

Module 1

Allen Bradley ControlLogix



ETH Driver Configuration

RSLinx

Student Materials

ETH Ethernet Driver: RSLinx

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Handout B5-1: RSLinx Basics

RSLinx is a communication software sold by Rockwell Software, that allows Allen Bradley hardware devices (such as PLCs) to communicate with Microsoft Windows Operating Systems

RSLinx will not only be used to communicate with Allen Bradley PLCs, but also with Panelviews, Allen Bradley motor drives, and other Allen Bradley smart devices.

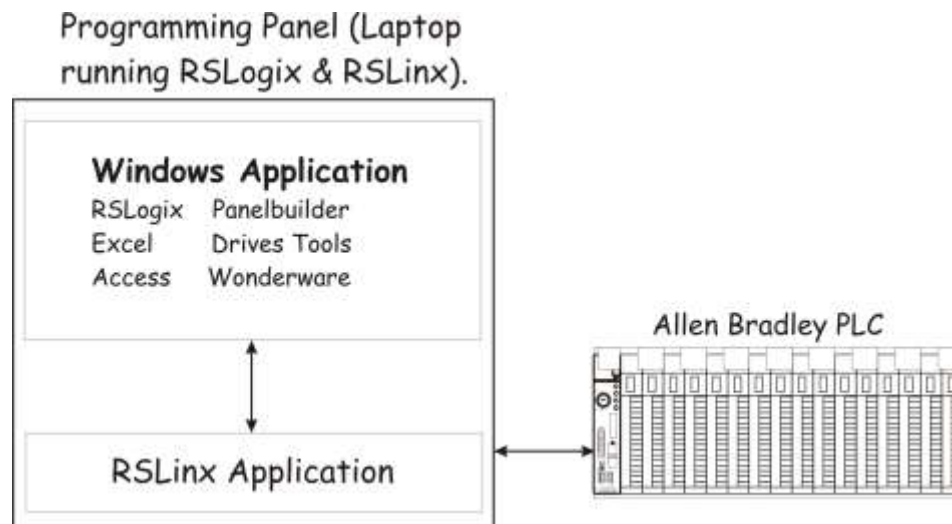


Figure 1-A. RSLinx for communications.

RSLinx is a application that interfaces Allen-Bradley networks and devices to Microsoft Windows Operating Systems . RSLinx can also run numerous conversations between PLC's and Windows applications.

Versions of RSLinx:

Here are some of the more common versions of RSLinx:

RSLinx Lite:

This version of RSLinx allows Allen Bradley PLC's or other AB hardware (Drives and Panelviews) to communicate with Rockwell Software PLC Programming Software. Lite uses the direct drivers of the RSLinx model to communicate at a very high speed. RSLinx Lite is packaged with RSLogix5/500/5000, A.I. programming software, Panelbuilder or Drives Tools. This version of RSLinx is free.

RSLinx OEM:

This version of RSLinx is primarily used to allow HMI (Human Machine Interface) products to communicate with Allen Bradley PLC's. This version has all of the functionality of RSLinx Lite. An example of this is if you had a computer running RSView32 or Wonderware HMI, communicating with AB PLC-5's or Logix5000, you would need only this version of software.

RSLinx Professional:

This version of RSLinx has all the features of Lite and OEM, but also DDE, OPC and Advanced DDE for any Advanced DDE-aware client. An example of this is if a Quality Control Engineer wanted to use Excel to look at live PLC data to determine and monitor quality, they would need this version. The user could drivers in RSLinx to communicate with PLCs, then have Excel communicate with RSLinx, to do analysis of the data in the PLC.

RSLinX Gateway:

This version of RSLinx has all of the features of RSLinx, but also will work as a "PLC hardware interface driver" server for the full enterprise. This will allow users throughout the enterprise, that do not have PLC interface hardware, to still communicate to the PLC of their choice back to their own programming or data acquisition station (Excel) with only a package of RSLinx or WinLinx on their computer. They will also need a network interface card logged into a network running the TCP/IP protocol. We will discuss Gateways in a later lesson.

The only difference between the different versions of RSLinx as listed above is the copy protection. RSLinx OEM, RSLinx Pro and RSLinx Gateway all have a different activation file. RSLinx Lite is not copy protected. When you load RSLinx and run it, it will be the Lite version. If you add the RSLinx Pro activation file from a Master Disk, it will become RSLinx Pro. If you then add the RSLinx Gateway activation file, the RSLinx will function with the Gateway capability.

