SIEMENS

Why can you not transfer the HMI configuration to the panel?

- Ethernet Connection -

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Caution

The functions and solutions described in this entry are predominantly limited to the realization of the automation task. When linking your system to other system components, to the company network or to the internet, appropriate industrial security measures must be taken. More information about this is available in FAQ response in Entry ID: !50203404!.

http://support.automation.siemens.com/WW/view/en/50203404

Contents

1 General

1.1 Contents

This entry describes different solutions if you should encounter problems when transferring the configuration file to the HMI operator panel. Possible causes are listed and remedies given for clearing them.

Requirement:
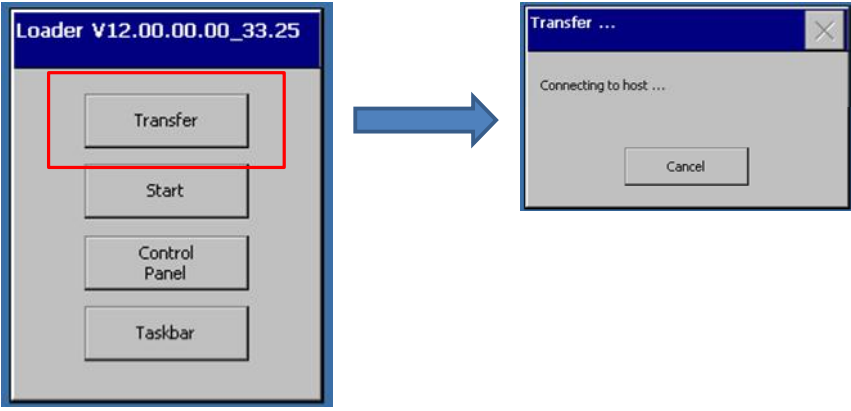Transfer of the HMI configuration to the operator panel is by Ethernet or PN/IE.

1.2 Settings

You must open different menus to check the settings. This chapter describes how to get to the menus and settings. In later error analyses we refer to this chapter.
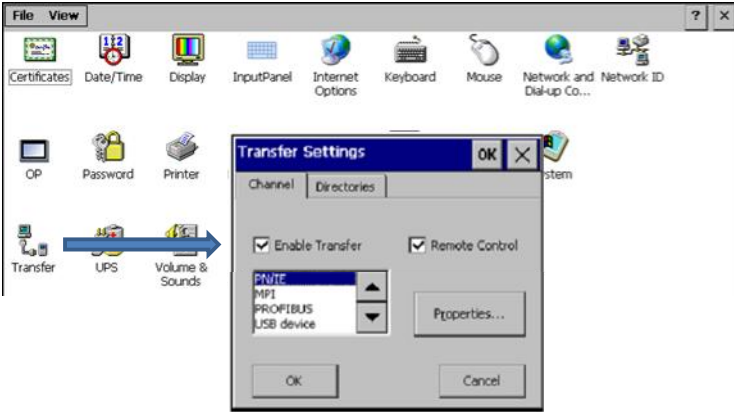
1.2.1 Settings on the Panel

Set the panel to the Transfer mode

Table 1-1

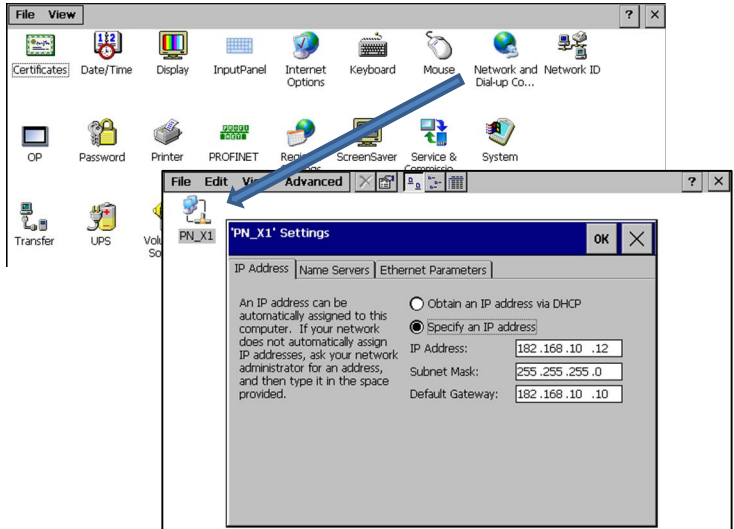| No.	Action
1.	• After the panel has started up or after the panel Runtime has been completed, the "Loader" menu is displayed. • Select the "Transfer" button in the "Loader" menu.

Make Transfer settings on the panel

Table 1-2

No.	Action
1.	• Select the "Control Panel" button in the "Loader" menu. • In the "Control Panel" you select the "Transfer" icon. The "Transfer Settings" window opens.

