ABLELink®

Modbus Gateway
MB5000 Series
User's Manual

Version 1.1

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Introduction

Modbus is an industry adopted communication protocol based on RTU, ASCII, and TCP protocols for various applications; these three protocols are commonly used by hardware equipments in the industry, such as DCS, PLC, HMI, power load measurement, various sensor and measuring instruments. The Modbus Gateway is capable of implementing the Modbus environment between different hardware interfaces, thereby streamlining the process of management and application.

Diverse Hardware Infrastructure

Modbus Gateway supports the four most commonly used hardware communication interfaces, RS232, RS485, RS422, and Ethernet. The simple-to-use configuration software provided with Modbus Gateway can quickly modify the hardware interface to use, and easily switch to the existing hardware communication infrastructure.

Switching between Modbus Protocols

Modbus Gateway supports the standard Modbus protocol and is capable of converting any Modbus protocols between Modbus TCP, Modbus RTU, and Modbus ASCII for all supported hardware interfaces, not just limited to converting Modbus TCP into Modbus RTU/ASCII.

Modbus ID Routing

Modbus Gateway is not only capable of hardware and protocol conversions, and when a Modbus ID conflict occurs the Modbus Gateway also supports ID routing to the existing Modbus hardware.

Modbus Gateway, Simple Integration for Complex Configurations

Modbus Gateway supports various types of hardware communication interfaces, Modbus protocol conversion, and Modbus ID routing. Therefore the Modbus Gateway can integrate your existing and complex Modbus hardware configuration into a simple network that can be easily managed.

Features

- Supports the four most commonly used hardware communication interfaces in the industry, RS232, RS485, RS422, and Ethernet.
- Easy-to-use webpage setup for RS232, RS485, RS422.
- Effortlessly convert between Modbus TCP, Modbus RTU, and Modbus ASCII.
- Hardware connections through serial and Ethernet ports for even easier integration.
- No software installations necessary; simply setup configurations through the Internet browser (e.g. Internet Explorer).
- Provides up to 16 ports for connectivity.
- Provides 2 Ethernet interfaces.

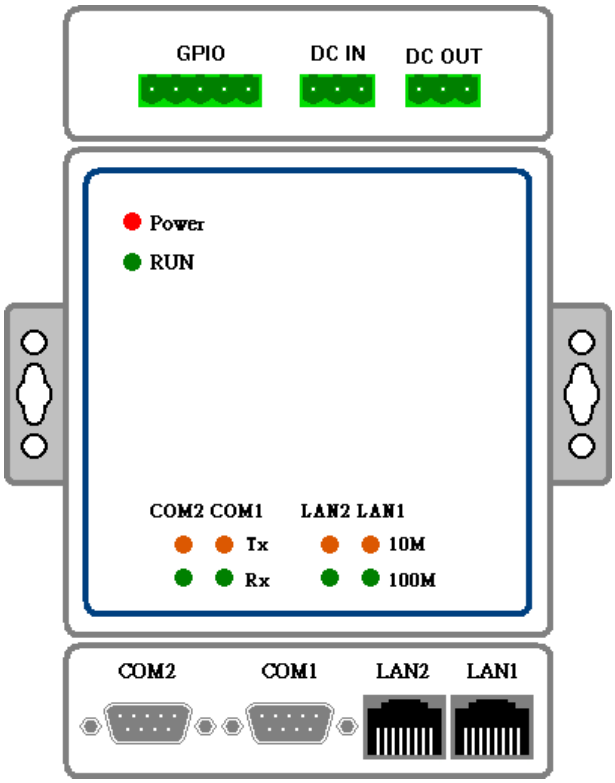
Specifications

Specifications		
Model	**MB5302 (2-Port)**	**MB5404 (4-Port)**
System		
CPU	RISC 150MHZ Processor with MMU	32-bit 266MHz RISC Processor with MMU
Flash	16M Bytes	32M Bytes
RAM	64M Bytes	128 M Bytes DDR
EEPROM	2K Bytes	8K Bytes
Watchdog	Hardware & Software built-in	
Ethernet		
Compliance	IEEE802.3	
Port	2-port	
Transmission	10/100M Auto-detection	
Connector	RJ-45	
Auto MDI/MDI-X	No	
Serial		
Interface	RS232/422/485 software selectable	
Ports	2-port	4-port
Baud Rate	110bps-921Kbps	
Parity	None, Odd, Even, Mark, Space	
Data Bits	5, 6, 7, 8	
Stop Bits	1, 2	
Flow Control	None, Software: Xon/Xoff, Hardware: RTS/CTS	
Protection	15KV ESD	15KV ESD
Connector	9-pin D-Sub	9-pin D-Sub
Power		
Input	DC 9 - 30V	
Consumption	Max. 6W	Max. 8.5W
Approval		
EMC	FCC Class A, CE Class A	
Environment		
Operating	0°C-60°C(32º-140ºF)	0°C-60°C (32º-140ºF)
Storage	-40º-85ºC (-40º-185ºF), 5 - 95%RH	-40º-85ºC (-40º-185ºF), 5 - 95%RH
Dimension		
W x H x D (mm)	99 x 35 x 108.5	197 x 37 x 112
Software		
Configuration	Web page	
Support protocol	TCP/IP, HTTP, Telnet, Modbus	
Option Accessories		
Power Adapter	US315(US / EU) AC100-240V / DC12V 1.25A ; 3 pins 5.08mm terminal block,	1A25F (US / EU): AC100-240V / DC12V 1.25A ; DC Jack lockable

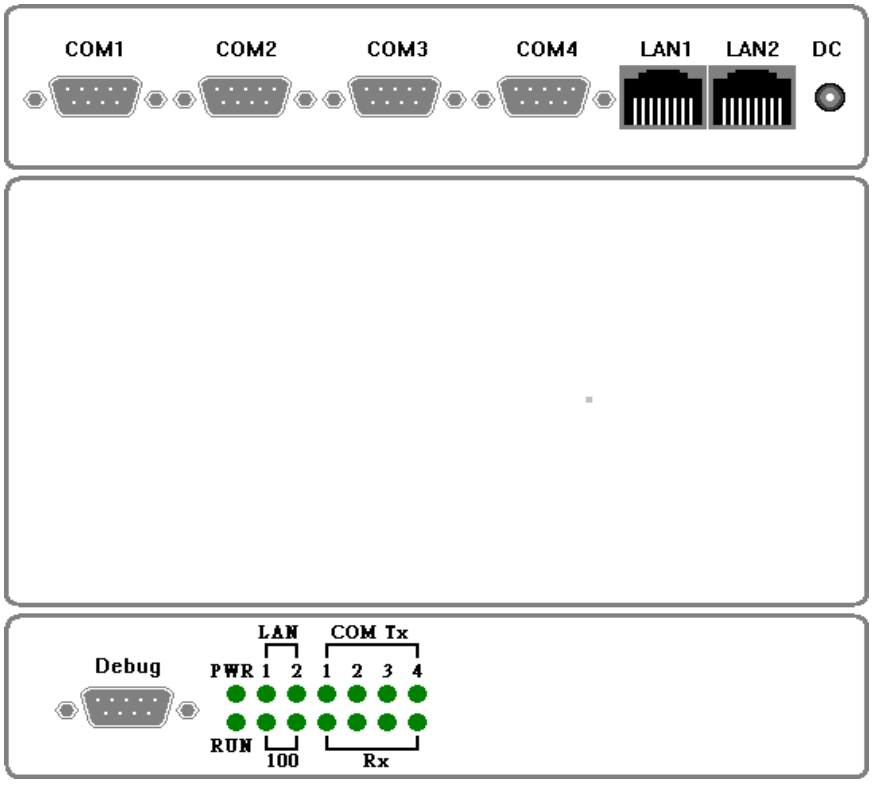
Hardware Diagram

Diagram

2-Port Hardware Diagram



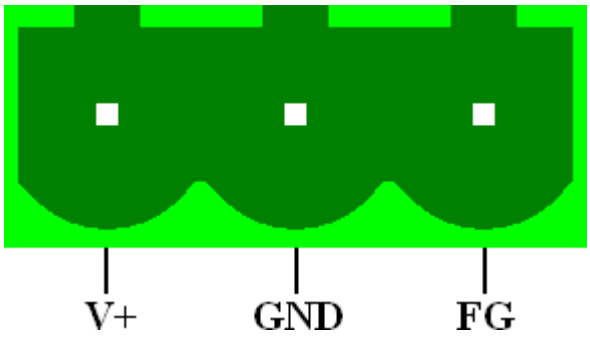
4-Port Hardware Diagram



Pin Definitions

Power Pin Definitions

2-Port Power Pin Definitions (DC)



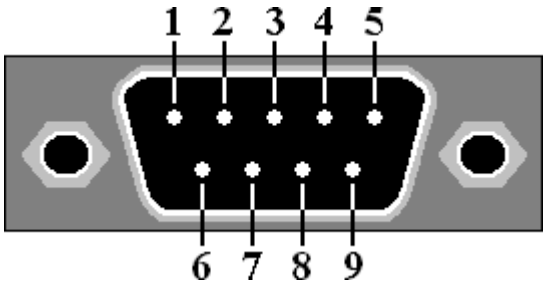
DC 9V - DC 30V

Ethernet Port Pin Definitions (RJ45)

Pin	Signal
1	TX+
2	TX-
3	RX+
4	
5	
6	RX-
7	
8	

Serial Port Pin Definitions

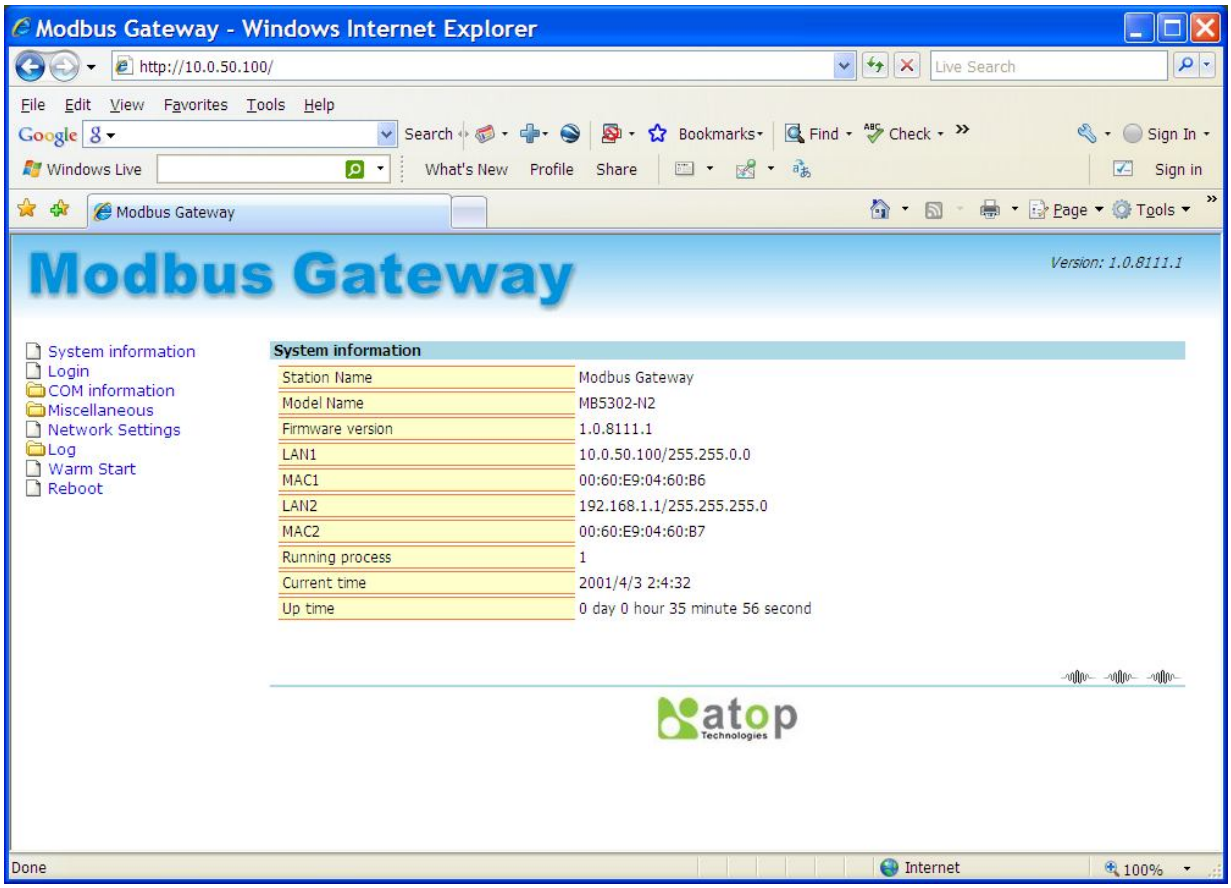
2-Port and 4-Port Pin Definitions (DB9)



