ADVANTECH Modbus Logger Router App User Guide

Contents

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Specifications

- **Product**: Modbus Logger
- **Manufacturer**: Advantech Czech s.r.o.

- **Address**: Sokolska 71, 562 04 Usti nad Orlici, Czech Republic
- **Document No**.: APP-0018-EN
- **Revision Date**: 19th October, 2023

Module Usage

Description of the module

The Modbus Logger is a router app that allows logging of communication on a Modbus RTU device connected to the serial interface of an Advantech router. It supports RS232 or RS485/422 serial interfaces. The module can be uploaded using the Configuration manual, which is available in the related documents section.

Note: This router app is not v4 platform compatible.

Web interface

After the installation of the module is complete, you can access the module's GUI by clicking on the module name on the Router apps page of the router's web interface.

The GUI is divided into different sections

1. Status menu section
2. Configuration menu section
3. Customization menu section

The main menu of the module's GUI is shown in Figure 1.

Configuration

The Configuration menu section contains the module's configuration page named Global. Here, you can configure the settings for the Modbus Logger.

Meters configuration

A meter configuration consists of the following parameters

- Address: The address of the Modbus device
- Data length: The length of the data to be captured
- Read function: The read function for Modbus data capturing

You can specify the required number of meters for data logging. The data for all meters will be consolidated in a given storage and then distributed to an FTP(S) server at defined intervals.

System Log

The system log provides information about the operation and status of the Modbus Logger.

Log file contents

The log file contains the captured Modbus communication data. It includes information such as the timestamp, meter address, and captured data.

Related Documents

- Configuration manual

FAQ

- **Q: Is the Modbus Logger compatible with the v4 platform?**

  A: No, the Modbus Logger is not v4 platform compatible.
- **Q: How can I access the module's GUI?**

  A: After installing the module, you can access the module's GUI by clicking on the module name on the Router apps page of the router's web interface.

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

Modbus Logger Changelog

v1.0.0 (2017-03-14)

- First release.

v1.0.1 (2018-09-27)

- Fixed javascript.

v1.1.0 (2018-10-19)

- Added support of FTPES.
- Added support of storage media.

Module usage

Description of the module

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

This router app is not v4 platform compatible.

- Modbus Logger router app can be used for logging of communication on a Modbus RTU device con-nected to the serial interface of an Advantech router. RS232 or RS485/422 serial interfaces can be used for this purpose. Serial interface is available as an expansion port (see [5] and [6]) for some routers or can be already built-in for some models.
- A meter is configuration of address, data length and read function for Modbus data capturing. Required number of meters can be specified separately for the data logging. Data for all meters are consolidated in given storage and afterward distributed (in defined intervals) to a FTP(S) server.

Web interface

- 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 of router's web interface.
- Left part of this GUI contains menu with Status menu section, followed by Configuration menu section which contains the module's configuration page named as Global. Customization menu section contains only the Return item, which switches back from the module's web page to the router's web configuration pages. The main menu of module's GUI is shown on Figure 1.

Figure 1: Main menu

Configuration

Configuration of this router app can be done on Global page, under Configuration menu section. Config-uration form is shown on Figure 2. It contains three main parts, for configuration of serial line parameters, for

configuration of connection to FTP(S) server and for configuration of meters. Configuration of meters is described in detail in chapter 2.3.1. All configuration items for Global configuration page are described in table 1.

