Commissioning Example

AC500

Scalable PLC
for Individual Automation

High Availability with CI590-CS31

High Availability

abb

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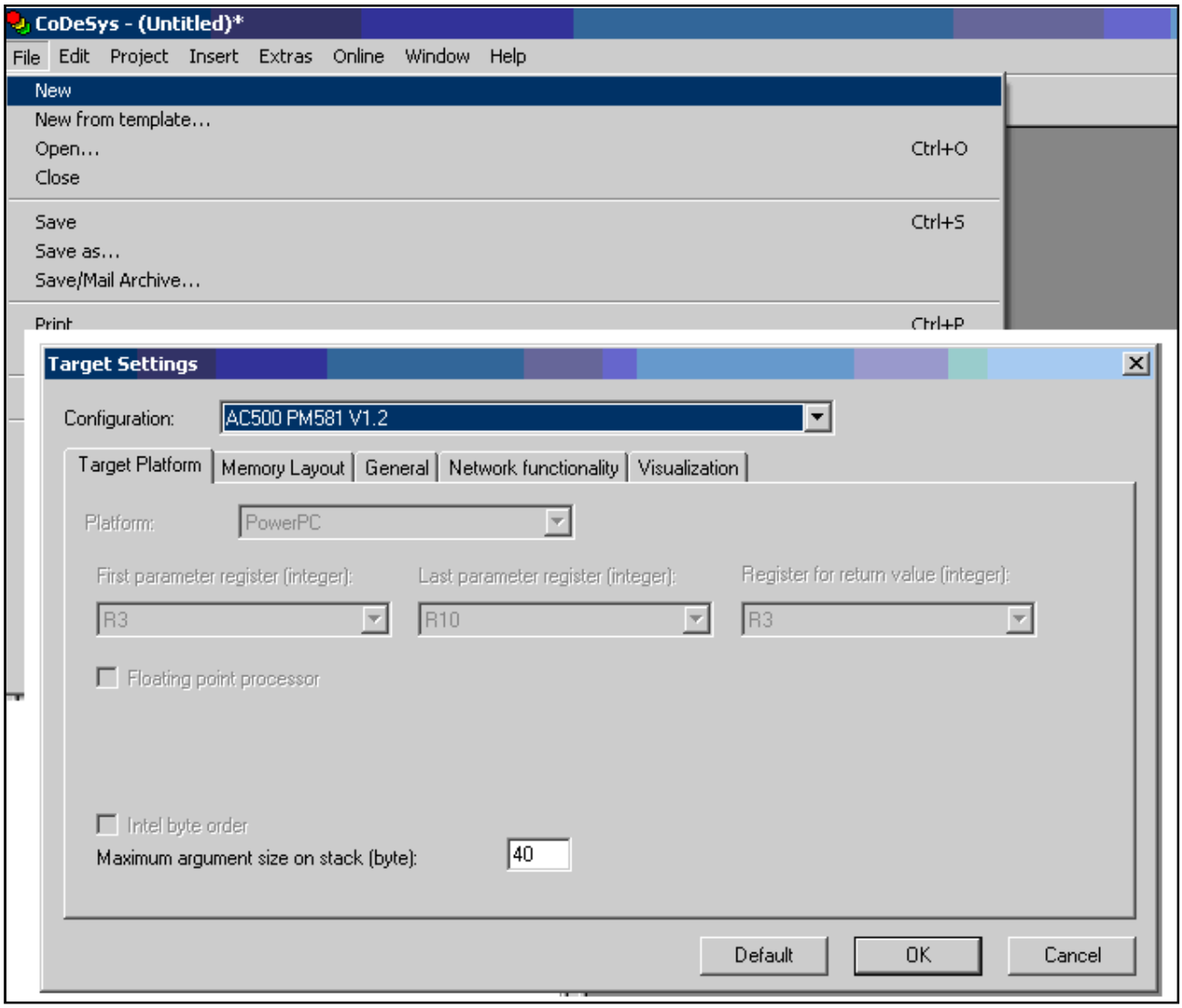
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CPU Configuration

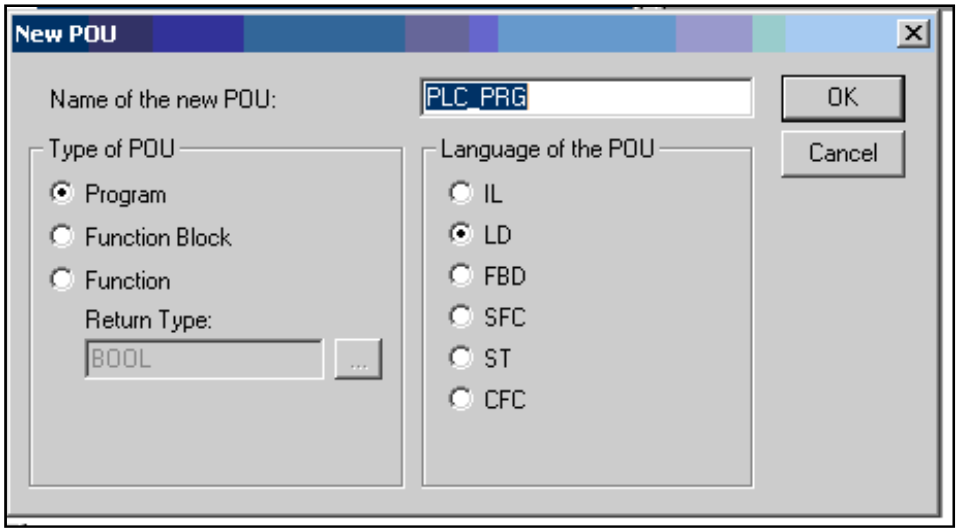
1. Select a **New** Project and select the required AC500 PLC CPU – **AC500 PM5xx V1.2.**



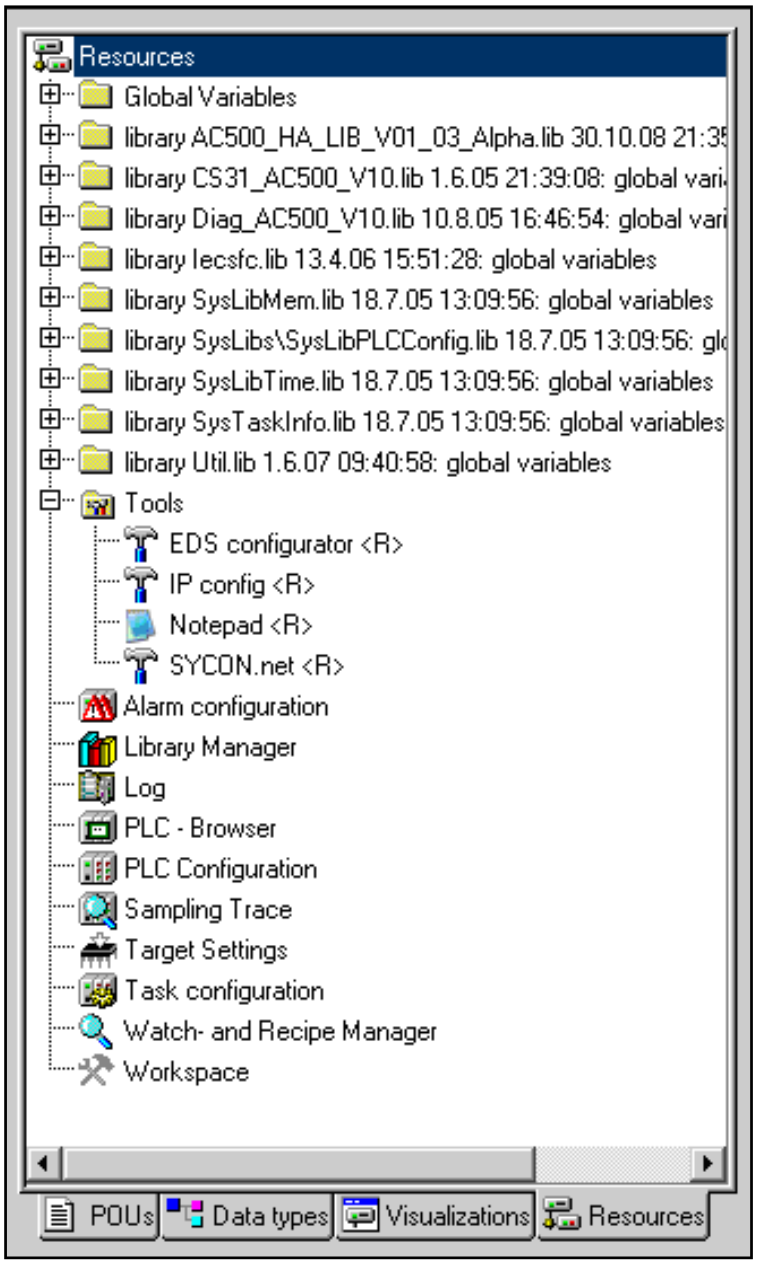
NOTICE

AC500 High Availability System is supported by all the AC500 CPU with Firmware Version V1.2 or greater.

