# EX-6100x Series Serial Server WEB User Manual

**EX-61001v2 • EX-61002 • EX-61011**



# Table of Contents

# Preface

## Target Audience

This manual is intended for installation personnel and system administrators responsible for installing, configuring, or maintaining networks. This manual assumes that you are familiar with all the transmission and management protocols used in networks.

This manual also assumes that you are familiar with the professional terminology, theoretical principles, practical skills, and specific expertise related to networking equipment, protocols, and interfaces. Additionally, you should have experience working with graphical user interfaces, command-line interfaces, Simple Network Management Protocol (SNMP), and web browsers.

## Conventions

This manual uses the following conventions.

| GUI Conventions | Description |
|---|---|
| Note | Descriptions of operations, providing necessary supplementary information. |
| Warning | Reminders of precautions during operations, as improper operations may lead to data loss or device damage. |

# 1 Overview

## 1.1 Product Introduction

The EX-61002 series is a serial server that provides 2 RS-232/485/422 serial ports and 1 10/100Base-T(x) network interface, enabling easy and convenient centralized management of dispersed serial devices and hosts over a network. This series of devices can achieve bidirectional transparent data transmission between RS-232/422/485 interfaces and Ethernet interfaces, allowing serial devices to immediately gain networking capabilities.

## 1.2 Product Features

-Supports 2 RS-232/485/422 serial ports for remote control functionality.

-Supports 1 10/100Base-T(x) Ethernet interface.

-Supports reset button to restore factory settings.

-Supports custom baud rates.

-Supports MCP and VCOM virtual serial ports.

-Supports ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, MODBUS, and other protocols.

-Supports ±4KV electrostatic protection for serial ports and 1.5KVAC isolation protection for Ethernet ports.

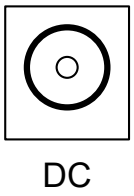
-Supports a wide operating temperature range of -40℃ to 85℃.

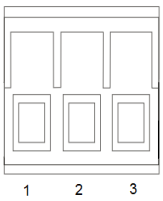
-Supports DC 12V to 48V operating voltage.

# 2 Hardware Description

## 2.1 Power Interface Definition

This series of devices provides DC and 3-pin 5.08 power terminal power input on the front panel, with a power input range of 12-48VDC. It is recommended to use a power adapter with a DC plug specification of 2.5mm inner diameter and 5.5mm outer diameter.

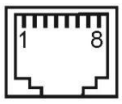



| Terminal | Power Interface |
|---|---|
| 1 | Power Positive V+ |
| 2 | Ground (GND) |
| 3 | Power Negative V- |

## 2.2 Serial Port Pin Definition

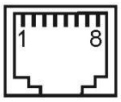
| RJ45 | RS-232 | RS-485 | RS-422 |
|---|---|---|---|
| 1 | TXD | A(+) | TXD+ |
| 2 | RXD | B(-) | TXD- |
| 3 | | | RXD+ |
| 4 | | | RXD- |
| 5 | | | |
| 6 | GND | GND | GND |
| 7 | | | |
| 8 | | | |



## 2.3 Ethernet Port Pin Definition

The 10/100BaseT(X) Ethernet interface is located on the front panel of the device, with an RJ45 interface type. The port rate is adaptive but can also be fixed. The pin definition is as follows:

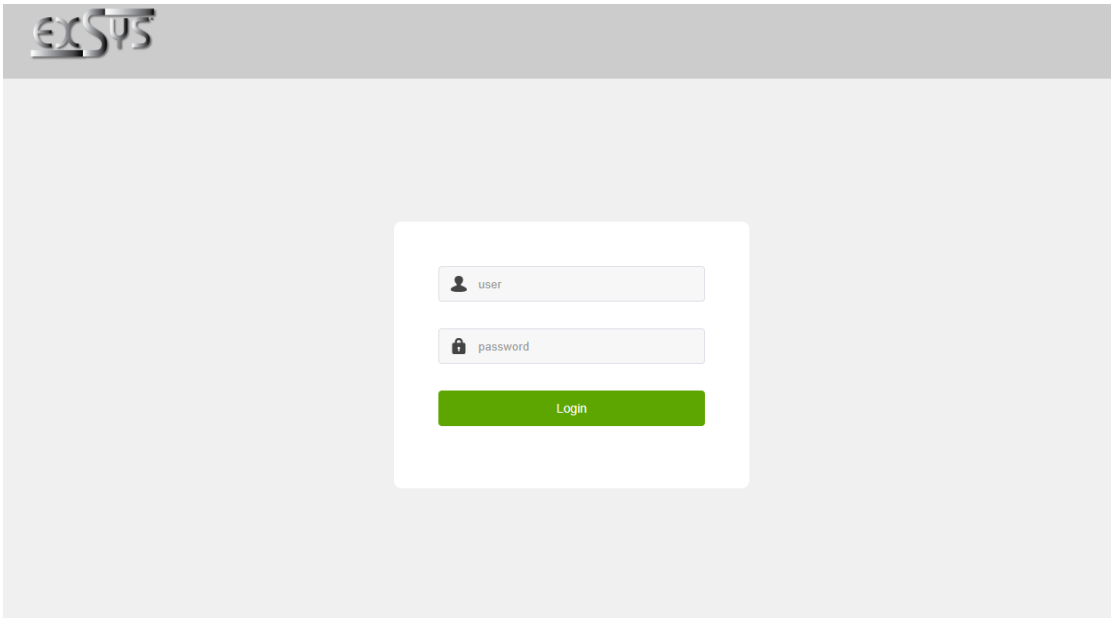
| RJ45 | EIA/TIA 568B | Definition |
|---|---|---|
| 1 | Orange/White | TX+ |
| 2 | Orange | TX- |
| 3 | Green/White | RX+ |
| 4 | Blue | Data+ |
| 5 | Blue/White | Data- |
| 6 | Green | RX- |
| 7 | Brown/White | Data+ |
| 8 | Brown | Data- |



# 3 Web Page

## 3.1 Web Page Login

Users can open a web browser and enter the default address of the serial server: http://192.168.1.125, then press Enter. A login window will appear as shown below, supporting Chinese and English language switching. Enter the default username: admin and password: admin. Click the <Login> button to view the serial server's system status information.




**Note:**

When logging into the serial server, the PC must be set to an IP address in the same subnet as the serial server.

## 3.3 Web Page Description

The web management menu mainly provides network settings, serial port settings, mode settings, system status, system management, security settings, user settings, and save settings. The details are shown in the table below.

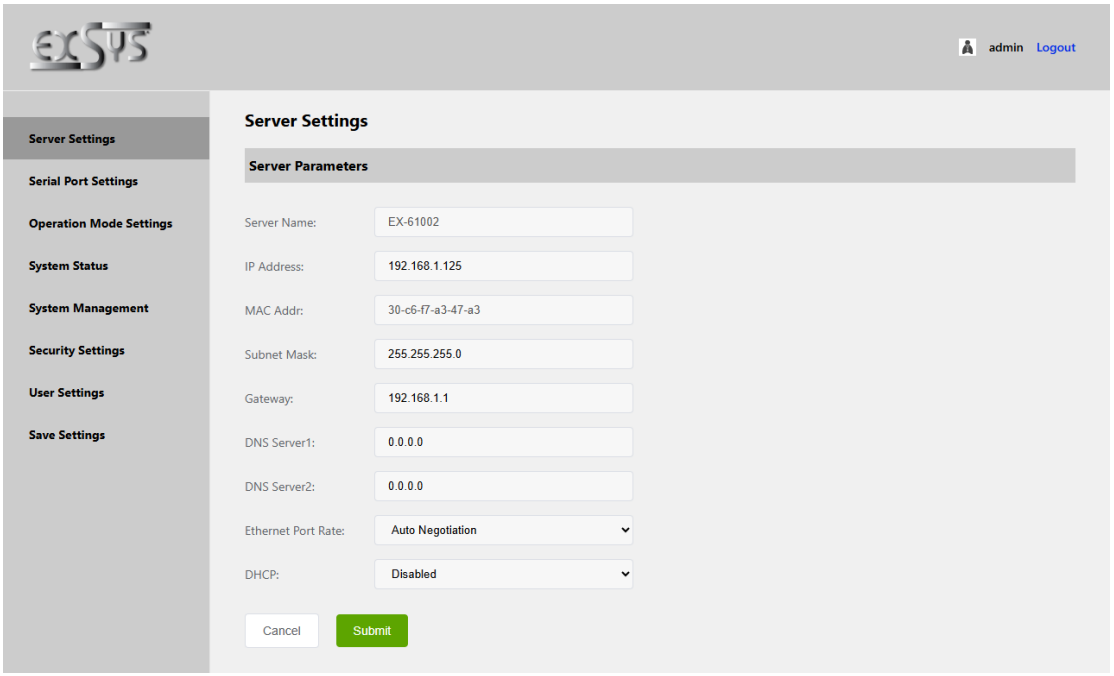
| Menu Item | Description |
|---|---|
| Server Settings | Device model display, IP address, subnet mask, DHCP settings |
| Serial Port Settings | Serial port type and basic parameter settings |
| Operation Mode Settings | Mode selection, including TCP Server/TCP Client/UDP Client/MCP/VCOM/Modbus Server/Modbus Client, default is TCP Server mode |
| System Status | TCP, UDP connection status, serial communication statistics display |
| System Management | View software version, hardware version, MAC address |
| | Restore factory settings |
| | Firmware Upgrade |
| Security Settings | IP segments within the filter range will not be able to access the server via WEB |
| User Settings | Logout from the web interface |
| | Change user password |
| Save Settings | Save and Reboot |

# 4 Basic Settings

## 4.1 Server Settings

### 1.Panel Description

The panel display area intuitively displays the system information of the serial server. The interface is shown below:




### 2.Keyword Description

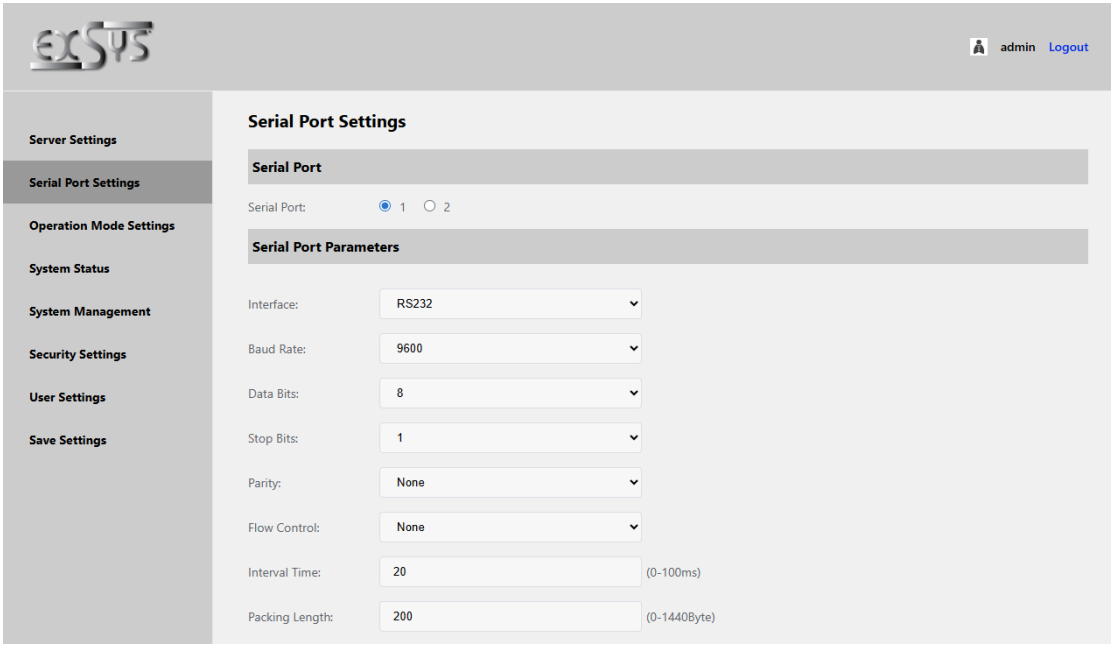
| | |
|---|---|
| Server Name | Device Model display |
| IP Address | Device IP address |
| MAC Addr | MAC Address display |
| Subnet Mask | Device subnet mask |
| Gateway | Device gateway address |
| DNS Server1 | Primary DNS address |
| DNS Server2 | Secondary DNS address |

| | |
|---|---|
| Ethernet Port Rate | Auto-negotiation, 10M half-duplex/full-duplex, 100M half-duplex/full-duple |
| DHCP | Whether to enable DHCP to obtain an IP address, default is disable |

## 4.2 Serial Port Settings

### 1.Panel Description

This interface allows users to set the communication parameters for different serial ports on the serial server. The interface is shown below:




### 2.Keyword Description

| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Interface | Serial port interface type selection, RS485/RS422 |
| Baud Rate | Serial port baud rate, 300~921600, or select custom, default is 9600 |
| Data Bits | Data bits, selectable 5/6/7/8 |
| Parity Bit | Stop bits, selectable 1/1.5/2 |
| Stop Bit | Parity bit, selectable Odd/Even, default is none |

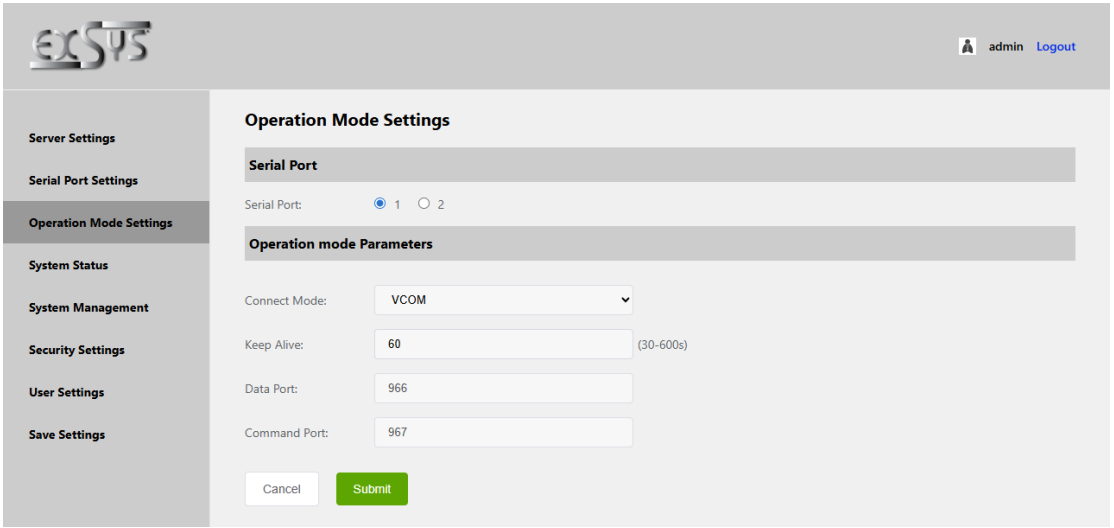
| | |
|---|---|
| Flow Control | Flow control, selectable None, RTS/CTS |
| Interval Time | Data packing interval time, the delay time within the packing rule. |
| Packing Length | Data packing length. If the serial port receives a data frame smaller than this setting, it will wait for the interval time to see if more data follows. |

