Application Note
Omron PLC and CX-Programmer

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:
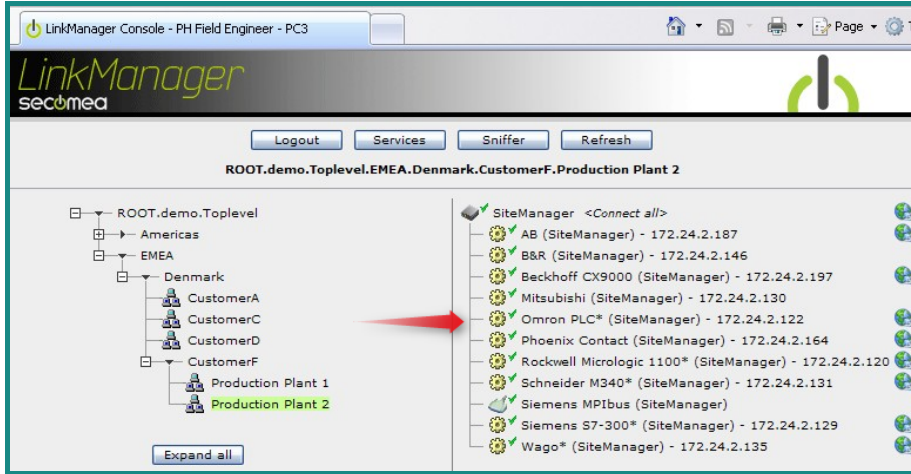
http://www.secomea.com

Version: 2.0, June 2010

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1. Prerequisites for This Guide

The following guide will assist you to setup a remote and online connection to the Omron equipment placed on the customer site using your Omron CX PLC 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 Omron software installed.

- You have the Omron device agent installed and configured on the SiteManager at the remote site, and there is access between the SiteManager and the Omron PLC. (A Serial attached PLC must be configured with agent device type **Omron/Serial PLC** on the SiteManager. A network attached PLC must be configured with agent device type **Omron/Ethernet PLC** 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:

Omron CX software → **LinkManager** → GateManager → SiteManager → Omron PLC.

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

The following system overview depicts a SiteManager 3034/3134 at the customer location:
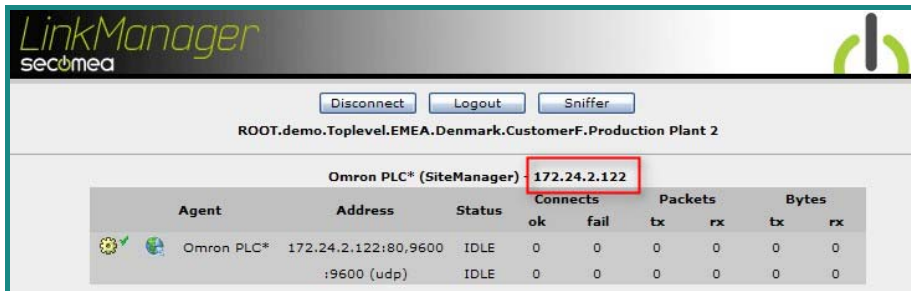

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2. TCP Ethernet Access

The following describes how to connect the Omron CX Programmer to an Omron PLC that is attached to a SiteManager via Ethernet.