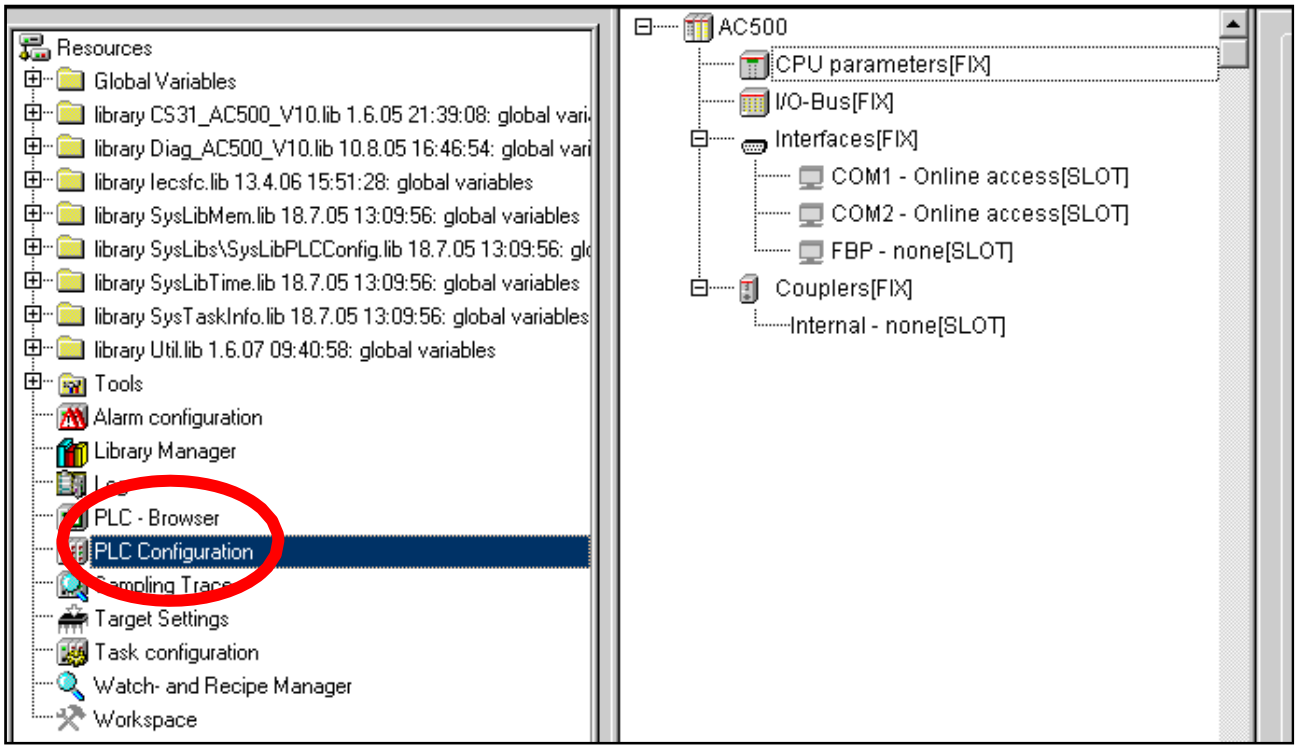
2. Create the Default Program **PLC_PRG** by pressing **OK**. Select the Programming language of your choice (e.g. LD – LADDER, FBD – Function Block Diagram).



3. **Save** the project and select the **Resources Window** as shown below.

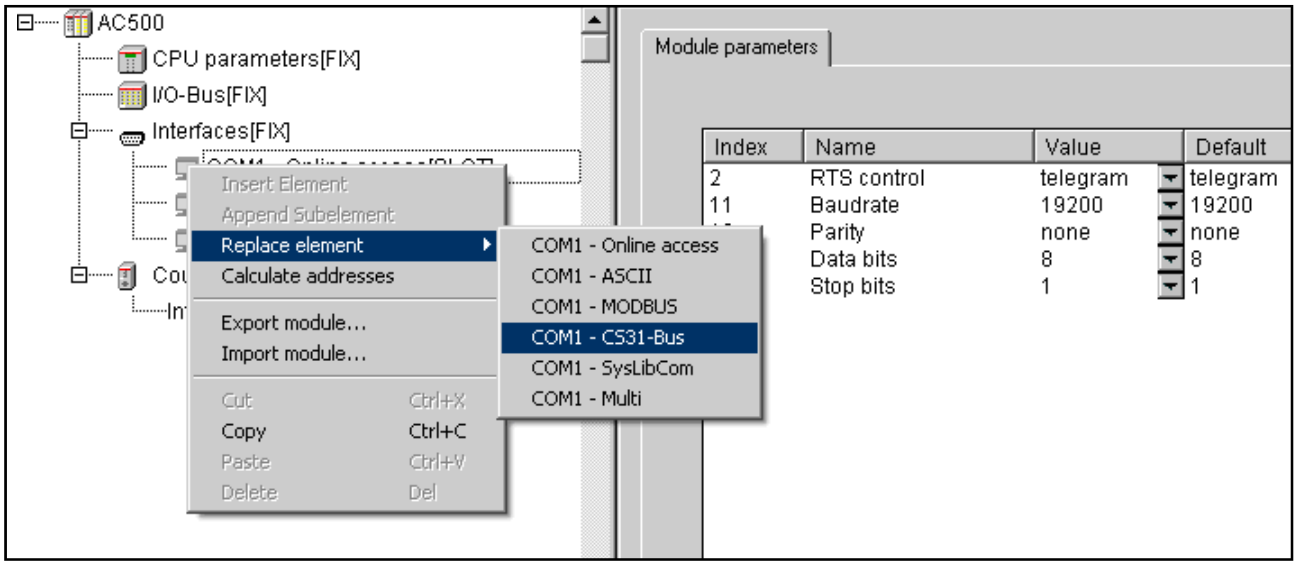


4. Select the **PLC Configuration**.

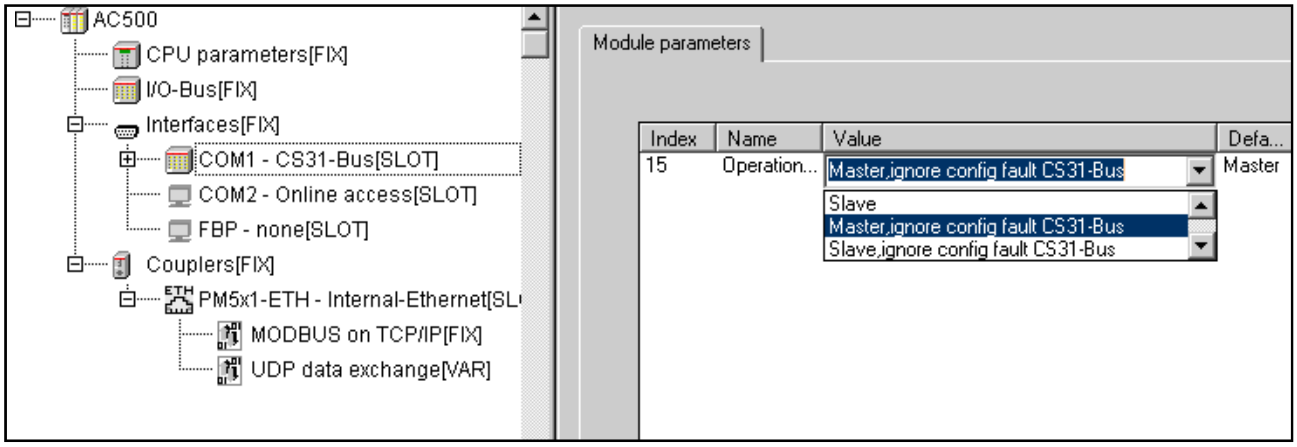


CS31 Configuration

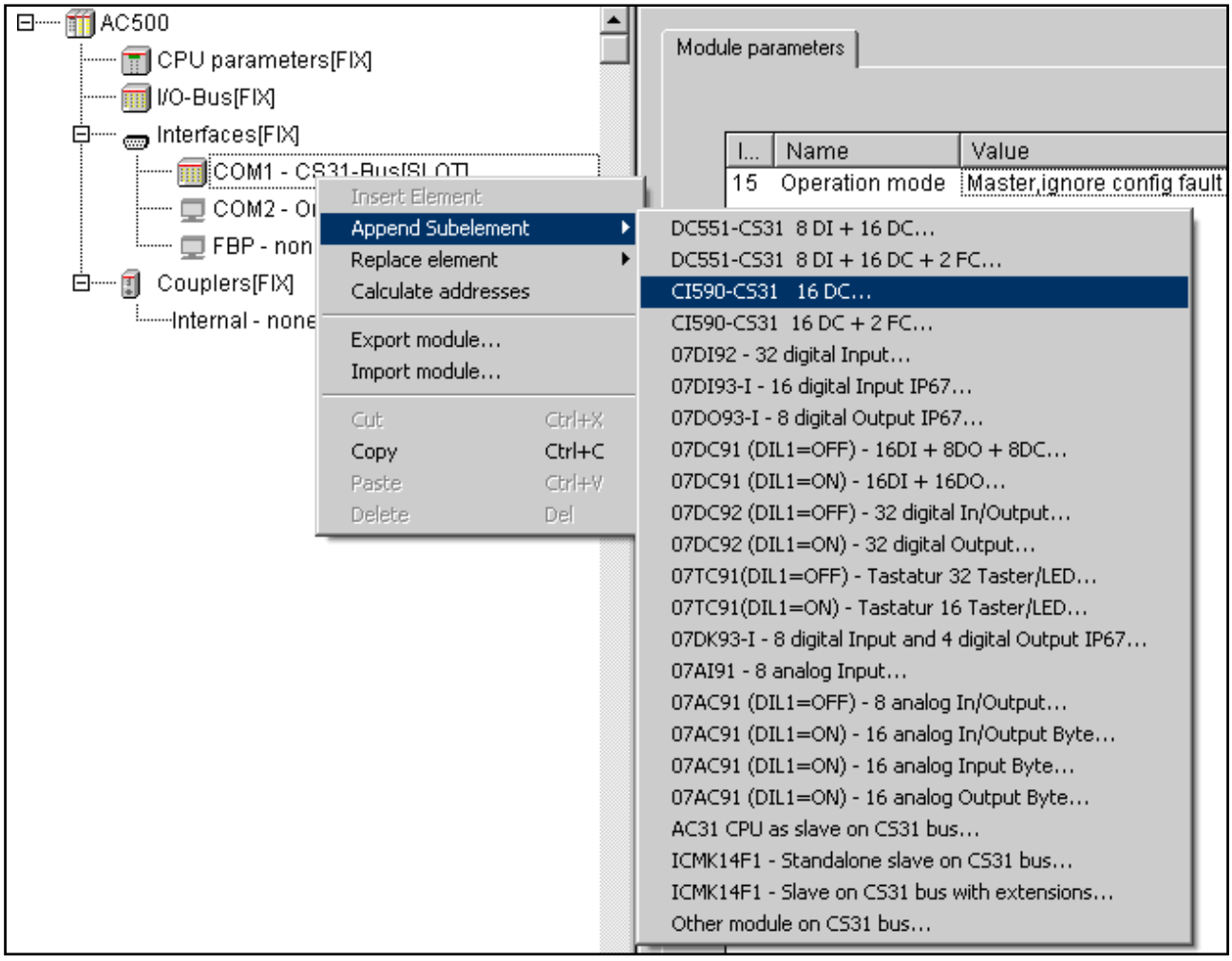
1. Select and right click on **COM1** -> **Replace element** and choose **COM1-CS31-Bus** as shown below.



