



Date: April 30, 2003

Re: Application Note

To: Global Distribution

Application Note Using the ABLELink Serial Server with an OCS

Overview

This application note shows how to get Cscape™ to talk to an OCS without an Ethernet Port via Ethernet. Figure 1 shows the ABLELink GW21R Dual Port Industrial Serial Server and the GW21E Single Port Serial Server that this application note refers to. The ABLELink allows a serial device such as an OCS or MiniOCS to be placed on a new or existing Ethernet LAN (Local Area Network) and another device (such as a PC using serial software) to talk to it over the Ethernet network. On the OCS side the ABLELink hardware is used to connect to Ethernet. On the PC side VirtualCOM serial server software is used to map an unused Comm Port on the PC to an IP address and port number as shown in Figure 2.



GW21R



GW21E

Figure 1 - GW21R Dual Port Industrial Serial Server and GW21E Single Port Serial Server

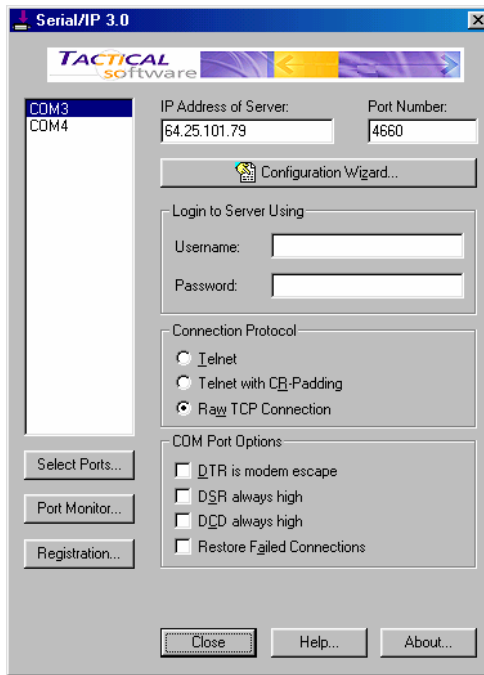


Figure 2 – Serial/IP PC Configuration

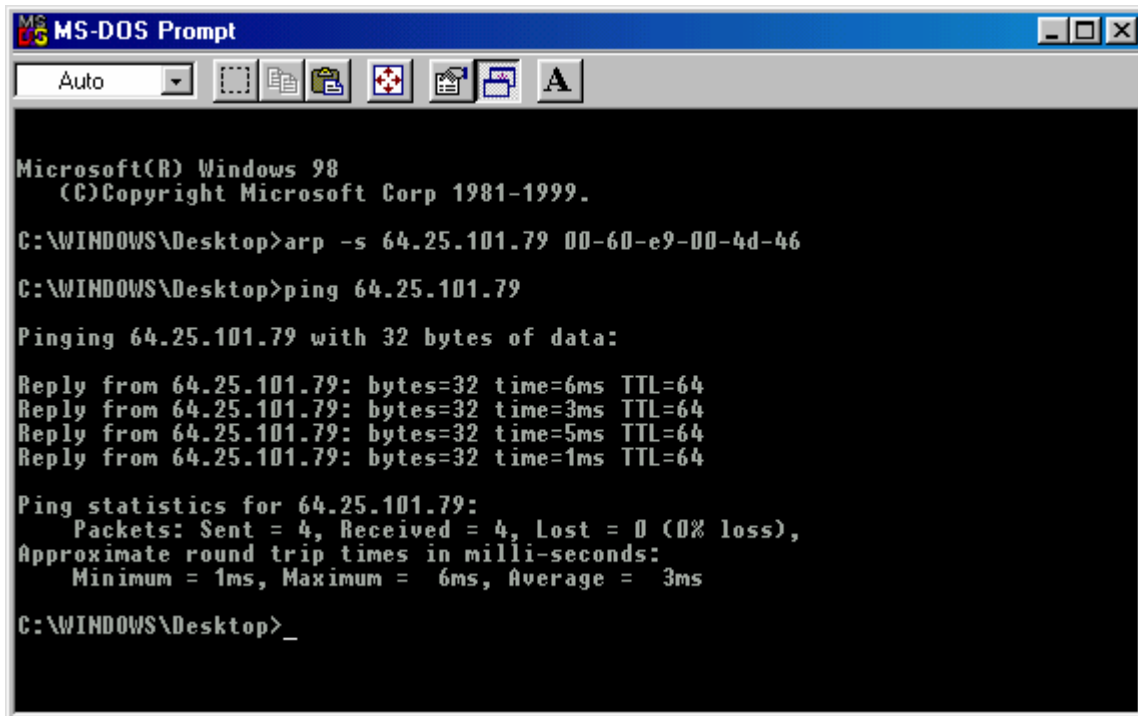
The features of the GW21R and GW21E are identical except the 21R has two serial ports and the 21E has one. Also, the 21E uses an included external power adaptor and the 21R requires external 24Vdc power.

