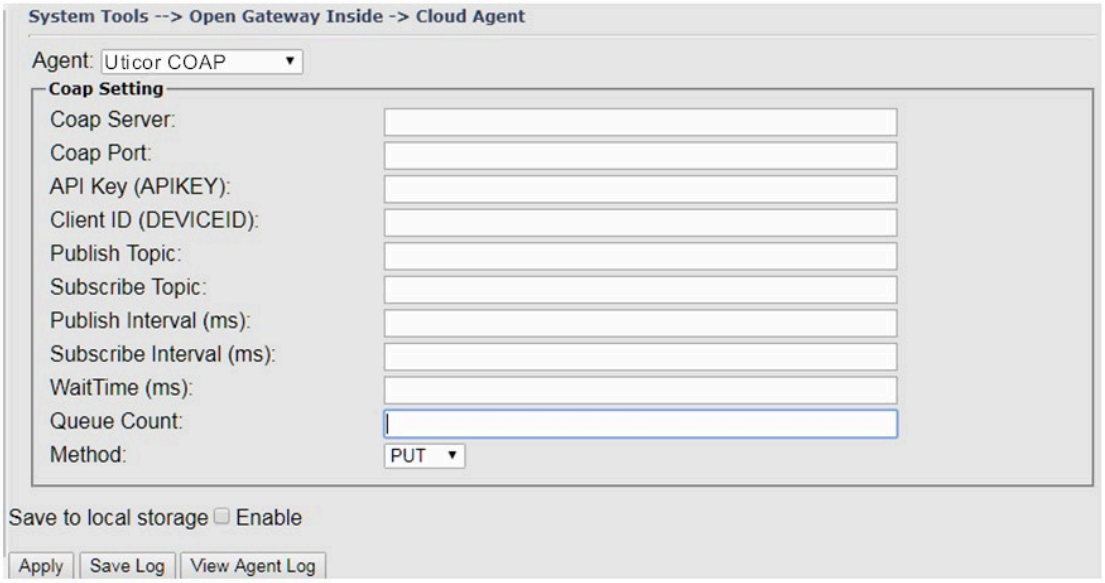


Label	Description
IOT Server	Enter the IOT server URL or IP address.
Client ID (Device ID)	Enter the client ID / device ID on PaaS.
User	Enter the username for the server.
Password	Enter the password for the server.
Publish Topic	The topic to be published on PaaS.
Subscribe Topic	The topic to be subscribed on PaaS.
Interval (ms)	The interval time of a command to be sent.
Wait time (ms)	The wait time before a device times out.
Queue Count	Command to be sent in one MQTT packet.
X509	Check to enable X509 authentication.
Agent Status	Connection/disconnection of the agent.
Subscribe Status	Status of the subscription.

Uticor COAP

This page allows you to set up the CoAP protocol. CoAP (Constrained Application Protocol) is a specialized web transfer protocol for use with constrained nodes and constrained networks in IoT. The protocol is designed for M2M applications such as smart energy and building automation. It can discover the properties of the nodes on your network. Since CoAP

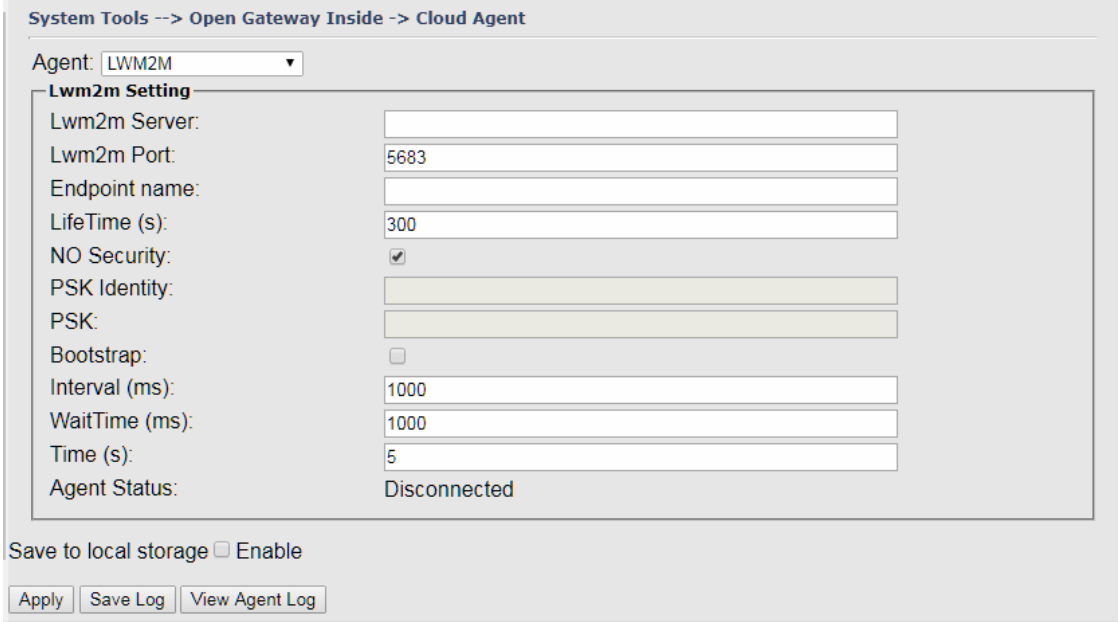
is based on the wildly successful REST model, resources are made available under a URL can be accessed using methods such as GET, PUT, POST, and DELETE.



