

# MODBUSTER User Manual

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**Version**

0.1v

Version:

Version	Date	Author	Notes
0.1	01/23/2017	Pablo Farreras	Creation

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## 1 Overview

MODBUSTER is a powerful tool specially designed for developing Server/Slave MODBUS TCP/IP applications.

This tool consists of two main development modules: an **emulator** and a **command center**.

As its name indicates, the **emulator** allows to emulate a system under development. The developer can use this development module in the advance development phases to see how the whole system behaves and interacts in a global way and higher abstraction level.

On the other hand, the **command center** allows to test commands individually. This is intended to support the developer in the earlier development phase where every command is separately developed. Additionally, the command center has a **command analyzer** that highlights and shows the different fields belonging to a MODBUS command.

## 2 Software Download

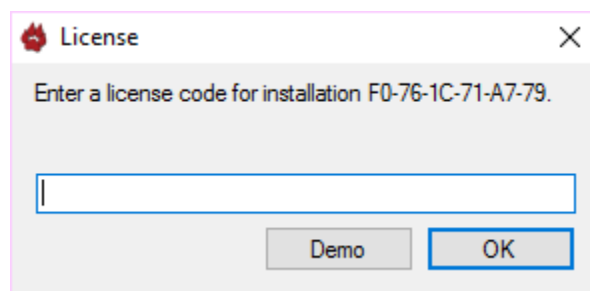
The latest software version is available for download from [www.modbuster.net](http://www.modbuster.net).

## 3 License

Licenses are available for sale in [www.modbuster.net](http://www.modbuster.net).

### 3.1 License Dialog Box

Immediately after launching MODBUSTER and before entering a valid license code, a dialog box asks for the corresponding license code and provides to the user with the option of running the MODBUSTER application in Demo version.



### 3.2 Software Versions

There are two versions of the MODBUSTER PC application: **Full** and **Demo version**.

You can try the application without any payment using the **Demo version**. All features are available for their use but with some restrictions shown in table below.

After obtaining any license, the **Full version** is activated and all features in both development modules are fully available without any restriction.

Development Module	Feature	Version	
		Demo	Full
Emulator	Coils	4	Unlimited
	Discrete Inputs	4	Unlimited
	Holding Registers	4	Unlimited
	Input Registers	4	Unlimited
Command Centre	Session Duration	*10 minutes	Unlimited
	MODBUS Command Analyzer	No Restriction	No Restriction

\*Note: after 10 minutes, the session expires and the program closes. After that, it is possible to launch it again for other 10 minutes any time.

### 3.3 Licenses Types


Type of License	Description	Connection Internet
Standalone	This license authorizes users to use MODBUSTER on a single computer. After that, the user can work in a self-contained, offline fashion.	Not Required
On Demand	This license authorizes users to use the MODBUSTER's full version on up to three (3) computers but one (1) at a time.	Required
On Demand Plus	This license authorizes users to use the MODBUSTER's full version on up to four (4) computers but two (2) at a time.	Required

## 4 MODBUSTER

As mentioned previously, this tool has two main development modules: an **emulator** and a **command center**.

### 4.1 Connecting to the MODBUS Server/Slave Node

At the top, the information related to the TCP/IP connection belonging to the MODBUS Server/Client node is configured.


 Modbustester 1.9.1.0

IP Address	<input type="text" value="192.168.0."/>
Port	<input type="text" value="502"/>
Timeout (ms)	<input type="text" value="500"/>


At the bottom right corner, the connection status is shown and the Polling Period (expressed in ms) can be configured.

Polling Period (ms)	<input type="text" value="500"/>	Connect	
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After click Connect and so long the MODBUSTER PC application is connected to the MODBUS Server/Client node, the information related to the polling period and the connection status is shown as follows:

 Modbustester 1.9.1.0

IP Address	<input type="text" value="192.168.1.103"/>	Polling took 498 milliseconds, polling period was 500 milliseconds.
Port	<input type="text" value="502"/>	
Timeout (ms)	<input type="text" value="500"/>	

Polling Period (ms)	<input type="text" value="500"/>	Disconnect	
---------------------	----------------------------------	------------	---

In order to disconnect the MODBUSTER application from the MODBUS node, click Disconnect.