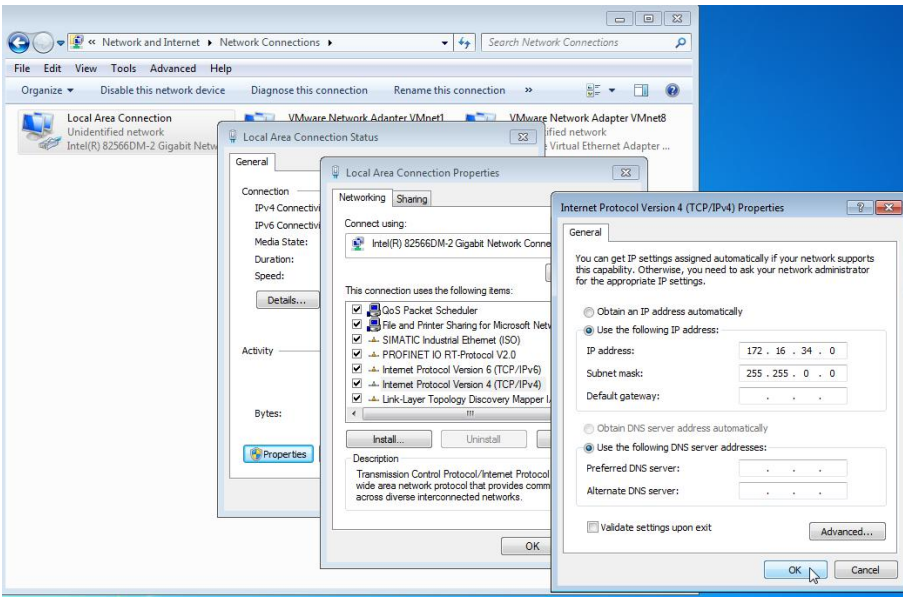**Change network settings on the panel**

Table 1-3

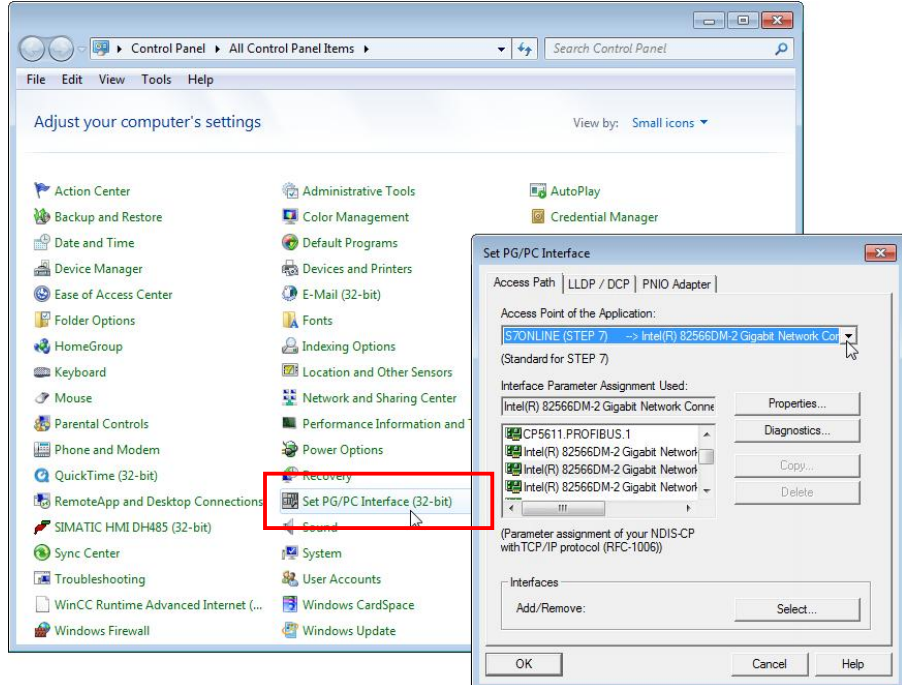| No.	Action
1.	• Select the "Control Panel" button in the "Loader" menu. • In the "Control Panel" you select the "Network and Dial-up Connections" icon. The "Network Adapter" window opens. • Click the icon to open the Properties of the "Network Adapters".

1.2.2   Settings on the Configuration PC

Network adapter settings on the PC

Table 1-4

No.	Action
1.	• Click the Windows "Start" button and open the Control Panel. • Open the Network and Sharing Center. • Click "Change adapter settings". • Double-click to open the Properties of the network adapter you are using. • Select "Properties > …4 (TCP/IPv4). **Note** If you are using VMware (Virtual Machine), then the network connection should be set to "Bridged" in the settings in the "Virtual Machine". Details about this are available in the VMware software documentation.
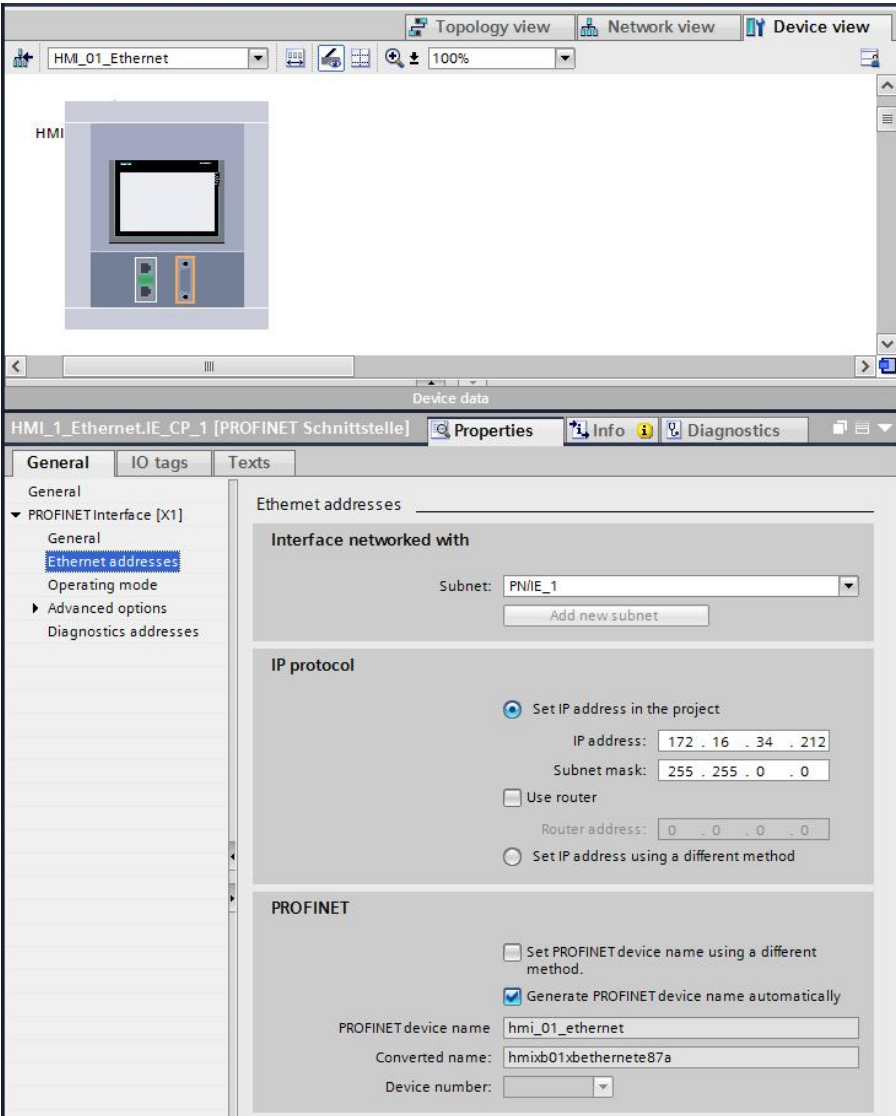
Settings of the PG/PC interface

Table 1-5

No.	Action
1.	• Click the Windows "Start" button and open the Control Panel. • Select the "Set PG/PC interface…" item.

