ADVANTECH LwM2M Router App User Guide

RouterApp

Modbus to LwM2M

Contents

LwM2M Router App

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Used symbols

Danger – Information regarding user safety or potential damage to the router.

Attention – Problems that can arise in specific situations.

Information – Useful tips or information of special interest.

Example – Example of function, command or script.

Changelog

1.1 Modbus to LwM2M Changelog
v1.0.0 (2020-08-28)

- First release.

Router App Modbus to LwM2M

2.1 Description

This Router app is not contained in the standard router firmware. Uploading of this router app is described in the Configuration manual (see ChapterRelated Documents).

Modbus to LwM2M router app provides seamless communication between Modbus/TCP devices and LwM2M device. LwM2M works as Modbus/TCP master to communicate with Modbus/TCP devices.

2.2Installation

The latest version of Modbus to LwM2M router app can be downloaded from the Engineering Portal[EP] at **https://icr.advantech.cz/products/software/user-modules**.

In the GUI of the router navigate to Customization -> Router Apps page. Here choose the downloaded module's installation file and click to the Add or Update button.

Once the installation of the module is complete, the module's GUI can be invoked by clicking the module name on the Router Apps page. Figure1shows the main menu of the module. It has the LwM2M, Mapping Table and Log menu items. To return back to the
router's web GUI, click on the Return to Router item.

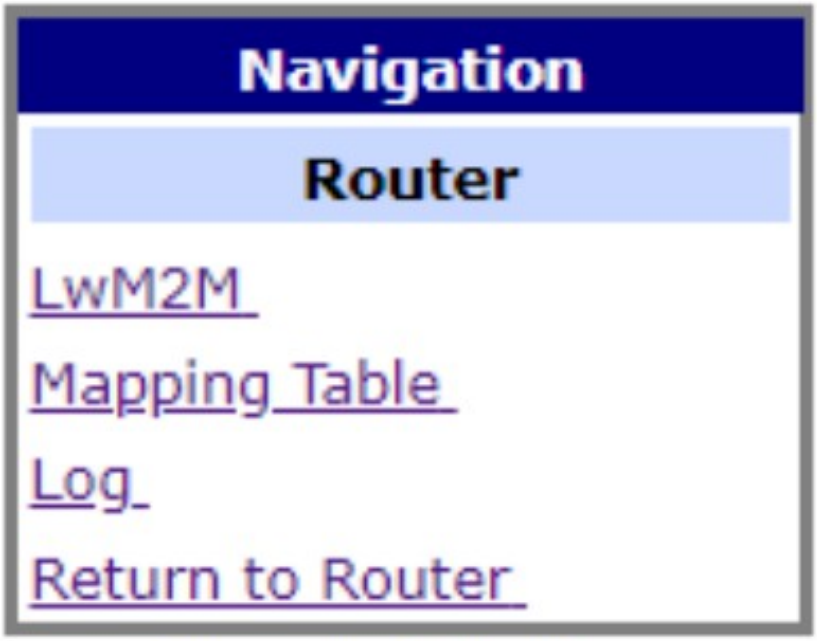

Figure 1: Main Menu

2.3 Module Configuration

Configuration of the router app can be done on the LwM2M page. This configuration page is shown in Figure2. There are two sections on the page, LwM2M Settings, and Modbus TCP. The configuration items are described on the page next to the items. Do not forget to click the Save button below to save changes made on the page.

