

Reduxi Controller - MQTT API

Original text as published before the redesign of this article. Wording unchanged.

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1. MQTT version support

We support the 3. x version. However, we do not support 5. x.

2. Reduxi Controller MQTT API documentation

Documentation of all available MQTT topics and subscribe methods are available on:

- <https://mqtt.support.reduxi.eu>

MQTT documentation is generated from the viewpoint of Reduxi Controller.

When you read from Reduxi MQTT, you will see the "PUB" term. Why PUB? Because we publish the data from Reduxi Controller to the topic.

When you set values to Reduxi Controller over MQTT, you will see the "SUB" term. Why SUB? Because we subscribe to the topic and read data from it, setting the values you have sent to the Reduxi Controller.

Below, we have included some information on how the Reduxi Configurator must be set so that you will start receiving data on specific MQTT brokers. In the last paragraph, you can see an example of one readout and setting the setpoints on one device.

3. Reduxi MQTT interface configuration

Please login to the Reduxi Controller device and go to the System settings. Under System settings, select MQTT v3 and define MQTT broker data:

- Host (just domain/IP, without mqtt://)
- Port
- Username
- Password

reduxi

CONFIGURATOR

Users

Devices

Strategies

System

Identifier

Network

Open VPN

Connector

Cloud

MQTT v3

iFlex

Configuration

Distribution System Operators

Time

MQTT v3 connection

Client

Host

Connected

MQTT connection

Host

mqtt.example.com

Port

1883

Username

Password

Server CA chain (PEM format)

Client public certificate (PEM format)

Client private key (PEM format)

