Application Note
Rockwell Automation PLC / PAC and RSLinx / RSLogix

This document guides you through the setup of proprietary vendor specific software installed on you PC. Your supervisor may provide you with additional or alternative instructions.

The document consists of standard instructions that may not fit your particular solution. Please visit our support website for latest revisions of documentation and firmware:

http://www.secomea.com

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Prerequisites for This Guide

The following guide will assist you to setup a remote and online connection to the Allen-Bradley and Rockwell equipment placed on the customer site using your RSLinx/RSLogix programming software installed on your PC.

Prerequisites for this guide are:

- You have an operational LinkManager installed on your PC with a LinkManager certificate that allows you to connect to the SiteManager agents.

- You have the Rockwell Automation PLC / PAC and RSLinx/RSLogix software installed.

- You have the Allen-Bradley or Rockwell device agent installed and configured on the SiteManager at the remote site, and there is access between the SiteManager and the PLC. (A Serial attached PLC must be configured with agent device type **Serial** or **Ethernet+Serial** on the SiteManager. A network attached PLC must be configured with agent device type **Ethernet** or **Ethernet+Serial** on the SiteManager).

If this is not the case, we kindly ask you to contact the person / department responsible within your own company or at the company responsible hereof.
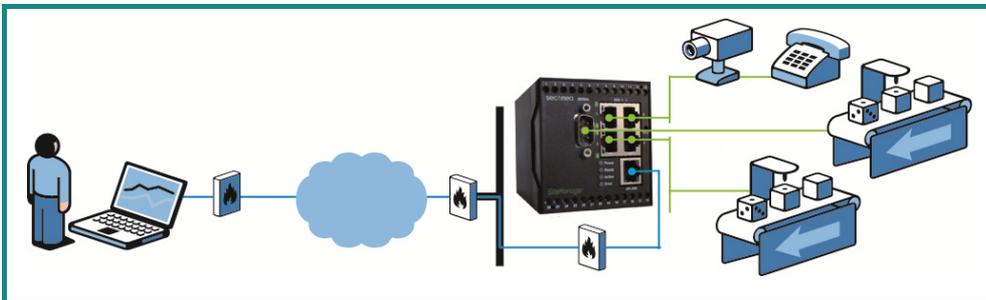
System Overview

The communication path is as follows:

RSLinx/RSLogix → LinkManager → GateManager → SiteManager → PLC.

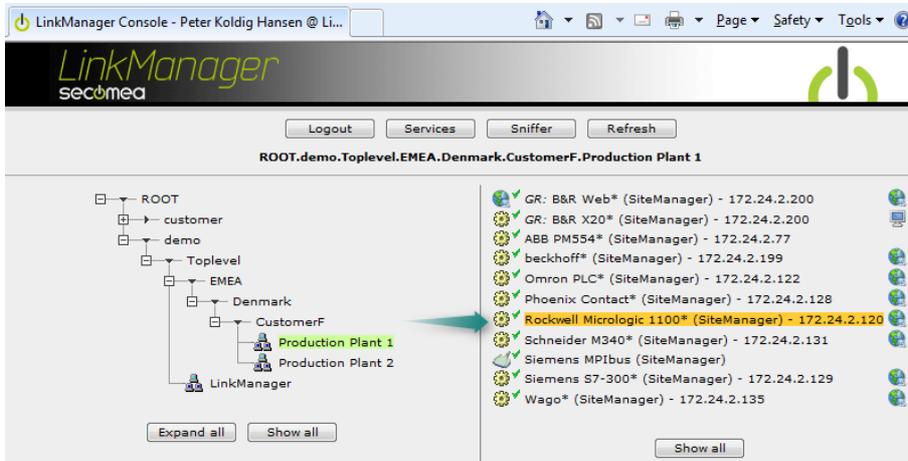This guide will elaborate on the components marked with **bold.**

The following system overview depicts a SiteManager 3134 at the customer location:
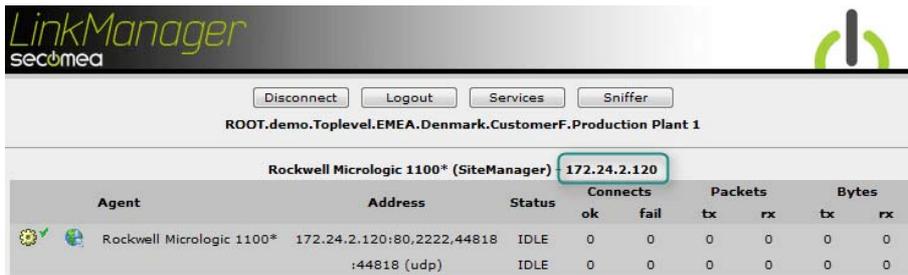

