FAQ COMBIVIS connect

C6 Router S7 Gateway via MPI   FAQ No.0001

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Introduction

This document describes how to use the S7 MPI gateway feature in combination with the Simatic TIA Portal.

S7 MPI Gateway

The S7-MPI gateway function uses a service which realizes an interface between the Ethernet connection and the serial port.
The function makes it possible to reach the controller which is connected with the serial port of the router via MPI protocol over the Ethernet interface.

The diagram with the principle of operation is shown in the following figure.
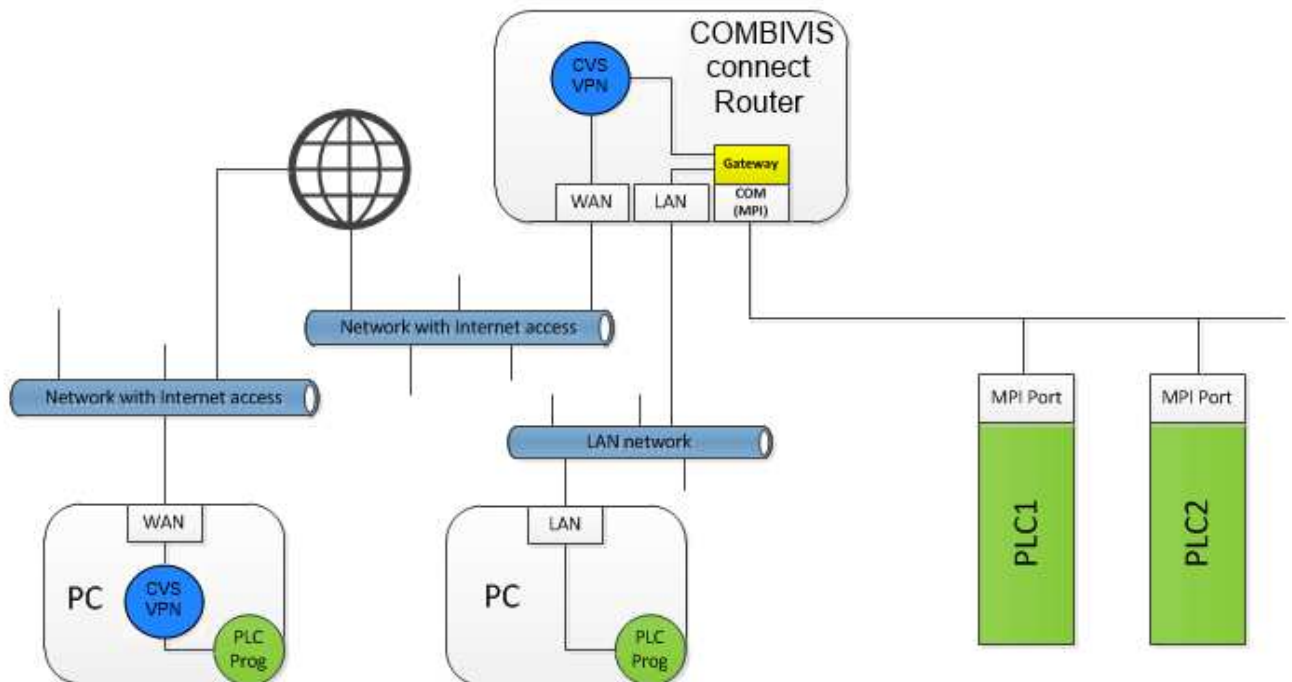
The serial interface of the C6 router (COM) is connected to the MPI subnetwork where several controllers are also connected.

The gateway protocol driver on one side and the serial port with the MPI driver on its internal side is capable to accept connections from the local Ethernet interface (LAN) to the VPN connection.

When going through the VPN connection you get a direct link from the PC on which the Control Center software is running and the PLCs. On the Control Center PC is it possible then to install the PLC programming software for the PLC management.

Later in this chapter you can find the instructions about how to setup the connection.

The Ethernet-MPI gateway function is NOT related to the serial pass-through. The gateway works at Router level and transform an Ethernet data flow into an MPI data flow, and vice versa. The serial pass-through function works instead as a real tunnel between the virtual serial port on the Control Center PC and the physical serial port on the device running COMBIVIS connect Runtime.

