

# SerialGate User Guide

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## Revision History

<b>Revision Date</b>	<b>Document Version</b>	<b>Pages</b>	<b>Description</b>
August 12, 2009	1.0	All	Initial release by JHRYU
April 12, 2010	1.1	All	Context amendment by JHRYU

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# Chapter 1 Introduction

This chapter is an introduction to SystemBase device server SerialGate series and this document.

## 1. About This Document

This guide is designed for users of SerialGate, who are in charge of connecting to and communicating with SerialGate, setting SerialGate's configurations, status monitoring, firmware update, and other administration work.

## 2. Who Should Read This Document?

This guide is designed for SerialGate users and administrators. It is strongly recommended that anyone trying to apply, use, and maintain SerialGate read this document. This guide deals with the hardware-level integration issues and software-level configuration tips. It will be a great starting point for any administrators who want to easily monitor and control SerialGate and its connected devices.

### 3. Document Structure

**Introduction** (Chapter 1) is a preface with general information and introductory notices.

**Getting Started** (Chapter 2) gives a brief introduction to SerialGate series, including features and applications.

**Hardware Descriptions** (Chapter 3) explains about the layout and pin specifications with block diagram and drawings.

**Installation** (Chapter 4) helps you to connect SerialGate to serial and network environment. It ends up with first time boot-up and status check.

**Configuration via Web** (Chapter 5) provides menu-by-menu guide for setting up the operation environment for SerialGate via web browser.

**Configuration via Telnet** (Chapter 6) provides a list of commands for setting up the operation environment for SerialGate via Telnet.

**Appendix** (Chapter 7) provides firmware update guides and technical specifications for detailed information.

## 4. SerialGate Documents

The following table summarizes documents included in the SerialGate document set.

Document Name	Description
User Guide	Integration, configuration, and management tasks are explained for the administrator
Portview User Manual	Guide for SystemBase device server management application Portview
COM Port Redirector User Manual	Guide for SystemBase COM Port Redirector
TestView User Manual	User Manual for testing Com port Redirector , TCP Server/Client , UDP Server/Client

If you need brief information on SerialGate or device servers in general, please visit our company website at <http://www.sysbas.com/>. You can view and/or download documents related to SerialGate as well as latest software and firmware updates. Available resources are as follows:

Document Name	Description
SerialGate Spec Sheet	Specifications for SerialGate products
	An easy reading for anyone new to device server.
SerialGate White Paper	Deals with background and technology Past, present, and future of device servers along with the overview of market environment

All documents are updated promptly, so check for the recent document update. The contents in these documents are subject to change without any notice in advance.

## 5. Technical Supports

There are three ways you can get a technical support from SystemBase.

First, visit our website <http://www.sysbas.com/> and go to 'Technical Support' menu. There you can read FAQ and ask your own question as well.

Second, you can e-mail our technical support team. The mail address is [tech@sysbas.com](mailto:tech@sysbas.com). Any kind of inquiries, requests, and comments are welcome.

Finally, you can call us at the customer center for immediate support. Our technical support team will kindly help you get over with the problem. The number to call is 82-2-855-0501 (Extension number 113). Do not forget to dial the extension number after getting a welcome message.



## Chapter 2 Getting Started

This chapter includes SerialGate overview, main and distinctive features, package contents for each product, and application fields.

### 1. Overview

SerialGate provides network connectivity to various serial devices (security devices, communication peripherals, modems, data printing devices, industrial metering devices, etc.). SerialGate supports RS232, RS422, and RS485 serial communication standards under various communication speed, meanwhile auto-sensing 100baseTX Fast Ethernet and 10baseT Ethernet connection.

### 2. Features

Various features of SerialGate make it a universal yet distinctive device server solution. Here we present main features of SerialGate. Others will explicitly appear throughout this guide.

- Max 921.6Kbps serial speed
- RS-232, or Combo(RS-422/RS-485)
- 10/100Mbps Ethernet port
- SystemBase COM Port Redirector for better adaptability
- Extensive configuration and monitoring with Portview
- Firmware upload with Web and FTP
- Configuration with Web, Telnet, SNMP, and Portview
- Lots of customizing options

### 3. Package Checklist

SerialGate package is composed of following components. Make sure every component is included with your package.

All packages include a module and a CD with utilities and documents.

SerialGate device 1pc (RS232 model or Combo(RS422/ RS485) model)

Cross LAN Cable 1pc

Power Adapter or cable 1pc

CD (utilities and documentations)

**A-Class Device**

This device is registered only for office use, and both the seller and the user must be aware of this. If not correctly sold or purchased, please exchange with home use device.

## 4. Applications

SerialGate can be applied to many practical applications in various fields. Here we present some of them.

### **Factory / Industrial Automation**

PLC, Robot arms, Human-Machine Interface, Warehouse rails

Medical instruments, Inspection equipment controllers

Alarming units

### **Home Appliances / Electronic Devices**

Power controller, Gaming machines

Scales, Gas detection units, Water & pollution metering devices

Data collection and distribution units

### **Financial / Building Automation**

Card readers, Barcode scanners, Kiosks, Point-Of-Sale related devices

Serial printers, Cash registers, Credit card authorization terminals

Biometric detection units, Security devices

## Chapter 3 Hardware Description

This chapter provides SerialGate's hardware information, including block diagram, layout, pin specifications, dimensions and other hardware-related issues.