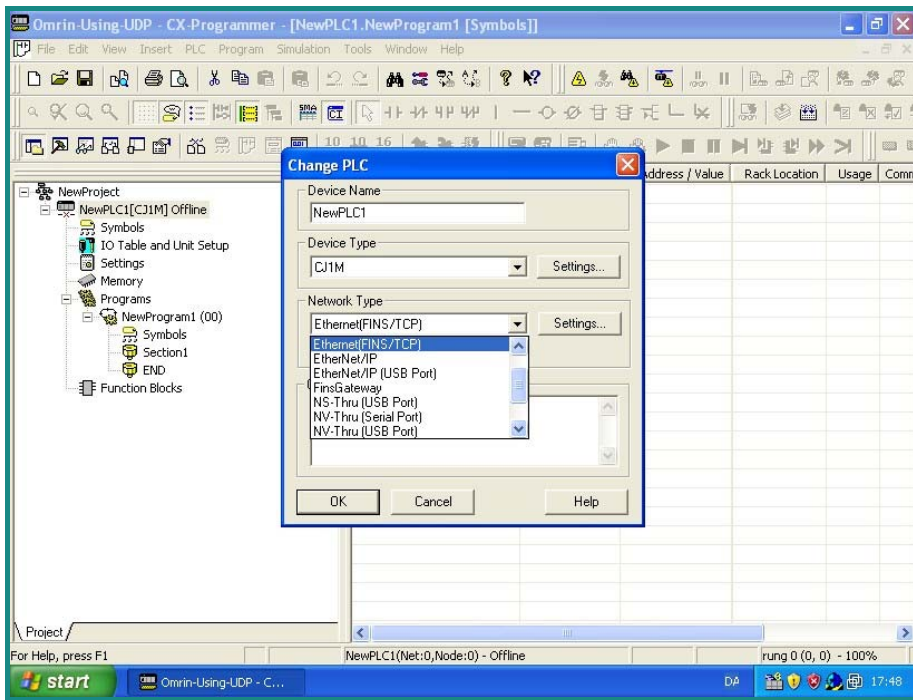1. Locate the agent that represents you TCPI/IP attached Omron PLC