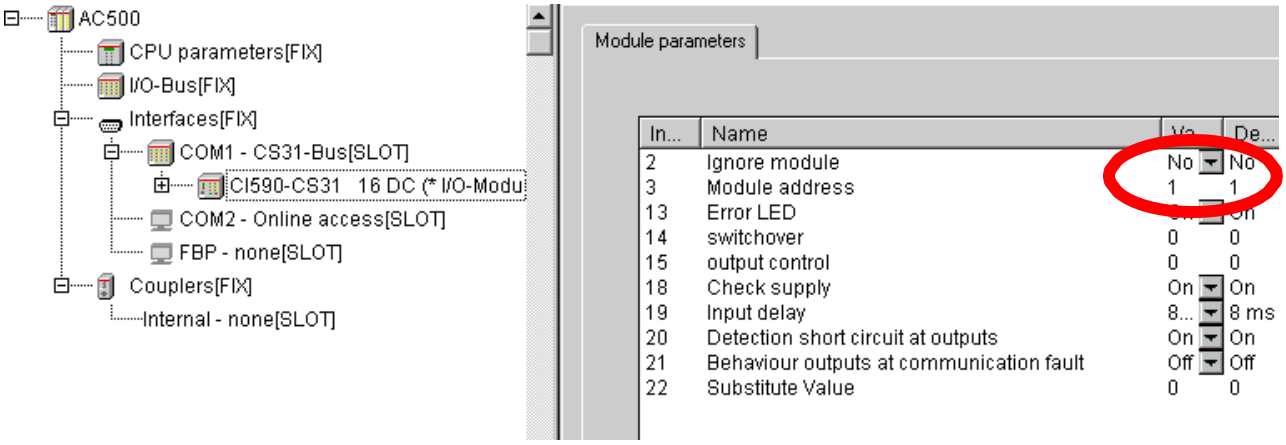
2. Click on the **COM1 – CS31-Bus** and choose tab **Module parameters**.
Select **Operation mode** as **Master, ignore config fault CS31-Bus** as shown below.



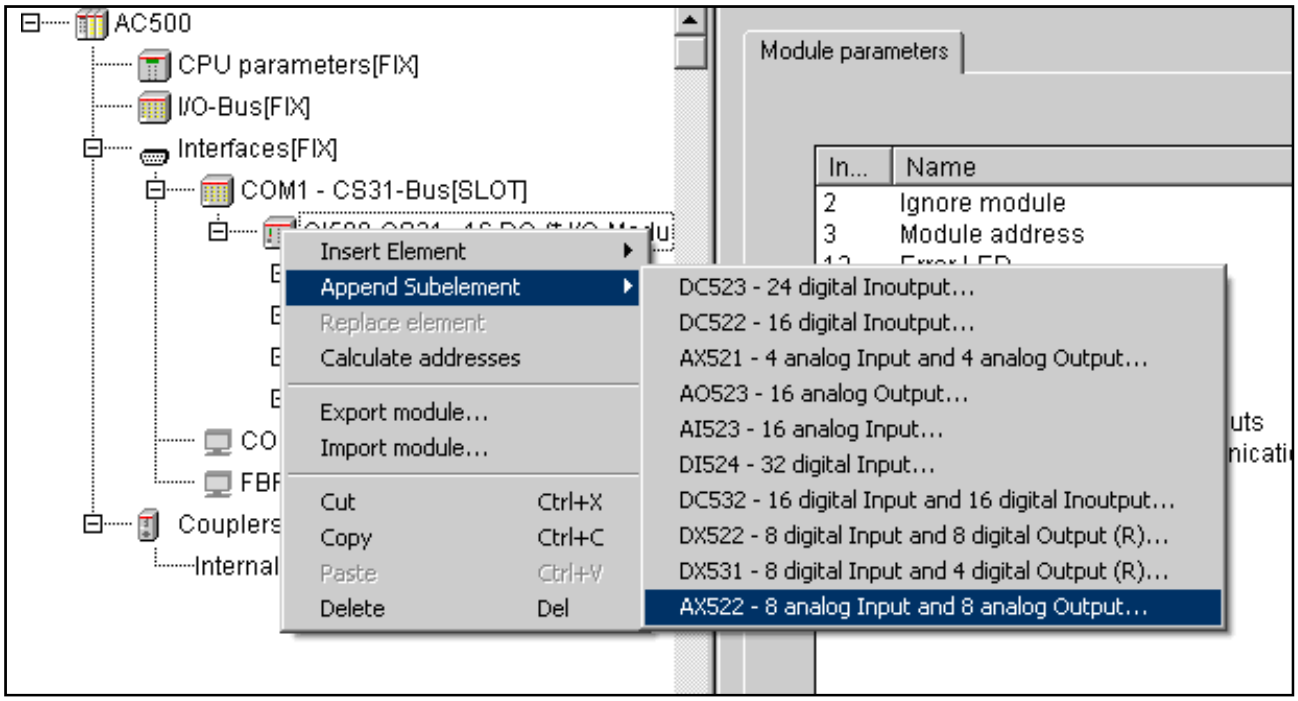
3. Select and right click on **COM1 – CS31-Bus** -> **Append Subelement** and select **CI590-CS31 16DC** or **CI590 16DC + 2 FC** (for usage of the 2 integrated fast counters) depending on the requirement.



4. Click on **CI590-CS31-Bus** and in the **Module Parameters.**
Set the Module Address (Range 1-61).
In normal cases address set here should be same as set on the module rotary switches. In case of **Fast Counter**, please note that address to be set on the module rotary switches is equal to (70 + set address in the **PLC configuration**).



5. Right click on the **CI590 CS31-Bus** -> **Append Subelement**.
   Select the I/O Modules in the same order as arranged physically in the hardware arrangement and parameterize the individual I/O Modules according to the requirement.