Network settings in the HMI configuration

Table 1-6

No.	Action
1.	• Open the Device Configuration of the HMI operator panel. • Switch to the "Device View". • Mark the "Ethernet interface" of the operator panel. • Open "Properties > General > PROFINET interface [X1] > Ethernet addresses".

Transfer settings in the HMI configuration

Table 1-7

No.	Action
1.	• In the project tree you open the folder of the operator panel to be transferred. • Select the menu command "Online > Extended download to device...". The window (Extended download) with the transfer settings opens.

2 Basic Check

This chapter describes the most common sources of error.

If you cannot now transfer the configuration to the HMI operator panel, then you must run a detailed check. Refer here to chapter 3.

Are you using a USB-Ethernet Adapter?

You can only use Ethernet interfaces that are present as hardware for project transfer.
Therefore **no** "USB to Ethernet" adapters can be used.
More information about this is available in this entry:
http://support.automation.siemens.com/WW/view/en/19109408

2.1 General Settings

Settings on the panel

Table 2-1

No.	Action
1.	**Panel in Transfer mode** • Set the panel to Transfer mode. **Note** Also set the panel to Transfer mode even if you have chosen the "Enable automatic transfer" (Remote Control) option in the transfer settings on the panel.

| No.	Action
2.	**Check the IP address** • Check the IP address and subnet mask set... - on the configuration PC (network adapter settings) - in the HMI configuration (transfer settings) - on the panel (network settings) **Notes** • The IP addresses must be unique in the network. • If you are not using a router, then the addresses assigned must be in the same subnet. **Example** (incorrect setting) • **Configuration PC** - IP address: 172.16.34.10 Subnetwork: 255.255.0.0 • **HMI configuration / Transfer settings** - IP address: 172.16.34.200 Subnetwork: 255.255.0.0 • **Panel network setting** - IP address: 172.16.34.200 Subnetwork: 255.255.**255**.0 -> In this case the subnet mask is not in the specified area.

Ethernet setting on the PC (see section 1.2.2)

Check the adapter settings on the configuration PC.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).
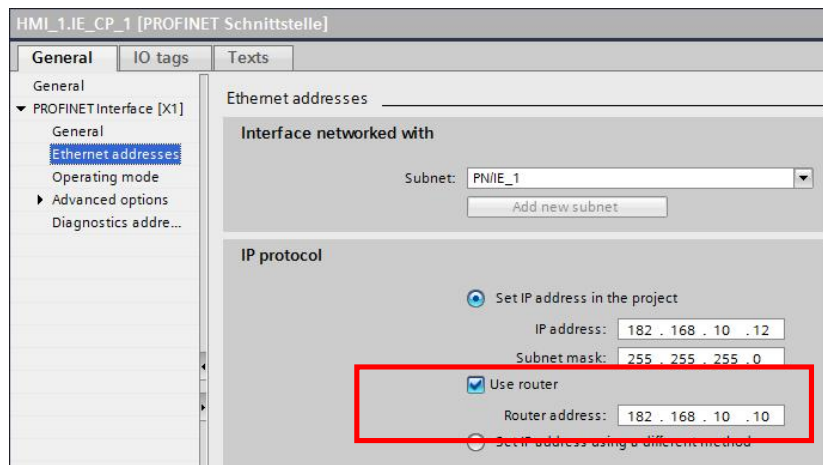
Figure 2-1
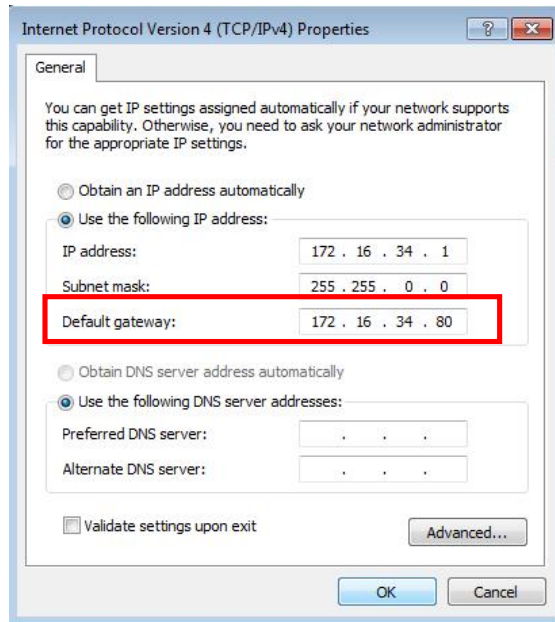
Ethernet setting in the HMI configuration (see section 1.2.2)

Check the network settings in the HMI configuration.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).

Figure 2-2

Ethernet setting on the operator panel (see section 1.2.1)

Check the network settings on the HMI operator panel.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).
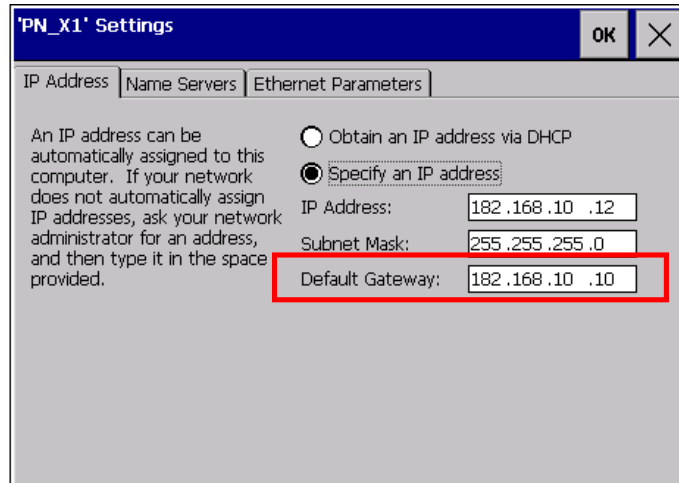
Figure 2-3

Note   When the HMI configuration has been transferred, the settings made on the panel are overwritten by the settings made in the configuration.