## 4.2 Emulator

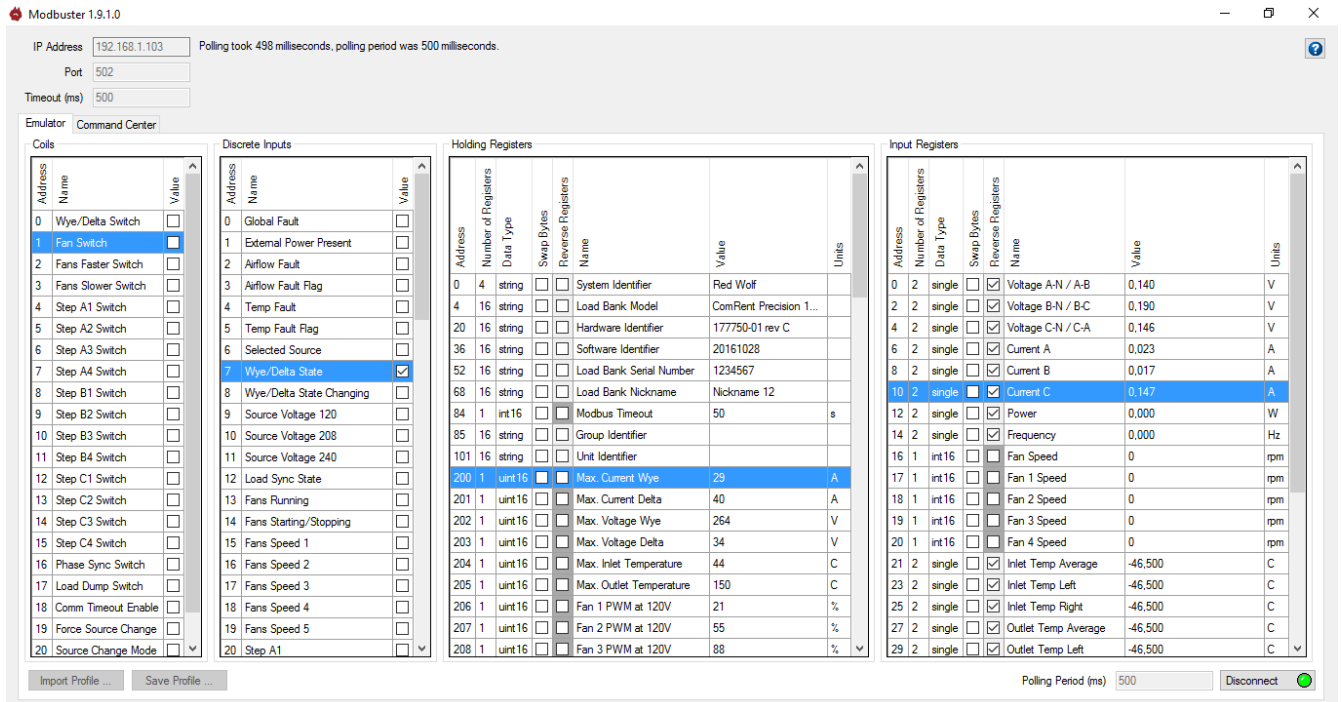
The Emulator emulates the behaviour of the **Client/Master node**. This is intended to interact with the **Server/Slave node** under development/validation.

This allows to evaluate the interaction of the **Server/Slave node** in a very flexible and robust way. This higher abstraction level tool is especially intended for most advanced development/validation phases of a Server/Slave node.

The emulator continuously shows the contents in the **Server/Slave node** of the:

- coils;
- discrete inputs;
- holding registers; and
- input registers.

The Emulator module is selected clicking on the Emulator Tab.



Additionally, the emulation configuration is very flexible since all resulting parameters are stored into a .xml file.

