



SETUP TEAMVIEWER – VPN CONNECTION TO PROGRAM REMOTE PLC’S AND HMI- PANELS

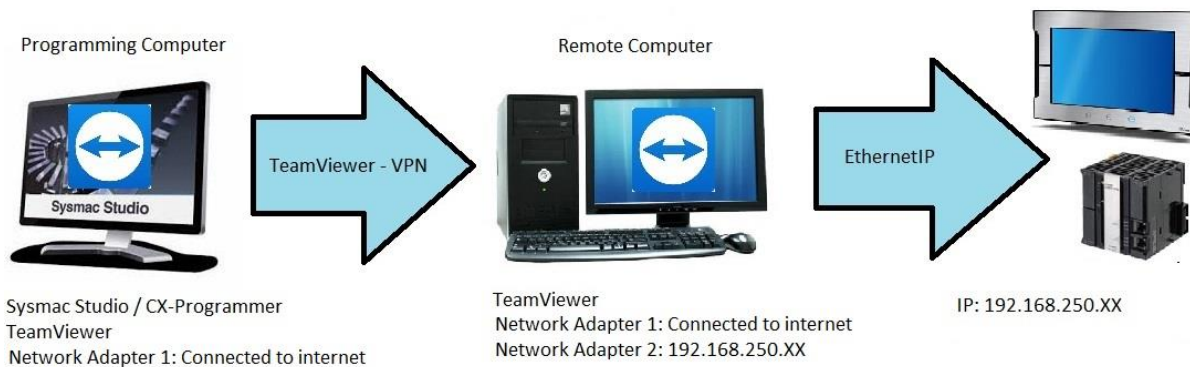
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Description

TeamViewer is a software commonly used for taking remote control over other PC. It also supports a VPN feature that allows connection to devices connected to the remote computer.

This document provides instructions to how to set up the VPN connection in a way that communication with PLC's and NA-panels will be possible. In practice this means that the programming computer which has Sysmac Studio or CX-Programmer installed can be located anywhere, as long as it has an internet connection. The programming computer connects to the remote computer via TeamViewer VPN. The remote computer is connected to Omron hardware via EtherNet/IP and there is no need for it to have any Omron software installed. The remote computer works as a router for the programming computer and so enables the programming computer to have full featured connection to the Omron devices.

In order to work, the setup requires two computers. Omron programming software needs to be installed on the programming computer and TeamViewer with VPN driver needs to be installed on both of the computers. The setup made in this document works on both Sysmac Studio and CX-Programmer, thou the instructions have been made with Sysmac Studio only.



Note that Omron doesn't take any responsibility over the possible security risks followed by making changes to the Windows registry and routing table.

Remote Computer Setup



Network Adapter 1: Connected to internet.

Network Adapter 2: Set up a solid IP-address that is in the same address space with the Omron devices you wish to connect to (PLC's, HMI's).

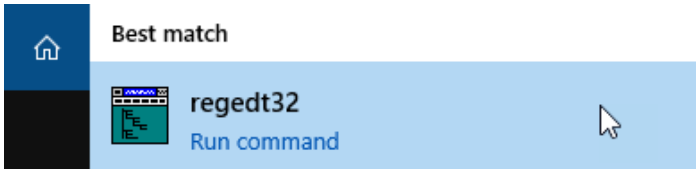
In this example the IP has been set to 192.168.250.10. Mask: 255.255.255.0

Connect this network adapter via Ethernet-cable to the device you wish to connect to (PLC, HMI, Switch).