The type of activation file you load onto your computer will determine what capabilities of RSLinx is available.

Executing RSLinx

Typically there are two easy ways to start RSLinx: through the start/programs menu from the desktop or double clicking on an RSLinx shortcut icon that is found on the desktop. The user can place a shortcut to RSLinx on the desktop by going through the start/programs menu, then instead of left clicking to execute RSLinx, a right click, drag and drop will copy the short cut to the desktop.

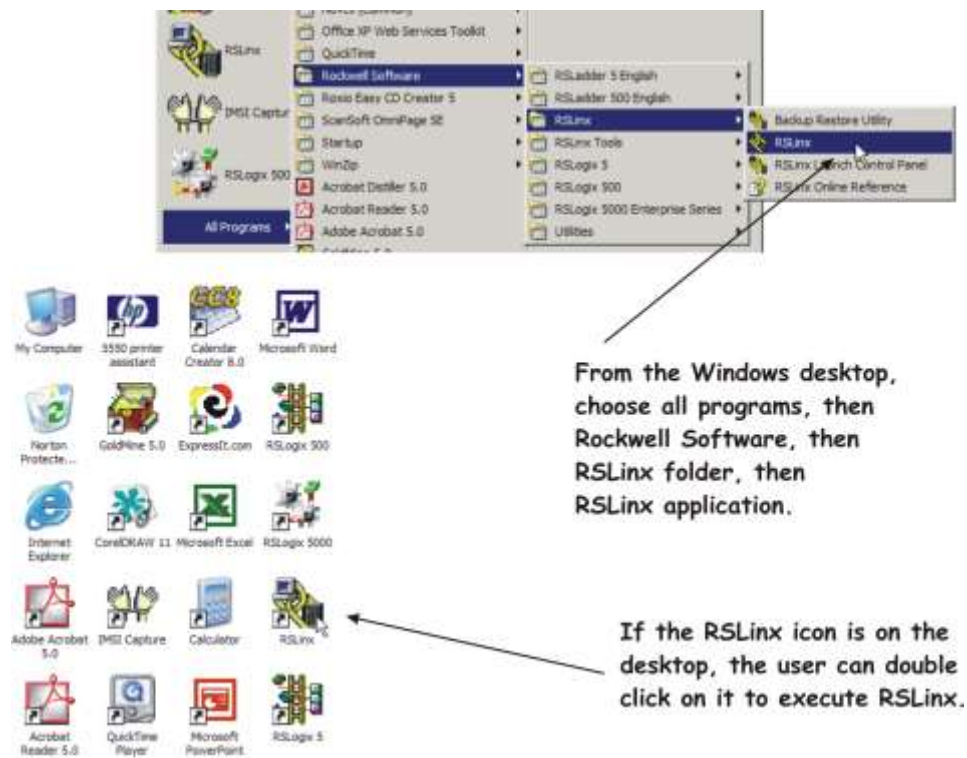


Figure 2-A. Executing the RSLinx software.

RSLinx can also run as an Windows Service. This means it will start automatically when the computer powers up and can be accessed in the system tray (located in the lower right hand corner of the screen). To set this feature, go to Control Panel and choose Services (this is under Administrative Tools).

This is the system tray located on the bottom right of the desktop. These programs are running if in the tray.



This the icon for RSLinx.
It is setup to start automatically when the computer boots up.

Figure 3-A. RSLinx running in the system tray.

RSWho is RSLinx's main window that displays networks and devices in a style similar to Windows Explorer. A variety of integrated configuration and monitoring tools are accessible by right-clicking on the device in RSWho. The following illustration will define the RSLinx/RSWho main screen.