2.2 Using a Router

If the configuration PC and the panel are in different
Ethernet networks, then the two Ethernet networks are connected through a router,
for example.

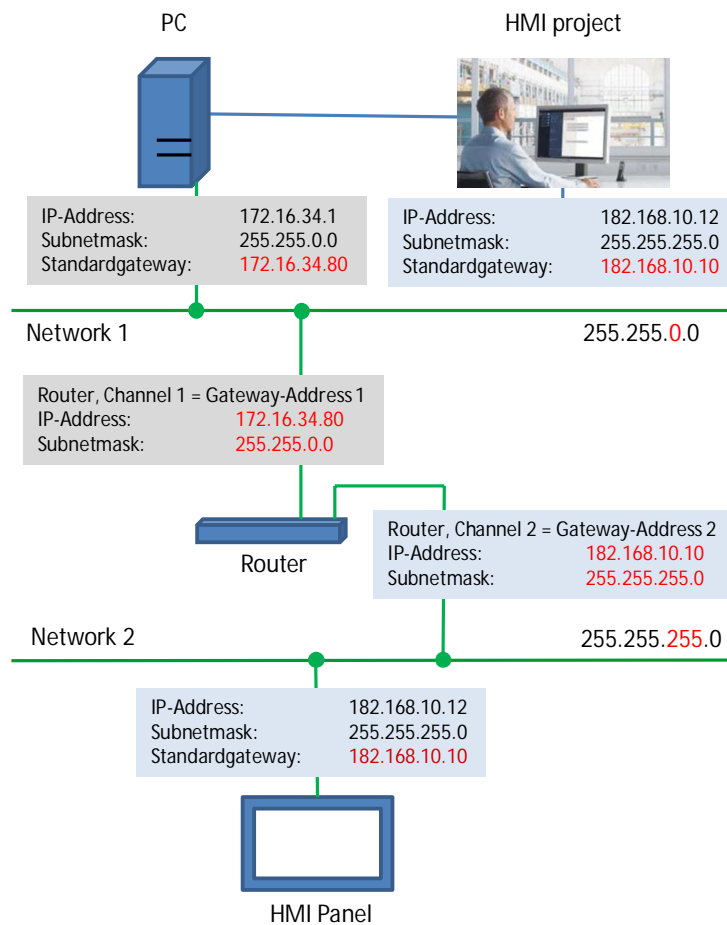| Note	Details about "Connecting panels in different networks" are available in the FAQ response in Entry ID 12345678 (in preparation).

Enter router address

When you specify the IP address in the HMI configuration you must also specify
the network-specific IP address of the router.

Example

- Network 1
  Configuration PC

- Network 2
  HMI operator panel

Figure 2-4

2.3   Cable Connections

Check the cable connections between the operator panel and the PC.

Causes of error and remedies

- The panel is connected to the PC with an Ethernet cable.
    - Panel with **one** Ethernet port:
      In this case you use a "crossed" Ethernet cable. Do not use a "patch cable" (connections are configured identically on both connectors).
    - Panel with **two** Ethernet ports:
      You can use a "crossed" Ethernet cable and a "patch cable".
    - Make sure that the connectors are slotted in properly.

- The panel is **not** connected to the PC with an Ethernet cable.
    - Make sure that the panel is connected to the correct network segment.
    - If there is a "switch" or "router" in the network, then make sure that the power supply is switched on on the devices.
    - First try to establish a direct Ethernet connection between the panel and the configuration PC.
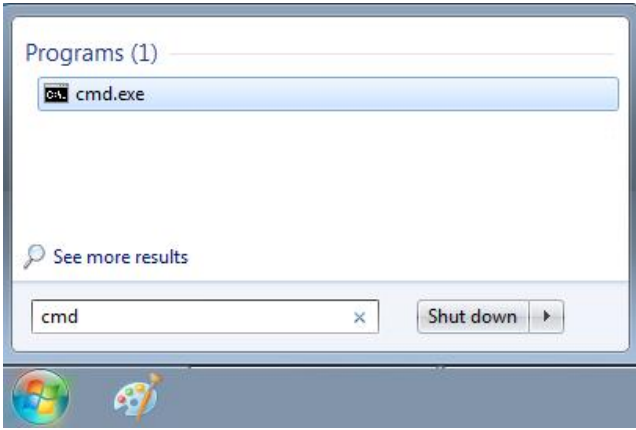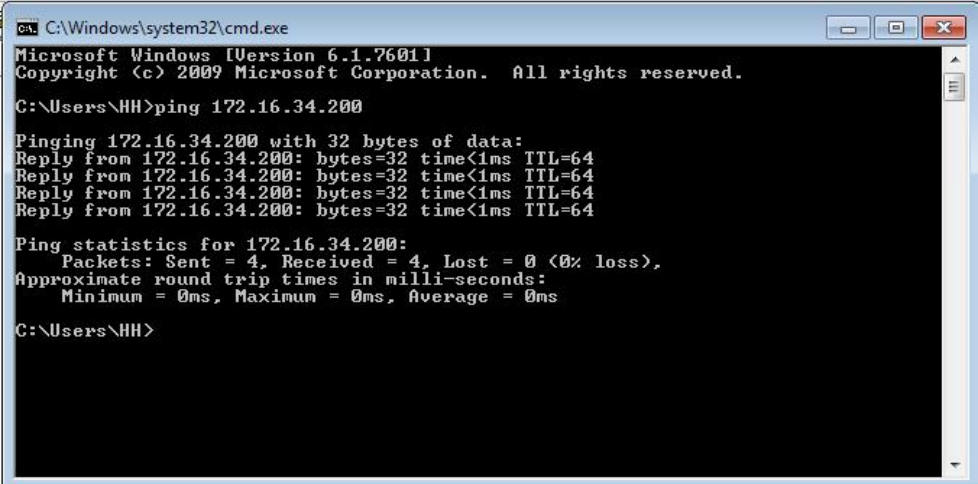
3 Detailed Check

3.1 PC Settings

3.1.1 Run a Ping Test

A "ping" is a diagnostics tool for checking whether a specified node is available in an IP network.