### 1. The Exterior

#### SerialGate-1010/1020



SerialGate-1010

SerialGate-1020

#### SerialGate-1010 (RS232 Version)



## SerialGate User Guide

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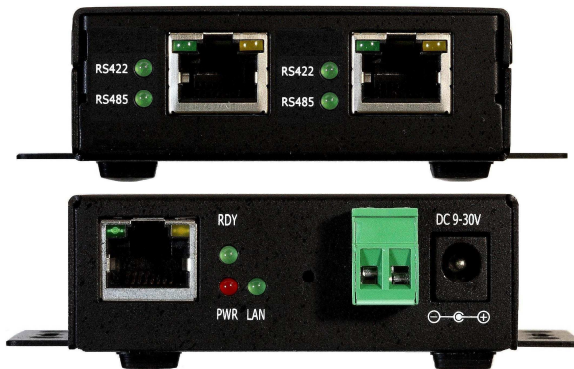
### SerialGate-1010 (Combo Version)



### SerialGate-1020 (RS232 Version)



### SerialGate-1020 (Combo Version)



- **Power connector** – for connection of DC9~30V adapter cable
- **Terminal block power connector** – for connection of terminal block power cable
- **Reset button** – SerialGate reboots if this button is pressed for less than 5 seconds. If pressed for longer than 5 seconds, SerialGate will restore factory default settings.
- **LED** – Operation status of SerialGate. Next section describes the meaning of each LED display status.
- **LAN port** – 8-pin RJ45 jack which is used when connecting SerialGate to network devices such as Ethernet card, hub, and router.
- **Serial** – RJ-45 socket for serial ports (RS-232, or Combo(RS-422/RS-485))

## SerialGate-1040/1080



SerialGate-1040/1080

### SerialGate-1040 (RS232/Combo Version)



### SerialGate-1080 (RS232/Combo Version)



- **LED** – Operation status of SerialGate. Next section describes the meaning of each LED display status.
- **Power connector** – for connection of AC110~220V cable
- **WAN port** – 8-pin RJ45 jack which is used when connecting SerialGate to network devices such as Ethernet card, hub, and router. (Primary LAN Port)
- **LAN port** – 8-pin RJ45 jack which is used when connecting SerialGate to network devices such as Ethernet card, hub, and router. (Secondary LAN Port)
- **Reset button** – SerialGate reboots if this button is pressed for less than 5 seconds. If pressed for longer than 5 seconds, SerialGate will restore factory default settings.
- **Serial** – RJ-45 socket for serial ports (RS-232, or Combo(RS-422/RS-485))

## 2. LED / RESET

### SerialGate-1010/1020

<LED display status>

LED	Status	Meaning
PWR (RED)	On	Power supplied to the device
	Off	No power supplied to the device
LAN (Green)	Off	No active network connection
	On	Network activated
RDY (Green)	Blinking	IP Configuration
	On	Normal operation
	Off	System error
RS422	On	Serial port set to RS422 mode (Combo model)
RS485	On	Serial port set to RS485 mode (Combo model)
Serial Tx/Rx	Green Blinking	Serial data transmitted
	Orange Blinking	Serial data received
LAN Tx/Rx	Green Blinking	100baseT connection detected & LAN data transferred
	Orange Blinking	10baseT connection detected & LAN data transferred

<Reset button features>

Operation	Result
Pressed for less than 5 seconds	Restart SerialGate
Pressed for more than 5 seconds	Restore factory default settings of SerialGate. The device will automatically reboot.

### SerialGate-1040/1080

<LED display status>

LED	Status	Meaning
PWR (RED)	On	Power supplied to the device
	Off	No power supplied to the device

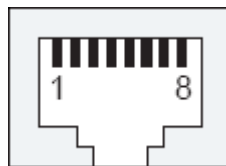
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RDY (Green)	Blinking	IP Configuration
	On	Normal operation
Off	System error	
WAN (Green)	Off	No active network connection
	On	Network activated (Primary LAN Port)
LAN (Green)	Off	No active network connection
	On	Network activated (Secondary LAN Port)
Serial Tx/Rx	Green Blinking	Serial data transmitted
	Orange Blinking	Serial data received
WAN LAN Tx/Rx	Green Blinking	100baseT connection detected & LAN data transferred
	Orange Blinking	10baseT connection detected & LAN data transferred

### <Reset button features>

Operation	Result
Pressed for less than 5 seconds	Restart SerialGate
Pressed for more than 5 seconds	Restore factory default settings of SerialGate. The device will automatically reboot.

## 3. Serial Port Pin Specifications



### RS232

1	RTS	2	DTR
3	RXD	4	DSR
5	TXD	6	GND
7	DCD	8	CTS

### RS422

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

### RS485

1	TRx-	2	
3		4	
5	TRx+	6	GND
7		8	



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### Pin Specification

1	RTS	RS232 Signal (Request To Send)
2	DTR	RS232 Signal (Data Terminal Ready)
3	RXD	RS232 Signal (Receive Data)
4	DSR	RS232 Signal (Data Set Ready)
5	TXD	RS232 Signal (Transmit Data)
6	GND	RS232 Signal (Signal Ground)
7	DCD	RS232 Signal (Data Carrier Detect)
8	CTS	RS232 Signal (Clear To Send)

RX+ RS422 Signal (Receive Data +)

TX+ RS422 Signal (Transmit Data +)

TX- RS422 Signal (Transmit Data -)

RX- RS422 Signal (Receive Data -)

TRX+ RS485 Signal (Transmit/Receive Data +)

TRX- RS485 Signal (Transmit/Receive Data -)

## Chapter 4 Installation

This chapter explains how you can make SerialGate to communicate. It deals with LAN and serial connection guides for SerialGate to operate together with the target serial device.

### 1. Installing SerialGate

Follow the steps below to install SerialGate. In most cases, SerialGate's factory default settings should be sufficient for most serial connections; however, some of the configuration settings may have to be changed for your particular installation.

1. Before attempting to install SerialGate, make sure you have installed and set up your serial equipment as described in the documentation that came with the device.
2. Write down the 12-digit MAC (Media Access Code) address printed on the label located on the bottom of SerialGate. You may need this number in order to configure SerialGate.
3. Connect SerialGate to your equipment using an RJ-45 serial connector.
4. Plug SerialGate power supply adapter or cable into a suitable AC receptacle, and then plug the power supply cable into SerialGate. SerialGate will run through a sequence of power-up diagnostics for a few seconds.
  - If SerialGate is operating properly, the RDY LED will blink constantly in a regular pattern. PWR LED should also be on.
  - If the RDY LED does not blink continuously in a regular pattern, a problem exists. If this is the case, try powering the unit OFF and then ON again. If the problem persists, refer to the Troubleshooting section in this User Guide.
5. Connect SerialGate to your network through a switch or hub using a category 5 (CAT5) Ethernet cable. SerialGate's IP address must be configured before a network connection is available. If your network offers DHCP (Dynamic Host Configuration Protocol), SerialGate will automatically search

## SerialGate User Guide

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for a DHCP server upon power up and obtain an IP address. If your network does not offer DHCP, a static (fixed) IP address must be assigned (see your system administrator for assistance). In most cases, a fixed IP address is preferred because a DHCP server may not always assign the same IP address to SerialGate when SerialGate is powered ON.