# 4.3 Mode Settings

## 4.3.1 VCOM Mode

### 1.Panel Description

TCP/IP virtual serial port mode works in the Windows system environment. Through the driver, the port on the serial server is mapped to a virtual COM port on the local host, allowing upper-layer software originally based on COM port operations to work without any modifications, just like using a local real COM port. The driver can support up to COM256. Each independent port can support multiple sessions, making monitoring of serial devices more flexible and convenient. Multiple connection resources can also be used for connection backup. The interface is shown below:




### 2.Keyword Description

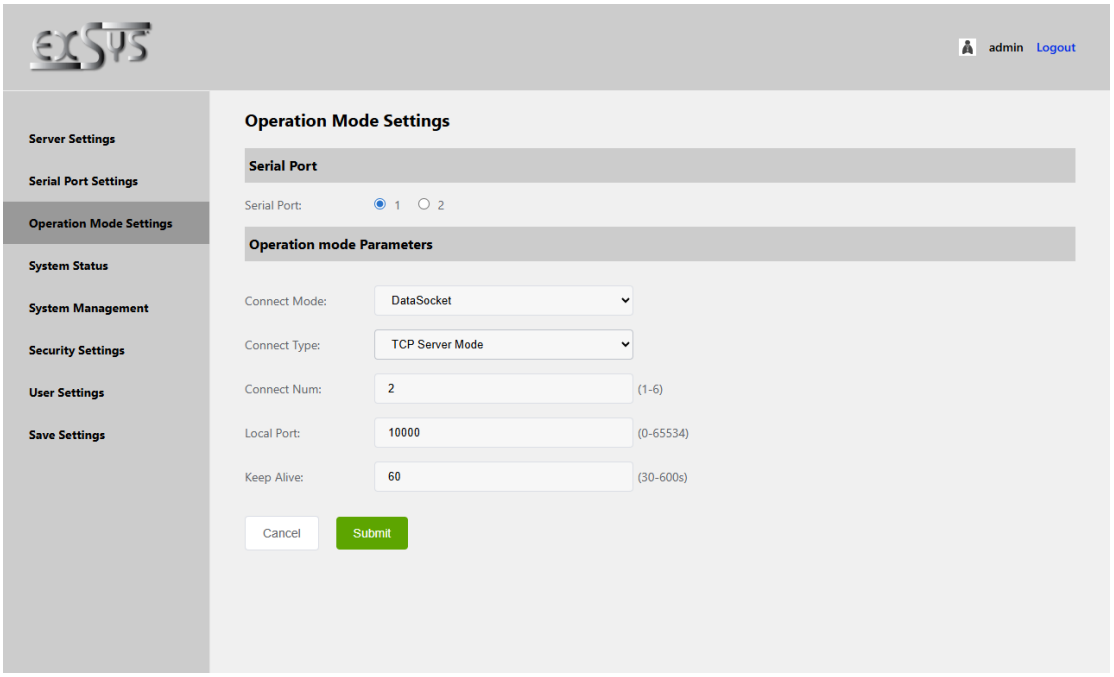
| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |

| | |
|---|---|
| Connect Mode | Select connect mode: VCOM |
| Keep Alive | After the connection is established, the device will send keep-alive probe packets at this set interval to detect if the connection is still active |
| Data Port | Cannot be modified, use default |
| Command Port | Cannot be modified, use default |

## 4.3.2 TCP Server Mode

### 1.Panel Description

In TCP server mode, the serial server is assigned an IP port number and passively waits for host connections. When a host initiates a connection request and establishes a connection with the serial server, the host can achieve bidirectional transparent data transmission with the serial port over the network. TCP server mode supports up to 6 simultaneous session connections, allowing multiple hosts to read or send Ethernet data to a single serial device. The interface is shown below:



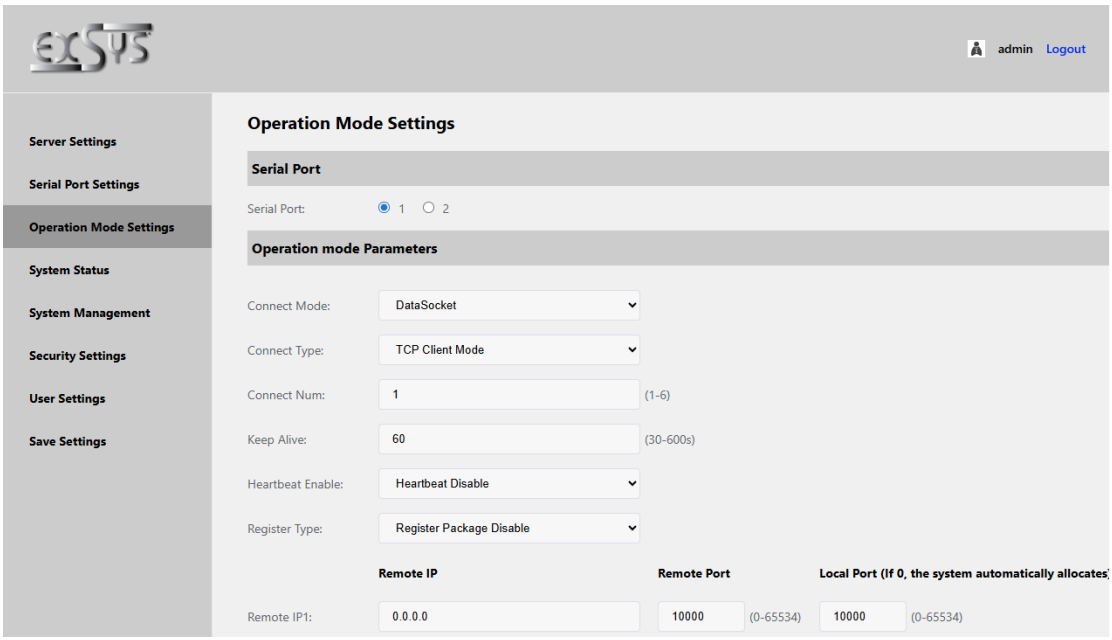
### 2.Keyword Description

| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: DataSocket |
| Connect Type | Select TCP Server Mode |
| Connect Num | Maximum number of client connections, 1-6 |
| Local Port | TCP Listening port number, default is 10000 |
| Keep Alive | After the connection is established, the device will send keep-alive probe packets at this set interval to detect if the connection is still active |

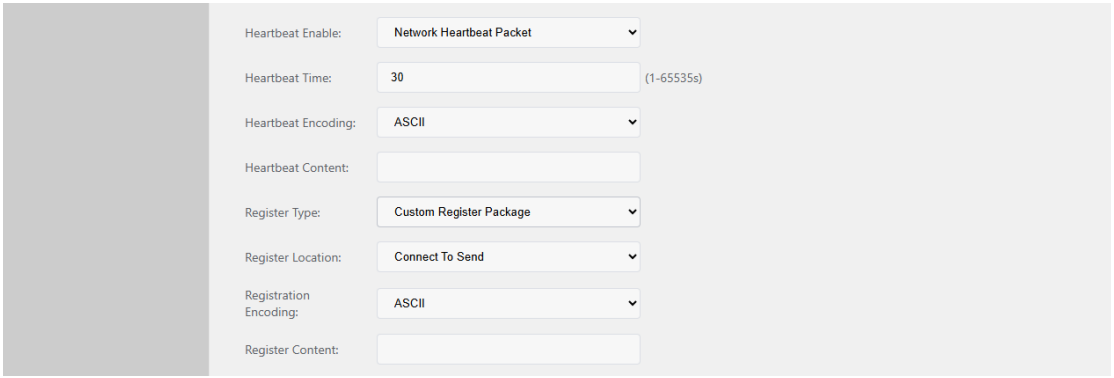
## 4.3.3 TCP Client Mode

### 1.Panel Description

In TCP client mode, the serial server can actively establish a network connection with a user-specified host when serial data arrives. After data transmission is complete, the serial server will automatically close the network connection based on parameters such as keep-alive time/idle timeout time. Similarly, TCP client mode supports up to 6 simultaneous session connections, allowing multiple hosts to read or send Ethernet data to a single serial device. The interface is shown below:




Heartbeat and Registration funtion:




## 2.Keyword Description

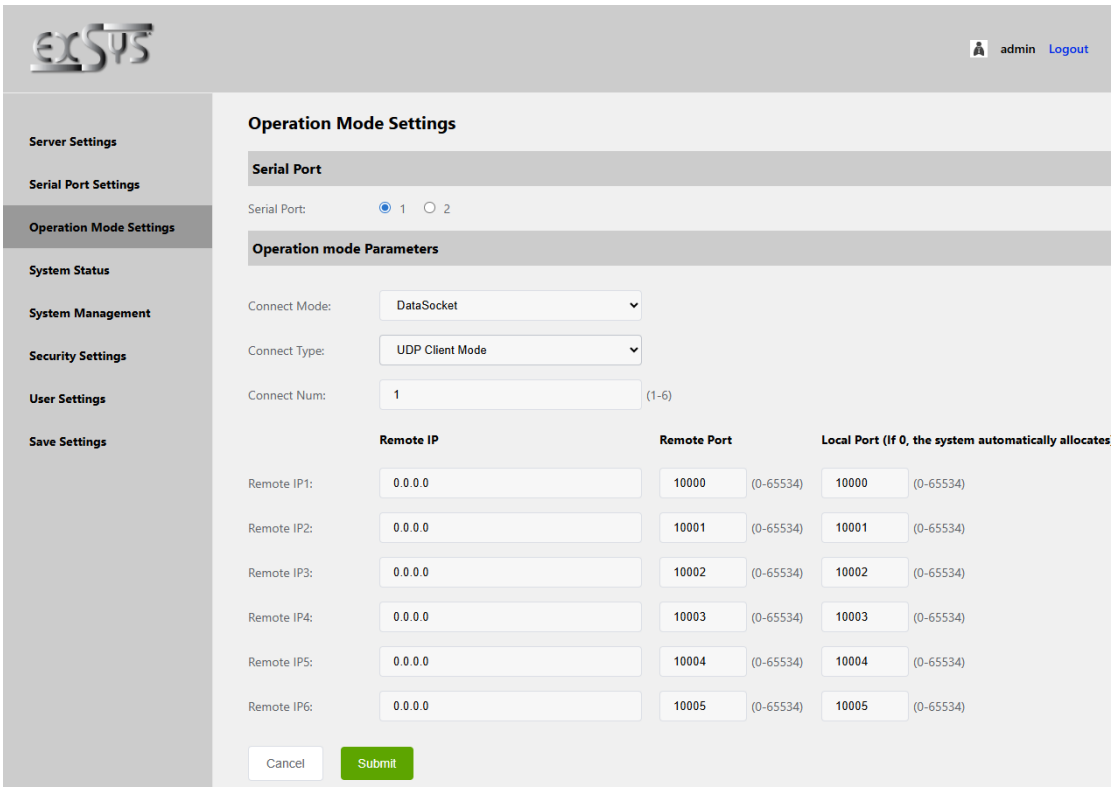
| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: DataSocket |
| Connect Type | Select TCP Client Mode |
| Connect Num | Maximum number of client connections, 1-6 |
| Additionl Protocol | None or RFC 2217,default is None |
| Keep Alive | After the connection is established, the device will send keep-alive probe packets at this set interval to detect if the connection is still |

| | |
|---|---|
| | active |
| Heartbeat Enable | Heartbeat Disabled:Disabled<br>Network heartbeat packet: periodically send heartbeat packet content to the server |
| Heartbeat Time | Heartbeat packet sending interval, 1-65535s |
| Heartbeat Encoding | Encoding format: Ascii or Hex |
| Heartbeat Content | Custom heartbeat packet content |
| Register Type | Registration Packet Disable: disable<br>MAC Registration Packet: send MAC address to the server<br>Custom Registration Packet: send custom registration packet to the server |
| Register Location | Connect To Send:send when establishing a connection with the server<br>Data Portablility:attach registration packet data to the front of each data packet<br>Full Register:includes both of the above situations |
| Registration Encoding | Encoding format: Ascii or Hex |
| Registration Content | Custom registration packet content. |
| Remote IP/Port | Set the IP address and port number of the target host |

## 4.3.4 UDP Client Mode

### 1.Panel Description

In UDP Client mode, the interface is shown below:



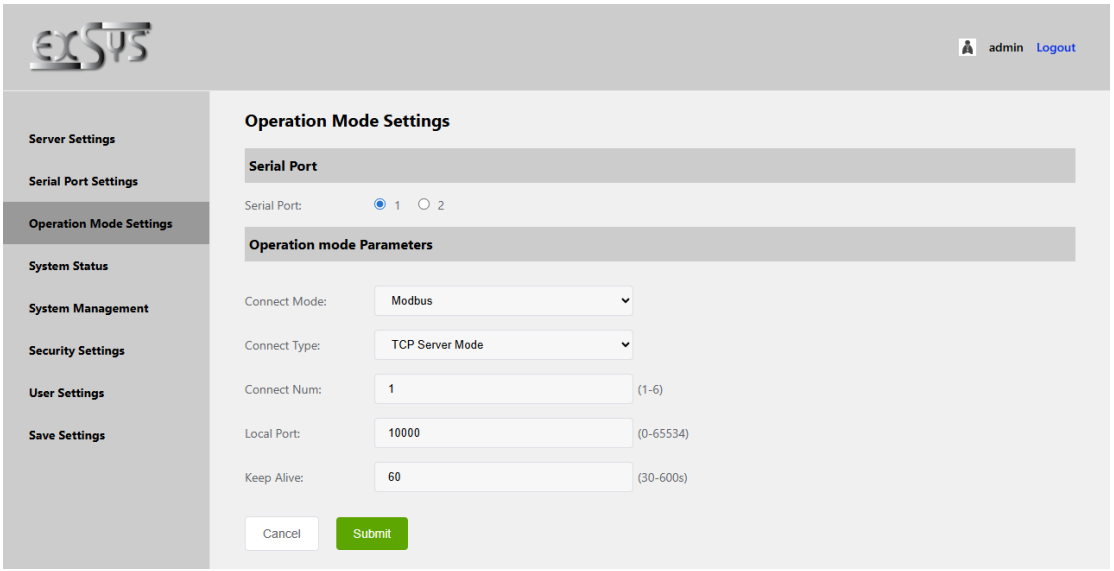

### 2.Keyword Description

| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: DataSocket |
| Connect Type | Select UDP Client Mode |
| Connect Num | Maximum number of client connections, 1-6 |
| Additionl Protocol | None or RFC 2217,default is None |
| Remote IP/Port | Set the IP address and port number of the target host |

## 4.3.5 Modbus Server Mode

### 1.Panel Description

The device is set as a Modbus server, acting as a slave to respond to transaction requests. The interface is shown below:



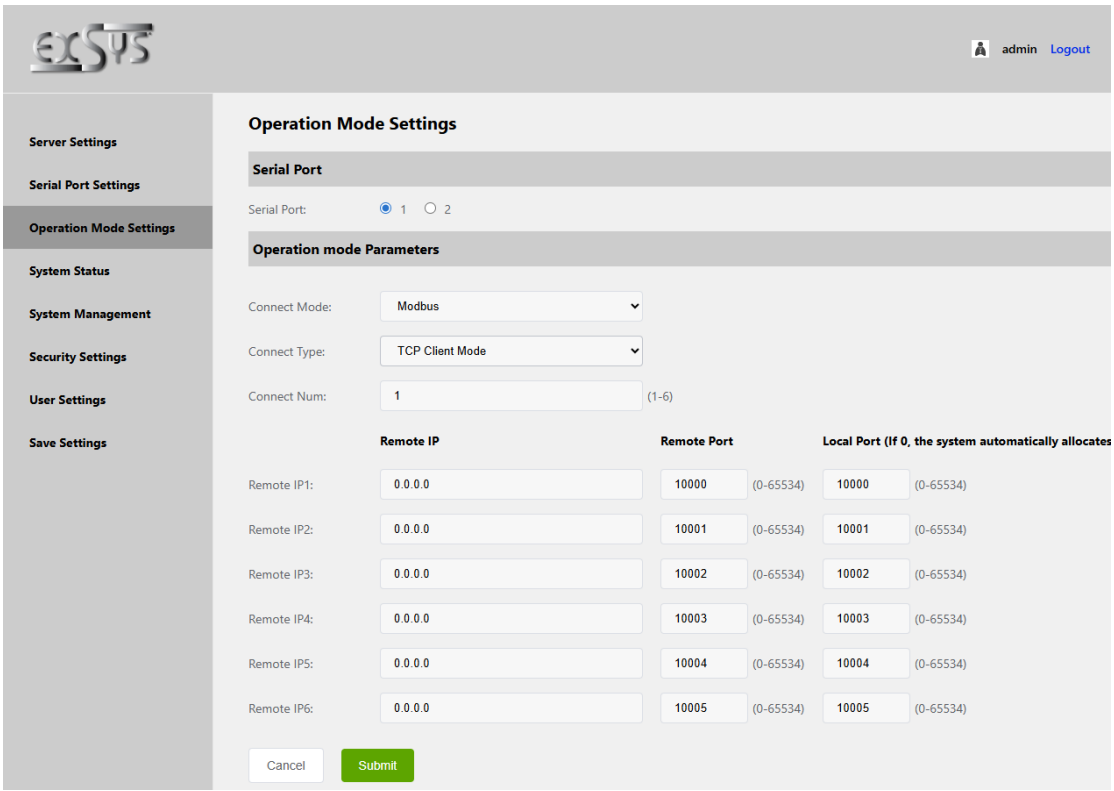

### 2.Keyword Description

| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: Modbus |
| Connect Type | Select TCP Server Mode |
| Local Port | Listening port number, default is 10000 |
| Connect Num | Support 1 only |
| Keep Alive | After the connection is established, the device will send keep-alive probe packets at this set interval to detect if the connection is still active |

## 4.3.6 Modbus Client Mode

### 1.Panel Description

The device is set as a Modbus client, acting as a master to initiate transaction requests. The interface is shown below:



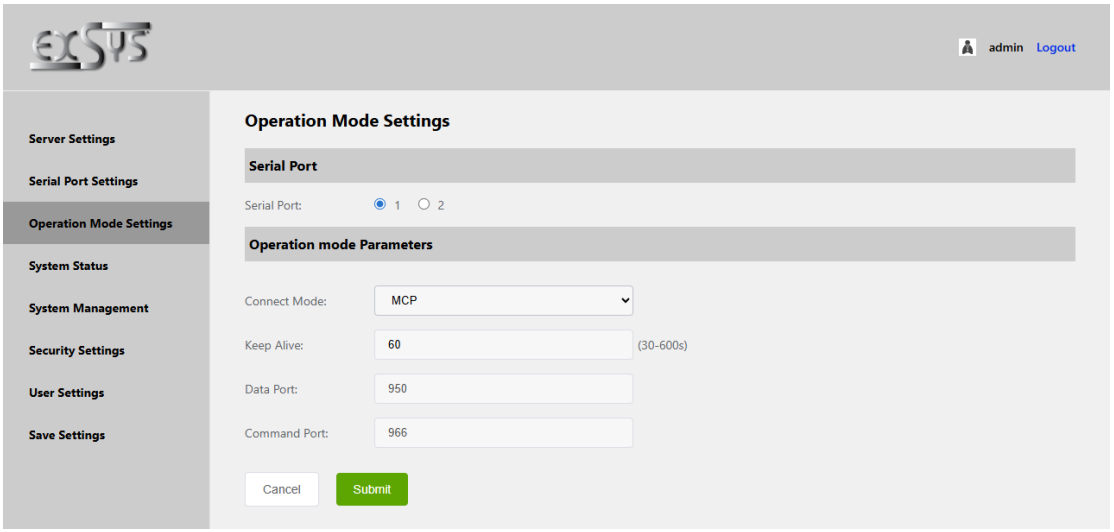

### 2.Keyword Description

| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: Modbus |
| Connect Type | Select TCP Client Mode |
| Connect Num | 1-6 |
| Remote IP Address/Port | Sets the IP address and port number of the target host to connect to. |

## 4.3.7 MCP Mode

### 1.Panel Description

TCP/IP virtual serial port mode works in a Windows system environment. Through the driver, the ports on the serial server are mapped to virtual COM ports on the local host, allowing upper-layer software originally based on COM ports to operate without any modifications, just like using a local real COM port. The driver can support up to COM256. Each independent port can support multiple sessions, making monitoring of serial devices more flexible and convenient. Multiple connection resources can also be used for connection backup. The interface is shown below:




### 2.Keyword Description

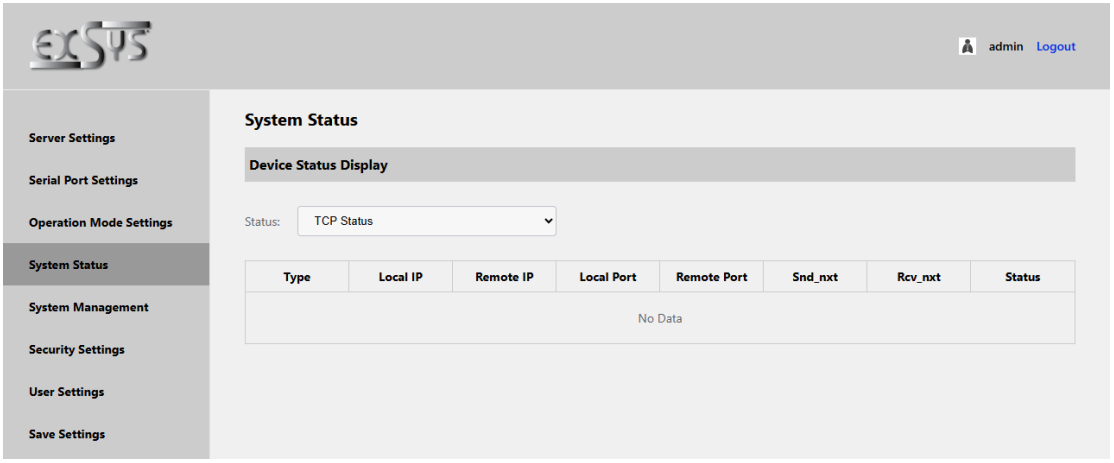
| | |
|---|---|
| Serial Port | Select Serial Port 1 or Serial Port 2 |
| Connect Mode | Select connect mode: MCP |
| Keep Alive | After the connection is established, the device will send keep-alive probe packets at this set interval to detect if the connection is still active |
| Data Port | Cannot be modified, use default |
| Command Port | Cannot be modified, use default |

# 4.4 System Status

## 1.Panel Description

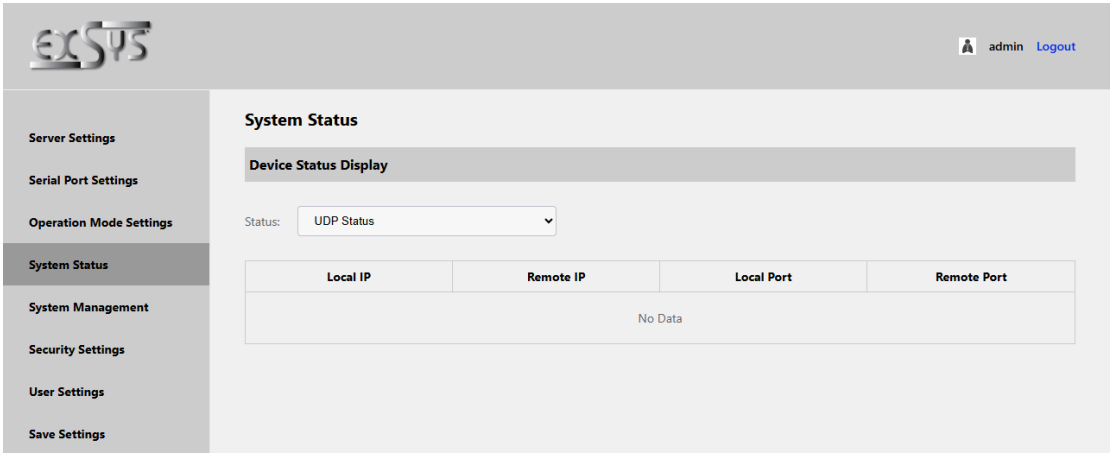
TCP Status

Displays the current system TCP connection status.

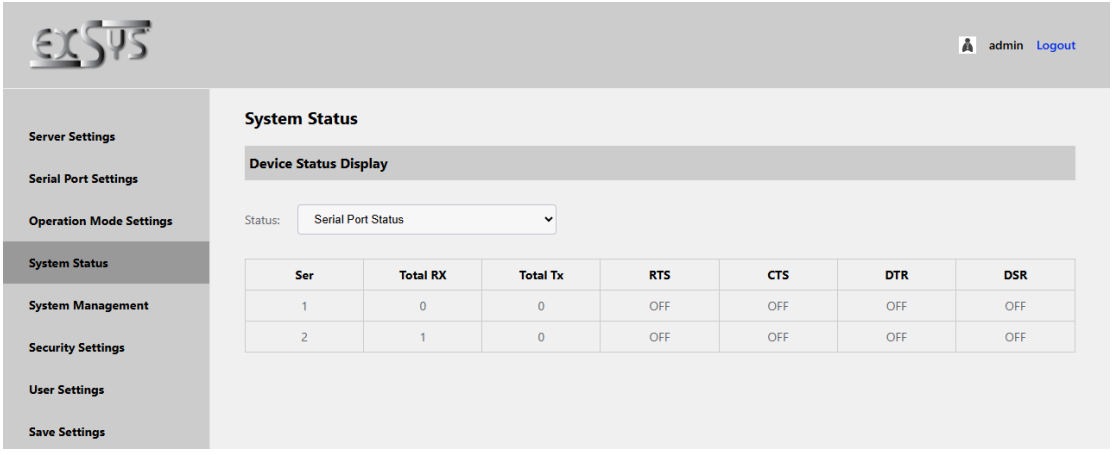



UDP Status

Displays the current system UDP connection status.

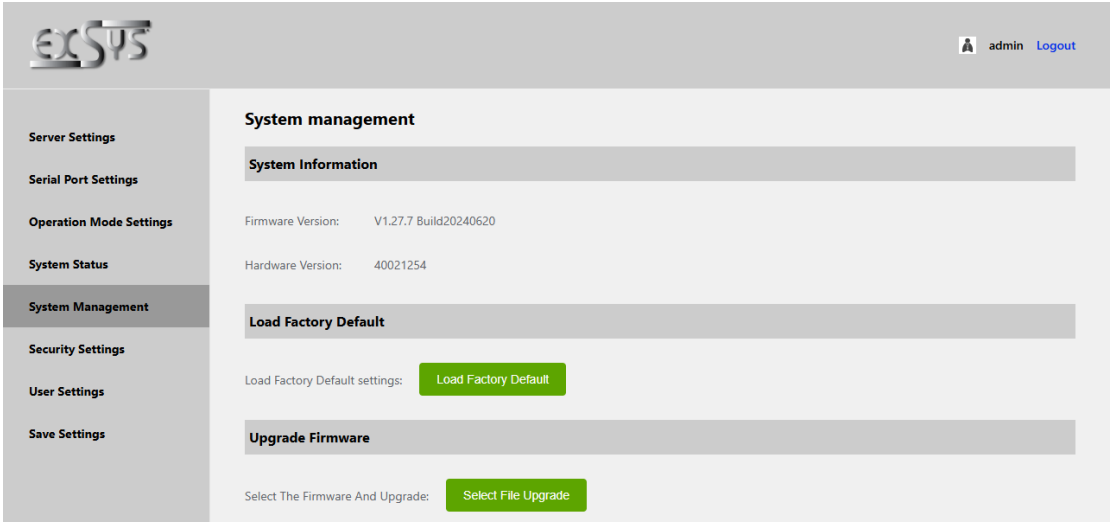


Serial Status




# 4.5 System Management

## 1.Panel Description



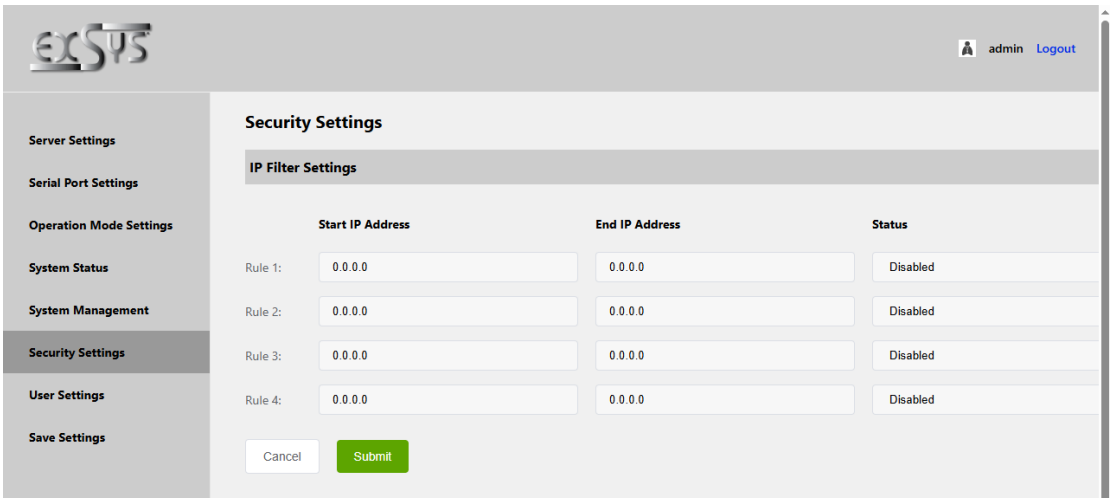

## 2.Keyword Description

| | |
|---|---|
| Firmware Version | Displays the current device's firmware version number |
| Hardware Version | Displays the current device's hardware version number |
| Load Factory Default | Restore factory settings |
| Upgrade Firmware | Software upgrade |

# 4.6 Security Settings

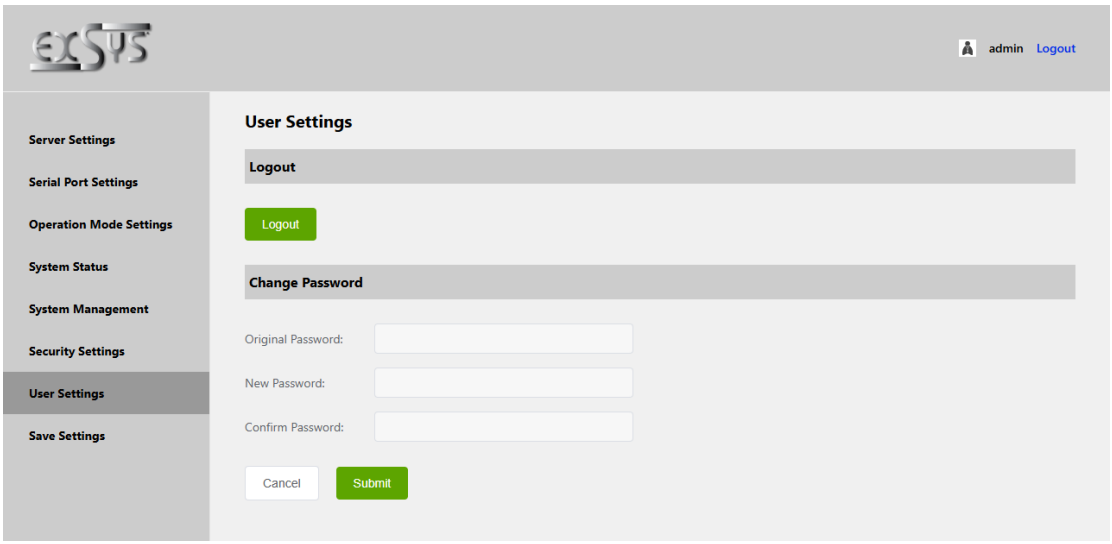
## 1.Panel Description

IP filter settings, IP segments within the filter range will not be able to access the server via WEB. The interface is shown below:




# 4.7 User Settings

## 1.Panel Description



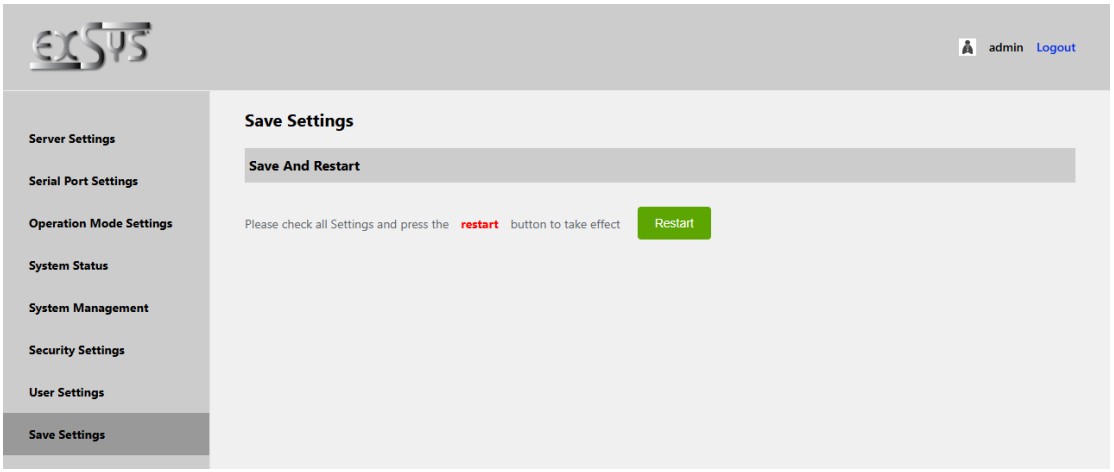

## 2.Keyword Description

| | |
|---|---|
| Change Password | Enter the original password and new password to change the user password. |

# 4.8 Save Settings

## 1.Panel Description

Click reboot to apply the configuration.



# 5 Troubleshooting

**a) Running search does not find the serial server's IP address**

1. First, check if the physical connection is normal, if the network cable (distinguish between crossover and straight-through cables) and power are connected, and observe the power indicator, LAN light, and ACT light (this light does not light up when connected to a 10M network, only when connected to a 100M network).

2. Check if the host's network card is available and if it can communicate with other local hosts.

3. Close all tools and software that can block broadcast packets (do not enable the system's built-in firewall).

4. If the IP address is suddenly lost during configuration through the browser (e.g., due to a power outage), use the console port to reconfigure the IP.

**b) Unable to open the serial port**

1. Ensure that the network is working normally and that the server can be pinged.

2. Check the working status to see if the port is occupied.

3. If using VCOM mode, check if the "VCOM Utility" configuration is correct.

4. Delete the corresponding COM port from the registry and remap it.

**c) Unable to send or receive data**

1. Ensure that the serial port can be opened normally.

2. Observe if the system light is flashing quickly or slowly. A fast flash indicates data transmission. If there is no fast flash, check the connection between the serial port and the upper network, and check the wiring of the lower serial port device.

**d) Forgot the previously set password**

1. Restore factory settings by holding the "reset" button for 5 seconds.

**e) Data sent or received is garbled**

1. Check if the wiring is correct. Our 485 wiring is 1A+, 2B-.

2. Check if the line distance exceeds the standard distance and the quality of the line (you can also use a line extender or optical isolator).

3. Check if the baud rate setting matches the lower device.

4. Disconnect from the customer's upper software and use a network or serial port debugging tool to see if normal data can be received. If normal data can be received, the issue may be related to the packing mechanism. You can set the packing length and packing wait time in "Port Configure".

**f)When the serial communication server is used as a dial-up server, the connection is established normally, but the client PC cannot open the webpage when entering the domain name in the address bar; however, it can open the webpage when entering the IP address in the address bar**

1. Check if the DNS set in the serial communication server is valid.

**g) When the serial communication server is used as a dial-up server, the connection is established normally, but the client PC often fails to open complex webpages or download large files completely, or even fails**

1. Check the [Serial Port] settings in the serial communication server to ensure that the [Flow

Control] matches the MODEM's flow control. Typically, the MODEM's flow control is RTS/CTS (hardware flow control).

2. The DCE rate negotiated between MODEMs is too low. Redial.

**h) Cannot be connected as a TCP server**

1. Confirm that no other PC is connected to the corresponding port of the serial communication server: check [Active TCP Information] in the [Statistics] of the serial communication server.

2. Check if [Authentication] in [Detailed Parameters] is set to [none].

**If the above methods do not resolve your issue, please contact the manufacturer.**

# 6 Vcom Software Description

## 6.1 Remote Devices Management

### 6.1.1 Device Search

After connecting the device, start the "VCOM" software (as shown in Figure 1), select Remote Devices Management---Add Device, and a search interface for finding the IP address of the device in the network will pop up; as shown in Figure 2, click the "Search" button to search for the IP addresses and basic information of all devices in the network; as shown in Figure 3, then click "Cancel" in Figure 3 and "OK" in Figure 2, and the device information found will be displayed in the VCOM interface, as shown in Figure 4:

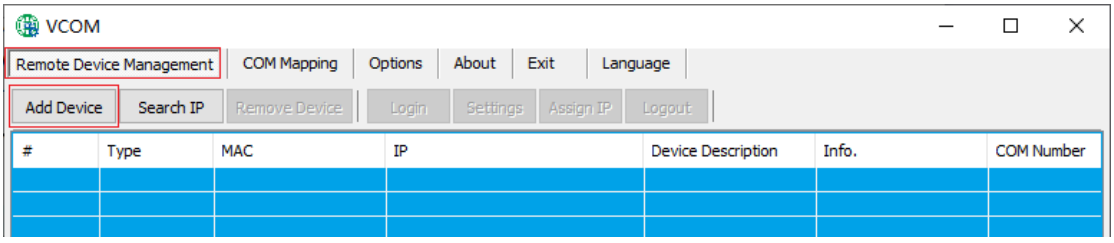



Figure 1

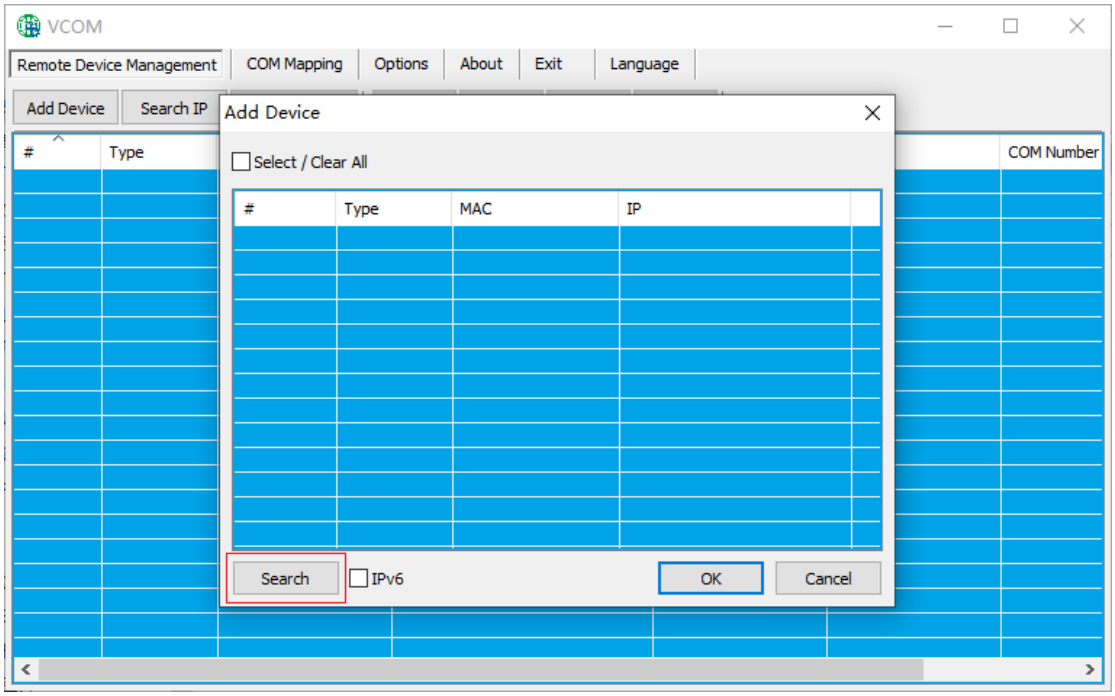


Figure 2

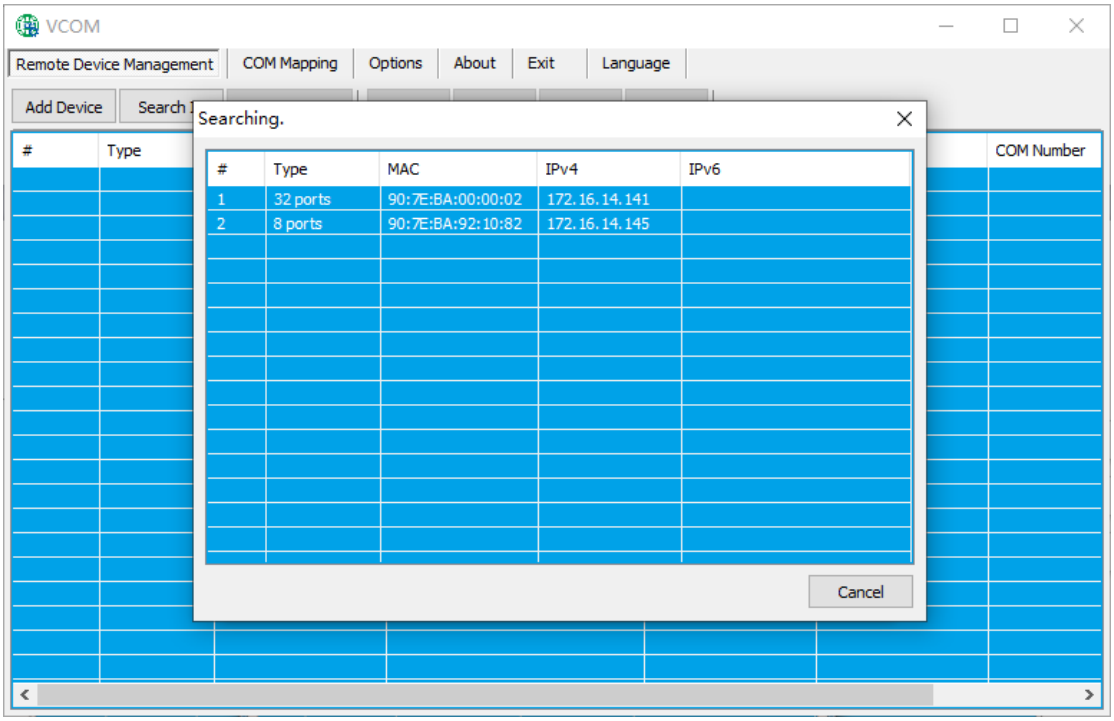



Figure 3

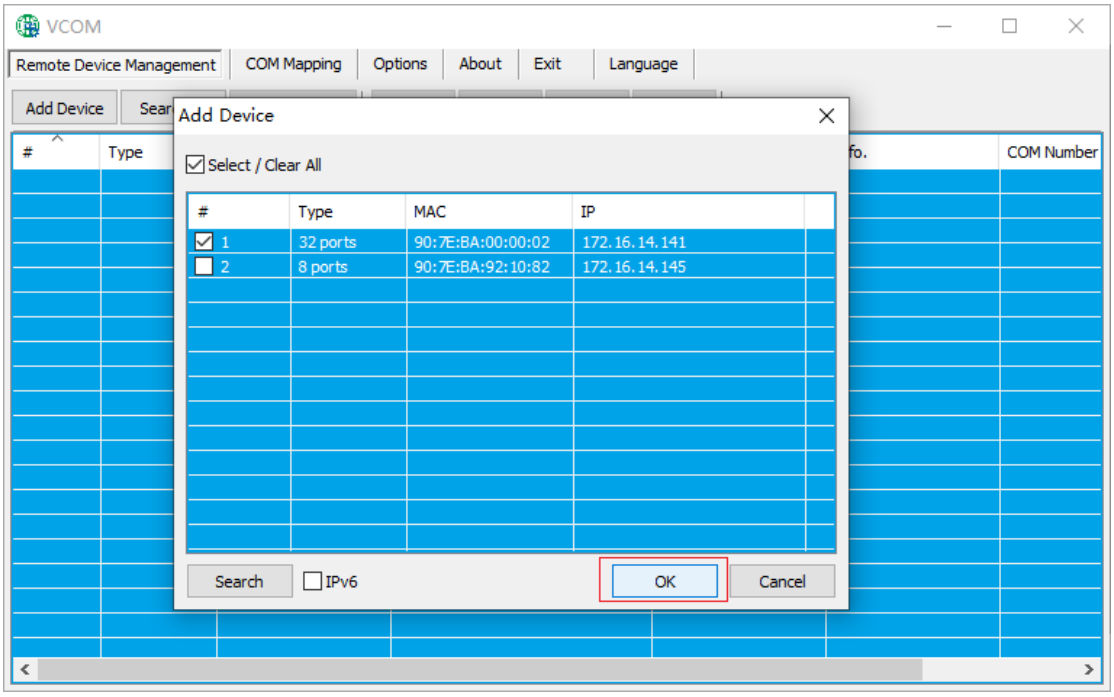
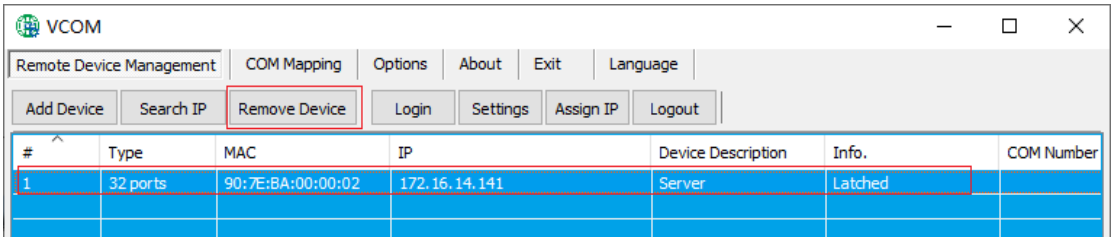



Figure 4

### 6.1.2 Delete Serial Device Information

In the "VCOM" software, first select the device information, then click "Remove Device" in the Remote Devices Management interface to delete the device information, as shown below:




### 6.1.3 Login to Device

In the "VCOM" software, click the "Login" button in the Remote Devices Management interface, and a pop-up window will appear as shown in Figure 1. Enter the login password to complete the login; after successful login, it will display as shown in Figure 2.

