

# EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

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### About Moxa

Moxa is a leading manufacturer of industrial networking, computing, and automation solutions. With over 25 years of industry experience, Moxa has connected more than 30 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industry with reliable networks and sincere service for automation systems. Information about Moxa’s solutions is available at [www.moxa.com](http://www.moxa.com). You may also contact Moxa by email at [info@moxa.com](mailto:info@moxa.com).

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## 1. Introduction

This document describes the configuration of a Moxa MGate gateway as an EtherNet/IP Scanner and the EDS-405A as an EtherNet/IP adapter. For the Modbus TCP setup, connect a Modscan32 simulator as a Modbus TCP master with 20 digital inputs.

## 2. Applicable Products

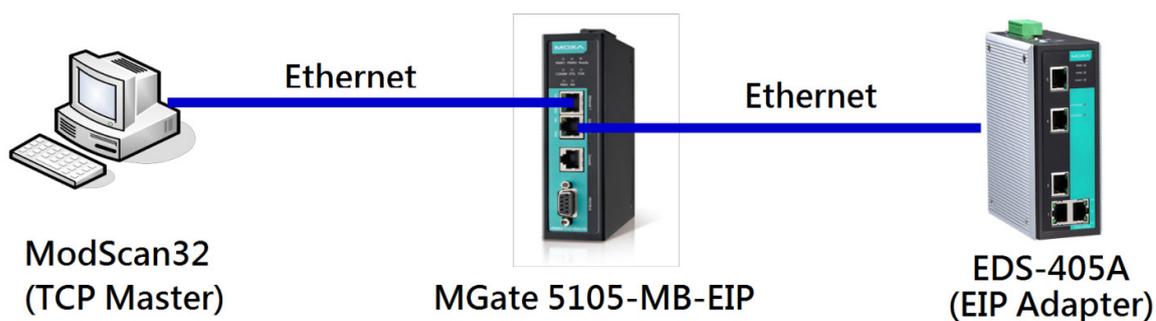
Product Line	Model Names
MGate 5000 series	MGate 5105-MB-EIP, MGate 5105-MB-EIP-T

## 3. System Requirements

Description	Model Names	Version
Moxa EtherNet/IP to Modbus gateway	MGate 5105-MB-EIP	1.1
5-port entry-level managed Ethernet switch	EDS-405A	1.1
Software utility to configure Moxa devices	MGate Manager	1.9
Modscan32		7.A00

## 4. System Overview

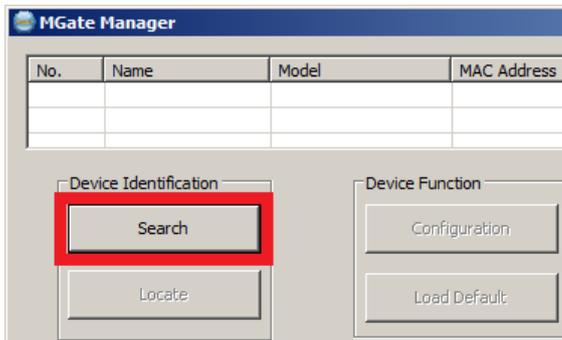
In this document, the MGate 5105-MB-EIP is used as an example. The system architecture is shown in the following figure.



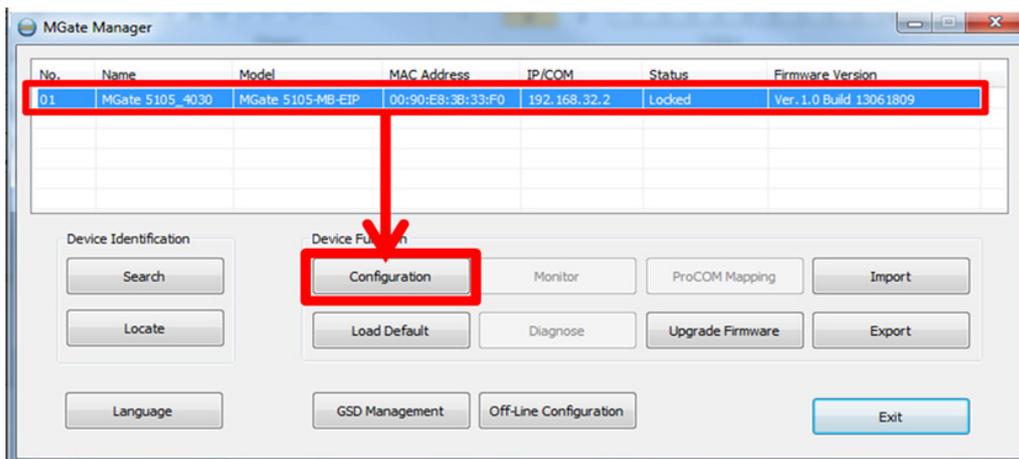
## 5. Configuring a Moxa PROFIBUS Device Using MGate Manager

### Manager

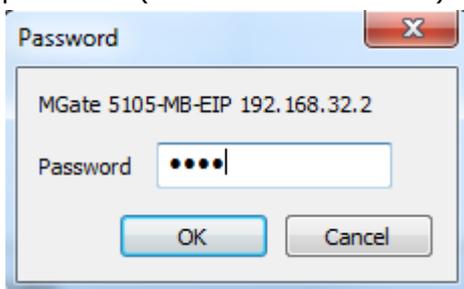
1. Start MGate Manager and click **Search** to find the Moxa MGate 5105-MB-EIP.