Why Use the ABLELink?

The ABLELink can be used in situations where the ETN100 Ethernet SmartStack Module cannot be used because of price concerns and when you are using miniOCS and miniRCS, or they are installed in a remote location. The ABLELink allows you to connect the miniOCS/RCS to an Ethernet network – no need for a clunky modem. Also the ABLELink can be used to talk to the **Horner Cscan OPC Server** meaning that data can be read and written from and to an OCS from miles away over the Internet. This same technology means you should be able to talk Modbus over the Internet whether that means between OCS's or from PC to an OCS or even with another Modbus device. Because the OCS can talk DeviceNet master or slave, and the Horner TIU can talk on many different networks, the possibilities are almost limitless when using an OCS or a TIU as a gateway. In this document, the communications between Cscan and the OCS over Ethernet are discussed which lays the groundwork for many other applications such as using the Cscan OPC Server.

Setting Up the Hardware

The first thing you need to do is issue an arp command from DOS to assign an IP address to the ABLELink. If the IP address you want to assign is 64.25.101.79 and the MAC ID that is on the bottom of the ABLELink reads 0060E9-004D46, then it should look like Figure 3. Notice also in Figure 3 that the device is then issued a ping command to see if it can be reached.



```
MS-DOS Prompt
Auto
Microsoft(R) Windows 98
(C) Copyright Microsoft Corp 1981-1999.
C:\WINDOWS\Desktop>arp -s 64.25.101.79 00-60-e9-00-4d-46
C:\WINDOWS\Desktop>ping 64.25.101.79
Pinging 64.25.101.79 with 32 bytes of data:
Reply from 64.25.101.79: bytes=32 time=6ms TTL=64
Reply from 64.25.101.79: bytes=32 time=3ms TTL=64
Reply from 64.25.101.79: bytes=32 time=5ms TTL=64
Reply from 64.25.101.79: bytes=32 time=1ms TTL=64
Ping statistics for 64.25.101.79:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 6ms, Average = 3ms
C:\WINDOWS\Desktop>_
```

Figure 3 – Setting the IP address from DOS

After you perform the arp command, you can access the setting 3 different ways - through Telnet, through your Web browser, or through the monitor.exe which is on the CD supplied with the unit. Figure 4 shows the configuration as seen via monitor.exe. Configure the ABLELink the way that is shown in Figure 4.