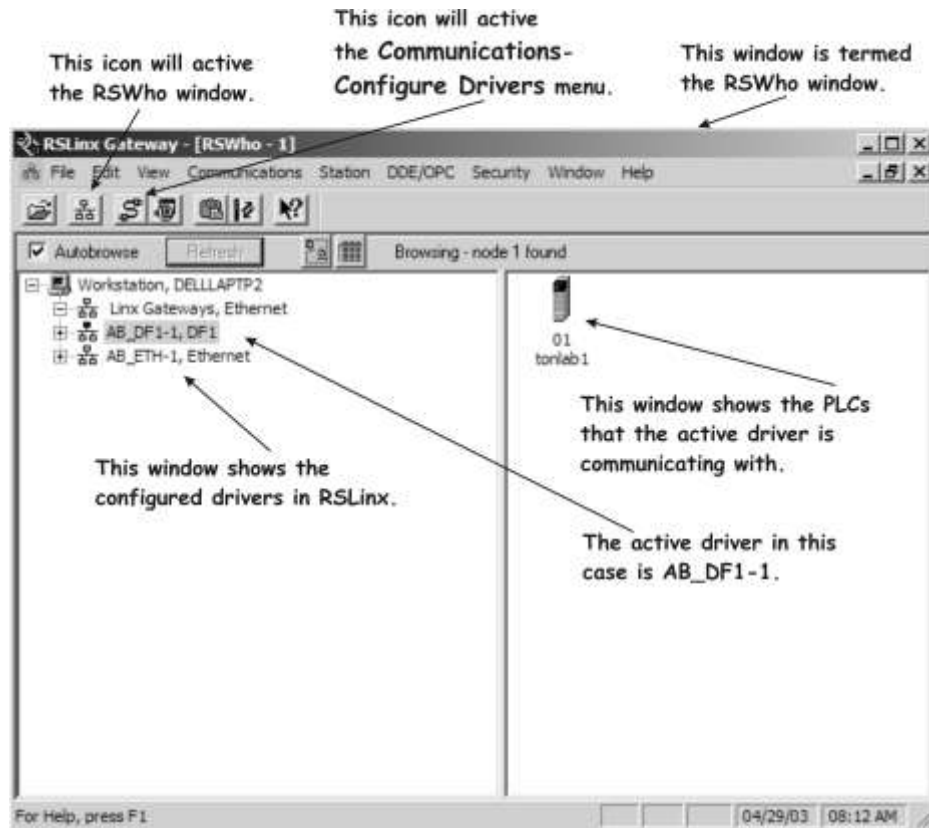


Figure 4-A. RSLinx screen definitions.

On the main RSWho screen, the Autobrowse button is checked on by default. While on, RSLinx will continually browse the network of the active communication driver for PLC stations. Some users will turn this feature off, in an effort to reduce the network traffic, especially if the drivers are used for more than just communication with RSLogix5000.

When the RSLinx is properly executed, the main window of RSLinx will be displayed as shown in the following illustration. The RSWho menu must be executed in order to show the drivers and PLCs that are communicating through these drivers.