Configure the MPI of the Router

When selecting "MPI" in the serial port configuration, you get other two options required to configure the gateway service.

The options are:
- MPI Address – MPI address assigned to the Router
- Maximum FDL – maximum node ID in the MPI network on which the Router is connect

The information about wiring the Router serial port can be found in the Router hardware manual.

Once the VPN connection between the Control Center PC and the LAN network is activated, the PLC programming software can be configured to use COMBIVIS connect Router as communication gateway to connect to the controller.
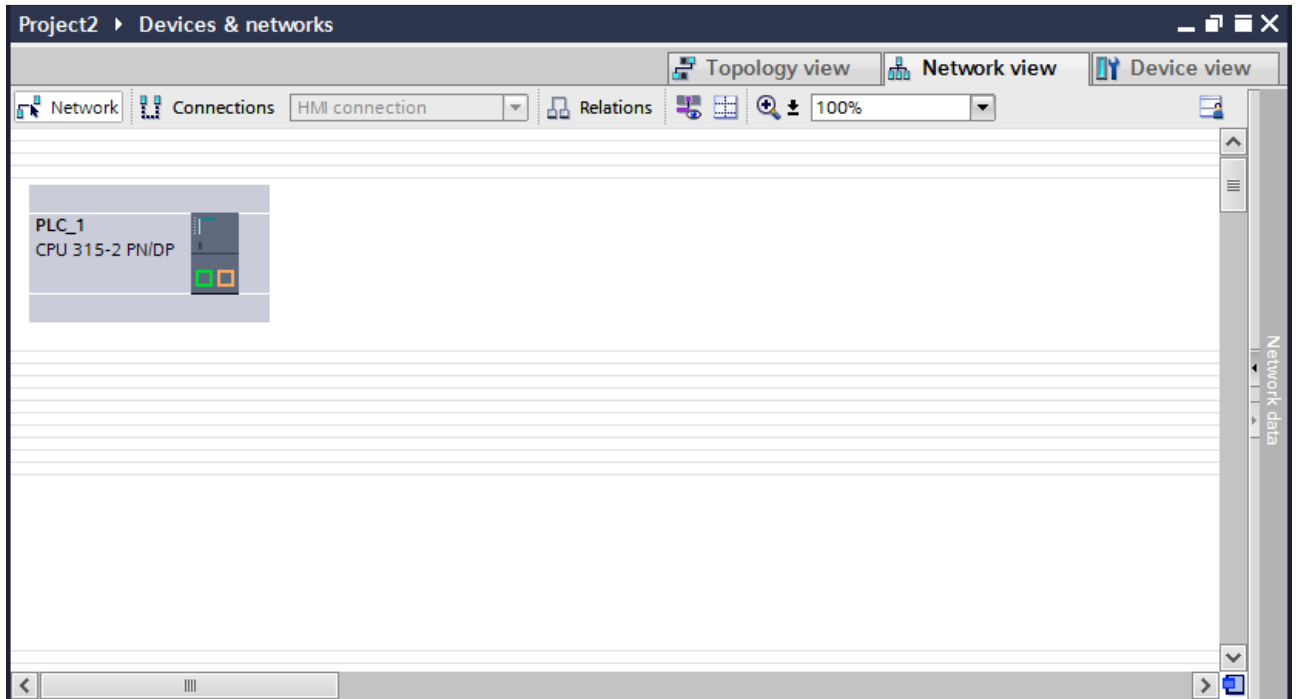
Network configuration in SIMATIC TIA Portal

The information in this chapter refers to the use of SIMATIC TIA Portal v13.

The use of the MPI gateway service requires a specific network configuration of the STEP 7 project.
The configuration is made directly in the network tool of TIA Portal.
The network topology is shown in the following figure.
The important elements of the network topology are the COMBIVIS connect Router and the PC with Control Center.

