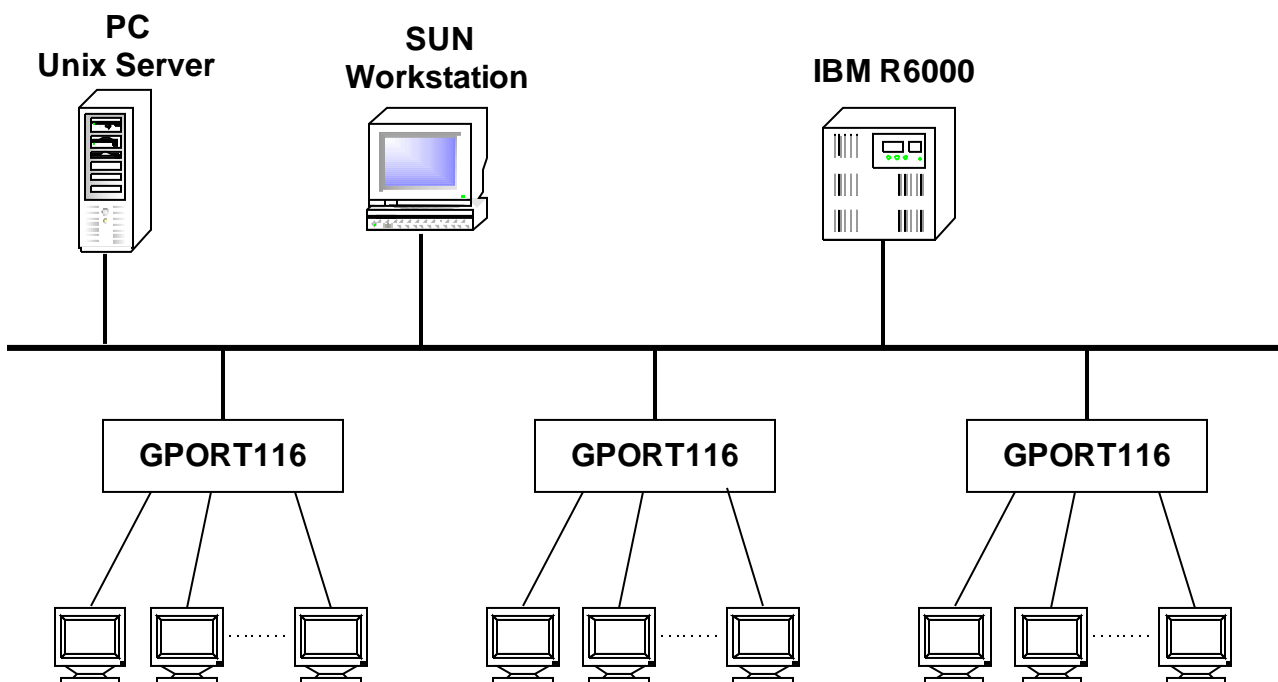# Application structure for GPORT IP serial device server

1. Expand the number of serial port for host

Generally one host (minicomputer, UNIX workstation or PC server) just have limited number of serial ports itself. However, one host may need to connect with multiple serial port equipments. So we need to extend the number of serial ports in one host.

For PC server we can use multi-user card to extend the serial ports in PC server upto 256 ports. Multi-user card are installed in expansion slot (ISA or PCI) of PC server directly. With the driver program to install in PC server, we can have such serial port available as standard COM port in PC server. It is very simple. But we can have limited serial ports to add. And the serial port in multi-user card will be used in this PC server only.

GPORT IP serial device server is another solution to expand the serial port in host. GPORT IP serial device server can be installed in any location with IP network reachable. We can install GPORT server anytime and anywhere. And there are no limitation for serial port to add. And we can have multi-host to use the serial port in GPORT. The serial port in GPORT box is not limited to use by one host only.
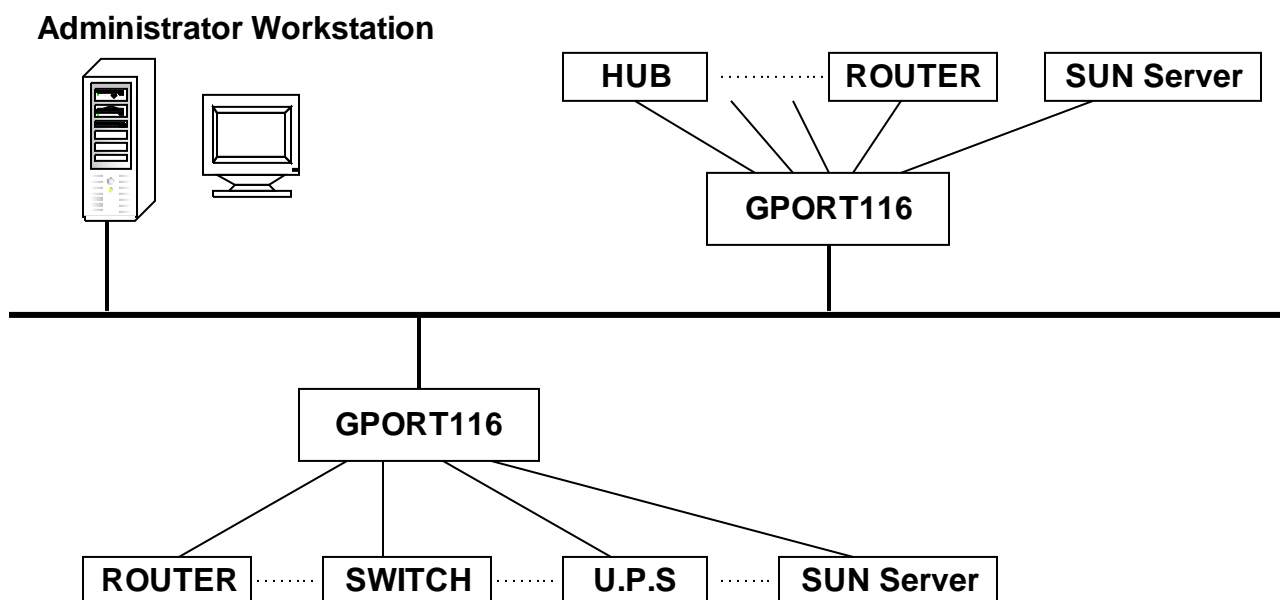
Application structure for GPORT IP serial device server

