I/O Data Mapping Configuration for Moxa MGate 5105-MB-EIP

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Contents

1. Introduction

This document describes how to configure I/O Data Mapping for the Moxa MGate 5105-MB-EIP gateway. Although the Moxa MGate 5105-MB-EIP can perform I/O Data Mapping automatically, there may be occasions for manual configuration.

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About Moxa

Moxa manufactures one of the world's leading brands of device networking solutions. Products include serial boards, USB-to-serial hubs, media converters, device servers, embedded computers, Ethernet I/O servers, terminal servers, Modbus gateways, industrial switches, and Ethernet-to-fiber converters. Our products are key components of many networking applications, including industrial automation, manufacturing, POS, and medical treatment facilities.

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2. Applicable products

Product Line	Model Name
MGate 5000 series	MGate 5105-MB-EIP、MGate 5105-MB-EIP-T

3. System requirements

| Description	Model / File Name	Version
Moxa EtherNet/IP to Modbus gateway	MGate 5105-MB-EIP	1.1
Software utility to configure Moxa device	MGate Manager	1.8
Modsim32		4.A00

4. System overview

This document will use the MGate 5105-MB-EIP to demonstrate how to configure I/O Data Mapping. The system architecture is shown below.
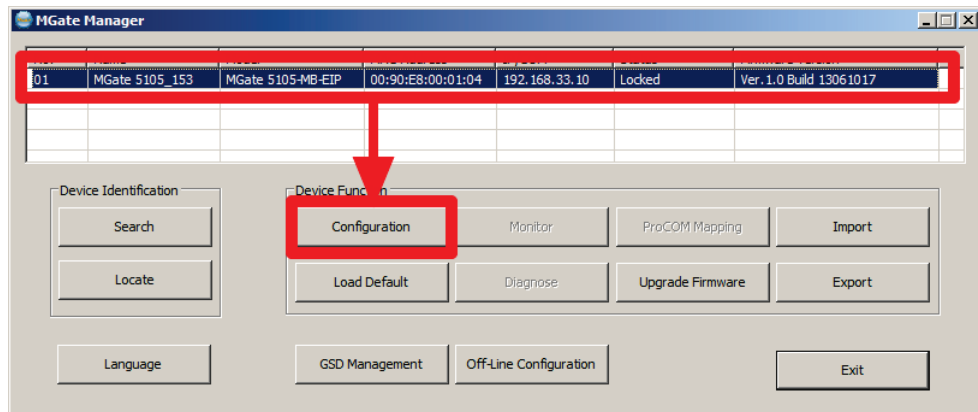

5. Moxa's device configuration

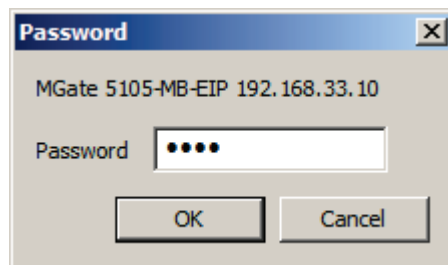### 5.1. Device configuration with MGate Manager

5.1.1. Start MGate Manager and **Search** for the Moxa MGate 5105-MB-EIP.
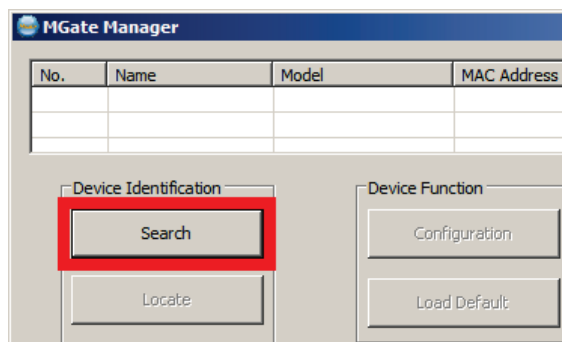
5.1.2. Select the target device and click the **Configuration** button to configure it.
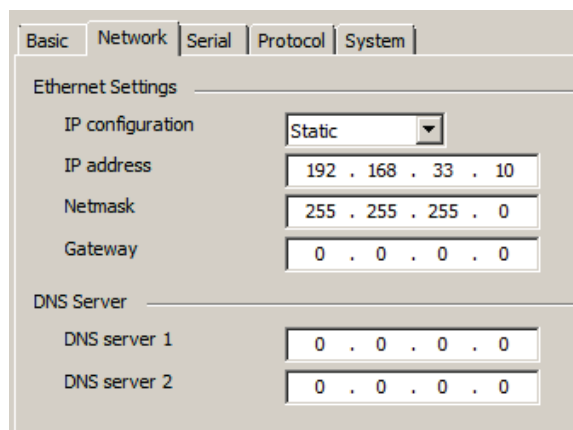

