Application Note
ABB PM583 PLC with Control Builder Plus

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

Version: 2.0, September 2012

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Prerequisites for This Guide

The following guide will assist you to setup a remote and online connection to the IMO equipment placed on the customer site using your ABB PM583 programming software installed on your PC.

Prerequisites for this guide are:

- You have an operational LinkManager installed on your PC with a GateManager certificate that allows you to connect to the SiteManager agents.
- You have the ABB software installed.
- You have the ABB device agent installed and configured on the SiteManager at the remote site, and there is access between the SiteManager and the ABB PLC.
  - A network attached PLC (such as the PM583) must be configured with agent device type **ABB/PLC Ethernet** on the SiteManager.
  - A serial attached PLC (such as the PM583) must be configured with agent device type **ABB/PLC Serial** on the SiteManager. Furthermore, the PLC must be attached to the SiteManager via a TK501:AC500 serial cable.

If any of these prerequisites are not met, you should contact the person / department responsible within your own company or at the company responsible hereof.

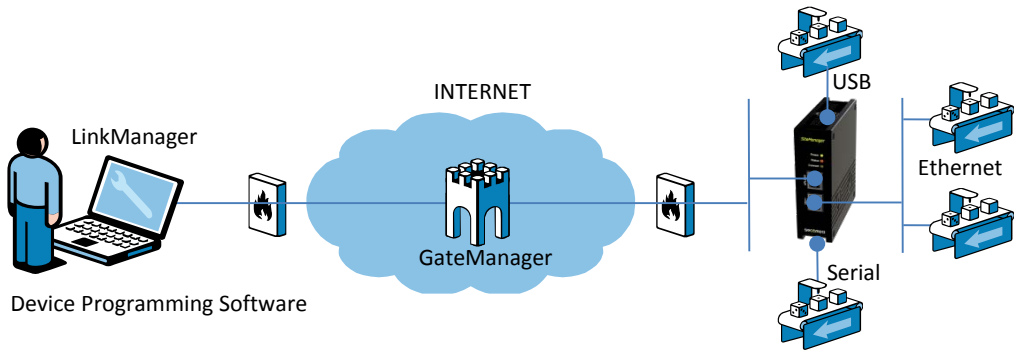
System Overview

The communication path is as follows:

Control Builder Plus → **LinkManager** → GateManager → SiteManager → PLC.

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

The following system overview depicts a SiteManager 3229 at the customer location:



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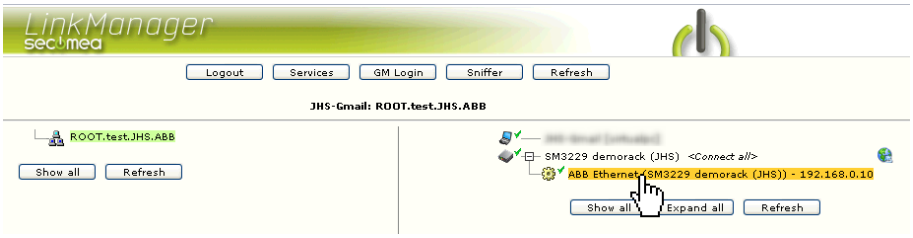
1. TCP Ethernet Access

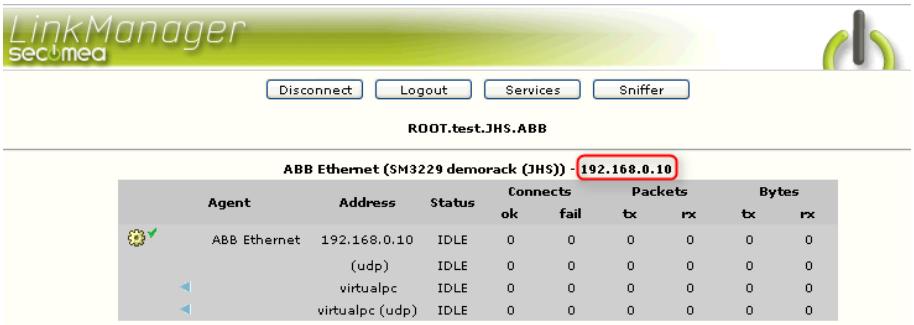
The following describes how to connect the Control Builder Plus to an ABB PLC, which is attached to a SiteManager via Ethernet. The description shows a PM583 module attached to the PLC.

Note: A network attached PLC must be configured with agent device type **ABB/PLC Ethernet** on the SiteManager.