2. Select the target device and click **Configuration**.



3. MGate Manager may prompt you for a password. In the **Password** screen, enter a password (the default is "moxa").



## EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

4. Select the **Network** tab to configure the IP address of the MGate 5105-MB-EIP. In this example, the IP address setting for the MGate 5105-MB-EIP is 192.168.32.2/255.255.255.0.

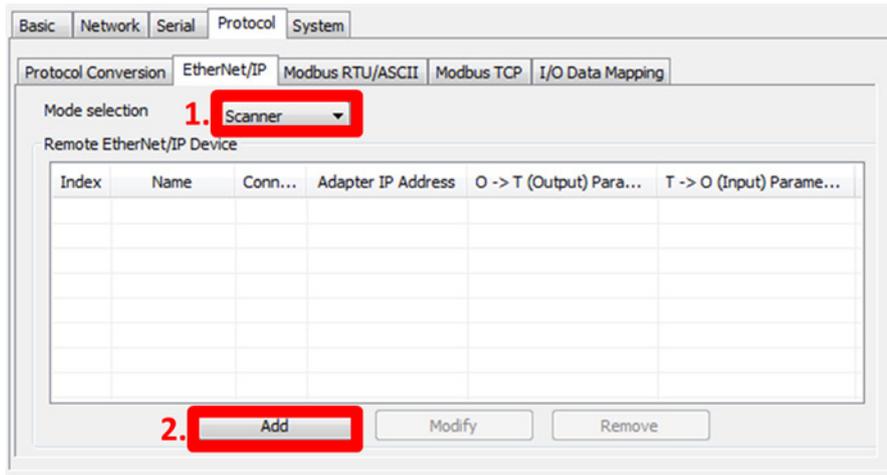
Basic	Network	Serial	Protocol	System
Ethernet Settings				
IP configuration	Static			
IP address	192 . 168 . 32 . 2			
Netmask	255 . 255 . 255 . 0			
Gateway	0 . 0 . 0 . 0			
DNS Server				
DNS server 1	0 . 0 . 0 . 0			
DNS server 2	0 . 0 . 0 . 0			

5. Select the **Protocol** tab to configure the protocol conversion settings.
  - a. In the Protocol Conversion screen, select the protocol to be converted from the **Protocol selection** drop-down list.  
In this example, **EtherNet/IP <-> Modbus TCP** is selected.

Basic	Network	Serial	Protocol	System
Protocol Conversion				
EtherNet/IP	Modbus RTU/ASCII	Modbus TCP	I/O Data Mapping	
Protocol selection	EtherNet/IP <-> Modbus TCP			

## EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

- b. In the **EtherNet/IP** screen, configure the EtherNet/IP settings. In this example, since the EDS-405A is the EtherNet/IP Adapter, select **Scanner** from the **Mode selection** drop-down list for the MGate 5105-MB-EIP and click **Add** to add connection settings.

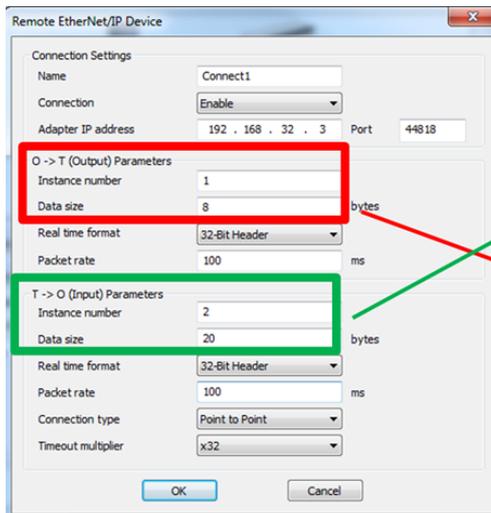


For this example, Input (T → O) refers to data (such as information and status report to the originator for monitoring) that is produced by the switch. Output (O → T) refers to the data that is generated by the originator (remote host) and is used by the switch.

The following figure shows an example for the EDS-405A assembly object. Based on the assembly object, set the following fields:

- **O → T (Output) Parameters:** Enter **1** in the **Instance Number** field and **8** in the **Data size** field.
- **T → O (Input) Parameters:** Enter **2** in the **Instance Number** field and **20** in the **Data size** field.