The MGate Manager may prompt you to enter a password. The default password is **moxa**.
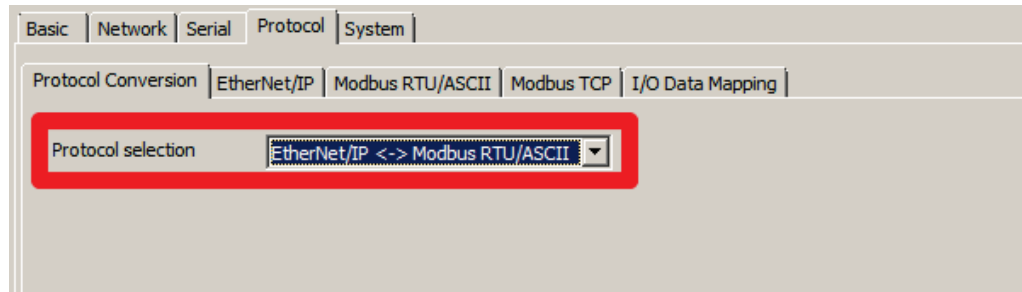

5.1.3. Select the **Network** tab to configure the IP address and netmask of the MGate 5105-MB-EIP as follows.
**IP address:** 192.168.33.10
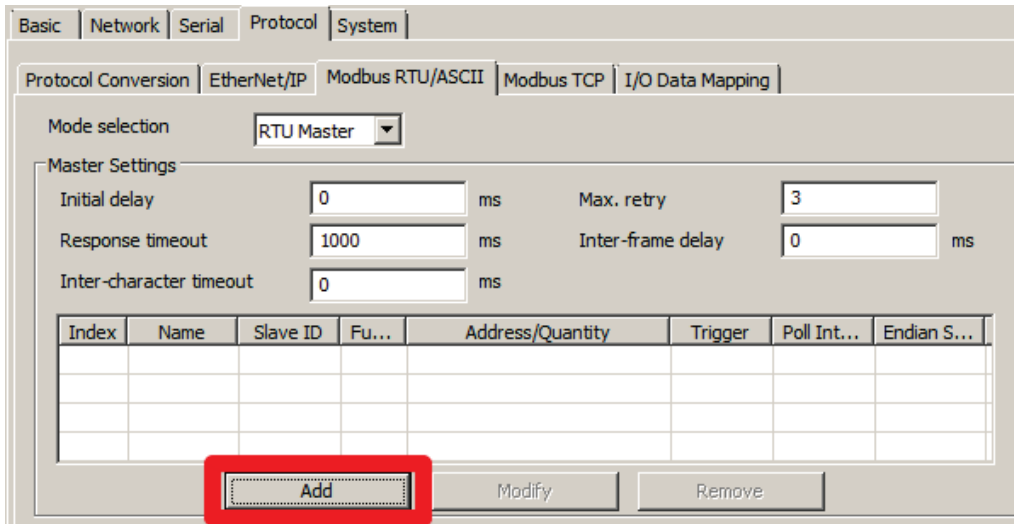**Netmask:**   255.255.255.0

5.1.4. Select the **Protocol** tab to configure the protocol conversion settings. The first sub-tab, **Protocol Conversion**, shows which protocols are going to be converted. Here, choose **EtherNet/IP <-> Modbus RTU/ASCII**.