NOTE: The IP address must be within a valid range, unique to your network, and in the same subnet as your PC.

## 2. SerialGate Connection

Follow these steps to connect SerialGate to the device and network.

### Connection Guide

#### 1) LAN

In order to connect SerialGate to network, you need to use RJ45 Ethernet port. It supports both 10Mbps and 100Mbps Ethernet connection (auto-sensing). Plug one end of a **LAN cable** to SerialGate and the other end to a hub, switch, or any other network device that can provide you with network access.

\* If you connect SerialGate to PC directly, you have to use cross or direct LAN cable.

#### 2) Serial

In order to connect external serial device and SerialGate, RJ45 serial cable is required. For pin specifications and further information, please refer to the Chapter 3. Hardware Descriptions.

### First-Time Bootup

SerialGate will power on and start booting process when DC adapter (9~30V) is connected. Operation status can be monitored by LED displays. For more information on LED displays, please refer to the Chapter 3. Hardware Descriptions.

An IP address is required to access SerialGate's web interface or telnet command-line configuration tool. By factory default, SerialGate is assigned a static IP address. After the initial connection, you can either

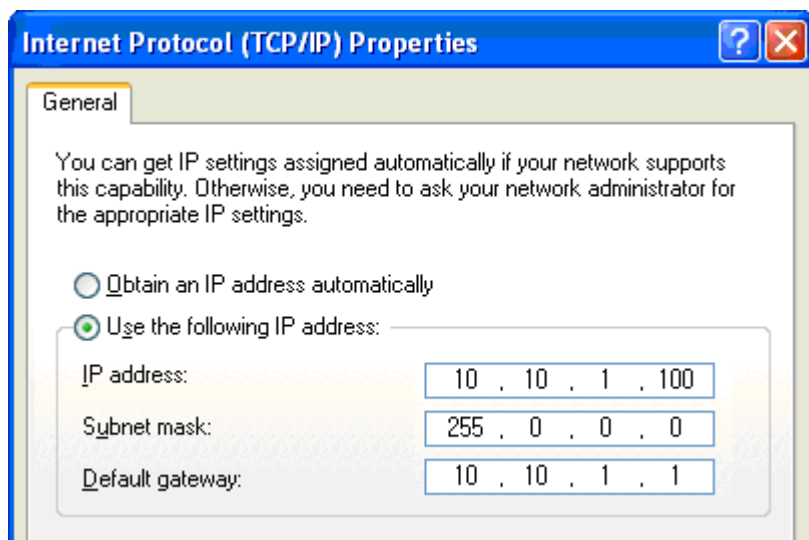
## SerialGate User Guide

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manually assign a different IP address or set SerialGate to automatically get an IP address from a DHCP server.

The factory default IP address of SerialGate : 192.168.0.223(10.10.1.1)

SerialGate's default IP address is set to 10.10.1.1. In order to connect with this address, you need to change network configurations so that your PC can connect to the IP 10.10.1.1. Please refer to an example below, and note that values doesn't necessarily have to be identical to the example below.



After modifying the IP address of SerialGate, it may lead to difficulties if you do not remember the IP address. To prevent such accidents, SerialGate always remembers a factory default address 10.10.1.1

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Now you are ready to connect to SerialGate! There are three options to configure SerialGate.

**Web:** You can easily configure SerialGate with web interface, accessible from any web browser. For more information, please refer to Chapter 5. Configuration via Web.

**Telnet:** You can configure SerialGate with commands after accessing SerialGate through Telnet. For more information, please refer to Chapter 6. Configuration via Telnet.

# Chapter 5 Configuration via Web

## 1. Connection

Open your favorite web browser and enter the IP address of SerialGate to access SerialGate’s web manager. Once you are successfully connected, the following front page will show up. You need to enter appropriate username and password to login.

Please note that this username and password is used as authentication method for Telnet as well. This means if username or/and password has been modified from the web interface, modified values have to be entered to connect to Telnet, and vice versa.

**Factory default username: SerialGate**

**Factory default password: 99999999**




## 2. Setup Menu

If login process is successful, you will see a web manager’s main page, showing summary of your device.

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On the left, you will see a setup menu, and you can navigate through these options.

 Setup Menu Summary Network Settings Serial Settings SNMP Settings Change Password Update Firmware Factory Default Save & Reboot System Log Copyright 2007 SystemBase Co., Ltd. All rights reserved.	[Summary]		Device Name: SerialGate Logged in as serialgate <a href="#">Logout</a>
	<b>Overview</b>		
	Device Name	SerialGate	
	Boot Loader Version	x . xx	
	Lemonix Kernel Version	x . xx	
	Firmware Version	x . xx	
	MAC Address	00 : 05 : f4 : xx . xx . xx	
	System Alive	(0 Days) 00:04:13	
	<b>Network Configuration</b>		
	Line Type	Static IP	
	IP Address	xxx . xxx . xxx . xxx	
	Subnet Mask	xxx . xxx . xxx . xxx	
	Gateway	xxx . xxx . xxx . xxx	
	<b>Support Information</b>		
Website	<a href="http://www.sysbas.com">http://www.sysbas.com</a>		
Contact	<a href="mailto:tech@sysbas.com">tech@sysbas.com</a>		

- Summary** : View a summary of SerialGate.
- Network Settings** : Configure network connection settings.
- Serial Settings** : Configure detailed operation environment for serial communication.
- SNMP Settings** : Configure detailed operation environment for SNMP
- Change Password** : Change ID and password for both Web and Telnet interface.
- Update Firmware** : Update SerialGate's firmware.
- Factory Default** : Restore all the factory default settings.
- Save & Reboot** : Save the configurations and reboot SerialGate.
- System Log** : View system log of SerialGate.

