Configuring Allen Bradley RSLinx and RSLogix for Use With the PLC Trainer

Accessing and using the PLC trainers located in 2003 SERC requires that the RSLinx software be properly configured for communication. Begin by executing the All Programs->Rockwell Software->RSLinx->RSLinx Classic utility. If the RSLinx software is executing, the \icon should be present in the system tray. The RsLinx software must be running to communicate with the PLCs on the network. With the PLC running, opening this software should show the state of the PLC in a window similar to Figure 1 below.

![RSLinx with RSWho Browsing Ethernet Network.](image_url)

The communication parameters have already been setup for communication between the PC and the PLC. This was done within RSLinx by first selecting a driver (Communications->Configure Driver). This was done by selecting the EtherNet/IP Driver as the driver type and then selecting the driver name as AB_ETHIP-1 (the default). The IP addresses for the four PLC trainers in the lab are given in Table 1. Note these IP addresses are dynamically assigned and may possibly change. The specific IP address assigned to a PLC on the network can be checked on the PLC itself. On the MicroLogix 1100 PLC, press the front panel ESC button and then press the down arrow key until the Advance Set function is selected. Press OK and press the down arrow key until the ENET Cfg function is selected. Press OK to show the current IP address for the PLC. Press ESC until the I/O Status function is selected. Press OK to return to the I/O Status screen.

<table>
<thead>
<tr>
<th>PLC Station</th>
<th>PLC Trainer IP addresses</th>
<th>PLC Lab Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.115.222.50</td>
<td><img src="image_url" alt="Diagram" /></td>
</tr>
</tbody>
</table>
| 2           | 10.115.222.72            | Trainer 2
10.115.222.72   Trainer 1
10.115.222.50 |
| 3           | 10.115.222.75            | Trainer 3
10.115.222.99   Trainer 4
10.115.222.75 |
| 4           | 10.115.222.99            |                |
Use RSLinx to verify the status of each PLC on the network. With the communication driver setup, the RSLogix software may be used to define a program for download and execution on the PLC trainer. The startup state of the RSLogix software is shown in Figure 2.

![Figure 2. RSLogix Startup Screen.](image)

The first step in the creation of a new ladder logic program is the specification of the processor type, the communication driver, and the processor node number. For our installation, the processor type will be the MicroLogix 1100 (Series B). The communications settings will set the driver type (*AB_ETHIP-1*), the processor node number (we will use the default), and the timeout (10 sec. is the default value).

Select **File->New** to begin a new PLC program. The “Who Active” button will initiate the RSLinx software that will allow you to search for active PLCs on a given network. Optionally, the processor may be given a name. The screen capture shown in Figure 3 gives the appropriate processor type settings. Use the “Who Active” button on the “Select Processor Type” screen to select a particular PLC as the target for your program.
After the processor type is configured, an empty ladder diagram is displayed within RSLogix as shown in Figure 4 below.
The next step in the configuration process requires the identification and selection of all I/O modules attached to the PLC and the specification of their location (under Controller, select IO Configuration). The 1762-IF2OF2 module should be selected into slot one. The I/O module configuration can also be accomplished by selecting “Read IO Config” which will read the current I/O module setup for the selected PLC. Results of this configuration step are shown in Figure 5.

Figure 5. I/O Configuration Screen.
The communication channel configuration parameters should be verified by selecting the **Channel Configuration** entry located under the controller folder. The settings under the “**General**” and “**Channel 1**” tabs should match Figures 6 and 7 given below. Make sure that the BOOTP Enable check box is not checked and that the **DHCP Enable** check box is checked.

**Figure 6. General Channel Configuration Tab.**
Figure 7. Channel One Configuration Tab.
At this point, the program is completely configured and ladder logic instructions may be added. Figure 8 shows a screen capture with the state of the RSLogix software with selected data tables displayed.

After the ladder logic code is written, commented, and saved to a file, it must be verified (for syntactic correctness) before being downloaded to the PLC. The computer icon with the check symbol on the menu can be used to accomplish this. If the program verifies as syntactically correct, it can be downloaded to the PLC using the drop down box labeled as OFFLINE in Figure 8. This drop down box displays the state of the communication with the PLC: OFFLINE, REMOTE PROG, RUN, etc.

Other elements of the RSLogix software may be explored using the online help facility.