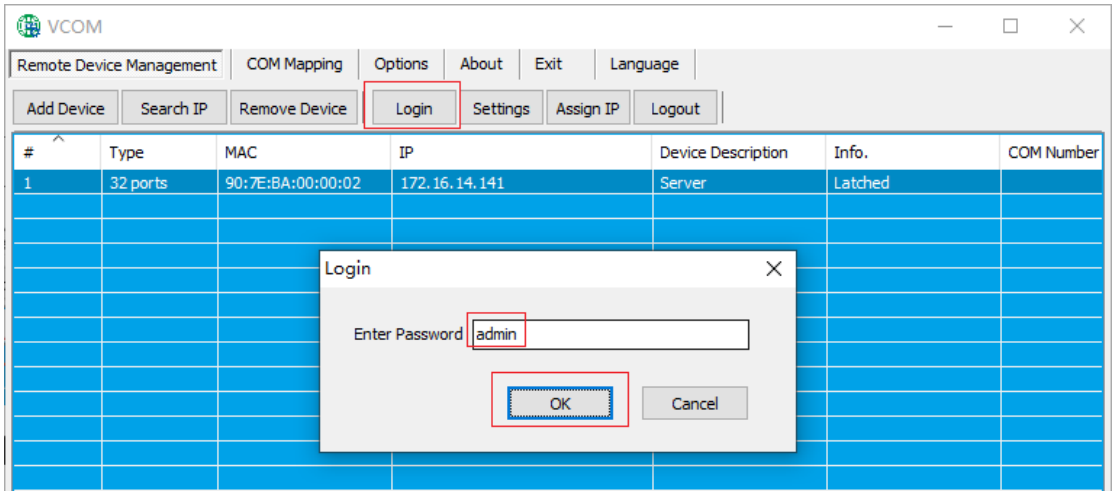



Figure 1

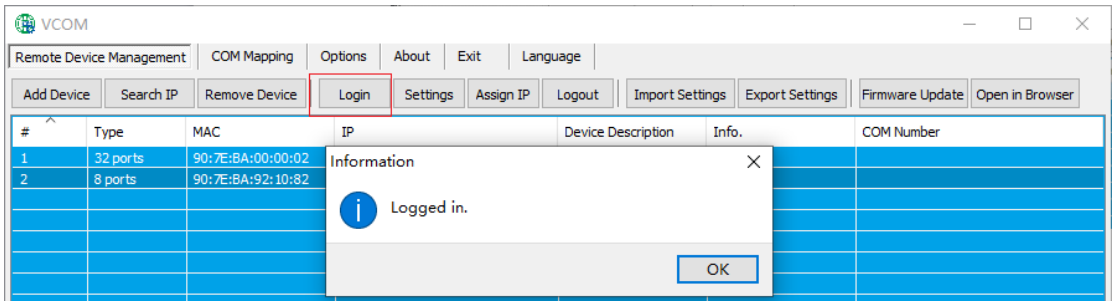


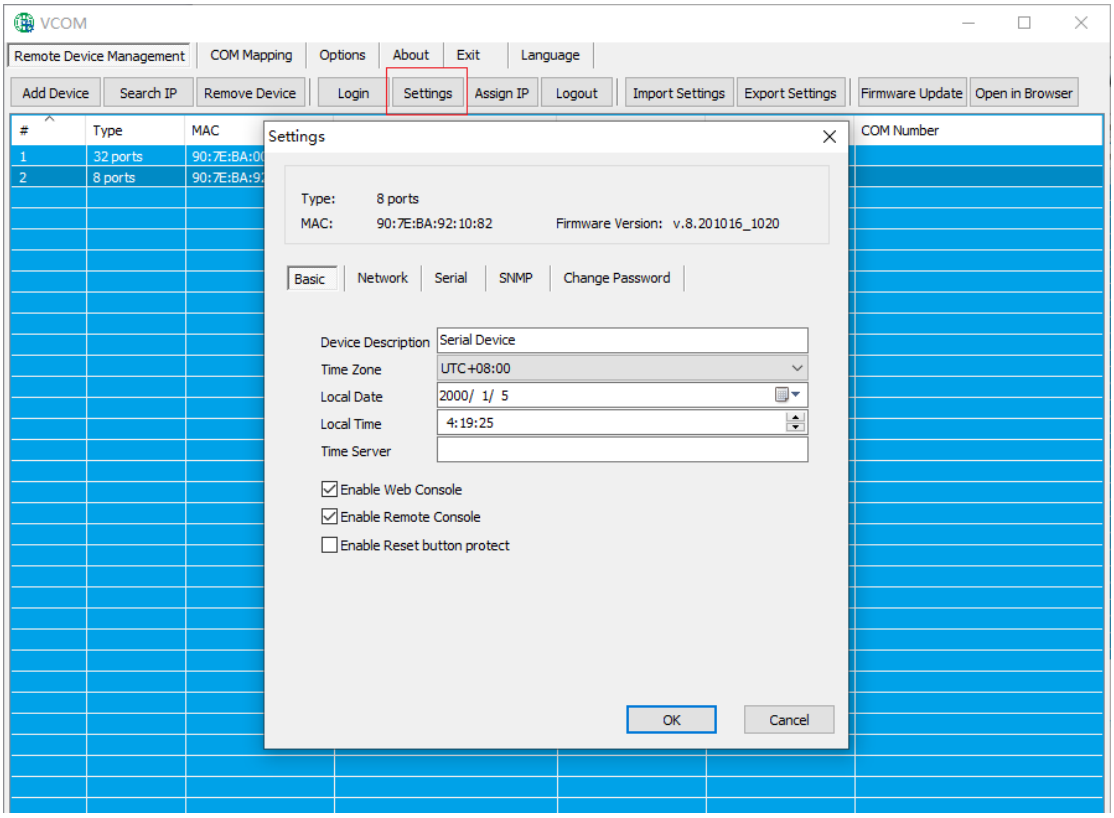

Figure 2

## 6.1.4 Configuration Information

After logging into the device, click the "Setting" button to bring up the interface as shown below.

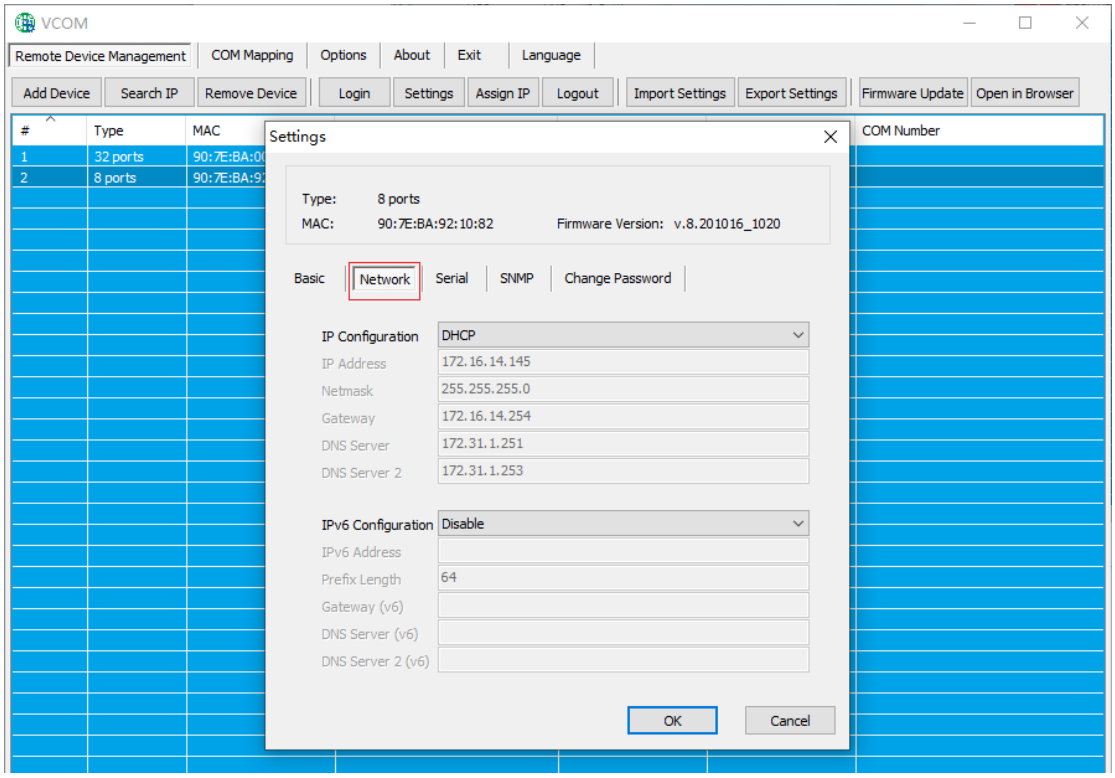
### 6.1.4.1 Basic

Displays basic device information. Keep the default state as shown below.




### 6.1.4.2 Network

Used for IP-related configuration, consistent with the serial server configuration.




### 6.1.4.3 Serial

Used for basic information configuration of the ports, as shown in Figure 1. Double-click the corresponding item in the "Settings" of the selected serial port or select the corresponding serial port and click the "Configure" button to open the configuration interface, as shown in Figure 2.

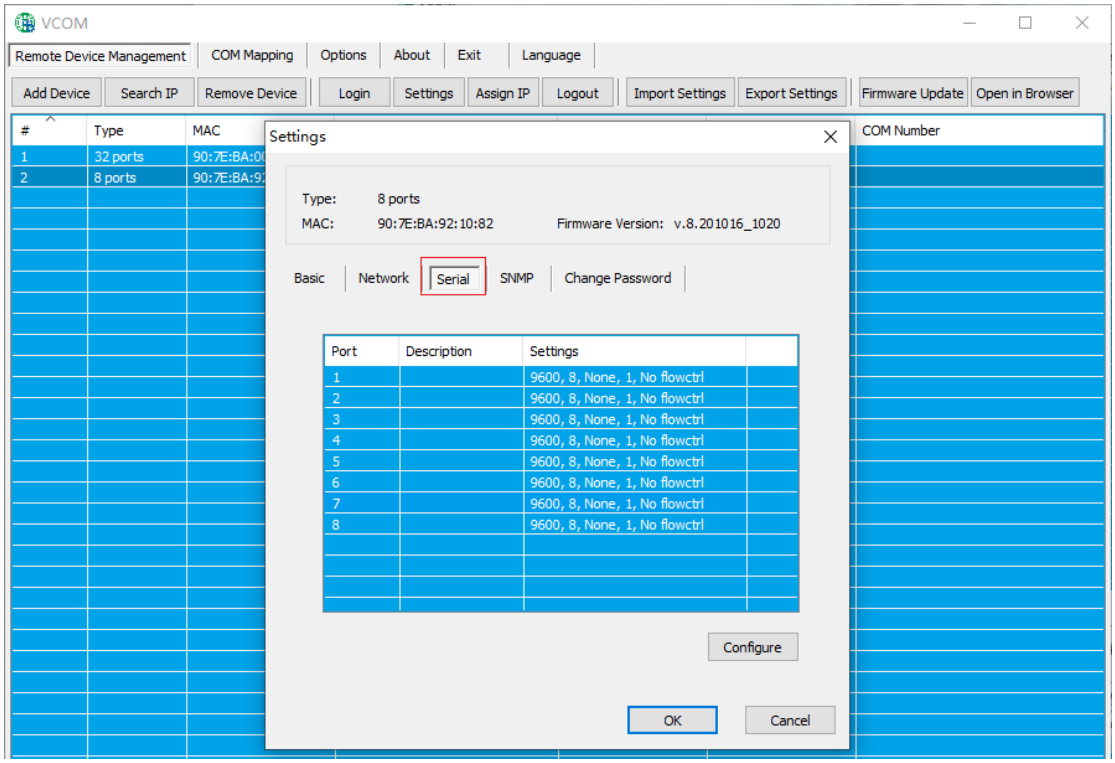



Figure 1

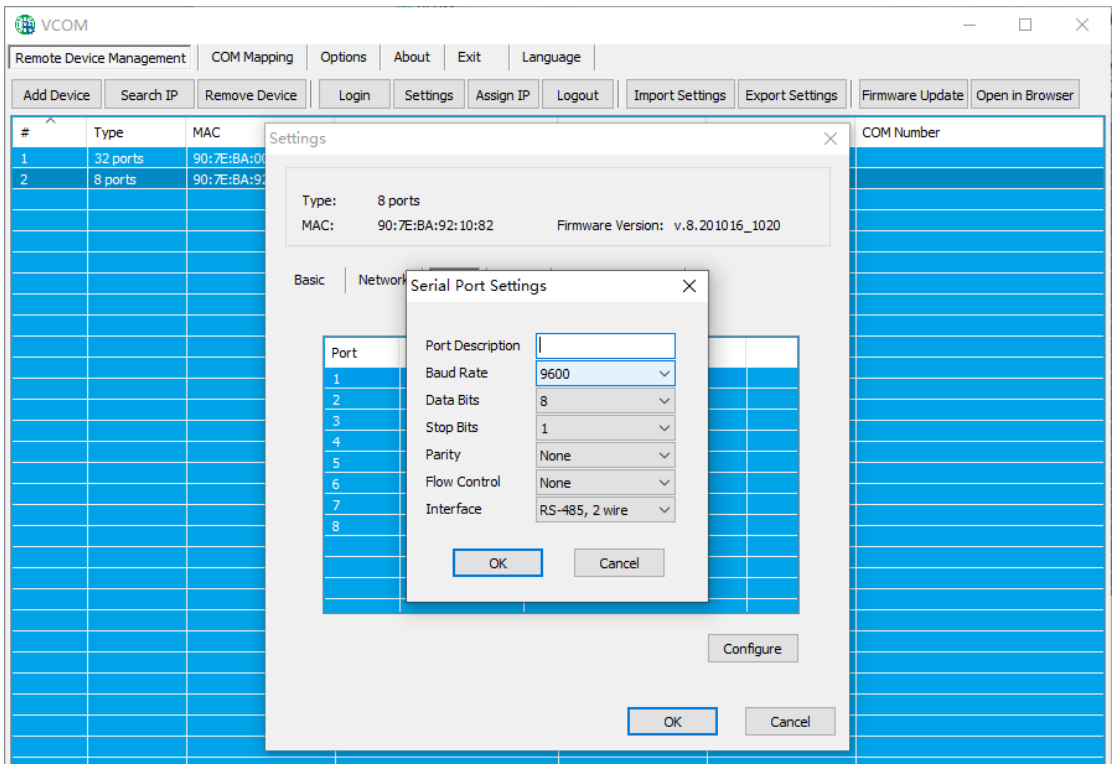
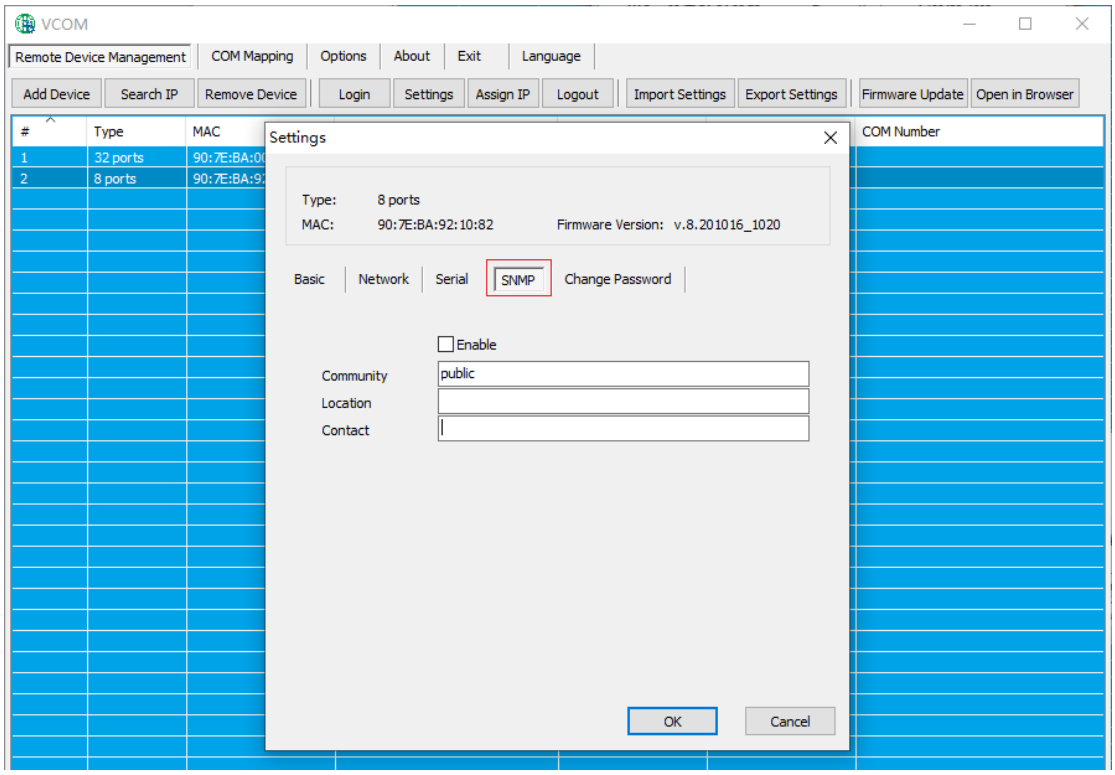