RS-232		RS-422		RS-485	
Pin	Signal	Pin	Signal	Pin	Signal
1	DCD	1	NC	1	NC
2	RXD	2	TXDB (+)	2	NC
3	TXD	3	RXDB(+)	3	DataB (+)
4	DTR	4	NC	4	NC
5	GND	5	GND	5	GND
6	DSR	6	NC	6	NC
7	RTS	7	RXDA (-)	7	DataA (-)
8	CTS	8	TXDA (-)	8	NC
9	NC	9	NC	9	NC

Configuration and Management

Connecting to the Setup Page



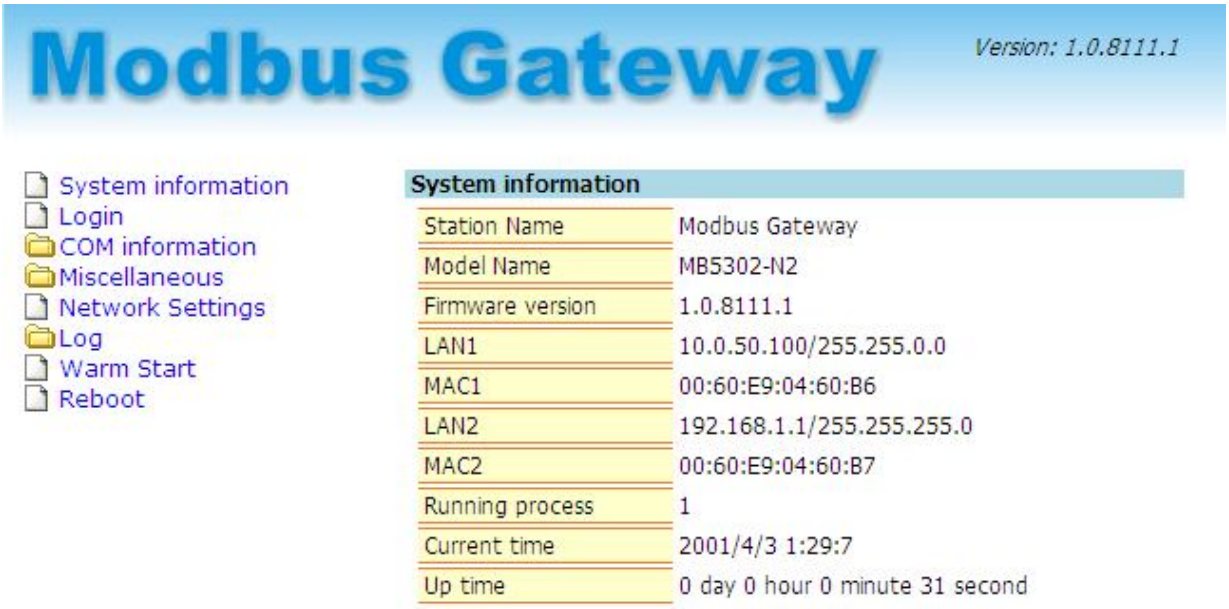
There are two methods of connecting to the Modbus Gateway Configuration and Management webpage:

The first method is to use the included software tool (Devicevw.EXE) and directly select the IP address then Click the “Browser” button. The software tool will use the default browser to open the setup page.

The second method is to launch the browser and then enter the IP address of the Modbus Gateway in the address bar, e.g. http://192.168.50.100

The System Information page will be displayed after connecting to the Modbus Gateway homepage. Please refer to the following for detailed descriptions of each page.

System information



The menu tree to the left side of the page contains the configuration and management options. The Modbus Gateway version is to the upper right corner and the system information is at the right hand side. Each field is briefly described as below:

Station Name	Name of this Modbus Gateway
Model Name	Model Name of this Modbus Gateway
Serial No.	Serial Number of this Modbus Gateway
Firmware version	Version of this Modbus Gateway
LAN1	IP/Netmask of the first LAN interface
MAC1	MAC address of the first LAN interface
LAN2	IP/Netmask of the second LAN interface
MAC2	MAC address of the second LAN interface
Running Process	Number of Modbus Gateways running
Current time	Current time of this Modbus Gateway
Up Time	System uptime of this Modbus Gateway

Login

If nothing is modified after connecting to the Modbus Gateway, the user does not have to be logged in. To make modifications to the Modbus Gateway, the user must first login beforehand or at the system prompt after modifications are made. Any modifications made will only be saved after the user is logged in (by login beforehand or at system prompt).

Default user name and password: **(Note: Case sensitive.)**

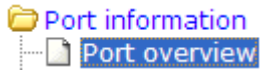
Username: admin

Password: 12345

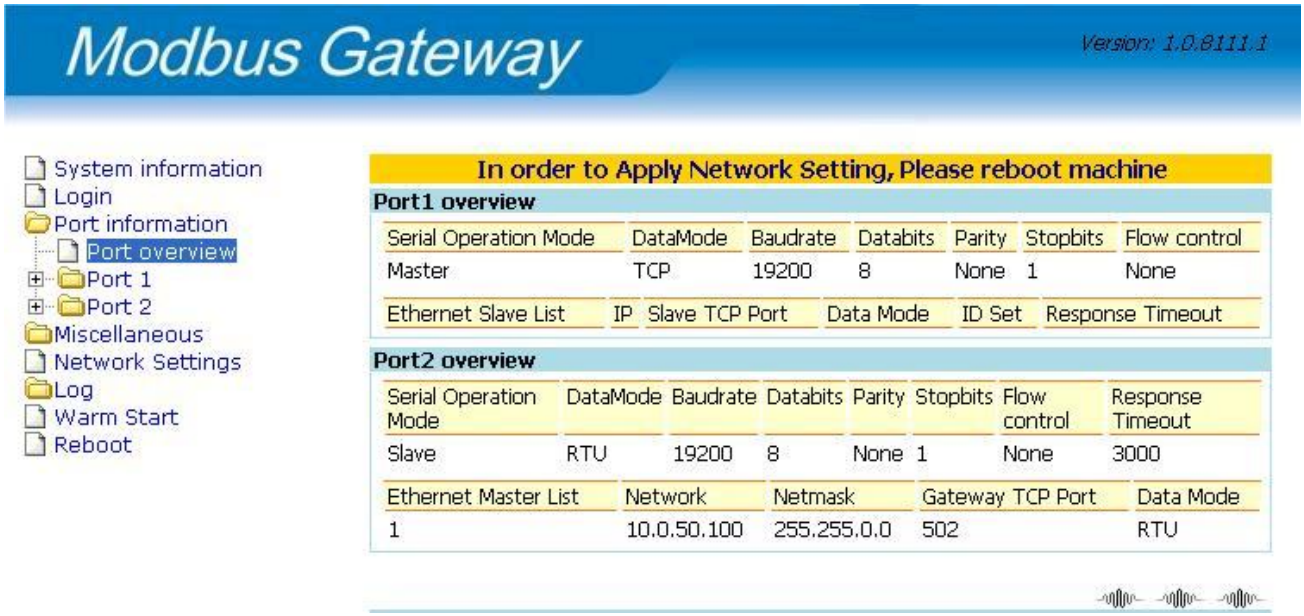
Port information

The Port Information menu can browse through and modify the settings of all ports, including [Port overview] and [Port] information.

Port overview



Port overview will list the current settings of all ports on Modbus Gateway, while some detailed port information will not be displayed here and is listed under the port setup details. As below, this is a 4-Port Modbus Gateway and the Port overview menu lists the current settings of all ports.



Port

[Port] will configure the basic parameters and connection information to the Modbus Gateway. There are two submenus [Parameter] and [Serial Device Mode] under the [Port] menu.

Parameter

Parameter contains the following basic parameters for the port: Hardware Mode, Baud Rate, Data Bits, Parity, Stop Bits, and Flow Control.

Note: After modifying the settings for the port, the Modbus Gateway has to be rebooted to apply the change. There are four methods to reboot the Modbus Gateway:

1. **Click "Apply" on the webpage after changes are made.**
2. **Click the "Warm Start" function menu to the left.**
3. **Click the "Reboot" function menu to the left.**
4. **Cutoff the power and then recover the power.**

After entering the setup interface the available common options are as below:

1. **Hardware Mode**
   Transfer mode for the port. Options include RS232, RS422, and RS485.
2. **Baud Rate**
   Transfer speed for the port. Applicable range is 110-921600.
3. **Data Bits**
   Usable bits for each unit of data during the transfer. Options include 5, 6, 7, and 8.
4. **Parity**
   Parity checks. Options include None, ODD, and EVEN.
5. **Stop Bits**
   The bits to use when stopping the transfer. Options include 1 and 2.
6. **Flow Control**
   Flow control setup. Options include None, RTS/CTS, and XON/XOFF.

Serial Device Mode

Modbus devices are commonly labeled as Master and Slave and therefore, the Serial Device Mode of the Modbus Gateway is also labeled as such modes, Master and Slave. When the port is set to Master, then the Ethernet will have to be set as Slave; vise versa, when the port is set to Slave, then the Ethernet will have to be set as Master. The following will explain the two configurations, **(I) "Serial Device Mode" as "Slave" and (II) "Serial Device Mode" as "Master".**

(I) "Serial Device Mode" as "Slave"

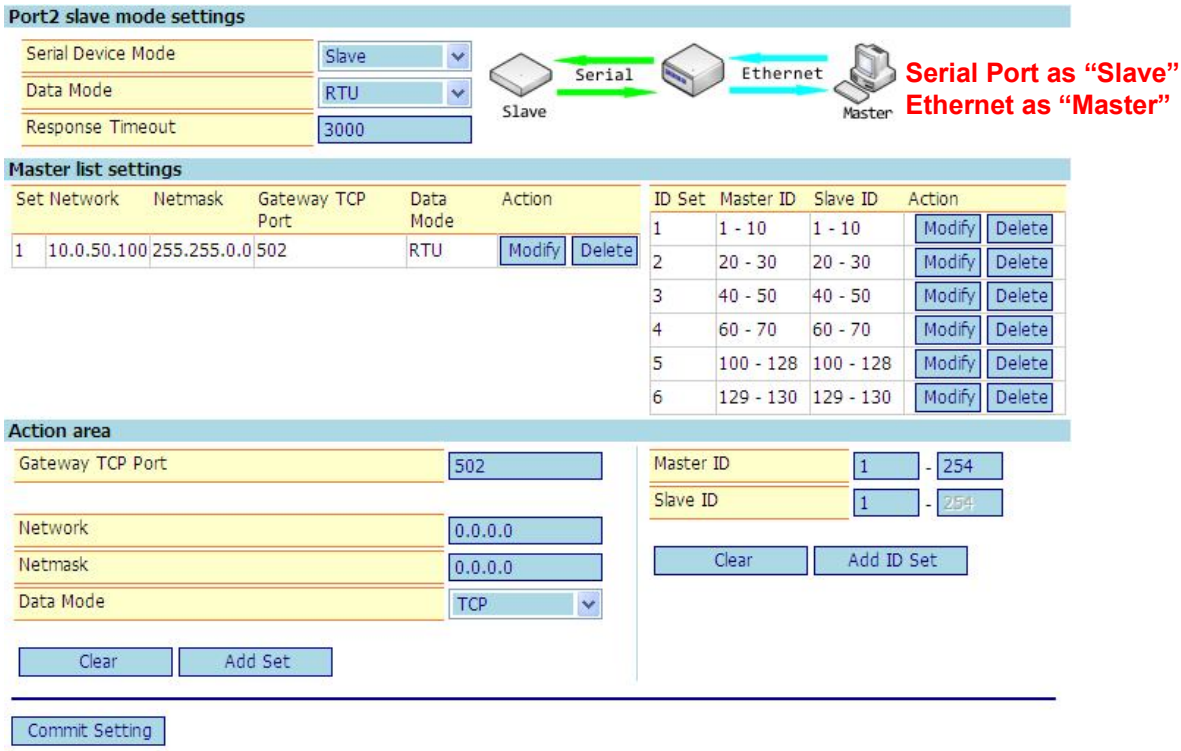


Figure 1.
Configuration page for "Serial Device Mode" as "Slave"

This page is split into three sections, (1) Port-mode setting, (2) Master-setting list, and (3) Action area.