If a ping works on the operator panel, then there is a network connection established between the PC and the panel.

Table 3-1

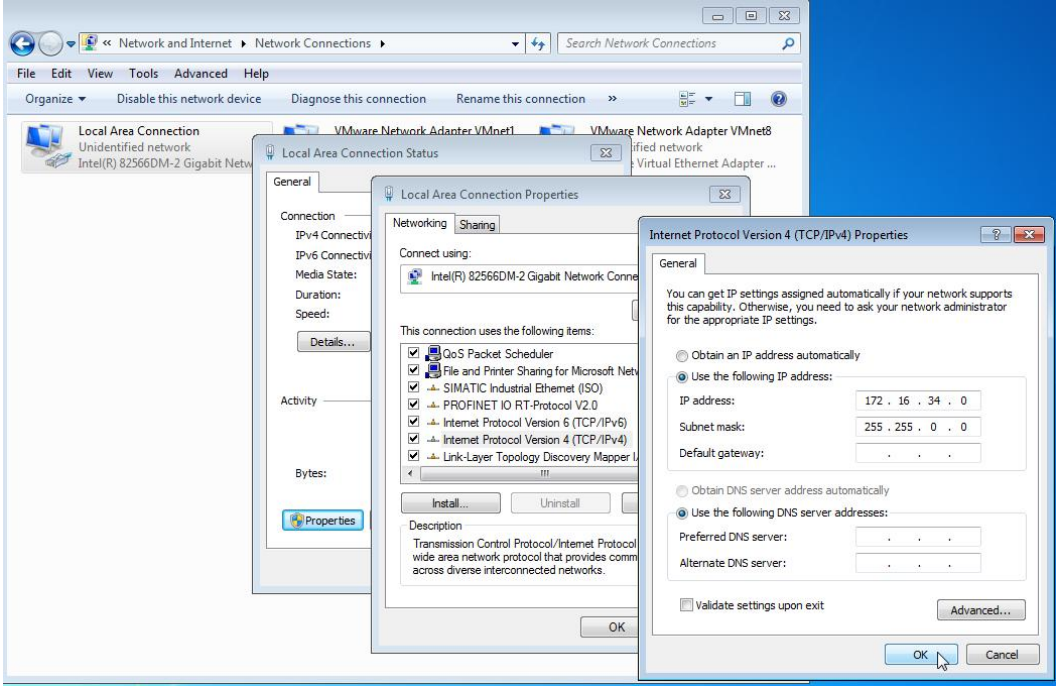| No.	Action
1.	**Open the DOS prompt window** • Click the Windows "Start" button and in the "Search programs and files" field you enter the "**cmd**" command. • Start the program by clicking "cmd.exe". The DOS prompt window opens.

No.	Action
2.	**Run a ping test** • In the DOS command line you enter the following command: **ping** "**Operator panel IP address**" Complete the entry with the "ENTER" key. **Example** IP address of the HMI operator panel: 172.16.34.200 => ping 172.16.34.200 – If the node is reached, you get the message "Reply from...". – If the node is **not** reached, you get the message "Time for request exceeded", for example.
3.	**Troubleshooting** • Ping to the panel works but it is not possible to transfer the project. – Is the same IP address entered in the HMI configuration as previously with the ping test? – If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and run the ping test again. There should be no reply. – Is the panel in Transfer mode? – Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? – Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there? • Ping to the panel does **not** work. – Is the panel switched on? – Check the cable connection. – If the panel is in a network, try to reach another device in the same network with a ping test. In this way you can check whether the cable connection to the network is OK. – If you are using a router, then check the "Default gateway" address. See section 2.2 for details.

3.1.2 PC-Ethernet Interface

Check the settings of the Ethernet interface on the PC.

Table 3-2

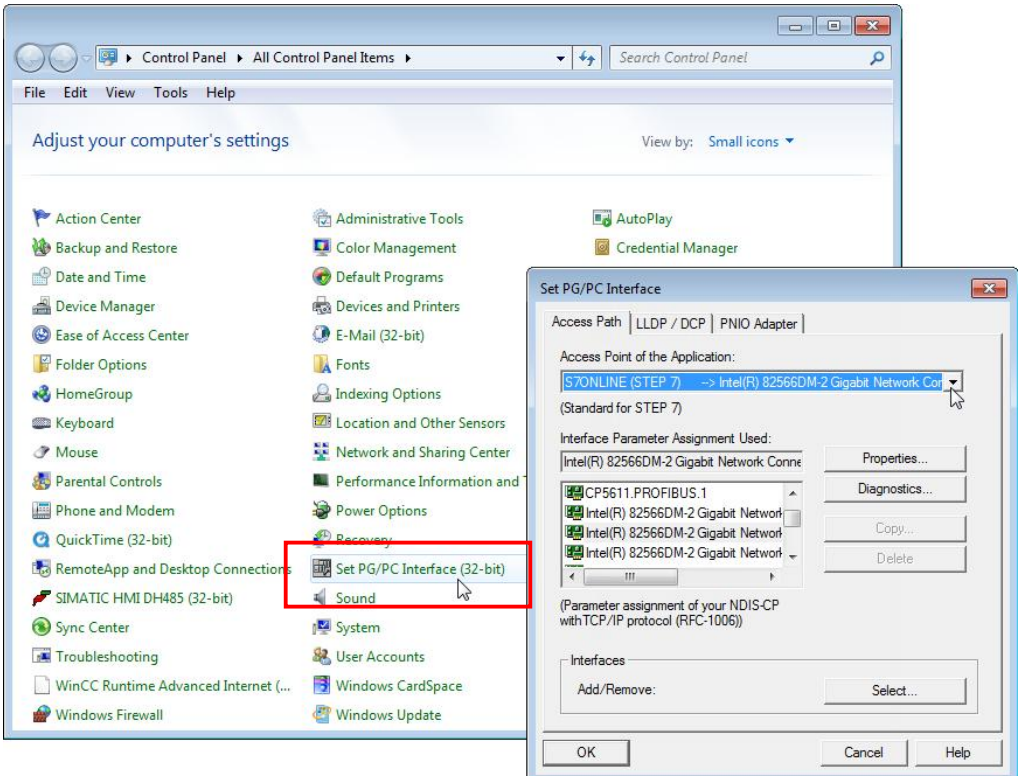| No.	Action
1.	**Check adapter settings** • Open the network connection and check the settings made there. Pay particular attention to the subnet mask address.