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1. Ethernet Connection

The following describes how to connect the RSLinx/RSLogix to a Rockwell PLC that is attached to a SiteManager via Ethernet.
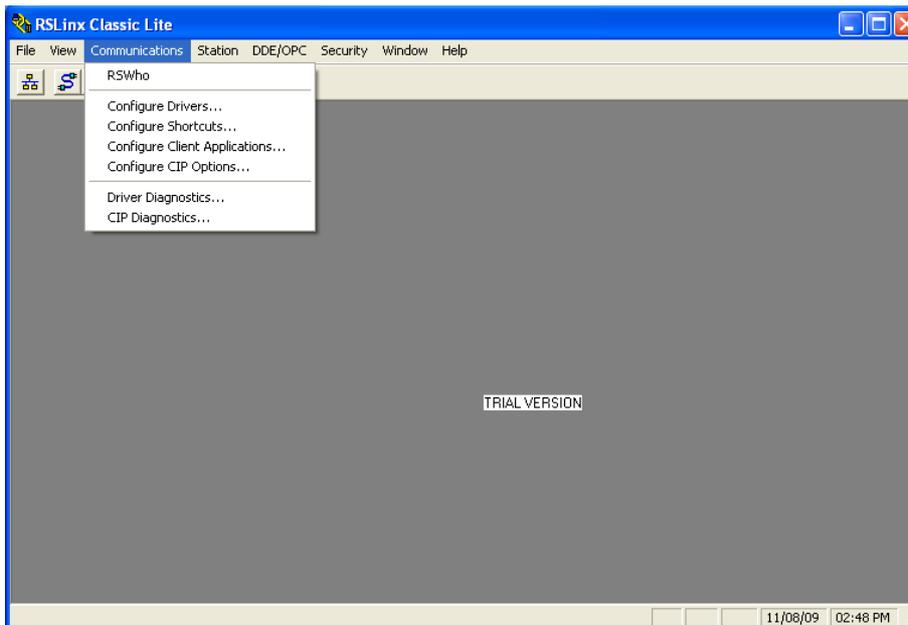
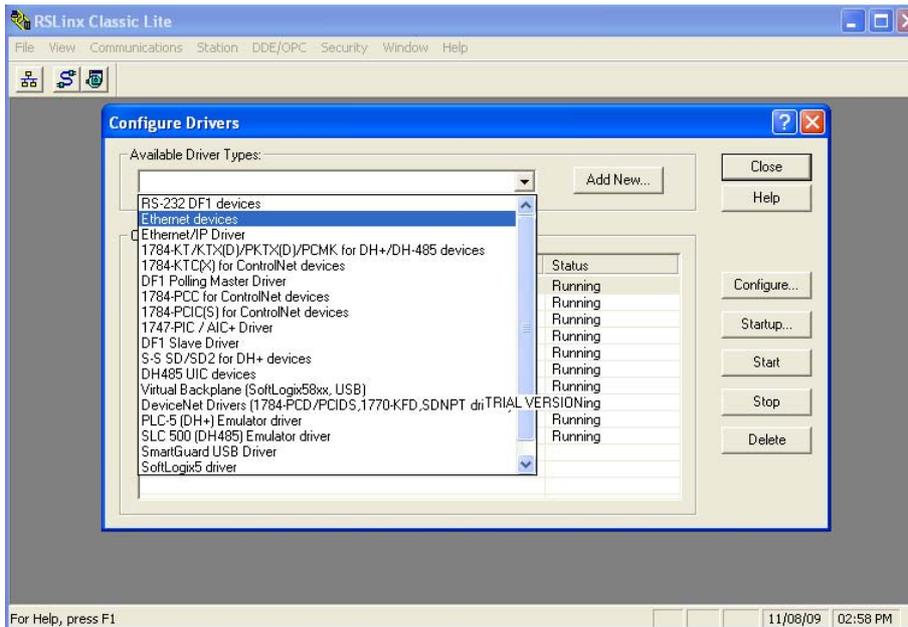1. Locate the agent that represents you TCPI/IP attached PLC

2. You will not see any activity on it yet. This only starts when you connect to the PLC via your project (Make a note of the IP address of the PLC):
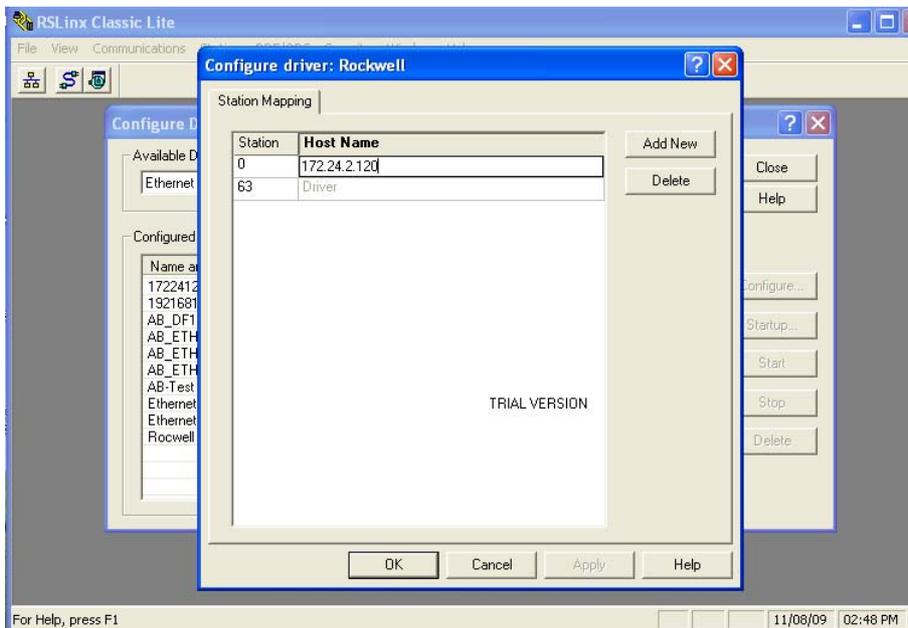

3. Start RSLinx and select **Communications**

4. Select **Configure Drivers** and select **Ethernet devices**:

5. Specify the Target PLC IP address, and click **OK**

6. The PLC should be found on the specified IP in RSLinx

   Note: If the device appear with a yellow question mark, you may want to try selecting the **Ethernet/IP driver** instead. This driver works over UDP, which is also supported by this solution. LinkManager will, however, not be able to propagate a UDP broadcast, so the device may not appear in RSLinx, but you will still be able to connect from RSLogix to the IP address of the PLC.
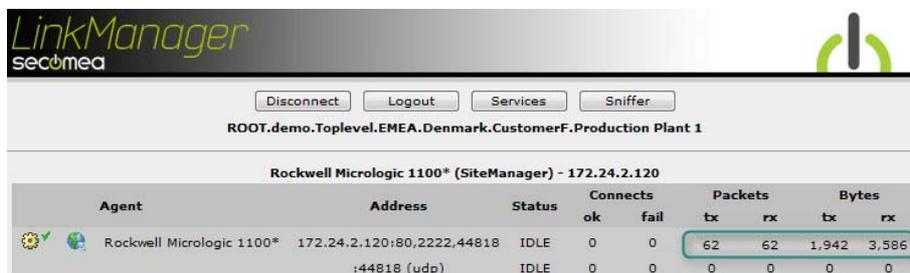
7. Start up RSLogix and choose your project. Note that the IP address in the project must correspond to the PLC.

