



# Technical Report

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## **CDC PC Station Guide** **Tutorial**

**Nuno Cruz**

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HURRAY-TR-A07006

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# CDC PC Station Guide

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## Abstract

This is a walkthrough guide to install a fresh CDC PC Station on the Flexible Manufacturing Field Trial.

## **Setting up the PC Station Module**

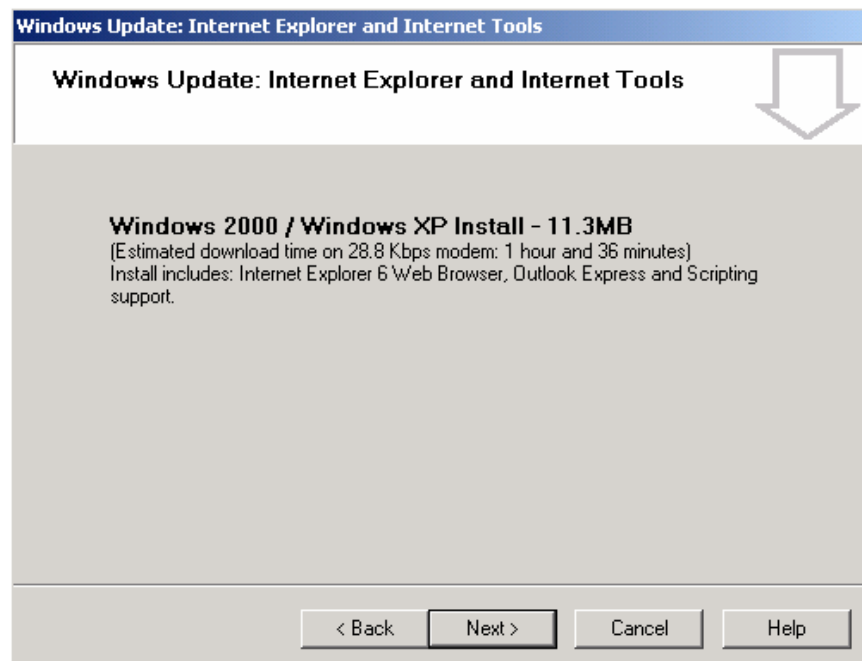
This guide was developed to be used in case there's the need to make a fresh install of the CDC PC Station module of the Manufacturing Field Trial.

**What is needed:** (marked items are available on the software package in the CD)

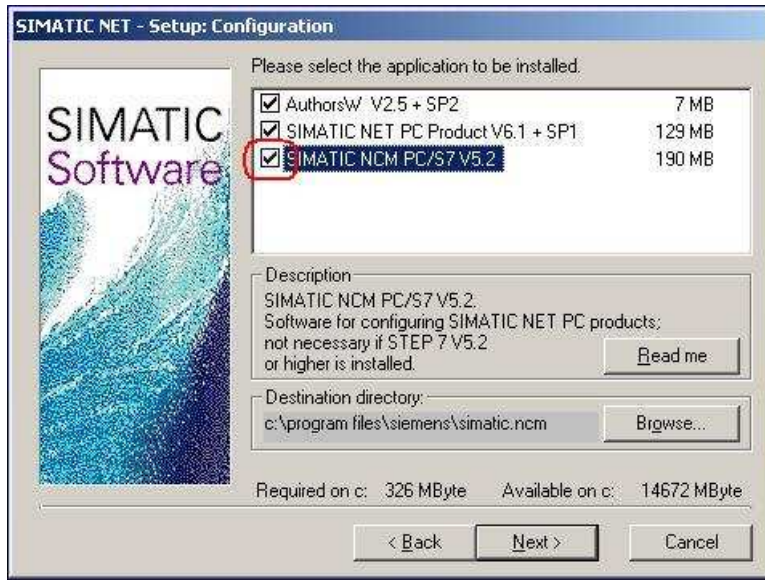
Windows 2000 Server  
Windows 2000 Server SP4 Update \*  
Simatic Softnet-DP V6.0  
Simatic Softnet-DP V6.0 SP5 Update \*  
Microsoft .Net Framework 2.0 \*  
Internet Explorer 6 (requires internet connection) \*  
IPP-Hurray! CDC application \*  
Several OS patches \*

Start by installing **Windows 2000 Server** on a typical installation. Once it's installed it'll prompt a window to configure the server. Choose to do that **later**. Then apply its **Service Pack 4** patch.

After the OS, update any **critical software patches** that came with this software package. Also install **Microsoft .NET Framework** and **IE 6**.



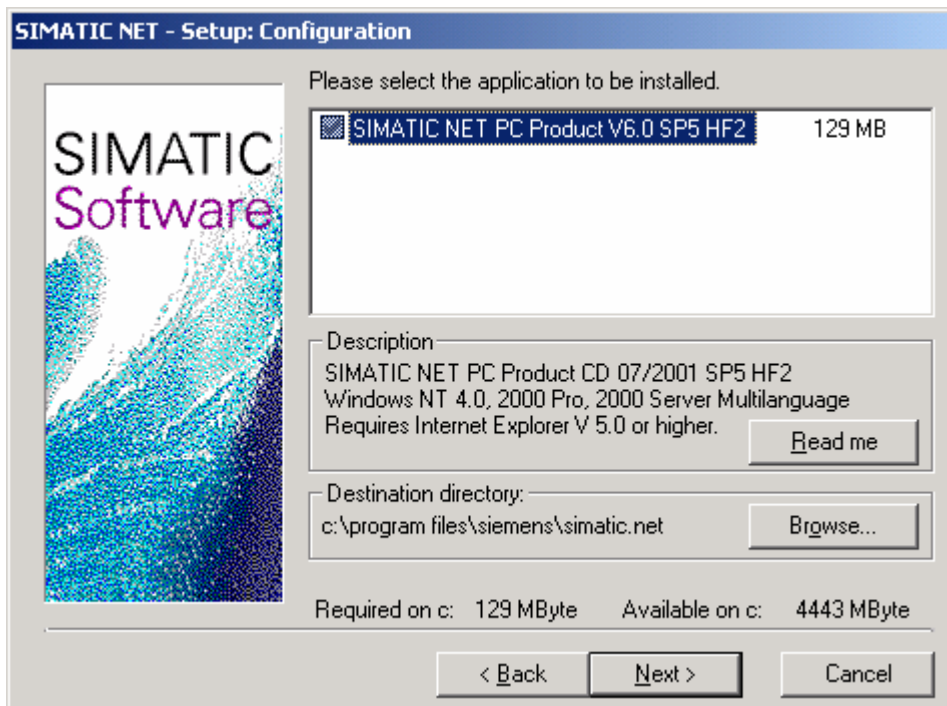
Next, install SIMATIC NET software from the installation CD. Be sure to select **SIMATIC NCM PC/S7**. If by any chance the system already has STEP7 installed then be sure to deselect **SIMATIC NCM PC/S7**.



The installation will require approx 30 minutes and 2 reboots to complete.

When the PC restarts, it will start the SIMATIC NCM PC Wizard. Close it. It should NOT be used. Also, close the **Console Configuration** window that'll popup. We'll deal with that further down in this guide.

After closing both windows apply **Simatic NET Service Pack 5 patch**.

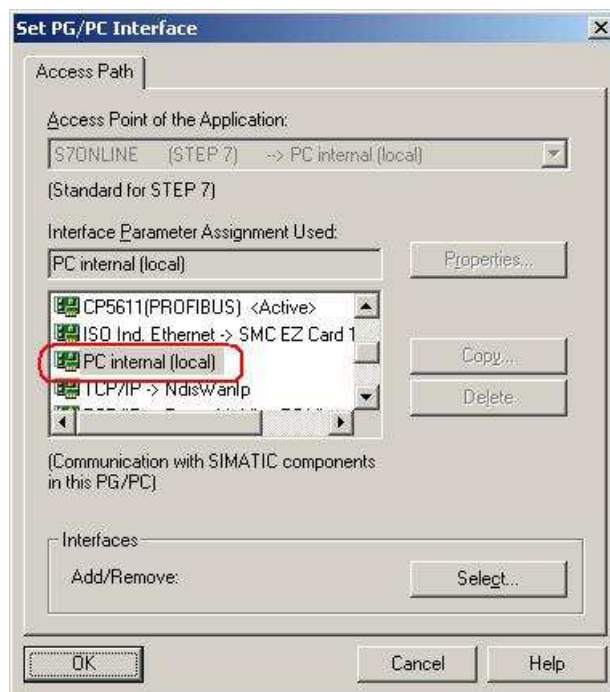


This one will also require a couple of reboots and approx 20 minutes to complete. When prompted, select "**Update Installation**" and also "**Uninstall Previous SIMATIC NET software**".

Once again, close both the SIMATIC NCM PC Wizard and the **Console Configuration** when installation is done.