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):
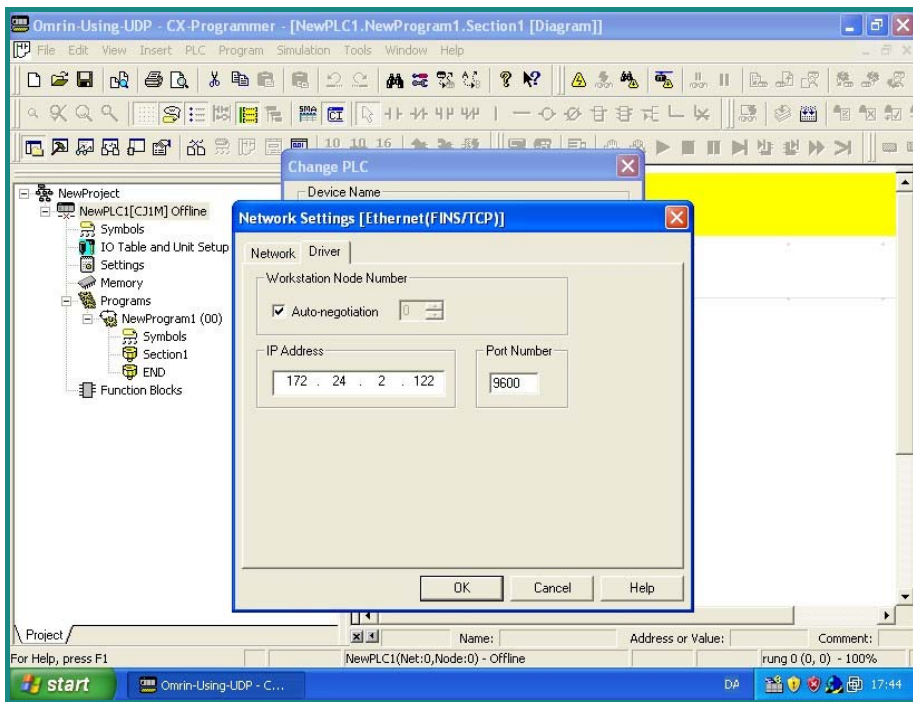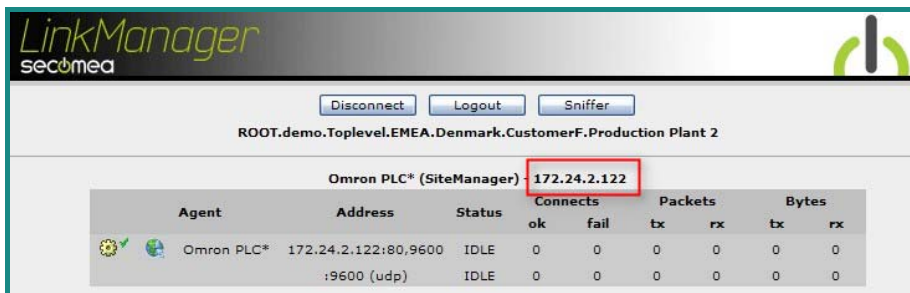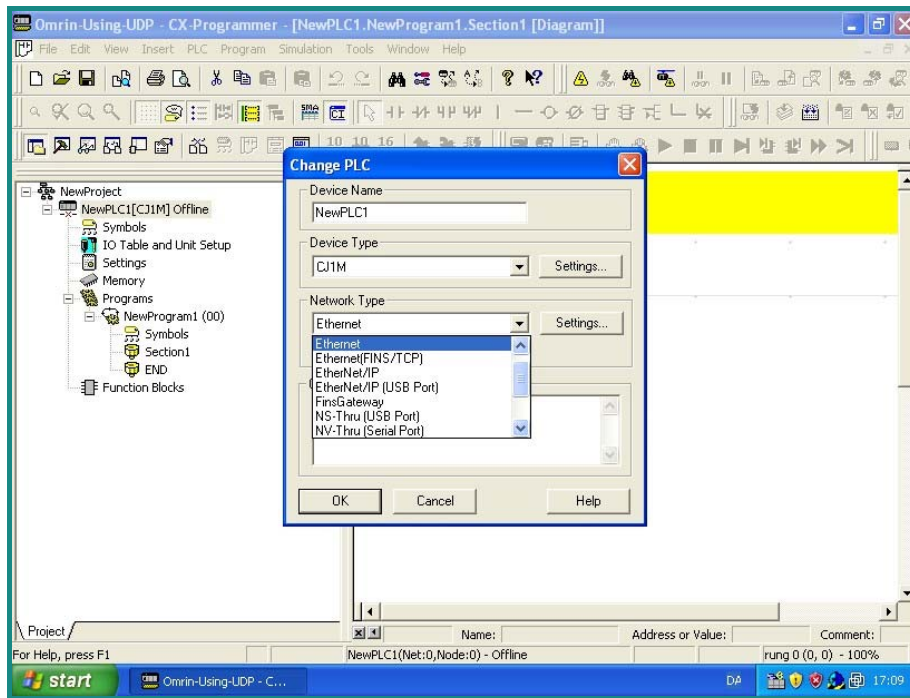