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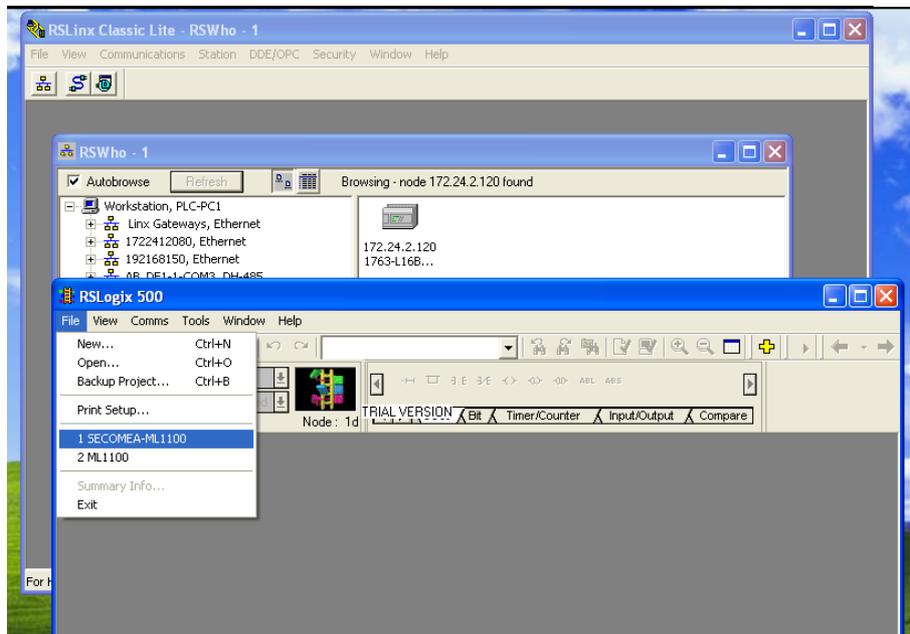
8. Select **Remote Run** and you should now become online on the PLC:
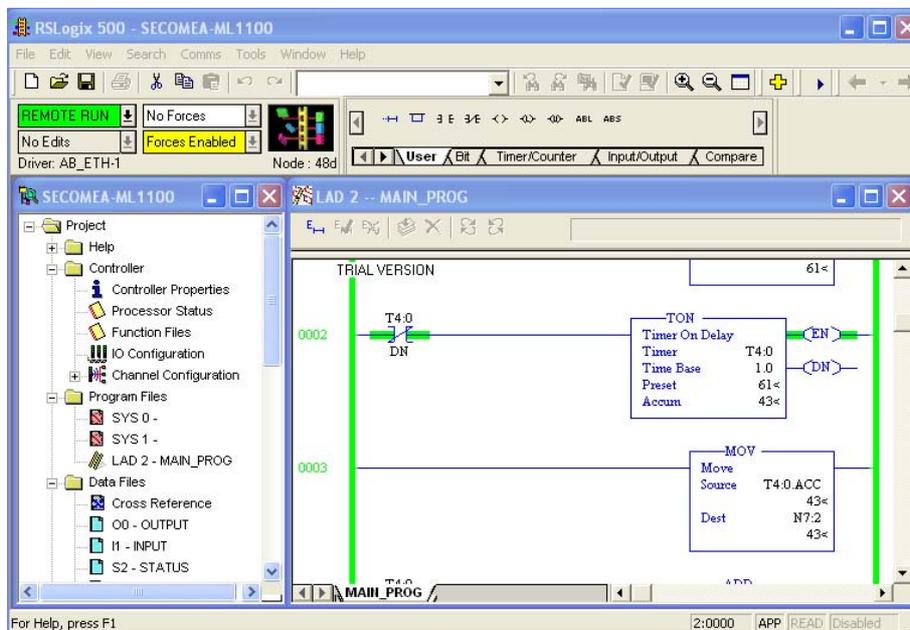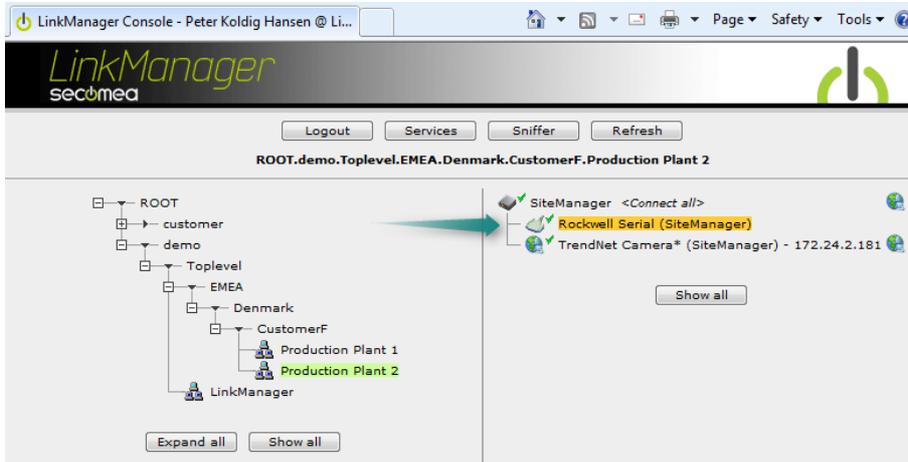

9. You can now observe data traffic in the LinkManager:

2. Serial Connection

The following describes how to connect RSLinx to a Rockwell PLC that is attached to a SiteManager via a Serial cable.

1. Locate the agent that represents you serial attached PLC

2. When connecting the agent, you should see some activity in the tray icon area, which is the auto configuring of a virtual serial port. If your SiteManager, and PLC is correctly attached, you should also see the status of the agent become OK, and a few bytes of traffic:
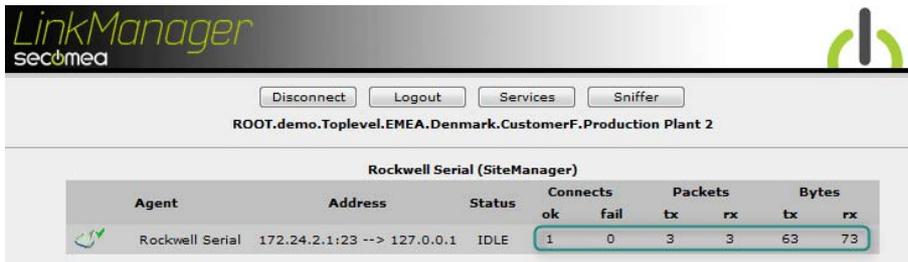
3. Now right click the LinkManager system tray Icon, and select **Status**. Make note of the Serial port that has been assigned (in this case COM5):

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Right click the LinkManager system tray icon again, and select **Options**. Enter the number of the COM port you found under status. This will ensure that you will always get this port in the future (note that this feature only exist in Link-Manager version v6041_10185 and newer). Note that if you change the port you must stop and start the LinkManager.
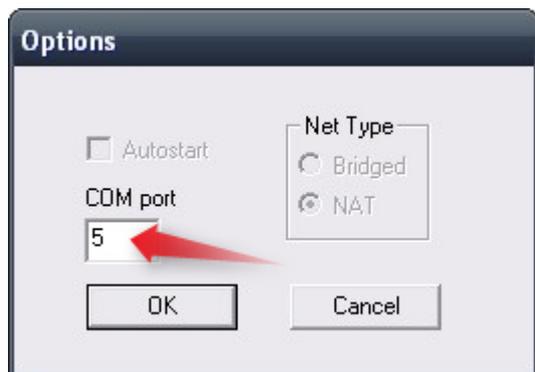