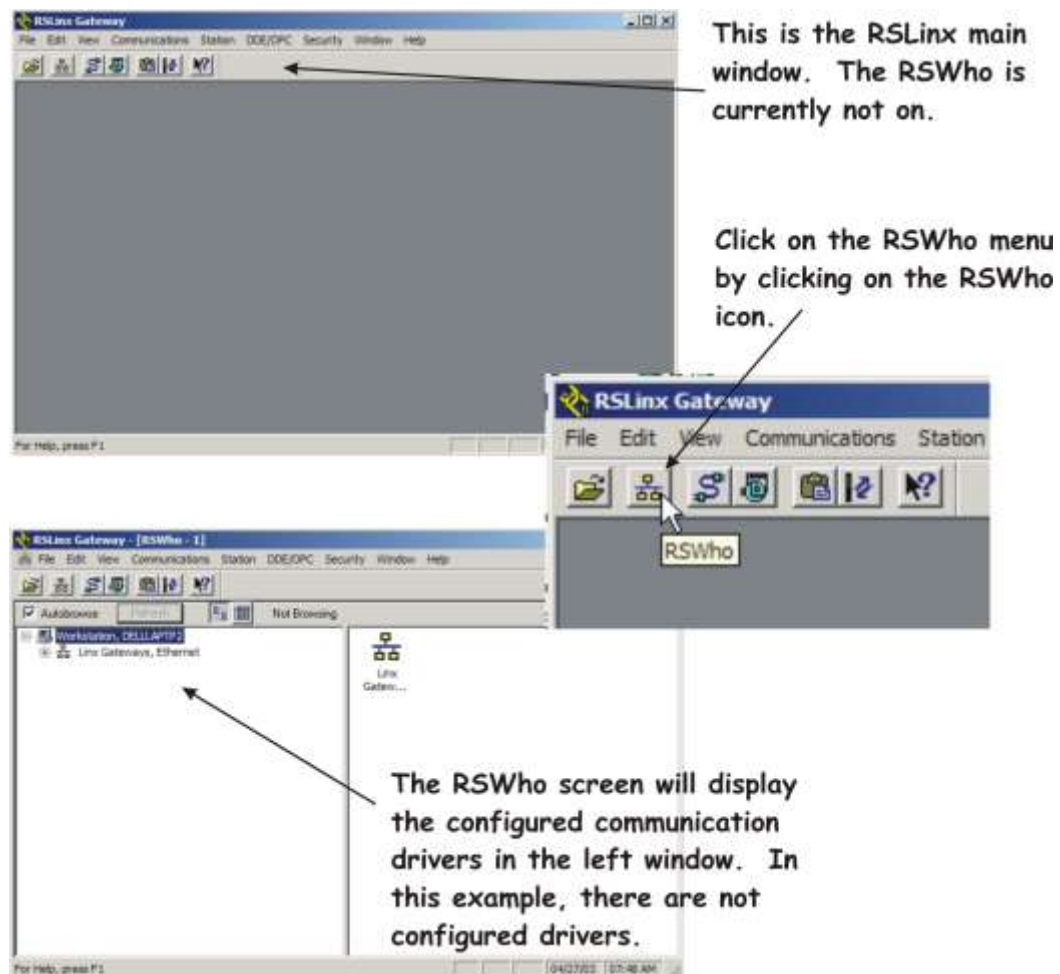


Figure 5-A. The RSWho Screen.

A communication driver is a configuration that shows the application (RSLogix5000) the path to the PLC it will be communicating with.

In the top left corner of the RSLinx application, the user will see the type of RSLinx that they have. Remember that all the RSLinx types will allow communication with a PLC.

At the top of the RSLinx screen, the user will see the type of RSLinx the computer has on it. This example is RSLinx Lite.

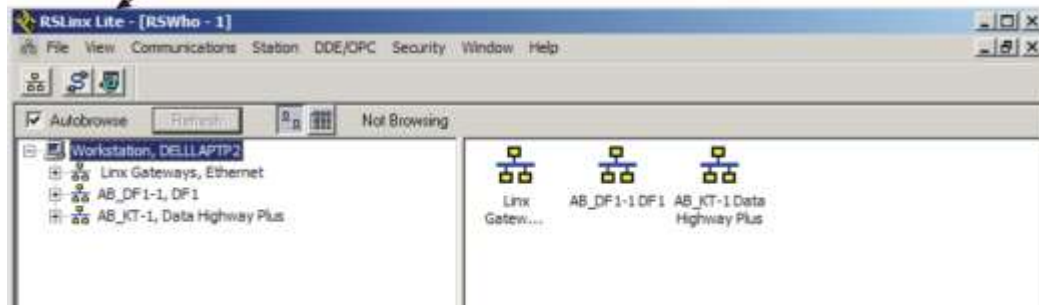


Figure 6-A. Viewing the type of RSLinx on the computer.

Deleting a Driver in RSLinx

Periodically users will delete communication drivers from RSLinx. This does not create problems with the PLC. Only delete drivers that are used for communication between a program panel (computer) and PLC. If a driver is used to interface a PLC to a Wonderware station, and the driver is deleted, the Wonderware station will no longer be able to send commands and monitor status of the PLC. It is not uncommon to have numerous communication drivers in RSLinx. The following illustration will show a user the steps involved with deleting drivers in RSLinx.



Figure 7-A. Deleting a driver in RSLinx.

Creating ETH Drivers in RSLinx

In this section, the user will be shown how to create an ETH Ethernet communication driver in RSLinx.

Ethernet - Ethernet is network standard that uses the TCP/IP communication protocol to communicate. This is the common network interface used in factory floor automation, and for office networking. The speed for communication is either 10 or 100 Mbps. In this example, the user will be setting up a driver to communicate between an Ethernet card / port on the program panel (computer), and an Ethernet module on the Logix5000 chassis (1756-ENB / ENBT / EN2TR).

Note: RSLinx has a second type of Ethernet driver with the default name of ETHIP-1.

