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Changing IP Address and PROFINET Device Name

CP 1543-1, T_CONFIG, STEP 7 (TIA Portal)



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Contents

1	Introduction	3
2	Instructions.....	4

1 Introduction

The T_CONFIG instruction is for program-controlled configuration of the integrated PROFINET interfaces of the CPU or of the interfaces of a CP/CM.

Using the T_CONFIG instruction you can change the Ethernet address, the PROFINET device name and the IP address of the NTP server from the user program. The previously valid configuration data is overwritten.

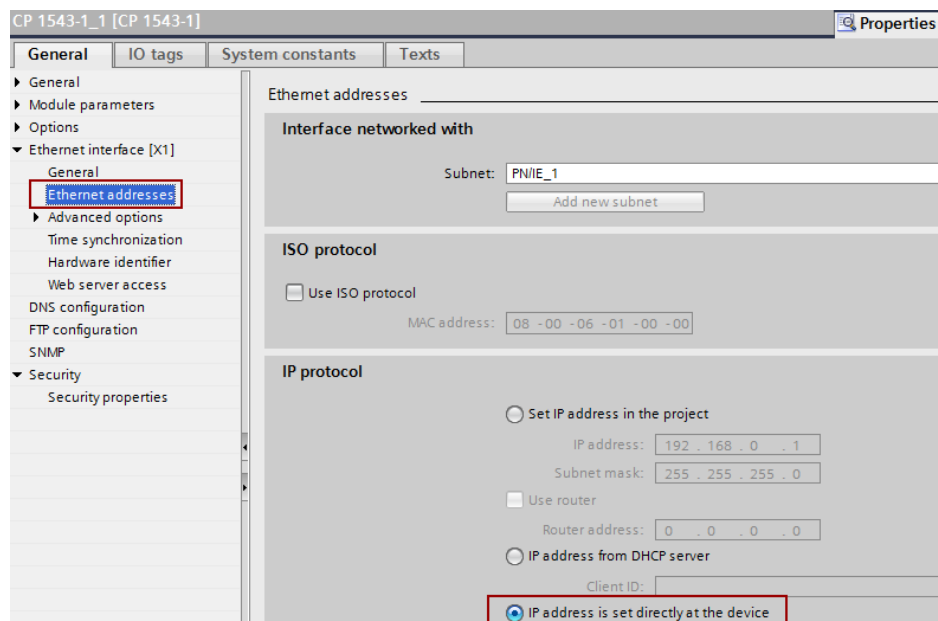
Follow the instructions in [Chapter 2](#) on how to use the T_CONFIG instruction to change the PROFINET device name and the IP address of the CP 1543-1 in running operation.