The example shown assumes to have an S7-300 PLC to be programmed through a COMBIVIS connect Router using the MPI PLC interface.
In our example, we assume the PLC has been already included in the project. The "Device & networks" view will look as shown in the following figure.
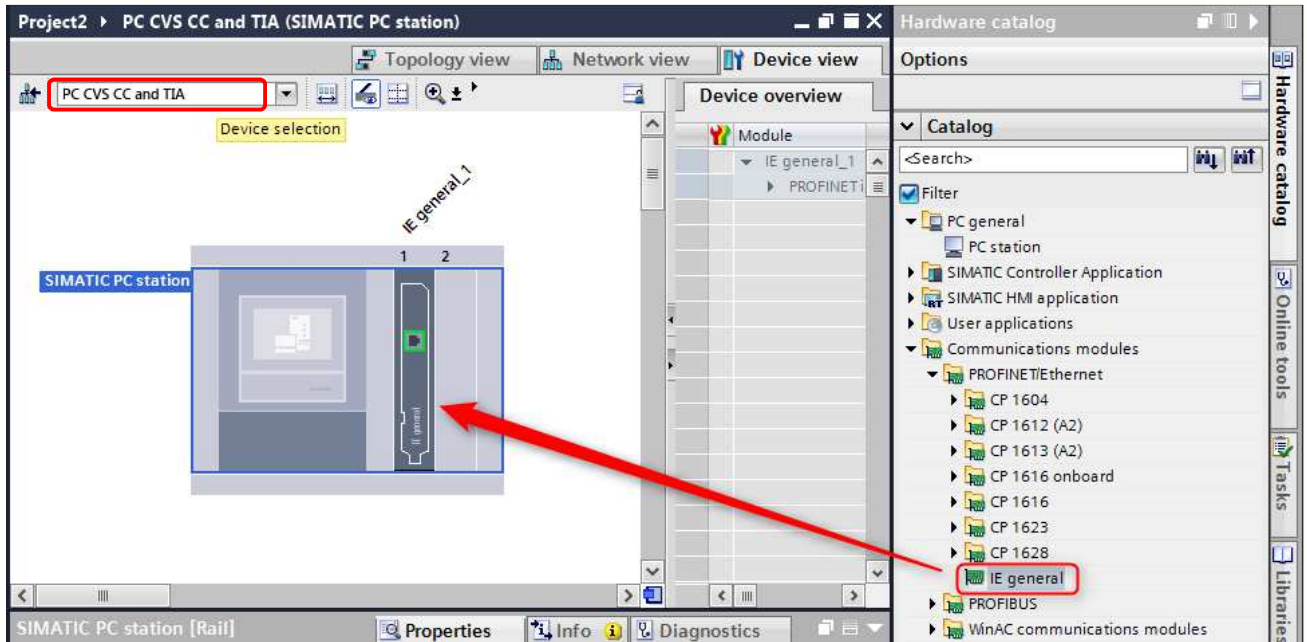
Add the PC with COMBIVIS connect Control Center in the SIMATIC TIA Portal