According to the selected "Serial Device Mode", the above-mentioned contents will differ.

(1) **Port-mode setting**: There are three options for the port, "Serial Device Mode", "Data Mode", and "Response Timeout".

"Serial Device Mode": Includes **[Master] and [Slave] modes. Current description is for the "Serial Device Mode" under slave mode**.

The Modbus Gateway "Serial Device Mode" will be configured based on the device connected to the port. For example, Port1 connected device is in slave mode (mainly provides data access for Master) then "Serial Device Mode" will be set to slave; vise versa, if the connected device is in master mode (mainly for accessing data from slave) then "Serial Device Mode" will be set to master. **Note: The mode changes will show up on the configuration page.**

"Data Mode": Includes RTU, ASCII, and TCP Modbus communication protocols.

The Modbus Gateway "Data Mode" communication protocol will be configured based on the device

connected to the port. For example, Port1 connected device uses the Modbus RTU communication protocol then "Data Mode" will be set to RTU; vise versa, if the connected device uses Modbus ASCII then "Data Mode" will be set to ASCII. **Note: Modbus Gateway also supports TCP mode for the "Serial Device Mode" at the port.**

"Response Timeout": When the connected device is in slave mode will this option be required.

This option is to set the timeout period for a response from the slave port connected device, unit in microsecond.

(2) **Master-setting list:** If the "Serial Device Mode" is set to slave, then this list will be the master list for the Ethernet port; vise versa, if the "Serial Device Mode" is set to master, then this list will be the slave list for the Ethernet port.

(3) **Action area:** If the "Serial Device Mode" is slave then this includes the master configuration page for the Ethernet port; vise versa, if the "Serial Device Mode" is master then this includes the slave configuration page for the Ethernet port. The following description is for "Serial Device Mode" set to "Slave".

"Serial Device Mode" as "Slave" setup page: As in Figure 1. The **Master setup (Client)** at the left and **ID routing-table** to the right.

Master setup (Client): Includes the settings "Gateway TCP Port", "Network and Netmask", and "Data Mode".

"Gateway TCP Port":

Modbus Gateway provides client connection to activate the TCP Port service.

"Network and Netmask":

Combination of **"Network"** and **"Netmask"** to configure the range of client IP to Modbus Gateway. The system does not provide shorthand description of the Network/Netmask (e.g. 192.168.100.0/24).

Example 1: Provide any IP that the client can connect to the Modbus Gateway, then enter 0.0.0.0 for the **"Network"** with 0.0.0.0 for the **"Netmask"**.

Example 2: Provide 192.168.100.1-192.168.100.63 range for the client to connect to Modbus Gateway, with 192.168.100.0 for the **"Network"** and 255.255.255.192 for the **"Netmask"**.

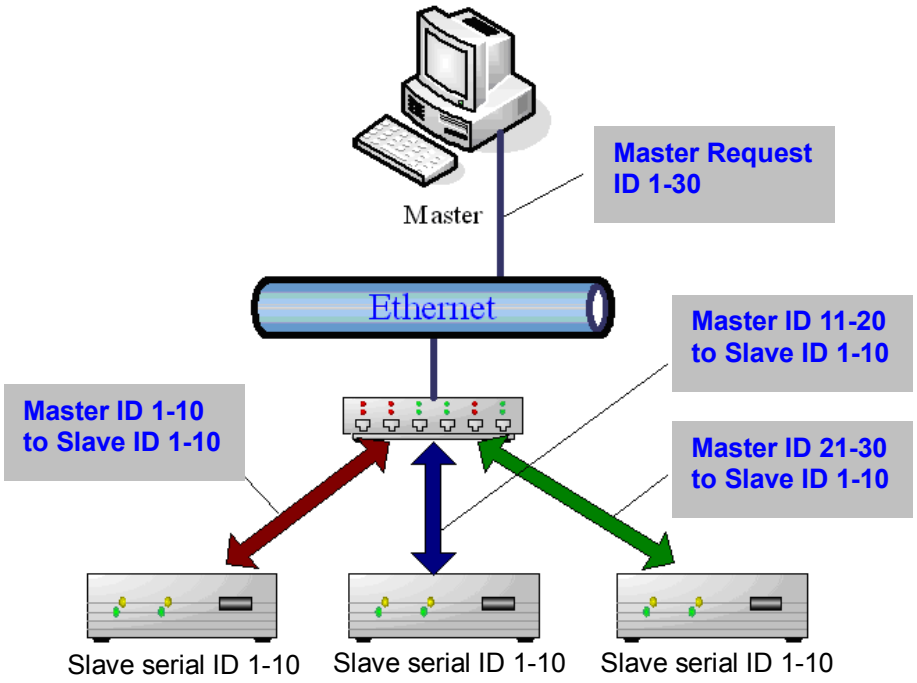
Example 3: Provide 192.168.100.1-192.168.100.255 range for the client to connect to Modbus Gateway, with 192.168.100.0 for the **"Network"** and 255.255.255.0 for the **"Netmask"**.

Example 4: To limit to a single IP (e.g. 192.168.100.31) for the client connection, enter 192.168.100.31 for the **"Network"** with 255.255.255.255 for the **"Netmask"**.

"Data Mode": Includes RTU, ASCII, and TCP modes.

The "Data Mode" here configures the communication protocol for the master device, and must be set to the communication protocol used by the remote Ethernet-master. The "Data Mode" listed here is independent to the "Data Mode" in the Port-mode setting. In other words, the master and slave can be configured with different communication protocols, and the Modbus Gateway will perform the conversion between different data types.

ID routing-table: Master ID and **Slave ID** modes.



Master ID: The Master ID is a virtual ID and each field must not duplicate with another.

Slave ID: Slave ID is the applicable ID range provided for the slave device.

As indicated above, the Modbus Gateway uses 3 ports with each port connecting to 10 serially connected Modbus slave devices ID range 1-10. During setup, the Master ID 1-10 corresponds to Slave ID 1-10, Master ID 11-20 corresponds to Slave ID 11-20, and Master ID 21-30 corresponds to Slave ID 21-30. When master sends the request for ID 1, 11, and 21, the Modbus Gateway will automatically convert to ID1 and send the request to the corresponding slave device, subsequently the slave response will also be automatically be converted to the corresponding 1, 11, and 21 replying to master.

(II) "Serial Device Mode" as "Master"

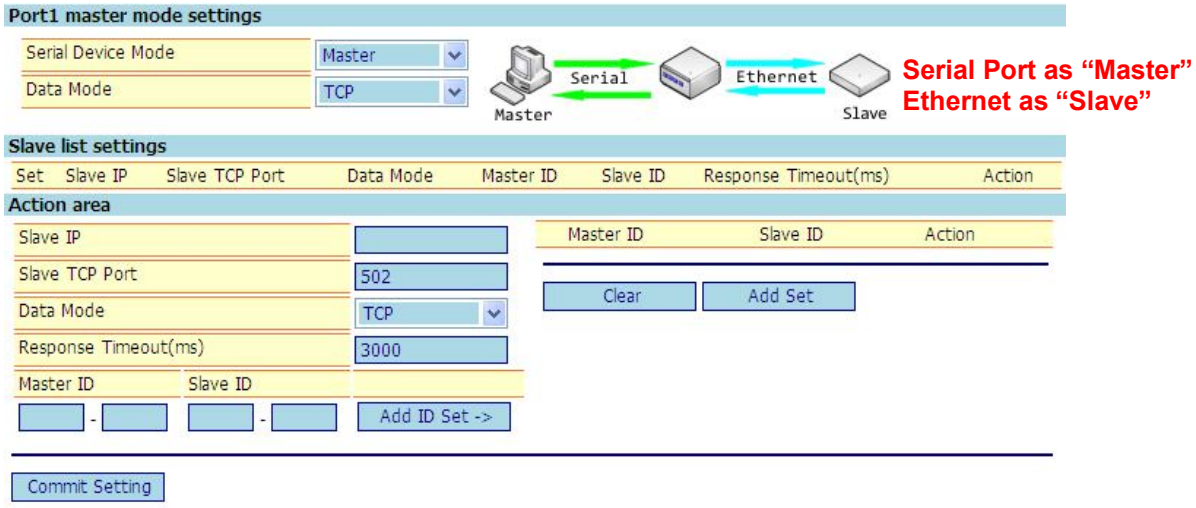


Figure 2.
Configuration page for "Serial Device Mode" as "Master"

This is similar to the slave configuration including three parts, (1) Port-mode setting, (2) Slave-setting list, and (3) Action area.

(1) **Port-mode setting**: There are to options for the port, "Serial Device Mode" and "Data Mode".

"Serial Device Mode": Includes **[Master] and [Slave] modes. Current description is for the "Serial Device Mode" under master mode**.

The Modbus Gateway "Serial Device Mode" will be configured based on the device connected to the port. For example, Port1 connected device is in master mode (mainly for accessing data from slave) then "Serial Device Mode" will be set to master; vise versa, if the connected device is in slave mode (mainly provides data access for Master) then "Serial Device Mode" will be set to slave.

"Data Mode": Includes RTU, ASCII, and TCP Modbus communication protocols.

The Modbus Gateway "Data Mode" communication protocol will be configured based on the device connected to the port. For example, Port1 connected device uses the Modbus RTU communication protocol then "Data Mode" will be set to RTU; vise versa, if the connected device uses Modbus ASCII then "Data Mode" will be set to ASCII. **Note: Modbus Gateway also supports TCP mode for the "Serial Device Mode" at the port.**

(2) **Slave-setting list**: If the "Serial Device Mode" is set to slave, then this list will be the master list for the Ethernet port; vise versa, if the "Serial Device Mode" is set to master, then this list will be the slave list for the Ethernet port.

(3) **Action area**: If the "Serial Device Mode" is slave then this includes the master configuration page for the Ethernet port; vise versa, if the "Serial Device Mode" is master then this includes the slave configuration page for the Ethernet port. The following description is for "Serial Device Mode" set to "Master".

"Serial Device Mode" as "Master" setup page: As in Figure 2. the **Slave setup (Server)** and **ID routing table**.

Slave setup (Server): Includes the settings "Slave IP", "Slave TCP Port", "Data Mode", "Response Timeout", and "Master ID and Slave ID".

"Slave IP":
IP address for connecting to remote slave device.

"Slave TCP Port":
TCP port for connecting to remote slave device.

"Data Mode": Includes RTU, ASCII, and TCP modes.

The "Data Mode" here configures the communication protocol for the slave device, and must be set to the communication protocol used by the remote Ethernet-slave. The "Data Mode" listed here is independent to the "Data Mode" in the Port-mode setting. In other words, the master and slave can be configured with different communication protocols, and the Modbus Gateway will perform the conversion between different data types.

"Response Timeout":

Sets the response timeout from the remote Ethernet-slave device, unit in microsecond.