Figure 2

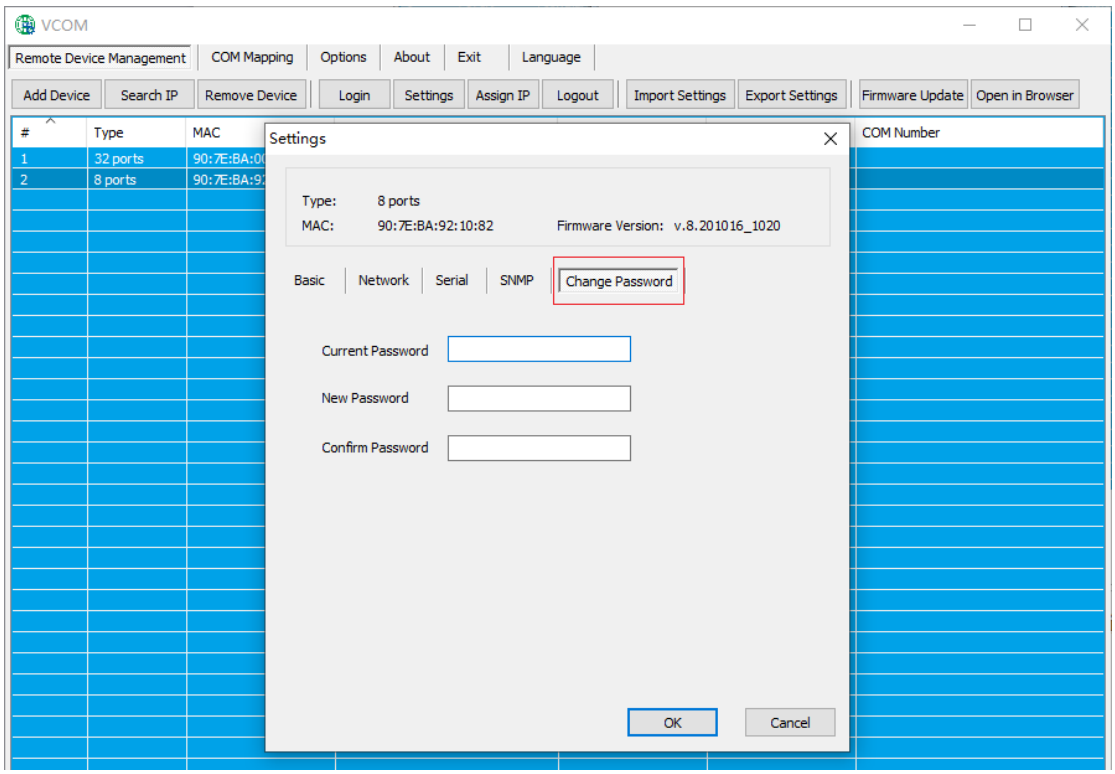
### 6.1.4.4 SNMP

Used to enable SNMP management function, consistent with the serial server configuration.



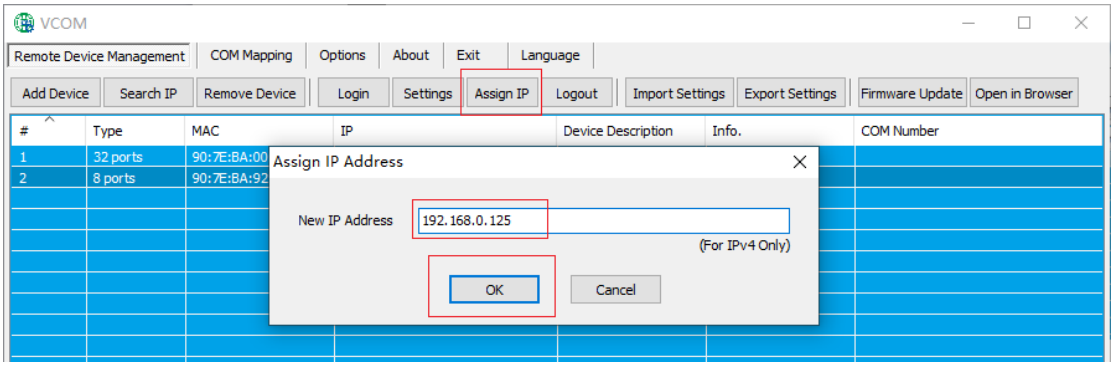

### 6.1.4.5 Change Password

Used to modify the user password of the serial server, consistent with the serial server configuration.



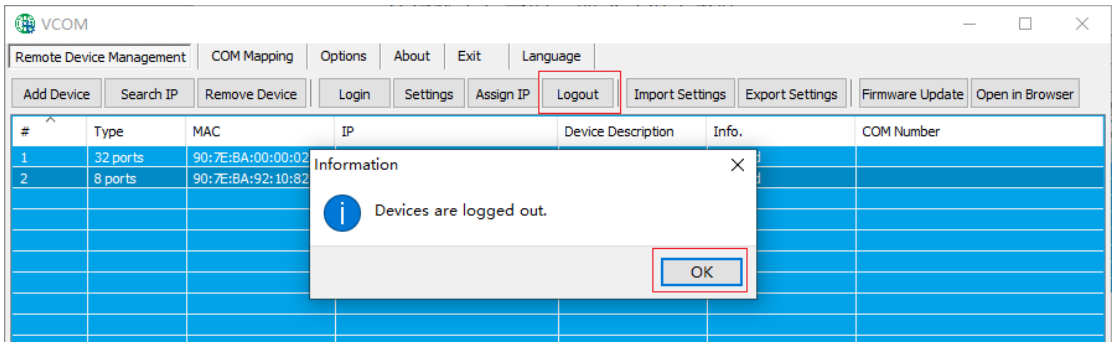

## 6.1.5 Change IP

In the "VCOM" software, click the "Assign IP" button in the Remote Devices Management interface, and a pop-up window will appear as shown below. You can reset the IP address of the serial server (you need to log in before changing the IP).




## 6.1.6 Logout

In the "VCOM" software, click the "Logout" button in the Remote Devices Management interface, and a pop-up window will appear as shown below, indicating successful logout.




## 6.1.7 Import Configuration

In the "VCOM" software, after successfully logging into the device, click the "Import Settings" button in the Remote Devices Management interface, and a pop-up window will appear as shown in Figure 1; then click "Browse" to select the saved or exported configuration file, as shown in Figure 2, and click "OK" to bring up the interface as shown in Figure 3; click "OK" and wait for the configuration to be successfully imported.

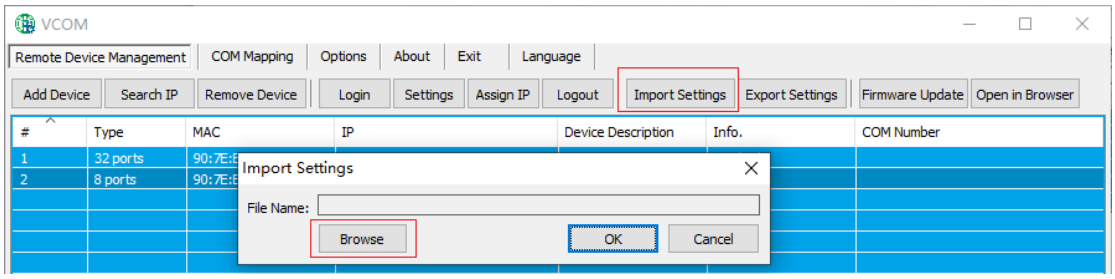



Figure 1

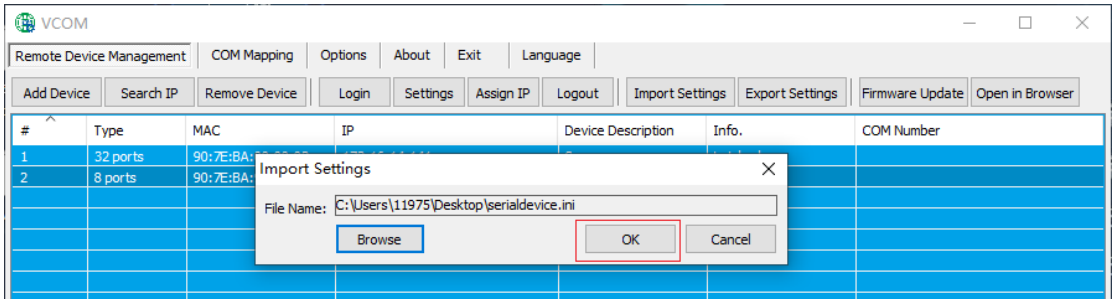



Figure 2

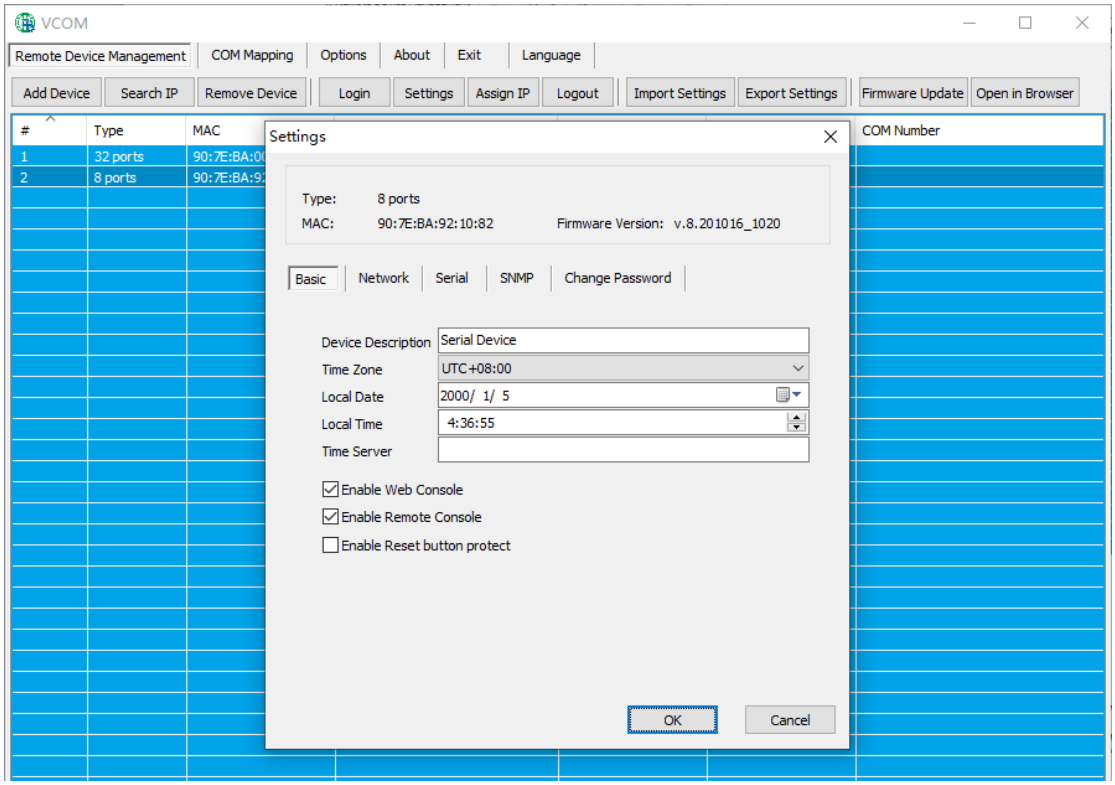



Figure 3

## 6.1.8 Export Configuration

In the "VCOM" software, after successfully logging into the device, click the "Export Settings" button in the Remote Devices Management interface, and a pop-up window will appear as shown in Figure 1; then click "Browse" to select the saved or exported configuration file, as shown in Figure 2, and click "OK" to wait for the configuration to be successfully exported; as shown in Figure 3.