3. Start the CX-Programmer and open your project.

   NOTE: The LinkManager does not allow CX-Programmer to scan for network attached devices. Therefore you will NOT be able to detect the PLC under the menu **Auto Online → EtherNet/IP Node Online.** Neither will you see any activity on the LinkManager before you access it with a project where the PLC's specific IP address is configured.
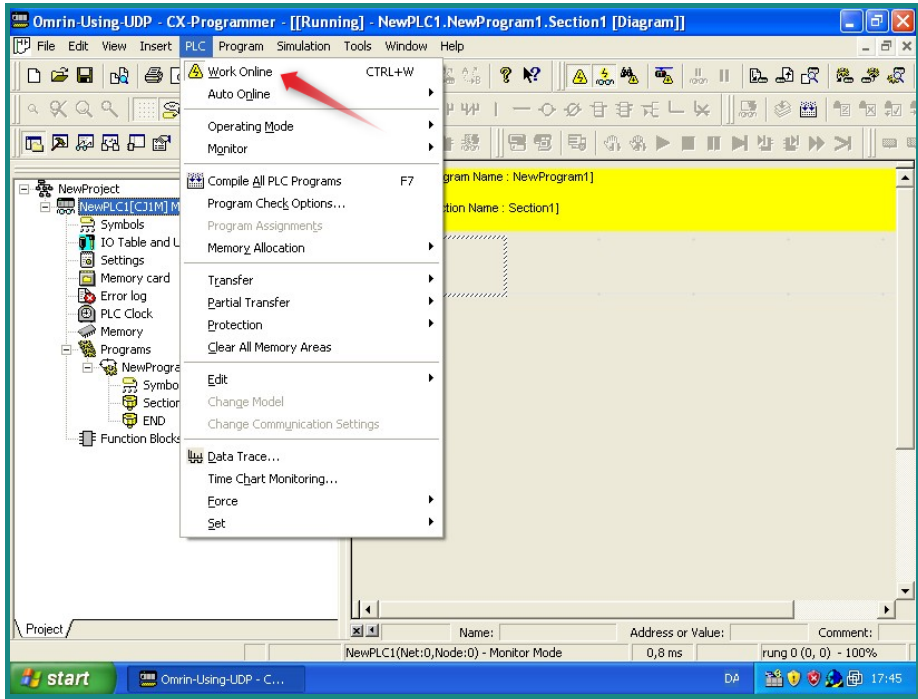
4. Double click the CPU icon in the screen "NewPLC[CJ1M] Offline". Choose the Network Type "Ethernet(FINS/TCP)", and select Settings → Driver:

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5. Specify the IP address of the PLC and Select OK

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6. Click Yes to connect to the PLC via LinkManager:

7. In the top menu, select PLC → Work Online:

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

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3. UDP Ethernet Access

The following describes how to connect the Omron CX Programmer to an Omron PLC that is attached to a SiteManager via Ethernet.

1. Locate the agent that represents you network attached Omron 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 CX-Programmer and open your project.

   NOTE: The LinkManager does not allow CX-Programmer to scan for network attached devices. Therefore you will NOT be able to detect the PLC under the menu **Auto Online → EtherNet/IP Node Online.** Neither will you see any activity on the LinkManager before you access it with a project where the PLC's specific IP address is configured.

4. Double click the CPU icon in the screen "NewPLC[CJ1M] Offline". Choose the Network Type "Ethernet(FINS/TCP)", and select Settings → Driver:
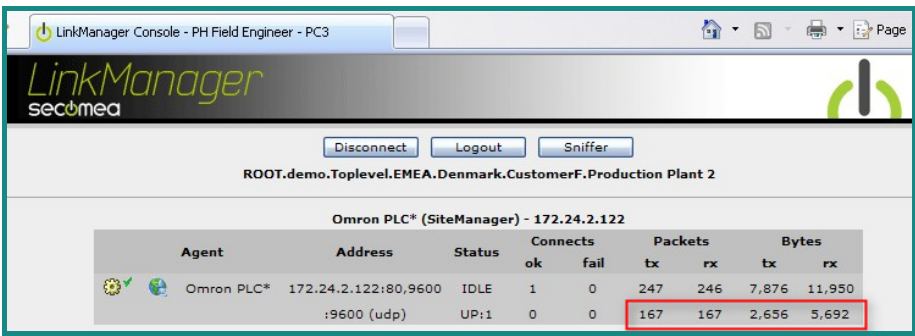
5. Specify the IP address of the PLC and Select OK.