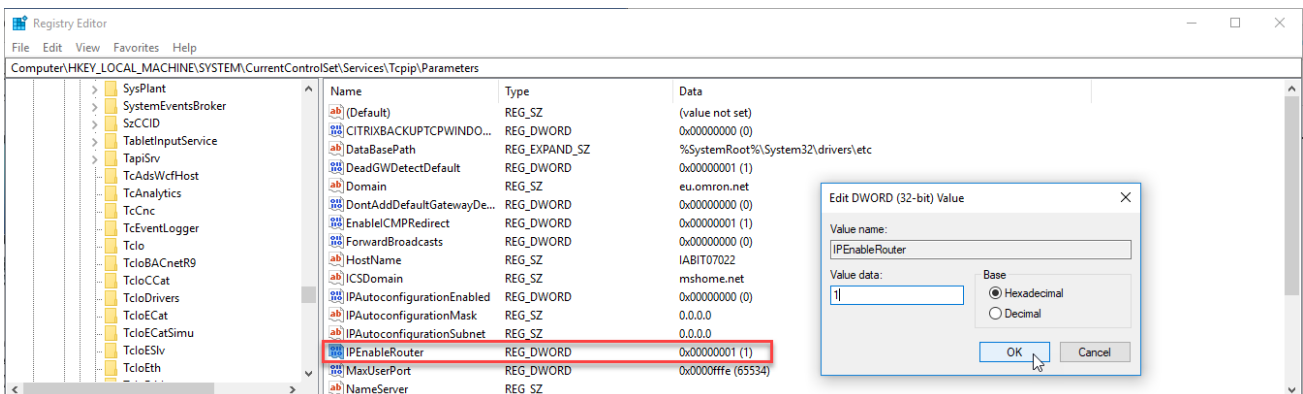
TeamViewer must be installed with the VPN – driver.

Extras -> Options -> Advanced -> Install VPN driver.

Run *regedt32*.



Browse to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters**



Set parameter *IPEnableRouter* to state "1".

Reboot your computer in order to make the changes valid.

Programming Computer Setup



Network Adapter 1: Connected to internet.

TeamViewer must be installed with the VPN – driver.

Extras -> Options -> Advanced -> Install VPN driver.

Create a VPN connection from this computer to the remote computer. TeamViewer will open a window with the information "IP of Partner". Copy this IP to the command below.

Run CMD as an administrator and write the following command:

route add <Base IP of the remote computer/Omron devices> mask 255.255.255.0 <IP of Partner> metric 1

For example:

route -p add 192.168.250.0 mask 255.255.255.0 7.207.174.83 metric 1

The command will open a routed connection to all devices in: 192.168.250.1 – 192.168.250.255

You can see a list of routed connections by command:

route print

You can remove a generated route by command:

Route -p delete <IP>

PLC Setup



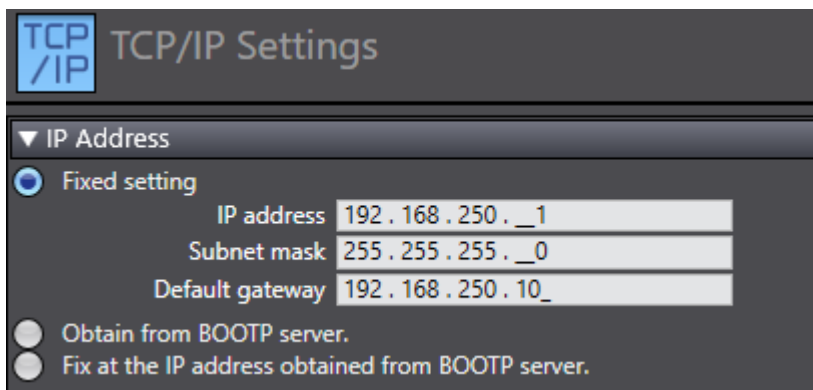
Set the IP of the PLC into the same address space with the remote computers **network adapter 2**.

In this example the **network adapter 2** of remote computer is set to 192.168.250.10.

So the default IP of PLC will do: 192.168.250.1.

Subnet mask: 255.255.255.0.

Gateway needs to be the IP of the remote computers **network adapter 2**: 192.168.250.10.



TCP/IP Settings

▼ IP Address

Fixed setting

IP address	192 . 168 . 250 . _1
Subnet mask	255 . 255 . 255 . _0
Default gateway	192 . 168 . 250 . 10_

Obtain from BOOTP server.

Fix at the IP address obtained from BOOTP server.

Upload the changes to the PLC. Notice that you need to remove the default setting *“Do not transfer the EtherNet/IP connection settings”* in order to make changes to the TCP/IP settings.