Readout interval

5

sec

Clear

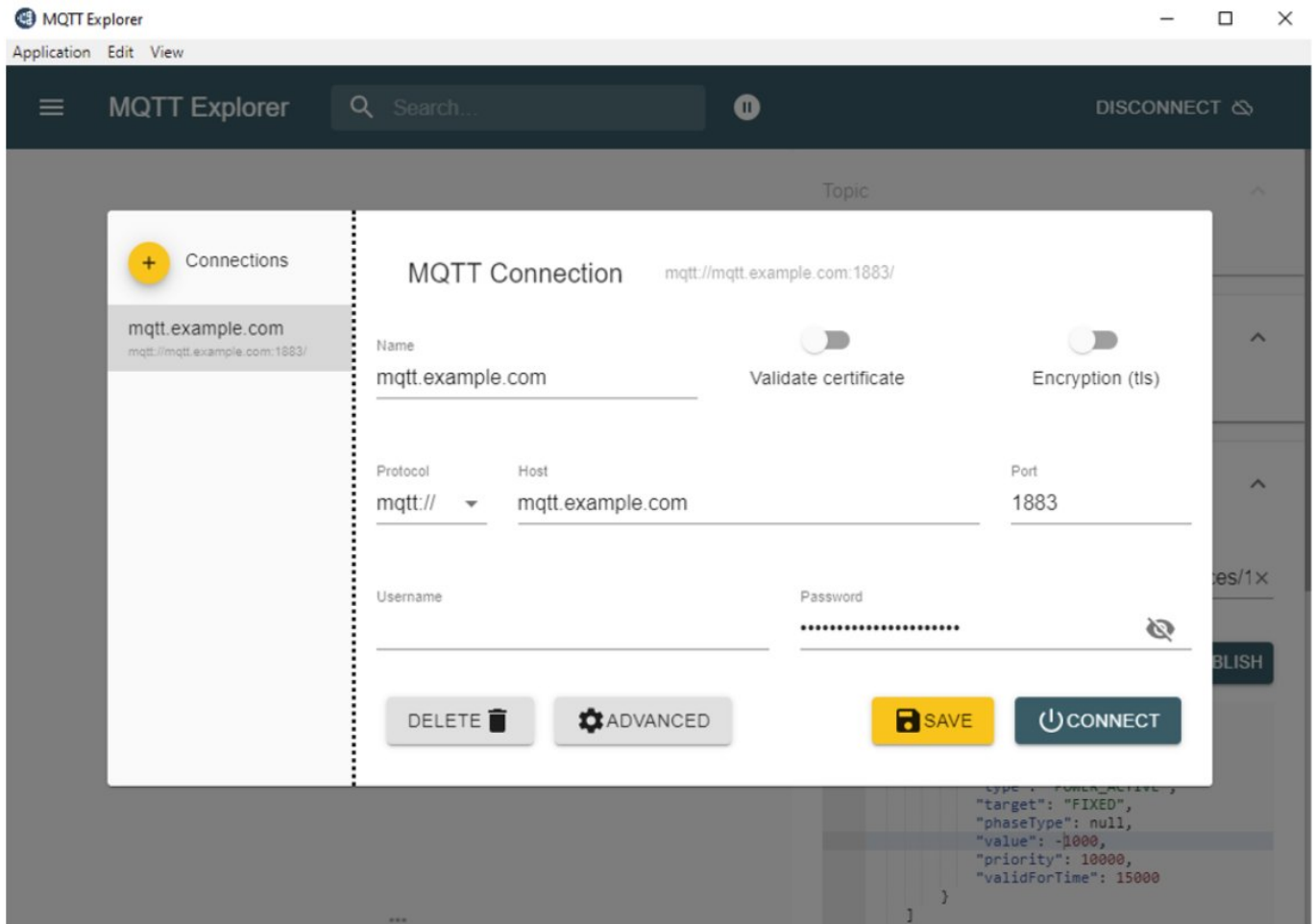
Save

4. Windows client

You could try to collect data by using MQTT Explorer and connecting to the MQTT broker with the following:

- <http://mqtt-explorer.com/>

You can connect to the MQTT broker when you start an MQTT explorer application.