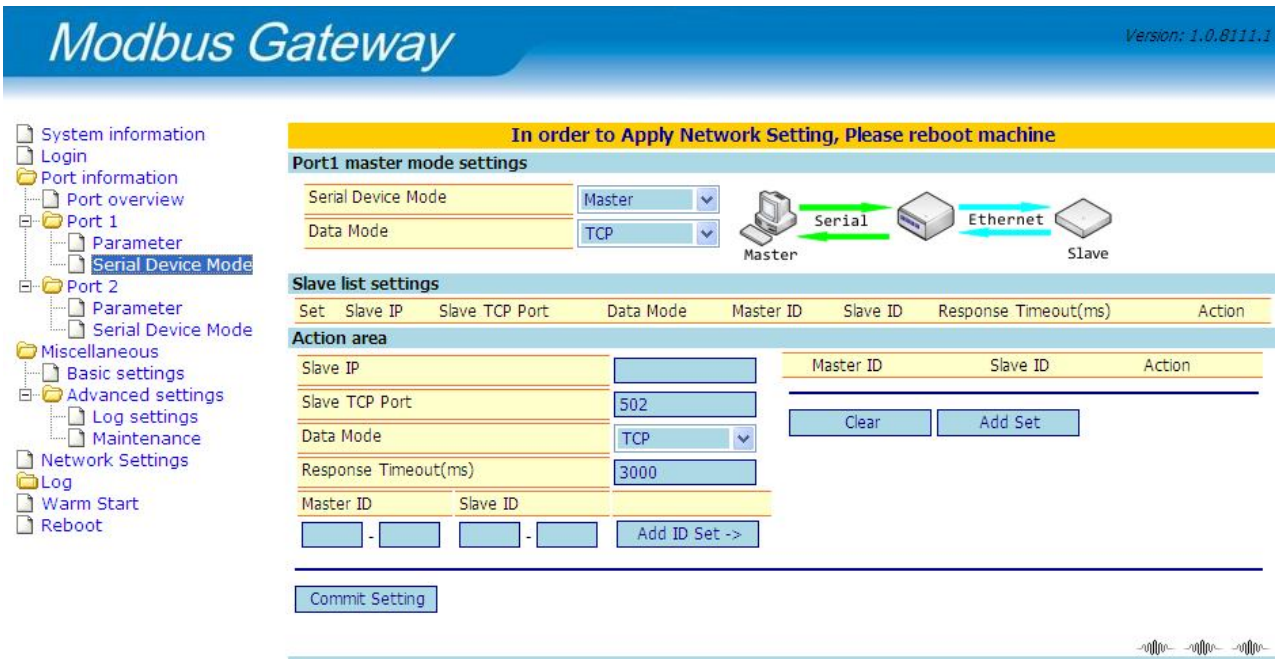
ID routing table: Master ID and **Slave ID** modes.

Master ID: The Master ID is a virtual ID and each field must not duplicate with another.

Slave ID: Slave ID is the applicable ID range provided for the slave device.

The concept is identical to the setup for "**ID routing table**" in the **"Serial Device Mode" as "Slave" configuration page**.

After configuring the Master ID and Slave ID, click "Add ID Set" to add to the buffer, then confirm the range of Slave ID click "Add Set" to add to the Slave-setting list. After all slave devices for the port have been configured, click "Commit Setting" to save to the Modbus Gateway. To immediately apply the changes, click the "Apply" button as below; otherwise, the "Commit Setting" button will only save the settings to the Modbus Gateway configuration file.



Miscellaneous

The miscellaneous menu includes the [Basic settings] and [Advanced settings] for the Modbus Gateway.

Basic settings: Configure the “Modbus Gateway Station Name”, “Modbus Gateway System Time”, and “Username and Password” (Login to Modbus Gateway webpage).

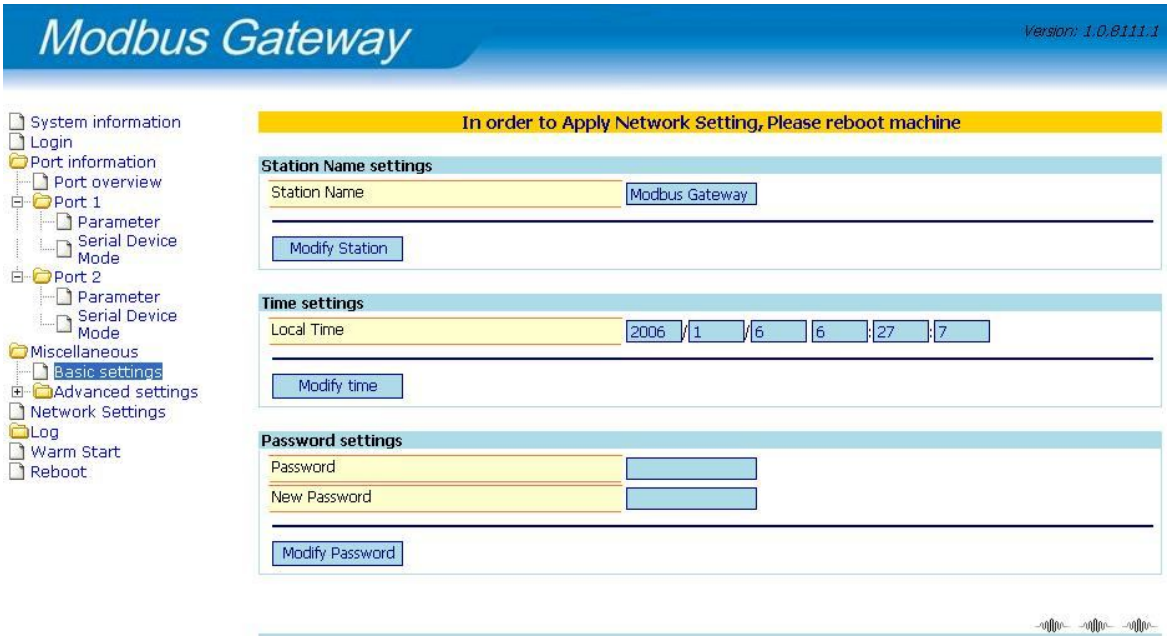
Advance settings: Enable and disable the communication log and configuration file of the Modbus Gateway.

Basic settings

“Station Name setting”: Station name of the Modbus Gateway. When there is a plurality of Modbus Gateway devices on the network, this is used to identify the different Modbus Gateways. For example, the station name [Fab 3F-1] is the first device for Fab 3F.

“Time setting”: Adjust the system time of the Modbus Gateway.

“Username setting”: Username and password for logging in to the webpage.



Station Name setting: Enter the station name and click “Modify Station” to confirm the name change.

Time setting: Time format in YYYY/MM/DD hh:mm:ss, and click “Modify Time” to confirm the time changes.

Username setting: For security reasons, the username and password has to be logged in before modifying the account password. After Username, Password, New Username, and New Password are filled in, click “Modify User” to confirm the changes.

Default username and password: **(Note: Case sensitive.)**

Username: admin

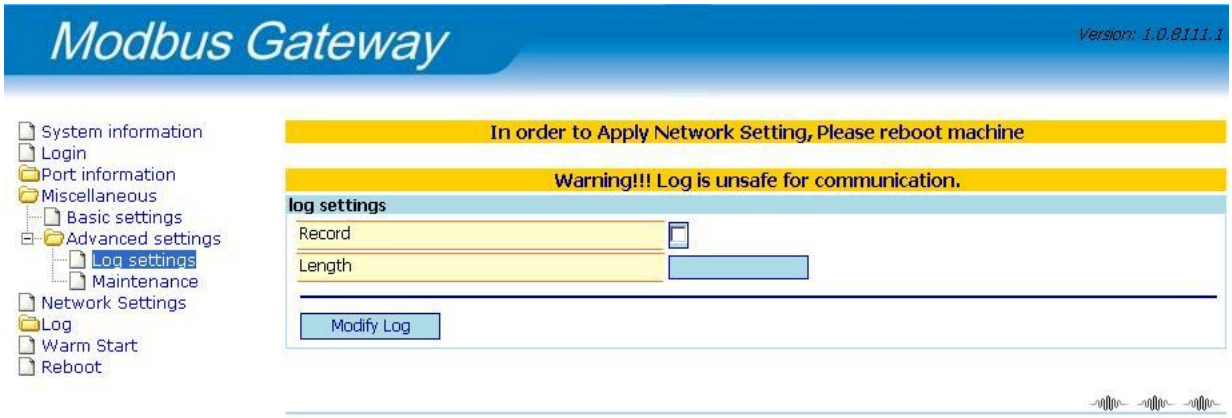
Password: 12345

Advance settings

There are two main functions in the advanced settings, (1) Enable and disable Modbus Gateway communication logs, (2) Maintenance of the configuration file.

Log setting

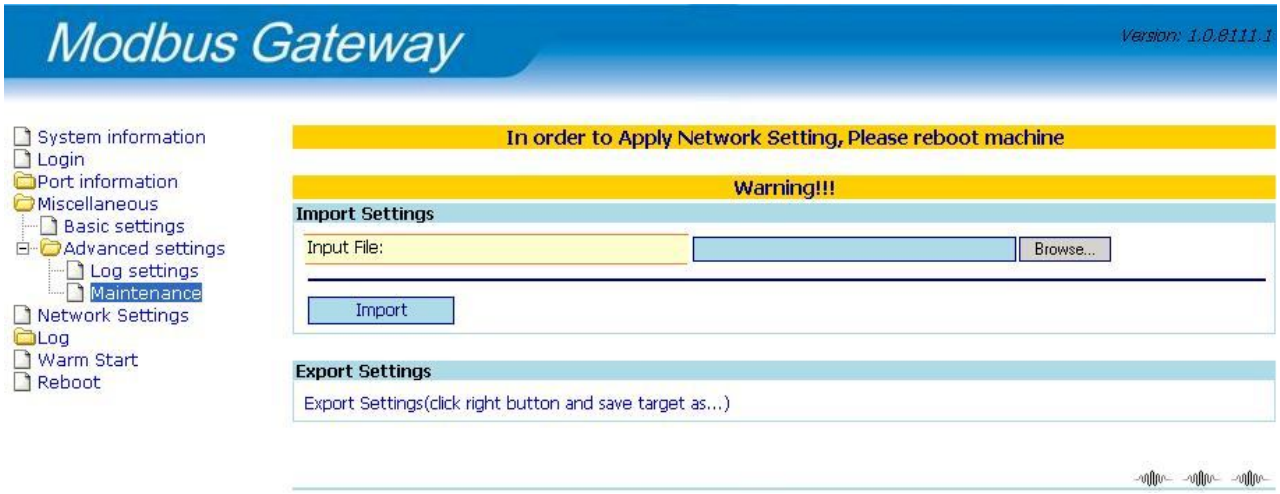
Enables and disables the Modbus Gateway communication logs. Enabling the communication log will increase resource consumption of the system, and therefore it is not recommended for units that are currently online. The default is to disable the communication logs. **It is recommended that the communication log only be enabled during non-online use for testing and debug purposes.**



To enable the function, checkmark the “Record” option and set the maximum length for the record size. Click “Modify Log” to save the setting and then “Apply” to apply the changes.

Maintenance

You can backup the settings of the Modbus Gateway and save as the configuration file for back recovery or apply to other identical Modbus Gateways. “Export Setting” will backup the Modbus Gateway settings and save the configuration to a file; “Import Setting” will restore the Modbus Gateway settings from your saved configuration files.