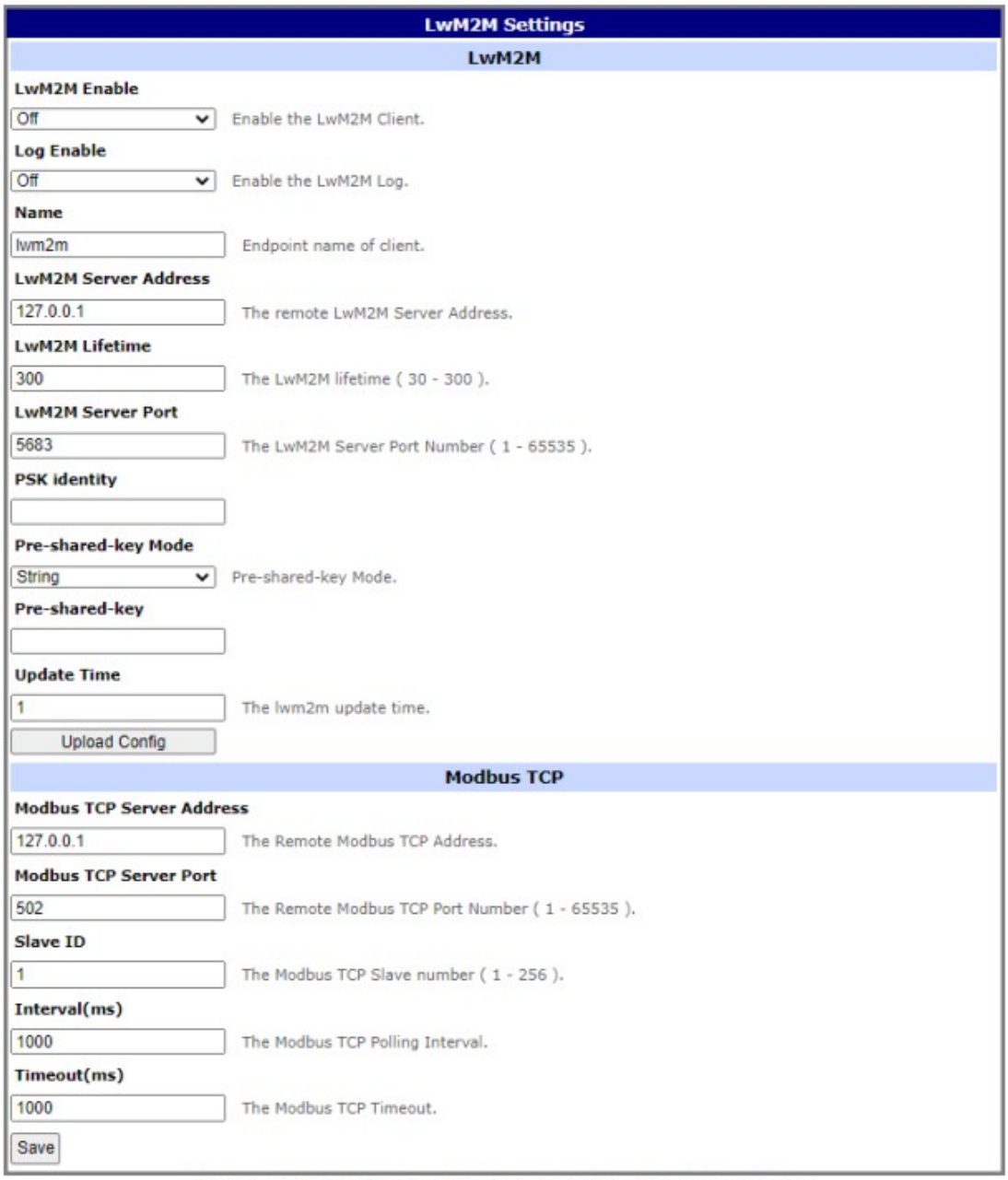

Figure 2: LwM2M and Modbus TCP Configuration Page

2.3.1 Configuration Uploading

Configuration of Modbus TCP and LwM2M devices mapping can be imported by a CVS file. Format of this file is shown in Figure3and the key columns are described in Table1. Separator (delimiter) for the CSV file is a comma.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
IPSO SO	Name	#	Type	Device ID	Function Code	Address Start	Data Length	Designator	Serial	IP	Port	Trigger	Preload	Verify	Threshold	Datatype
10701	Vibration_Alarm	1	TCP	1	3	10811	1	/10701/0/101	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	7 Boolean
10702	Water_Alarm	1	TCP	1	3	10820	1	/10702/0/105	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	7 Boolean
10706	Max_Pressure	1	TCP	1	3	40054	2	/10706/0/201	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	4 IEEE, Re
10706	Min_Pressure	1	TCP	1	3	40062	2	/10706/0/202	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	4 IEEE, Re
10707	DC_Voltage	1	TCP	1	3	40802	2	/10707/0/302	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	4 IEEE, Re
10707	DC_Current	1	TCP	1	3	40804	2	/10707/0/303	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	4 IEEE, Re
10708	Temperature_Alarm	1	TCP	1	3	10808	1	/10708/0/105	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	7 Boolean
10708	Pressure_Alarm	1	TCP	1	3	10810	1	/10708/0/107	Port 1	192.168.0.12	502	none	none	0 Always	FALSE	7 Boolean