#### 4.2.1 Emulator Configuration

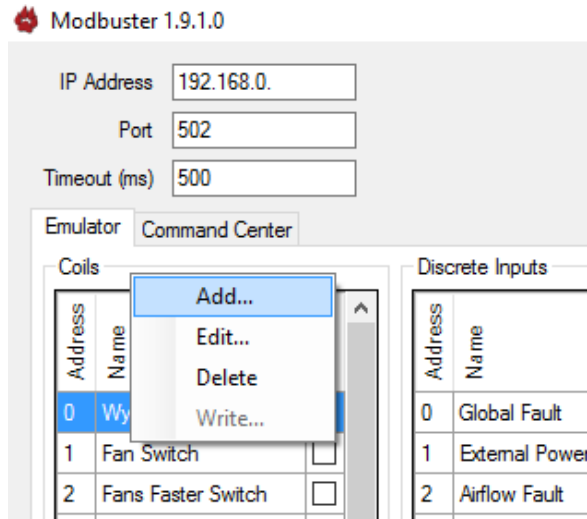
The emulator can be configured manually and using a XML file.

The configuration of the Emulator is very flexible since XML files are used to recreate the **Client/Master node** to emulate.

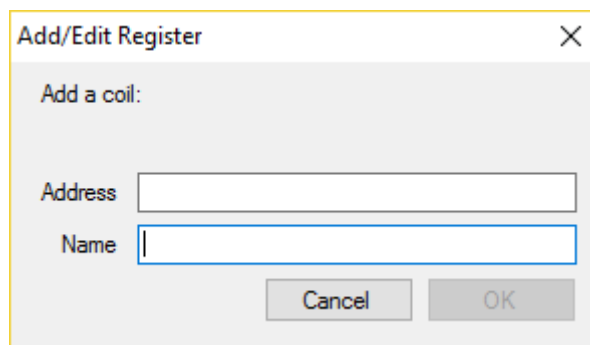
All changes are stored in a XML file to be used in further development/validation sessions.

Manual Configuration is performed by Right Mouse Clicking on Coils/Discrete Inputs/Holding Registers/Input Registers, opens selection box to:

- add a new parameter to the existing ones;
- edit an exiting parameter;
- delete an existing parameter; and
- write an existing parameter.



After clicking Add..., the following dialog box is opened and the address and name of the corresponding parameter can be entered.



All changes are stored into a .xml file clicking Save Profile in the bottom left corner.



The emulator configuration is imported clicking Import Profile and selecting the wanted .xml file.

### 4.3 Command Center

The Command Center is intended to develop/validate every command individually.

The following MODBUS commands are supported:

- read coils (01);
- read discrete inputs (02);
- read holding registers (03);



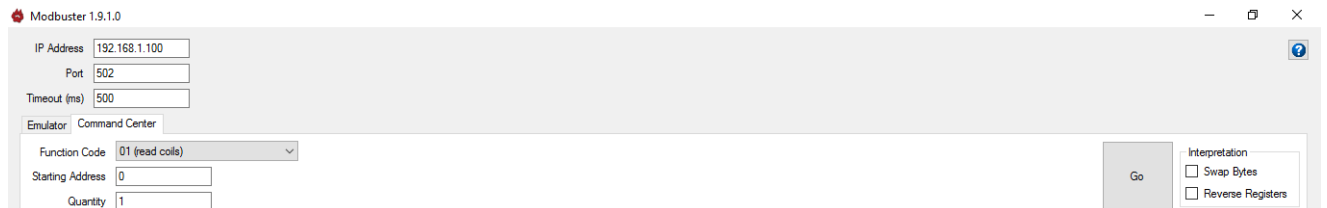
- read input registers (04);
- write single coil (05);
- write single holding register (06);
- write multiple coils (15); and
- write multiple holding registers (16).

### 4.3.1 Connection and Command Selection

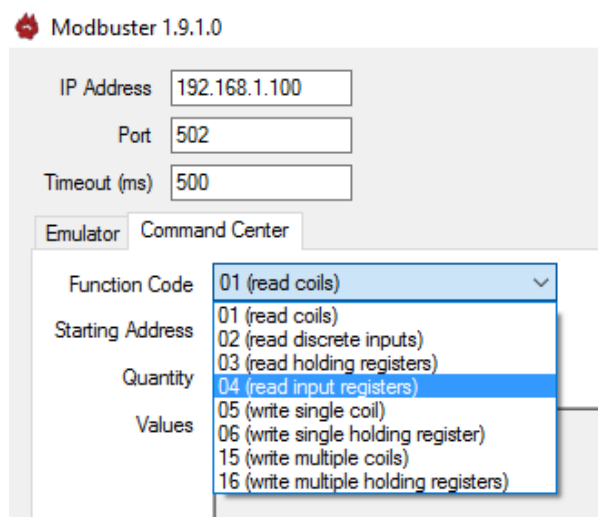
To be able of connecting, it is necessary to enter a valid IP address, Port and Timeout (ms) data at the top.