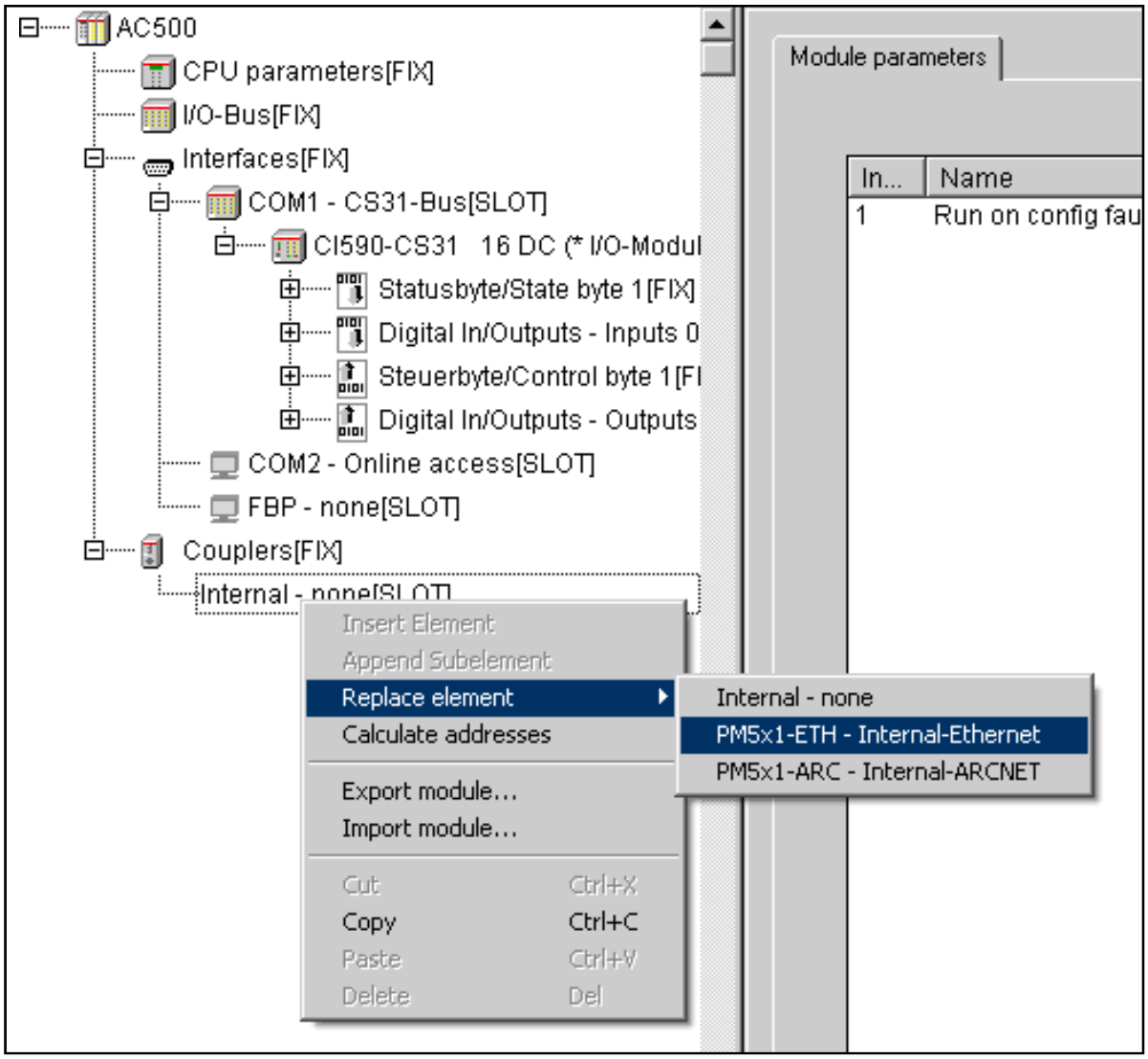


6. Repeat the steps 3, 4 and 5 for all the CI590 to be connected on the CS31-Bus.

UDP Configuration

In AC500 High Availability System the synchronization between 2 CPUs is performed via Ethernet Link and UDP Protocol. If on board, the Ethernet port of the CPU is used for UDP communication. It needs to be configured for UDP Protocol. Follow the procedure below for configuring the Ethernet port.

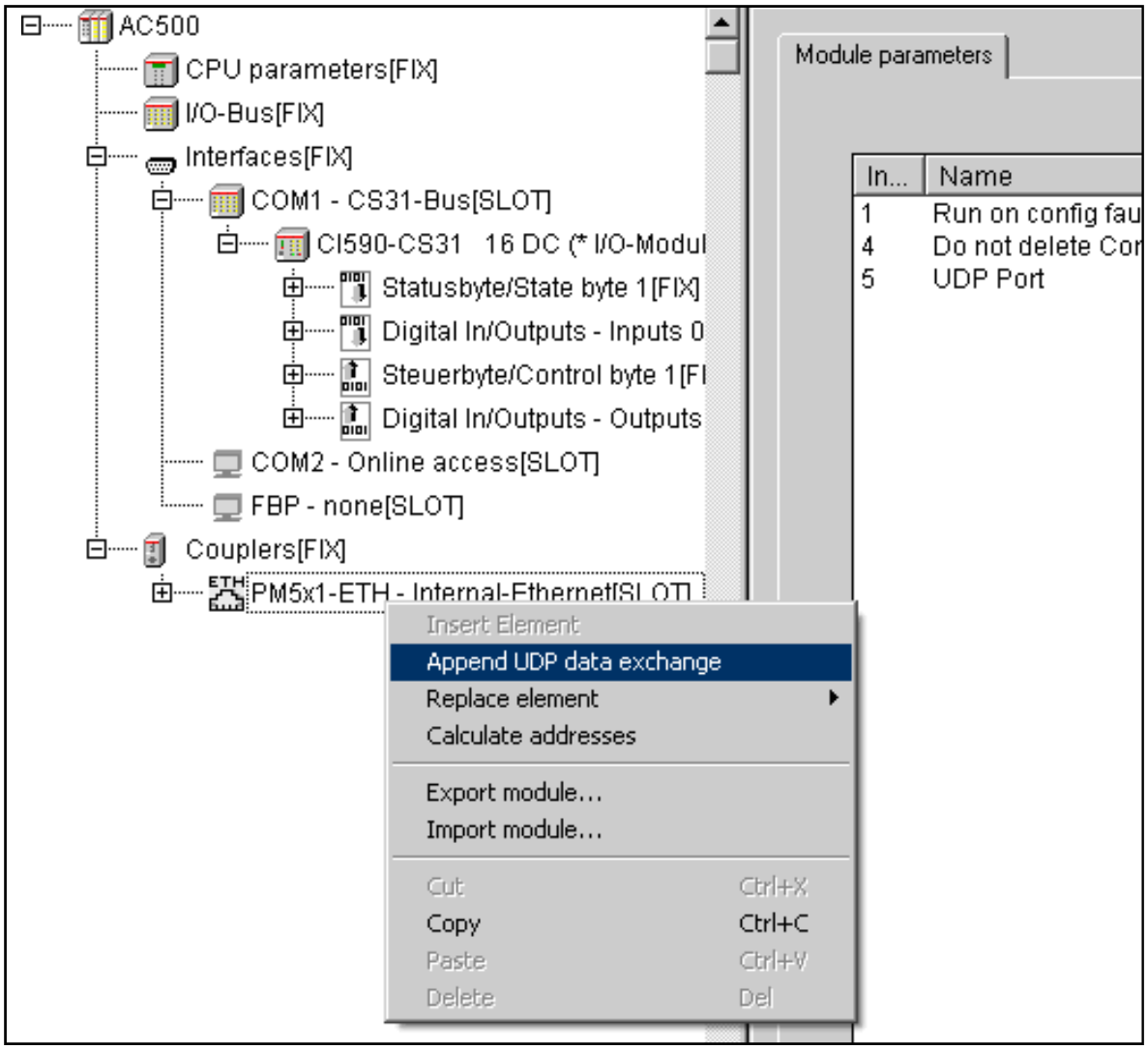
1. Right Click on **Internal –none [SLOT]** -> **Replace element** and select **PM5x1-ETH – Internal-Ethernet**.



NOTICE

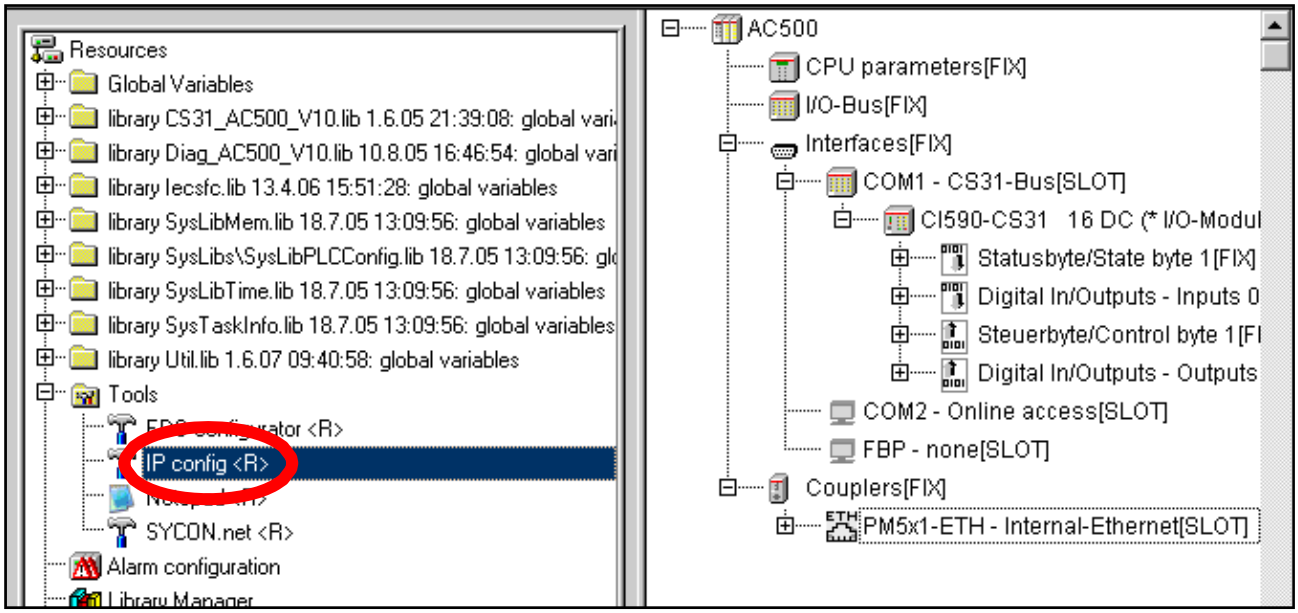
It is also possible to use the Ethernet Communication Module (CM577-ETH) for synchronization. Then the respective SLOT number should be entered in HA_CS31_CONTROL Block.

2. Right click on **PM5x1-ETH-Internal –Ethernet[SLOT]** and select **Append UDP data exchange**. This completes UDP configuration.