Open the hardware catalog, locate the "PC Station" component and add it into the configuration.
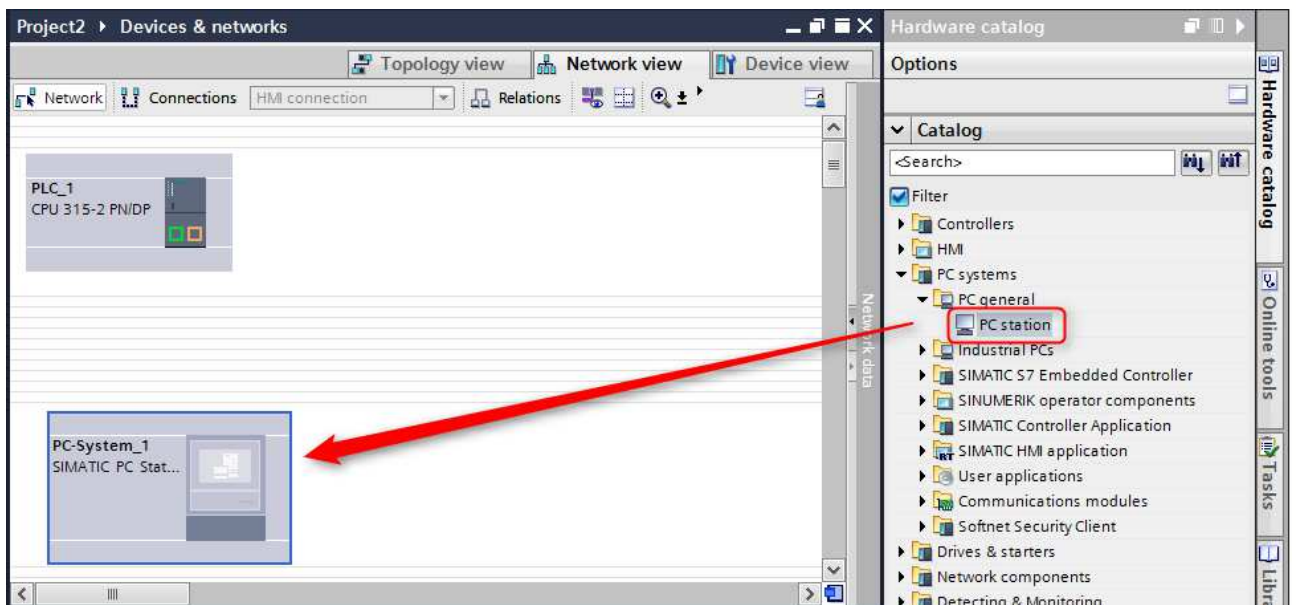
Double click on the component, locate the "IE general" interface from the catalog and add it to the first available slot.
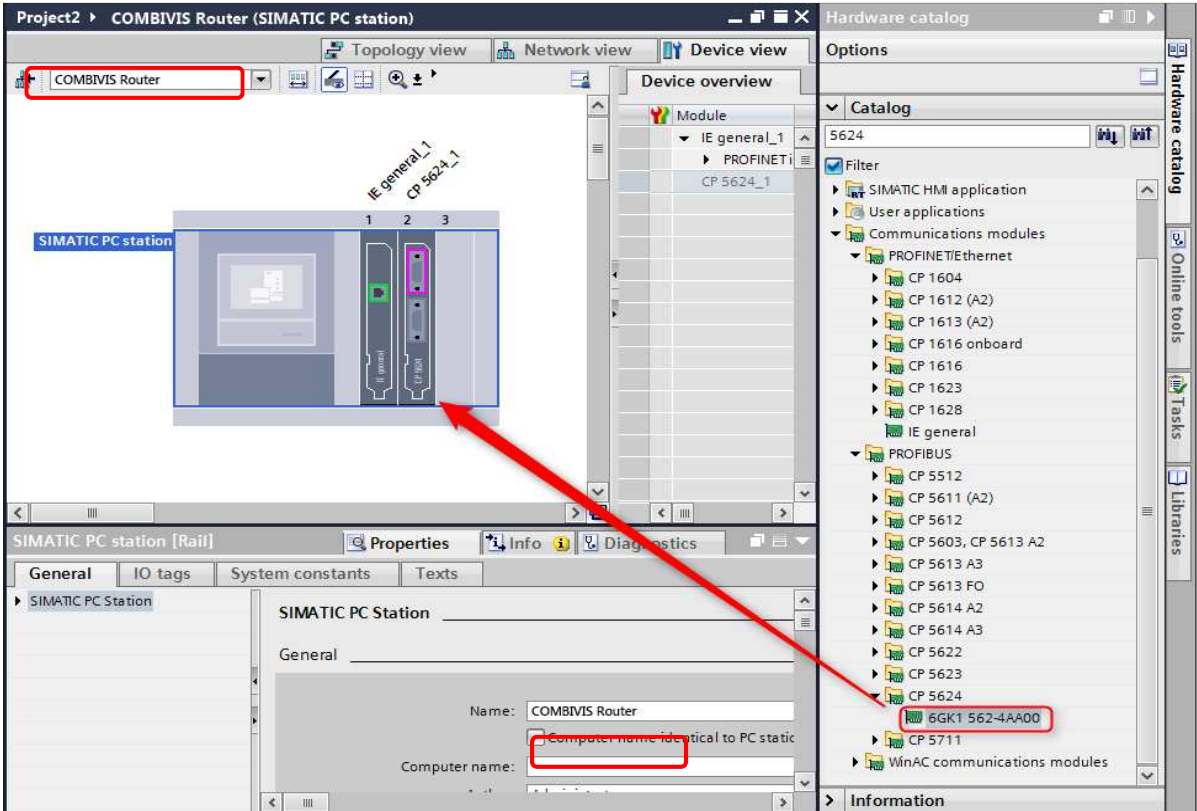
Create the COMBIVIS connect Router in the SIMATIC TIA Portal