Note: You can also force another COM port (e.g. COM2). Just ensure in your Windows device manager, that the port is not conflicting with an existing COM port. See Appendix A for info on how to organize COM ports.
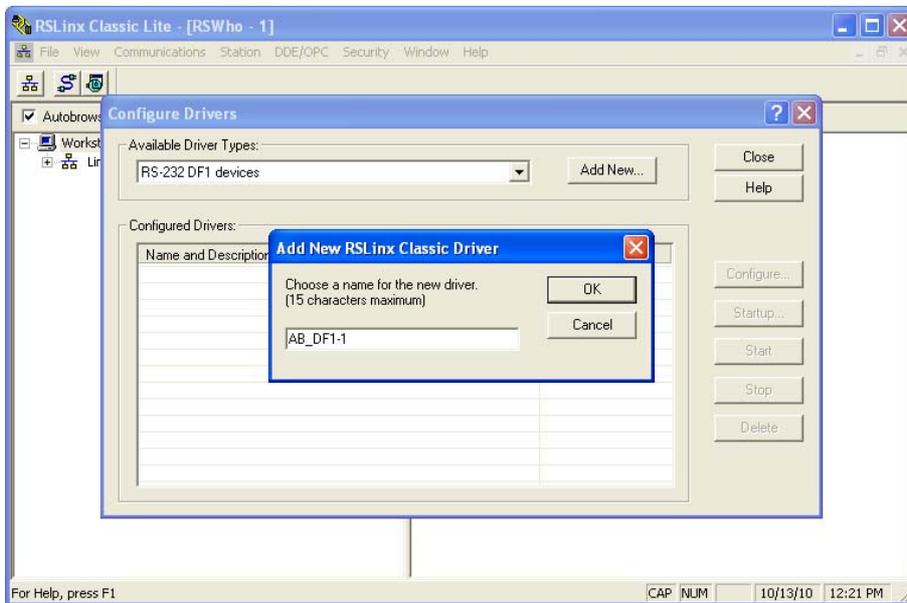
4. Open RSLinx and select **Communications → Configure drivers**:
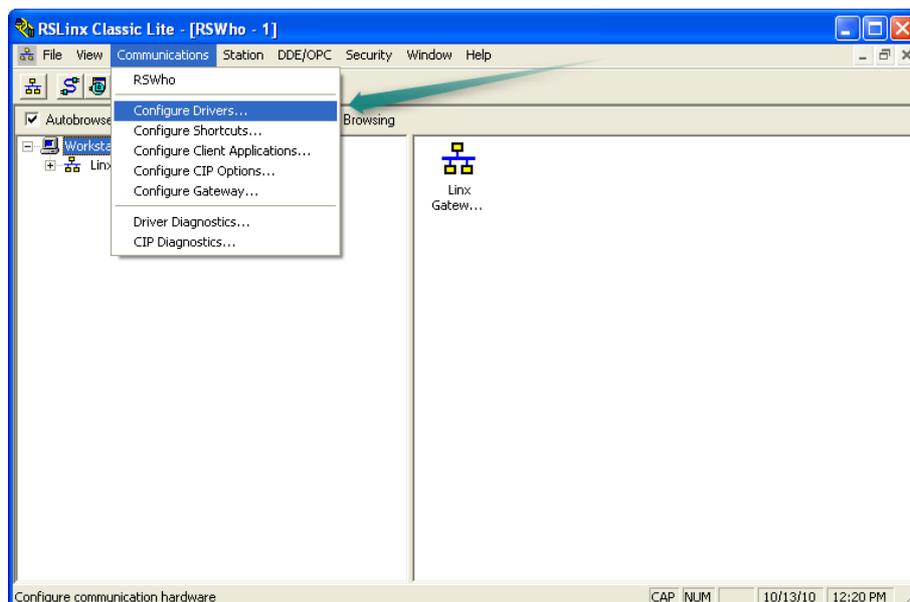
5. Select the driver type **RS-232 DF1 devices**. Click on the **Add New…** button. (DF1 is the protocol that all Rockwell PLCs have by factory default):
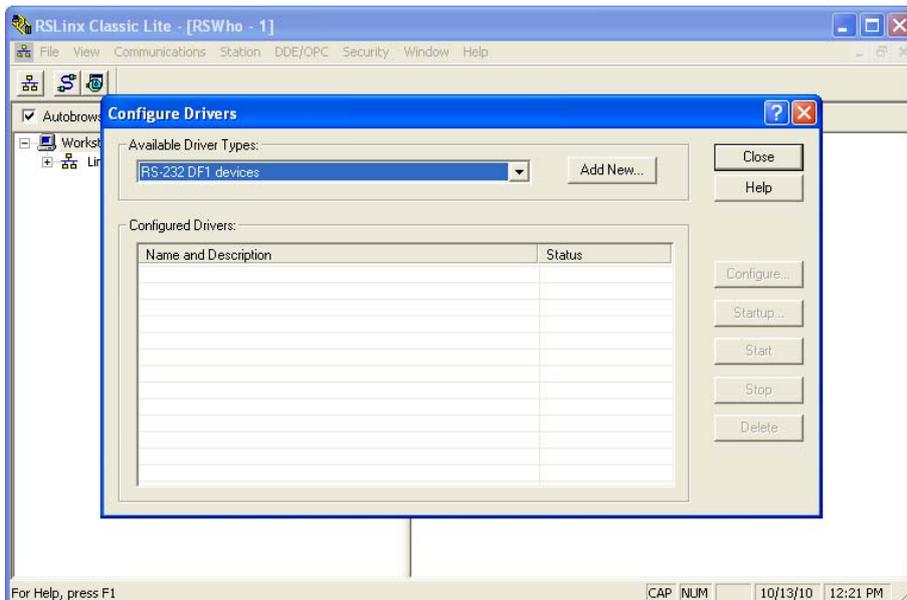
6. RSLinx will ask for a name, you can leave it at the default name **AB_DF1-1**:


7. Set the parameters to communicate with the PLC and select **OK**. The COM port should match the one defined previously for the LinkManager:

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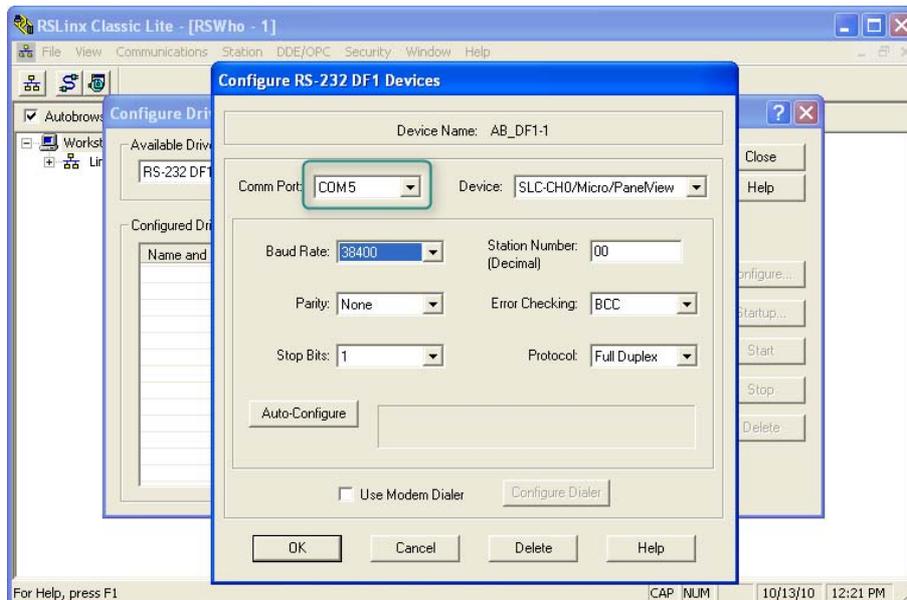
8. Observe that the status of the driver is "Running". This means the PC has opened the COM port and is trying to communicate with the configured parameters. Select **Close**.
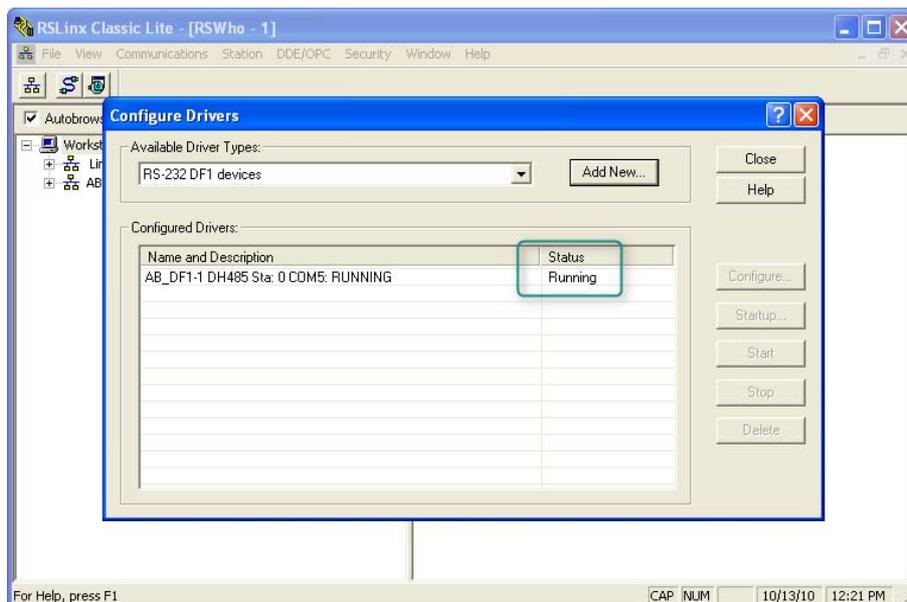