6. Click Yes to connect to the PLC via LinkManager:
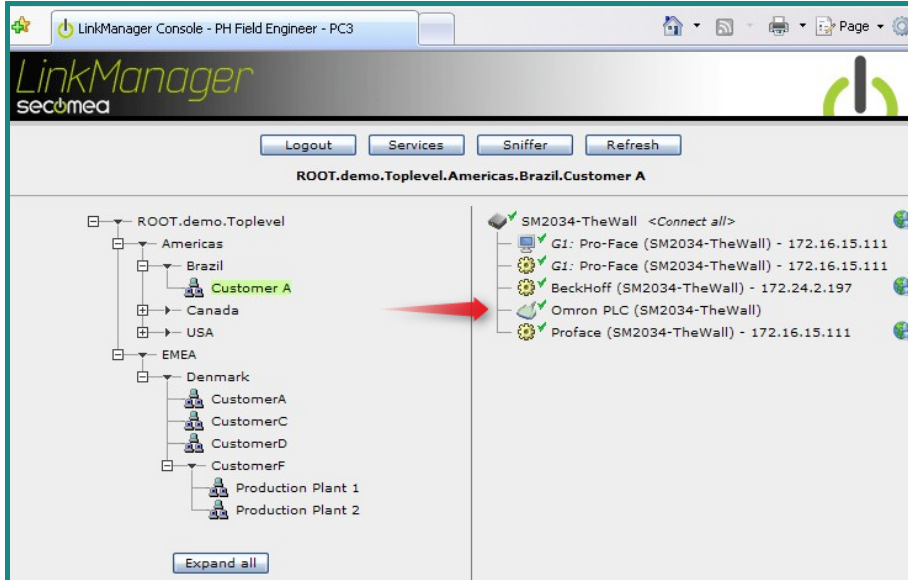
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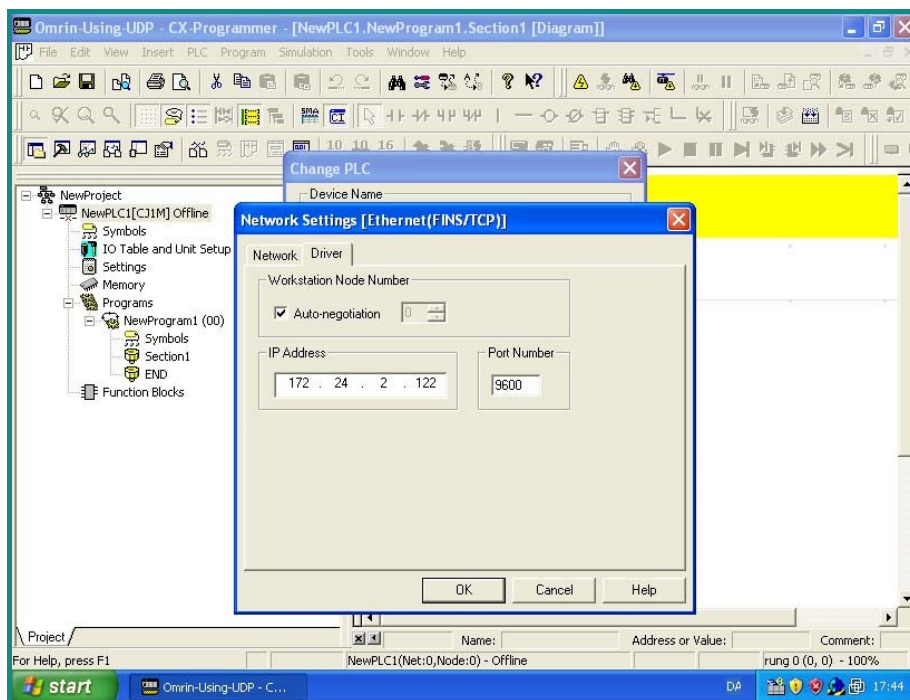
7. In the top menu, select PLC → Work Online:

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

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4. Serial Access

The following describes how to connect the Omron CX Programmer to an Omron PLC that is attached to a SiteManager via an Omron Serial cable.