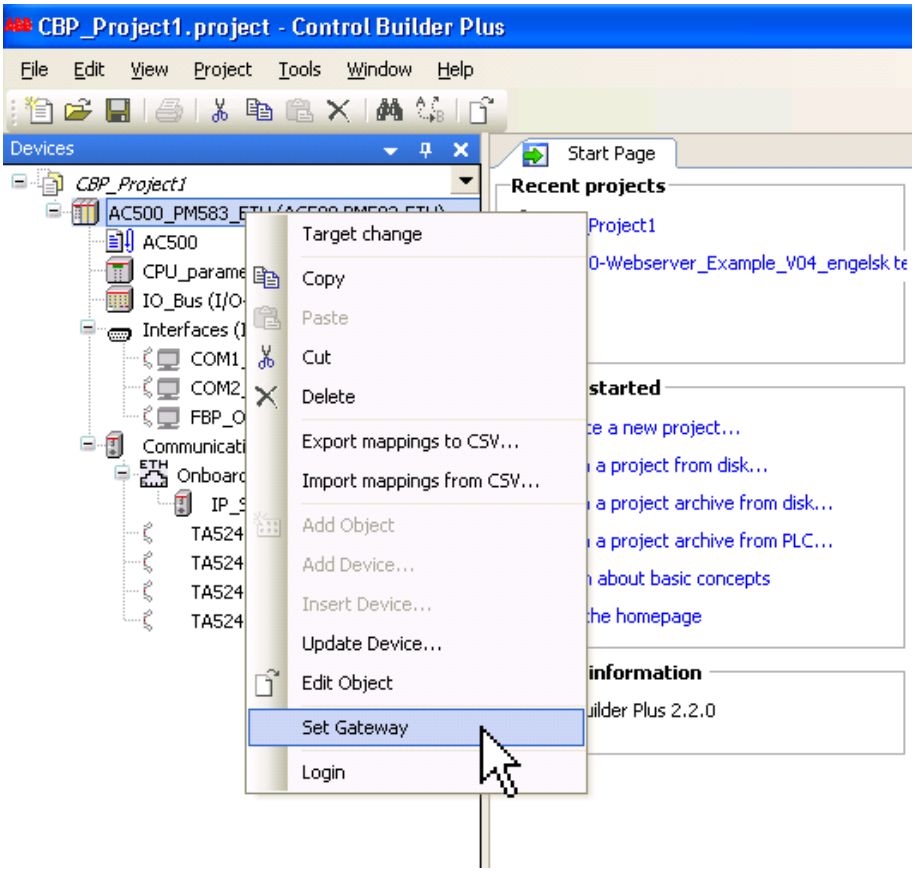
1. Locate the agent that represents you TCPI/IP attached ABB PLC



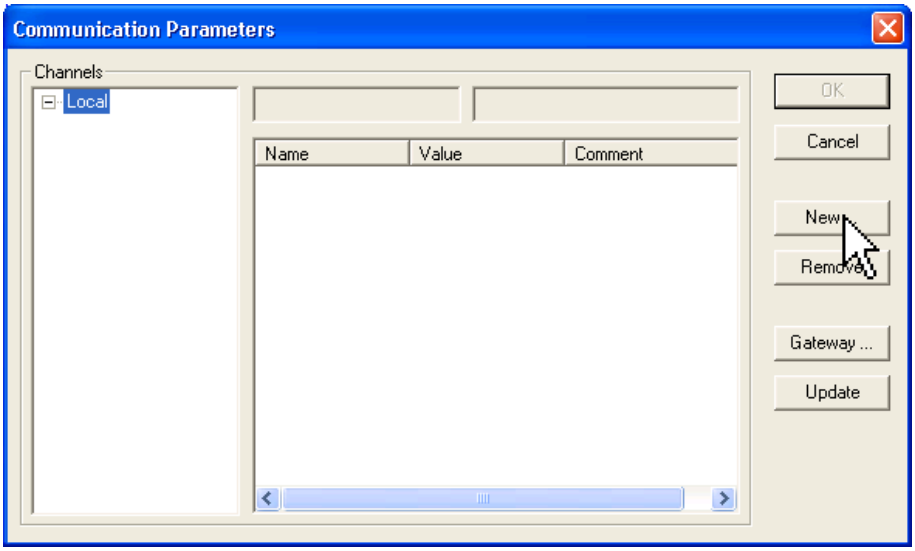
2. You will not see any activity on it yet. This only starts when you connect to the PLC via your project (Make a note of the IP address of the PLC):