2. Equipment console management

A lot of intelligent equipment (ex, router, managed switch, UPS, PSTN switch, network terminal equipment...) provide console port to allow administrator to setup or monitor the system. Generally we can use terminal to connect with console port to handle such task.

When the number of equipments are too large to handle. It is not reasonable for each console port with one terminal or to move terminal for every equipment. So we can use GPORT IP serial device server to connect with every console port. When we set every serial port in GPORT box with one unique TCP port number. Then we can work in any location to "Telnet" with GPORT and assign target TCP port number for dedicated console port. By establishing one transparent channel between console port of dedicated equipment and the application program, GPORT can allow the administrator to achieve the same effect as console port connection directly.

In Windows system you may open many terminal emulation program to connect with every console ports simultaneously. So it is very easy for you to communicate with every intelligent equipment anytime and anywhere the IP network reachable.

Administrator Workstation

Application structure for GPORT IP serial device server

3. Let serial device as networked device.

Upon IP network is more popular. There are many industrial application environment will use IP network to handle the data communication. But there are many devices (ex, sensor, detector, PLC, card reader....) just work in RS232/422/485 serial port. So we can connect such device to GPORT box. We can offer each device with one unique TCP/UDP port number. Then all the IP network communication task will be handled by GPORT. So the serial port only device will be worked as intelligent networked device.

In this application we may use TCP for connection style application. We can also use UDP for connectless style application. In UDP style application we can let the serial port only device to send data to multi-host for data backup purpose. All the data in serial port will be handled as raw data to send in IP network. We can have flexible architecture to handle the data in application host and networked device (GPORT handled serial port device).

Control Center

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GPORT116
   |
Sensor ···· Relay ··················· Valve
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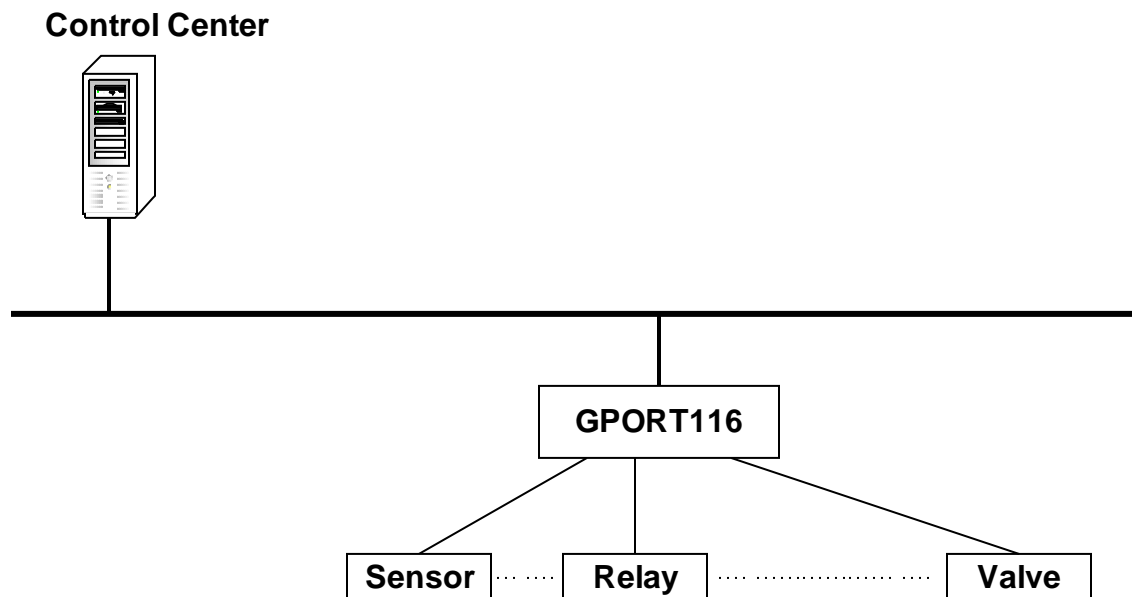
Application structure for GPORT IP serial device server

4. Transparent TCP/IP connection between two serial ports

In real application environment we may need to connect two serial port in long distance. Originally we may use MODEM or other method to cover such requirement. Due to the TCP/IP network is popular and popular. So it is very easy for two IP devices to connect in any location.

GPORT box can let every serial port with unique TCP port number. We can let one serial port in location A to connect with the other serial port in location B via IP network. What you need is to set one GPORT in TCP client mode and the other GPORT in TCP server mode. Because GPORT will establish the TCP connection automatically. It is just like that you have one cable to connect both serial ports directly.