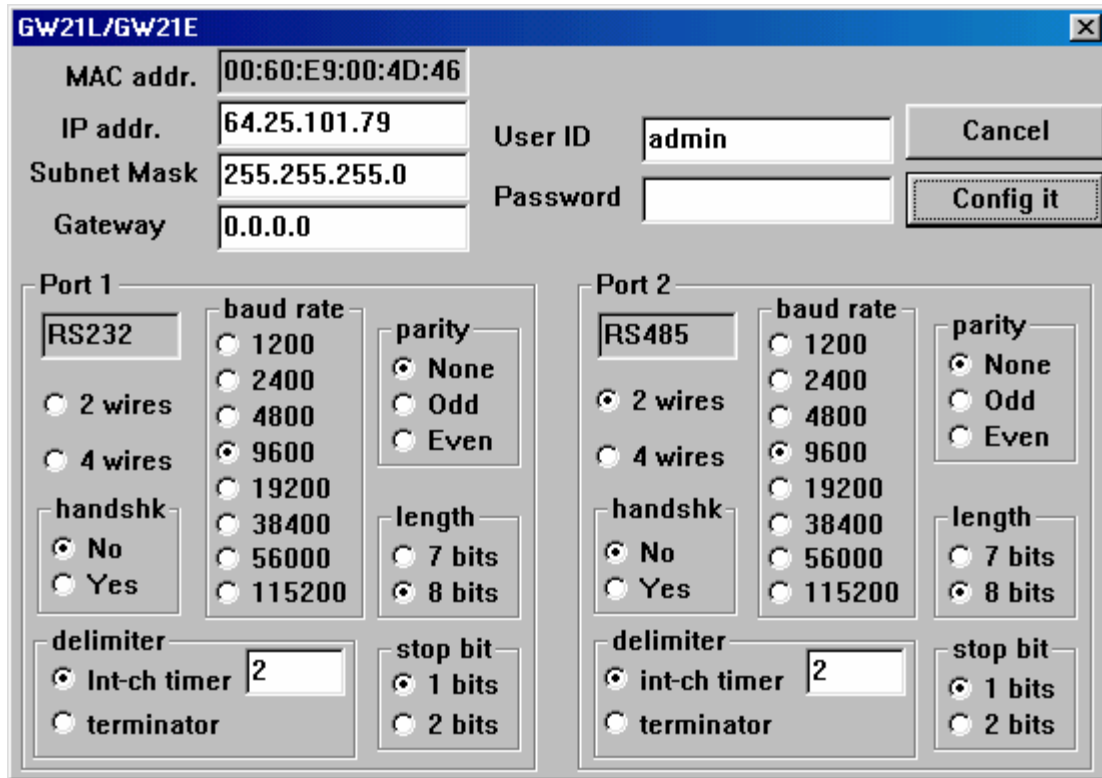


Figure 4 – Configuration as seen with the supplied monitor.exe program

Notice that the “Int-ch timer” is set up for 2 ms. This seems to work the best for fast communications with Cscape. Any baud rate over 9600 baud doesn’t work and it doesn’t seem to communicate with the hardware handshaking turned on. The fastest the ABLELink will communicate with Cscape is slightly slower than 9600 baud actual speed.

Setting Up the Serial Server On a PC

The Serial-IP software is required from ATOP Technologies (www.atoptechnologies.com). The software package is called VirtualCOM, and it can be downloaded as a 30-day evaluation, free, off of the Web site. After it is installed it will allow you to check which Comm Port(s) to use from a list of non-used ports. Com 1, 2, 3, or 4 need to be selected for Cscape to be able to access it. It will put an icon in the taskbar of your computer. If you right click on it, you are given the option to configure the port. That is where you assign the IP address of your ABLELink as shown in Figure 2. Ask your system administrator for an appropriate IP address to use. It also has a field for the port number. Use 4660 for port 1 and 4661 for port 2. Port 1 is by default RS-232 and port 2 is RS-485. Both are configurable to either RS-232 or RS-485 by a bank of jumpers for each port inside the enclosure. See the manual on the CD for more details.

Wiring Considerations

Use a normal straight through 9-pin com cable to connect the ABLELink to the OCS. No adapters are necessary. The ABLELink Ethernet Port will take a standard RJ-45 Ethernet Cable to a hub or switch.

Cscape™ Setup

Cscape should be set up for the Virtual Comm Port that was configured in the serial-IP software in Figure 2. In Cscape under the Tools|Options, Communications Port Tab limit the high speed of the communications to 9600. Figure 5 shows the Communications Port Tab.