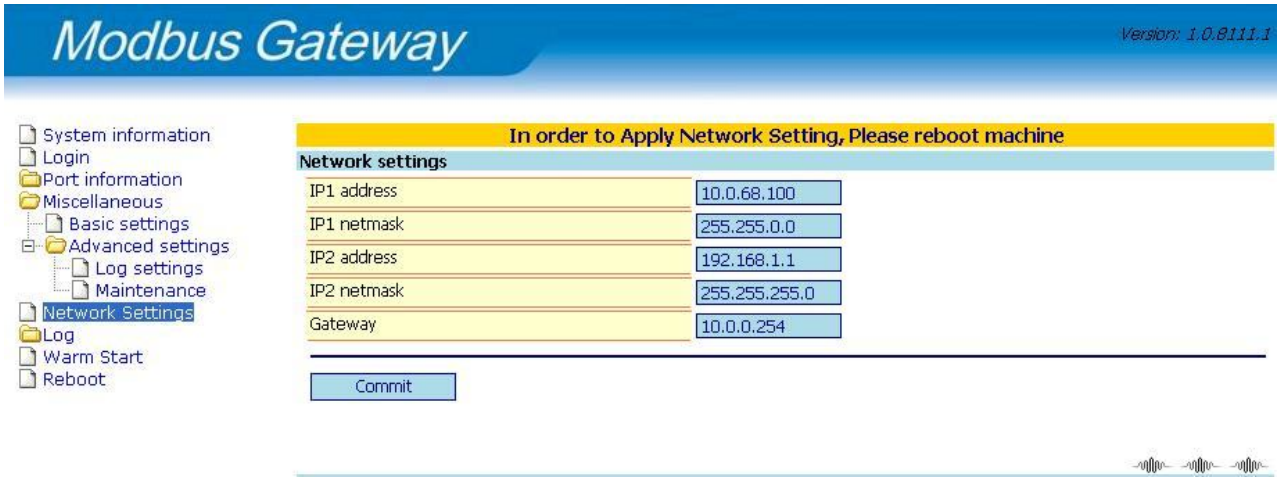


Import Setting: Click “Browse” and select the configuration file to recover the Modbus Gateway, then click Import.

Export Setting: Right click on “Export Settings (...)” and then select [Save target as] in IE. Enter the file name and then confirm to save the file.

Network Settings

The Modbus Gateway features two network devices that can be configured. After carefully configuring the network settings, apply the changes or reboot to put into effect.



Enter the LAN1 and LAN2 settings. If there are no Gateways on the same network as the Modbus Gateway, it is possible to use the current IP as the Gateway IP address.

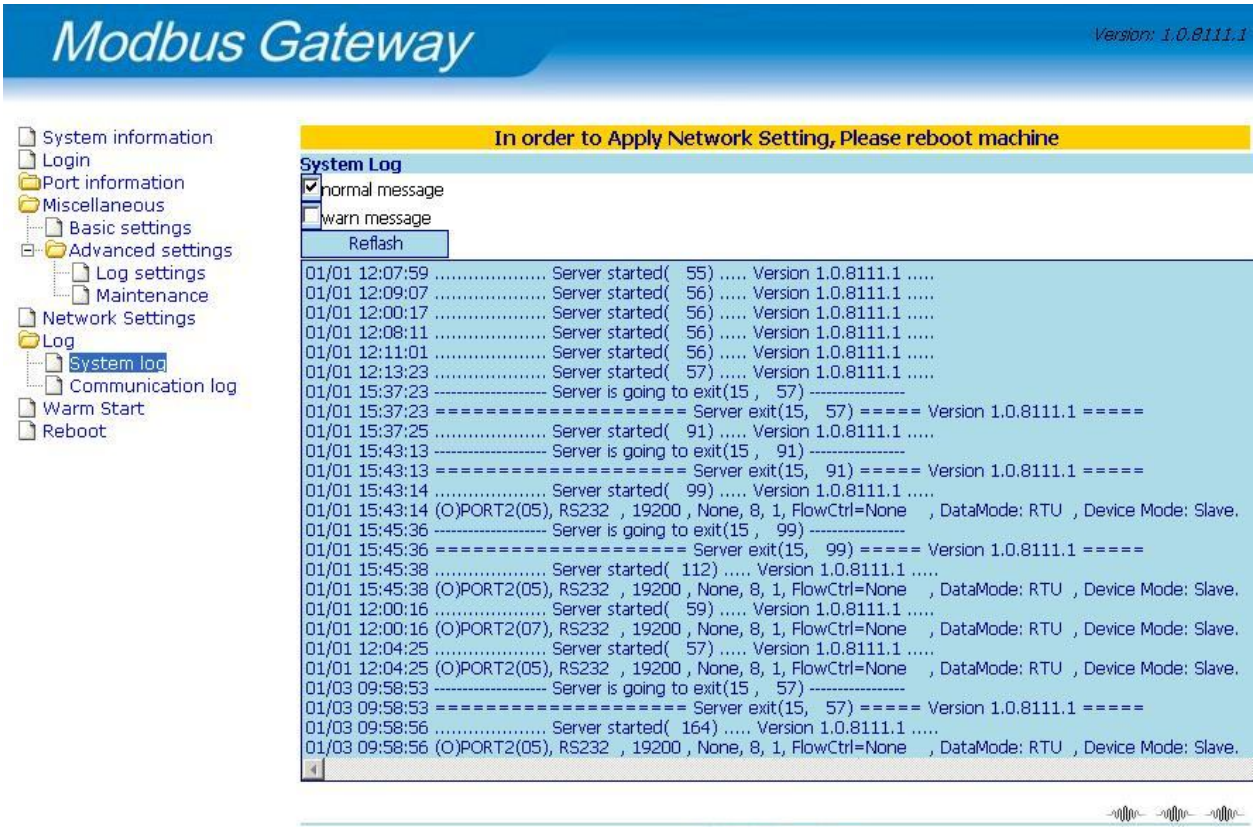
For example, when LAN1 is connected to the network with IP address 192.168.100.201 and there are no Gateways on the network, then the Gateway IP address can be configured with 192.168.100.201.

Log

Lookup the system or communication logs.

System log

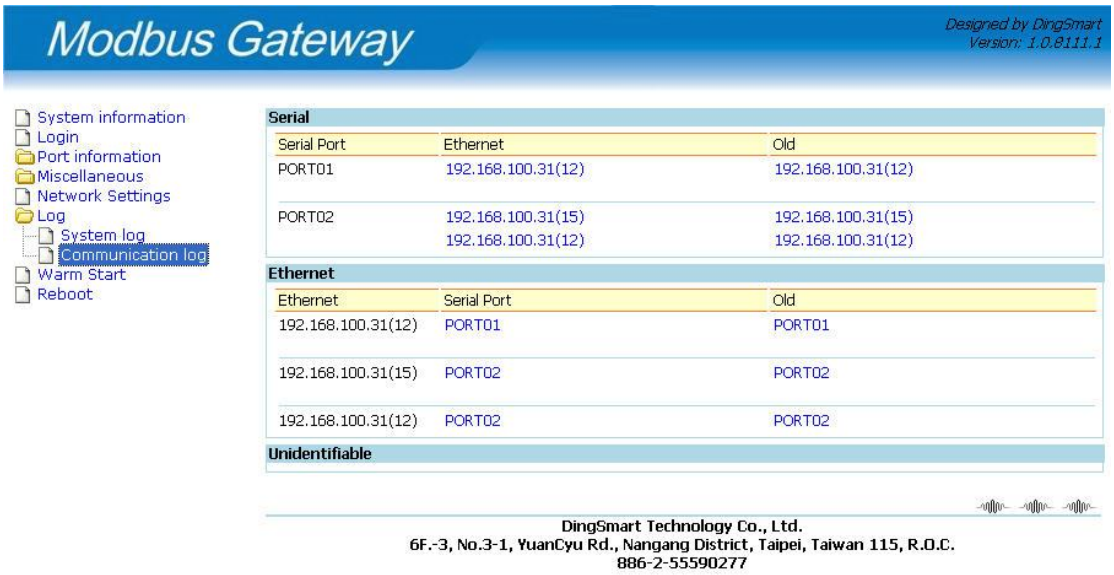
The system log will record the startup, shutdown, error, or warning messages during the operation, including both normal message and warn message. The connection records of the client and Modbus Gateway will be logged in the warn message category.



The “Warn message” option has to be checked to log the connection records.

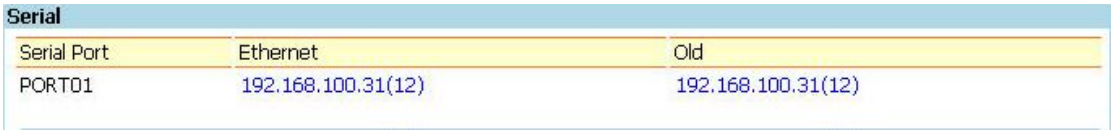
Communication log

The Modbus Gateway will record the Modbus communication records through the serial ports and Ethernet connection in the Communication log if enabled.

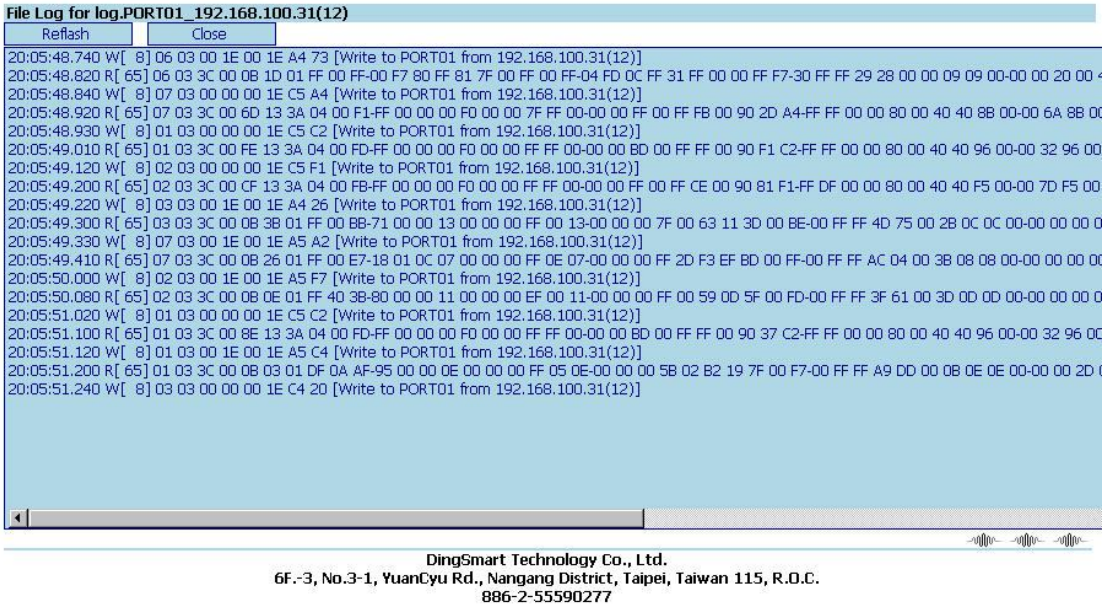


Communication log has three sections, Serial, Ethernet, and Unidentifiable.

Serial: Includes three fields, (1) Serial port number, (2) Ethernet IP, (3) Old data.



These logs are the Read and Write data from the serial port with the IP hyperlink for the “Ethernet” field (e.g. 192.168.100.31(12), and because a single IP may have multiple connections, each connection will be identified with an ID in the brackets. This ID can be looked up from the warn message in System log) and click on the IP to review the access records for the serial port and IP. The Old data field contains expired logs, and the Modbus Gateway will retain the new data in the Ethernet field. The following is the results shown when clicking on the 192.168.100.31(12) link for Port1 Ethernet.



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886-2-55590277

Click on upper left “Refresh” to refresh the contents, click “Close” to close this log window.