Create a new "PC Station" from the catalog and make a double click on it. Then insert the "IE general" interface in the first available slot.
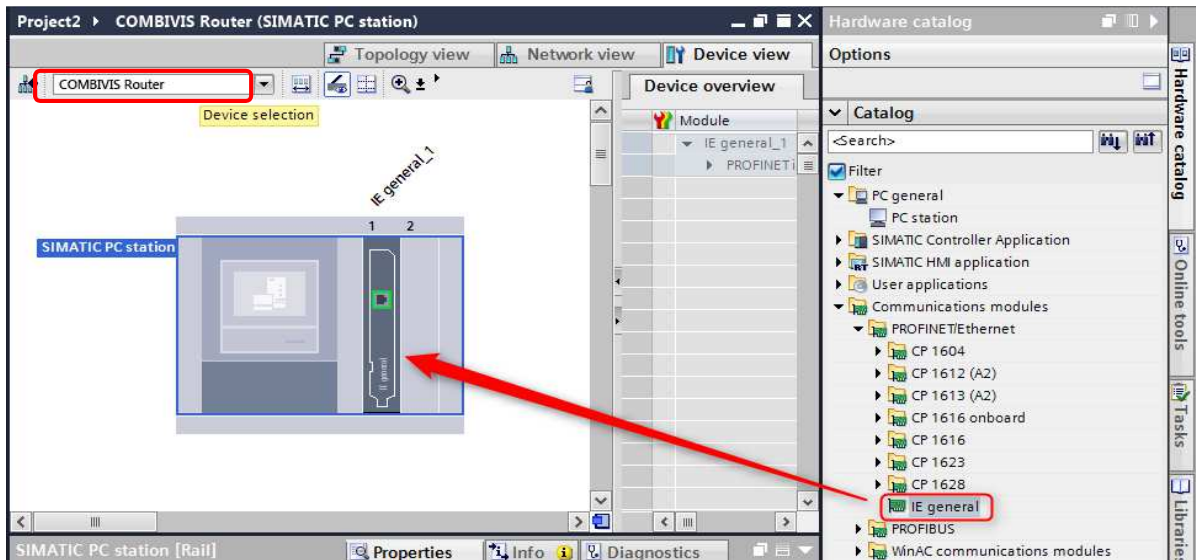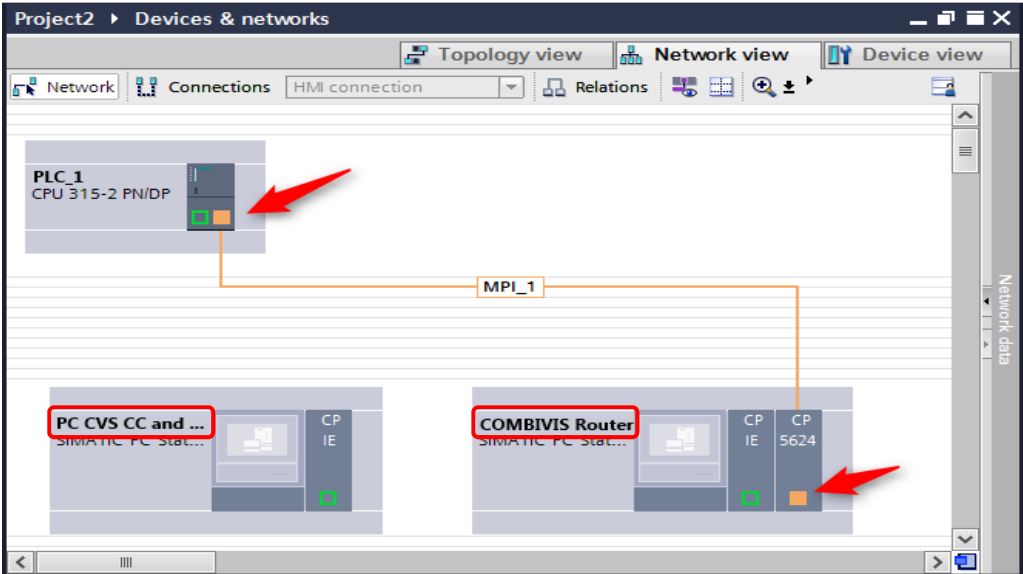