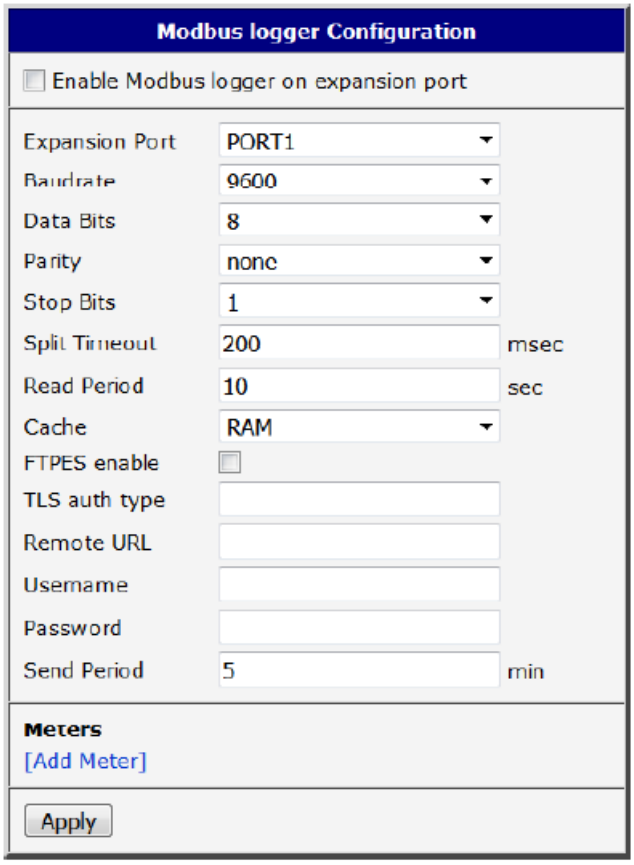

Figure 2: Configuration page

Item	Description
Enable Modbus logger on expansion port	If enabled, logging functionality of the module is turned on.
Expansion Port	Choose expansion port (port1 or port2) with serial inter- face for *Modbus* data logg ing. Port1 corresponds with *ttyS0* device, port2 with *ttyS1* device mapped in the k ernel.
Baudrate	Choose baudrate for *Modbus* communication.
Data Bits	Choose data bits for *Modbus* communication.

Item	Description
Parity	Choose parity for *Modbus* communication.
Stop Bits	Choose stop bits for *Modbus* communication.
Split Timeout	Maximum time interval which is allowed between two of received bytes. If exceeded, the data are treated as in- valid.
Read Period	Time period for capturing data from the *Modbus* device. Minimum value is 5 secon ds.
Cache	Select destination for the module data storage. Logged data are stored into this de stination as files and deleted once successfully sent to the destination server. There are these three options: • RAM – store to RAM memory, • SDC – store to SD card, • USB – store to USB disk.
FTPES enable	Enables FTPES connection – FTP that adds support for the Transport Layer Secur ity (TLS). Remote URL ad- dress starts with ftp://…
TLS auth type	Specification of the type for TLS authentication (param- eter for the *curl* program). Currently, only TLS-SRP op- tion is supported. Enter this string (without the quotat ion marks): "*-tlsauthtype=SRP*".
Remote URL	Remote URL of directory on an FTP(S) server for data storage. This address must be terminated by backslash.
Username	Username for access to the FTP(S) server.
Password	Password for access to the FTP(S) server.
Send Period	Time interval in which the data captured locally on the router will be stored to the F TP(S) server. Minimum value is 5 minutes.
Meters	Definition of meters. For more information see Chap- ter 2.3.1.
Apply	Button to save and apply all changes made in this con- figuration form.

Meters configuration

A meter is configuration of address, data length and read function for Modbus data capturing. Required number of meters can be specified separately for the data logging. A new meter definition can be done by clicking on [Add Meter] link in Meters section of the configuration page, see Figure 2. Configuration form for a new meter is shown on Figure 3.

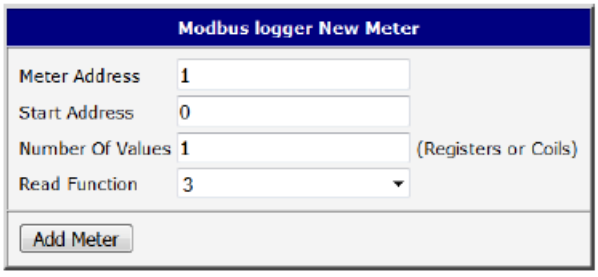

Figure 3: New meter configuration

Description of all items required for a new meter configuration is described in table 2. To delete an existing meter

click on [Delete] button on the main configuration screen, see Figure 4.