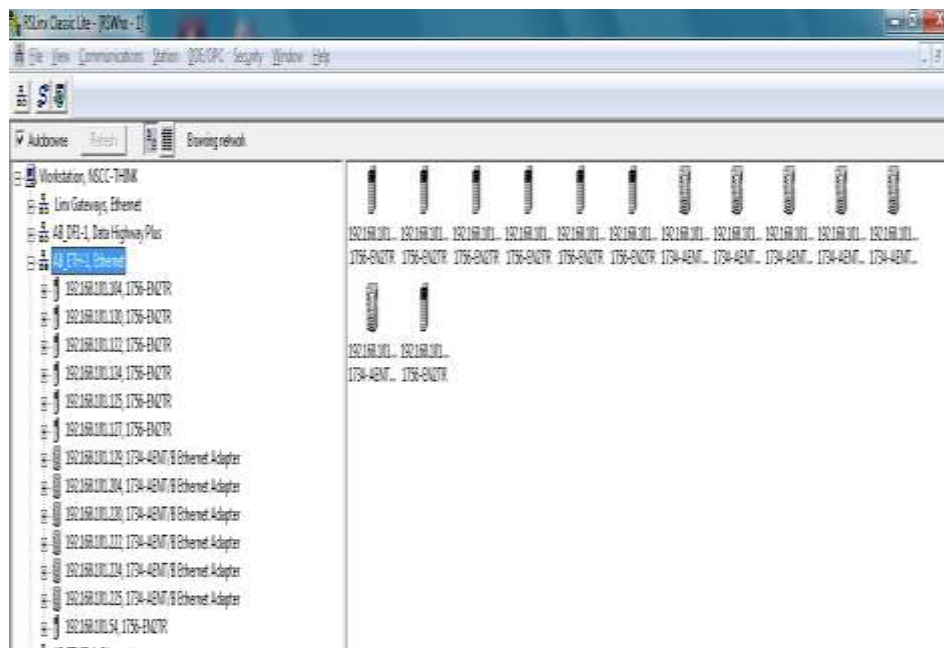


Figure 8-A. Mapped Devices ETH Driver

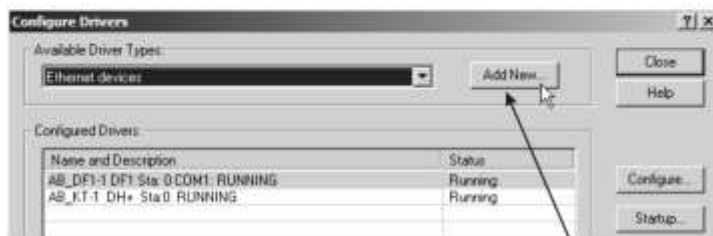
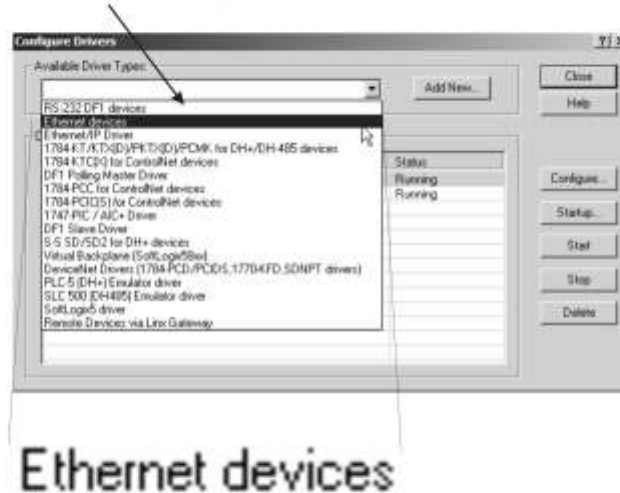
Creating an Ethernet Driver in RSLinx



Open the Configure Drivers menu by clicking on the icon, or using the pull down menus.



In the Configure Drivers menu choose the "Ethernet devices" option.



Click the "Add New" button.

Figure 9-A. Creating an Ethernet driver in RSLinx.