2.	**Troubleshooting**
	
	• Run a ping test to the panel
	  – If you have changed the adapter settings, then try whether the panel can now be reached with a ping test.
	
	• Ping to the panel does **not** work.
	  – Check the cable connection. See section 2.3 for this.
	  – If the panel is in a network, try to reach another device in the same network with a ping test. In this way you can check whether the cable connection to the network is OK.
	  – If you are using a router, then check the "Default gateway" address. See section 2.2 for details.

3.1.3 PG/PC Interface

WinCC (TIA Portal)

When using WinCC (TIA Portal), there is no need to make any settings in the PG/PC interface for transferring the configuration to the operator panel. All the required settings are made in the "Extended download" menu.

WinCC flexible 2008

When using WinCC flexible 2008, check the settings in the PG/PC interface.

Table 3-3

No.	Action
1.	**Change the settings of the PG/PC interface** • Open the PG/PC interface. • In the dialog window you select the network card you are using. • Under "Access Point of the Application" you select "S7ONLINE (STEP 7) → your network card".

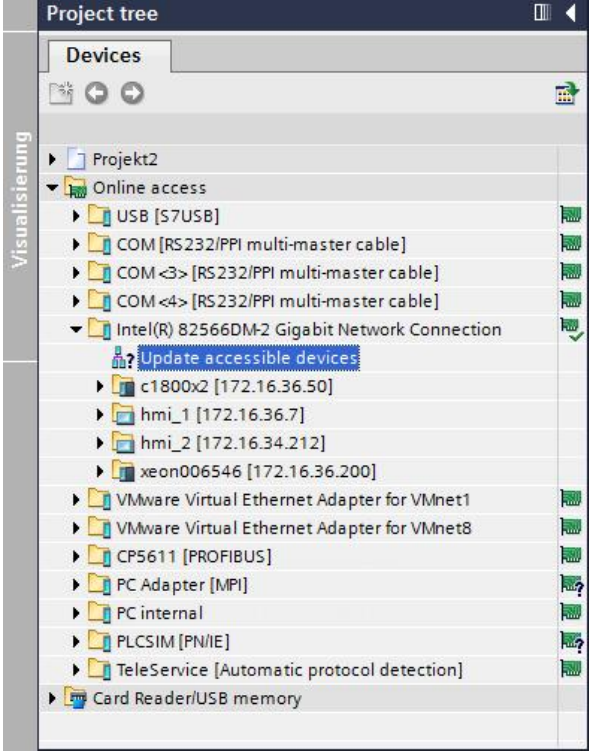| No.	Action

2.	**Troubleshooting**
	
	Note
	If you cannot change the PG/PC interface, check whether "PLC SIM" or an HMI Runtime is still enabled. PLC SIM disables all other online interfaces. In this case, first close the running application (assuming that this is allowed to be closed).
	
	   - Run a ping test to the panel
	  - If you have changed the PG/PC interface settings, then try whether the panel can now be reached with a ping test.
	  - If the ping test is successful, now try to transfer the configuration to the panel.
	   - Ping to the panel does **not** work.
	  - Check the cable connection. See section 2.3 for this.
	  - If the panel is in a network, try to reach another device in the same network with a ping test.
	  - Check the settings of the Ethernet interface on the PC. See section 1.2.2 for this.
	  - Check the network settings on the operator panel. See section 1.2.1 for this.
	   - Ping to the panel works, transfer of the configuration does **not** work.
	  - Is the same IP address entered in the HMI configuration as previously with the ping test?
	  - If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and run the ping test again. There should be no reply.
	  - Is the panel in Transfer mode?
	  - Is the "Enable Transfer" option enabled in the transfer settings on the operator panel?
	  - Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there?

3.1.4 Displaying accessible nodes

Section 3.1.1 describes how to test the connection to the panel using a ping test. Instead of the ping test you can also use the function presented below for testing the online connection.

The advantage of this function is that you can see all the nodes connected to the network.
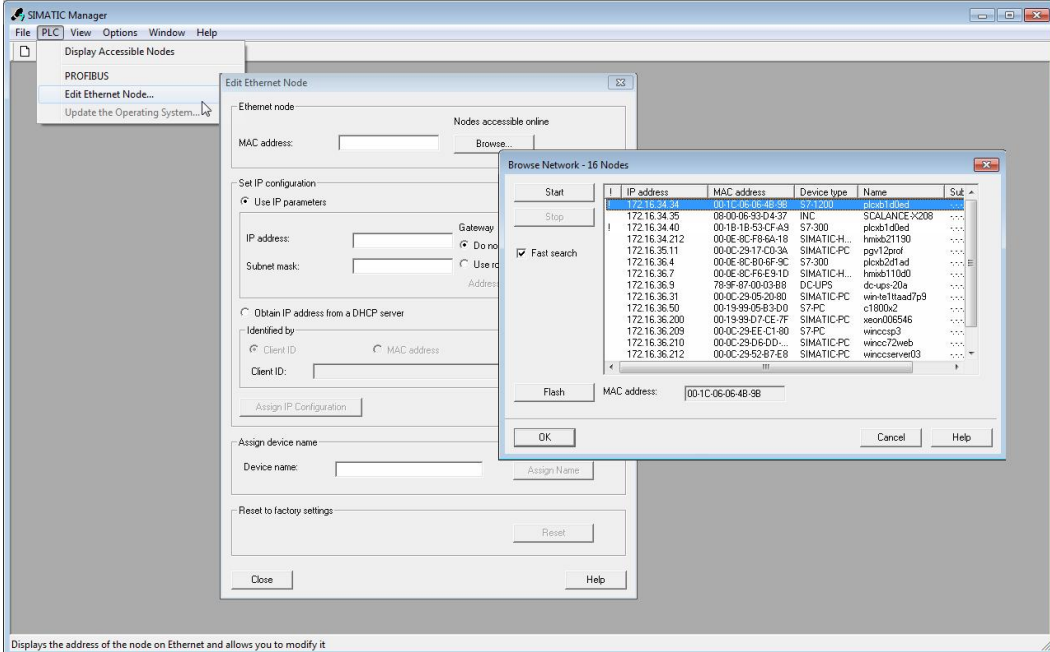
WinCC (TIA Portal)

Table 3-4

No.	Action
1.	**Online access** • Open the WinCC (TIA Portal) configuration. • Open the "Online access" folder in the project tree. The folder contains all the enabled interfaces of your PG/PC. • Open the subfolder of the Ethernet interface used. – To update the list you double-click "Update accessible devices". If the panel is accessible in the network, it is listed underneath the Ethernet interface used. To be able to use the function you must make **no** settings in the PG/PC interface or under "Extended transfer settings". **Note** Detailed information about "Online access" is available in the Online Help.