1. Locate the agent that represents you network attached Omron 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 Omron PLC is correctly attached, you should also see the status of the agent become OK, and a few bytes of traffic:
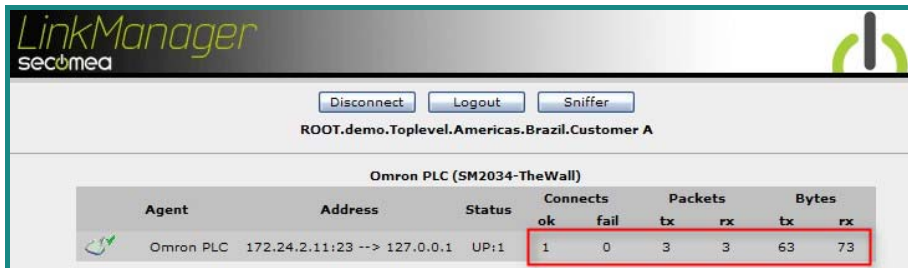
3. Now right click the LinkManager system tray Icon, and select **Status**. Make note of the Serial port that has been assigned (in this case COM5):

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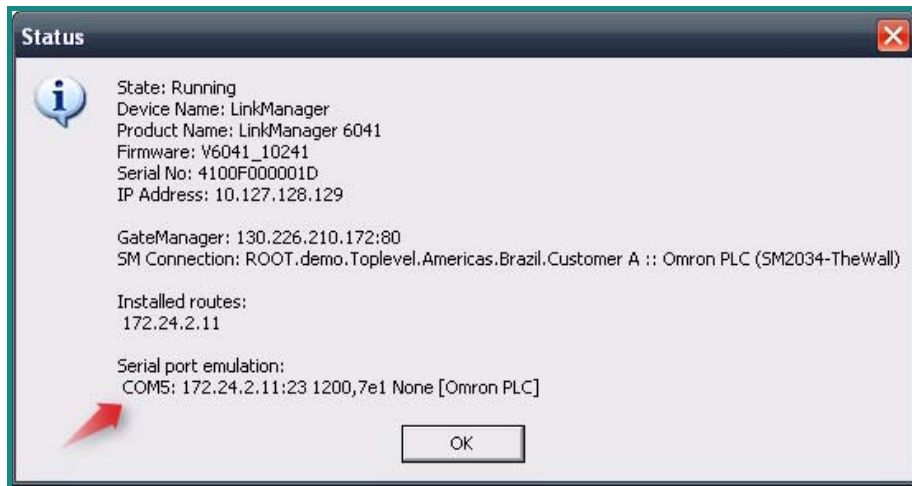
Right click the LinkManager system tray icon again, and select **Options**. Enter the number of the COM port you found under status. This will ensure that you will always get this port in the future (note that this feature only exist in Link-Manager version v6041_10185 and newer). Note that if you change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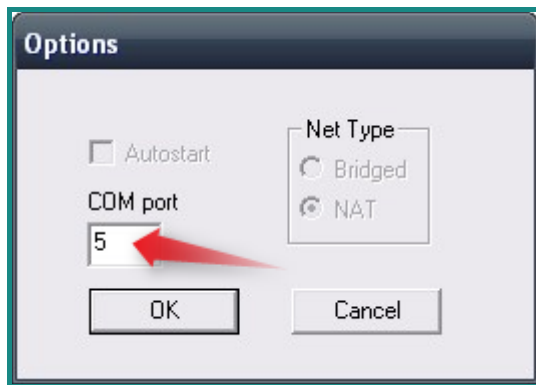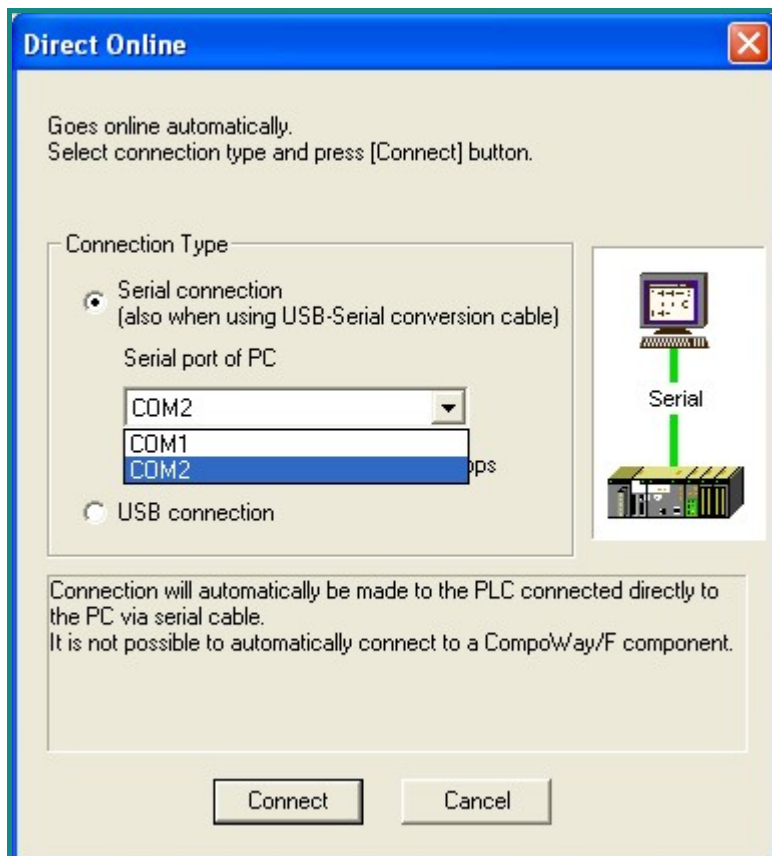