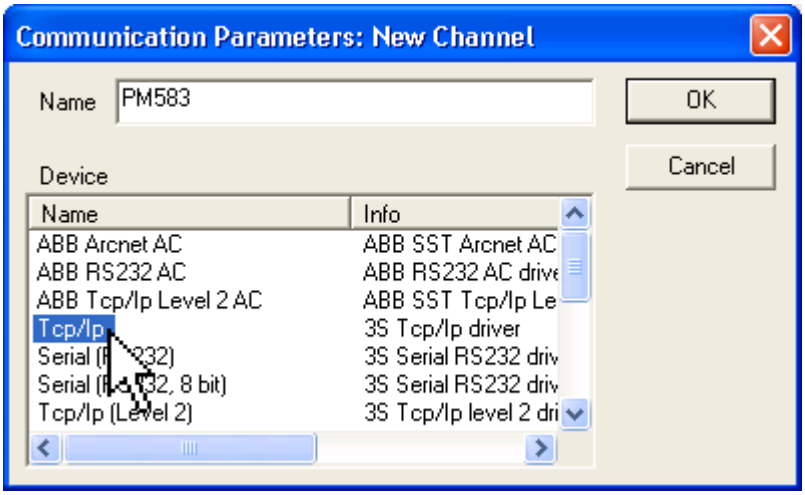
3. Start the Control Builder Plus software, and open your project. Right-click on your PLC, and select “Set Gateway”.



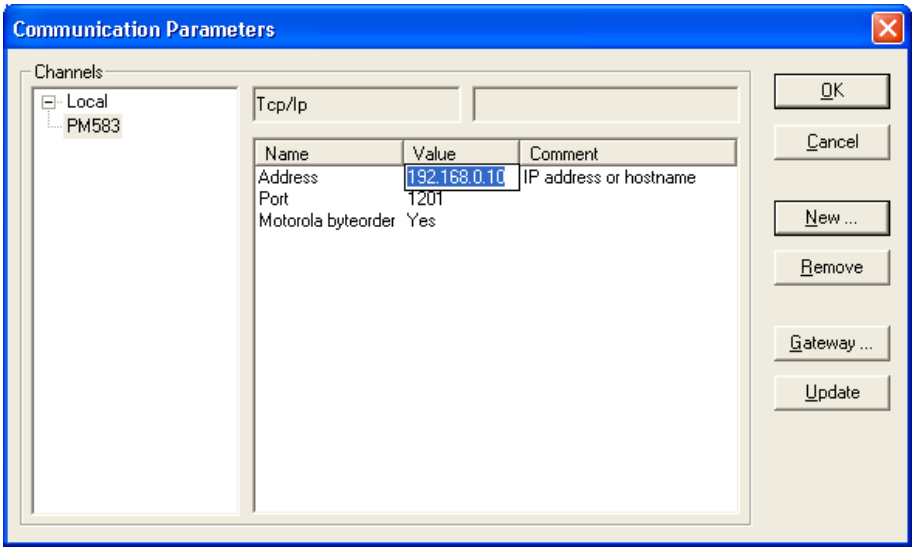
4. If you haven’t already created a Gateway, click **New**.



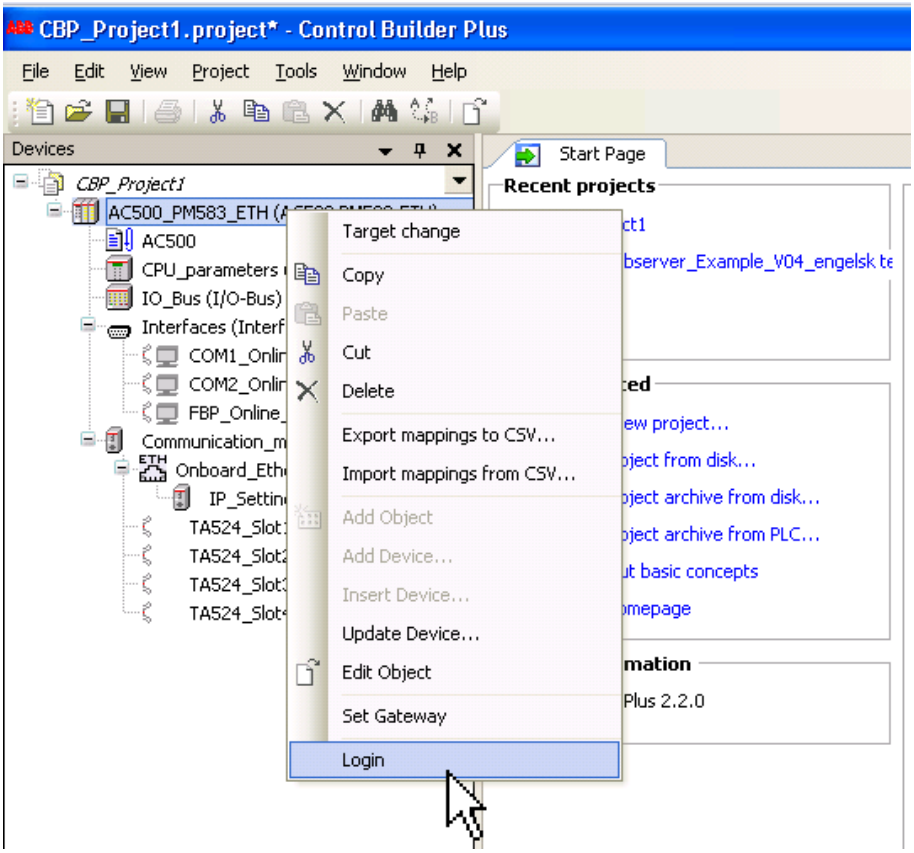
5. Type in a proper name for the PLC connection, and select "Tcp/Ip", and click **OK**.