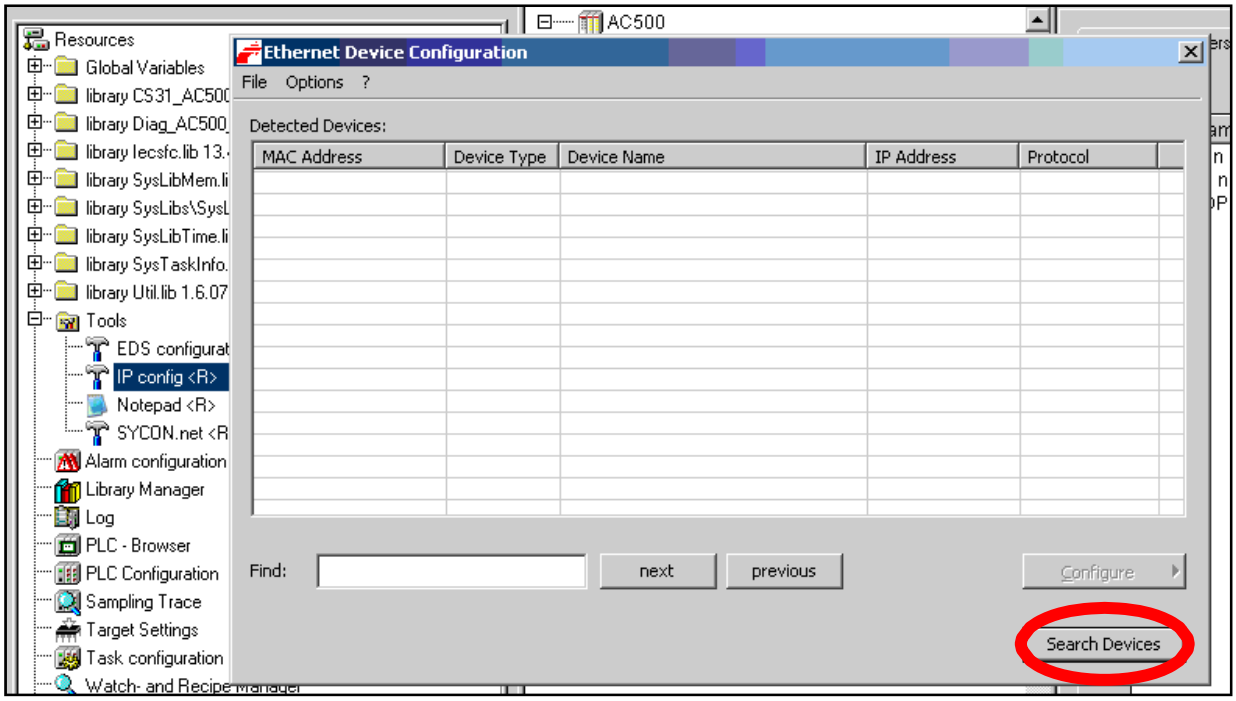
To download the configuration for the Ethernet port, we must know the IP address of the available AC500 CPUs. To find the IP address, follow the procedure below:

3. Select **Resources** -> **Tools**. Double click on the **IPconfig** as shown below.

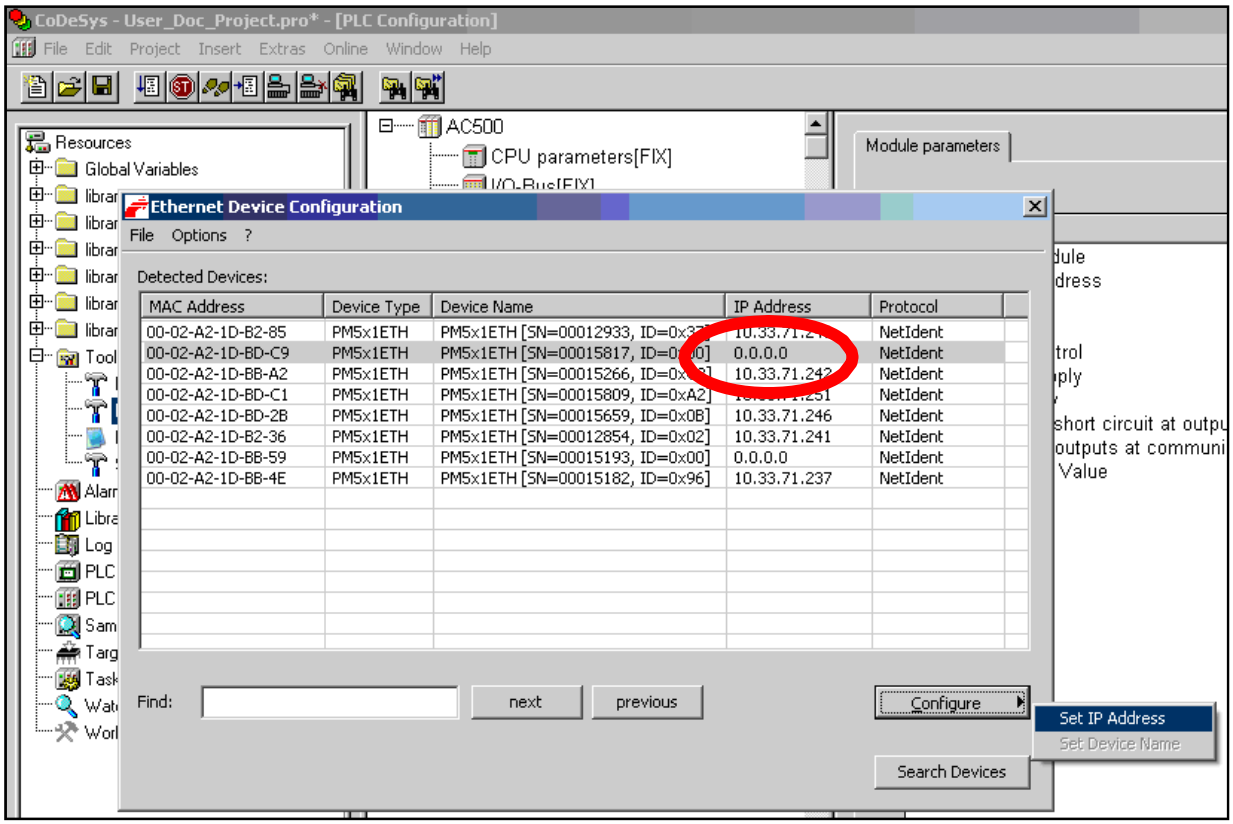


4. Click on **Search Devices** button.

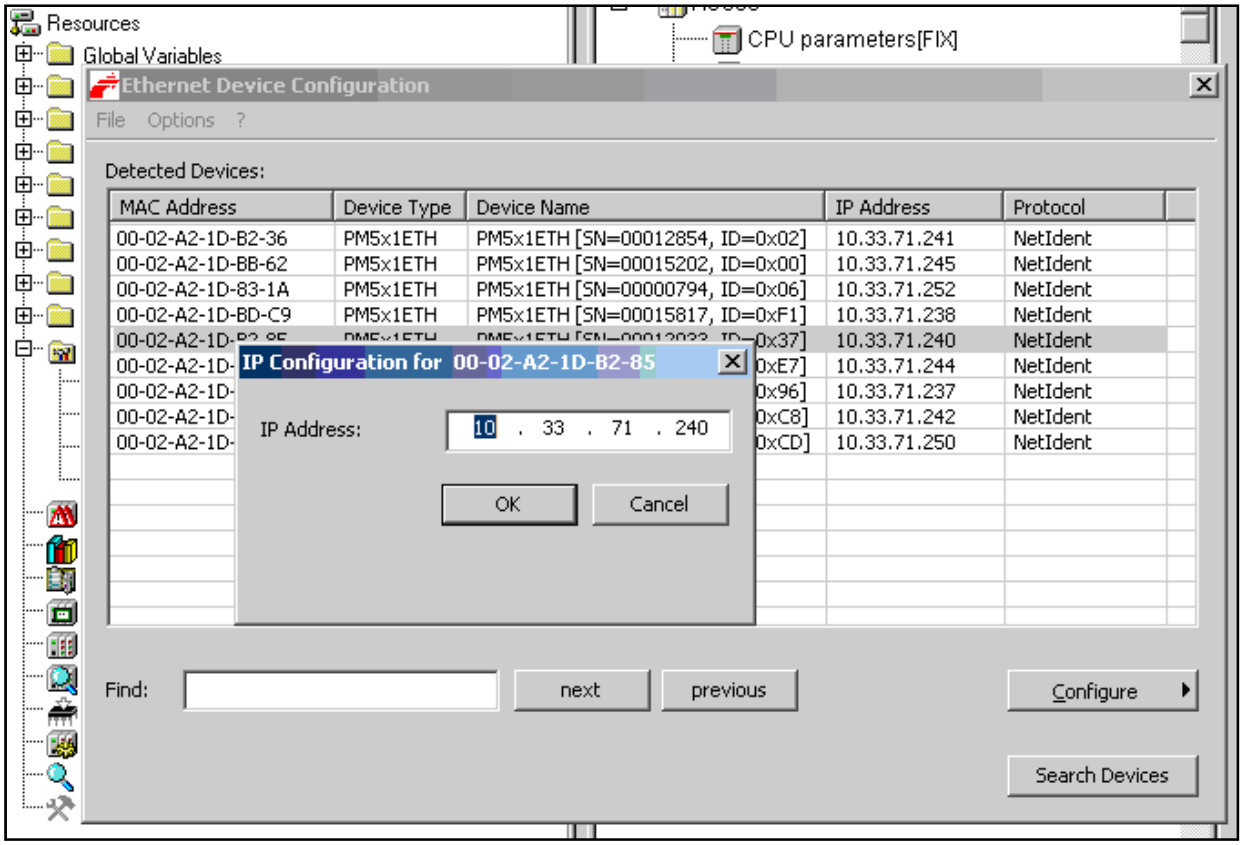
IPconfig software searches all the AC500 CPU available in the network and lists the same as shown below.