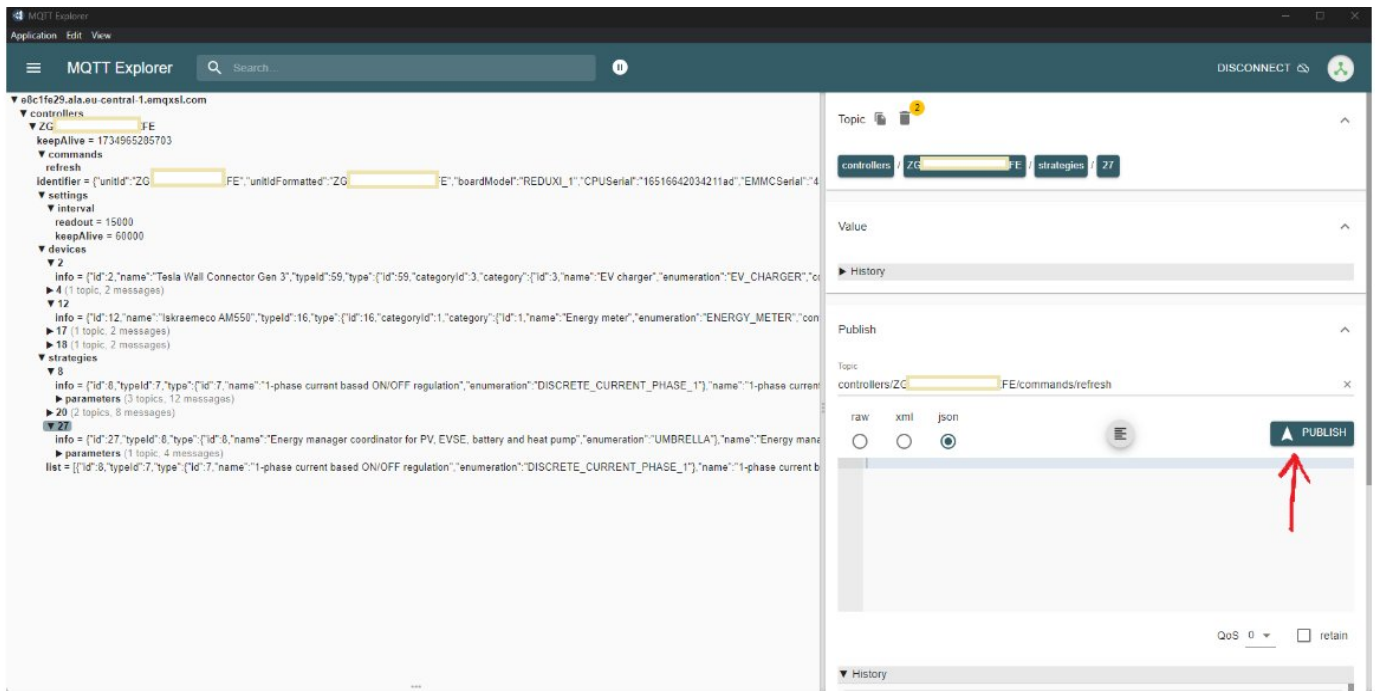


5. Commands

5.1. Refresh metadata

Request Reduxi to republish all metadata about the system, devices and strategies to