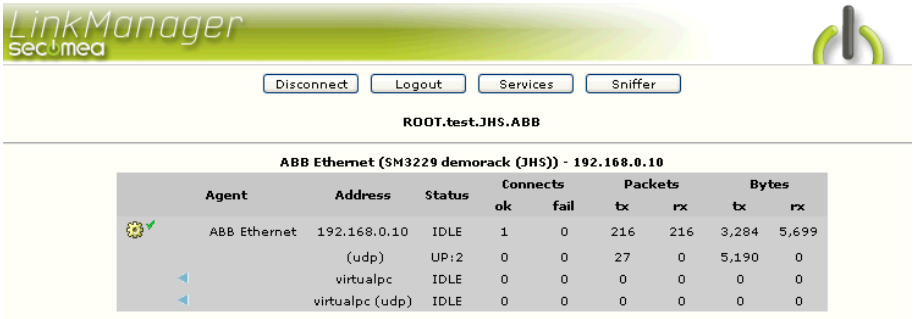
6. Double-click on the IP address, and set it to match the IP address in section 2. Verify the Port to be 1201, and click **OK**.



7. To go online with the PLC, right-click on the PLC again and select Login.



8. You are now online with the PLC. You can now observe data traffic in the LinkManager:

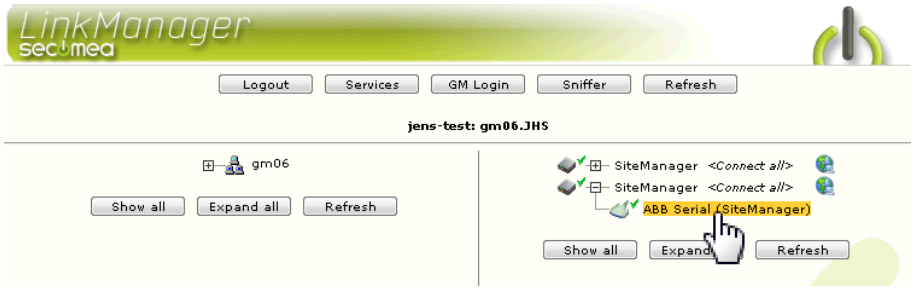


2. Serial access via ABB serial cable (TK501:AC500)

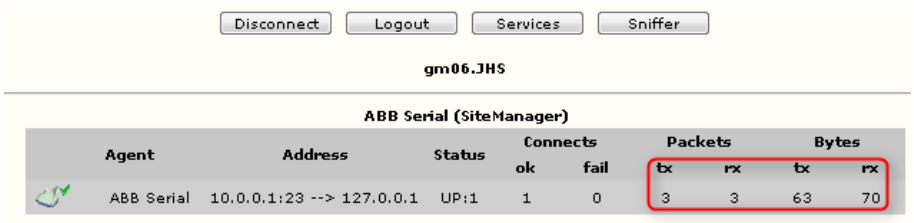
The following describes how to connect the Control Builder Plus to an ABB PLC, which is attached to a SiteManager via serial cable. The description shows a PM583 module attached to the PLC.

Note: A serial attached PLC must be configured with agent device type **ABB/PLC Serial** on the SiteManager. This agent is included from SiteManager firmware 12384.

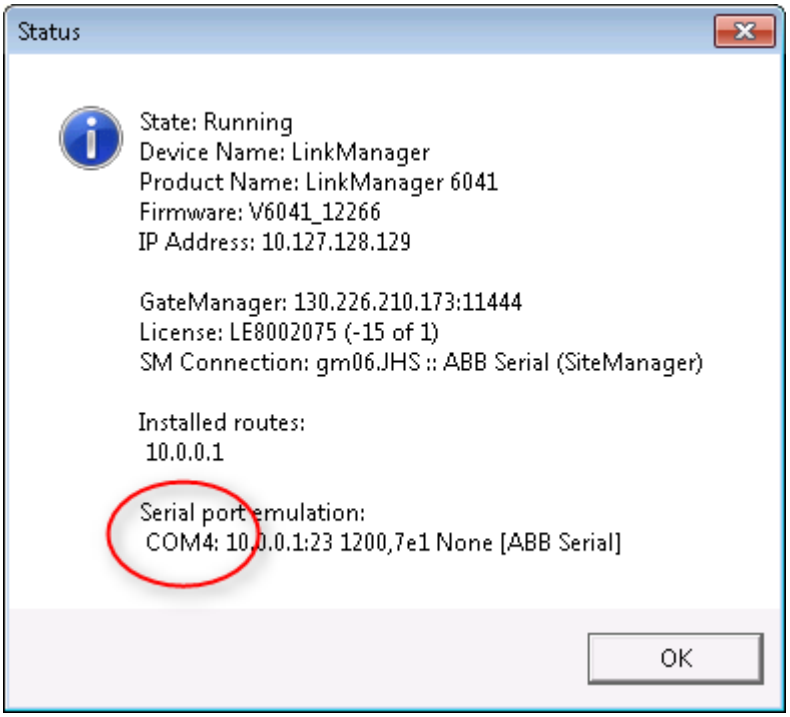
1. Locate the agent that represents you TCPI/IP attached ABB PLC