- Clear the present values of variables with Retain attribute (Valid for Transfer to Controller).
- Do not transfer the POU program source (Valid for Transfer to Controller). All data will be re-transferred when this option is changed.
- Do not transfer the following. (All items are not transferred.)
 - CJ-series Special Unit parameters and EtherCAT slave backup parameters.
 - Slave Terminal Unit operation settings and NX Unit application data.
- Do not transfer the EtherNet/IP connection settings (i.e., tag data link settings).

HMI-Panel Setup



Set the IP of the HMI-panel into the same address space with the remote computers **network adapter 2**.

In this example the **network adapter 2** of remote computer is set to 192.168.250.10,

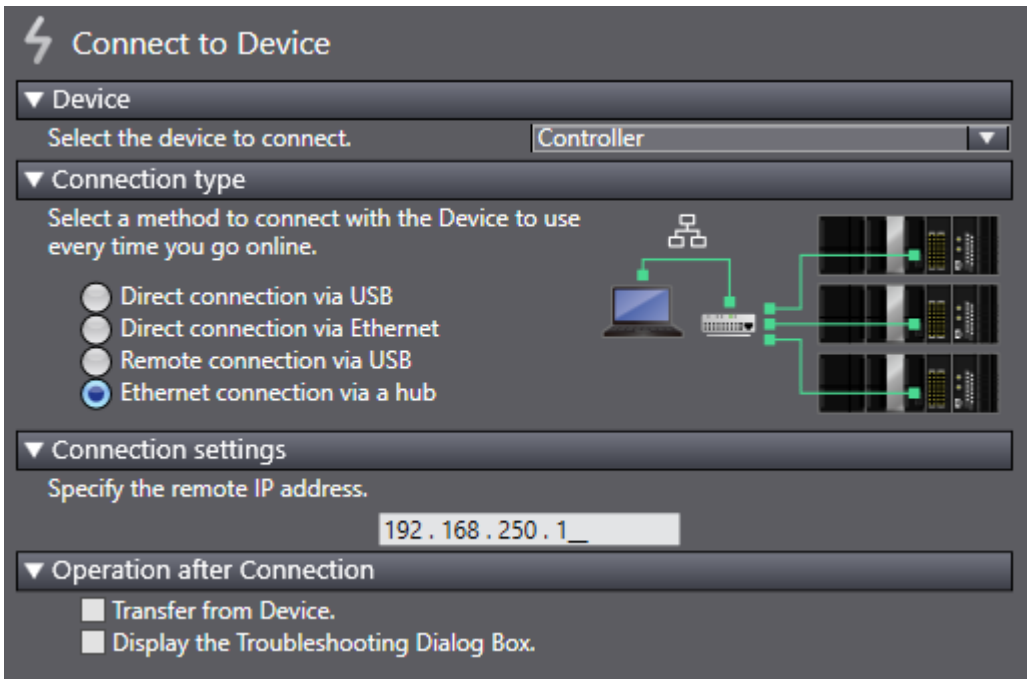
IP of the panel can be set up to: 192.168.250.2.

Subnet mask: 255.255.255.0.

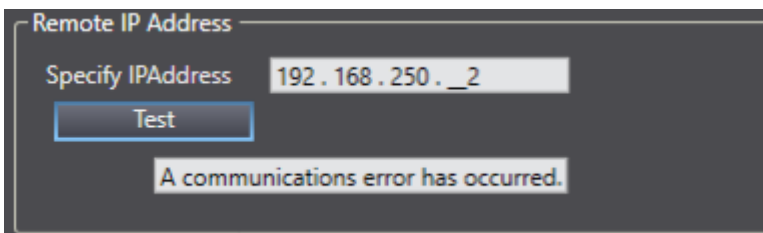
Gateway needs to be the IP of the remote computers **network adapter 2**: 192.168.250.10.

Connecting

When connecting use option "Ethernet connection via a hub".



Notice that the *Communication Setup* "Test" doesn't work when connecting to a NA-panel, even though the communication will work.



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