## Setting up SIMATIC NET

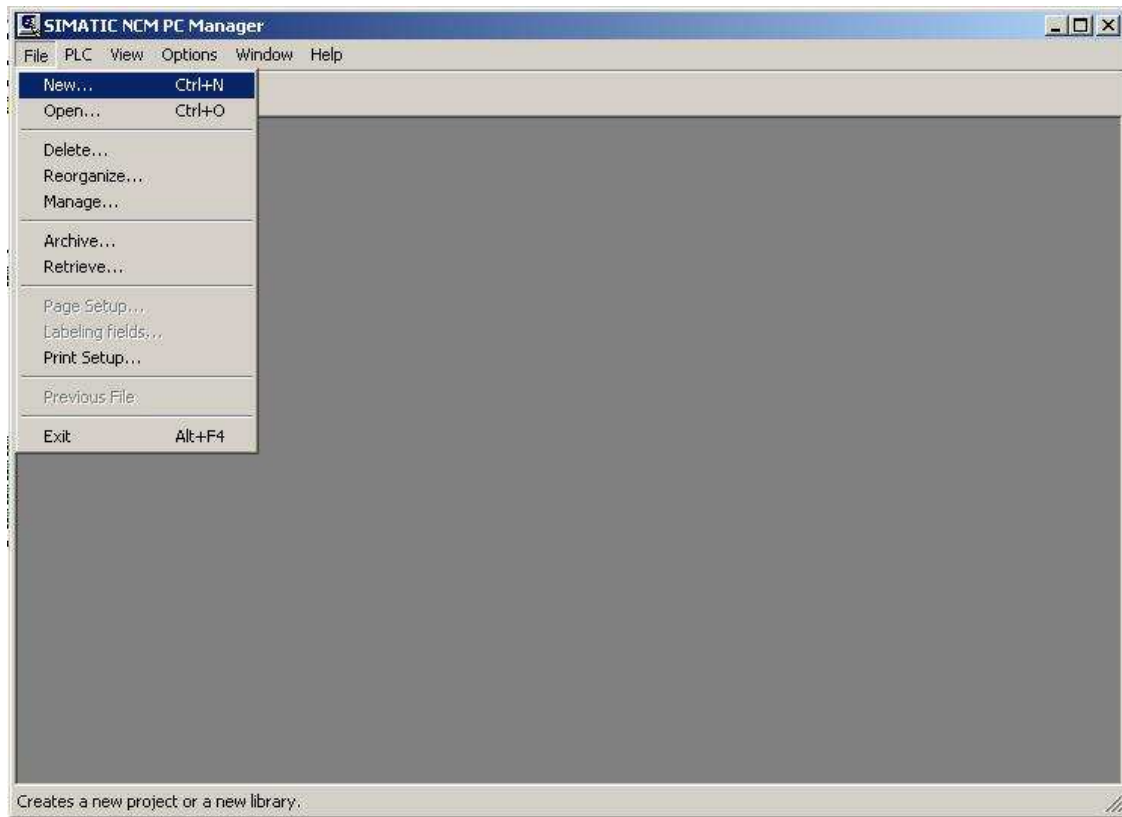
Select **Start\SIMATIC\SIMATIC NCM PC Manager**. Choose **Options..Set PG/PC interface**.



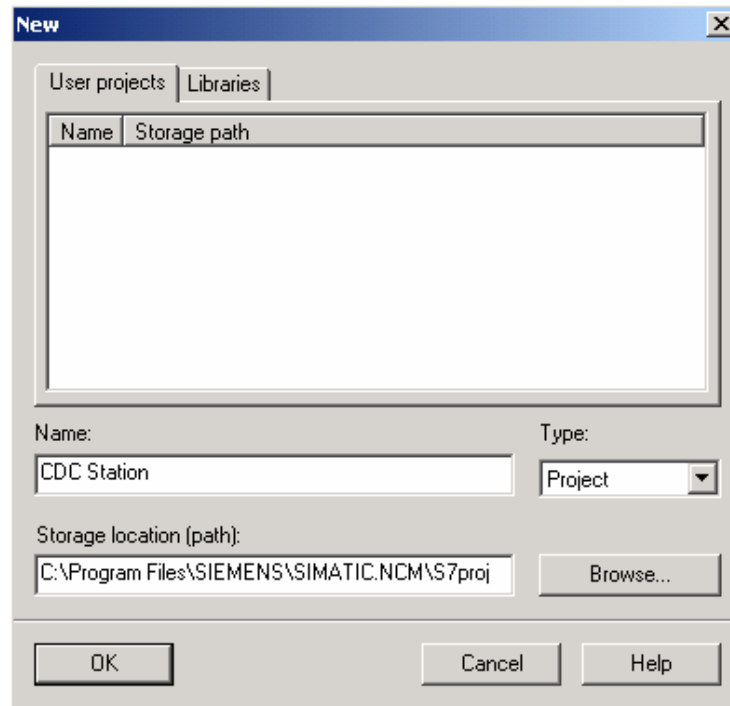
Set the **Interface Parameter Assignment Used** to **PC internal (local)**.

Note: This is required in order to be able to "download" the configuration of the OPC server. If STEP7 is installed, later (when setup of SIMATIC NET is finished) the S7ONLINE access point can be changed to CP5611 for example for online access to S7 PLCs.

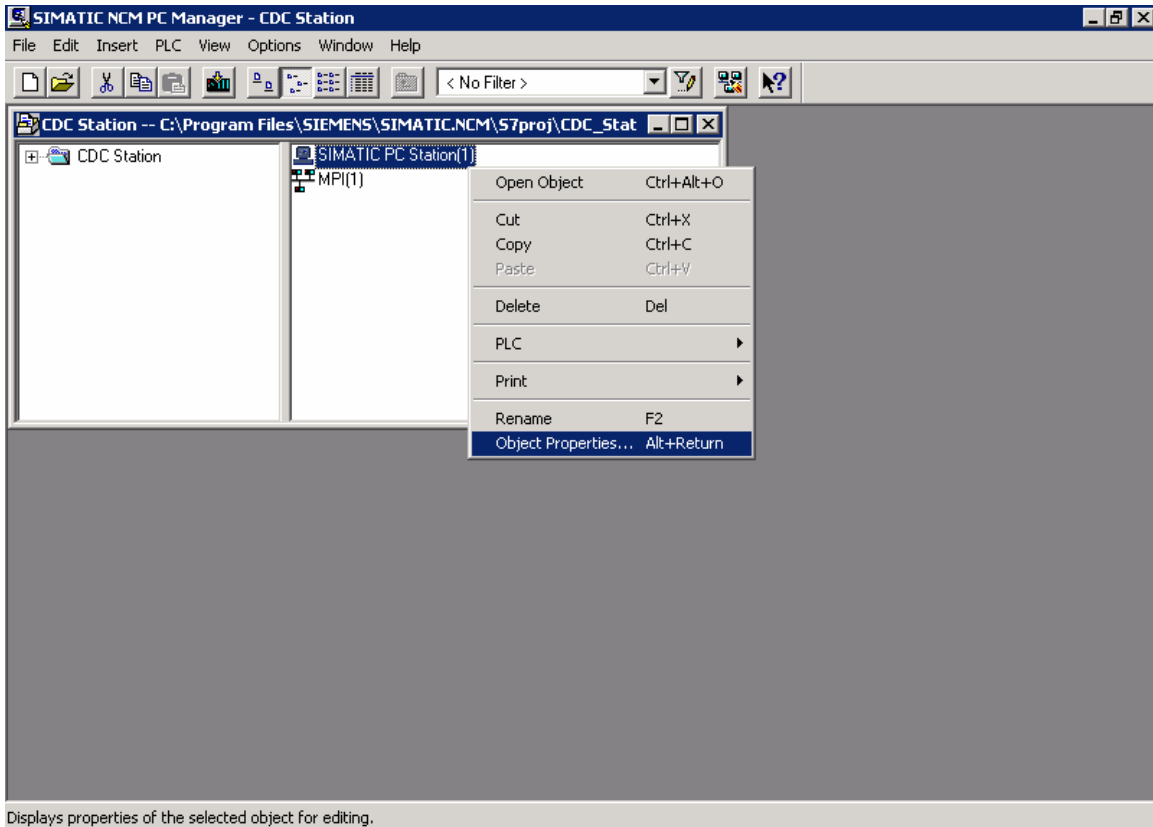
Choose **File..New**



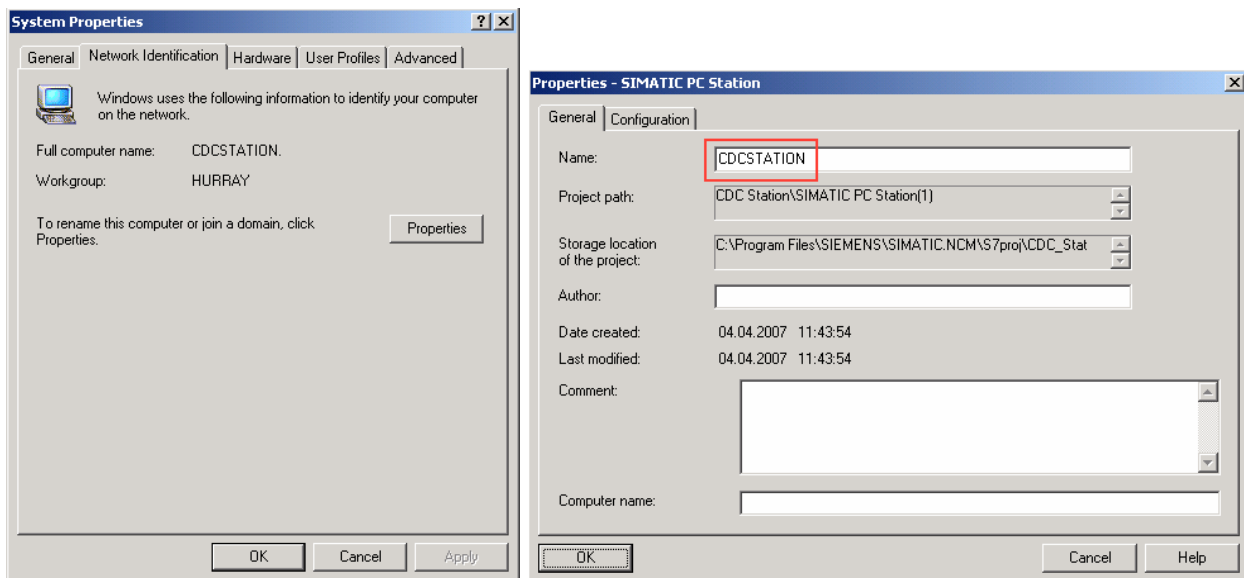
Choose any meaningful name ("CDC Station" is used throughout this example).



