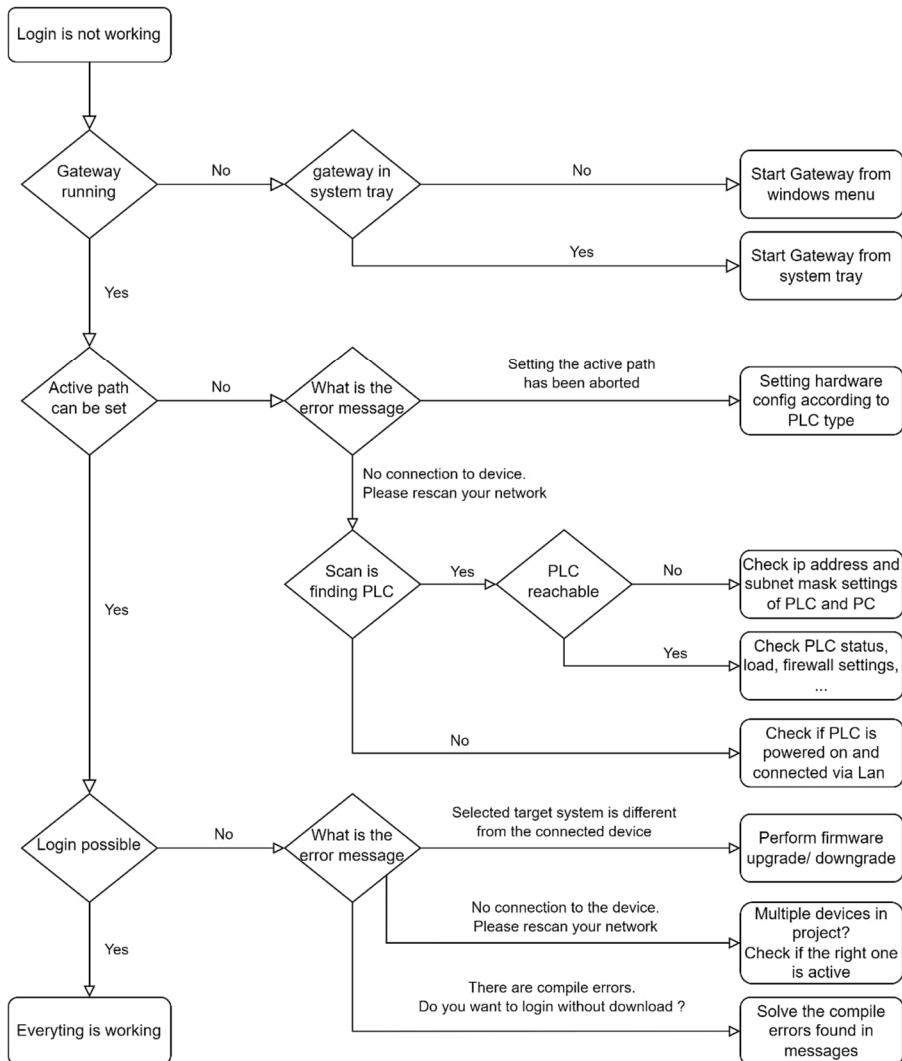


# AC500 V3 PLC – Online connection issue

## Online connection Detection causes and Resolution methods

There are multiple reasons why a log in can fail. The purpose of this document is to guide the users to determine the root cause of the online connection issues and how to resolve them.

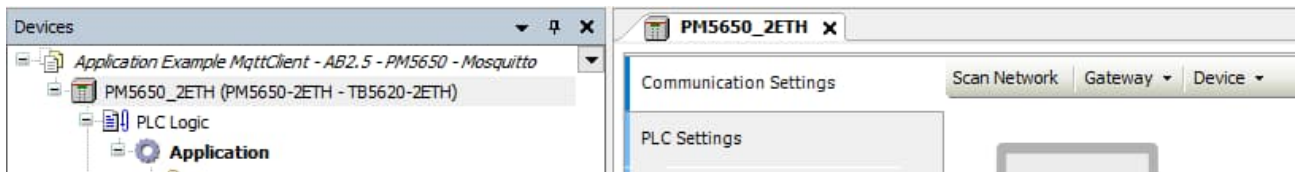
Following diagram is showing the required steps. These are explained in detail below.