### 3. Network Settings

Configure general network environment and network management. After changing values, you need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to 'Save & Reboot' in order to see these changes in effect. Changes will be discarded if you do not save current settings.


[Network Settings]

Device Name: SerialGate  
 Logged in as serialgate  
[Logout](#)

<div style="background-color: #f0f0f0; padding: 2px;">Setup Menu</div> <ul style="list-style-type: none"> <li style="background-color: #f0f0f0; padding: 2px;">Summary</li> <li style="background-color: #f0f0f0; padding: 2px;">Network Settings</li> <li style="background-color: #f0f0f0; padding: 2px;">Serial Settings</li> <li style="background-color: #f0f0f0; padding: 2px;">SNMP Settings</li> <li style="background-color: #f0f0f0; padding: 2px;">Change Password</li> <li style="background-color: #f0f0f0; padding: 2px;">Update Firmware</li> <li style="background-color: #f0f0f0; padding: 2px;">Factory Default</li> <li style="background-color: #f0f0f0; padding: 2px;">Save &amp; Reboot</li> <li style="background-color: #f0f0f0; padding: 2px;">System Log</li> </ul> <div style="background-color: #f0f0f0; padding: 2px; font-size: small;">       Copyright 2007        SystemBase Co., Ltd.        All rights reserved.     </div>	<div style="background-color: #333; color: white; padding: 2px; font-weight: bold;">WAN Configuration</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Device Name</td> <td><input type="text" value="SerialGate"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>Line Type</td> <td>Static IP <input type="button" value="v"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>IP Address</td> <td><input type="text" value="xxx.xxx.xxx.xxx"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>Subnet Mask</td> <td><input type="text" value="xxx.xxx.xxx.xxx"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>Gateway</td> <td><input type="text" value="xxx.xxx.xxx.xxx"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>DNS</td> <td><input type="text" value="xxx.xxx.xxx.xxx"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> </table> <div style="background-color: #333; color: white; padding: 2px; font-weight: bold; margin-top: 5px;">Network Service Configuration</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">PortView IP / Port</td> <td><input type="text" value="0.0.0.0"/></td> <td>/</td> <td><input type="text" value="4000"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>DDNS / (Username/Password)</td> <td><input type="text" value="203.32.117.1"/></td> <td>/</td> <td><input type="text" value="serialgate"/></td> <td><input type="text" value="99999999"/></td> <td style="text-align: right;"><a href="#">Help</a></td> </tr> <tr> <td>Telnet Service</td> <td>Enable <input type="button" value="v"/></td> <td style="text-align: right;"><a href="#">Help</a></td> <td colspan="2"></td> </tr> <tr> <td>FTP Service</td> <td>Enable <input type="button" value="v"/></td> <td style="text-align: right;"><a href="#">Help</a></td> <td colspan="2"></td> </tr> <tr> <td>WEB Service</td> <td>Enable <input type="button" value="v"/></td> <td style="text-align: right;"><a href="#">Help</a></td> <td colspan="2"></td> </tr> <tr> <td>SSH Service</td> <td>Disable <input type="button" value="v"/></td> <td style="text-align: right;"><a href="#">Help</a></td> <td colspan="2"></td> </tr> </table> <div style="margin-top: 10px; text-align: center;"> <input type="button" value="Submit"/> <input type="button" value="Cancel"/> </div>	Device Name	<input type="text" value="SerialGate"/>	<a href="#">Help</a>	Line Type	Static IP <input type="button" value="v"/>	<a href="#">Help</a>	IP Address	<input type="text" value="xxx.xxx.xxx.xxx"/>	<a href="#">Help</a>	Subnet Mask	<input type="text" value="xxx.xxx.xxx.xxx"/>	<a href="#">Help</a>	Gateway	<input type="text" value="xxx.xxx.xxx.xxx"/>	<a href="#">Help</a>	DNS	<input type="text" value="xxx.xxx.xxx.xxx"/>	<a href="#">Help</a>	PortView IP / Port	<input type="text" value="0.0.0.0"/>	/	<input type="text" value="4000"/>	<a href="#">Help</a>	DDNS / (Username/Password)	<input type="text" value="203.32.117.1"/>	/	<input type="text" value="serialgate"/>	<input type="text" value="99999999"/>	<a href="#">Help</a>	Telnet Service	Enable <input type="button" value="v"/>	<a href="#">Help</a>			FTP Service	Enable <input type="button" value="v"/>	<a href="#">Help</a>			WEB Service	Enable <input type="button" value="v"/>	<a href="#">Help</a>			SSH Service	Disable <input type="button" value="v"/>	<a href="#">Help</a>		
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WEB Service	Enable <input type="button" value="v"/>	<a href="#">Help</a>																																																
SSH Service	Disable <input type="button" value="v"/>	<a href="#">Help</a>																																																

#### Network Configuration

- **Connection Mode** (Default: Static)
  - Options: Static IP / DHCP
  - IP obtaining method for SerialGate's network connection
  
- **IP Address** (Default: 192.168.0.223)
  - Current IP address SerialGate is assigned to.
  - When connection mode is Static IP, manually enter an appropriate IP address.
  - When connection mode is DHCP, current IP is displayed, but it is not editable.

