

SerialGate

Serial to Ethernet Device Server

White Paper

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Overview

Computer becomes more efficient tool when combined with features provided by the external equipment connected to it.

In order to connect external devices, communication protocol determined as standard is necessary, and the most widely used method is the serial communication. Serial communication is based on Telex communication, and nearly every computer has a serial port. However, communication speed is slow and it is not suitable for long distance communication.

On the other hand, Ethernet enabling N:N communication in high speed is widely used for communication method. Even though Ethernet provides convenient wiring schemes, it is more complex and expensive than serial communication which makes it not ideal for connecting individual device.

- **History of Device Server**

As two methods with different purposes and characteristics coexist, Ethernet has developed to IP network (internet). IP network overcomes the spatial limitation that was in LAN and now supports environment where PC all over the world can be connected on network. Computers and devices do not need to be physically connected, and with IP address they can be logically connected over the network. In this background, the need to connect devices with serial port to Ethernet has increased and the device that connects them over Ethernet, device server, has emerged.

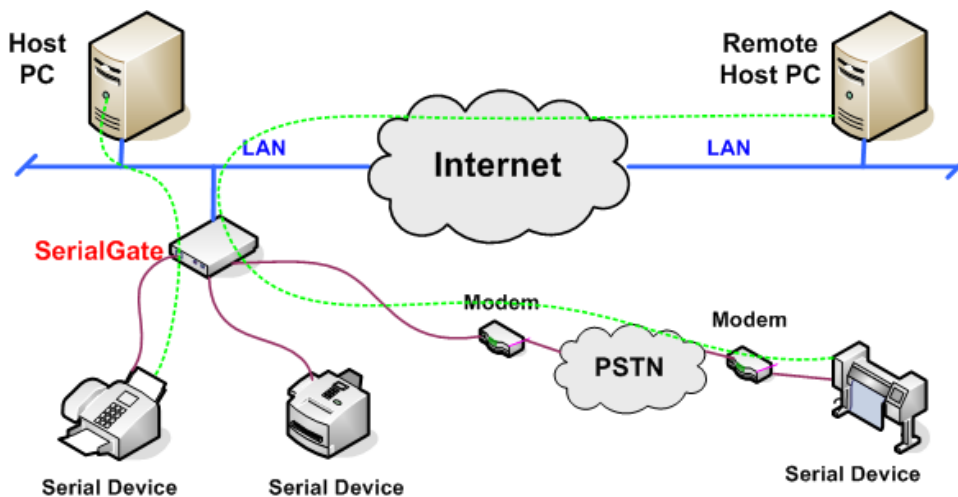
What is a Device Server?

Device Server consists of more than one Ethernet ports and multiple serial ports enables you to easily connect any equipment with a serial port to Ethernet. Devices connected to a device server get the same effect as they are directly connected to the Ethernet. As devices are indirectly connected to the target computer via Ethernet connection with the help of the device server, it provides an environment where a variety of tasks is performed more effectively.

SerialGate

SerialGate is network access equipment which transforms socket communication as well as RS232/422/485 serial communication and modem to a Ethernet based communication.

SerialGate does not only work as a standard device server but also provides additional features such as Portview and Com Port Redirector.



(Image) SerialGate Application

SerialGate series is made up of various models by the number of serial ports.

These devices supports all types of serial (RS-232/422/485) communication mode and RS-232 only depending on their models so the users can choose the right product for the right use.

SerialGate Features

- **Device Connectivity and Management**

SerialGate reads RS232/422/485 signals from a serial device and transmits to network. In contrast, network data could be sent to serial data, Serial communication speed is up to 960Kbps while ensuring reliability. It supports various network protocols such as TCP, UDP, Telnet, ICMP, DHCP, TFTP, HTTP and PPP. Also, SNMP(Simple Network Management Protocol) 1, 2, considered as a worldwide network management standard, is supported.

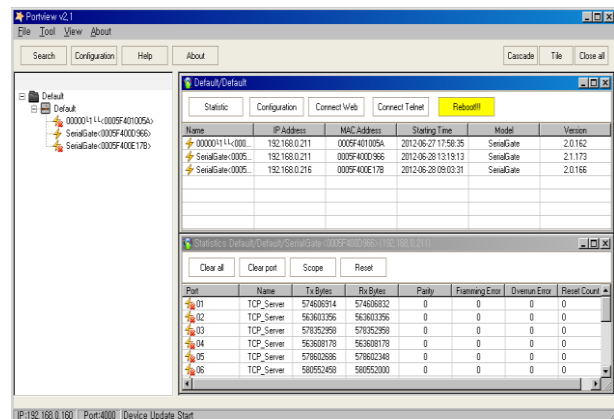
- **Configuration**

SerialGate helps the user to easily set up the environment for a high level of communication. Via web browser or Telnet, it is available to configure serial communication, network, security, management and other advanced settings. SerialGate provides easy and simple interface for setting via web browser while various commands are available in Telnet.