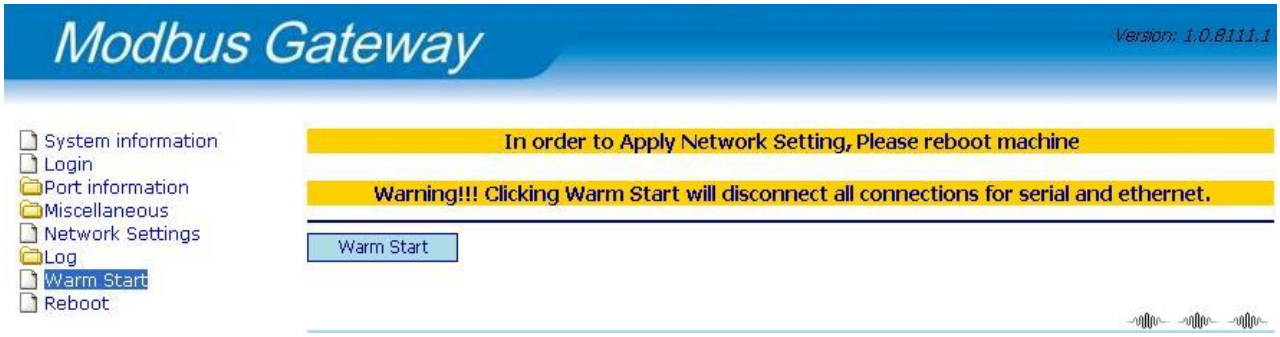
```
20:05:48.740 W[  8] 06 03 00 1E 00 1E A4 73 [Write to PORT01 from 192.168.100.31(12)]
20:05:48.820 R[ 65] 06 03 3C 00 0B 1D 01 FF 00 FF-00 F7 80 FF 81 7F 00 FF 00 FF-04 FD 0C FF
```

This example uses the Port1 and the communication log will be listed for Port01, the leading data is the time `20:05:48.740`, followed with Write `W[ 8]` or Read `R[ 65]` where the number in brackets is the number of Bytes. The data contents to read or write `06 03 00 1E 00 1E A4 73` is represented in Hex, and finally the text string in brackets is the source of the data stream `[Write to PORT01 from 192.168.100.31(12)]` (indicating that this entry is written to Port1 and the data source is 192.168.100.31, connection ID is 12) or the direction of the data stream `[Read from PORT01 to 192.168.100.31(12)]` (indicating that this entry is read from Port1 and sent to 192.168.100.31, connection ID is 12).

The same data will appear as corresponding information in the Ethernet section. Due to the fact that the serial port and Ethernet may use different data modes, the information contained within the Ethernet section is the result of the data conversion.

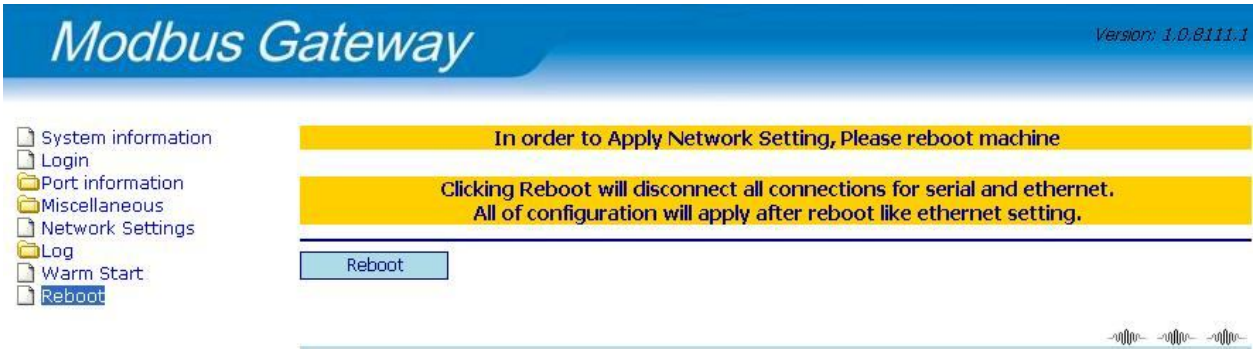
Warm Start

Warm Start is rebooting the Modbus Gateway without cutting off the power. The Reboot option or cutting off the power then re-powering should be used after modifying the network settings.



Reboot

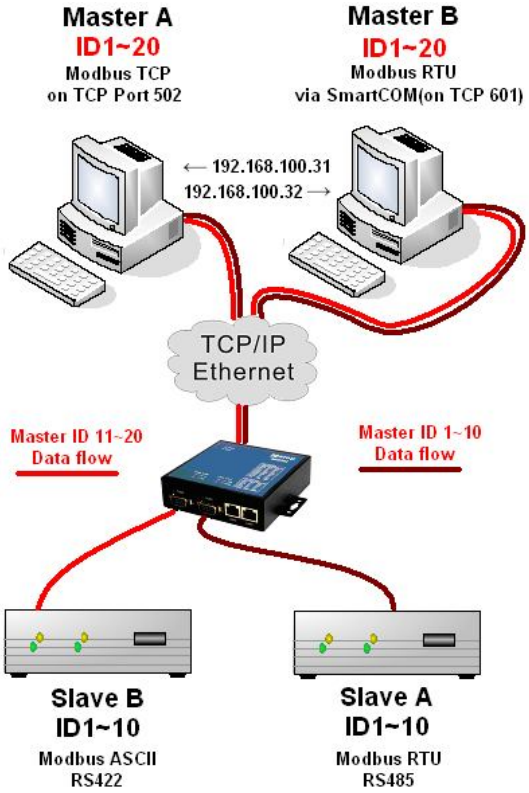
Reboot the Modbus Gateway system and all modified settings will be applied after the reboot.



Configuration Examples

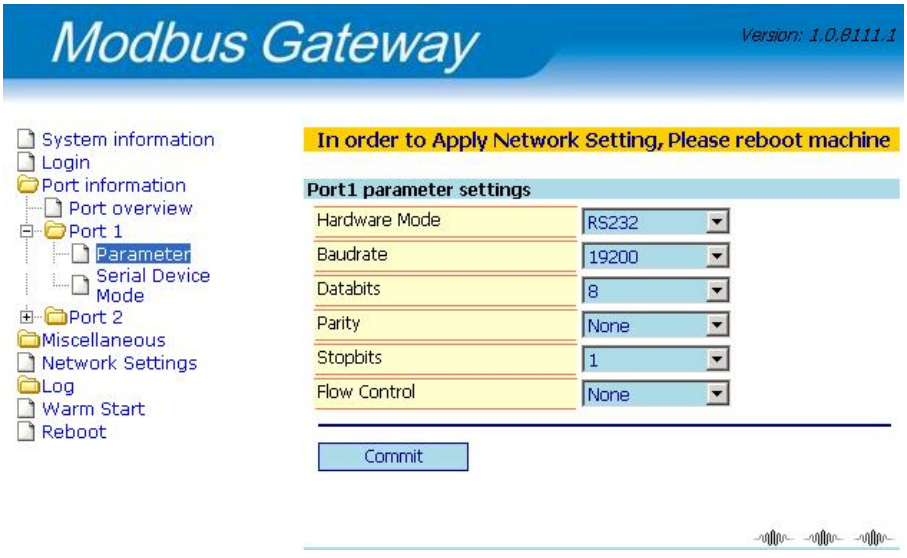
Example 1: Serial Port to Slave Device

Two serial ports connecting to different serial devices, where Port1 connects to 10 serial Modbus RTU devices with ID 1-10 using RS485 communication; and Port2 connects 10 serial Modbus ASCII devices with ID 1-10 using RS422 communication. Two computers are used to access the Master device as indicated below.



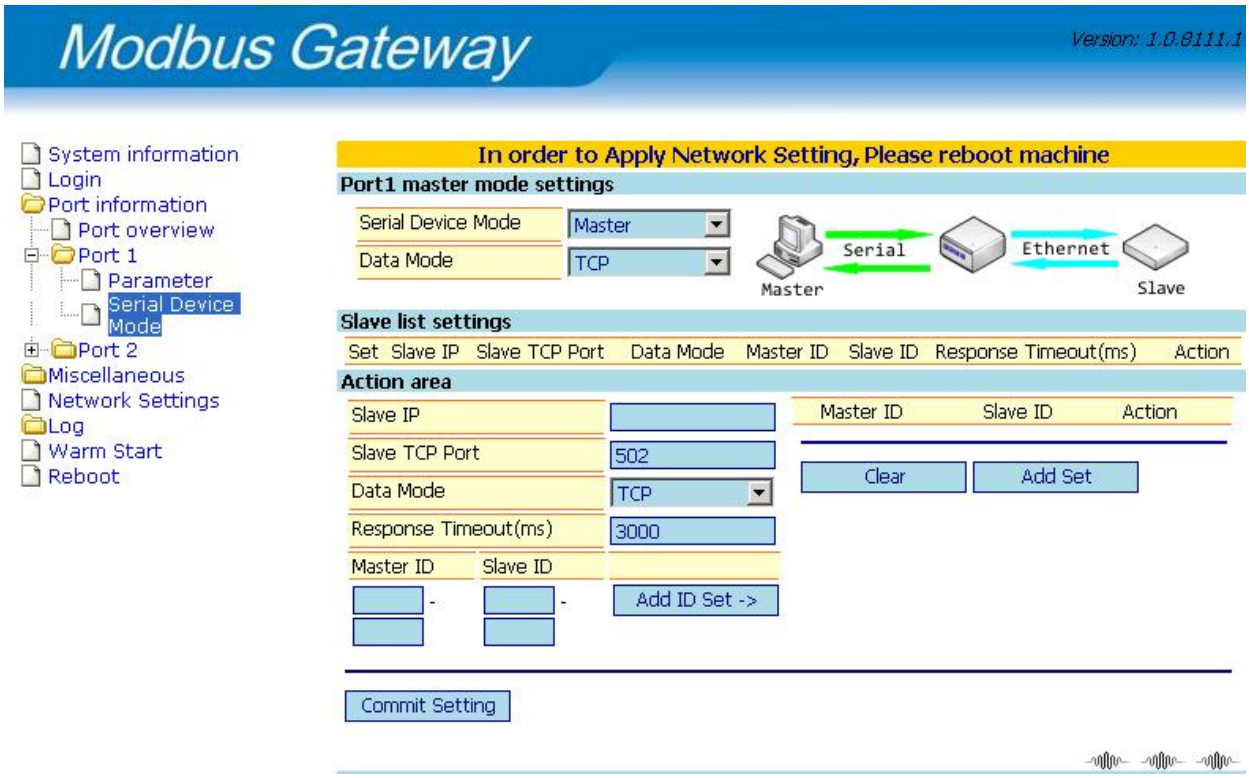
Port1 settings:

Configure the port parameters:



Port1 uses RS485 and should be set in the Hardware Mode option. Click Commit after settings are made but do not click Apply until Port2 has been configured.

After the Parameter has been configured, select the “Serial Device Mode” function menu for Port1.



Port1 “Serial Device Mode” setup

Port1 is the Modbus RTU Slave device, therefore

Serial Device Mode is set to Slave

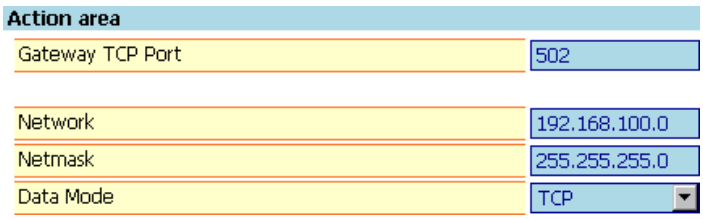
,

Data Mode is set to RTU

Configure the Master device after the Slave device is configured.

There are two Master devices using different communication protocols, and therefore the appropriate settings should be configured under the Master device.

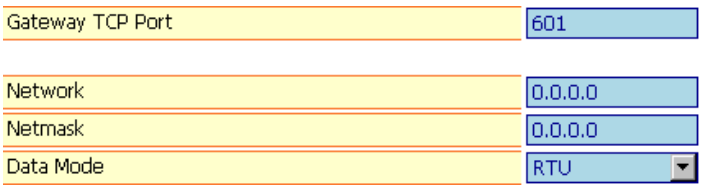
(1) Configure the Master device to communicate through TCP Port 502:



Set TCP Port as 502 with IP range of 192.168.100.1 -- 192.168.100.254 using TCP (communication protocol) for the Data Mode. Click

to add to the list.

