Tech Note 303 Setting Up an MPI Connection with Siemens SIMATIC NET 6.0 Software Using a CP5611 Profibus Card and an S7-400 PLC (CPU 413-1)

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This *Tech Note* outlines how to set up an MPI connection with Siemens SIMATIC NET 6.0 software using a CP5611 Profibus Card and an S7-400 PLC (CPU 413-1).

Before You Get started, Please Do the Following:

1. Install the Siemens CP5611 adapter card part number (6GK15611AM00 - CP5611 + MPI-cable) on your pc.

The following are part numbers for the CP5611 separately:

6GK1561-1AA00 - SIMATIC NET, PB, CP 5611 PCI CARD (32 BIT) FOR CONNECTION OF A PG OR PC WITH PCI BUS TO PROFIBUS OR MPI

6GK1561-1AM00 - SIMATIC NET, PB, CP 5611-MPI CONS. OF: PCI CARD CP 5611 (32BIT) F. CONN. OF PC/PG WITH PCI BUS TO PROFIBUS OR MPI INCL. MPI CABLE, 5 M

2. Install the Siemens SIMATIC NET 6.0 Software + SP2 or higher.

3. Install the MPI cable (Connect it from the CP5611 adapter card to the MPI port on the CPU of the S7.) Siemens part number (6ES7901-0BF00-0AA0).

4. Install the Wonderware Siemens S7 I/O Server version 7,5,0,11.

5. Make sure that the S7 Plc is connected via the MPI cable to the pc and is in **Run** mode.

Starting a new Project with SIMATIC Manager

1. Click on **File/New** from the SIMATIC Manager main menu.

The following screen appears:

Name	Storage path]
CP5611	D:\Program Files\SIEMENS\SIMAT	IC.NCM\S7proj ⁱ	\$611
CP5611	D:\Program Files\SIEMENS\SIMAT		
lolprj	D:\Program Files\SIEMENS\SIMAT		
locprj	D:\Program Files\SIEMENS\SIMAT		
MPI1	D:\Program Files\SIEMENS\SIMAT		
OPCConnect	D:\Program Files\SIEMENS\SIMAT		
S70PC	D:\Program Files\SIEMENS\SIMAT		
CZODCI			
S70PC1	D:\Program Files\SIEMENS\SIMAT	IC.NCM\S7prof	\S7op
•	D:\Program Files\SIEMENS\SIMAT	T	\S7op
4 ame:	D:\Program Files\SIEMENS\SIMAT	IU.NUM\S7proj	\S7op
•	D:\Program Files\SIEMENS\SIMAT	T	\S7op ▶
Image: Image			\S7op ▶

FIGURE 1: NEW PROJECT



2. Enter a project name in the **Name:** box and click **OK**. In the above example, **MPI2** was used.

The following Project is now created:

E si	MATI		PC Ma	inagei	- MPI2	1								- D ×
						Window								
D	2	8 唯	B	-	₽ <u>₽</u>	田間	齨	< No Filter >		• 70	뭰	N?		
	_			_			_							
		194												1
		EX	COLUMN TWO IS NOT	ALC: NO CONTRACTOR	rogram	Files\SIEN	COLUMN TWO IS NOT	SIMATIC.NC	4\57proj\Mp	ii2			- 10 ×	
		1.7	🗟 M	P12			TM	4PI(1)						
							L							
							L							
							L							
							L							
							L							
							L							
							L							
							L							
		1		_			_							
Press	F1 to	get Help	6. S											14



3. Select **Insert/Station/SIMATIC PC Station** (see following figure) from the main menu:



FIGURE 3: INSERT...PC STATION

4.Highlight **SIMATIC PC Station**, right-click, and select **Rename**. Enter **PCStation** (following figures) as the new name:

SIMATIC NCM PC Manager - MPI2				
Edit Insert PLC View Options		er>	I <u>V</u> 8 M	
MP12 D:\Program I	a de casa da la seconda da second			
	물로 MPI(1)		Open Object	Ctrl+Alt+O
			Cut Copy Paste	Ctrl+X Ctrl+C Ctrl+V
			Delete	Del
			PLC	•
			Print	•
			Rename Object Properties	F2 Alt+Return
1				
iges the name of the selected object.				