Choose **Insert..Station..Simatic PC Station**.



Change the name of **SIMATIC PC Station(1)** to the *computer name*.  
Use **Start..Settings..Control Panel..System..Network Identification** to find the computer name.



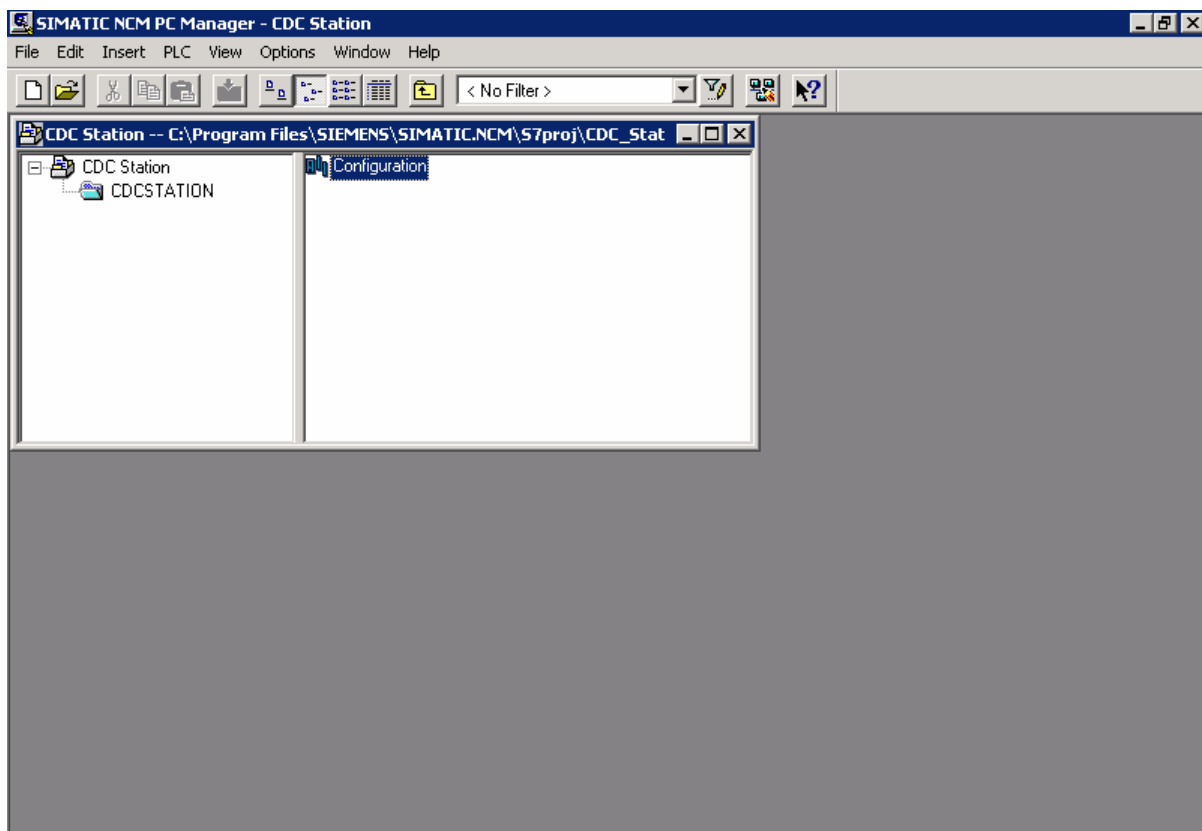
Notice: There will be a period "." in the name reported by the Windows Control Panel. Do NOT include the period in the name for the station.

Example: Name reported by Control Panel: "**CDCSTATION.**"

Then set the station name to "**CDCSTATION**".

Also, the name is case sensitive. Set it exactly as indicated in Control Panel, except the period.

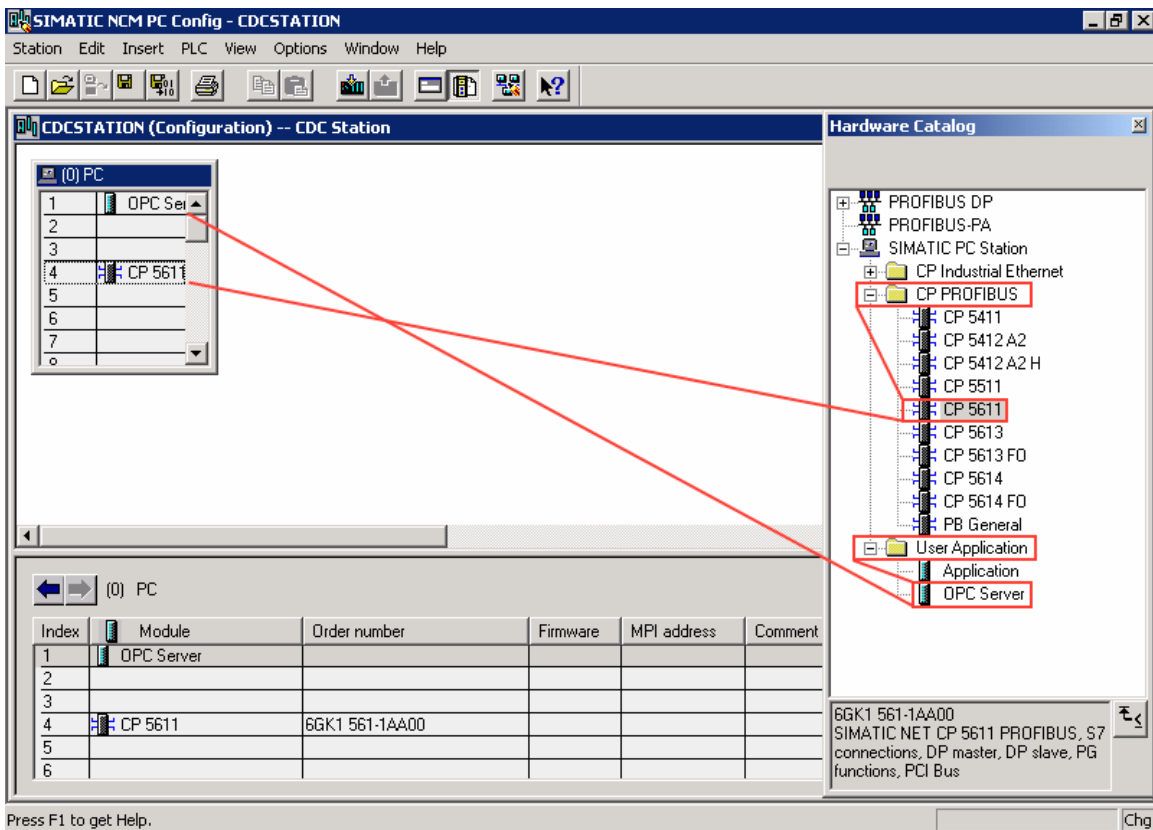
Double-click on **Configuration** to start **SIMATIC NET PC Config**.



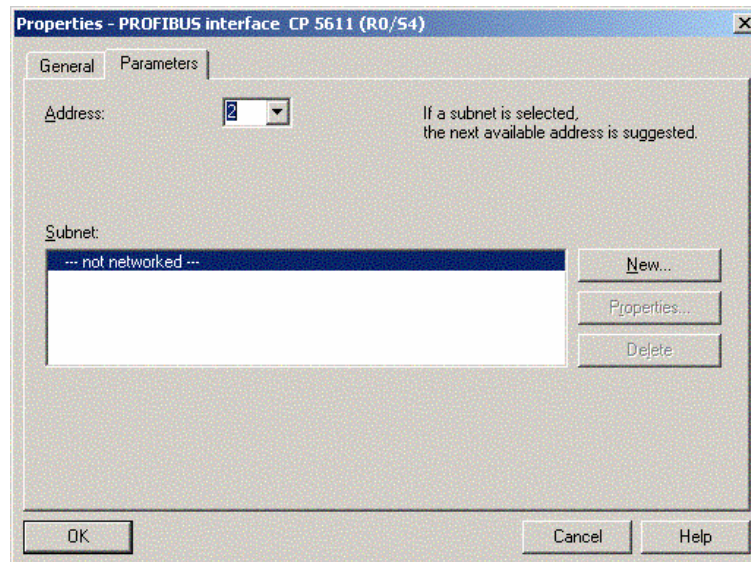


Insert an **OPC server** in **index 1** and a **CP 5611** in **index 4**.

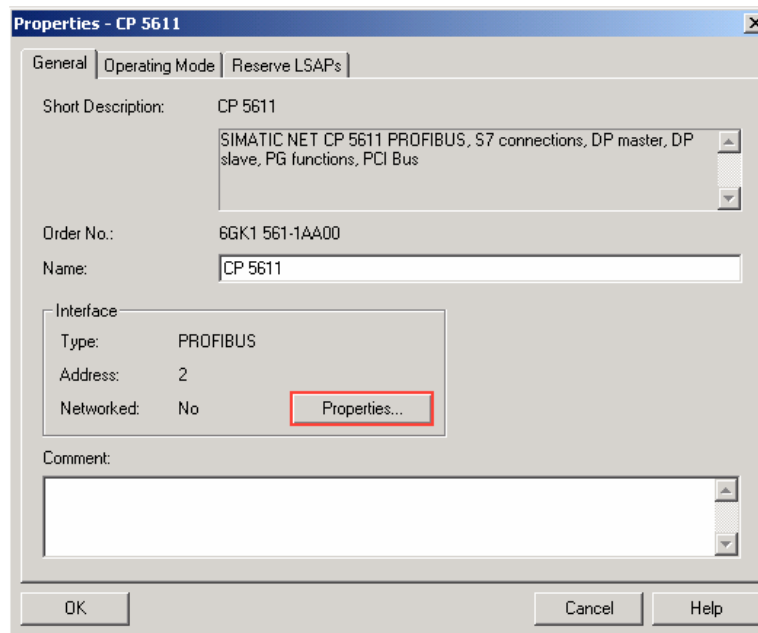
To insert a module: Highlight the "slot" in the left side of the window, and double-click on the module in the right side of the window (or drag and drop).