Label	Description
Coap Server	Enter the CoAp server URL or IP address.
Coap Port	Enter the port number for the CoAp server.
API Key (APIKEY)	Enter the CoAp server key.
Client ID (Device ID)	Enter the client ID / device ID on PaaS.
Publish Topic	The topic to be published on PaaS.
Subscribe Topic	The topic to be subscribed on PaaS.
Interval (ms)	The interval time of a command to be sent.
Subscribe Poll (ms)	Subscribe polling time.
Wait time (ms)	The wait time before a device times out.
Queue Count	Command to be sent in one MQTT packet.
Method	Select the method for uploading the data to server. You can choose between Put or Post.

LWM2M

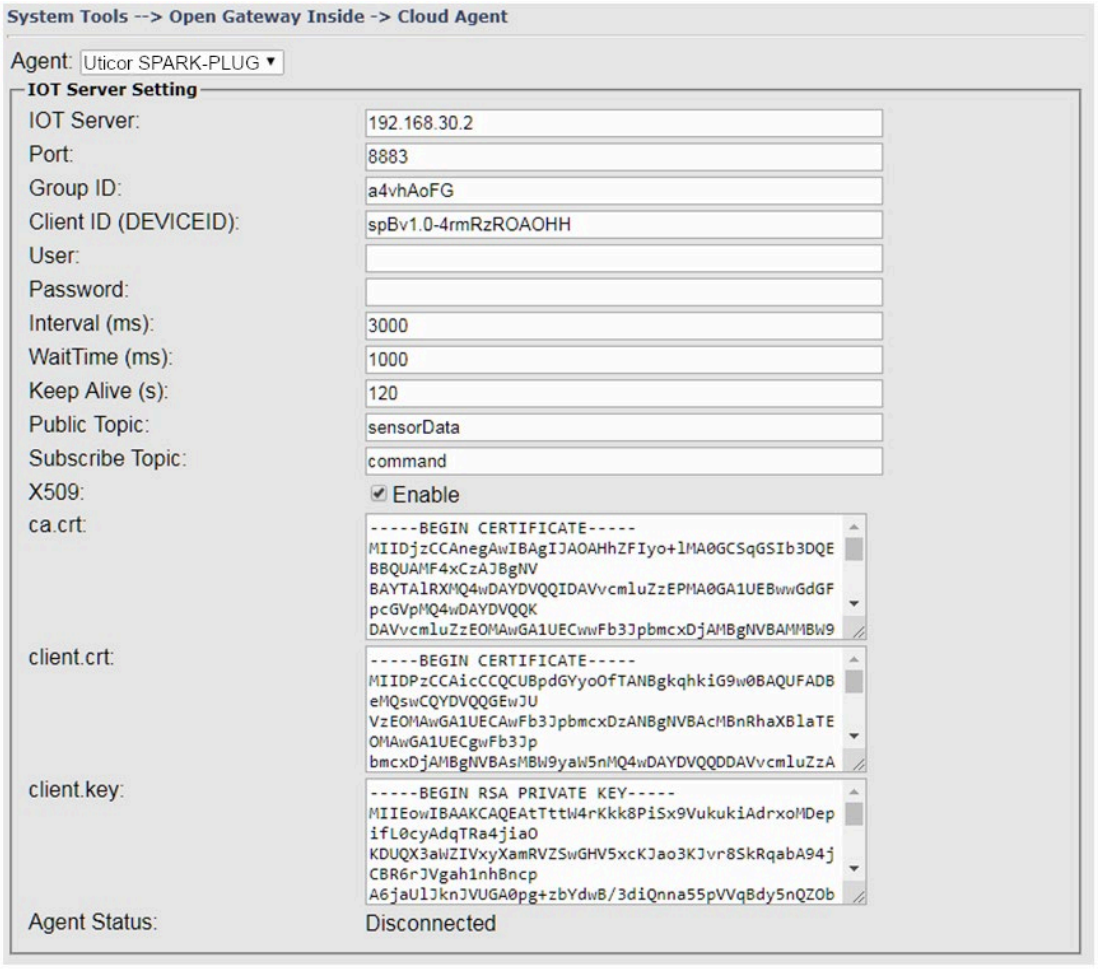
This page allows you to set up LWM2M Sparkplug protocol. LwM2M is a secure, efficient and deployable client-server protocol defined by the Open Mobile Alliance for M2M and IoT device management. LwM2M uses a modern architectural design based on REST to manage resource constrained devices on a variety of networks. It provides a choice for the M2M Service Provider to deploy a M2M system to provide service to the M2M User and is frequently used with CoAP