- **PortView**

PortView is a real-time communication status monitoring program for SerialGate.

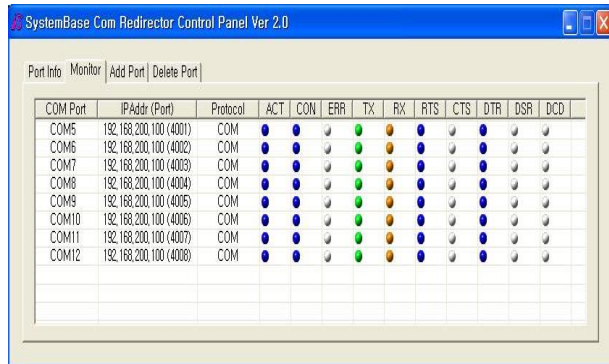
In a Windows System(PC), SerialGate communication and all input/output data through its serial port can be monitored from a remote site. If a user encounters problems with the equipment connected, it can remotely diagnose and fix.



- **COM Port Redirector**

COM Port Redirector is a Serial-to-Ethernet conversion driver.

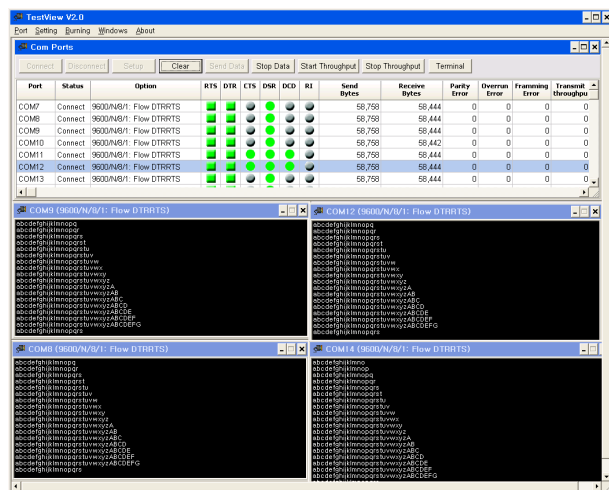
It allows a user to utilize serial ports of device server as they are serial ports on PC. User does not need to write a new socket program to use the existing serial communication program.



- **TestView**

TestView is an application running in Windows. It tests performance and reliability of the products supplied by SystemBase.

It provides TCP, UDP server/client features, and performance, reliability, and stability can be evaluated using the burning test.



SerialGate Application

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

- **Factory / Industrial Automation**

PLC, Robotics, Human-Machine Interface, Warehouse rail

Medical equipment, Test equipment

Alarm device



- **Consumer Electronics / Electronic Appliance**

Power management, Game console

Gas detector, Pollution measurement

Data collection and distribution equipment

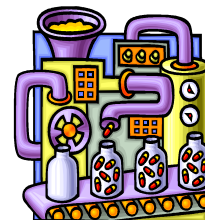
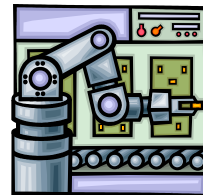


- **Finance / Building Automation**

Card reader, barcode scanner, KIOSK, POS equipment

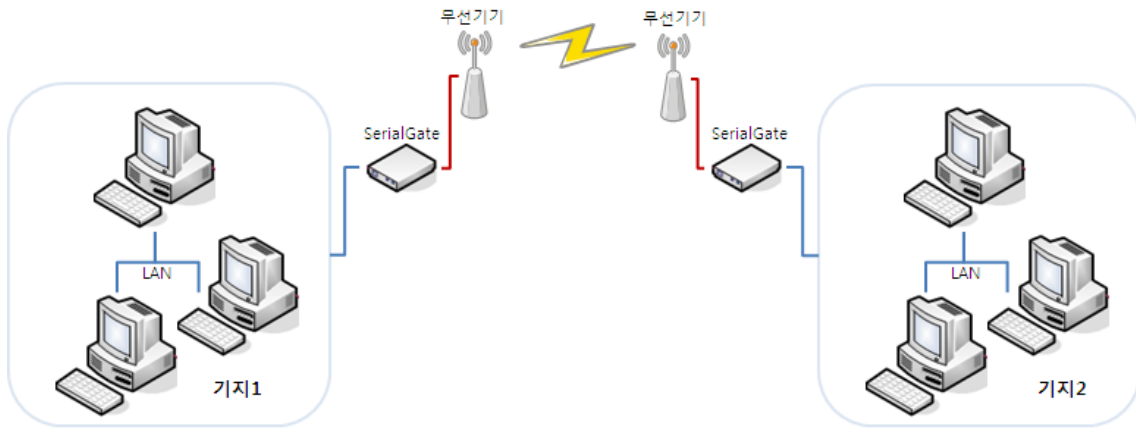
Serial printer, ATM, Credit card terminal

Security equipment



- **SLIP(Serial Line Internet Protocol)**

Bluetooth, WiFi, broadband wireless equipment can be utilized to build a network.