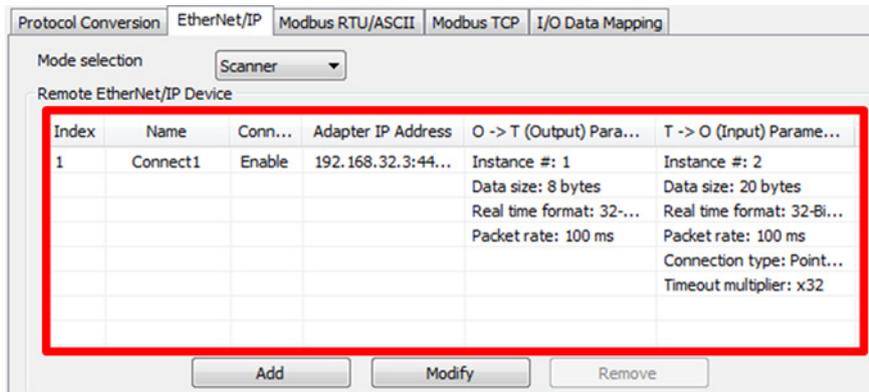
Then, click **OK** to add the connection.



EDS-405A Assembly Object

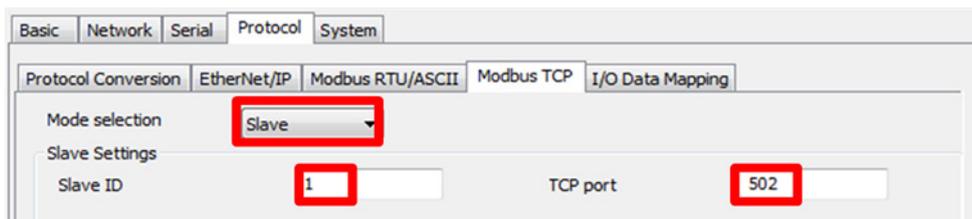
	Instance Number	Size (32 bit)
Input	2	5
Output	1	2
Configuration	3	0

## EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

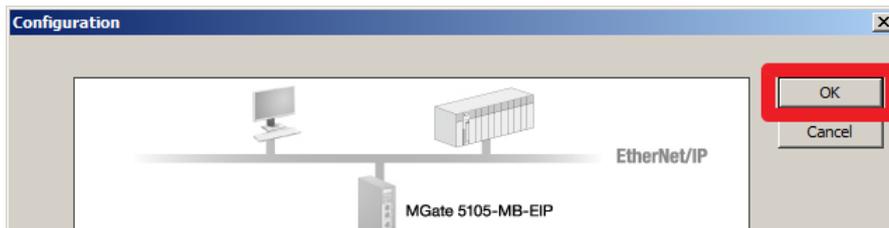


c. In this example, since ModScan is a Modbus TCP Master, configure Modbus settings in the **Modbus TCP** tab as shown in the following figure.

- **Mode selection:** Select **Slave** from the drop-down list.
- **Slave ID:** Enter "1" for MGate 5105-MB-EIP.
- **TCP port:** Enter "502".