Label	Description
Lwm2m Server	Enter the Lwm2m server URL or IP address.
Lwm2m port	Enter the port number for the Lwm2m server.
Endpoint name	Enter the name of the endpoint.
Life time (s)	Enter the life time in second.
No Security	Check to enable security function.
PSK Identity	Enter the PSK identity.
PSK	Enter the PSK.
Bootstrap	Check to enable Bootstrap.
Wait time (ms)	The wait time before a device times out.
Times	Times in second.
Agent Status	Connection/disconnection of the agent.

Uticor Spark-plug

This page allows you to set up the Sparkplug protocol. The Sparkplug MQTT specification defines how to use MQTT in a mission-critical, real-time environment, defining the topic namespace, payload definition, state management with high availability, redundancy, and scalability. The Sparkplug specification provides the necessary details for any MQTT enabled device to connect to MQTT servers and integrate with zero configuration into Ignition via the Cirrus Link MQTT Engine Module or other Sparkplug supported applications.

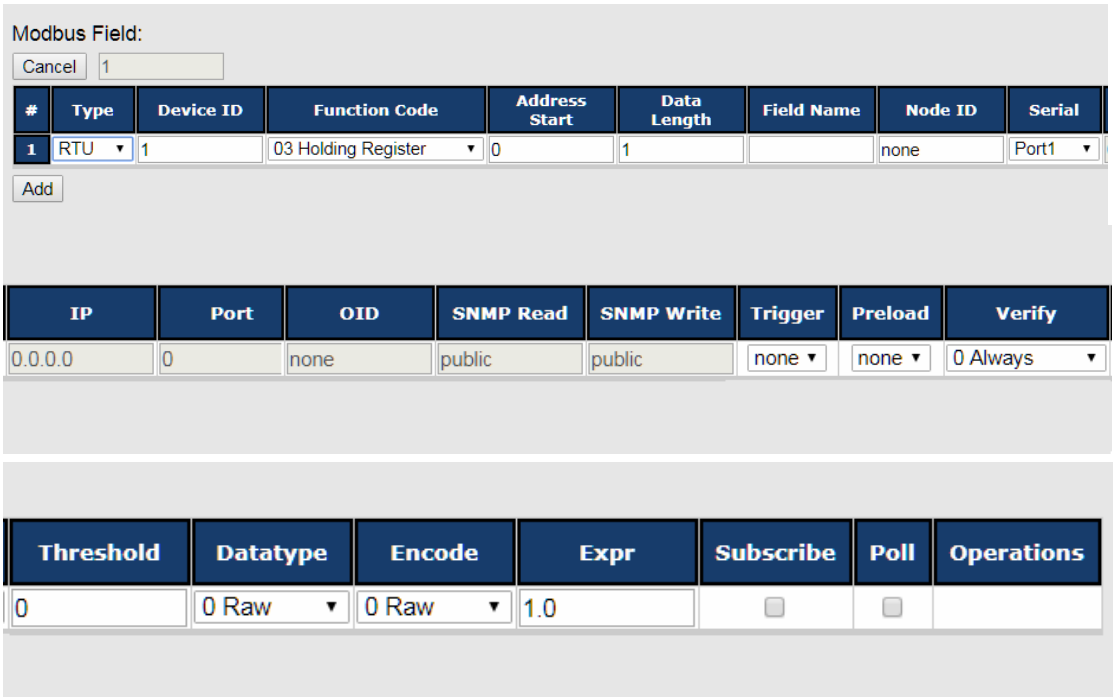


Label	Description
IOT Server	Enter the IOT server URL or IP address.
port	Enter the port number for the IOT server.
Group ID	Enter the group ID of Sparkplug.
Client ID (Device ID)	Enter the client ID /device ID on PaaS.
Username	Enter the username for the server.
Password	Enter the password for the server.
Interval (ms)	The interval time of a command to be sent.
Wait time (ms)	The wait time before a device times out.
Keep Alive (s)	Check connection between the server and device.
Publish Topic	The topic to be published on PaaS.
Subscribe Topic	The topic to be subscribed on PaaS.
X509	Check to enable X509 authentication.
CA Cert	Fill in the CA cert.
Client Cert	Fill in the Client certification.
Client Key	Fill in the Client Key.

Agent Status	Connection/disconnection of the agent.

End-Points