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 ABB PLC is correctly attached, you should also see the status of the agent become OK, and a few bytes of traffic:

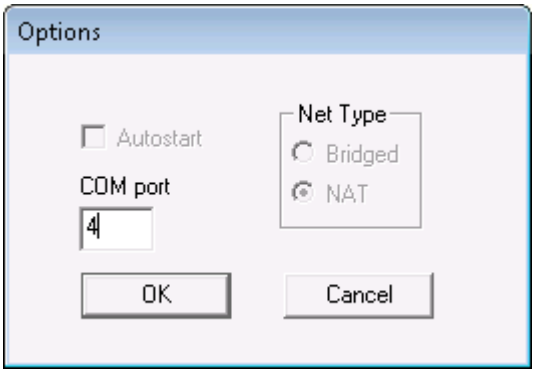


3. Now right click the LinkManager system tray Icon, and select Status. Make note of the Serial port that has been assigned (in this case COM4):



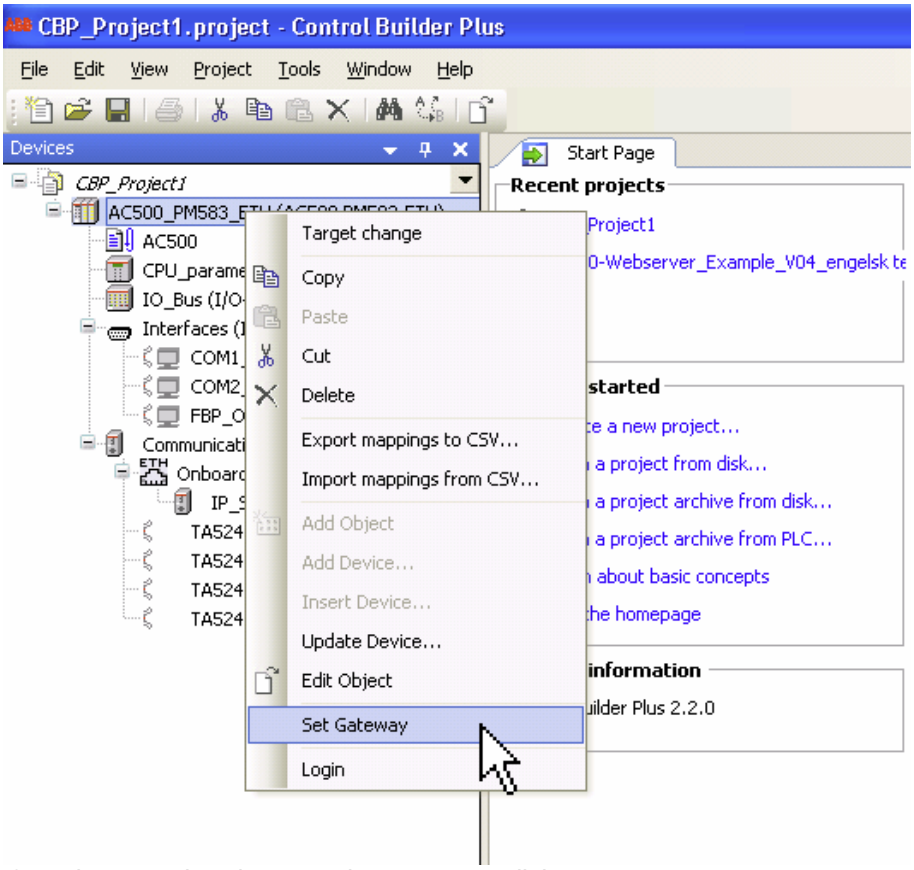
4. Right click the LinkManager system tray icon again, and select Options. Enter the number of the COM port you found under status. This will ensure that you will always get this port in the future.

   IMPORTANT: if you change the port you must stop and start the LinkManager.