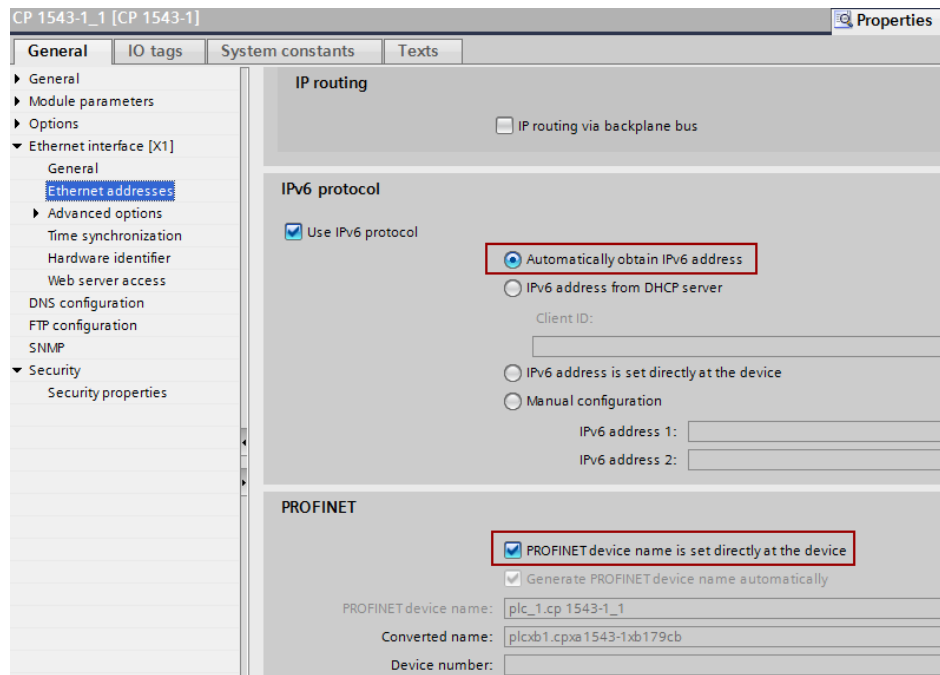
2 Instructions

Follow the instructions below to change the PROFINET device name and the IP address of the CP 1543-1 in running operation.

Settings in the Properties of the CP 1543-1

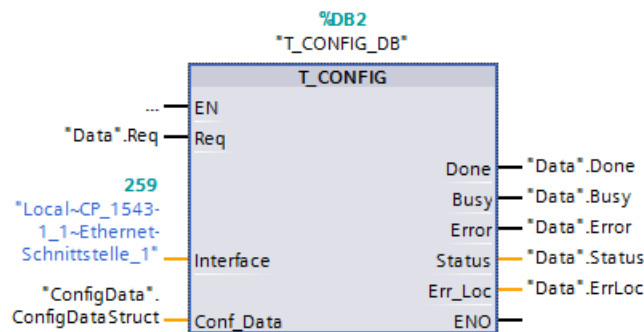
1. In the Network or Device view you mark the CP 1543-1. The properties of the CP 1543-1 are displayed in the inspector window.
2. Navigate to "Ethernet interface [X1] > Ethernet addresses" and enable the following functions:
 - IP address is set directly at the device
 - Use IPv6 protocol
 - Automatically obtain IPv6 address
 - PROFINET device name is set directly at the device



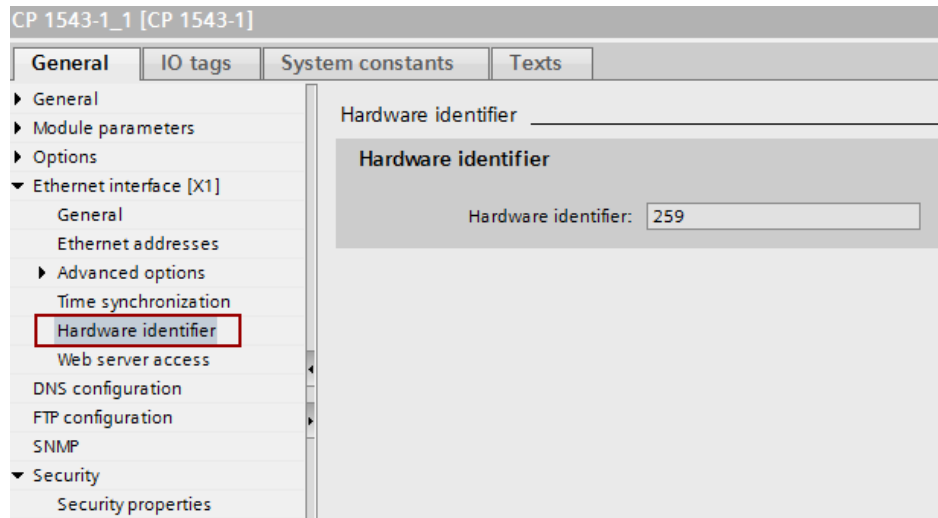


Call the T_CONFIG instruction in the user program of the CPU

1. Call the TC_CONFIG instruction in the user program of the CPU. The T_CONFIG instruction is in the "Instructions" task card under "Communication > Open user communication > Other".