No.	Action

2.	**Troubleshooting**
	
	 • The panel is in the list of accessible devices.
	   – Try now to transfer the configuration to the panel.
	
	 • The panel is **not** in the list of accessible devices.
	   – Check the cable connection. See section 2.3 for this.
	   – Check the settings of the Ethernet interface on the PC. See section 1.2.2 for this.
	   – Check the network settings on the operator panel. See section 1.2.1 for this.
	
	 • The panel is in the list of accessible devices but transfer of the configuration does **not** work.
	   – If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and update the function.
	   – Is the panel in Transfer mode?
	   – Is the "Enable Transfer" option enabled in the transfer settings on the operator panel?
	   – Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there?

WinCC flexible 2008

Table 3-5

No.	Action
1.	**Online access** • Open the STEP 7 SIMATIC Manager (no project should be loaded). • In the toolbar you select the option "PLC > Edit Ethernet Node...". The "Edit Ethernet Node" dialog opens. • Click the "Browse..." button. A window opens showing all the accessible nodes.

2.	**Troubleshooting**
	
	Note
	If you cannot open the "Edit Ethernet Node" dialog, check the PG/PC interface. There, the Ethernet interface you are using must be selected under "Access Point of the Application".
	
	• The panel is in the list of accessible devices.
	   – If the panel you are using is in the list of accessible devices, check the IP addresses of the other nodes in the list. There might be a device there with the same IP address as the operator panel.
	
	• The panel is **not** in the list of accessible devices.
	   – Check the cable connection. See section 2.3 for this.
	   – Check the settings of the Ethernet interface on the PC. See section 1.2.2 for this.
	   – Check the network settings on the operator panel. See section 1.2.1 for this.

No.	Action

	• The panel is in the list of accessible devices but transfer of the configuration does **not** work.
	  - If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and update the function.
	  - Is the panel in Transfer mode?
	  - Is the "Enable Transfer" option enabled in the transfer settings on the operator panel?
	  - Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there?

3.2 HMI Configuration

3.2.1 Check the PROFINET Interface
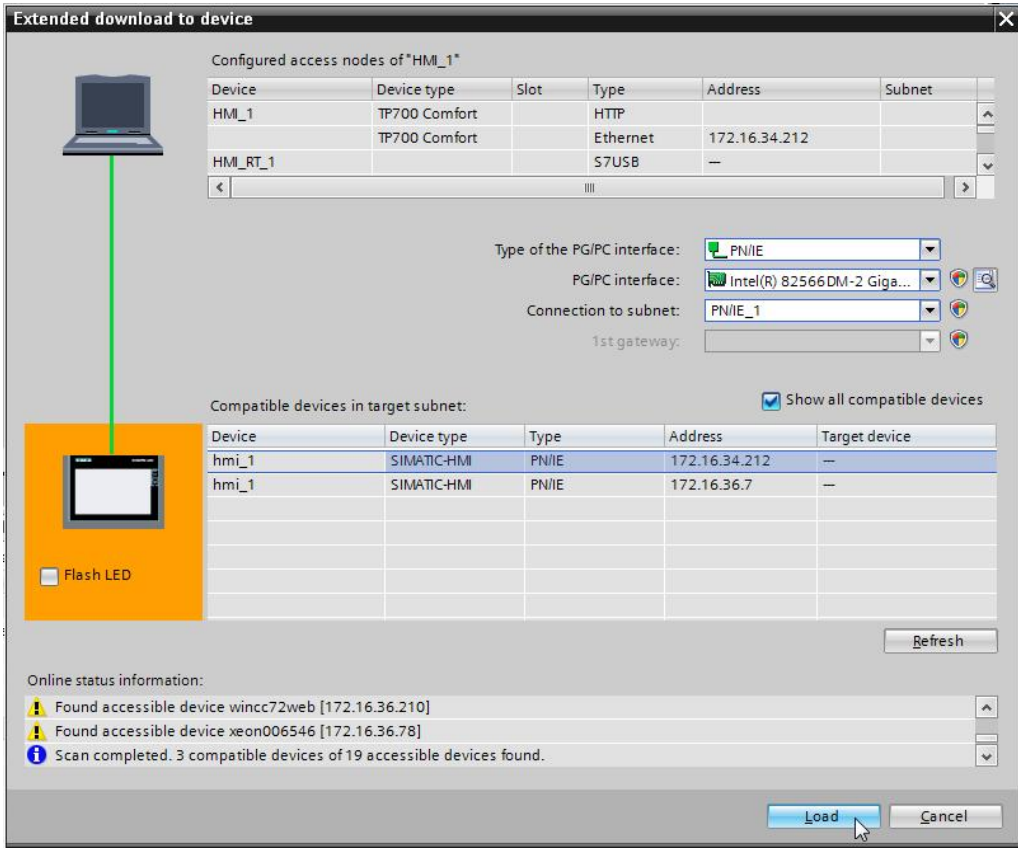
Table 3-6

No.	Action
1.	**Network view** • Open the Device View of the operator panel and call the Network View. • Mark the Ethernet interface of the operator panel and check the IP address entered.
2.	**Troubleshooting** • Is the panel in the correct subnet? • Do the settings match those on the operator panel? • Is there a router in the network? In this case the router address must also be entered. See section 2.2 for details.