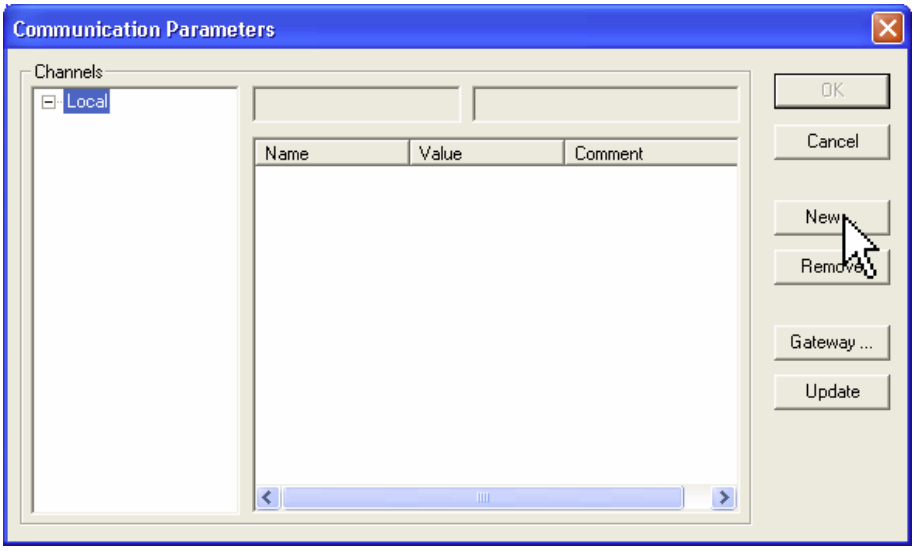


   Note: You can also force another COM port (e.g. COM2). Just ensure in your Windows device manager, that the port is not conflicting with an existing COM port. See Appendix A for info on how to organize COM ports.

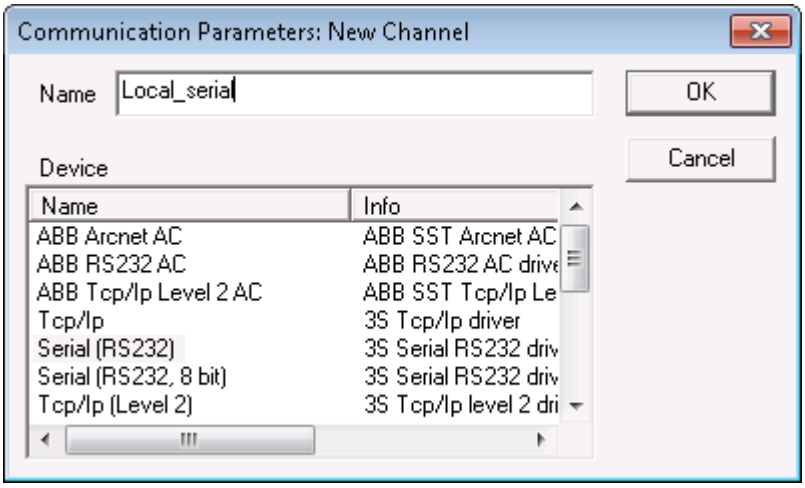
5. Start the Control Builder Plus software, and open your project. Right-click on your PLC, and select “Set Gateway”.



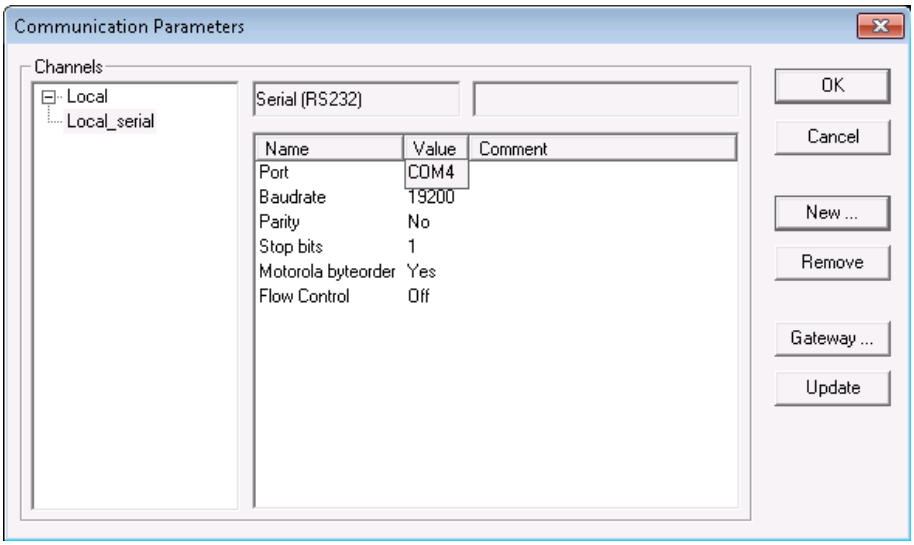
6. If you haven’t already created a Gateway, click New.