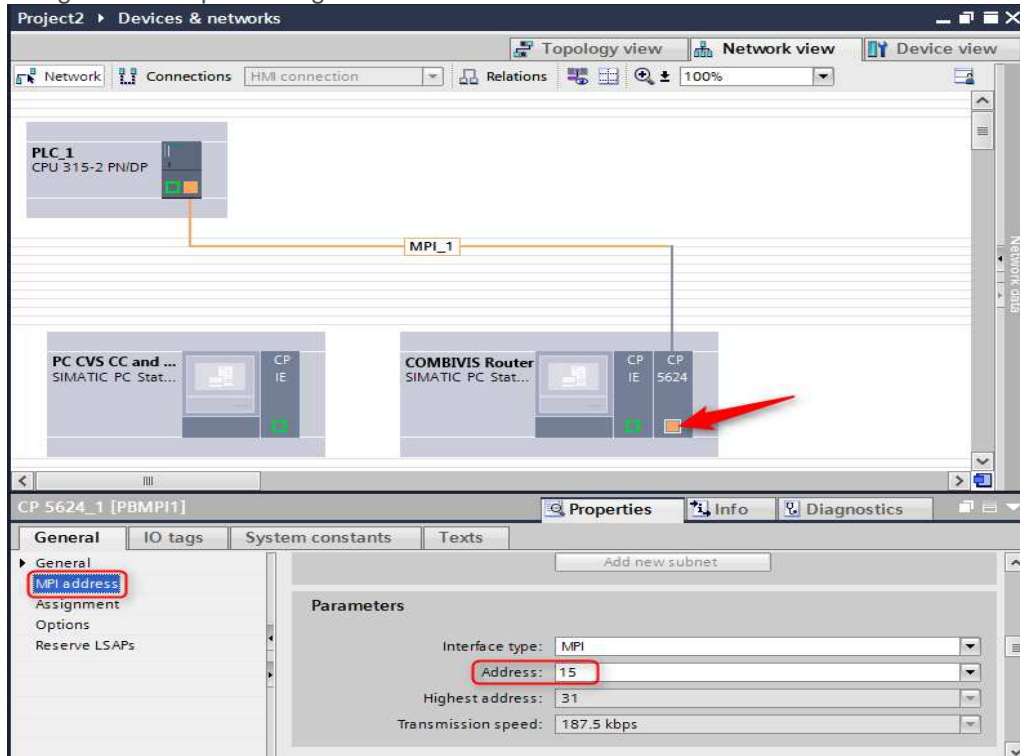Locate the "CP 5624" interface then and insert it in the second available slot.

MPI network configuration

Now return back to network view. Click the orange square of the PLC component and drag the connection to the CP interface.
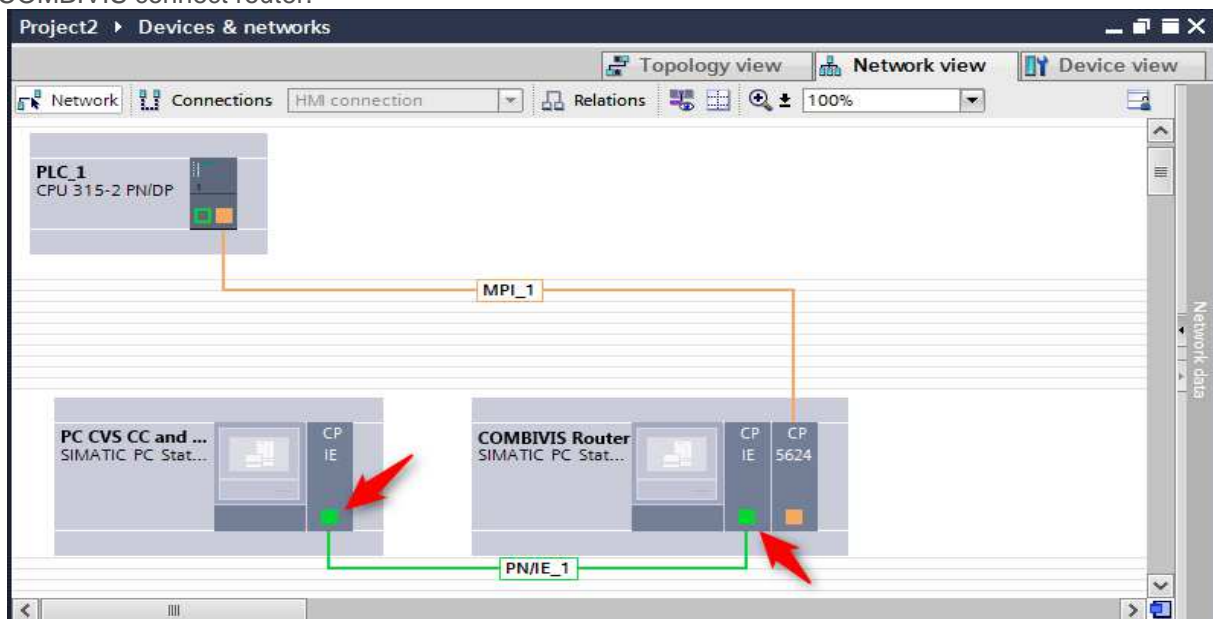
Click the orange square of the "COMBIVIS connect router" and assign the MPI node address corresponding the router port configuration.