3.2.2 Check the Transfer Settings

Table 3-7
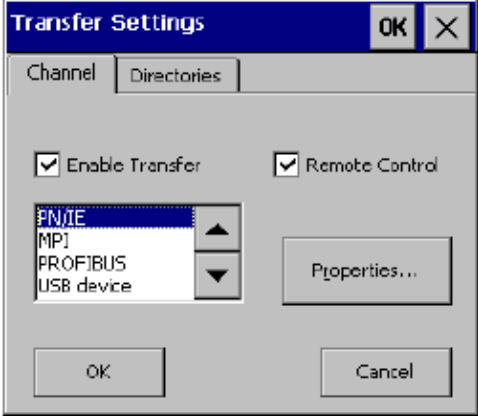
No.	Action

1.	**Transfer settings / Extended download**
	
	In the "Extended download" dialog you must check every item and make sure that these match the transfer settings on the panel.
	
	• PG/PC interface type
	  - The setting you make here must be identical to the one on the operator panel.
	• PG/PC interface
	  - Make sure that you select the correct network card here.
	• Connection to subnet
	  - Here you select the network in which the panel is located. If the panel is connected directly to the PC, you can also use the "Direct at slot..." setting.
	• Show all compatible devices (option)
	  - Select the option if you do not know the address of the operator panel, for example, or you want to have all the network nodes displayed.

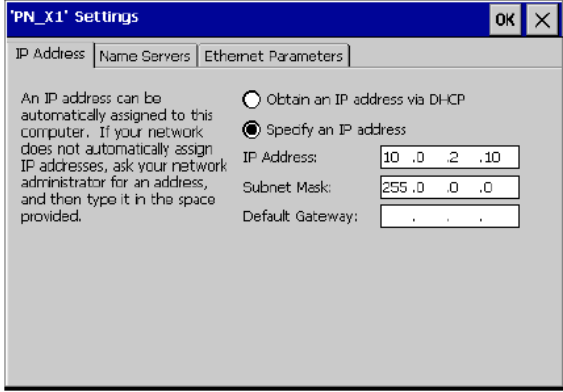| No.	Action
2.	**Troubleshooting** • The panel is in the "Compatible devices in target subnet" table. – If the panel you are using is in the list of accessible devices, check the IP addresses of the other nodes in the list. There might be a device there with the same IP address as the operator panel. – Is the panel in Transfer mode? – Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? • The panel is **not** in the "Compatible devices in target subnet" table. – Check the entry for "Type of the PG/PC interface:". Is "PN/IE or Ethernet" selected there? Compare this with the transfer settings on the operator panel. – Enable the "Show all compatible devices" option. The panel is also recognized if the incorrect IP address is entered on the panel. – Take a look at the operator panel settings in section 1.2.1 and check the points listed there. – Check the cable connection. See section 2.3 for this.

3.3 Operator Panel Settings

3.3.1 Transfer Settings

Table 3-8

No.	Action

1.	**Transfer settings**
	
	Check the settings in the "Transfer Settings" dialog.
	
	• Enable Transfer
	   - This option must be enabled if you want to transfer the configuration to the panel.
	• Remote Control
	   - If you disable this option, you have to set the panel manually to Transfer Mode before you can transfer the configuration to the panel.
	• Interface selection
	   - Specify the transfer protocol. This setting must be identical to the one in the configuration.

2.	**Troubleshooting**
	
	• Transfer protocol
	   - Is "PN/IE or Ethernet" selected there? This setting must be identical to the one in the configuration.
	• Properties….
	   - Using the "Properties..." button you call the network settings.
	   Check the IP address set there. This must match the IP address used in the configuration.

3.3.2 Network Settings

Table 3-9

No.	Action
1.	**IP address** Check the IP address. Make sure that the IP address is identical to the IP address specified in the configuration.
2.	**Troubleshooting** • Check the IP address and subnet mask set. • Check that the IP address has not already been assigned in the network.

4 Tips for Configuring and Commissioning

Configuration

Make a list of all the devices in the network. Note the following information for each device.

- Device designation
- IP address
- Subnet mask
- MAC address

Compare the list with the devices in the plant. This avoids duplicate assignment of IP addresses.

Commissioning

Before you start testing the network connection to the panel, take a good look at the network structure of the plant. If necessary, get together with a network manager before commissioning.

- Check the cable connections.
- Are there routers in the network?
- Are there switches in the network?
- Are there already multiple devices/operator panels in the network?
- Is there a list of the devices already in the network?
- Are all the devices in the same subnet and the same IP band?
- First make a direct connection with the panel and then try to establish a connection. Only when that works should you connect the panel to the network.
- If you are using a router, try to minimize the possible security settings in the router for test purposes. Depending on the parameters of the security settings, you might not get a reply from ping requests

5 Link List

WinCC (TIA Portal)

Table 5-1

No.	Type	Link
1.	FAQ	Which connector cables are available for connecting to SIMATIC Panels? http://support.automation.siemens.com/WW/view/en/19109408
2.	FAQ	How can you transfer a WinCC (TIA Portal) configuration to an operator panel using Ethernet? http://support.automation.siemens.com/WW/view/en/58522604
3.	Application	Remote access to SIMATIC HMI Panels http://support.automation.siemens.com/WW/view/en/109476153
4.	Manual	WinCC Comfort / WinCC Advanced V12.0 http://support.automation.siemens.com/WW/view/en/68075405

WinCC flexible 2008

Table 5-2

No.	Type	Link
1.	FAQ	Which connector cables are available for connecting to SIMATIC Panels? http://support.automation.siemens.com/WW/view/en/19109408
2.	FAQ	How can you transfer a WinCC flexible project via Ethernet to a Windows-based panel? http://support.automation.siemens.com/WW/view/en/23800567
3.	FAQ	How do you use WinCC flexible to configure communication between an operator panel and an S7 station via S7 routing? http://support.automation.siemens.com/WW/view/en/22257781
4.	FAQ	Why is the communication driver marked "orange" in WinCC flexible when another Ethernet communication is added to an existing MPI/DP? http://support.automation.siemens.com/WW/view/en/19436008
5.	Manual	SIMATIC HMI WinCC flexible 2008 WinCC flexible 2008 Compact / Standard / Advanced http://support.automation.siemens.com/WW/view/en/18796010