MQTT. Otherwise, only readouts and setpoints are published periodically.

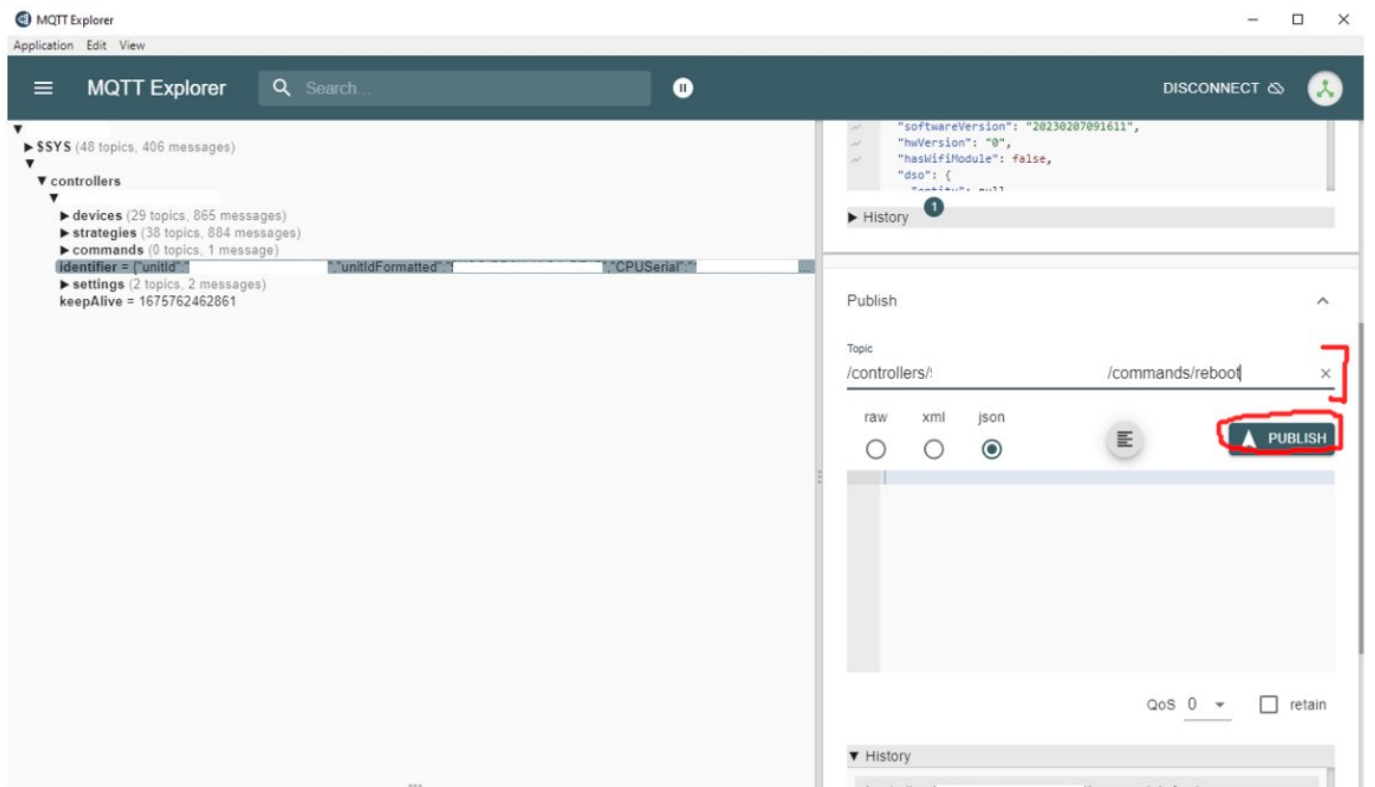
Topic: controllers/controller_unit_id/commands/refresh