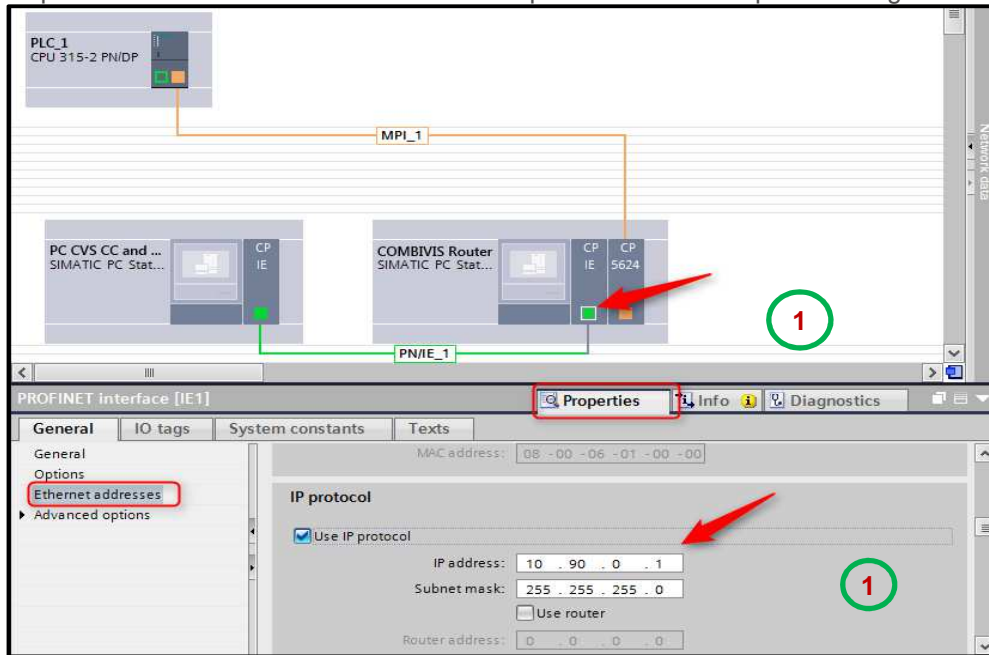

Ethernet network configuration
Click on the green square of the PC component and connect the network to the green square of the COMBIVIS connect router.