5. If the CPU is new, the IP address is shown as **0.0.0.0**. Select the desired CPU and click on **Configure** and select Set **IP Address**.



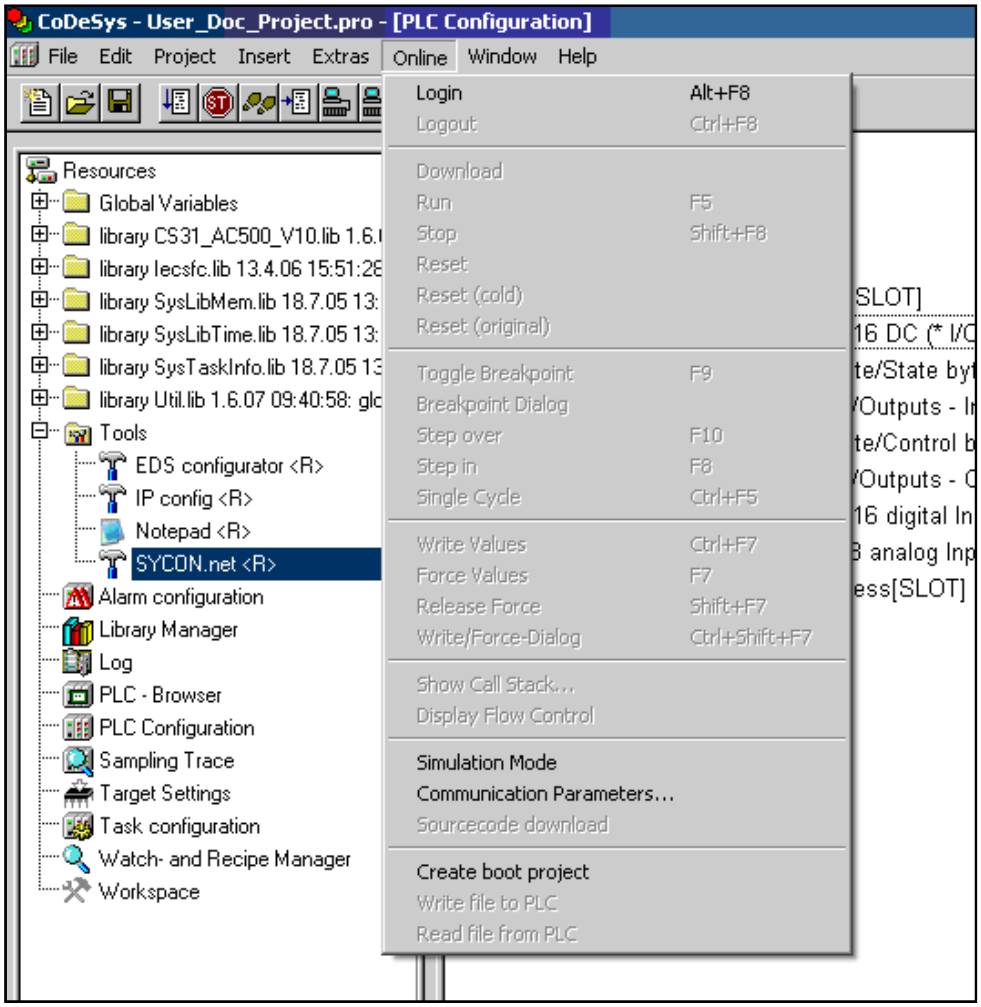
6. Enter the required IP address and click on **OK**. Now the selected CPU will have the new IP address. It is possible to check the IP address setting by searching one more time.



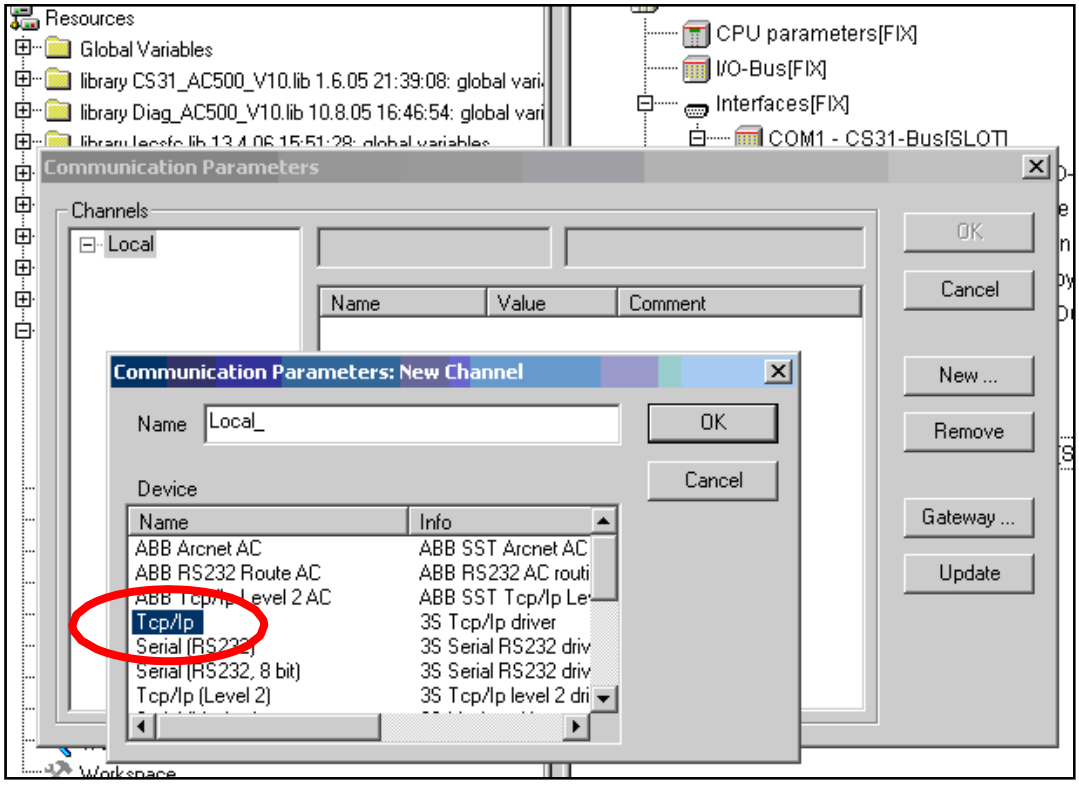
NOTICE

IP setting from IPConfig software is only a temporary setting. If PLC CFU is powered OFF, the IP address will reset to previous IP address or 0.0.0.0.

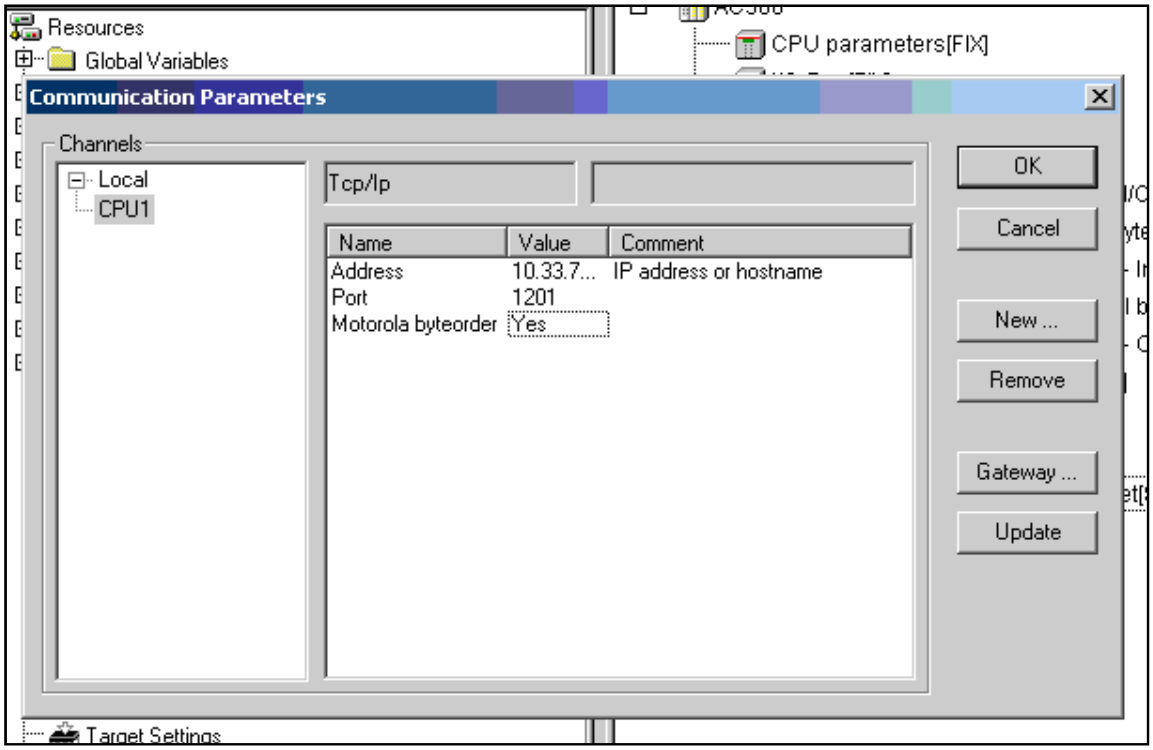
7. After setting the IP address, go to the PS501 Window and click on **Online** menu and select **Communication Parameters**.