FIGURE 4: RENAME

Note The PCStation name MUST must match up with the name in the Station Configuration Editor (see Figure 51).

SIMATIC NCM PC Manager - MPI2		X
Ele Edit Insert PLC View Options Window	Help	
	💼 < No Filter > 🗾 🎾 🐯 🍂	
	MENS\SIMATIC.NCM\S7proj\Mpi2	
· · · · · · · · · · · · · · · · · · ·	TMPI(1) @ PCStation	
Press F1 to get Help.		

FIGURE 5: PCSTATION

5. Highlight and expand the **MPI2** icon. The following window appears:

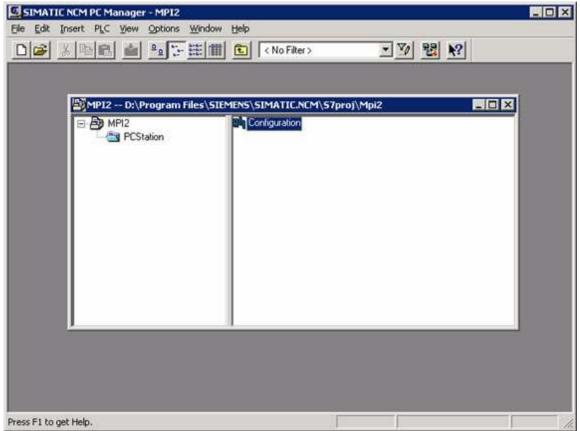


FIGURE 6: CONFIGURATION ICON

6. Double-click the **Configuration** Icon in the right pane of the above figure to open up the SIMATIC Manager PC Config screen. This enables the **PCStation** setup.

Setting up the PCStation in the SIMATIC Manager PC Config Screen

The following window should now be visible:

2 zaton gdt <	stion (Configuration) MP12]	_ 0
1 1 2 1 3 1 4 5 5 1 6 0 7 0 8 0	8 11 11 11 11 11 11 11 11 11 11 11 11 11	ALKI.
	Dide number Fi. M. C Dide number Fi. M. C	
9 UPC Server for configuing all protocols		*

FIGURE 7: PCCONFIGURATION WINDOW

1. Add the **Application** component of the **PCStation** by selecting it in the right hand pane of the PC Config window. In the previous figure, it appears under **User Application**. Drag it over to the the top left box labeled **(0) PC**, and drop in the first line in order to configure the **Application** component as Index **1** (see following figure):

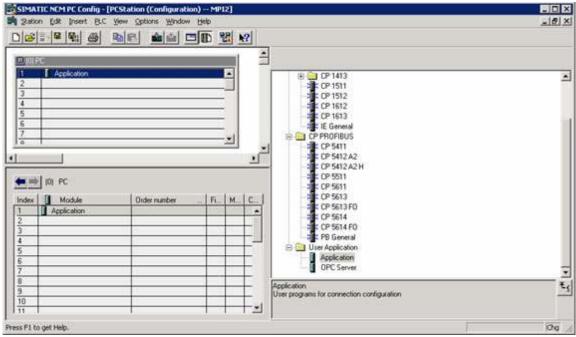


FIGURE 8: INDEX 1

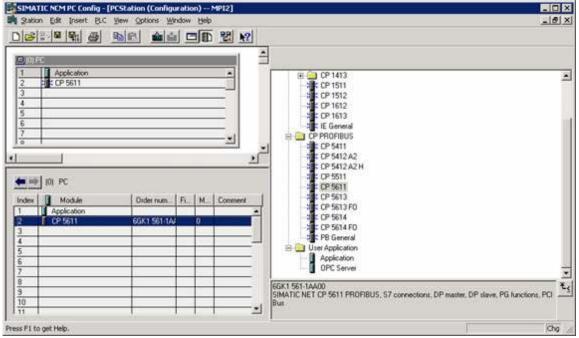
2. Select the CP 5611 module (under the CP Profibus folder), and drag it to the second line of the