Station Mapping: Ethernet Devices - ETH Driver

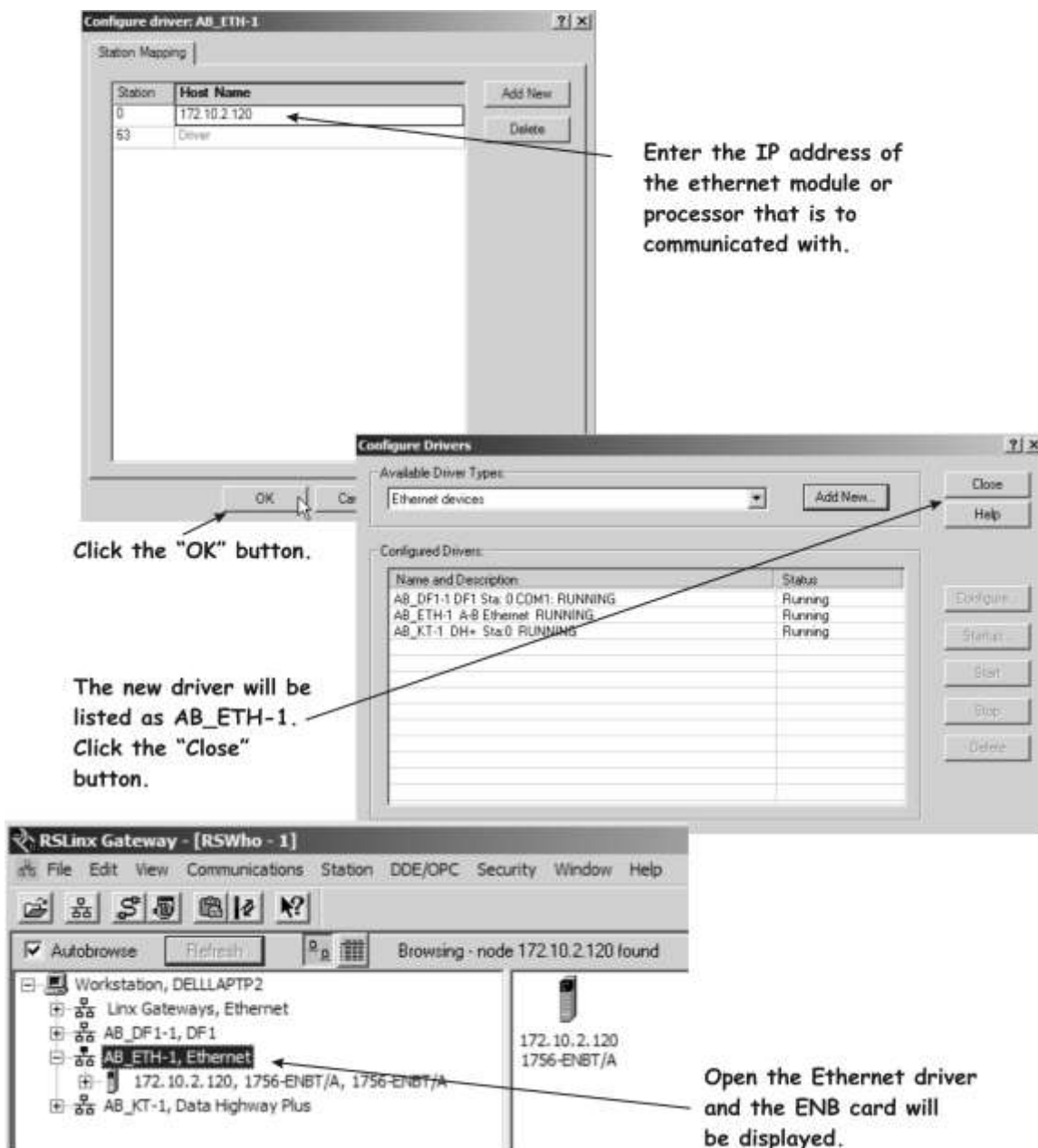


Figure 10-A. Creating an Ethernet driver in RSLinx (Cont.)

Monitoring the Logix5000 PLC

Since the L5000 processor has only one communication port on it (Channel 0, RS-232 / USB), when the user wishes to communicate to the processor with Ethernet, they must go through a communication card on the I/O chassis. Remember, the default driver names for Ethernet is:

AB_ETH-1 for Ethernet (Port on computer to Ethernet card in the chassis)

The following illustration shows RSLinx configured with two drivers. The first is the DF1 driver and shows just the processor. The other is the KT-1 driver which is the default name for any DH+ communications. It shows the DHRIO card, the backplane, and the cards located on the chassis.