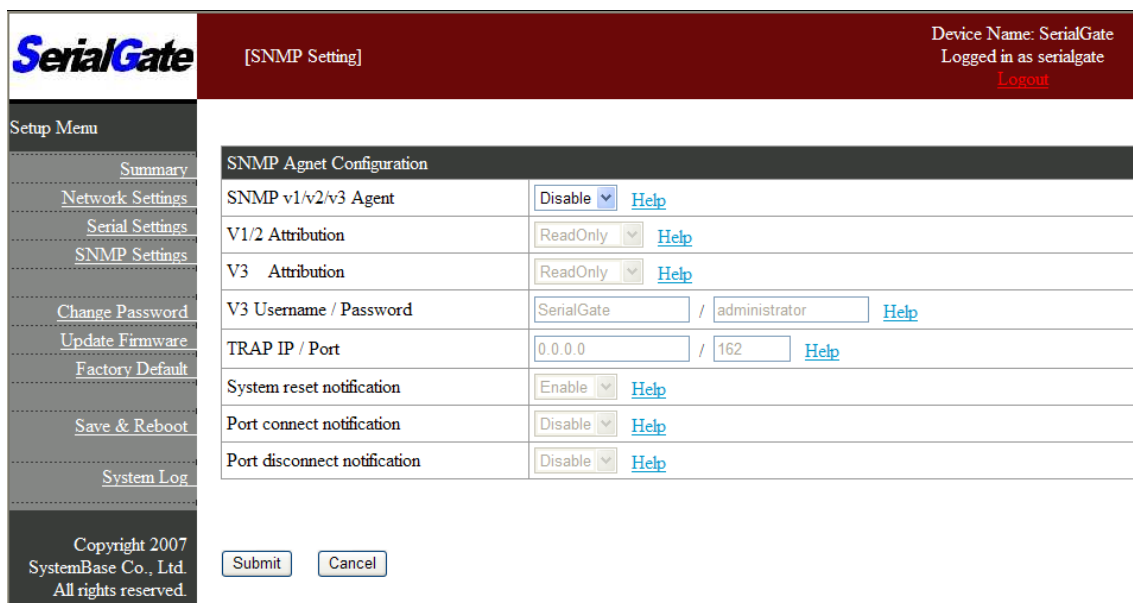


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- Subnet Mask** (Default: 255.255.255.0)  
 Current subnet mask SerialGate is assigned to.  
 When connection mode is Static IP, manually enter an appropriate subnet mask.  
 When connection mode is DHCP, current subnet mask is displayed, but it is not editable.
- Gateway** (Default: 192.168.0.254)  
 Current default gateway SerialGate is assigned to.  
 When connection mode is Static IP, manually enter an appropriate default gateway.  
 When connection mode is DHCP, current default gateway is displayed, but it is not editable.
- DNS**  
 IP address of DNS server that SerialGate uses.

## SNMS Configuration

If multiple devices are installed and managed together, integration in management is necessary. In addition, it is often the case when the device reports an erroneous status, figuring out the reason for the failure becomes a time-consuming job. To solve this inefficiency and provide better solution, SerialGate includes Network Management System software, Portview.



SNMP Agent Configuration	
SNMP v1/v2/v3 Agent	Disable <a href="#">Help</a>
V1/2 Attribution	ReadOnly <a href="#">Help</a>
V3 Attribution	ReadOnly <a href="#">Help</a>
V3 Username / Password	SerialGate / administrator <a href="#">Help</a>
TRAP IP / Port	0.0.0.0 / 162 <a href="#">Help</a>
System reset notification	Enable <a href="#">Help</a>
Port connect notification	Disable <a href="#">Help</a>
Port disconnect notification	Disable <a href="#">Help</a>

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Submit Cancel

## 4. Serial Settings

You can set the communication and operation environment for the serial port. After changing values, you

## SerialGate User Guide

need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to 'Save & Reboot' in order to see these changes in effect. Changes will be discarded if you do not save current settings.

SerialGate

[Serial Settings]

Device Name: SerialGate  
 Logged in as serialgate  
[Logout](#)

Setup Menu  


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[Summary](#)  
[Network Settings](#)  
[Serial Settings](#)  
[SNMP Settings](#)  


---

[Change Password](#)  
[Update Firmware](#)  
[Factory Default](#)  


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[Save & Reboot](#)  


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[System Log](#)  


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Serial Port 1

Operation Mode	COM Redirect <a href="#">Help</a>		
Interface	RS-232 <a href="#">Help</a>		
Local Socket Port	4001 <a href="#">Help</a>		
Port Alias	Port-01 <a href="#">Help</a>		
Com Specification	Baud 9600 bps	Data 8 bits	Stop 1 bit Parity None <a href="#">Help</a>
Flow Control	None <a href="#">Help</a>		
Device Type	Data Only <a href="#">Help</a>		
Remote IP Address / Port	0.0.0.0 / 4000 <a href="#">Help</a>		
KeepAlive Check Time	0 sec <a href="#">Help</a>		
Port Login	Disable	User none	Password none <a href="#">Help</a>

- **Status** (Default: Enabled)  
Options: Enabled / Disabled  
Choose to use or not use this port. You cannot use the port when selecting 'Disabled'.
  
- **Interface** (Default: RS232 or Selectable among RS422, RS485(No-Echo), RS485(Echo) modes)
  
- **Operation Mode** (Default: COM(Win200x/XP))  
Select the operation protocol, which the serial port would use.
  - **COM**  
Use the serial port of SerialGate as the COM ports of Windows 2000/XP/2003 operated PC. (Both the data and the signal line information of the serial port can be controlled.)
  - **TCP Server**  
SerialGate works as a socket server, waiting for the client connection on the network. Socket number for awaiting connections can be set in 'Local socket port' field. All data between the socket and the serial port is transferred untouched after the socket connection is established.
  - **TCP Client**

## SerialGate User Guide

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SerialGate acts as a socket client in this mode. It tries to connect to the server IP address and the socket number assigned when a certain server waits for connection on the network. All data between the socket and the serial port is transferred untouched after the socket connection is established.

### → **TCP Broadcast**

SerialGate works as a server, accepting up to 5 simultaneous connections from socket clients.

Data transmitted from SerialGate is broadcast to each socket client.

### → **TCP Multiplex**

SerialGate works as a server, accepting up to 5 simultaneous connections from socket clients. The difference between TCP Broadcast and TCP Multiplex is that Multiplex allows each socket to communicate exclusively. That is, serial data in response are only transferred to the sender socket.

### → **UDP Server**

SerialGate works as a UDP server, waiting for UDP connection from the client on the network.

Socket number for awaiting connections can be set in 'Local socket port' field.