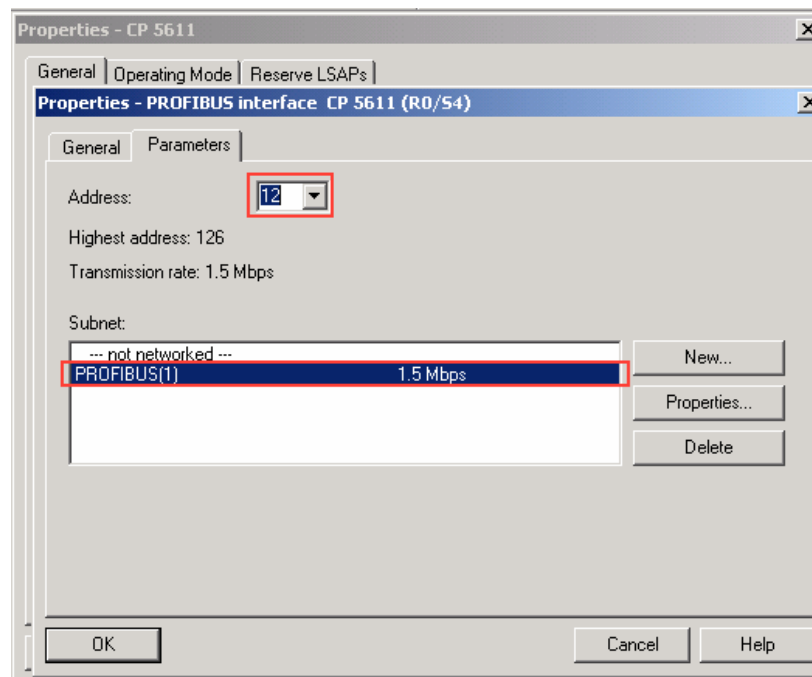
When inserting the CP5611 card, accept the default settings (--- **not networked** ---) when the first dialog is presented. Click **OK**.



Double click on the **CP 5611** to open the **Object Properties** dialog.

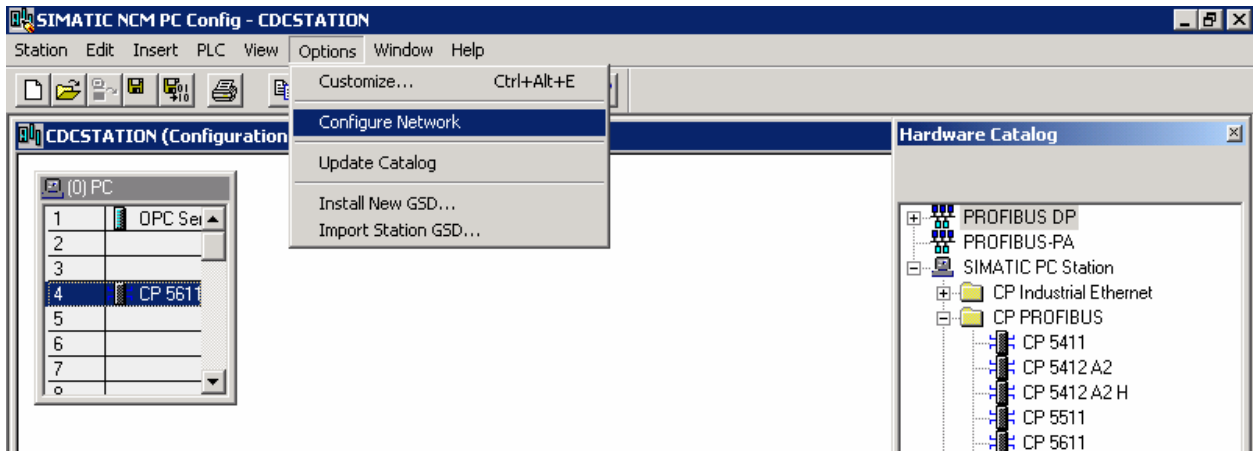


Click on **Properties...**

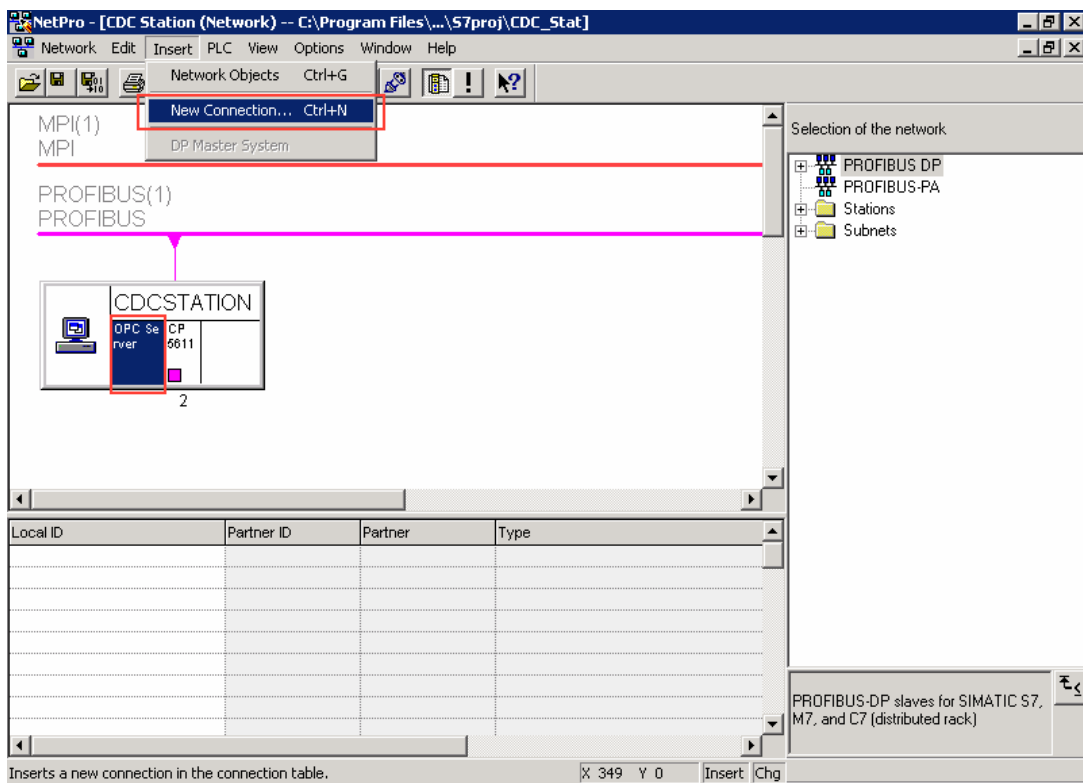


Set **Address** to the PROFIBUS node that you want the PC to have in the network (here **12**) and select the **PROFIBUS(1)** network.

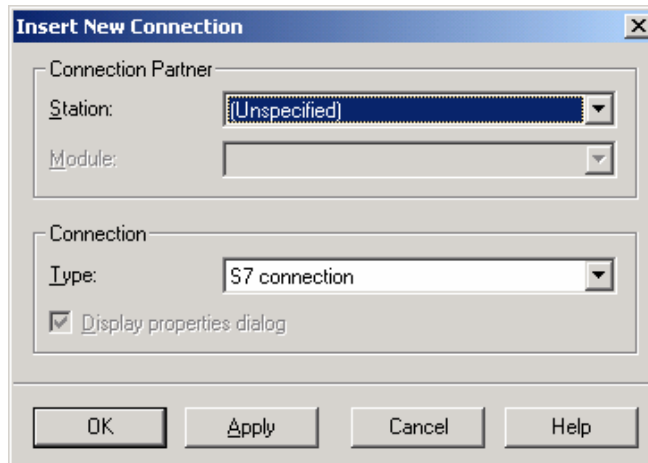
Choose **Options..Configure Network** to start **NetPro**.