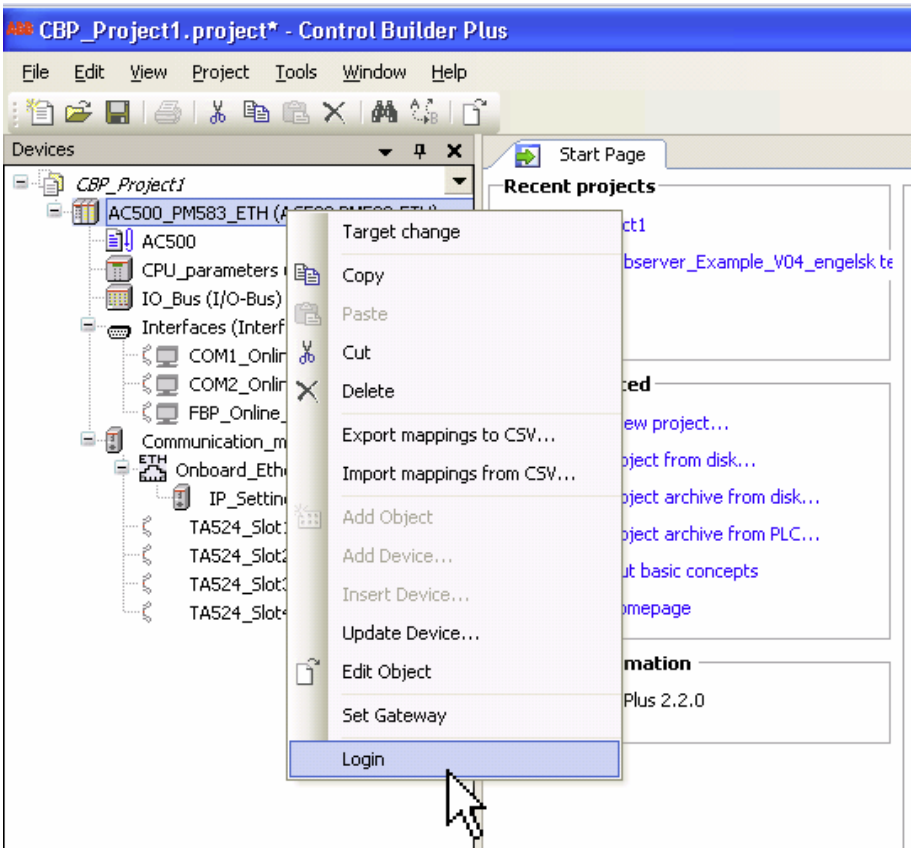
7. Type in a proper name for the PLC connection, and select "Serial (RS232)", and click OK.



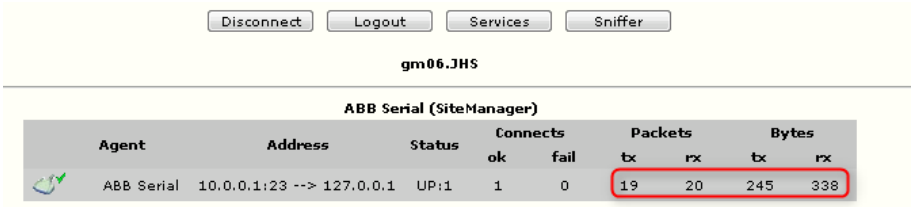
8. Double-click on the Port number, and use the DOWN ARROW on your keyboard to increase the number. Select the number obtained from section 2. Click ok.



9. Right-click on the PLC again and select Login.



10. You are now online with the PLC. You can now observe data traffic in the LinkManager:



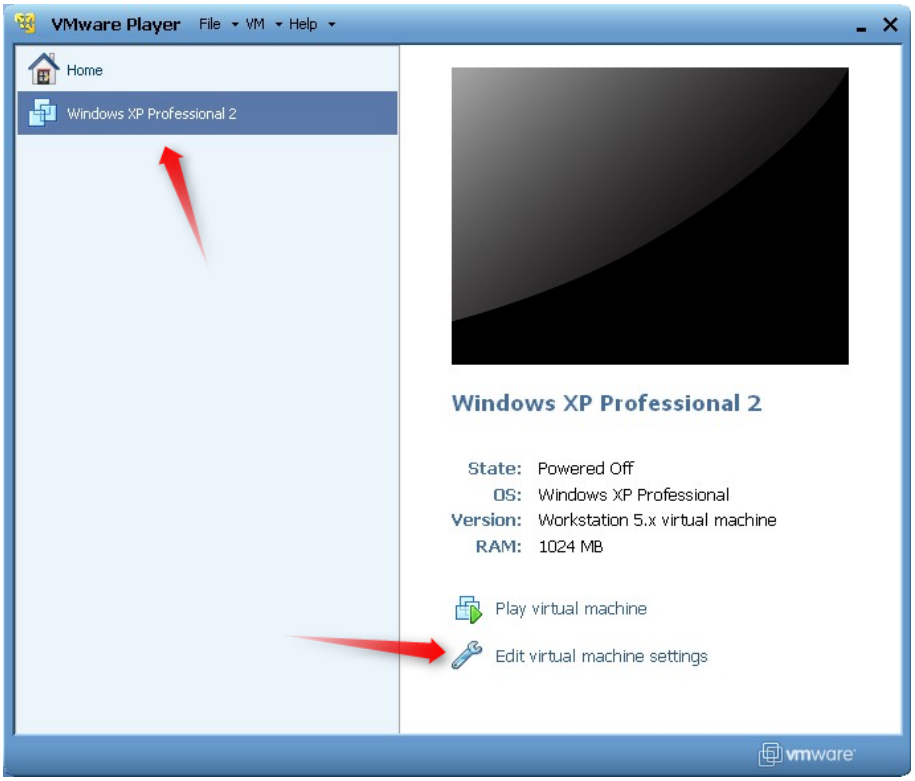
3. Ethernet Access via Windows XP under VMWare

