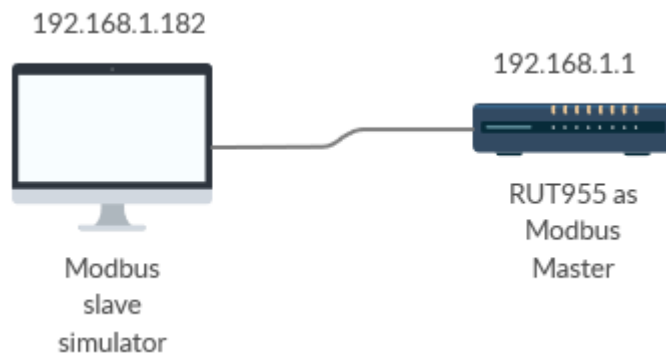


Modbus TCP Master



A Modbus **master** device can request data from Modbus slaves.

RUT955 will be used throughout this guide

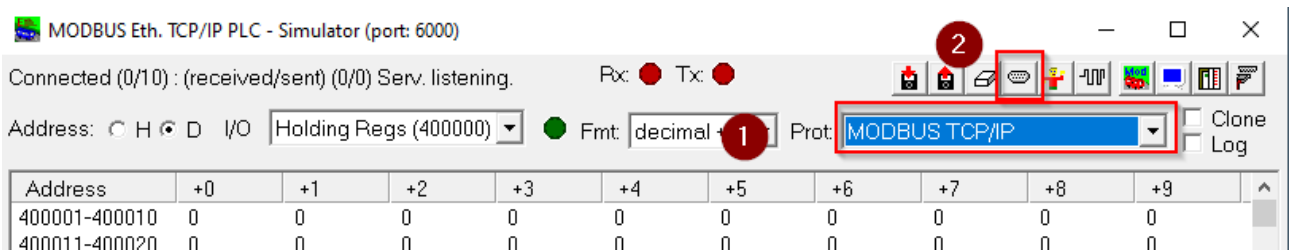
Prerequisites:

- ModRsim2 (<https://sourceforge.net/projects/modrssi2/>)

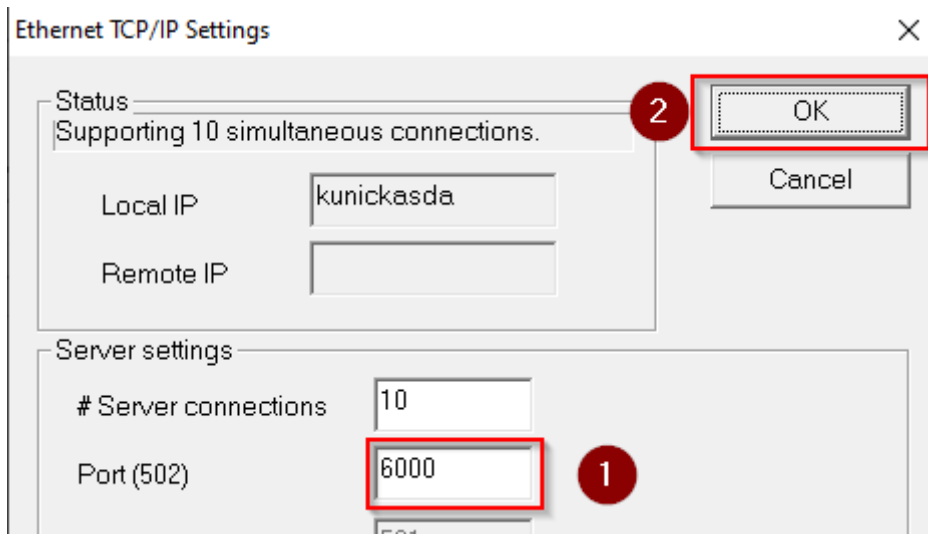
ModRsim2 is a slave device simulator software which simulates a real Modbus Slave device.

Configuring ModRsim2

1. Select Protocol as **MODBUS TCP/IP**
2. Click **Setup the communication Serial or TCP/IP port.**



1. Type in a port what you want to use, we will use the same one when configuring the router.
2. Click **OK**



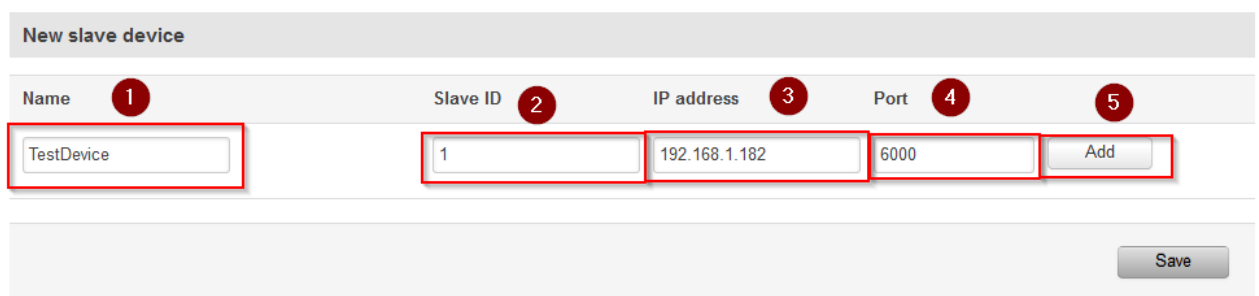
The image shows a dialog box titled "Ethernet TCP/IP Settings". It has a close button (X) in the top right corner. The dialog is divided into two sections. The top section, labeled "Status", contains the text "Supporting 10 simultaneous connections." and two input fields: "Local IP" with the value "kunickasda" and "Remote IP" which is empty. The bottom section, labeled "Server settings", contains two input fields: "# Server connections" with the value "10" and "Port (502)" with the value "6000". The "Port (502)" field is highlighted with a red box and a red circle with the number "1". The "OK" button is highlighted with a red box and a red circle with the number "2". The "Cancel" button is also visible.