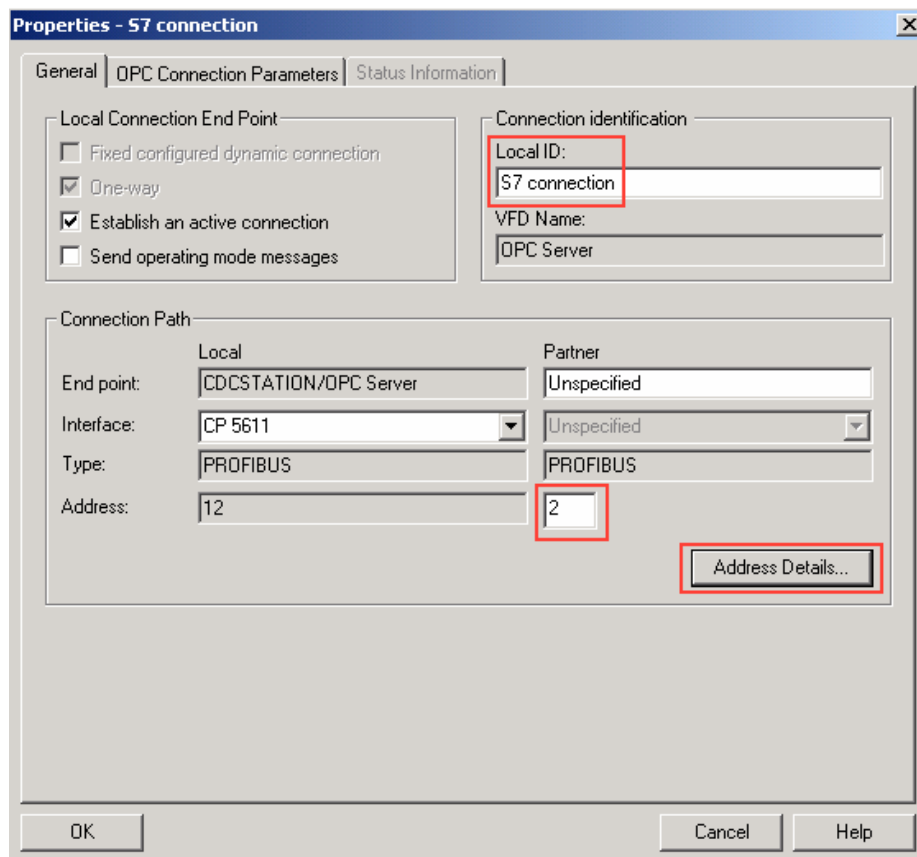
In NetPro highlight **OPC Server** and choose **Insert..New Connection**.



Click **OK** to select the default **Connection partner = (Unspecified)** with a **Type = S7 connection**.

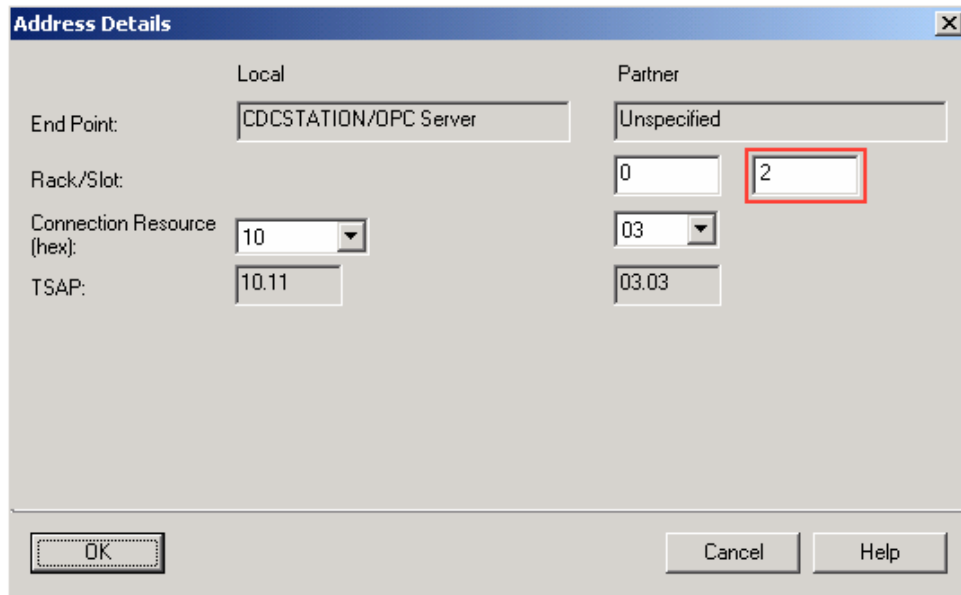


The Properties dialog will open automatically.



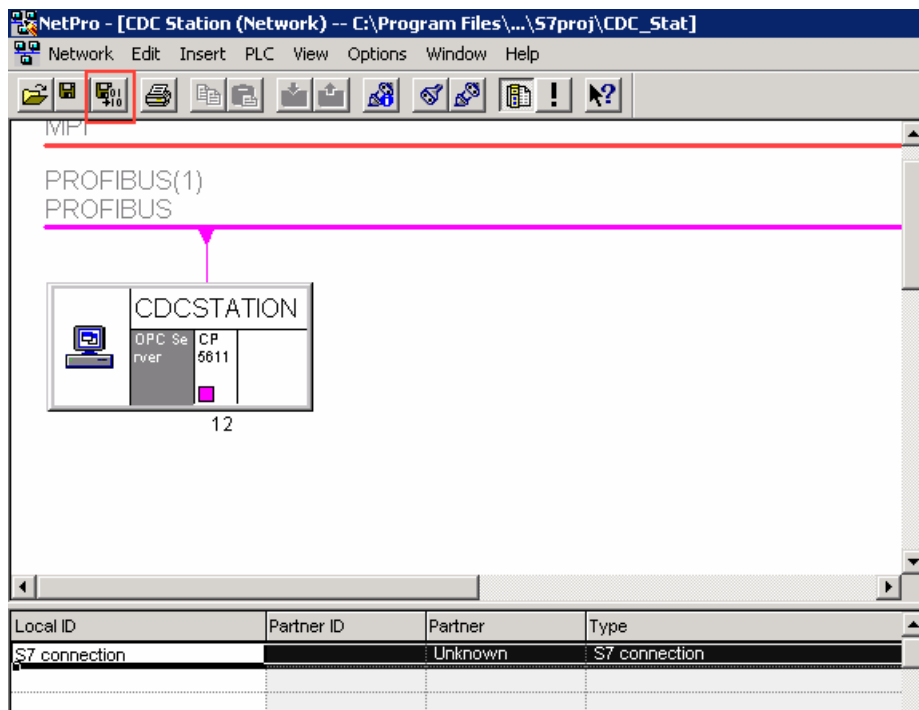
Set **Local ID** to **S7 connection** (this is important because the CDC App will use this name when browsing the OPC) and match the **Partner Address** with the PROFIBUS address of the remote S7 CPU (here is set to **2**).

Click on **Address Details...**



The **Partner Rack/Slot** values must match the remote S7 CPU hardware position. Everything else can be left as is.

In **NetPro**, choose **Network..Save and Compile (compile and check everything)**.

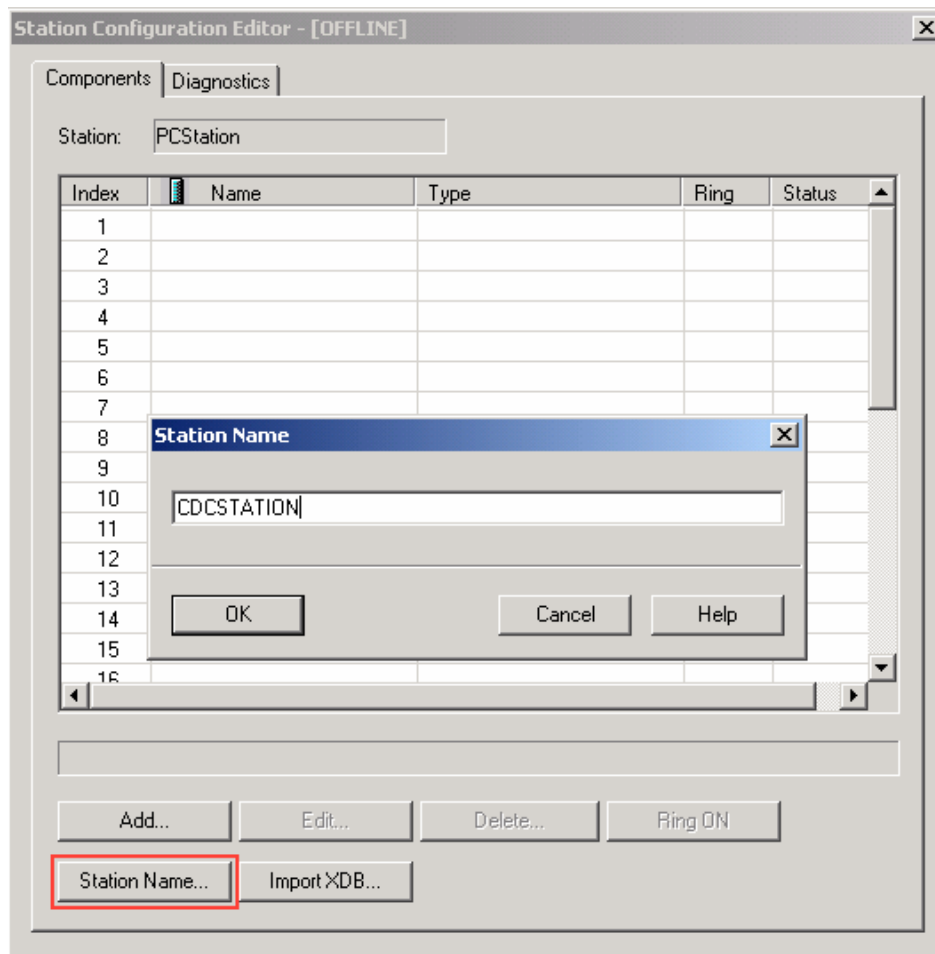


Close **Simatic NCM PC Manager**

Select **Start\Station Configurator** (or click on the icon in the taskbar).