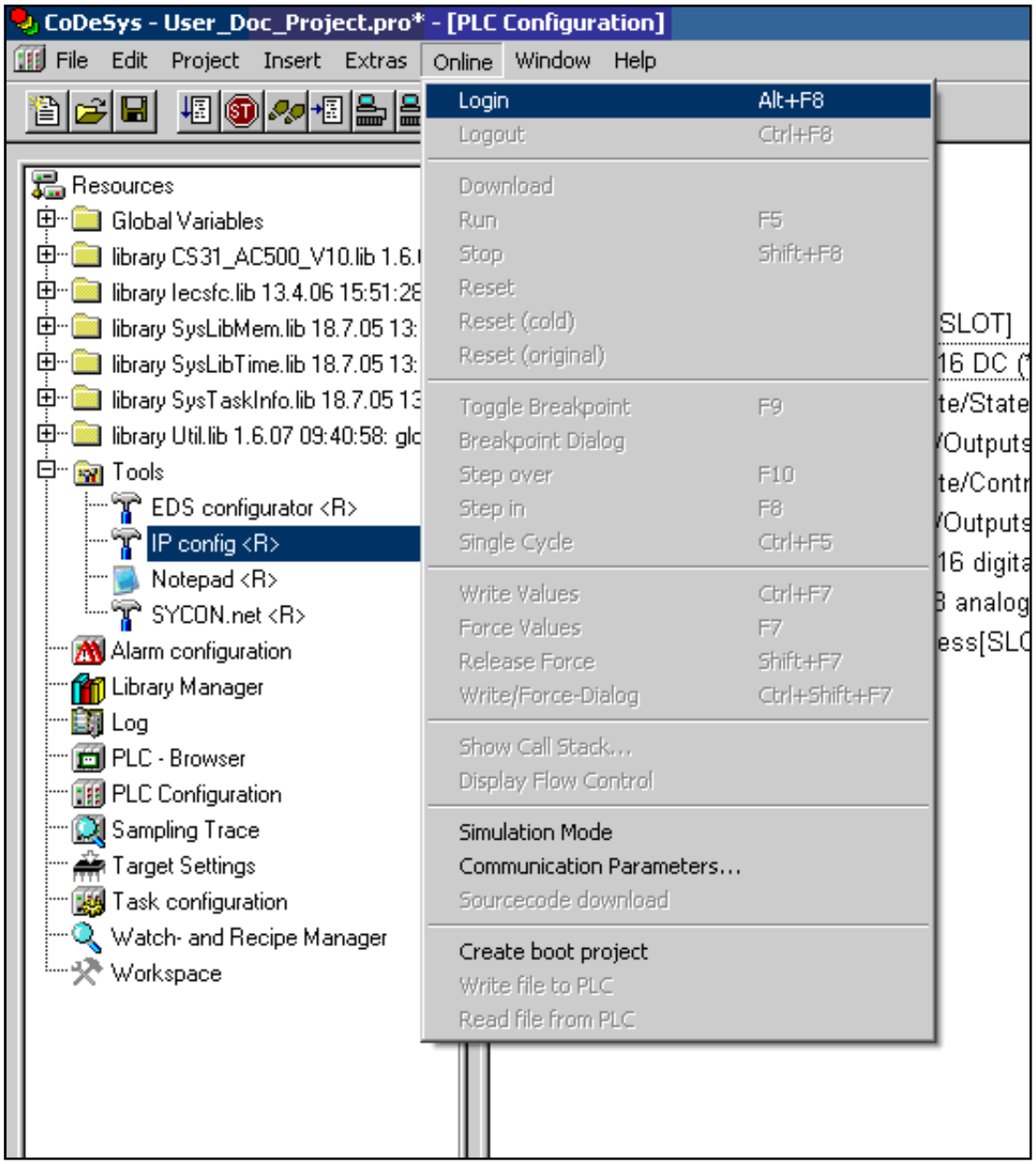
8. Click on the **New** button. Enter a symbolic name (e. g. CPU1) and select **Tcp/ip** (**3S Tcp/ip driver**) and click on **OK** button.



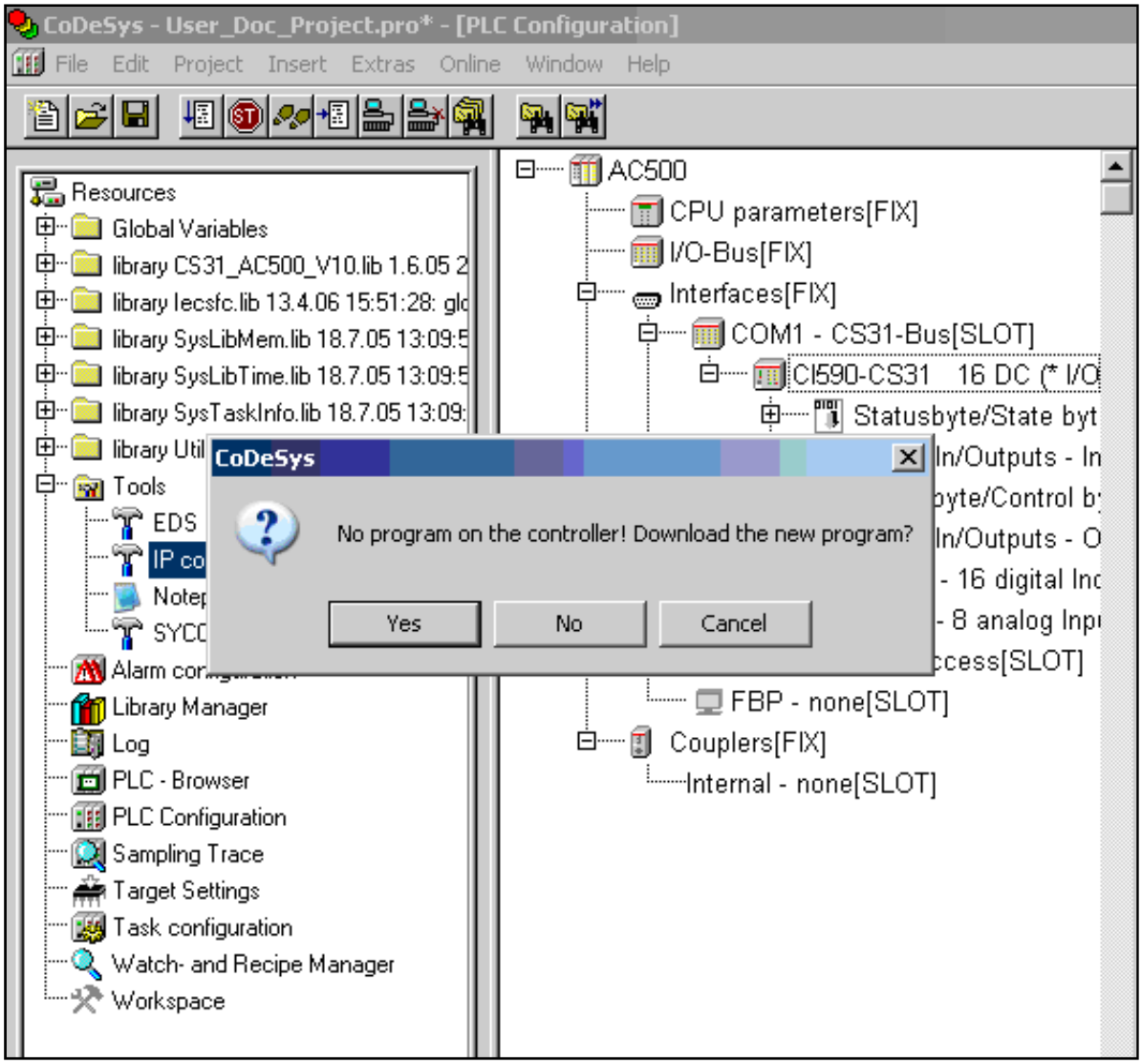
9. Click on **localhost** and enter the IP address of the CPU (e.g. **10.33.71.238**) and set the parameters as given below:
   Port to **1201**
   Motorola byteorder to **yes**
   At last click on **OK** button.