Once a UDP packet is received to the socket that waits for the connection, the data is transmitted to the serial port. The data input from the serial port is put into UDP packets, which eventually are sent to the client.

### → **UDP Client**

When the data is input to the serial port, UDP packets are sent using the preset IP address and the socket number of the server.

- **Local Socket Port** (Default: 4001)

Set the socket number for the port. TCP server and UDP server operation mode makes use of this port for awaiting network socket connections.

- **Port Alias** (Default: Port1)

Port alias name for convenience. 16 Characters at maximum.

- **Baud Rate** (Default: 9600bps)

Options: 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600bps

Set communication speed.

## SerialGate User Guide

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- **Data Bits** (Default: 8)  
Options: 5, 6, 7, 8  
Set the number of bits in each character size.
- **Stop Bits** (Default: 1)  
Options: 1, 2  
Set the number of stop bits.
- **Parity** (Default: None)  
Options: None, Odd, Even  
Set parity bit check scheme.
- **Flow Control** (Default: None)  
Options: None, Xon/Xoff, RTS/CTS  
Set the flow control scheme.
- **Device Type** (Default: DataOnly)  
Options: Data Only, Modem Signals  
Set the signal line checking method for the device to be connected to the given serial port.  
If the mode is set to Data Only, only Txd, Rxd, and Gnd signal lines are used in inter-device communication. If the mode is set to Modem Signals, all modem signals except RI(Ring Indicator) are asserted, tested, and used in communication.
- **Remote IP Address / Port** (Default: 0.0.0.0 / 4000)  
When the Operation Mode is set to TCP Client, set the IP address and the socket number to connect to.
- **KeepAlive Check Time** (Default: 0 sec)  
When the operation mode is set to TCP Client, TCP Server, TCP Multi-Server, after a certain amount of time passes without any communication after the socket connection between the given serial port and the server is established, automatically disconnect the socket connection. If the value is set to 0, this function is disabled. Valid from 0 to 32767 seconds.
- **Latency Time** (Default: 0 byte)  
Latency Time, and this option needs to be set when consecutive data from the given serial port needs to be transmitted to socket at once. If 100 bytes of character string are to be transmitted

## SerialGate User Guide

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from the serial device and Latency Time is set to '100', SerialGate waits until the entire 100 bytes are received. After receiving 100 bytes, it transmits this data to the server as a single packet, using the socket. If 200 bytes of character string are to be transmitted from the serial device, SerialGate breaks this data into 2 packets of 100 bytes. If Latency Time is set to '0', however, each byte is transmitted right away in a packet, therefore multiple packets sent to the server.

- **Port Login** (Default: Disable)

Options: Enable, Disable

When the Operation Mode is set to TCP Server, ask for the username and password when the client tries to connect.

You can set the username and password if this option is enabled.

- **Username** When the Operation Mode is set to TCP Server, set the username to ask for. 32 Characters at maximum.

- **Password**

When the Operation Mode is set as TCP Server, set the password to ask for. 32 Characters at maximum.

- **Reset Port**

Clicking a 'Submit' button with the Reset Port checkbox checked will reinitialize the current port.

## 5. Admin Settings

Device information and support information settings. After changing values, you need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to '**Save & Reboot**' in order to see these changes in effect. Changes will be discarded if you do not save current settings.

### **Device Information**

- **Device Name** (Default: SerialGate-1020 or SerialGate 1010)  
Name of the current device.
- **Firmware Version**  
Current firmware version.
- **Hardware Version**  
Current hardware version.
- **Kernel Version**  
Current kernel version.

### **Support Information**

- **Website**  
Website for help and support.
- **Contact**  
Contact information for technical support.

## 6. Change Password


Change Web/Telnet access username and password. After changing values, you need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to '**Save & Reboot**' in order to see these changes in effect. Changes will be discarded if you do not save current

## SerialGate User Guide

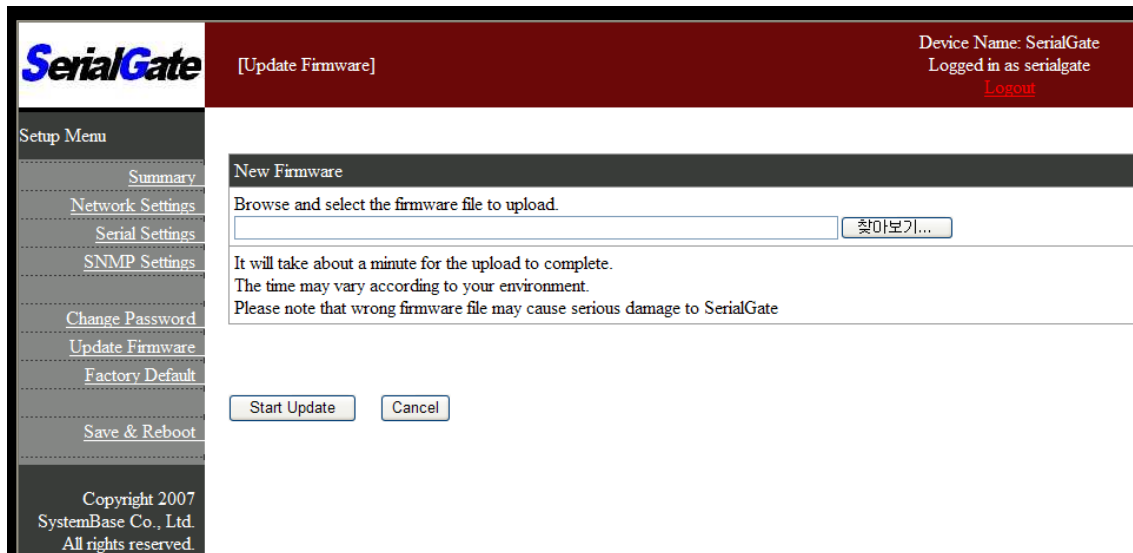
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settings.

Default password is '99999999'.