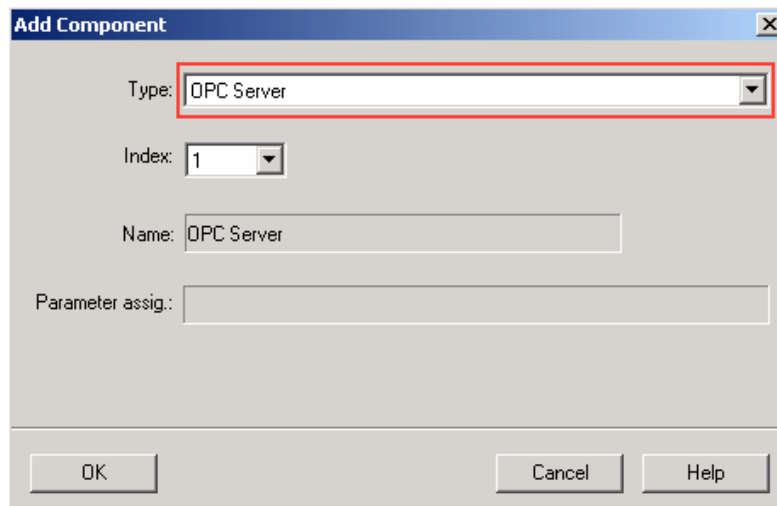


Make sure that the **Station's** name matches the one defined in the **Simatic NCM Manager**. Change it if necessary.



Click on **Add..**

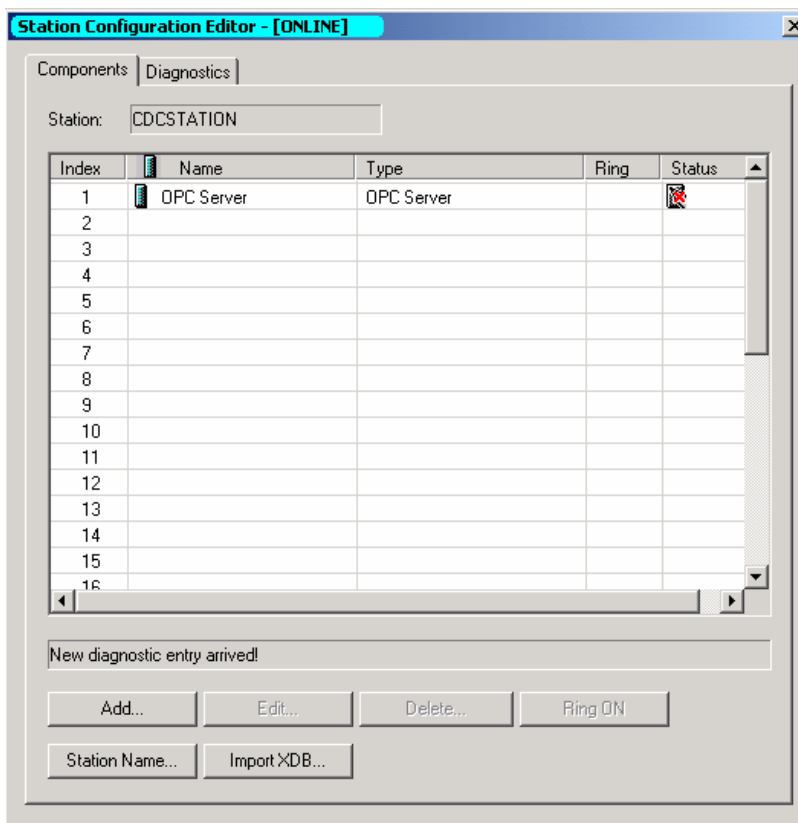
Then add a **Component** of type **OPC server** at **Index 1**.



The 'Add Component' dialog box is shown with the following fields:

- Type: OPC Server (highlighted with a red box)
- Index: 1
- Name: OPC Server
- Parameter assign.: (empty)

Buttons: OK, Cancel, Help



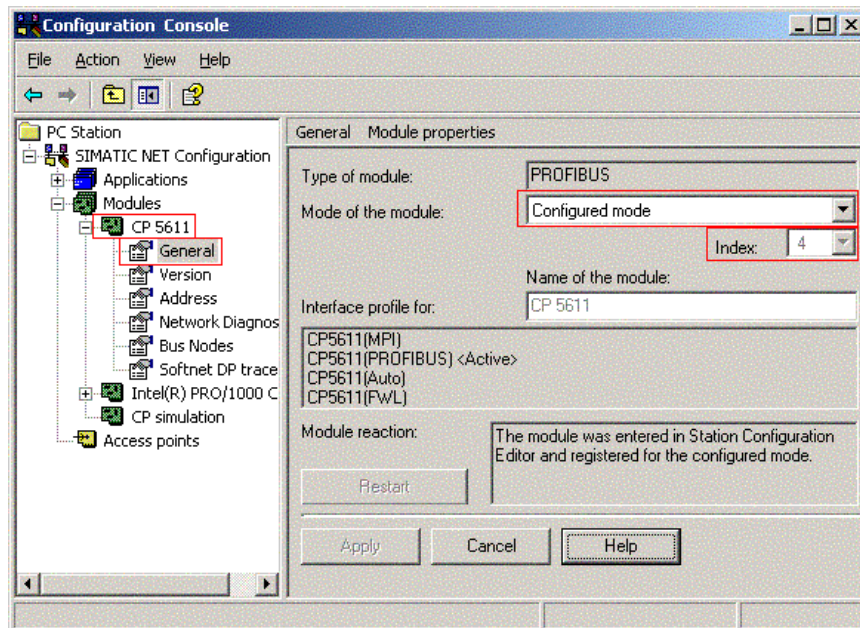
The 'Station Configuration Editor - [ONLINE]' window shows the configuration for station CDCSTATION. The 'Components' tab is active, displaying a table of components:

Index	Name	Type	Ring	Status
1	OPC Server	OPC Server		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

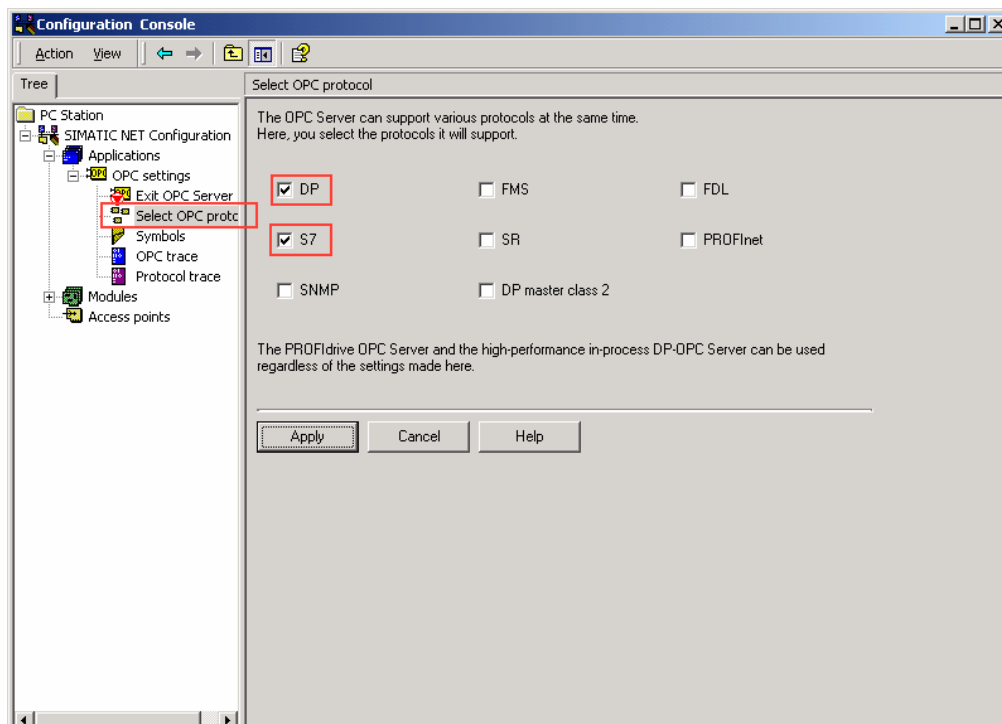
Buttons: Add..., Edit..., Delete..., Ring ON, Station Name..., Import XDB...

Close **Station Configuration Editor**.

Select **Start..Simatic..SIMATIC NET..Settings..Configuration Console**.



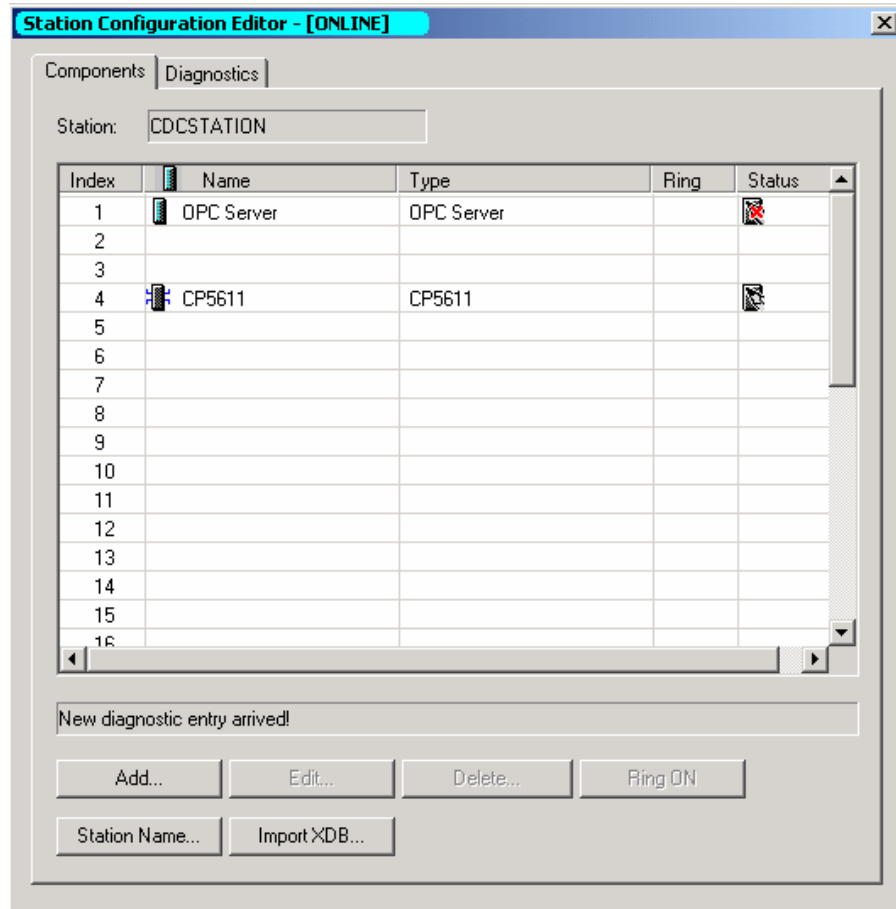
Set the CP5611 mode to **Configured mode** and specify **Index = 4**. Activate with **Apply**.