(0) PC box. This creates **Index 2** for the **CP5611** component in the **PCStation** (see following figure):

Properties	- PROFIBUS i	nterface CP 5	5611 (R0/52)	×
General	Parameters			
<u>A</u> ddress:		2 💽	If a subnet is selected, the next available address is suggested.	
<u>S</u> ubnet:	networked		New	ï
			Properties	11
			Dejete	ī I
ОК			CancelHelp	

FIGURE 9: CP 5611 (RO/S2) DIALOG BOX

3. Click **OK**. The following figure shows the CP 5611 in index 2:





4. Double click the **CP5611** module that you just added to Index 2. The following dialog box appears:

operties - CP 5611		2
General Operating Mo	ode Reserve LSAPs	
Short Description:	CP 5611	
	SIMATIC NET CP 5611 PROFIBUS, S7 connections, DP master, DP slave, PG functions, PCI Bus	*
Order No.:	6GK1 561-1AA00	
<u>N</u> ame:	CP 5611	
Interface		
1 3 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ROFIBUS	
Address: 2	1	
Networked: No	Properties	
<u>C</u> omment:		
		4
		-
		1002
ОК	Cancel He	elp

FIGURE 11: SELECT INTERFACE TYPE: DIALOG

5. In the **Interface Type:** area (shown above), open the **Type:** drop-down list and select **MPI**.

6. Click **OK**. The following message appears:

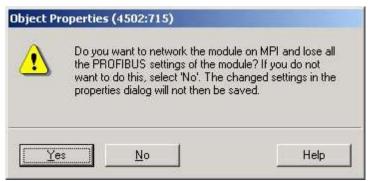


FIGURE 12: OBJECT PROPERTIES MESSAGE

- 7. Click **Yes**. The **Properties CP 5611** dialog box reappears.
- 8. Click **Properties** (see following figure):

General	Operating Mode	Reserve LSAPs	
Short De	escription:	CP 5611	
		SIMATIC NET CP 5611 PROFIBUS, S7 connections, DP master, DP slave, PG functions, PCI Bus	4
Order N	o.:	6GK1 561-1AA00	
<u>N</u> ame:		CP 5611	
_ Interfa	ice		
<u>Iype</u> :	MPI		
Addre	iss: 2		
Netwo	orked: No	Properties	
Commer	nt:		
			*
			-
OK		Cancel He	slp

FIGURE 13: PROPERTIES - CP 5611 DIALOG BOX

The **MPI interface** dialog box appears (following figure):

9. Click **New** (following figure):

uddress:	If a subnet is selected, the next available address is proposed.
ransmission rate: 187.5 Kbps jubnet: not networked	<u>N</u> ew
	Properties
	Dejete

FIGURE 14: NEW INTERFACE SETTING (CAPTION)

Note We will change the Bus address to correspond to the actual Bus address of the CP5611 card

The **New subnet MPI** dialog box appears:

roperties - New su	bnet MPI	2
General Network	Settings	
<u>N</u> ame:	MPI(2)	
<u>S</u> 7 subnet ID:	0015 - 0004	
Project path:	MPI2	
Storage location of the project:	D:\Program Files\SIEMENS\SIMATIC.NCM\S7proj\Mpi2	
Author:	[
Date created:	22.01.2003 17:01:16	
Last modified:	22.01.2003 17:01:16	
Comment	<u>*</u>	
	<u>.</u>	
ОК	Cancel	Help