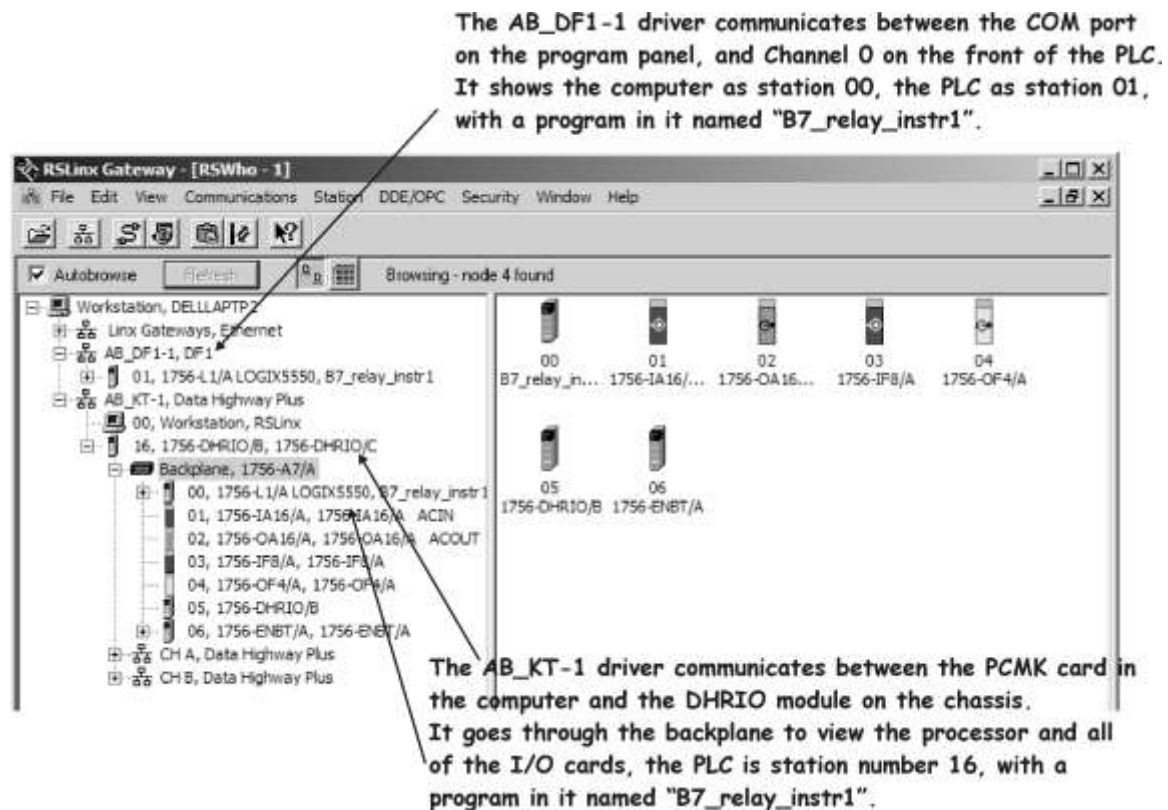


Figure 11-A. Monitoring Drivers in RSLinx.

If RSLinx was communicating with a processor, then communications is lost, a red "X" will be shown over the processor. A common problem is that a cable is off. Another problem can be in the ETH driver is not configured properly. The following illustration shows this situation.

The following illustration shows RSLinx communication through an Ethernet driver. Notice the IP address on the ENB (Ethernet card in the chassis). The view in RSLinx is similar to Windows Explorer. When the user expands the view of the driver, the Ethernet card is shown. Expand that card and the backplane is shown, then expand it and the processor/cards will be shown. In a later unit, we will look at how to configure the Ethernet module.