9. Before opening RSLogix, you can check if you can communicate with the PLC with the configured parameters. Open **RSWho** inside RSLinx, and select the driver (AB_DF1-1). If the PLC is represented by a PLC icon the PC is communicating with the PLC through the serial driver:
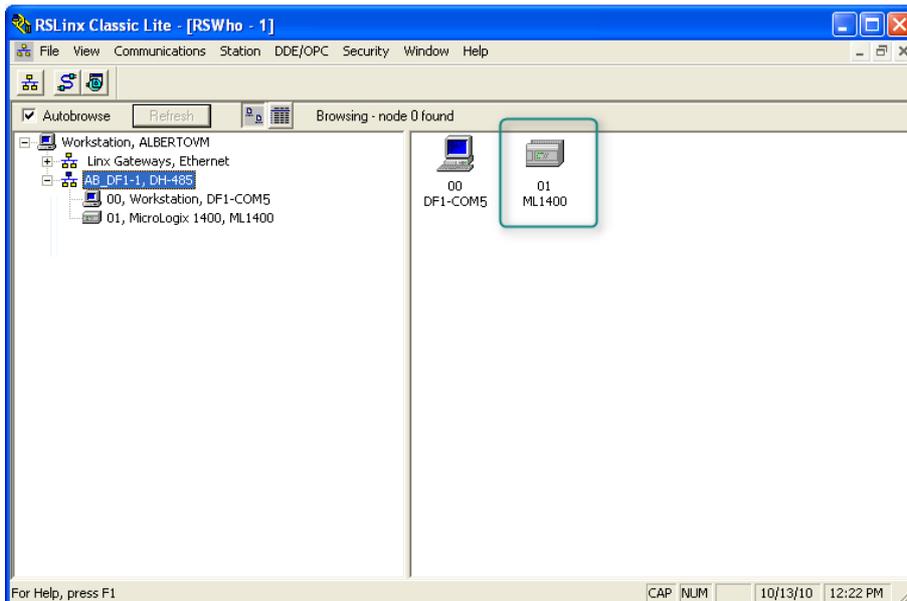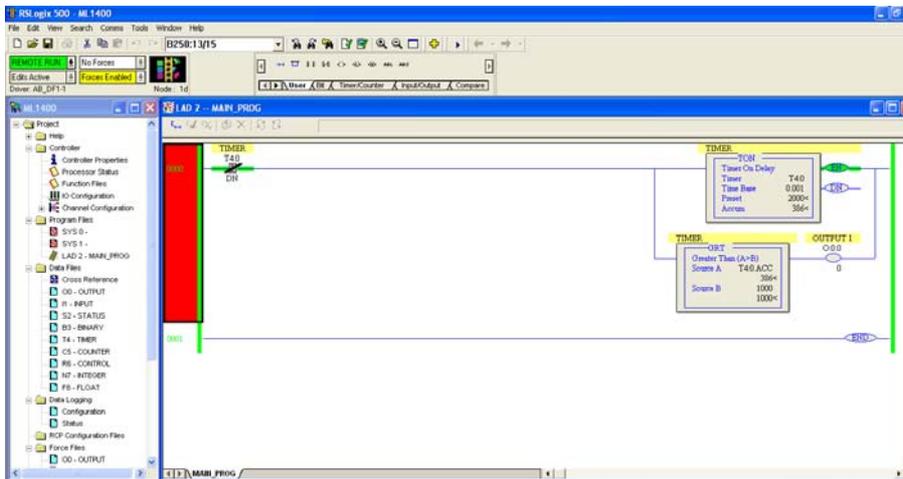
10. Now open RSLogix and select **Comms → System Comms…**. This is the menu that contains the features "Go Online", "Upload" and "Download".
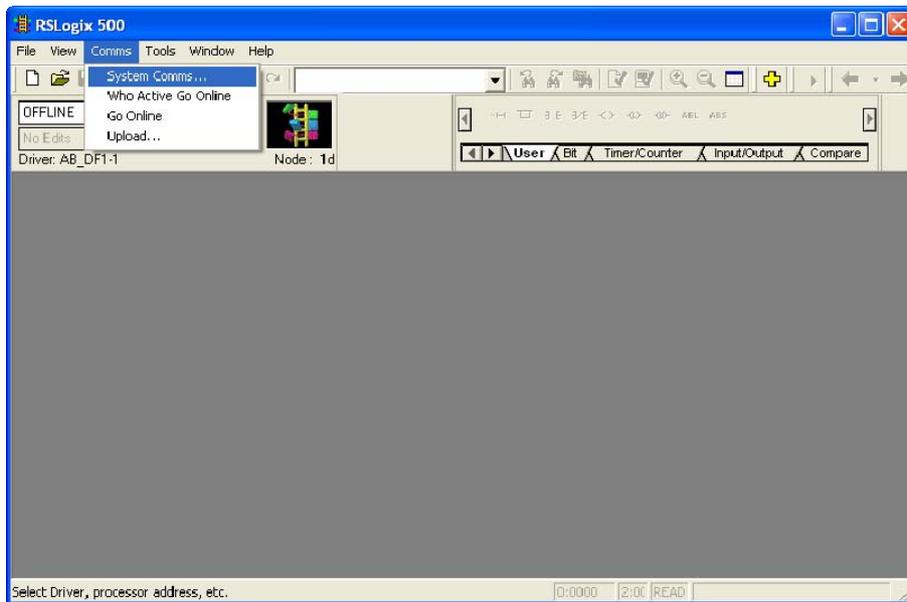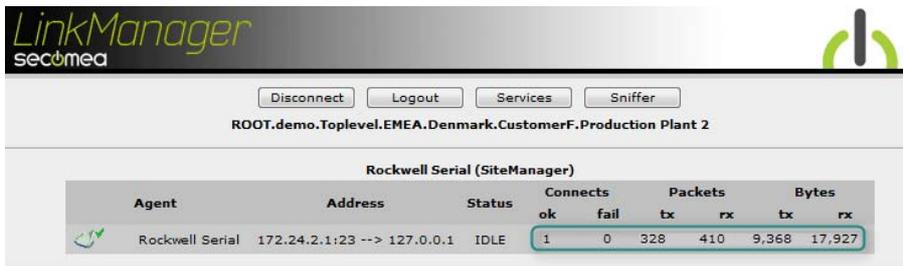
11. Select the PLC and select the **Online** button
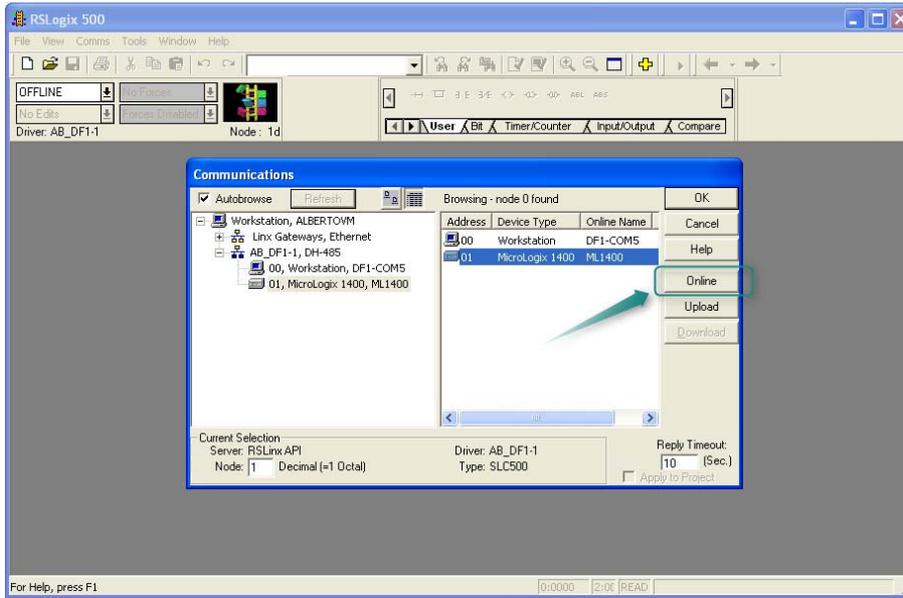
12. You are now online with the PLC

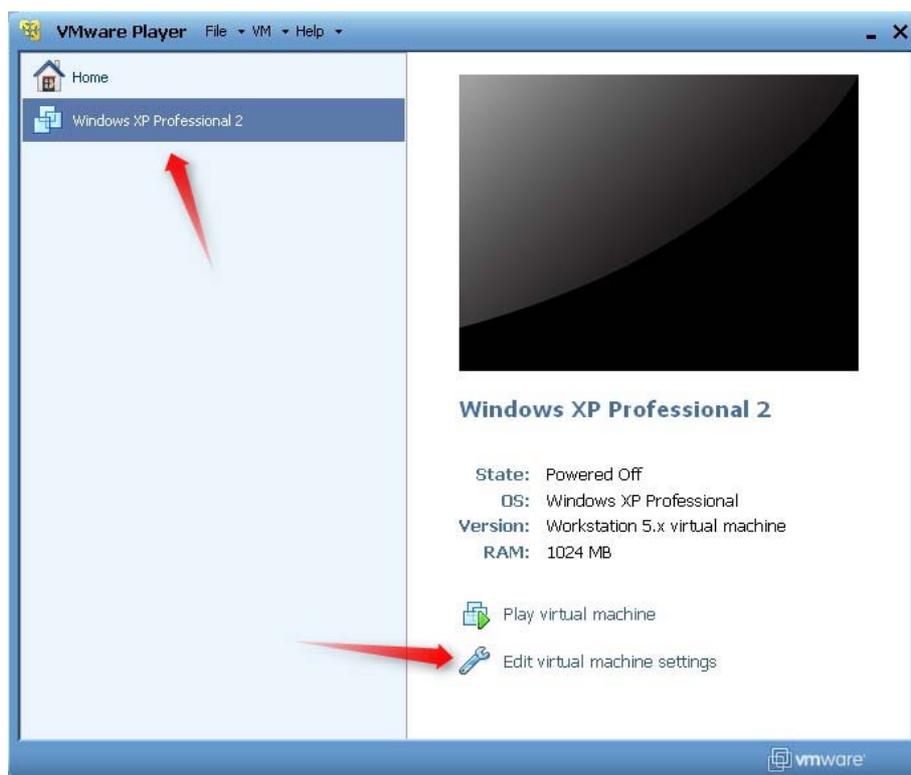13. You can now observe data traffic in the LinkManager:

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3. Ethernet connection via WindowsXP under VMWare

You can run the RSLinx/RSLogix software inside a VMWare engine, to a Allen-Bradley / Rockwell PLC that is Ethernet attached to a SiteManager.
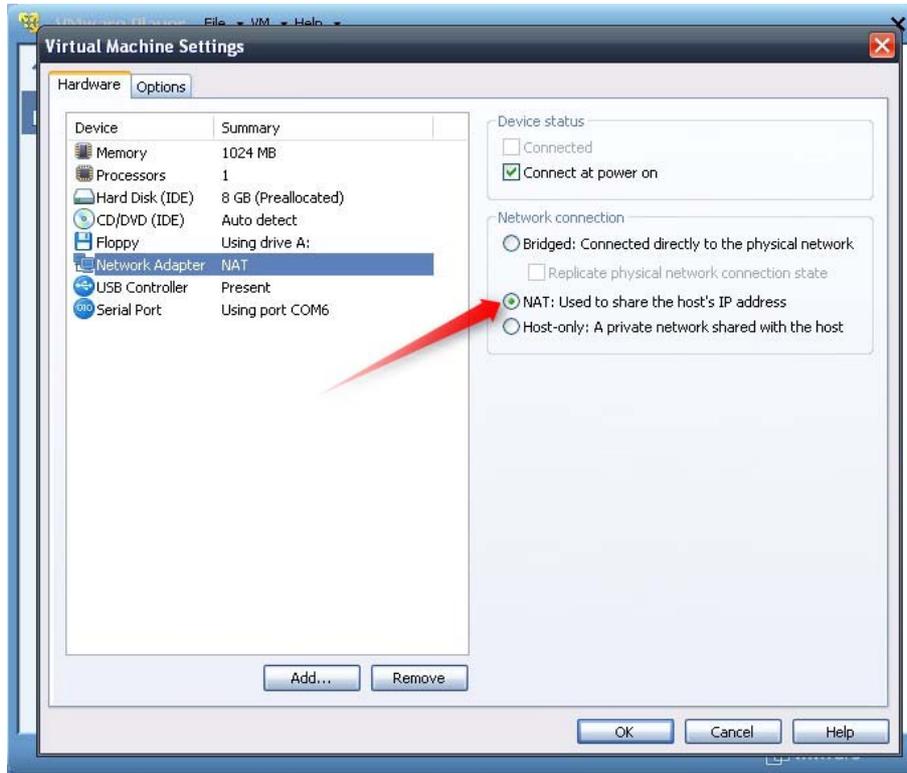
Note: LinkManager must be installed on the hosting machine,- and NOT inside the VMWare Windows XP image. LinkManager cannot run inside a VMWare virtual machine.

The following illustrates VMWare Player, which can be downloaded from
http://www.vmware.com/support/product-support/player/

10. Locate your WindowsXP that has RSLinx/RSLogix installed, and enter **Edit virtual machine settings.**

11. Make sure the Network Adapter settings is set to **NAT:**

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12. Start the VMWare engine and on the host PC start LinkManager.

13. Follow the procedure of section **2 TCP Ethernet Access** to get access to the PLC via LinkManager

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4. Serial connection via WindowsXP under VMWare

You can run the RSLinx/RSLogix software inside a VMWare engine, to a Allen-Bradley / Rockwell PLC that is Serial attached to a SiteManager.

Note: LinkManager must be installed on the hosting machine - and NOT inside the VMWare Windows XP image. LinkManager cannot run inside a VMWare virtual machine.

The following illustrates VMWare Player, which can be downloaded free of charge from http://www.vmware.com/support/product-support/player/