### Opening communication settings

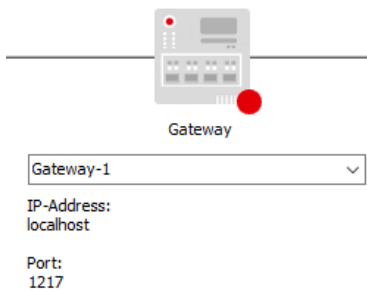
- Double click on the PLC in the Devices tree in your Automation Builder project.

- Select Communication Settings in the left side menu. This will be required for all further steps.

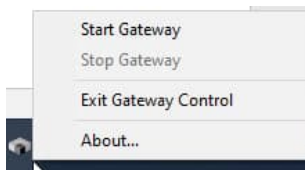


### Status of the gateway

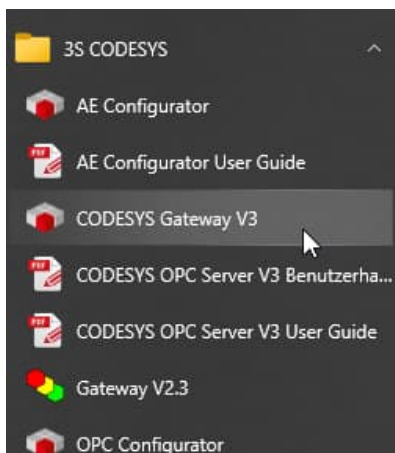
Check the status of the Gateway. If the Gateway has a green colored circle, the gateway on your computer is running. If the gateway has a red colored circle the service is not running.



If this is the issue, find the Gateway in the system tray. Right click and select “Start Gateway”.



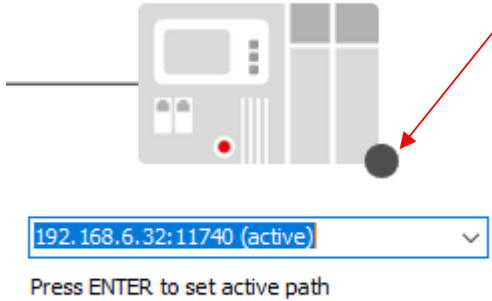
If the Gateway in the system tray is not active, you must activate CODESYS Gateway V3 from the windows menu. See screenshot below



### Status of the active path


If the gateway is running the active path to the PLC can be set by these steps.

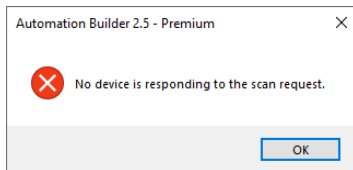
1. Click on the grey circle on the PLC
2. Make sure the IP address is correct by clicking into the textbox to select it and press enter to accept the change. If no valid IP address is available in the Pull down, rescan your network (see No connection to device. Please rescan your network in the next step).



If the PLC becomes active (green), the communication has been established successfully between PC and V3 CPU.

### No connection to device. Please rescan your network

If this following error message pops up, click on Scan Network  button (Upper left of Window) to scan for active PLCs on the network.



If the scan tool is not finding the active PLCs as shown below

Scan finished, 0 responses received

Here are the steps to check or verify between PC and V3 CPU:

- Is the PLC powered on?
- Is the PLC physically connected to the PC?
- Is the PLC connected via a VPN connection?
  - Scanning tool is not working via VPN connection
  - Ensure that the right IP address and verify by using the ping command via the command shell.

### If the scan finds the right PLC

- Select this PLC and click OK

Once done this and there is no warning you should be able to connect set the active path to the PLC.

If not, there are several things which can be checked:

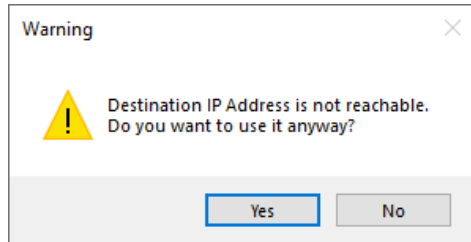
- Is the PLC in run or stop mode and does not display "AC500", "no conn" or any other message?
- Is there a firewall/router in between which might block the login command?
- Is there any VPN connection active, which might lead to a wrong routing?
- In case the PLC is running under a high load, there might be no resources for logging in. Set the PLC to stop mode if it is not in production.

It might be also useful to open the command prompt and execute ping <PLC IP address> to see if the PC is able

to reach the PLC or not.

```
C:\Users\DEU219191>ping 192.168.0.10  
  
Pinging 192.168.0.10 with 32 bytes of data:  
Request timed out.
```

After scanning, the PLC is found after clicking ok. The following warning message is displayed, the PLC and the PC are not in the same network connection.