Item	Description
Meter Address	Address of slave device (from 1 to 247).
Start Address	Start reference of registers/coils address.
Number of Values	Number of registers/coils values to be captured.
Read Function	Chose number of read function from: 1 = Read Coils 3 = Read Holding Registers 4 = Read Input Registers
Add Meter	Button to add new configuration of meter.

Table 2: Meter items description

Configuration example

Example of module's configuration is shown on Figure 2. In this example, the data will be captured from Modbus RTU device connected to the first serial interface every 5 seconds. Captured are data from Modbus slave device with address 120 and there is definition of two different meters. The first meter reads 10 coil values starting at coil number 10. The second meter reads 100 registers starting at register number 4001.

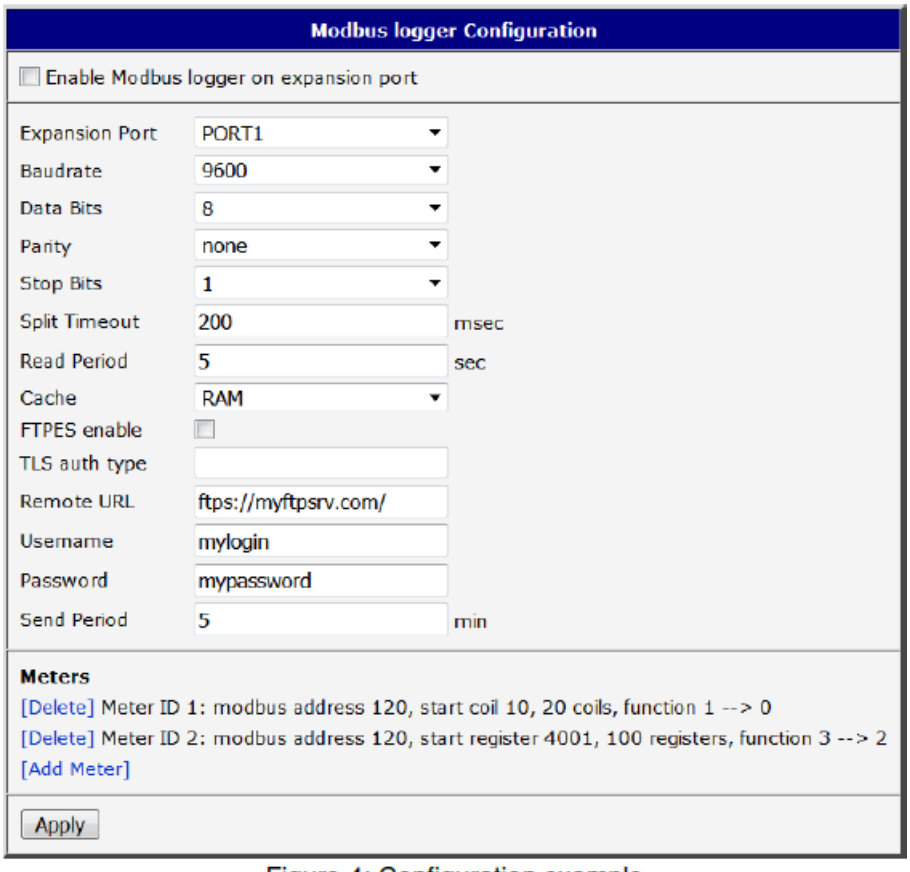

Figure 4: Configuration example

System Log

Log messages are available on System Log page, under Status menu section. This log contains log messages for this router app, but also all other router's system messages and is exactly the same as the system log available on System Log page in router's Status menu section. An example of this log is shown on Figure 5.