1. Locate your WindowsXP that has RSLinx/RSLogix installed, and enter **Edit virtual machine settings.**
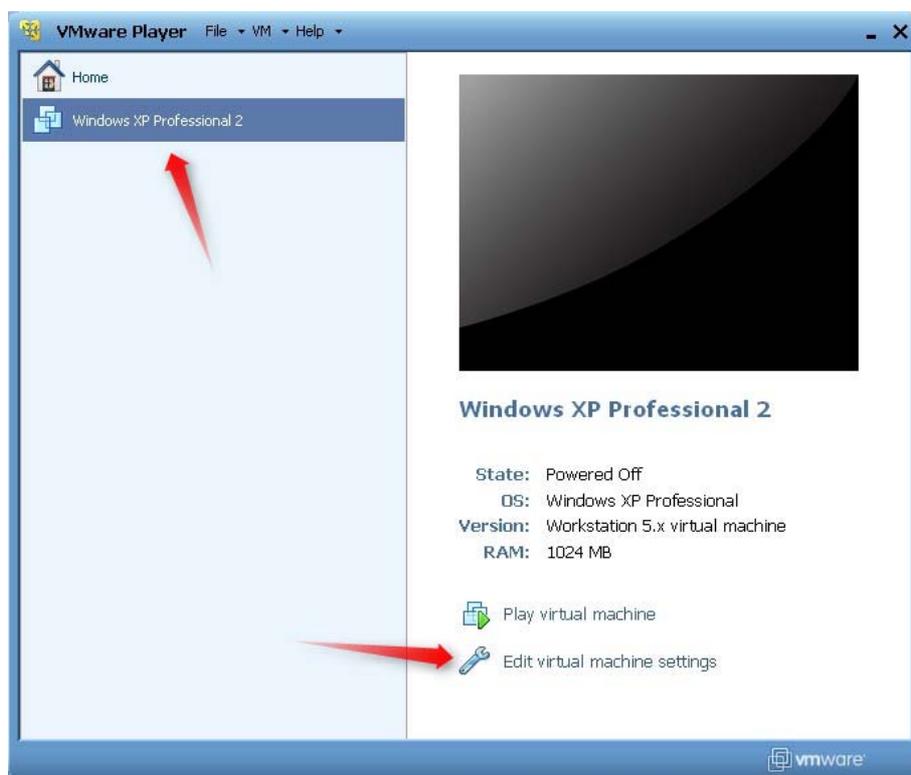
2. Make sure there is a Serial Port available in the hardware list. If not, you should add it like this:
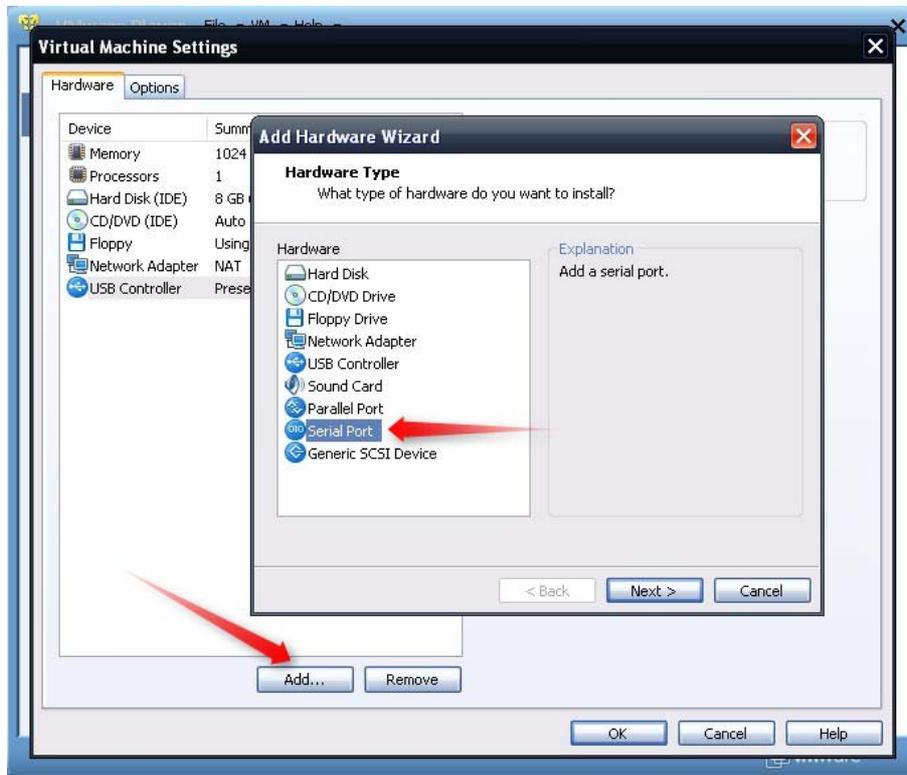
Note: The PC you are installing on must have a physical or virtual COM port defined in order for VMWare to allow adding a Serial Port. You can verify if you have a Serial port on your PC, under Windows Control Panel → System → Hardware → Device Manager → Ports (COM & LPT). Alternatively you can start LinkManager and connect to the serial Agent, which will create a COM port.
On Windows 7 it is possible to add a COM port under the device manager even though the PC does not have a physical COM port available.

3. Check that it is set to use the physical serial port on the host.
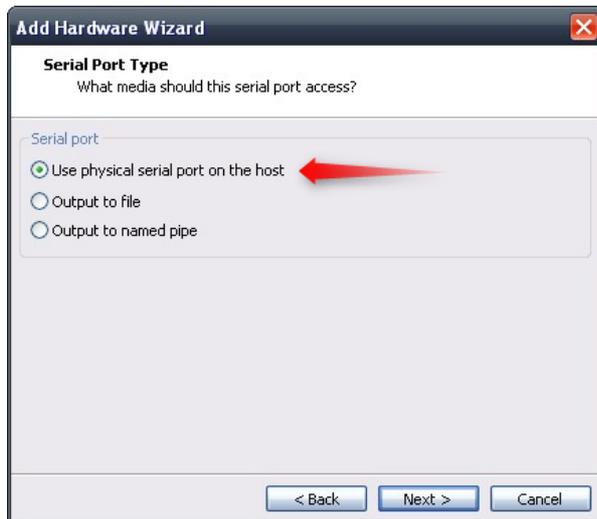
4. Click **Next**. If you have not started the LinkManager, you will probably only have COM1 and maybe COM2 available. This does not matter for now, as you can change that when the VMWare image is running.

5. Press **OK** twice, and select the Select **Finish** and **OK**, Start the VMWare WindowsXP image, and start the RSLinx/RSLogix software.

6. Follow the procedure described in section **3 Serial Access** on getting access to the PLC via LinkManager.

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Appendix A, Organizing COM ports in Windows

Clean up Windows Registry for redundant COM ports:

You may want to use a lower COM port number. In case your PC assigns a COM port of e.g. 13, it may be due to previous installs of virtual COM ports from in relation to installation of other programs.

You can clean your PC for redundant COM ports in Windows registry:

1. Open regedit (Start → run → Regedit)
2. Navigate to:

    HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\COM Name arbiter
3. In the ComDB set all values to 00
4. Restart your PC

Enable LinkManager to use COM1:

If you prefer the COM port to be COM1:

Even if no COM ports are installed on the PC, Windows will never assign a COM port lower than COM3 to the LinkManager. You therefore have to do the following to force LinkManager to use COM1:

1. Open Windows Control Panel → System → Hardware → Device Manager → Ports (COM & LPT).
2. If there already are physical COM ports listed, you must re-assign the port numbers to free up COM1.

    Right click a COM port and select Properties → Port Settings → advanced
3. Change the COM port number in the drop down list.
4. Restart your PC.
5. Right click the LinkManager system tray icon and select Options.
6. Enter 1 in the COM port field.
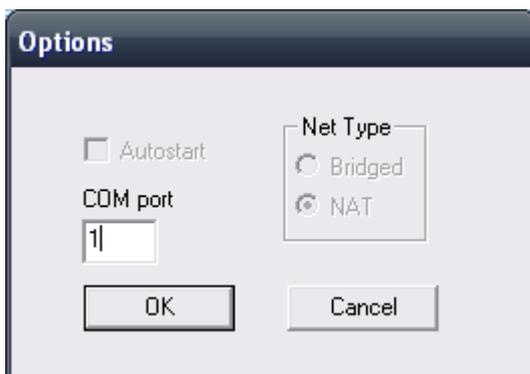
7. Stop and Start the LinkManager and start the Serial agent.

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Notices

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