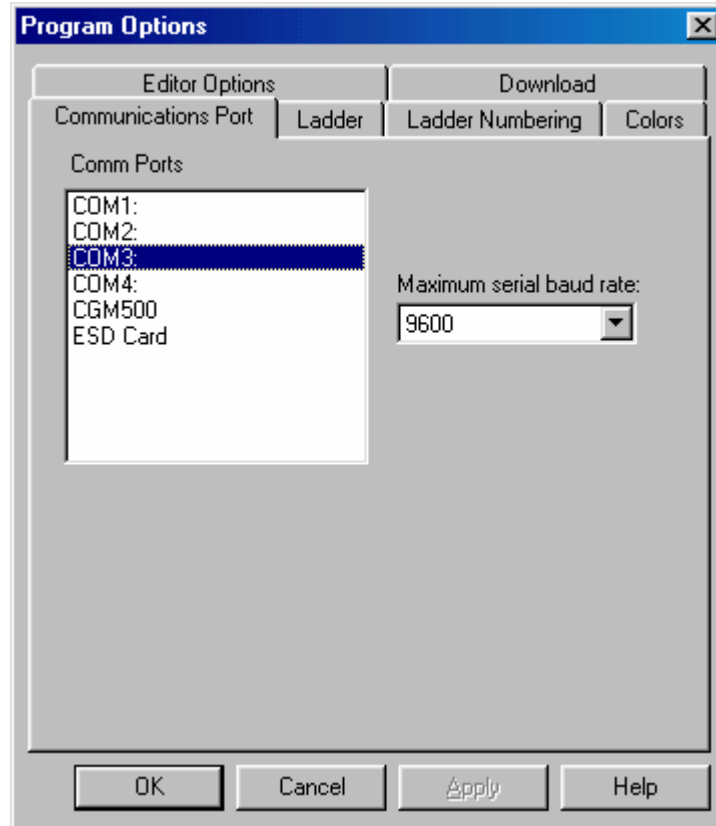


Figure 5 – Communications Port settings for Cscape

Once all is set up as described, you should be able to talk to your OCS from Cscape as if you were directly connected. In fact you should be able to see “Local” and then the node id of the OCS the ABLELink is directly connected to. If not, you may have to start the connection with the serial-IP software. Do this by clicking on Configuration Wizard from the configuration screen and then start the server. The configuration wizard is shown in Figure 6.

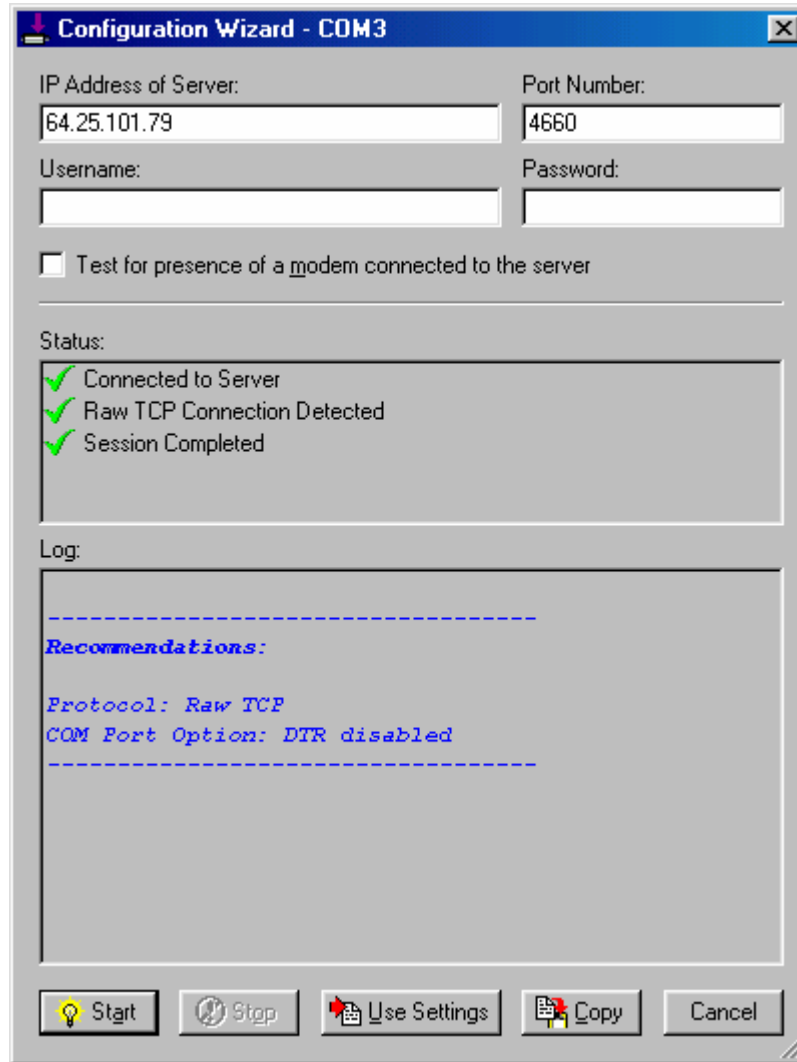


Figure 6 – Configuration Wizard for serial-IP server.

Product details are also available in the ABLELink manual. For additional information, please call Tech Support, toll-free: 877-665-5666, press #3, or call: 317-916-4274, press #3. You can also send questions by e-mail: techsppt@heapg.com.

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