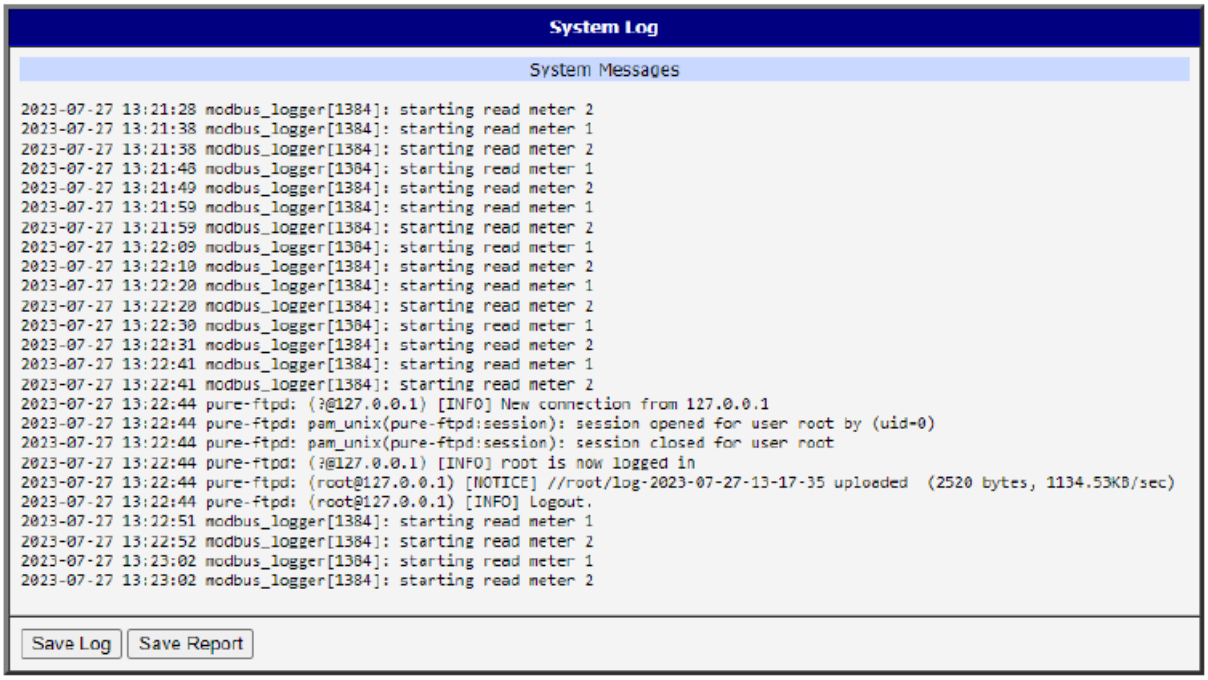

Figure 5: Example of System Log

Log file contents

The Modbus Logger module generates log files to record communication data from the Modbus RTU device. Each log file is created with a specific format and contains information related to the executed com-mands. The log files are named using the following format: log-YYYY-MM-dd-hh-mm-ss (where “YYYY” represents the year, “MM” the month, “dd” the day, “hh” the hour, “mm” the minute, and “ss” the second of the execution time).

The contents of each log file follow a specific structure, which is detailed below

- m0:2023-06-23-13-14-03:01 03 06 00 64 00 c8 01 2c d1 0e
- “m0” represents the identifier of the user-defined meters.
- “2023-06-23-13-14-03” shows the date and time when the Modbus command was executed, in the format “YYYY-MM-dd-hh-mm-ss”.
- The rest of the line represents the received Modbus command in hexadecimal format.
- The log file contains lines for each executed Modbus command, and each line follows the same structure as shown in the example above.

Related Documents

1. **Advantech Czech**: Expansion Port RS232 – User Manual (MAN-0020-EN)
2. **Advantech Czech**: Expansion Port RS485/422 – User Manual (MAN-0025-EN)

- 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 Modbus Logger Router App [pdf] User Guide Modbus Logger Router App, Logger Router App, 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
- User Manual