10. Click on **Online** menu and select **Login**.

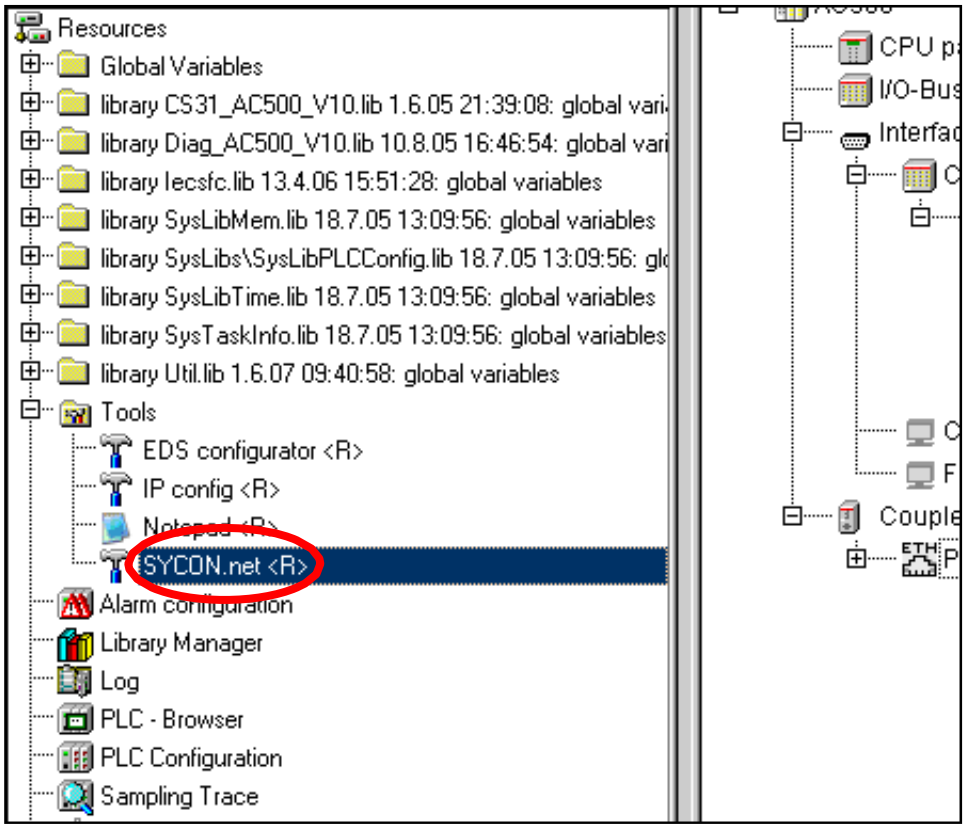


11. After the connection is established and if there is no program in the CPU, the following dialog appears on the screen. Select **Yes** and the program will be downloaded to the CPU.

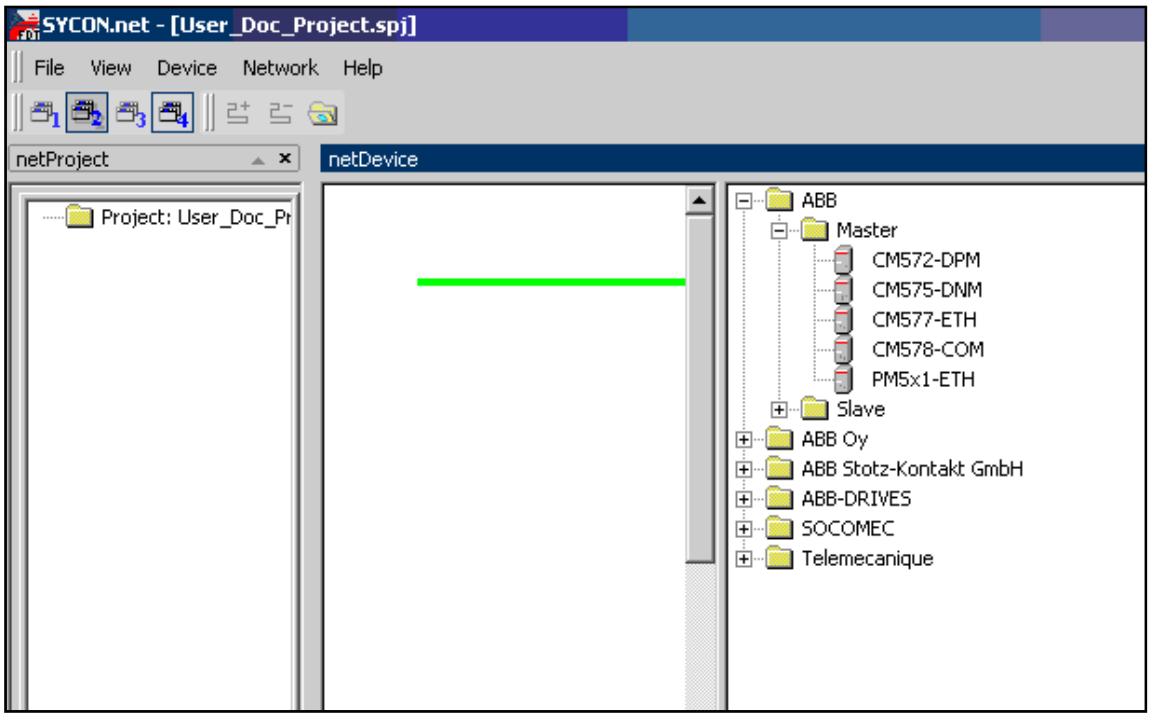


Ethernet Configuration

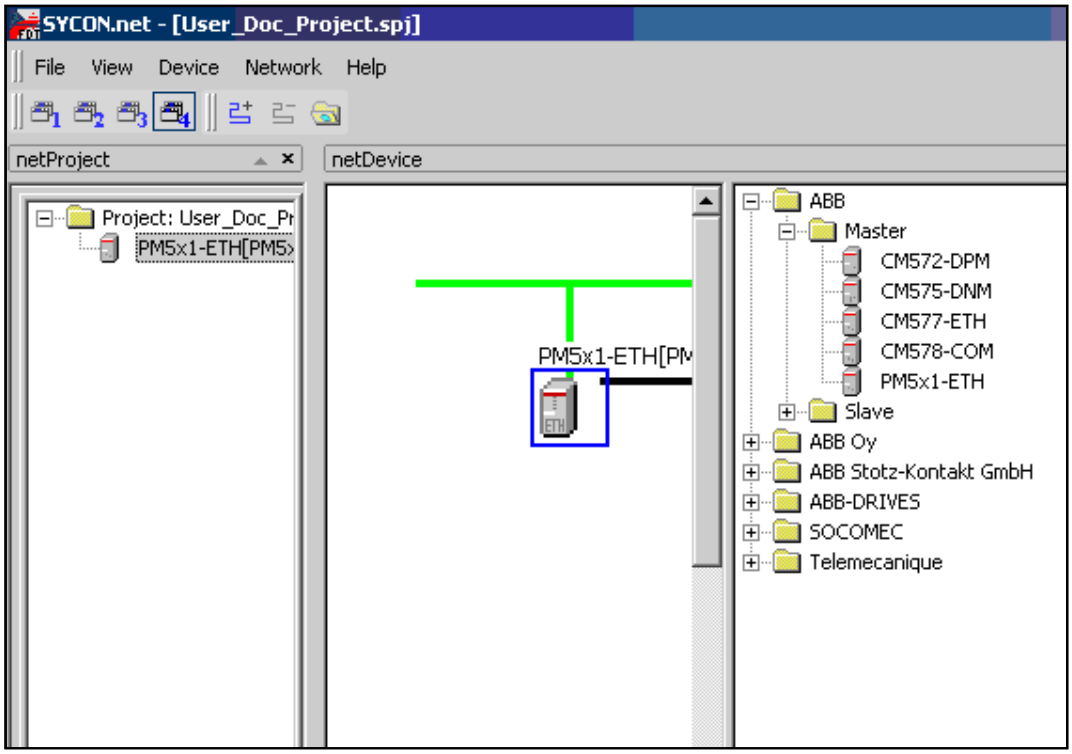
1. Select **Resources** -> **Tools**. Double click on **SYCON.net**.



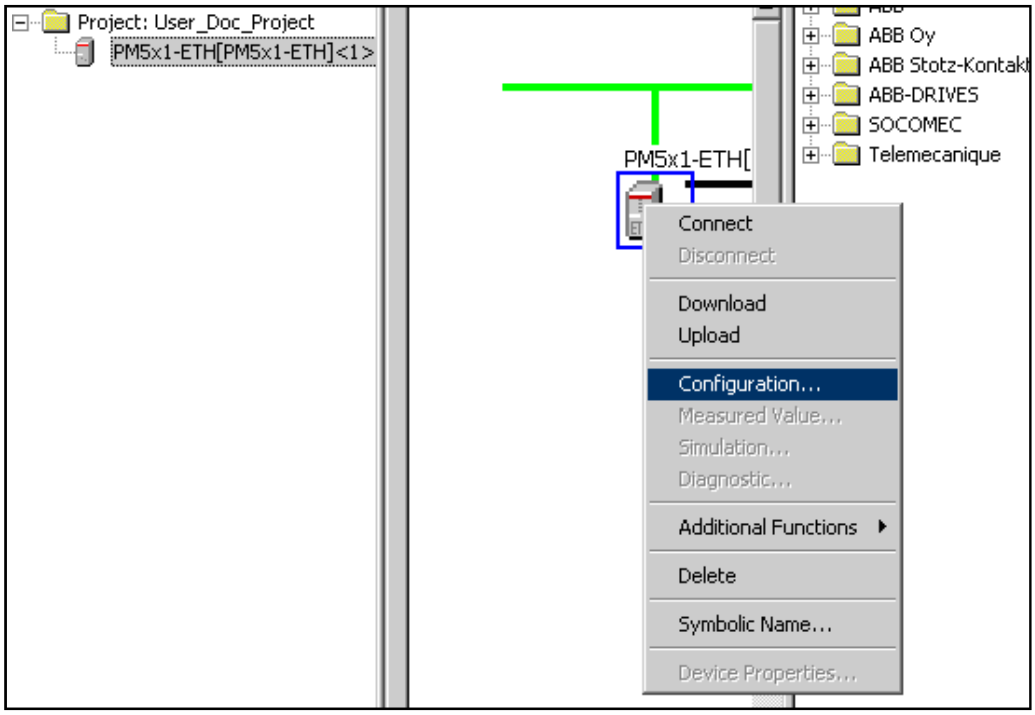
2. Select the **netDevice** Window.



3. Select and drag **PM5x1-ETH** and place it on the green line. You will see a '**+**' mark when the cursor is on the line. After adding the window looks like shown below.



4. Double click on **PM5x1-ETH [PM5x1-ETH]** and select **Configuration**.



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