5.1.5. Select the **EtherNet/IP** sub-tab to configure EtherNet/IP settings. Although we generally recommend that you select **Automatic** from the **I/O data size configuration** dropdown menu, in this example, choose **Adapter** for MGate 5105-MB-EIP and **User defined** to specify the T → O (Input) data size as 48 bytes.
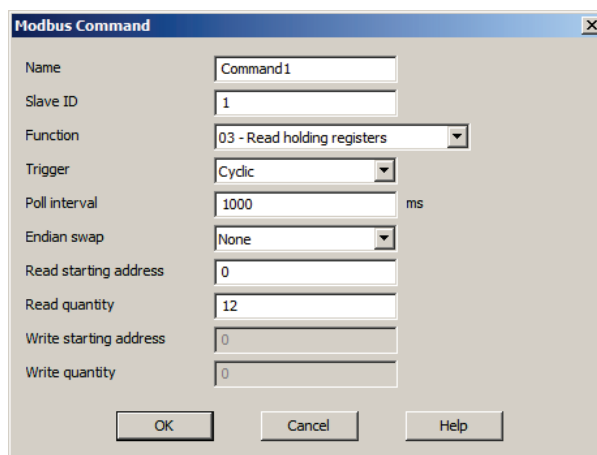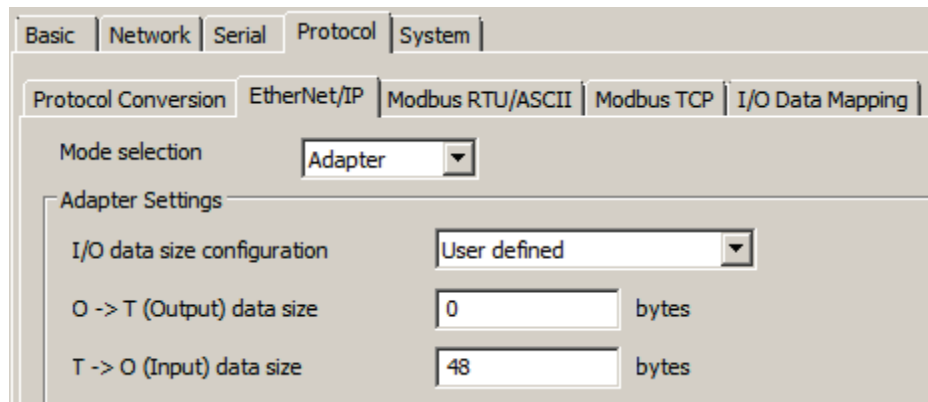
5.1.6. Select the **Modbus RTU/ASCII** tab to configure Modbus RTU/ASCII settings. In this example, we will create 2 Modbus commands to show the input data coming from 2 different Modbus RTU slave devices (Slave1 and Slave2). Click the **Add** button to add Command1.
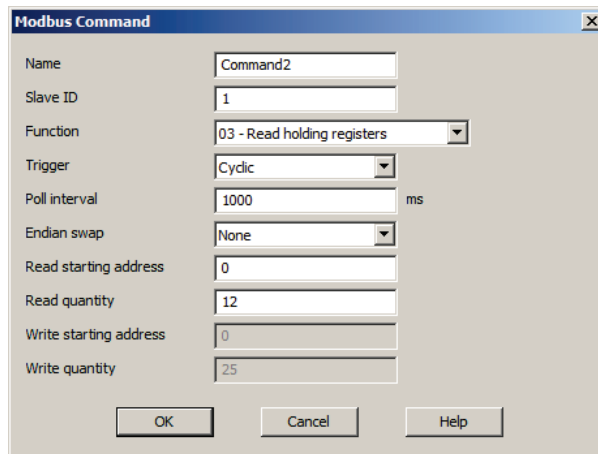
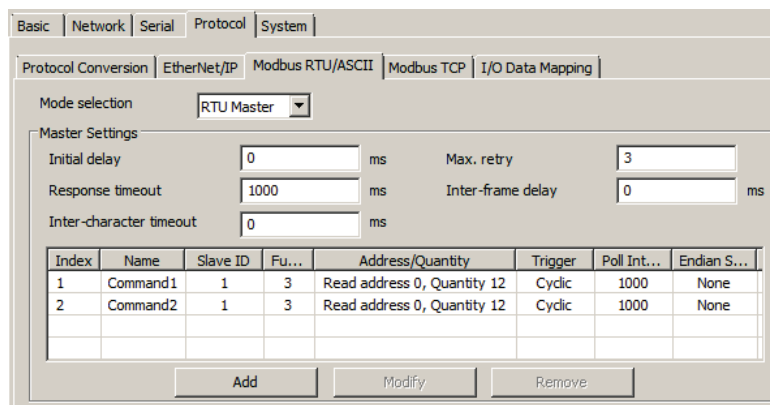Configure **Command1** to read 12 words (24 bytes of data) from Modsim32. Click **OK** to add the command.
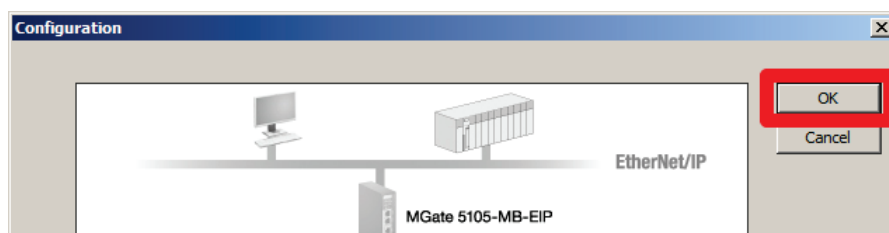
Configure **Command2** to read 12 words (24 bytes of data) from Modsim32. Click **OK** to add the command.