 <b>Setup Menu</b> Summary Network Settings Serial Settings SNMP Settings Change Password Update Firmware Factory Default Save & Reboot Copyright 2007 SystemBase Co., Ltd. All rights reserved.	[Change ID/Password]		Device Name: SerialGate Logged in as serialgate <a href="#">Logout</a>
	<b>Change ID</b>		
	Current ID	serialgate	
	New ID	<input type="text"/>	
	<b>Change Password</b>		
	Enter Current Password	<input type="text"/>	
	Enter New Password	<input type="text"/>	
	Retype New Password	<input type="text"/>	
	<input type="button" value="Submit"/> <input type="button" value="Cancel"/>		

## 7. Update Firmware

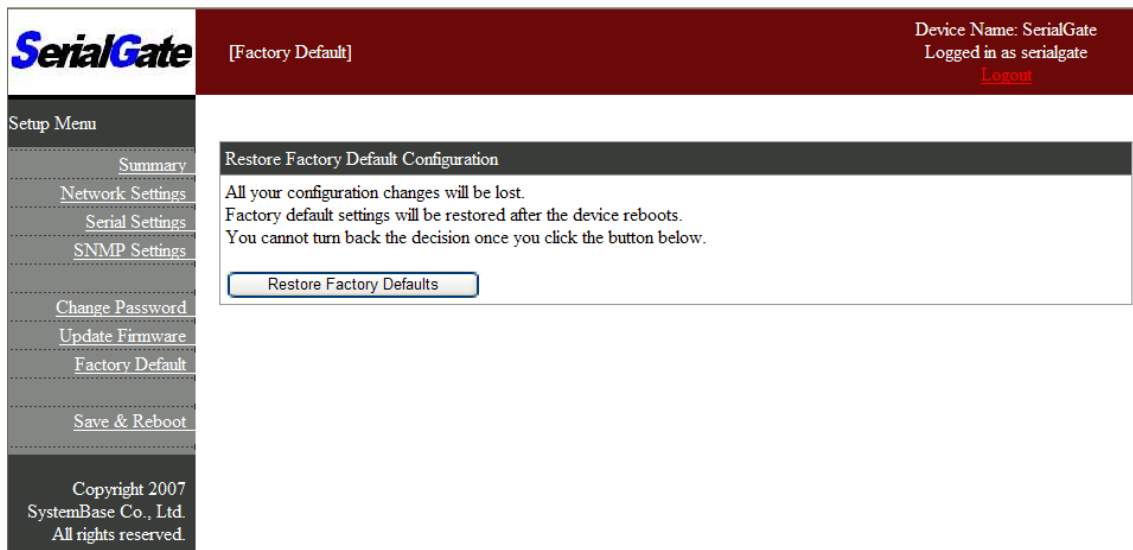


Firmware is an application embedded in Flash memory of SerialGate. Set the location of the firmware file to update, using the 'Browse...' button. The selected firmware will be transferred to SerialGate when you click 'Start Update'. After the transmission is complete, SerialGate will be automatically restarted to operate with the new firmware.



## 8. Factory Default

Restore all the configuration parameters to the factory default values. Clicking on 'Restore Factory Defaults' button will delete all current settings and restore settings to the initial status. SerialGate will automatically reboot. You cannot turn back the decision once you select this option.



**SerialGate** [Factory Default] Device Name: SerialGate  
 Logged in as serialgate  
[Logout](#)

Setup Menu

- Summary
- Network Settings
- Serial Settings
- SNMP Settings
- Change Password
- Update Firmware
- Factory Default
- Save & Reboot

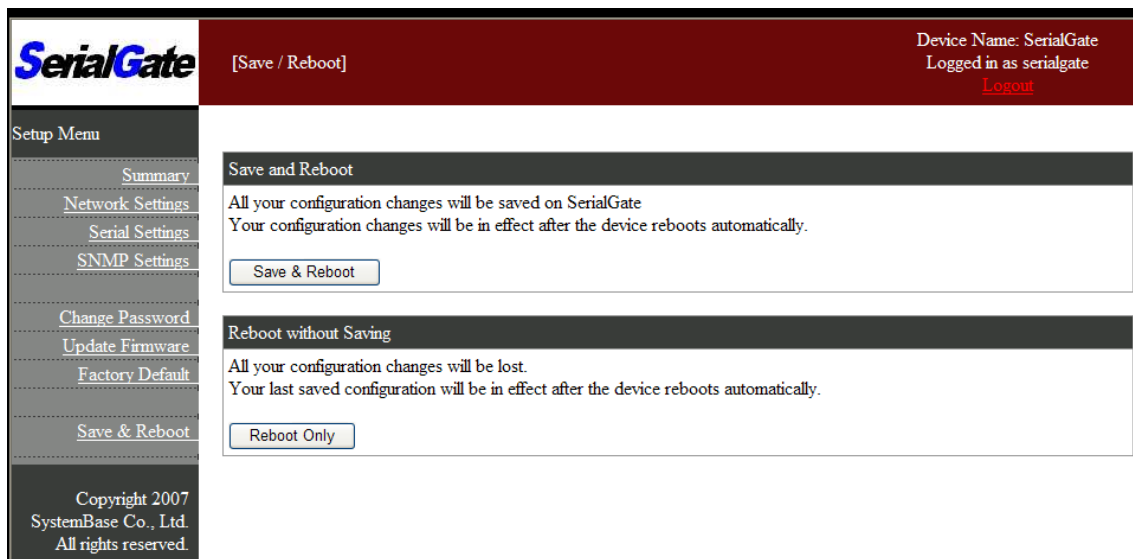
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**Restore Factory Default Configuration**

All your configuration changes will be lost.  
 Factory default settings will be restored after the device reboots.  
 You cannot turn back the decision once you click the button below.

### 9. Save & Reboot

This option saves changes to the Flash memory and restarts the system to let the changes to take place in the operation.



The screenshot shows the SerialGate web interface. At the top left is the 'SerialGate' logo. To its right is a navigation bar with '[Save / Reboot]' and 'Device Name: SerialGate', 'Logged in as serialgate', and a 'Logout' link. A left sidebar menu contains options like 'Summary', 'Network Settings', 'Serial Settings', 'SNMP Settings', 'Change Password', 'Update Firmware', 'Factory Default', and 'Save & Reboot'. The main content area has two sections: 'Save and Reboot' with a 'Save & Reboot' button, and 'Reboot without Saving' with a 'Reboot Only' button. The footer contains copyright information for SystemBase Co., Ltd. from 2007.