Verify the IP address and the subnet mask for this PLC and PC.

### Checking IP address of the PLC

In Automation Builder, open Tools > IP-Configuration and Scan. All available PLCs or other devices will be listed. Select the Device which you are trying to connect to and find the IP address and Subnet mask information on the right side.

IP address	192 . 168 . 0 . 10
Subnet mask	255 . 255 . 255 . 0
Std. gateway	0 . 0 . 0 . 0

It is also possible to change the IP address in this tool.

### Checking IP address of the PC

- Open the windows settings and go to Network & Internet. In the Advanced network settings, you can find Change adapter options. Please select the right interface in this list and open it by double clicking. Select Properties and double click the entry Internet Protocol Version 4 (TCP/IPv4).

Obtain an IP address automatically

Use the following IP address:

IP address:	192 . 168 . 0 . 100
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 0 . 1

Notes: Make sure that the IP address of your PC is different from the IP address of the PLC.

And the IP address of your PC is in the same subnet as the IP address of the PLC.

PLC IP address – subnet mask	PC address – subnet mask	Comment
192.168.0.10 – 255.255.255.0	192.168.0.10 – 255.255.255.0	IP addresses must be unique
192.168.0.10 – 255.255.255.0	192.168.1.10 – 255.255.255.0	IP addresses not in same subnet
192.168.0.10 – 255.255.0.0	192.168.1.10 – 255.255.0.0	Working
192.168.0.10 – 255.255.255.0	192.168.0.100 – 255.255.255.0	Working

After setting the IP addresses of PLC and PC correctly try again to establish the active path.

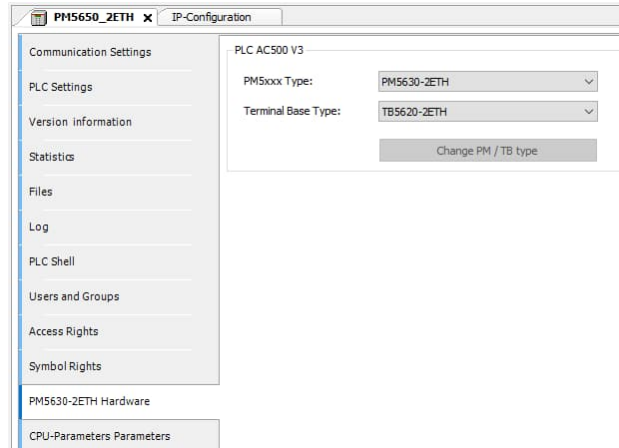
### Setting the active path has been aborted.

The selected device is either unavailable or its target ID or target type does not match the device in your project. You will not be able to connect to this device.

If this message pops up. The device hardware might be configured wrong. The type of the PLC you can either read from PLC's side sticker or via a Scan tool.

Device type	IP Address	Port	M
PM5630-2ETH	192.168.0.10	ETH1	01

Make sure that this is the same type as configured in the Hardware. Select the right Processor type in the drop-down list and click Change PM / TB type to change the hardware configuration in Automation Builder software.



- set the active path again for this PC and PLC.

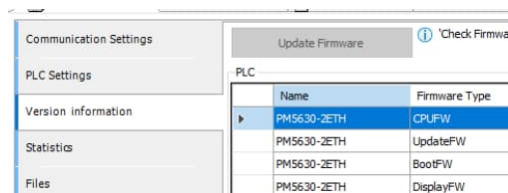
### Login to PLC

Once the gateway is running and the active path was successfully set as described in the chapters above, a login should be possible to perform for online connection. If no warning or error is popping up, online connection is successfully.

Here are some warnings or errors which can be occurred as described below:

- **Selected target system is different from the connected device**

According to the Automation Builder version which is used. The PLC must have the correct firmware. Perform a firmware upgrade / downgrade in the tab Version information. Please make sure that the PLC is in stop mode before starting the update. There is a direct relation between Automation Builder and firmware version. As shown in the table below.



AB Version	FW Version
2.2.5	3.2.5
2.4.0	3.4.0
2.4.1	3.4.1
2.5.0	3.5.0
...	...

- **No connection to the device. Please rescan your network**

Make sure that the active path is successfully set (green). If there is no connection, check whether there might be multiple devices in the Automation Builder project. Select the active device to log in for online connection.

## Checklist

- PLC physically connected to PC
- PC gateway running
- Right hardware selected
- PLC and PC are in the same network
- Active path to PLC established
- PLC has the right firmware according to Automation Builder version
- Code can be built error free