5.2. Reboot

Could you reboot the Reduxi Controller?

Topic: *controllers/controller_unit_id/commands/refresh*



6. Setpoints

6.1. View all active setpoints for the device

The screenshot shows the MQTT Explorer interface. On the left, a tree view displays the MQTT topic structure:

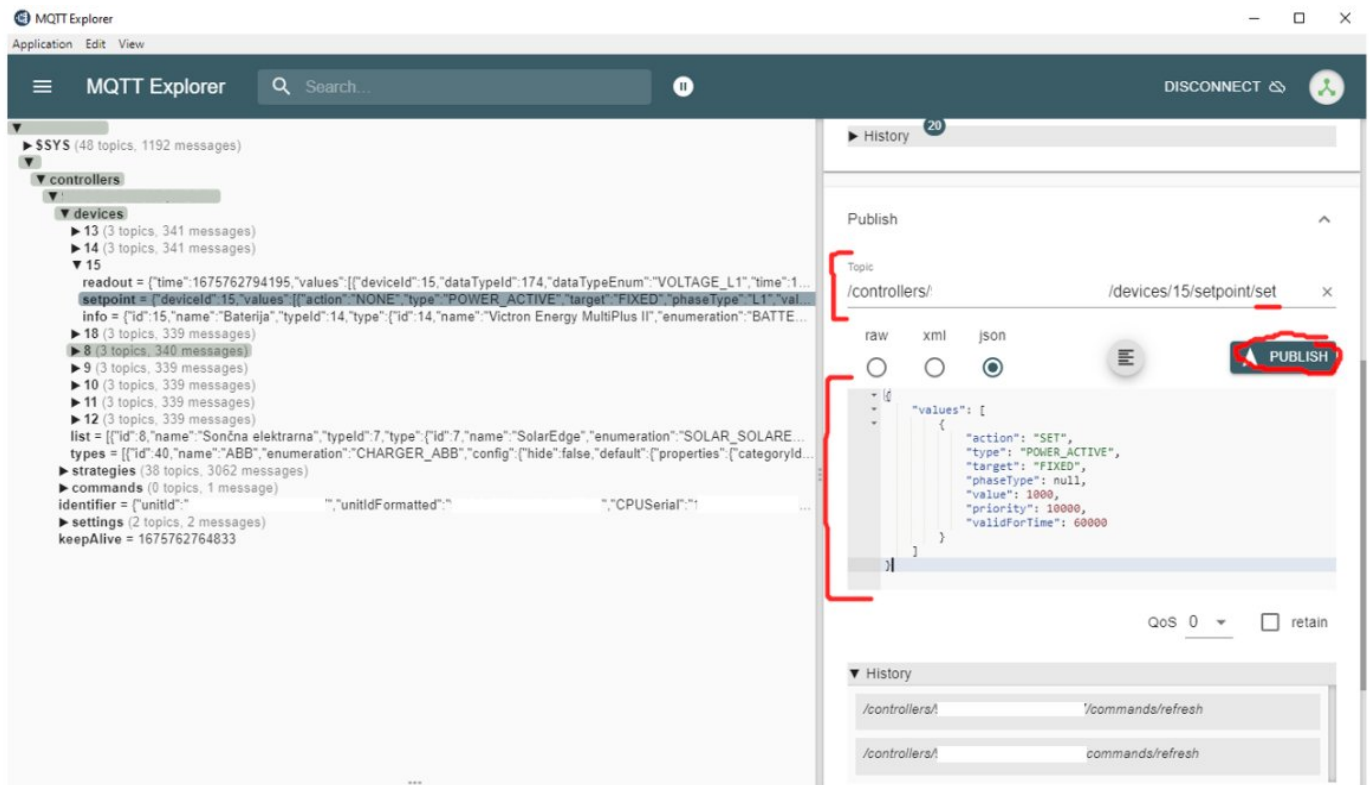
- \$SYS (48 topics, 862 messages)
 - controllers
 - devices
 - 13 (3 topics, 235 messages)
 - 14 (3 topics, 235 messages)
 - 15
 - readout = [{"time": 1675762671666, "values": [{"deviceId": 15, "dataType": 174, "dataTypeEnum": "VOLTAGE_L1", "time": 1675762671666}]}]
 - setpoint = [{"deviceId": 15, "values": [{"action": "NONE", "type": "POWER_ACTIVE", "target": "FIXED", "phaseType": "L1", "value": 0}], "info": {"id": 15, "name": "Baterija", "type": 14, "type": {"id": 14, "name": "Victron Energy MultiPlus II", "enumeration": "BATTE..."}]}]
 - 18 (3 topics, 233 messages)
 - 8 (3 topics, 233 messages)
 - 9 (3 topics, 233 messages)
 - 10 (3 topics, 233 messages)
 - 11 (3 topics, 233 messages)
 - 12 (3 topics, 233 messages)
 - list = [{"id": 8, "name": "Sončna elektrarna", "type": 7, "type": {"id": 7, "name": "SolarEdge", "enumeration": "SOLAR_SOLARE..."}, "types": [{"id": 40, "name": "ABB", "enumeration": "CHARGER_ABB", "config": {"hide": false, "default": {"properties": {"categoryId": ...}}}]}
 - strategies (38 topics, 2104 messages)
 - commands (0 topics, 1 message)
 - identifier = {"unitId": "...", "unitIdFormatted": "...", "CPUSerial": "..."}]
 - settings (2 topics, 2 messages)
 - keepAlive = 1675762644772

On the right, the 'Value' section shows a selected message with the following JSON payload:

```
{
  "deviceId": 15,
  "values": [
    {
      "action": "NONE",
      "type": "POWER_ACTIVE",
      "target": "FIXED",
      "phaseType": "L1",
      "value": 0,
      "priority": 100,
      "validForTime": 28571
    }
  ]
}
```

The 'Topic' field at the bottom shows the path: `/controllers/15/setpoint`.

6.2. Set setpoints for the device



6.2.1. Example 1

Set power active to -1 kW (export) on all phases for 15 seconds.

```
{
  "values": [
    {
      "action": "SET",
      "type": "POWER_ACTIVE",
      "target": "FIXED",
      "phaseType": null,
      "value": 1000,
      "priority": 10000,
      "validForTime": 15000
    }
  ]
}
```

6.2.2. Example 2

Limit maximum current to 10A on phase L2 for 30 seconds.

```
{
  "values": [
    {
      "action": "SET",
      "type": "CURRENT",
      "target": "MAX",
      "phaseType": "L2",
      "value": 10,
      "priority": 10000,
      "validForTime": 30000
    }
  ]
}
```