2. Set the parameter "Req" = 1 to start processing of the "T_CONFIG" instruction.
3. At the "Interface" parameter you specify the hardware identifier of the CP 1543-1. The hardware identifier can be found in the Properties of the CP 1543-1 under "Ethernet interface [X1] > Hardware identifier".



4. At the "Conf_Data" parameter you specify a data structure comprising the following system data types:
 - IF_CONF_Header: Via the header you define the number of the following system data types. The system data type IF_CONF_Header must always be included.
 - IF_CONF_v4: In this system data type you store the IP address, subnet mask and router address.
 - IF_CONF_NOS: In this system data type you store the PROFINET device name. You should only create IF_CONF_NOS if you also want to change the device name via the "T_CONFIG" instruction.

The screenshot shows the 'ConfigData' table in the SIMATIC Manager. The table has columns for 'Name', 'Data type', and 'Start value'. The data is as follows:

	Name	Data type	Start value
1	Static		
2	ConfigData	Struct	
3	Header	IF_CONF_Header	
4	IpData	IF_CONF_v4	
5	NoS	IF_CONF_NOS	

5. The system data type IF_CONF_Header is structured as follows:
 - FieldType: This parameter must have the value "0".
 - FieldId: This parameter must have the value "0".
 - SubfieldCount: Number of system data types used. 2 system data types are used in this example: IF_CONF_v4 and IF_CONF_NOS.

Header	IF_CONF_Header	
FieldType	UInt	0
FieldId	UInt	0
SubfieldCount	UInt	2

6. The system data type IF_CONF_v4 is structured as follows:
 - Id: Identifier of the system data type. Do not change the start value of this parameter.
 - Length: Length of the system data type IF_CONF_v4. Since the parameters of IF_CONF_v4 have a fixed length and structure, you must use the start value for the length specification.
 - Mode: Validity of the addressing
 1 = Permanent validity of the configuration data
 2 = Temporary validity of the configuration data including deleting of existing permanent configuration data
 - InterfaceAddress: IP address: 192.168.0.3, for example
 - SubnetMask: Subnet mask: 255.255.255.0, for example
 - DefaultRouter: Router address: 192.168.0.5, for example

▼ IpData	IF_CONF_v4	
Id	UInt	30
Length	UInt	18
Mode	UInt	2
▼ InterfaceAddress	IP_V4	
▼ ADDR	Array[1..4] of Byte	
ADDR[1]	Byte	16#C0
ADDR[2]	Byte	16#A8
ADDR[3]	Byte	16#0
ADDR[4]	Byte	16#3
▼ SubnetMask	IP_V4	
▼ ADDR	Array[1..4] of Byte	
ADDR[1]	Byte	16#FF
ADDR[2]	Byte	16#FF
ADDR[3]	Byte	16#FF
ADDR[4]	Byte	16#0
▼ DefaultRouter	IP_V4	
▼ ADDR	Array[1..4] of Byte	
ADDR[1]	Byte	16#C0
ADDR[2]	Byte	16#A8
ADDR[3]	Byte	16#0
ADDR[4]	Byte	16#5

7. The system data type IF_CONF_NOS is structured as follows:
 - Id: Identifier of the system data type. Do not change the start value of this parameter.
 - Length: Use the default start value "246" at the "Length" parameter for a dynamic length.
 - Mode: Validity of the addressing
 1 = Permanent validity of the configuration data
 2 = Temporary validity of the configuration data including deleting of existing permanent configuration data
 - NOS: PROFINET device name: iodevice, for example

2 Instructions

■ ▼ NoS	IF_CONF_NOS	
■ Id	UInt	40
■ Length	UInt	246
■ Mode	UInt	2
■ ▼ NOS	Array[1..240] of Byte	
■ NOS[1]	Byte	'i'
■ NOS[2]	Byte	'o'
■ NOS[3]	Byte	'd'
■ NOS[4]	Byte	'e'
■ NOS[5]	Byte	'v'
■ NOS[6]	Byte	'i'
■ NOS[7]	Byte	'c'
■ NOS[8]	Byte	'e'
■ NOS[9]	Byte	16#0
■ NOS[10]	Byte	16#0