Figure 3: CSV File Example

To import this file, go to LwM2M configuration page, click on the Upload Config button, choose the file, and then click the Upload button. If uploaded successfully, click the Return button and finally click on the Save button LwM2M on the bottom of the configuration page. The new mapping configuration will take effect immediately.

Column	Field	Description
A	IPSO SO	LwM2M Object ID
B	Name	The name to identify the mapping.
G	Address Start	Designate the Modbus to starting address for the Modbus registry.
H	Data Length	For range 1 9999 or 10000 19999, the unit is bit(s). For range 30001 39999 or 40000 49999, the unit is word(s).
I	Designator	Designate LwM2M Object. Include Object ID, Short ID and Resource I D. Format: /Object_ID/Short_ID/Resource_ID
Q	Data Type	LwM2M data type with options: •7 Boolean •4 IEEE, Reversed Word •1 Double Precision

Table 1:Description of the Key Columns

2.4 Mapping Table

As shown in Figure4, the Mapping Table page just displays the mapping table of Modbus TCP and LwM2M devices. This table can be imported by a CSV file, see Chapter2.3.1.

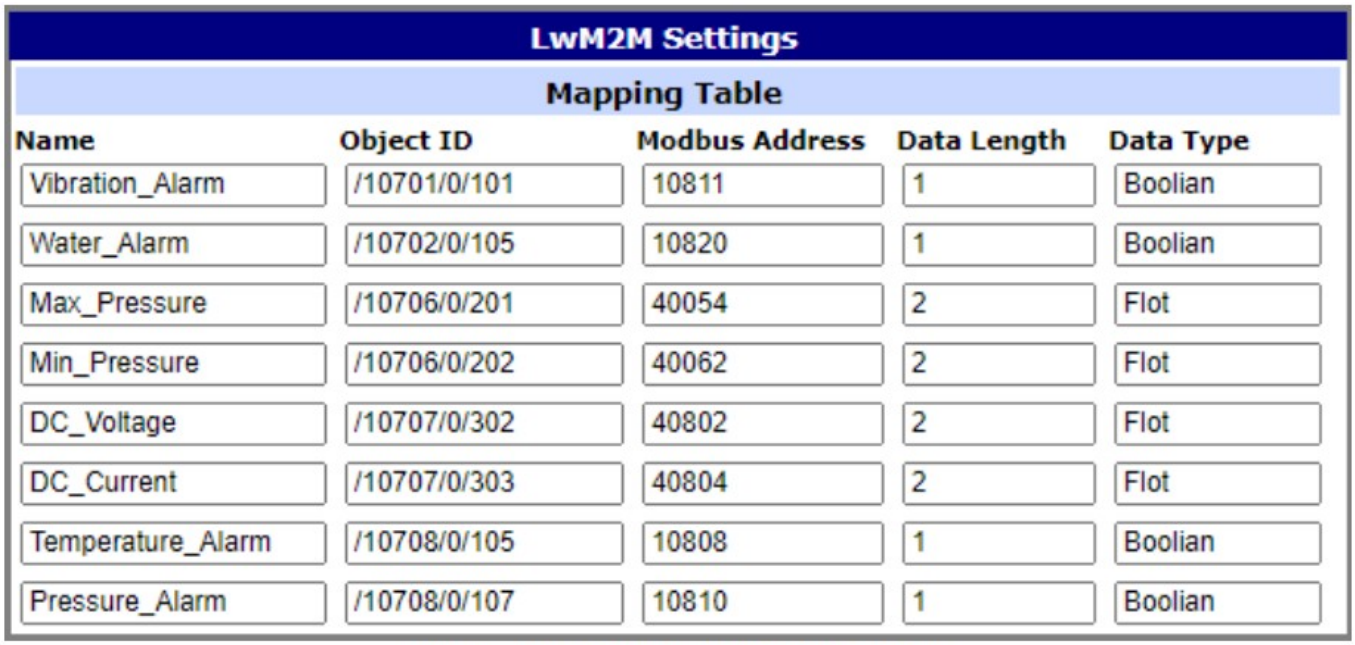

Figure 4: Example of Mapping Table

2.5 Log Messages

The Log page displays the log messages of the LwM2M router app. This loggin can be enabled on the LwM2M configuration page, see Chapter 2.3.