- **Save and Reboot**

'Save & Reboot' reboots SerialGate after saving changes to Flash memory.

- **Reboot without Saving**

'Reboot Only' option just reboots SerialGate without saving changes. This option can be used to rollback the changes you have mistakenly made.

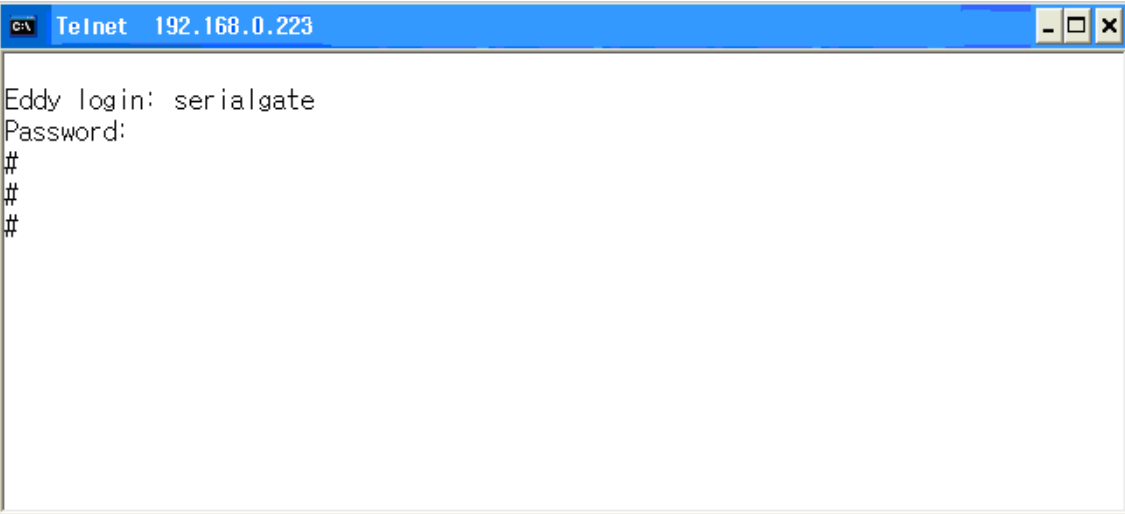
## Chapter 6 Configuration via Telnet

### 1. Connection

Open your telnet client and enter SerialGate's IP address to connect. You need to enter appropriate username and password to login. Please note that this username and password is used as authentication method for Web as well. This means if username or/and password has been modified from the telnet interface, modified values have to be entered to connect to web, and vice versa.

**Factory default username: SerialGate**

**Factory default password: 99999999**



```
TeInet 192.168.0.223
Eddy login: serialgate
Password:
#
#
#
```

With **'def'** commands, you can configure SerialGate's settings.

With **'def view'** commands, you can view current SerialGate's settings.

After changing values, you can see modified values with 'set view' commands. But be careful because these values are not in effect unless you issue a **'def save'** command. Changes will be discarded if you do not save current settings.

## 2. View commands

- **def view / def help**

- **def help** : View Commands
- **def view** : View all current settings.

# Chapter 7 Appendix

## 1. Troubleshooting

This section describes procedures for troubleshooting problems you may encounter with SerialGate, and is divided into the following sections:

- Installation Problems
- Configuration Problems
- Intermittent Problems
- Protocol-Specific Problems

### ▪ Troubleshooting Installation Problems

If you cannot access the connected serial device via SerialGate, first check the network connection and cabling.

- Check the physical cabling to ensure all cables are plugged in (Ethernet and DB-9 serial cable).
- If the appropriate LEDs are not illuminated, then there is probably a bad 10baseT or 100baseTX cable, or the hub port is bad. If possible, try a different cable and hub port, or try connecting a different device to the cable.
- Verify that you are using the correct values for both IP Address and Port Number.
- If you are using a hub, verify that the hub port is operating correctly by trying SerialGate on a different port.

### ▪ Troubleshooting Network Configuration Problems

- If you are using TCP/IP, make sure that your computer and SerialGate are on the same IP segment or can reach each other with a PING command from the host. The IP address you assign to SerialGate must be on the same logical network as your host computers (e.g., if your

## SerialGate User Guide

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computer has an IP address of 192.189.207.3 and the subnet mask of 255.255.255.0, SerialGate should have an IP address of 192.189.207.x, where x is an integer between 1 and 254), or you must properly configure your router address to work with SerialGate.

- If your Device Server is set to Auto or DHCP for obtaining an IP Address, it is possible that SerialGate's IP address can change. Either configure your DHCP server to give SerialGate a permanent lease, or configure SerialGate to be on a STATIC IP address outside the scope of the DHCP addresses.
- The problem may be the result of mismatched or duplicate IP addresses. Verify that the IP address is correctly loaded into SerialGate (via the displayed or printed configuration information or through the remote console), and make sure that no other nodes on the network have this address (duplicate addresses are the biggest cause of TCP/IP connectivity problems). If the IP address is not correct, then check whether the loading procedure was properly executed.
- Also verify that the host computer and SerialGate are using the same subnet masks (for example, if SerialGate has a subnet mask of 255.255.255.0, the host must have the same subnet mask) or that the router is properly configured to pass data between the two devices.
- If the wrong IP address is loaded, check your network for DHCP server, and make sure that the server is not set up to load wrong IP addresses into SerialGate.

### ▪ Troubleshooting Windows Problems

- If you are having trouble accessing the connected serial device through Windows, ensure you can ping SerialGate using the command PING x.x.x.x, where x.x.x.x is the IP address of SerialGate. If you cannot ping SerialGate, you will not be able to access the serial device.
- If you are running COM port redirector and the software reports an error, verify that the correct virtual COM port is being used when the application runs. Verify that your application's COM port settings have been changed to use the virtual COM ports.