This page allows you to set up end points such as sensors on the Internet.

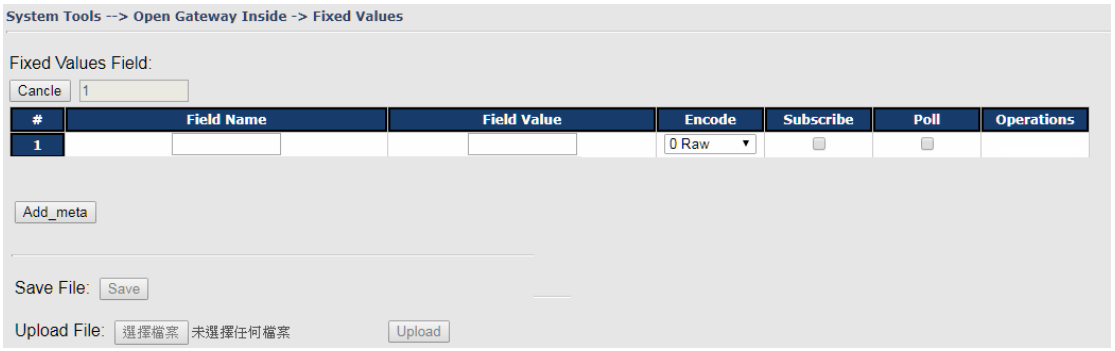


Label	Description
Modbus Field	Enter the number of fields to be added.
Type	Select among RTU / ASCII / TCP / Raw / Custom.
Device ID	Enter the device ID to be read.
Function Code	Select the function code to be read.
Address Start	Reading Address.
Data length	Data length of the reading address.
Field Name	Field name on PaaS.
Node ID	Node ID for Sparkplug.
Serial port	Select the serial port on devices.
IP	The device IP address.
Port	The device port.
OID	The OID name to be read for SNMP.
SNMP read	The SNMP community to be read for SNMP.
SNMP write	The SNMP write community for SNMP.
Trigger	Field name to be triggered with existing Modbus field.
Preload	Preload Field name which the data is include in specific field.

Verify	Verify the data receive with Threshold before read.
Threshold	Values to be compare with the data receive.
Datatype	Received Data type Raw / integer / Float SP / Dummy.
Encode	Data type to be transfer Raw / integer / Float SP / Dummy.
Expr	Value receive from devices will be multiply with this value.
Subscribe	Enable Subscribe.
Poll	Enable Polling.
Save file	Backup Modbus field to PC.
Upload file.	Restore the Modbus field from file.

Fixed Value

This page allows you to set up fixed value for the end points such as humidity or temperature thresholds.



Label	Description
Field Name	Field name on PaaS.
Field Value	Field value to send to PaaS server.
Encode	Select the data type to be transferred, including raw / integer / Float SP / dummy.
Subscribe	Check to enable subscription.
Poll	Check to enable polling.
Operations	Delete from list.

Status

This page shows the status of each IoT device such as query value and query count.


System Tools --> IOT Setting -> IOT Status
IOT Status:
#
Field Name
Query Value
Query Count