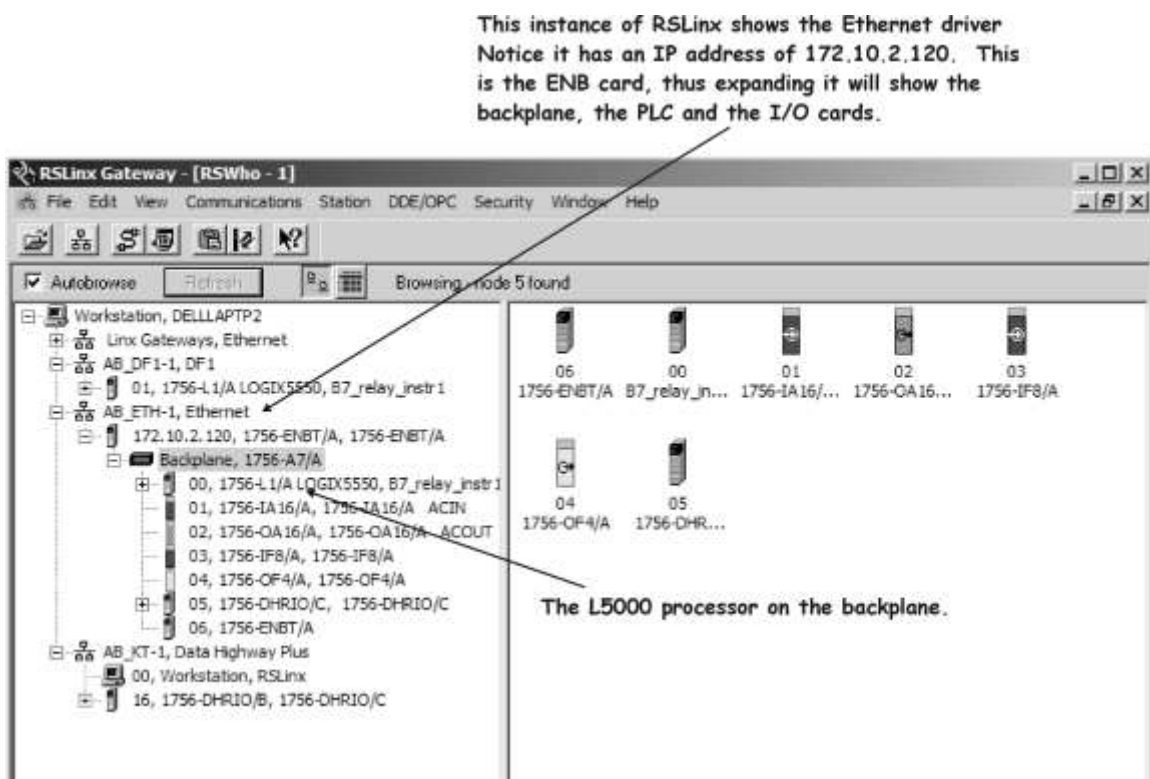


Figure 12 - A. Monitoring through an Ethernet driver.

Review Questions

1. **T F All versions of RSLinx (Lite, OEM, Pro, GW, etc) will allow communications between a program panel (computer) and a PLC.**

2. **A communication driver named AB_ETH-1, indicates which type of communication?**
 - a) Data Highway Plus
 - b) RS-232
 - c) Ethernet
 - d) ControlNet

3. **T F RSLinx will hold only one communication driver at a time.**

4. **A communication driver named AB_ETHIP-1, indicates which type of communication?**
 - a) Data Highway Plus
 - b) RS-232
 - c) Ethernet
 - d) ControlNet

5. **T F The user can delete an active driver in RSLinx.**
6. **While configuring a ETH driver in RSLinx, configuring a list of Ethernet devices is called:**
- a) Add New
 - b) Synchronize
 - c) Baud Detect
 - d) Station Mapping
7. **T F RSLinx can be configured to start up when the program panel (computer) starts up.**
8. **What does it indicate if a red "X" occurs on a PLC within a communication driver in RSLinx.**
- a) RSLinx is no longer communicating with that PLC.
 - b) The PLC processor is faulted out.
 - c) AutoBrowse is not turned on in RSLinx.
 - d) The PLC is in the Program Mode.
9. **T F A driver that is named AB_ETH-1, is associated with the PCMK card in the program panel.**

10. The version of RSLinx that does not require an activation file (copy protection)?
- a) RSLinx OEM
 - b) RSLinx Pro
 - c) RSLinx Lite
 - d) RSLinx PLC

Review Question Answers:

- 1) T
- 2) c
- 3) F
- 4) c
- 5) F
- 6) d
- 7) T
- 8) a
- 9) F
- 10) c

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