You can run the Control Builder Plus program inside a VMWare engine, to an ABB PLC that is Ethernet attached to a SiteManager.

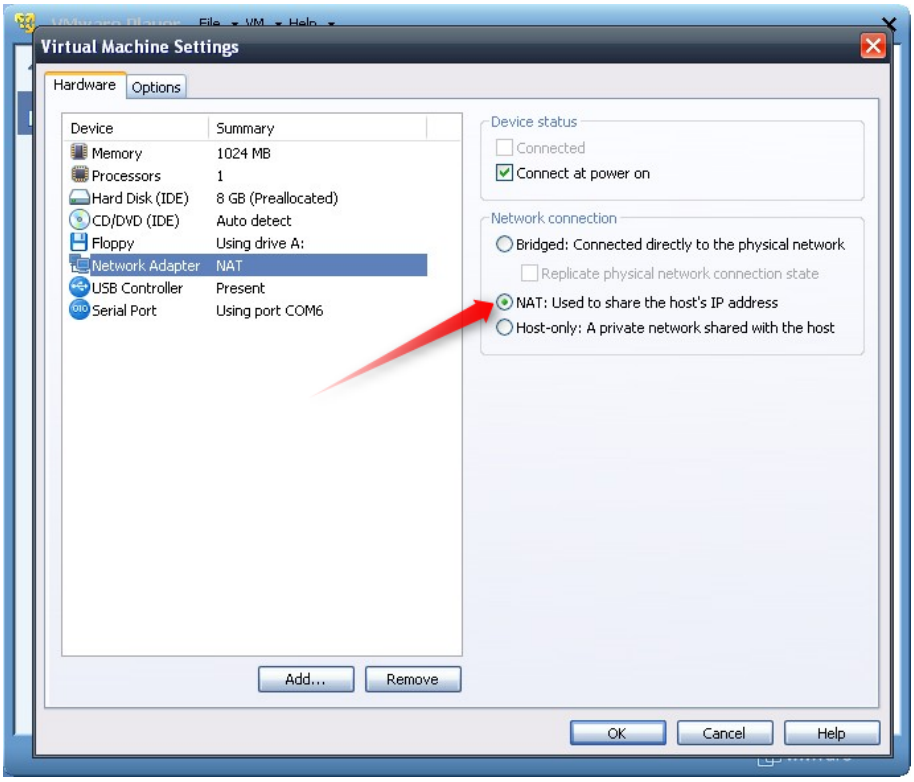
From LinkManager version 12155 you can choose to run the LinkManager inside or outside the virtual machine. Note that LinkManager can only run inside VMWare if the host OS is Windows 7 and the PC's CPU has support for virtualization.

The following illustrates VMWare Player, which can be downloaded from http://www.vmware.com/support/product-support/player/, and for LinkManager running outside the virtual machine (i.e. on the host OS system)

1. Locate your Windows XP that has programming software installed, and enter **Edit virtual machine settings.**



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



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

4. Follow the procedure of section **1 TCP Ethernet Access** to get access to the PLC via LinkManager

Appendix A, Organizing COM ports in Windows

Clean up Windows Registry for redundant COM ports:

You may experience that older versions of the IMO software require 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

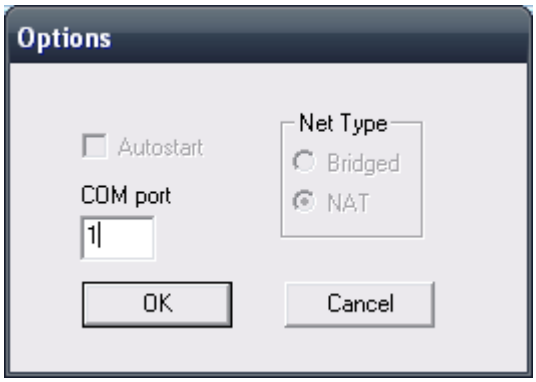
Enable LinkManager to use COM1:

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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