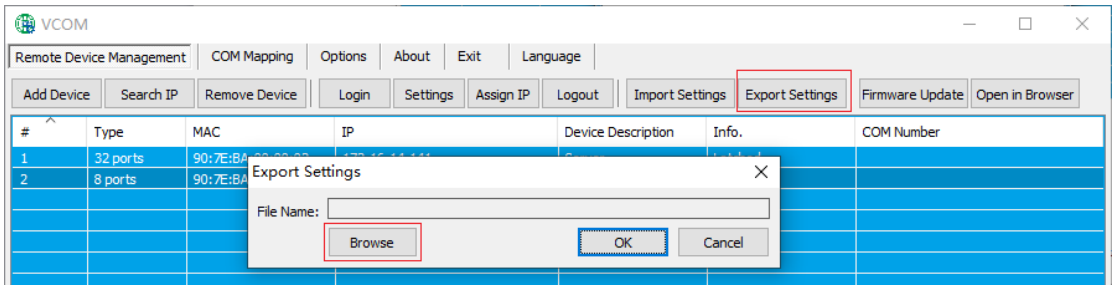



Figure 1

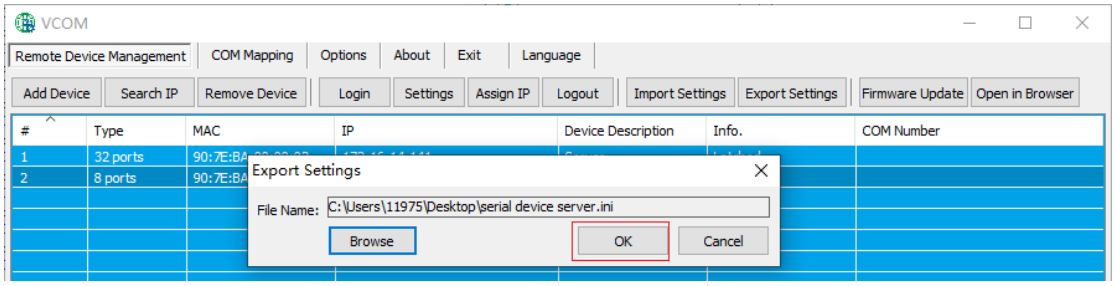



Figure 2

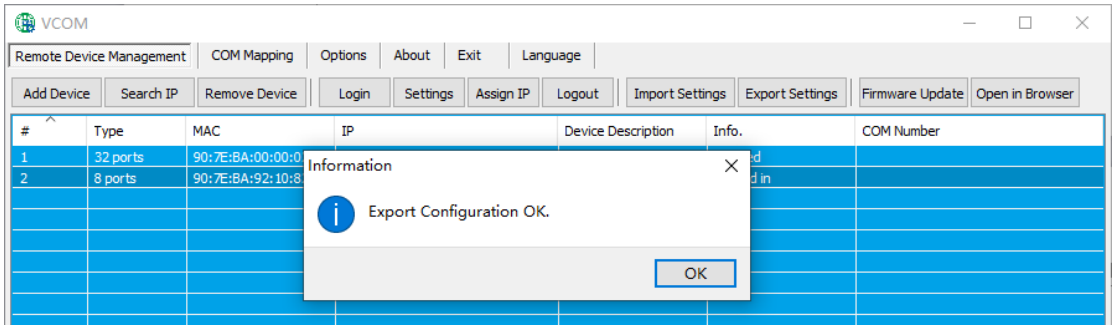
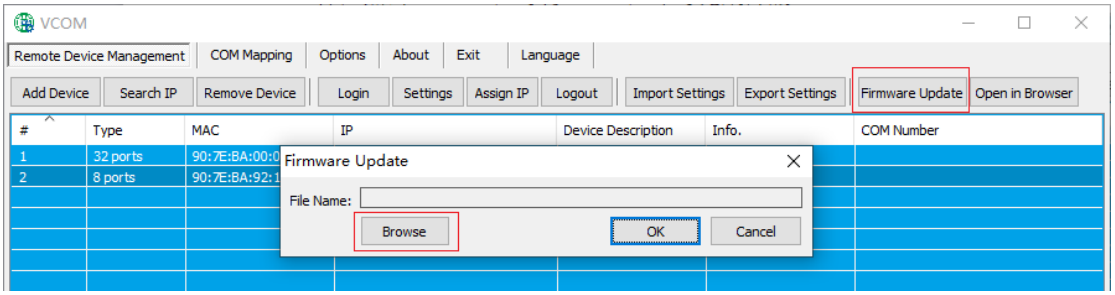



Figure 3

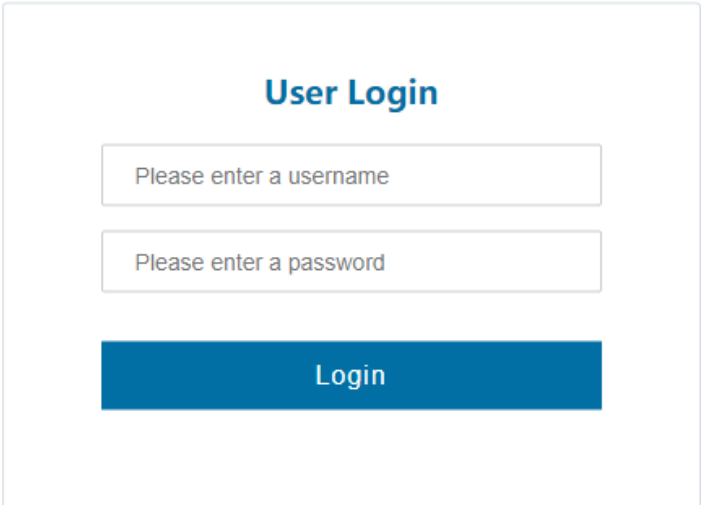
## 6.1.9 File Upgrade

In the "VCOM" software, after successfully logging into the device, click the "Firmware Update" button in the Remote Devices Management interface, and a pop-up window will appear as shown below. Click "Browse" to select the update file, click "OK", wait for 240 seconds, and the upgrade will be completed.



### 6.1.10 Jump to Web Login

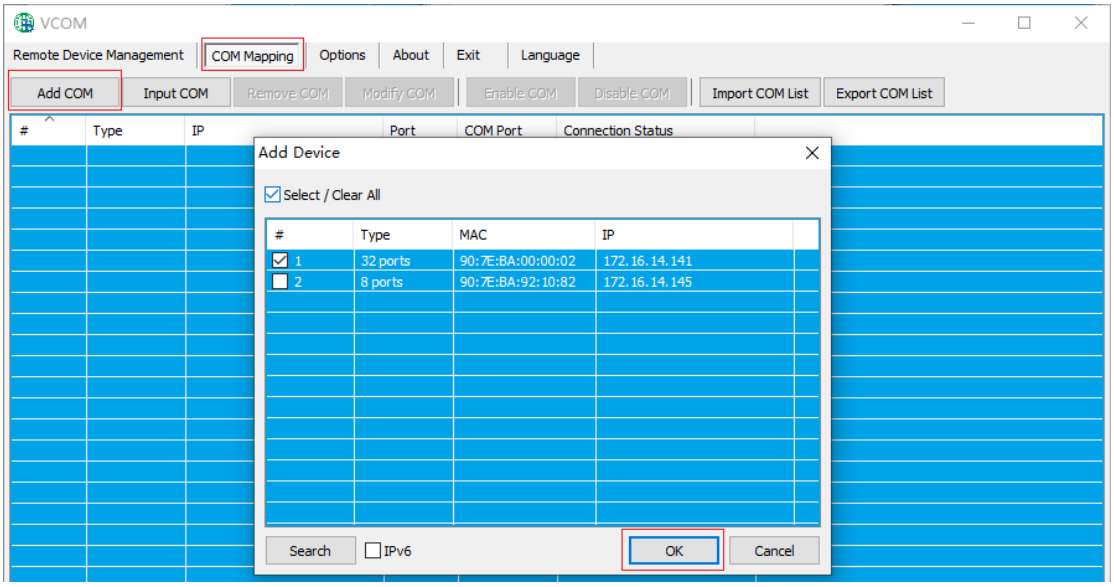
In the "VCOM" software, click the "Open in Browser" button in the Remote Devices Management interface to enter the web login interface through the IE browser.



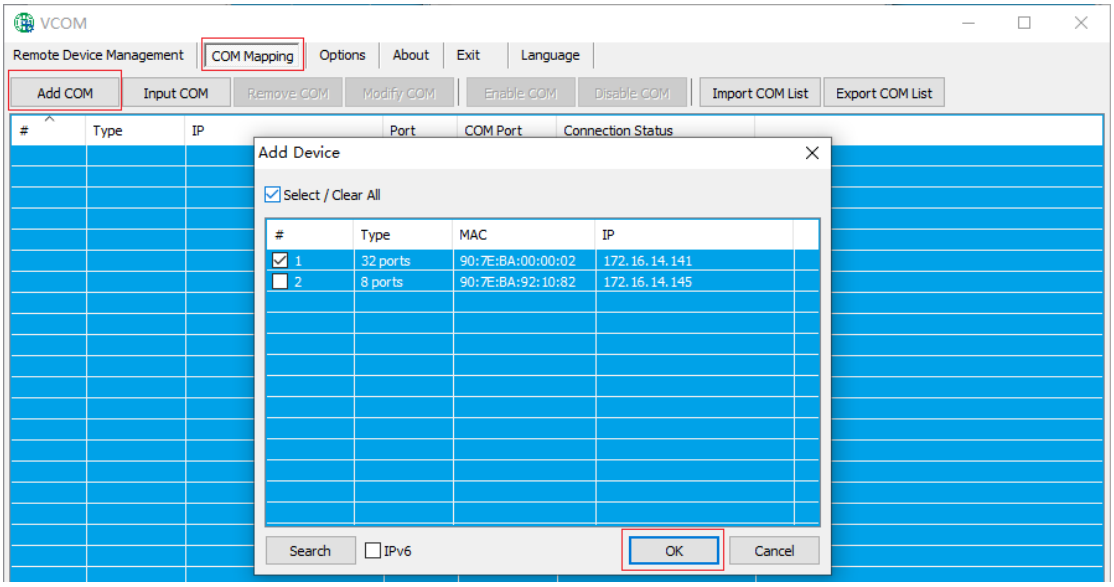

## 6.2 COM Mapping

### 6.2.1 Create Virtual Serial Port

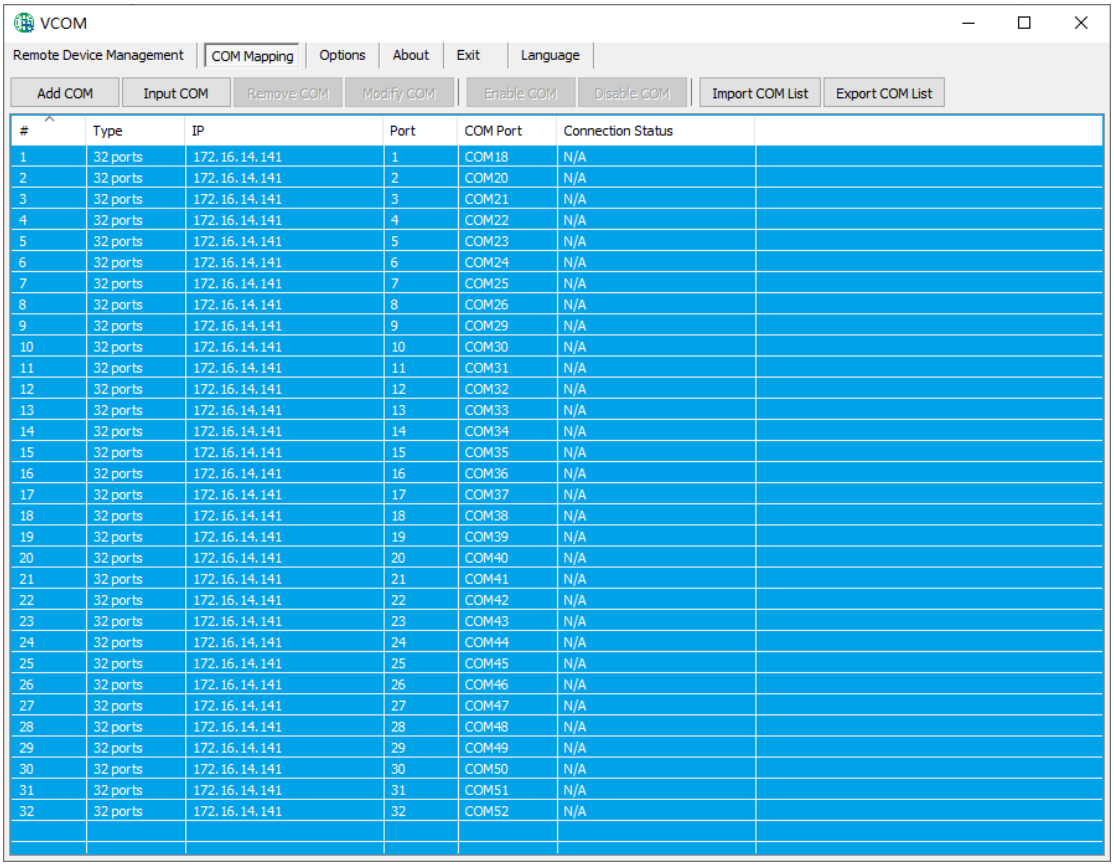
1. In the "VCOM" software, select COM Mapping---Add COM, and the "Add Device" window will pop up, as shown below.



2. The "Add Device" window will appear. Select the device and click "OK".

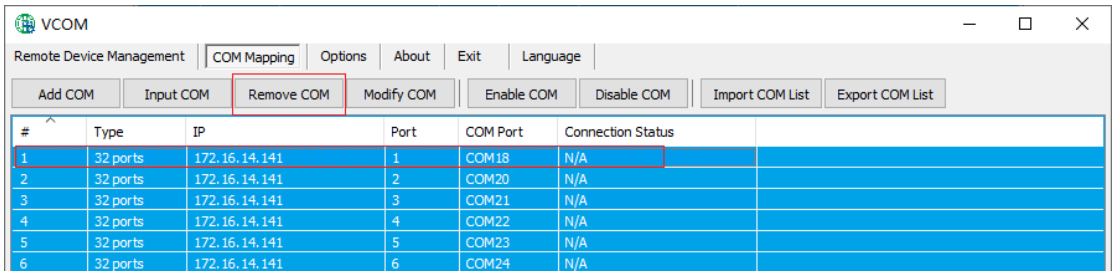



3. The interface shown below will pop up, indicating that the corresponding virtual serial port has been created.



### 6.2.2 Delete Virtual Serial Port

In the "VCOM" software, first select the virtual serial port to be deleted, then click "Remove COM" in the COM Mapping interface to delete the virtual serial port, as shown below.




### 6.2.3 Modify Virtual Serial Port

In the "VCOM" software, first select the virtual serial port to be modified, then click "Modify COM" in the COM Mapping interface, and the interface shown in Figure 1 will pop up. Then select "COM60" to modify Port1 from "COM18" to "COM60", as shown in Figure 2.