After that make a click on the green square of the COMBIVIS connect Control Center PC and assign to the Ethernet port the COMBIVIS connect Ethernet adapter IP address acquired during the VPN session. **1**
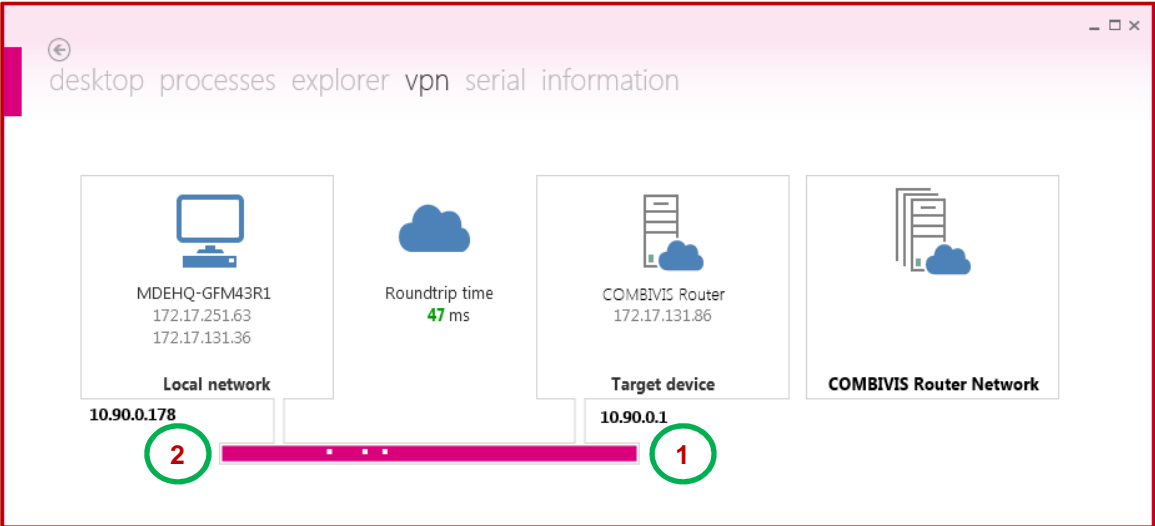

Then perform a click on the green square of the CP IE interface of the COMBIVIS connect router and assign the Ethernet IP address corresponding to the IP address assigned to the LAN ports of the COMBIVIS connect router. **2**
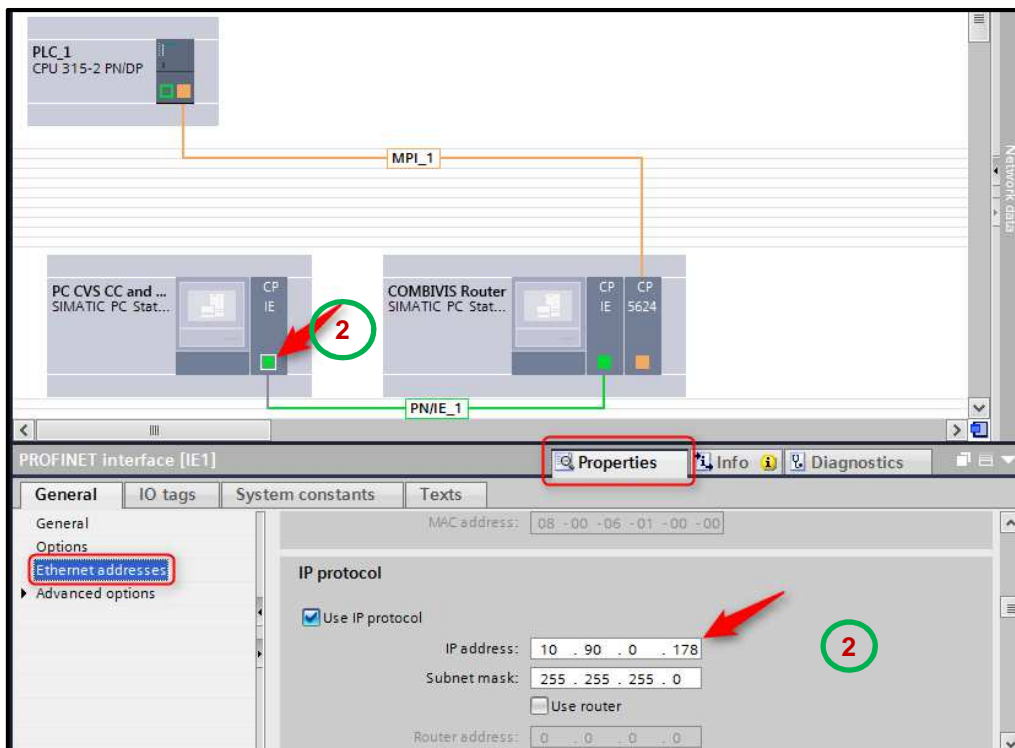
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The IP addresses display of the remote control software COMBIVIS connect

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