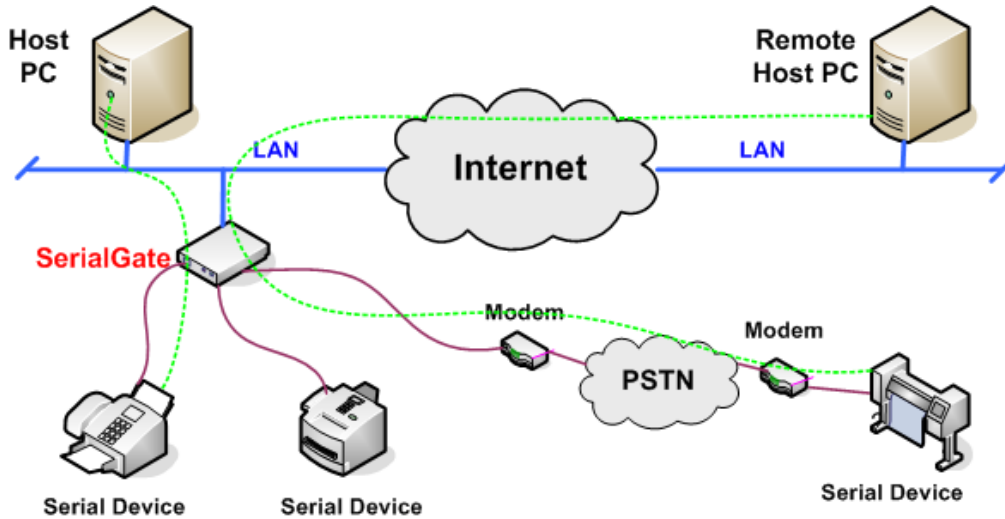
- **Serial Communication Tunneling**

Tunneling extends cable in between PC and serial devices to network so it makes serial cable with no distance limitation. Also, internet section can take advantage of various media, such as the wire, wireless, and PPP.



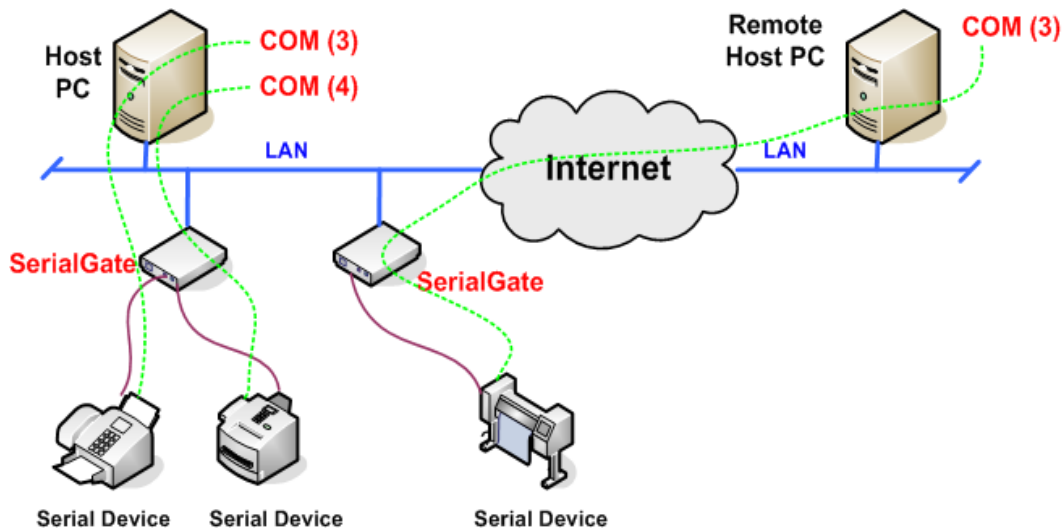
- **Serial to Ethernet Device Server**

As the most common example, PC and SerialGate are connected to network, and serial devices connected to SerialGate can be controlled in PC. Using 'Com Redirector' feature, it is available to use the program developed for Com Port.



- **Remote COM Port**

To provide remote COM Port, SerialGate provides Com Redirector.



- **Serial Device Sharing**

Through TCP Multiplex Protocol, SerialGate provides an environment in which a serial device can be used simultaneously by up to five PC.