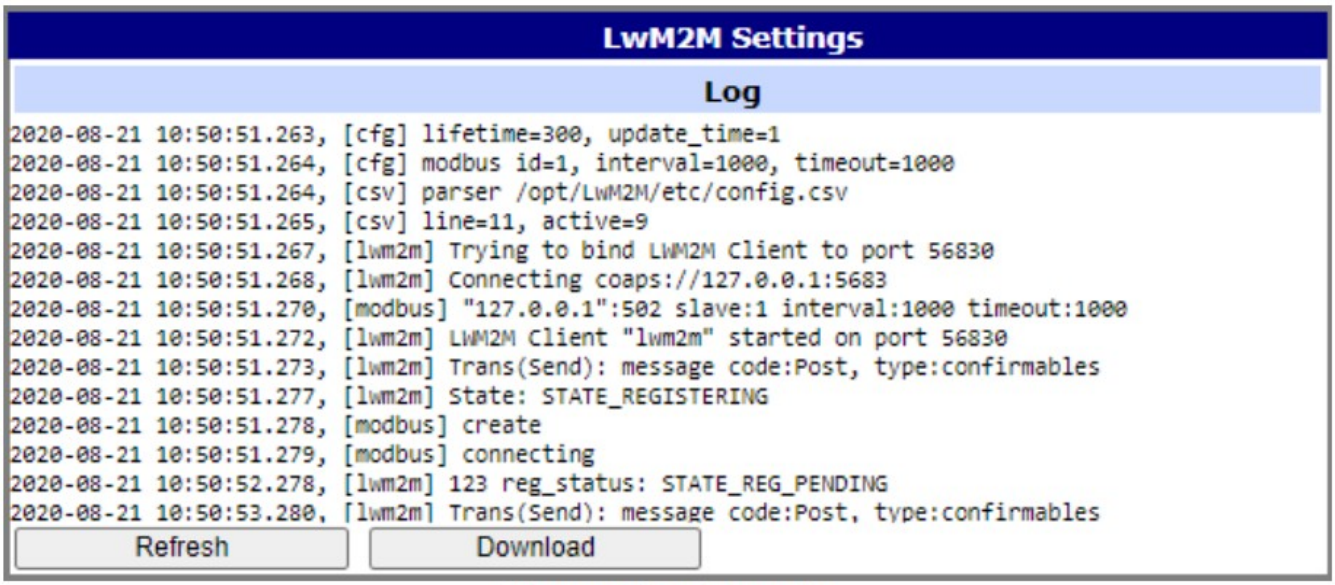

Figure 5: Log Example

Related Documents

[1] MC Manual Pages: **https://linux.die.net/man/1/mc**
You can obtain product-related documents on Engineering Portal at **icr.advantech.cz** address.
To get your router's Quick Start Guide, User Manual, Configuration Manual, or Firmware go to the **Router Models** page, find the required model, and switch to the Manuals or Firmware tab, respectively.
The Router Apps installation packages and manuals are available on the **Router Apps** page.
For the Development Documents, go to the **DevZone** page.

Documents / Resources

	**ADVANTECH LwM2M Router App** [pdf] User Guide LwM2M Router App, LwM2M, Router App, App

References

- **Advantech 4G, 5G Cellular Routers & Gateways for IoT applications - Engineering Portal**
- **Advantech 4G, 5G Cellular Routers & Gateways for IoT applications - Engineering Portal**

- DevZone - Cellular Routers Engineering Portal
- Router Apps - Cellular Routers Engineering Portal
- Router Models - Cellular Routers Engineering Portal