Set the selected OPC protocols to **S7** and **DP** only (all others deselected). Activate with **Apply**. Close **Configuration Console**.



Select **Start\Station Configurator**.



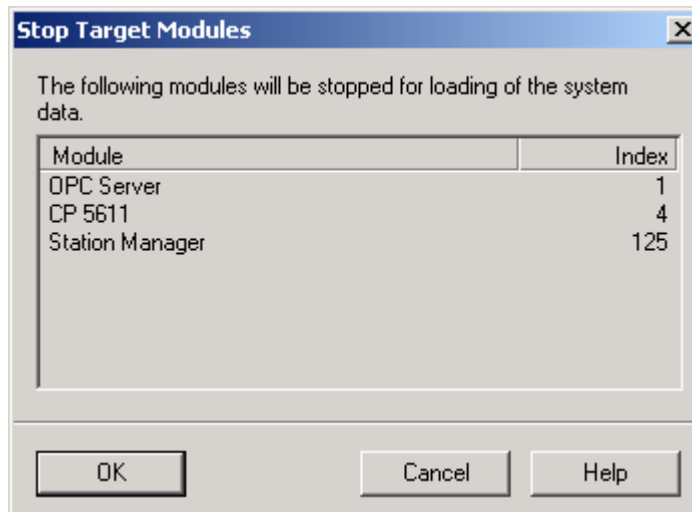
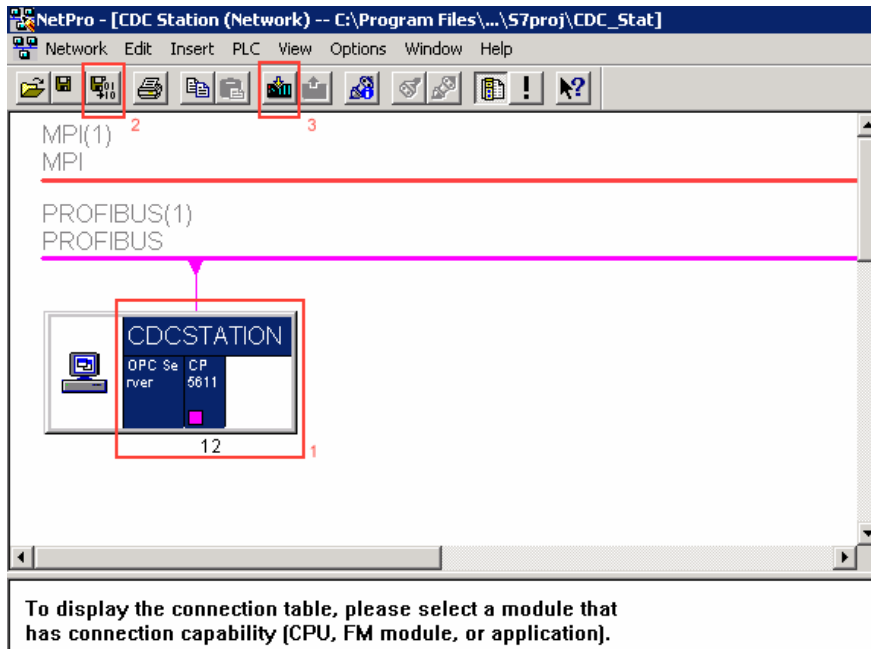
The **CP 5611** should now appear in **index 4**.

Switch to **NetPro**.

Highlight all the PC components as shown (1).

Select **Network..Save and compile** (2) and select **PLC.. Download to current project..**

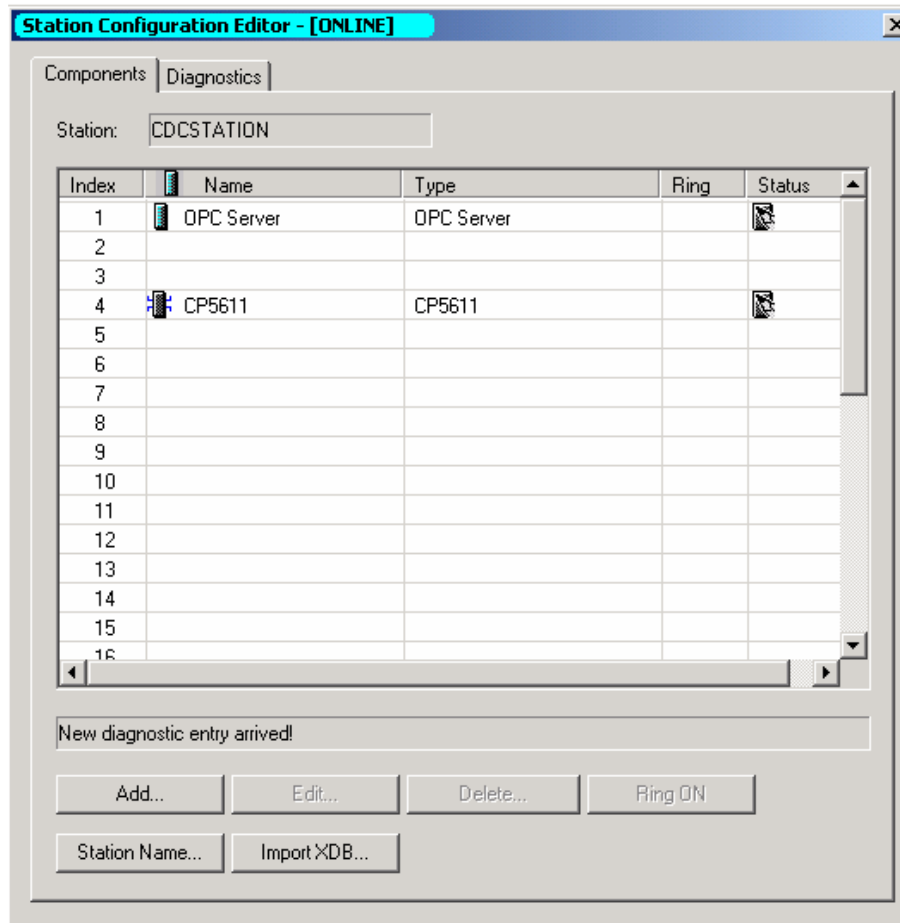
**Selected stations** (3).



You will be prompted to accept the various components to be stopped. Accept with **OK** or **YES**.

Close **NetPro**.

Select **Start\Station Configurator**.



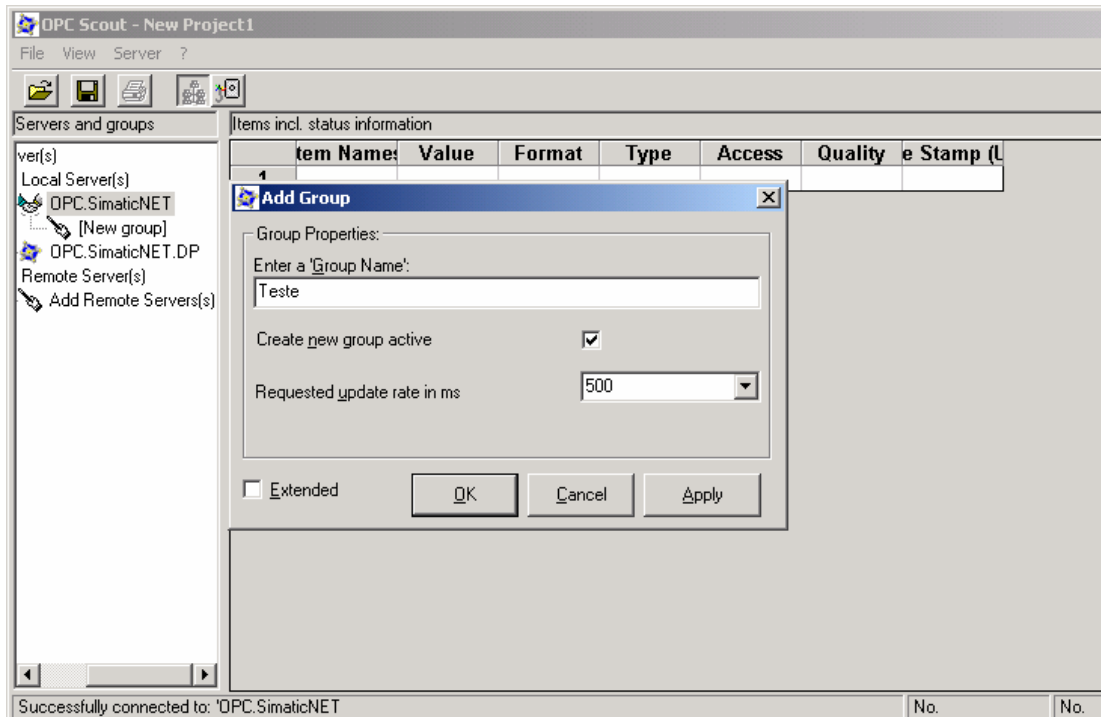
Both **OPC Server** and **CP5611** should now have no errors (no red cross at status icon). If so, the configuration of SIMATIC NET is finished.