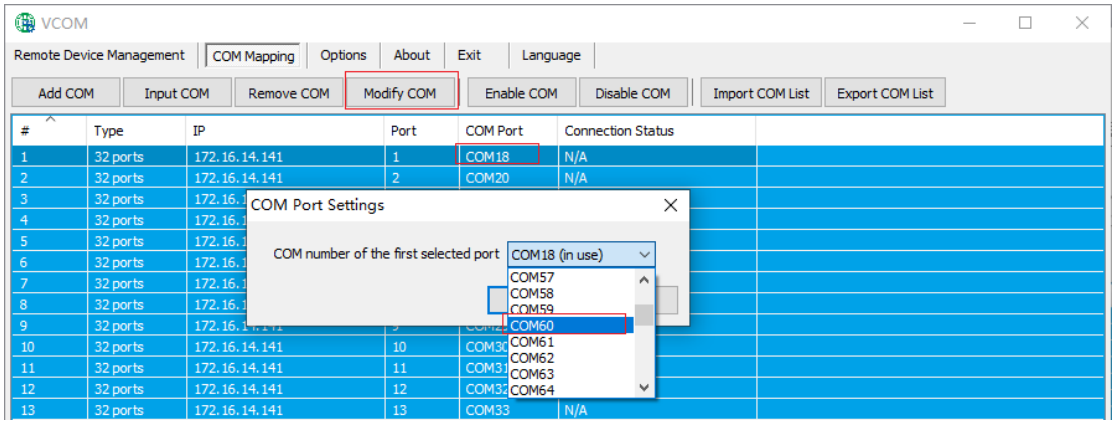



Figure 1

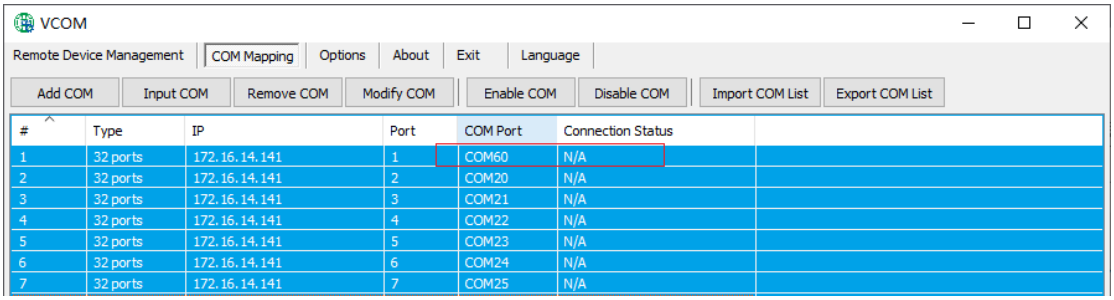
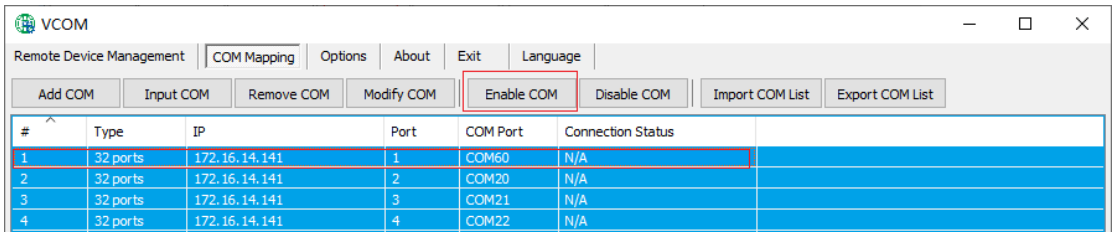



Figure 2

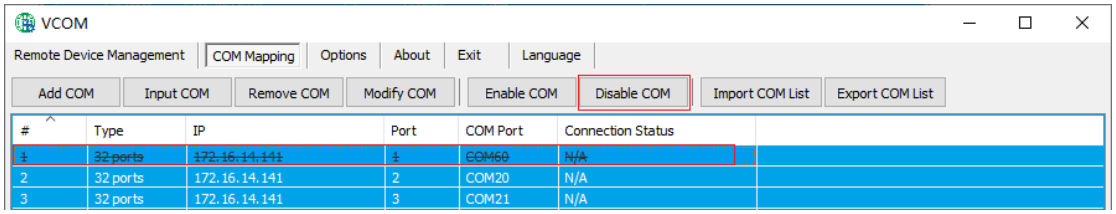
## 6.2.4 Enable Virtual Serial Port

In the "VCOM" software, first select the virtual serial port to be enabled, then click "Enable COM" in the COM Mapping interface to enable the corresponding virtual serial port, as shown below.




## 6.2.5 Disable Virtual Serial Port

In the "VCOM" software, first select the virtual serial port to be disabled, then click "Disable COM" in the COM Mapping interface to disable the corresponding virtual serial port, as shown below.




## 6.2.6 Import Virtual Serial Port List

In the "VCOM" software, click "Import COM List" in the COM Mapping interface, and the interface shown in Figure 1 will pop up. Click "Browse" and select the saved virtual serial port configuration information, as shown in Figure 2, then click "OK" to successfully import, as shown in Figure 3.

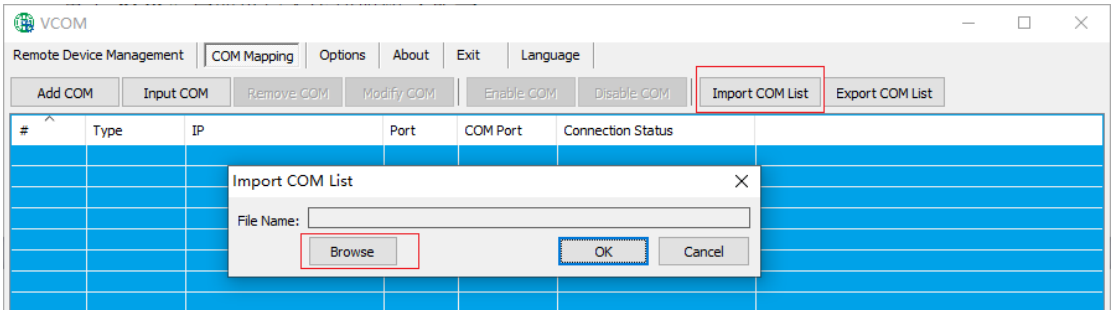



Figure 1

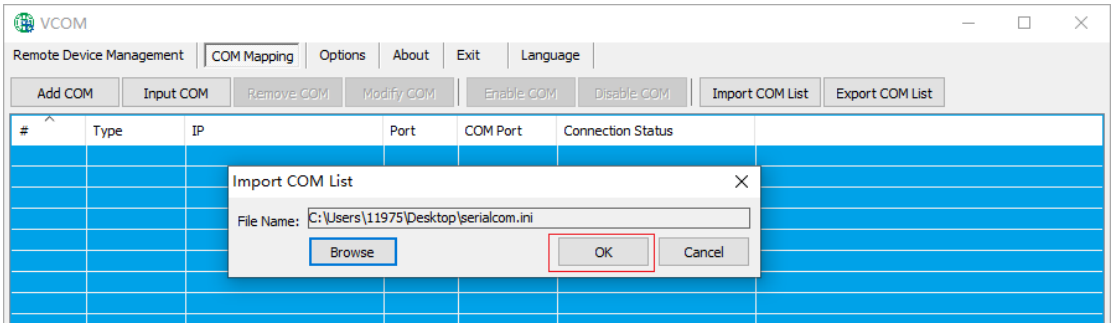



Figure 2

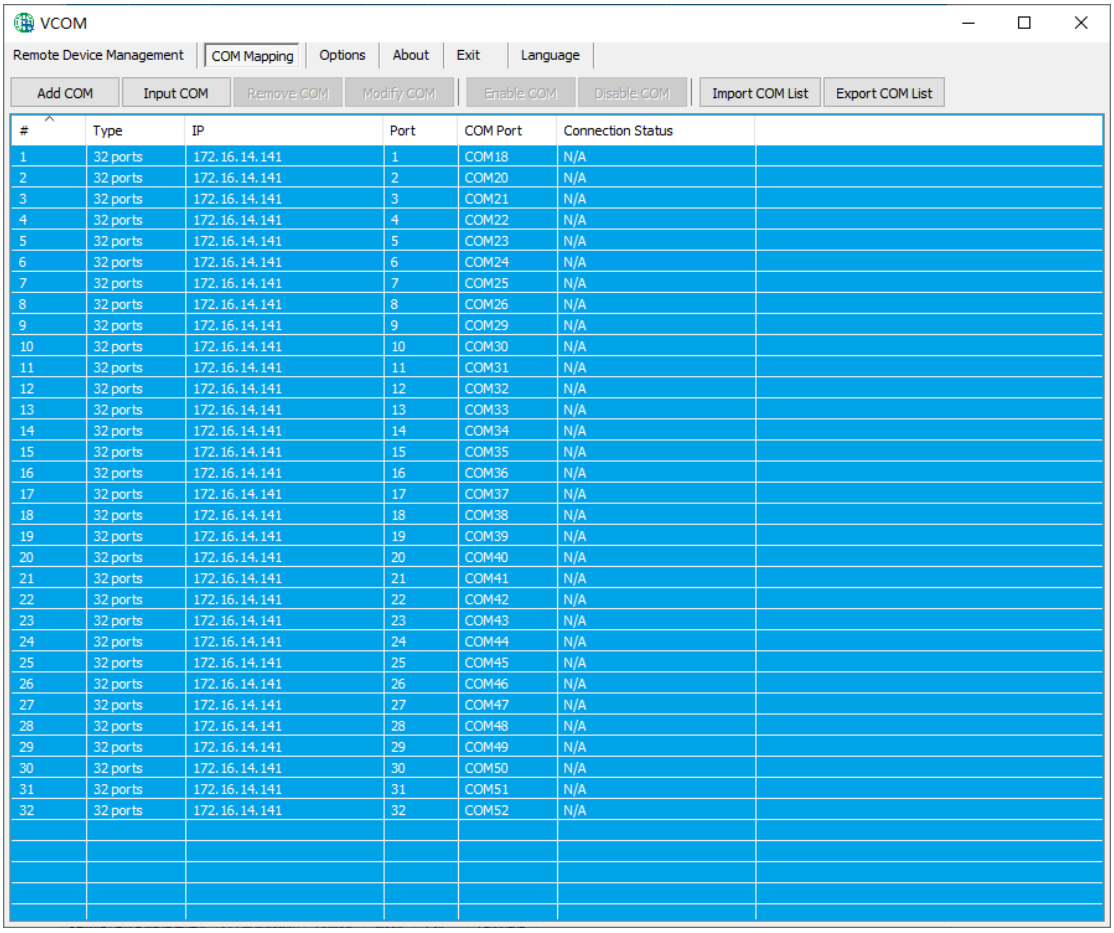



Figure 3

## 6.2.7 Export Virtual Serial Port List

In the "VCOM" software, click "Export COM List" in the COM Mapping interface, and the interface shown in Figure 1 will pop up. Click "Browse" and select the path to save the virtual serial port configuration information, as shown in Figure 2, then click "OK" to successfully export, as shown in Figure 3.

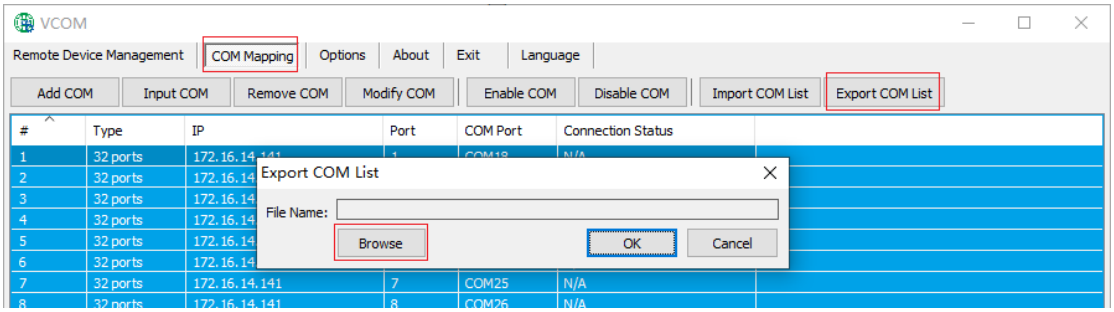



Figure 1

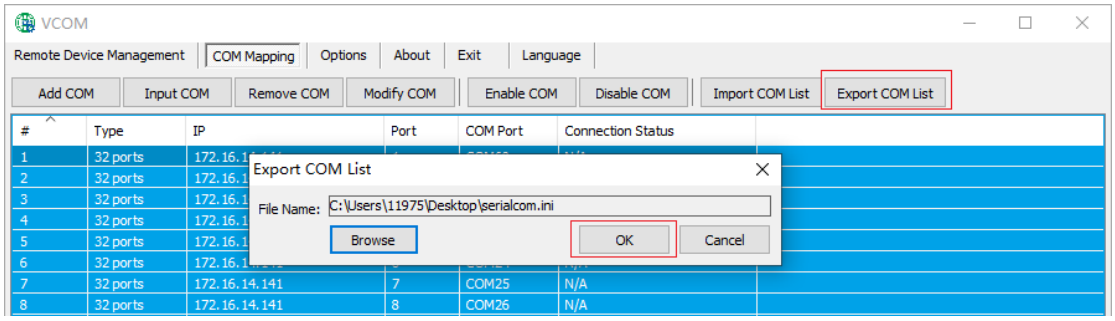



Figure 2

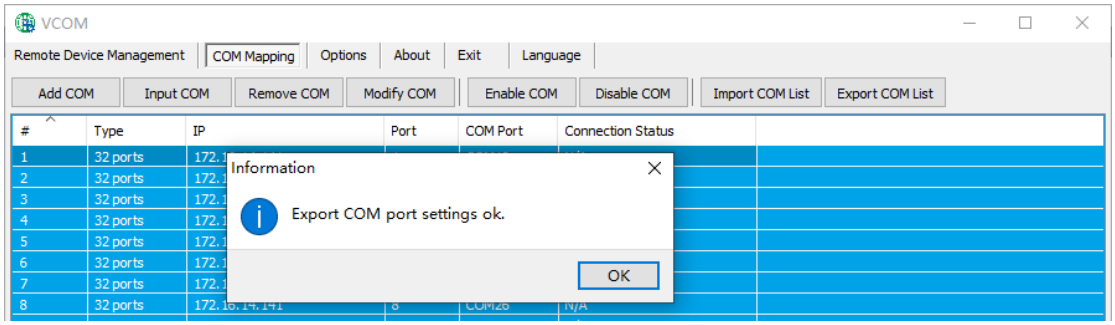
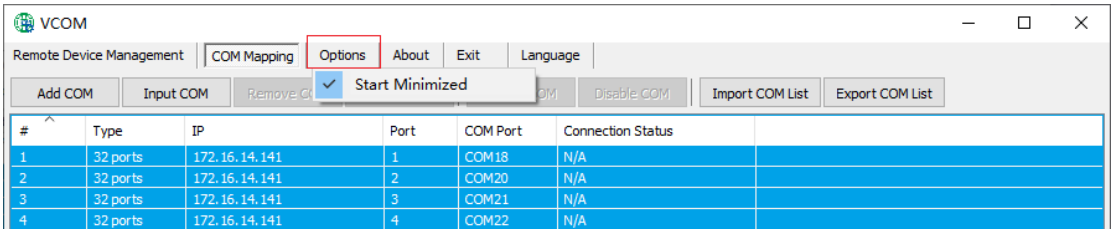



Figure 3

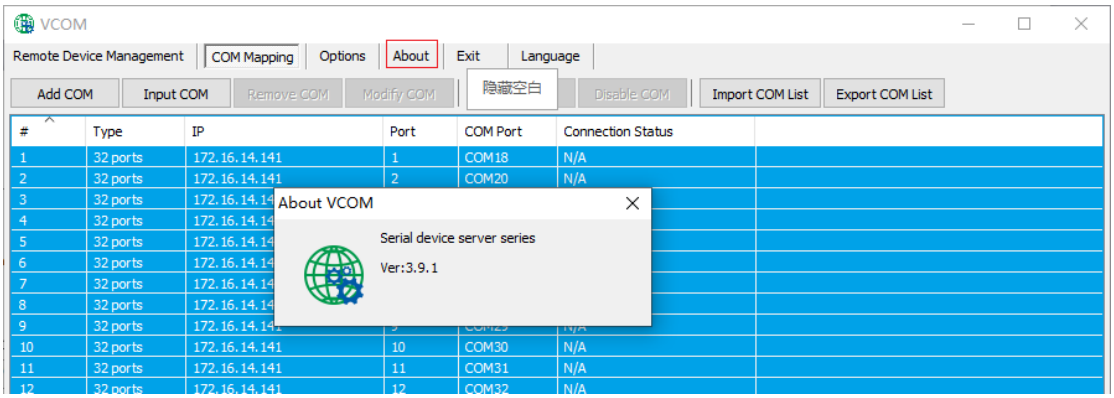
## 6.3 Options

When starting the VCOM software, you can choose whether to open it directly or minimize it to the taskbar. By default, the software is minimized to the taskbar. The configuration is shown below.




## 6.4 About

Click the "About" button to view the software version information, as shown below.




## 6.5 Exit

Click the "Exit" button to exit the software.

## 6.6 Language

Switch the language, you can choose Chinese or English.