Note: You can also force another COM port (e.g. COM2). Just ensure in your Windows device manager, that the port is not conflicting with an existing COM port. See Appendix A for info on how to organize COM ports.

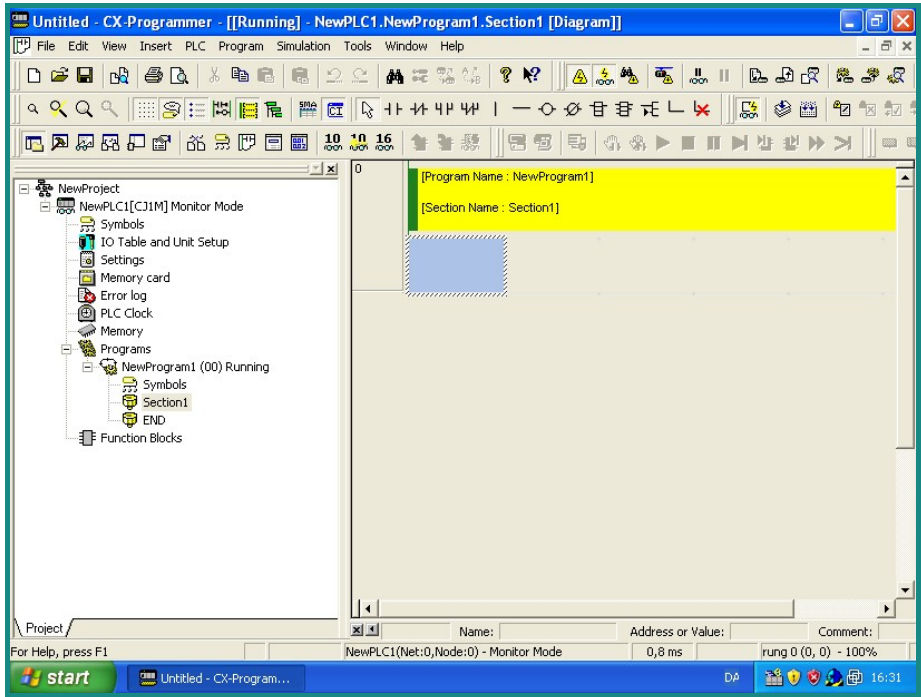4. Open the CX-Programmer and select Auto Online → Direct Online:
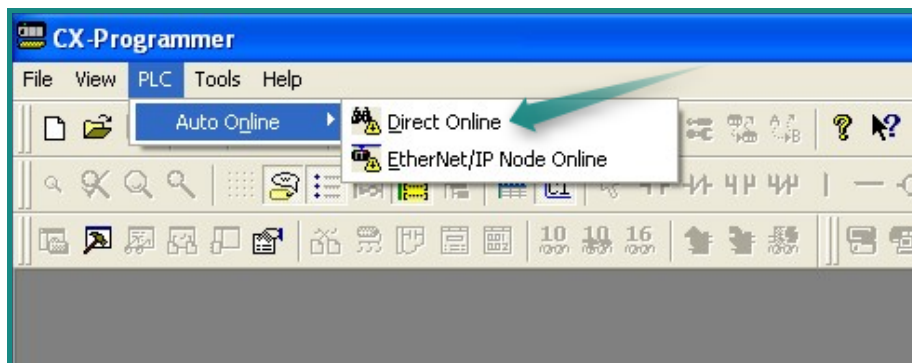
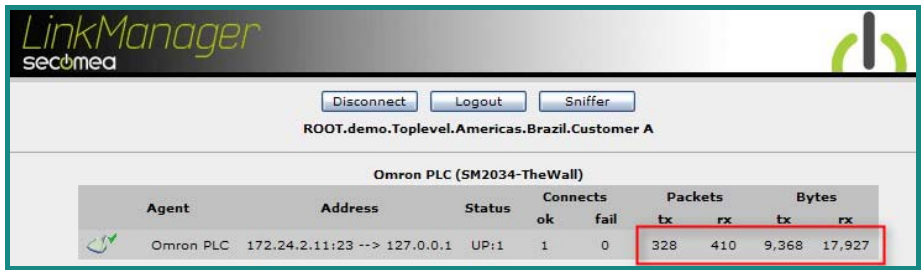5. Select the COM port matching the virtual COM port defined in the LinkManag-er:

6. Click Connect, and it will start searching for the proper communication type:
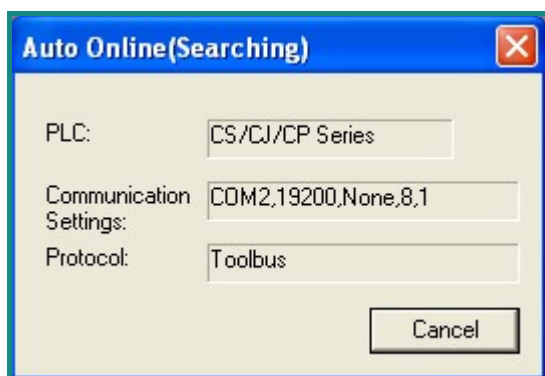
7. You are now online with the PLC:

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

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5.   Appendix A, Organizing COM ports in Windows

Clean up Windows Registry for redundant COM ports:

You may experience that the Omron 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.
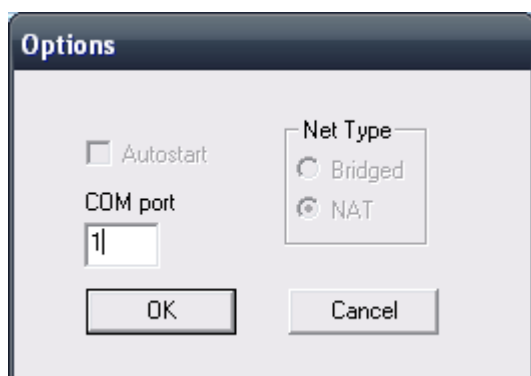
7. Stop and Start the LinkManager and start the Serial agent.

6. Notices

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