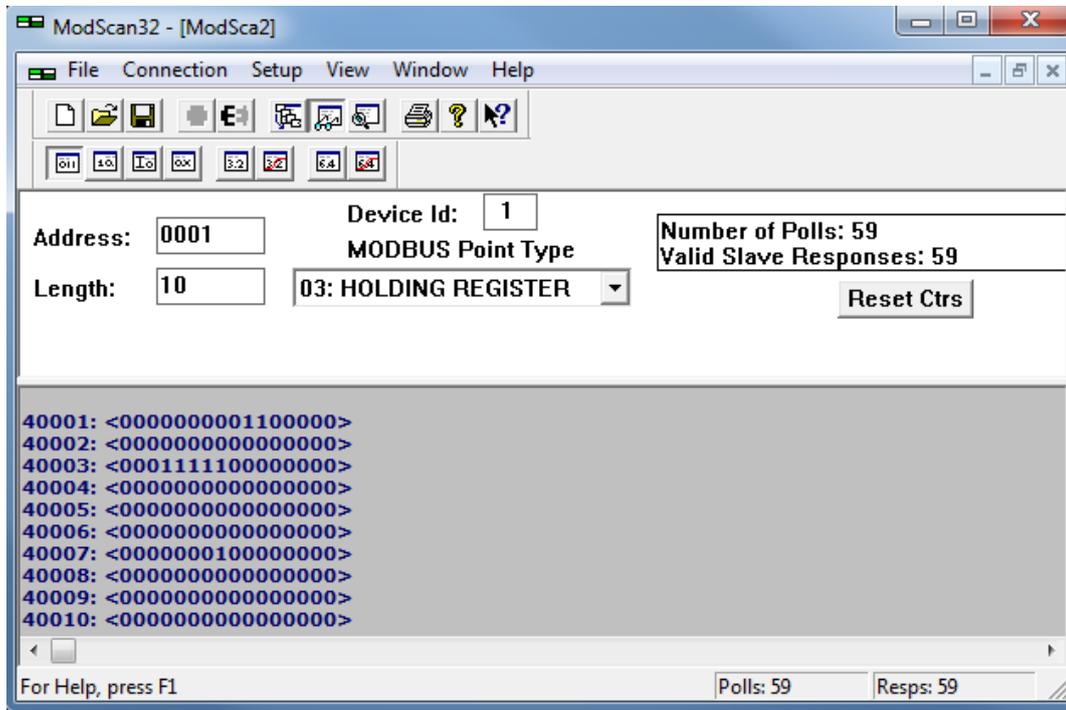


d. Click **OK** to save the changes. The MGate 5105-MB-EIP automatically restarts to use the new settings.



## 6. Communication Test: Monitoring I/O Data

1. Execute the Modscan function on the PC to simulate data exchange from the Modbus TCP master to the MGate 5105-MB-EIP.



## EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

The test reads data from the EIP Adapter and monitors the power status. The following figure shows the attribute list for the EDS-405A. The values of bits 6 and 7 become 1 when input power fails. The values of bits 13 and 14 become 1 when there is a power supply.

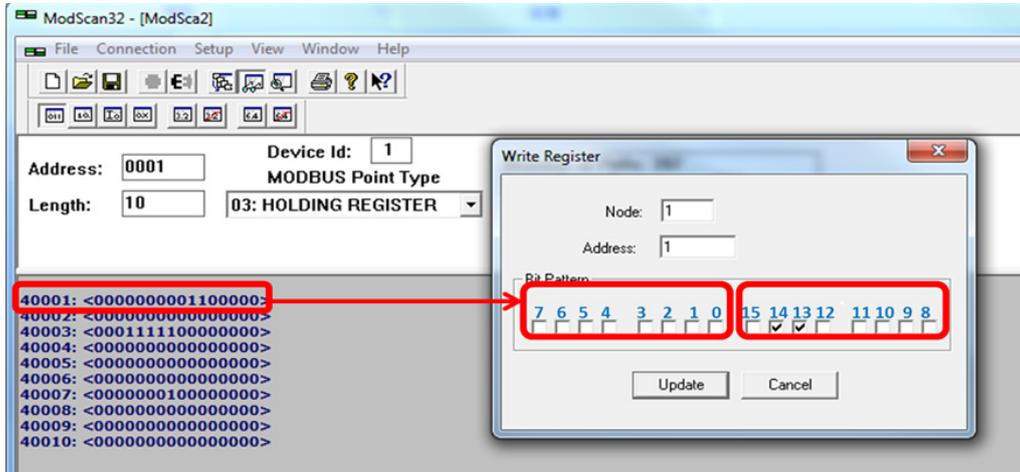
Description	
Switch firmware version	
Switch fault status	Bit 11: DI 2(on)
Bit 0: Reserved	Value 0: No alarm
Value 0: Ok	Value 1: Alarm
Value 1: Fail	Bit 12: Reserved
Bit 1: Reserved	Value 0: Not support
Value 0: Ok	Value 1: Detected
Value 1: Fail	Bit 13: Power supply 1
Bit 2: Port utilization alarm	Value 0: Off
Value 0: No alarm	Value 1: On
Value 1: alarm	Bit 14: Power supply 2
Bit 3: Port link up	Value 0: Off
Value 0: No alarm	Value 1: On
Value 1: Alarm	Bit 15~31: Reserved.
Bit 4: Port link down	
Value 0: No alarm	
Value 1: Alarm	
Bit 5: Turbo ring break(Ring Master only)	
Value 0: No alarm	
Value 1: Alarm	
Bit 6: Power Input 1 fail	
Value 0: No alarm	
Value 1: Alarm	
Bit 7: Power Input 2 fail	
Value 0: No alarm	
Value 1: Alarm	
Bit 8:DI 1(off)	
Value 0: No alarm	
Value 1: Alarm	
Bit 9: DI 1(on)	
Value 0: No alarm	
Value 1: Alarm	
Bit 10: DI 2(off)	
Value 0: No alarm	
Value 1: Alarm	

- At first, both power supplies are used by the EDS-405A.



# EtherNet/IP Scanner Configuration for the Moxa MGate 5105-MB-EIP

The ModSca test screen shows the value **1** in bits 13 and 14.



- 3. Power supply 1 is turned off on the EDS-405A.



In the ModSca test screen, the value of bit 13 becomes 0, bit 6 becomes 1 (to indicate power input failure), and the alarm bit is 1.