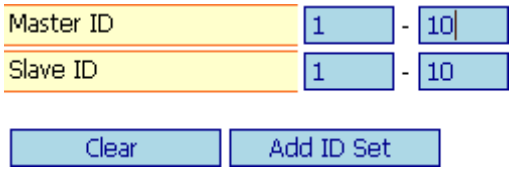
(2) Configure the Master device to communicate through TCP Port 601:



Set TCP Port as 601 with unrestricted IP range using RTU (communication protocol) for the Data Mode. Click

to add to the list.

Then we will configure the ID Routing between ID 1-10 of Port1 and ID 1-10 of Port2, where the Master ID will be used to identify the routing between Port1 and Port1. In this example, the Master ID1-10 is routed to Port1 and Master ID11-20 is routed to Port2. Port1 settings are as below:



Enter Master ID 1-10

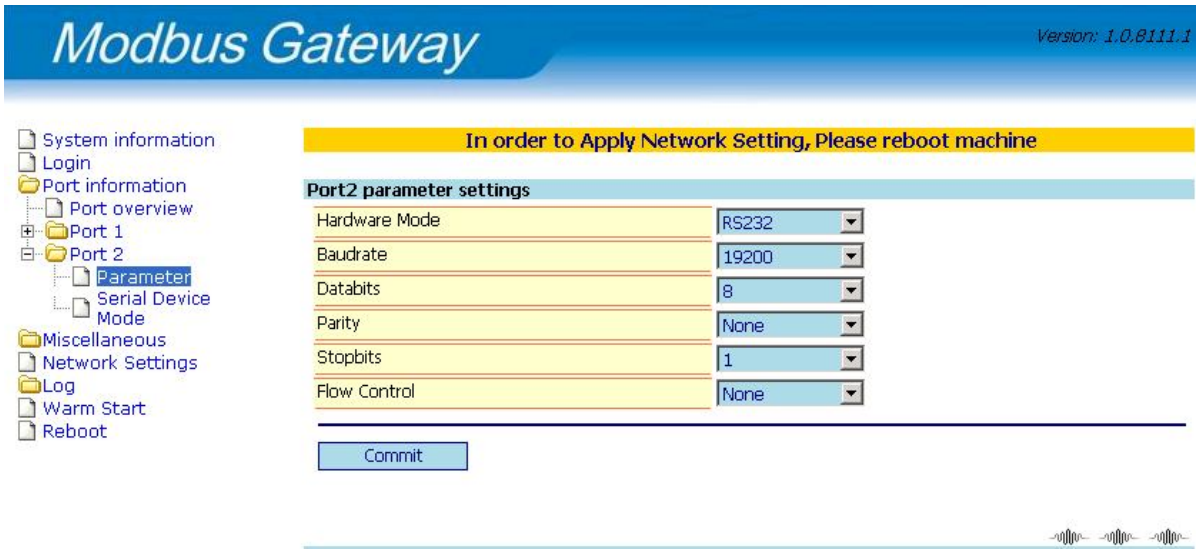
Enter Slave ID 1-10

Click Add ID Set to add to the ID list.

After all settings are configured click Commit Setting but do not click “Apply” until Port2 has been configured.

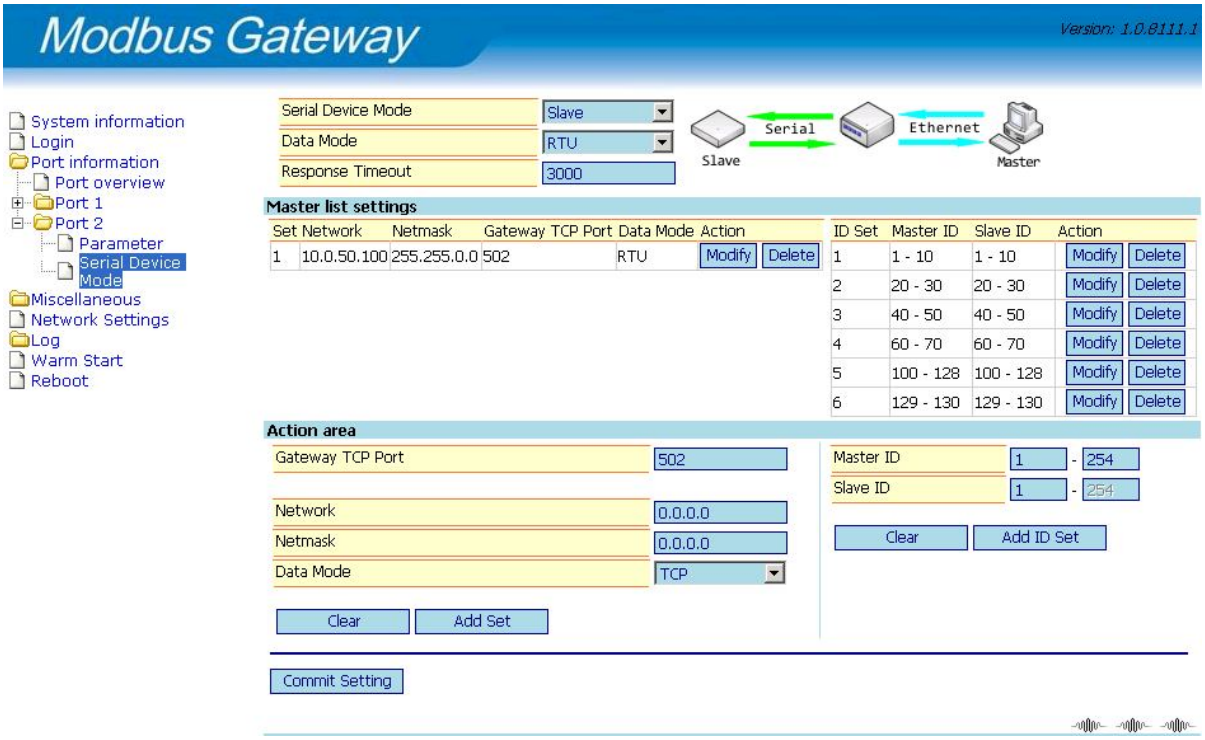
Port2 settings:

Configure the port parameters:



Port2 uses RS422 and should be set in the Hardware Mode option. Click Commit after settings are made but do not click Apply until Port2 has been configured.

After the Parameter has been configured, select the “Serial Device Mode” function menu for Port2.



Port2 “Serial Device Mode” setup

Port2 is the Modbus ASCII Slave device, therefore

Serial Device Mode is set to Slave

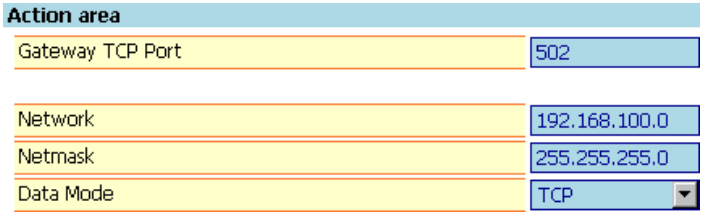
,

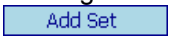
Data Mode is set to ASCII

Configure the Master device after the Slave device is configured.

There are two Master devices using different communication protocols, and therefore the appropriate settings should be configured under the Master device.

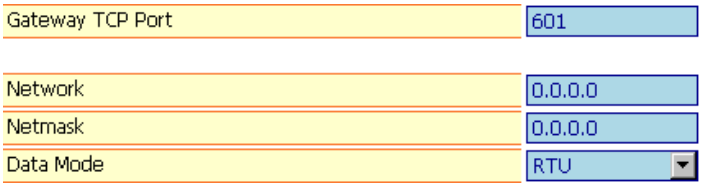
(1) Configure the Master device to communicate through TCP Port 502:



Set TCP Port as 502 with IP range of 192.168.100.1 -- 192.168.100.254 using TCP (communication protocol) for the Data Mode. Click 

to add to the list.

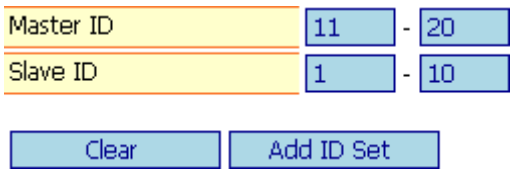
(2) Configure the Master device to communicate through TCP Port 601:



Set TCP Port as 601 with unrestricted IP range using RTU (communication protocol) for the Data Mode. Click

to add to the list.

Then we will configure the ID Routing between ID 1-10 of Port1 and ID 1-10 of Port2, where the Master ID 1-10 will be routed to Port1 and Master ID 11-20 will be routed to Port2 as below:



Enter Master ID 11-20

Enter Slave ID 1-10

Click

to add to the ID list.

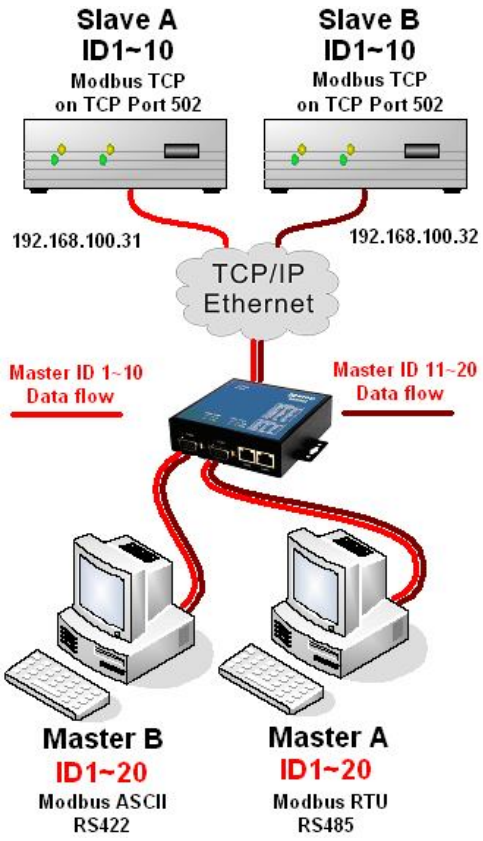
After all settings are configured click

and then click

to immediately apply the changes.

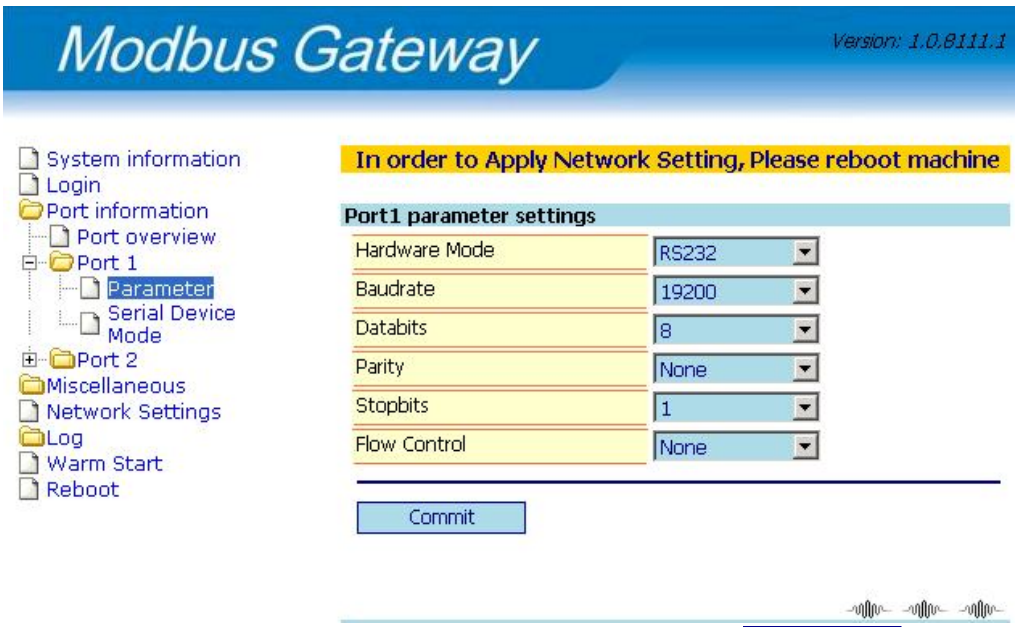
Example 2: Serial Port to Master Device

Two serial ports connecting to different serial Master devices, where Port1 uses RS485 communication and Port2 uses RS422 communication. Modbus Gateway uses Ethernet to connect to the remote Ethernet Slave Device, and the two Master serial ports are connected to the slave devices through the Modbus Gateway as indicated below.