Close **Station Configuration Editor**.

## Testing and Setting up the OPC Items

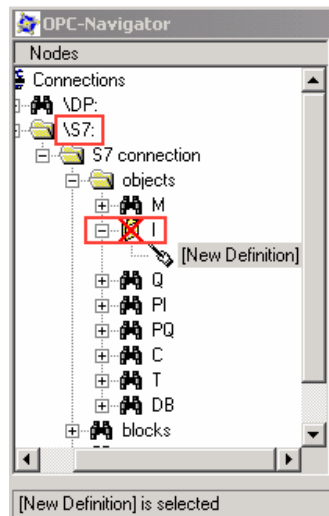
Use an OPC test client to test the connection. Simatic Net OPC test client is called **OPC scout**. Start it.

A dialog will appear with a list of available OPC servers. **OPC.SimaticNET** and **OPCSimaticNET.DP** must be in the list. Right-click on the first one and it will "connect". Specify any name for "group".

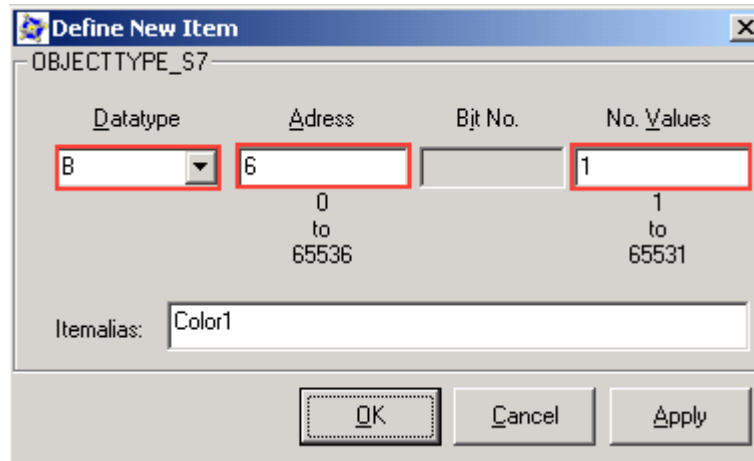


Right-click on the newly created group – in this example “**Teste**” - and select **Add item**.

A dialog will appear where you can click on available connections. Choose **\S7** then the previously created connection named **S7 connection** and then navigate to the Input items.

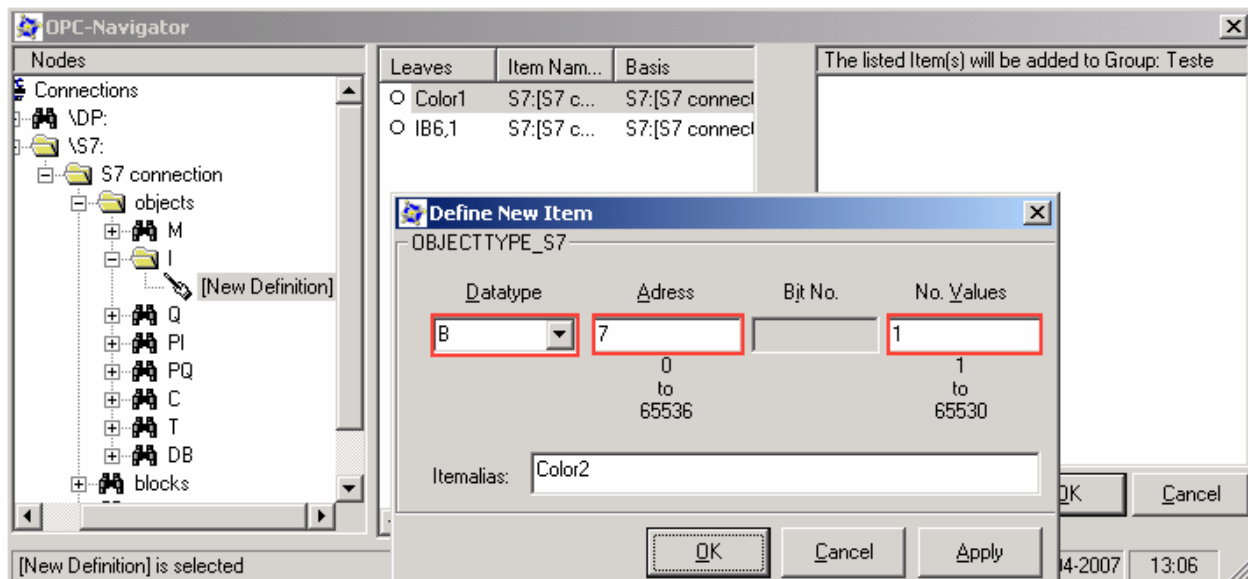


There you’ll select **New Definition** and create a new item. Select **Datatype = B**, **Address = 6** and **No. Values = 1**. The item alias must be **Color1**.



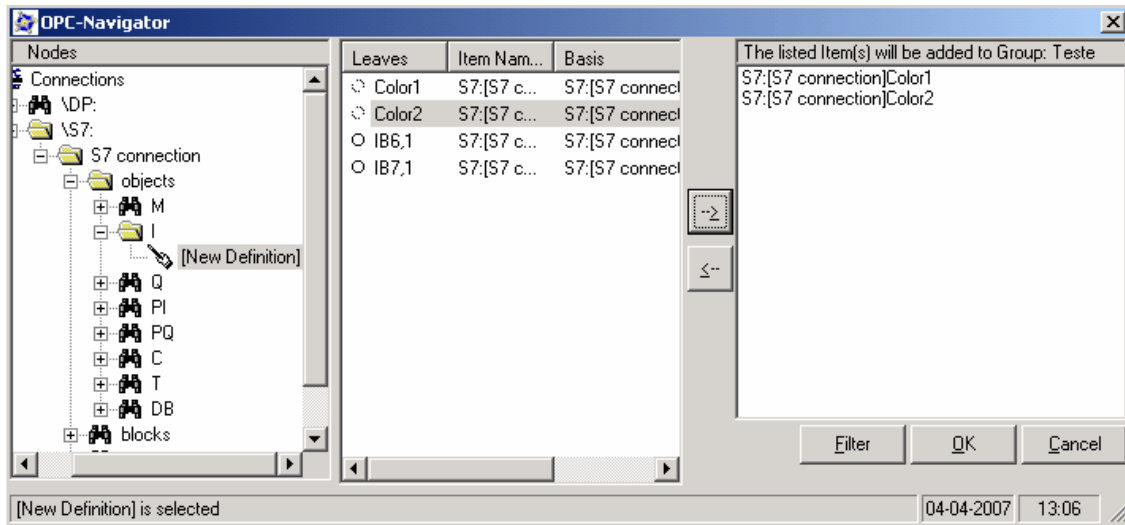
The item just created is going to be used to communicate the detected values over at camera 1. It is imperative that this is done correctly otherwise the CDC App will not work properly.

Next create a second item, this one for the second camera. Select **Datatype = B**, **Address = 7** and **No. Values = 1**. The item alias must be **Color2**.



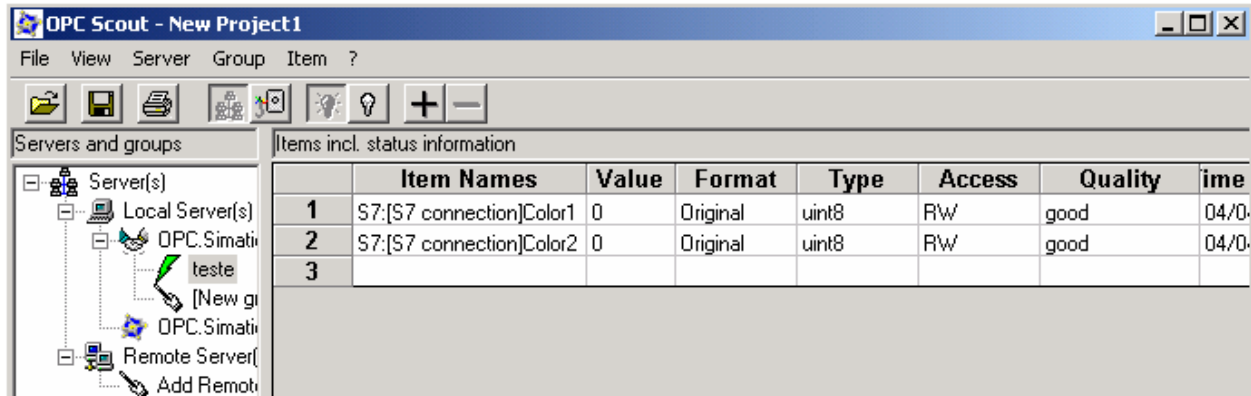
As the picture shows, you can see the previously created "Color1" item in the background for selection.

When done, pick the "Color1" and "Color2" items and add them to the list of updated items in the group with the "-->" button.



Press **OK**.

You'll be able to check the status of both items as well as update the values in them (for testing if required). If the **quality** of the items is **good** then everything is connected and set up correctly.



Finally, typical pitfalls:

1. Is the **PG/PC interface** set to **internal** ?
2. Is the name of the computer specified correctly everywhere ?  
The **Station Name** in **NCM** must be the same as in **Station Configurator** as well as the name of the PC as indicated in the **Control Panel**. No period in the end of the name. Case must be the same (**NAME**, **Name** and **name** are all different)
3. The mode of the communication hardware must be **configured** with the proper **index** in **Configuration Console**.
4. The correct **slot** number is not specified for the **communication partner** when setting up the connection in **NetPro**.
5. If the items **quality** is **bad**, check if the cable is connected properly. Double check all the steps in this guide.