After that, clicking Go -on the right side- the selected and configured command is sent.



The command to be sent is selected as follows:



The different parameters belonging to each command are configured using the corresponding fields as shown below:

**Modbuser 1.9.1.0**

IP Address

Port

Timeout (ms)

Emulator  Command Center

Function Code

Starting Address

Quantity

Values

Then click Go and the corresponding command request is sent to the **Server/Slave node** and the response from the **Server/Slave node** is displayed.

The screenshot shows the Modbuser 1.9.1.0 interface with the following details:

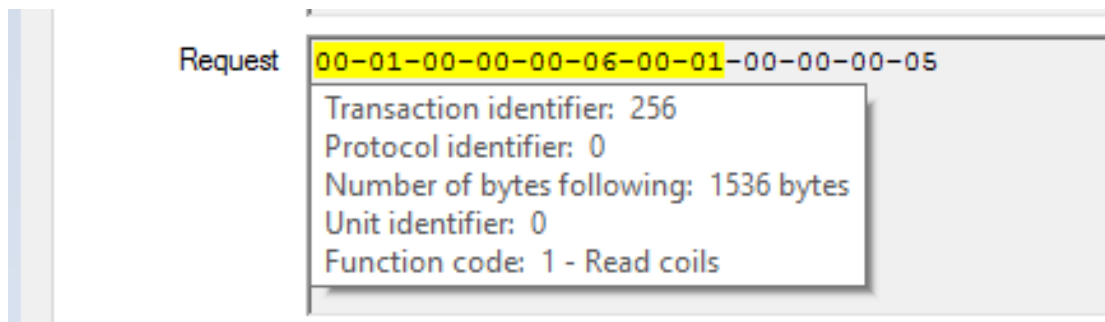
- IP Address: 192.168.1.103
- Port: 502
- Timeout (ms): 500
- Emulator: Command Center
- Function Code: 04 (read input registers)
- Starting Address: 0
- Quantity: 5
- Go button: Clicked
- Request: 00-01-00-00-00-06-00-04-00-00-00-05
- Response: 00-01-00-00-00-0D-00-04-0A-3E-13-2E-D3-3E-47-B2-64-**8E-19**
- Interpretation:
  - Unsigned 16 bit integer: 6462
  - Signed 16 bit integer: 6462
  - ASCII string: >□

### 4.3.2 MODBUS Command Analyzer

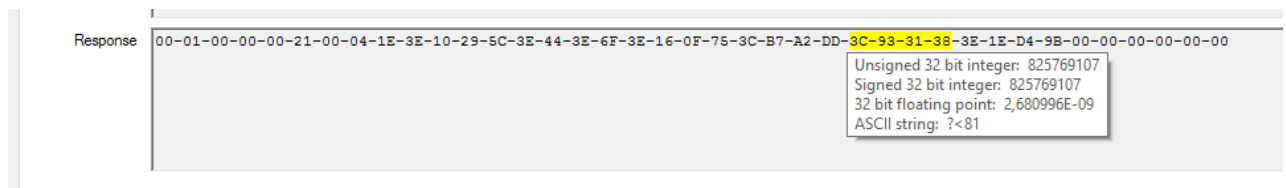
This useful feature of the Command Centre is intended to support the user in analysing the information contained in the **Request** and **Response** commands.

Moving the mouse on the different parts of the command, the fields are highlight and their specific information is interpreted and displayed in a user-friendly way by the integrated **Interpreter Engine**.

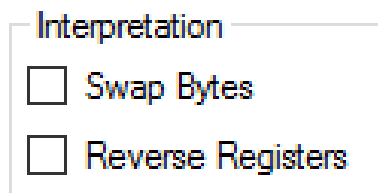
In the Request:



In the Response:



Additionally, the configuration of the **Interpreter Engine** in the **Command Analyzer** is flexible. It is configurable as follows:



For further information, refer to Help (?) at the top right corner.