Port1 settings:

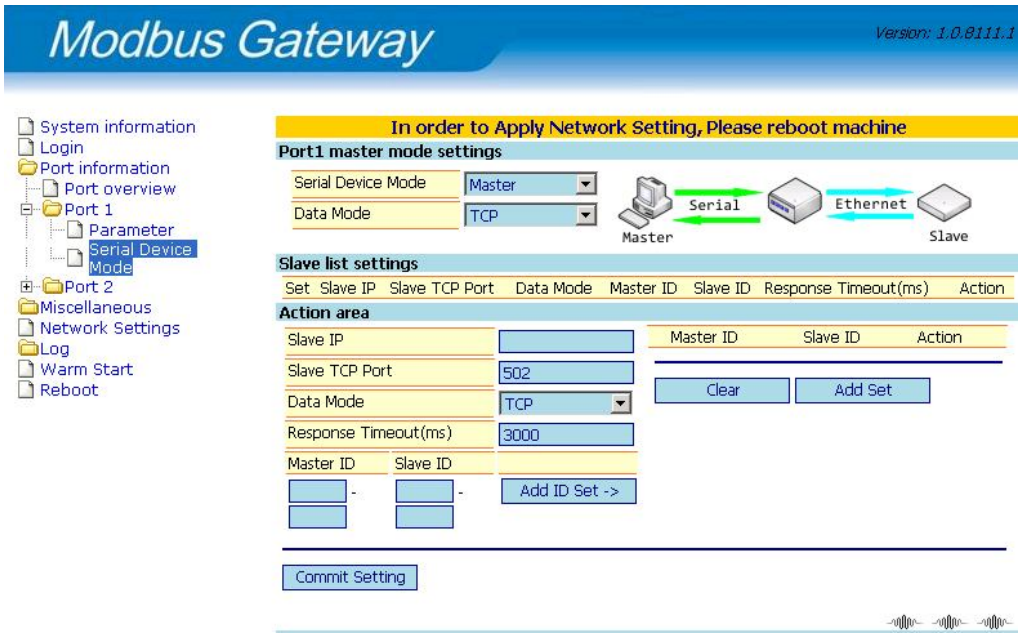
Configure the port parameters:



Port1 uses RS485 and should be set in the Hardware Mode option. Click

after settings are made but do not click Apply until Port2 has been configured.

After the Parameter has been configured, select the “Serial Device Mode” function menu for Port1.



Port1 “Serial Device Mode” setup

Port1 is the Modbus RTU Master device, therefore

Serial Device Mode is set to Master

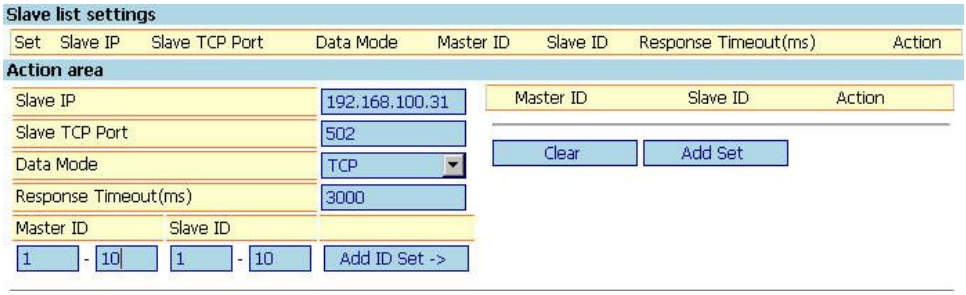
,

Data Mode is set to RTU

Configure the Slave device after the Master device is configured.

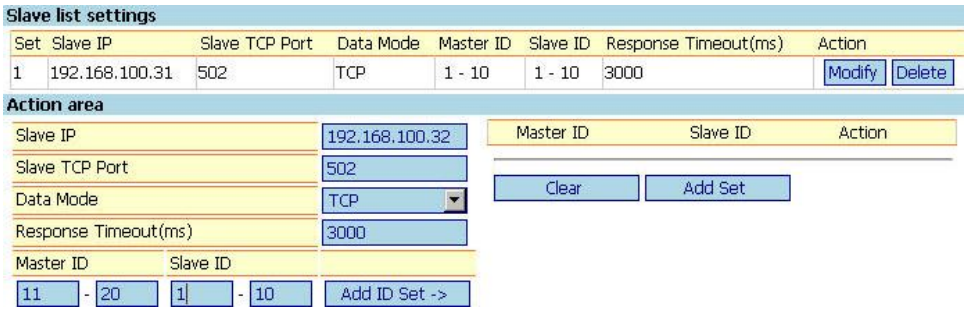
There are two slave devices each providing ID1-10 services, and therefore we need two data entries for the slave devices.

(1) Configure Slave A: Set the IP address and TCP Port of Slave A, as well as ID range for Slave A.



Enter the Slave A parameters, Salve IP 192.168.100.31, TCP Port 502, using TCP (communication protocol) as the Data Mode, and the slave device response time. Enter the ID and then click Add ID Set -> to add to the list. Click Add Set after configuring the slave device and ID to add to the list.

(2) Configure Slave B: Set the IP address and TCP Port of Slave B, as well as ID range for Slave B.



Enter the Slave B parameters, Salve IP 192.168.100.32, TCP Port 502, using TCP (communication protocol) as the Data Mode, and the slave device response time. Enter the ID and then click Add ID Set -> to add to the list. Click Add Set after configuring the slave device and ID to add to the list.

Port2 "Serial Device Mode" setup

Port2 is the Modbus ASCII Master device, therefore

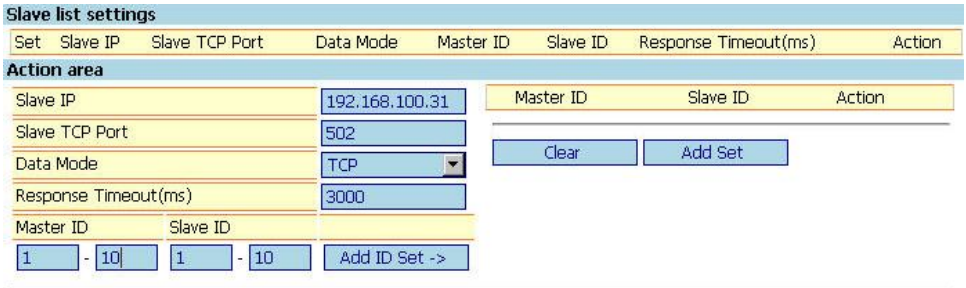
Serial Device Mode is set to Master

,

Data Mode is set to ASCII

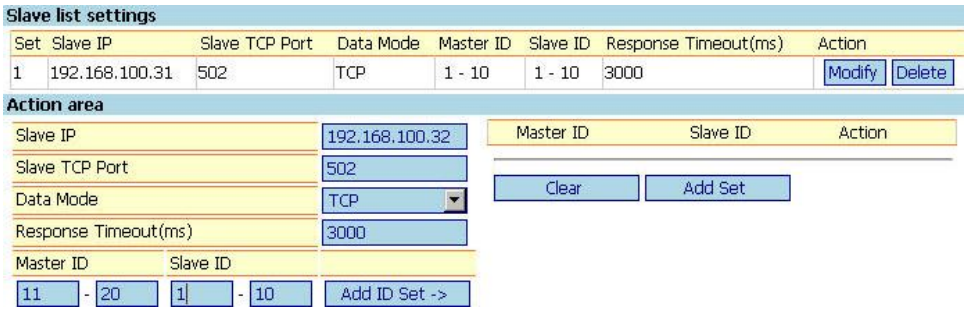
Configure the Slave device after the Master device is configured. Both Port2 and Port1 will need to access data from Slave A and Slave B, therefore repeat the procedures as for Port1.

(1) Configure Slave A: Set the IP address and TCP Port of Slave A, as well as ID range for Slave A.



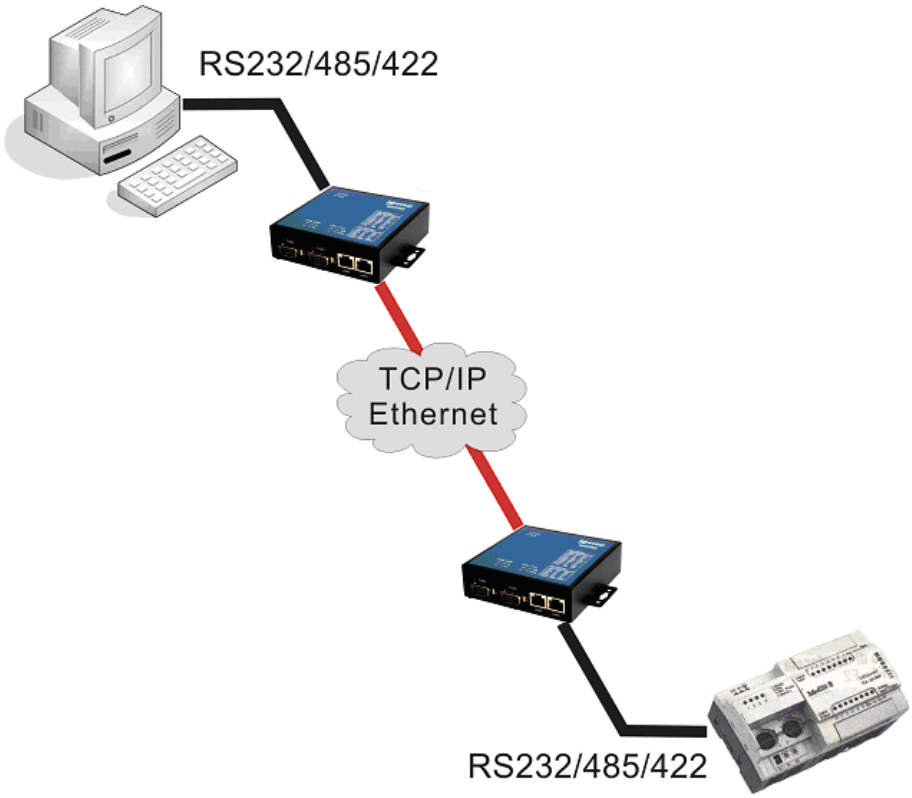
Enter the Slave A parameters, Salve IP 192.168.100.31, TCP Port 502, using TCP (communication protocol) as the Data Mode, and the slave device response time. Enter the ID and then click Add ID Set -> to add to the list. Click Add Set after configuring the slave device and ID to add to the list.

(2) Configure Slave B: Set the IP address and TCP Port of Slave B, as well as ID range for Slave B.



Enter the Slave B parameters, Salve IP 192.168.100.32, TCP Port 502, using TCP (communication protocol) as the Data Mode, and the slave device response time. Enter the ID and then click Add ID Set -> to add to the list. Click Add Set after configuring the slave device and ID to add to the list.

Example 3: Modbus Gateway to Modbus Gateway Direct Link



When the Modbus Slave and Modbus Master both uses the serial ports and is able to communicate with each other through the Ethernet connection, then the Modbus Gateway direct link feature can be used.

Setup procedures:

1. Set the port on a Modbus Gateway as the slave device shown in Example 1, and enable the connection to the other device.
2. Set the port on the other Modus Gateway as the master device shown in Example 2, and point the slave device as the opposing Modbus Gateway.

For setting of the Master and Slave modes, please refer to procedures in Examples 1

and 2.