5.1.7. Return to the **Modbus RTU/ASCII** tab to see a summary of the commands we added.

5.1.8. Click the **OK** button to save recent configurations. The MGate 5105-MB-EIP will restart automatically for the new settings to take effect.

6. I/O Data Mapping configuration

6.1. I/O Data Mapping configuration via Web Console

6.1.1. Open the Web Console of the MGate 5105-MB-EIP and go to the **I/O Data Mapping** page (**Main Menu → Protocol Settings → I/O Data Mapping**).
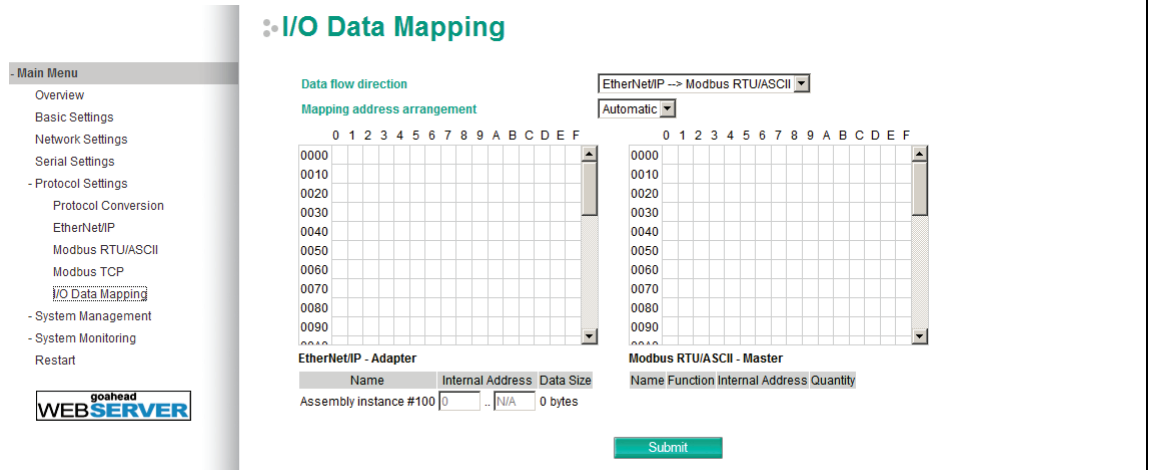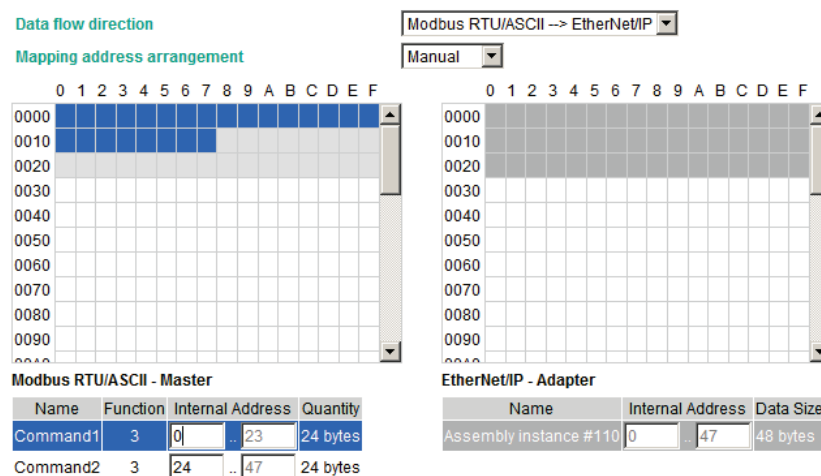

6.1.2. Since we configured the data direction to be **T → O (Input)** (Refer to Step 5.1.5), configure the **Data flow direction** to be **Modbus RTU/ASCII → EtherNet/IP**, the **Mapping address arrangement** to be **Manual**, and then click the **Submit** button.

6.1.3. By default, Command1's data will be stored first and followed by the other commands, as shown below:

6.1.4. When changing the **Mapping address arrangement** from **Automatic** to **Manual**, you can also modify the sequence. Change Command1's **Internal Address** to be **24..47**, and Command1's to be **0..23**. Then click **Submit**.

:·I/O Data Mapping

The new setting means the data read from Slave2 will be represented by the first 24 bytes of EtherNet/IP data, and the data read from Slave1 will be represented by the last 24 bytes of EtherNet/IP data.