Change a few registers for testing purposes. To do that, just double click on the register and in a pop-up window change it

Configuring router for reading registers

Open routers WebUI and navigate to **Services > Modbus > Modbus TCP Master**

1. Type in a name for your device of your choosing
2. Type in 1 as a **Slave ID**
3. Type in Slave device's IP address (Because in this example a simulator software is being used, it is an IP address of our PC)
4. Type in a port which was configured in ModRSsim2
5. Click **Add**



The image shows a form titled "New slave device". It has a table with five columns: "Name", "Slave ID", "IP address", "Port", and "Add". The "Name" column has a red circle with the number "1" and a red box around the input field containing "TestDevice". The "Slave ID" column has a red circle with the number "2" and a red box around the input field containing "1". The "IP address" column has a red circle with the number "3" and a red box around the input field containing "192.168.1.182". The "Port" column has a red circle with the number "4" and a red box around the input field containing "6000". The "Add" column has a red circle with the number "5" and a red box around the "Add" button. Below the table, there is a "Save" button.

You will be redirected to **Advanced device settings** page.

1. Check **Enable**
2. Type in **Timeout** period in seconds

3. Click **Add**
4. Enter a **name** of your choosing
5. Select **16bit INT, high byte first**
6. Select function **3** (Function 3 means **Read Holding Registers**, you can find codes for other functions in https://wiki.teltonika.lt/view/RUT955_Modbus#Slave_device_configuration)
7. Enter first register (In this example it is 0)
8. Enter how many registers router should read (For this example it is 10)
9. Check Enable
10. Save configuration
11. Test the Request
12. You should see a response

Advanced device settings

Here you can add and configure request parameters and alarms for this TCP slave device

Slave device configuration

1

Enabled ☒

Name

Slave ID

IP address

Port

Period

2

Timeout

Requests configuration

Name	Data type	Function	First Register	Number of Registers	Enabled	
TestParameter	16bit INT, high byte first	3	0	10	<input checked="" type="checkbox"/>	<div style="border: 1px solid red; border-radius: 50%; padding: 2px 5px; margin-bottom: 5px;">11</div> <div style="display: flex; justify-content: space-around;"> Test Delete </div>

3

Add

Request sent (12 bytes)
 Response:
 Unit ID:1, Message length:23, Function code:3, Data count:20
 Data:
 1:[10] 2:[20] 3:[30] 4:[40] 5:[50] 6:[60] 7:[70] 8:[80] 9:[0] 10:[0]

12

Back to Overview

10

Save

If you want to add another request configuration just click add and repeat configuration steps.

Requests configuration

Name	Data type	Function	First Register	Number of Registers	Enabled	
TestParameter	16bit INT, high byte first	3	0	10	<input checked="" type="checkbox"/>	<div>Test</div> <div>Delete</div>

Add

Configuring router for writing registers

Open routers WebUI and navigate to **Services > Modbus > Modbus TCP Master**

1. Type in a name for your device of your choosing
2. Type in 1 as a **Slave ID**
3. Type in Slave device's IP address (Because in this example a simulator software is being used, it is an IP address of our PC)
4. Type in a port which was configured in ModRssim2
5. Click **Add**

New slave device

Name	Slave ID	IP address	Port	
TestDevice	1	192.168.1.182	6000	<div>Add</div>

Save

You will be redirected to **Advanced device settings** page.

1. Check **Enable**
2. Type in **Timeout** period in seconds
3. Click **Add**
4. Enter a **name** of your choosing
5. Select **16bit INT, high byte first**
6. Select function 6 (Function 6 means **preset Single Register**, you can find codes for other functions in https://wiki.teltonika.lt/view/RUT955_Modbus#Slave_device_configuration)
7. Enter register you want to change (In this example it is 1)
8. Enter value to which you want to change this register
9. Check **Enabled**
10. **Save** configuration

11. **Test** the Request
12. You should see a **response**

Advanced device settings

Here you can add and configure request parameters and alarms for this TCP slave device

Slave device configuration

1

Enabled ☒

Name

Slave ID

IP address

Port

Period

2

Timeout

Requests configuration

Name	Data type	Function	First Register	Number of Registers	Enabled	
WriteTest	16bit INT, high byte first	6	1	88	<input checked="" type="checkbox"/>	Test Delete

Add


Request sent (12 bytes)

Response:

Unit ID:1, Message length:6, Function code:6, Data count:0

Back to Overview
Save

If you open **ModRSim2** you will see that first register has changed into a value that was configured in the router.

 MODBUS Eth. TCP/IP PLC - Simulator (port: 6000)

Connected (0/10) : (received/sent) (117/117) Serv. listening. Rx: ● Tx: ●

Address: H D I/O Holding Regs (400000) ● Fmt: decimal +/-

Address	+0	+1	+2	+3
400001-400010	10	88	30	40
400011-400020	0	0	0	0