FIGURE 15: MPI CONFIGURATION

10. Select the **Network Settings** tab (see following figure):

Properties - New subnet MPI			×
General Network Settings			
Highest MPI address:	31 💌 🗖	Change	
Iransmission rate:	19.2 Kbps 187.5 Kbps 1.5 Mbps	·	
	3 Mbps 6 Mbps 12 Mbps		
ОК		Cancel	Help

FIGURE 16: PROPERTIES/NETWORK SETTINGS TAB

11. Select the Transmission rate:. For this test, **187.5 kbps** is selected.

Note Your MPI Cable should have the baud rate printed on it.

```
12. Click OK.
```

Note The correct address of the CP5611 adapter card MUST be selected for the MPI interface. In this example, it is 0. Settings are configured and verified from within the **Configuration Console**. **MPI Bus** addresses are verified by running **Start/Simatic/SIMATIC NET/ Settings/Configuration Console:** (if the Wizard appears, click **Cancel** to return to the Configuration Console window). The following figure shows the Configuration Console screen: node **0** is the **CP5611** adapter card, and the CPU is **3**:

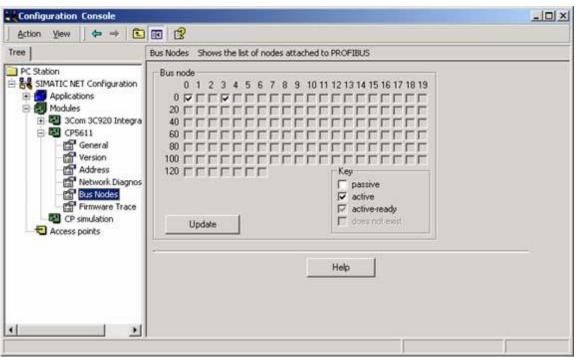


FIGURE 17: CONFIGURATION CONSOLE INTERFACE

13. Next, select the correct address of the CP5611 in the Properties - MPI interface dialog:

and a second			
arameters			
ess: 31 0 1 nrate: 187.5 2 3 1			
worked	187.5 Kbos		<u>N</u> ew
			Properties
			Delete
)	ess: 31 rate: 187.51 3 ▼	ess: 31 rate: 187.512 3 ▼	ess: 31 1 2 rate: 187.5 1 2 3

FIGURE 18: ADDRESS LIST

Address: 0		
Highest address: 31		
Transmission rate: 187.5 Kbps	i i	
<u>S</u> ubnet:		
not networked MPI(2)	187.5 Kbps	<u>N</u> ew
on ((2)	TOT S RUPS	P <u>r</u> operties
c1		Dejete

FIGURE 19: ADDRESS SELECTED

14. Click **OK** (on both the **MPI Interface** and **CP 5611** dialogs) to save the configuration and exit the dialog boxes.

Your **PC Config** of **PCStation** should now look like the following figure:

Station Edit Insert EL	PCStation (Configuration Yew Options Window BOR MAR	Reb	
- MIPC		A REAL PROPERTY OF THE REAL PR	3
1 Application 2 E CP 5611 3 5 6 7 0 10) PC		1	
ndex Module	Didernum Fi		
CP 5611	66K1 561-1A4	0	-14 CP 5614 FD
			+ # PB General
			B D User Application
	-		OPC Server
	-		EGK1 561-14400
			SIMATIC NET CP 5611 PROFIBUS, S7 connections, DP master, DP slave, PG functions, PCI
0		-1	But
1 1		1. 1. 	
			Chi

FIGURE 20: PC CONFIG COMPLETED

15. (**Optional**) Adding the OPC Server component to the **PC Config PCStation**: Under the **User Application** folder in right-hand pane of the PC Config window, select the **OPC Server** component and drag it over to line **3** in the (0) PC pane. This creates the OPC Server as Index 3. The PC Config PCStation window should now look like the following figure:

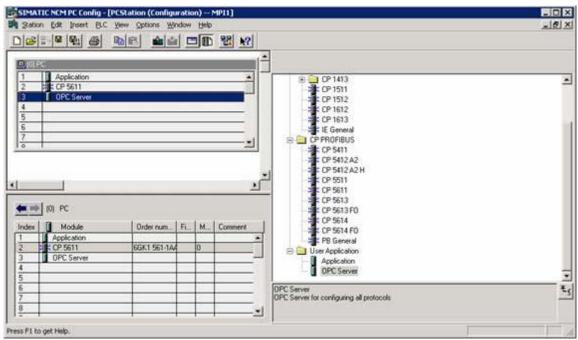


FIGURE 21: SELECT OPC SERVER

16. Click **Station**, then **Save and Compile**, to check for errors in your configuration (see following figure):

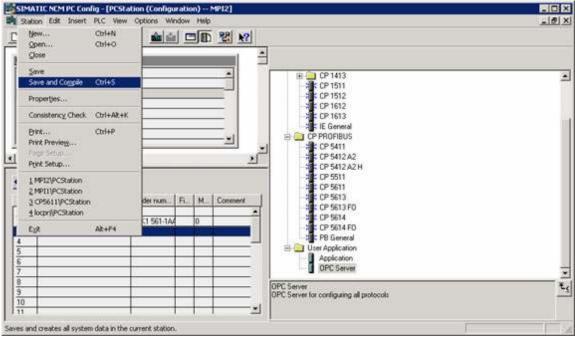


FIGURE 22: SAVE AND COMPILE

×
Cancel

FIGURE 23: COMPILING PROGRESS

Your configuration in **PC Config** for PCStation should now be complete.

Verifying Your Configuration in NetPro, and Creating Connections for the CP 5611 MPI - and OPC Server.

1. Select **Options/Configure Network** from the main menu to start NetPro (see following figure):

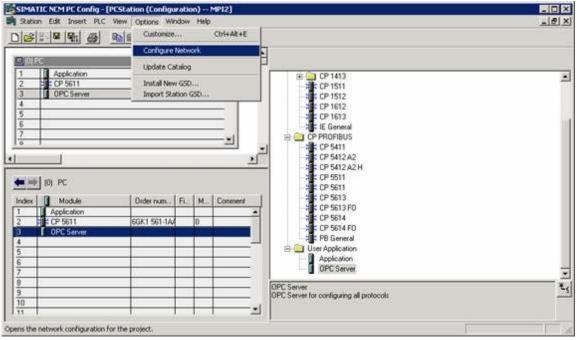


FIGURE 24: START NETPRO

The following NetPro Window displays your current PCStation configuration without any connections to the CP5611 module or the OPC Server components:

Network E	(Network) D:\Program (dt Insert PLC Yew C	Ogtions ₩indow (Telb	×
MPI(2) MPI			1	*
	Station CP OPC Se 5011 Free			
	0			×
<	0 Partner ID	Partner	Туре	× ۲
	43 43	Partner	Туре	× ^
	43 43	Partner	Туре	<u>×</u>
	43 43	Partner	Туре	<u>×</u>
	43 43	Partner	Туре	<u>*</u> ^
	43 43	Partner	Туре	^
	43 43	Partner	Туре	<u>×</u>
	43 43	Partner	Туре	
	43 43	Partner	Туре	

FIGURE 25: NETPRO WINDOW

2. Highlight the **Application** index in the PCStation box (see previous figure) to display the connection window. Right-click the first row in the connection window and select **Insert New Connection**:

	<mark>IPI2 (Network) — D:∖Progr</mark> an k Edit Insert PLC View O	and the second		× _ 8 × _ 8 ×
	8 10 10 10 10 10 10 10 10 10 10 10 10 10			Anna basedinini kana based
MRI(2) MPI			1	-
				L
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PCStation			
•	12			<u>ل</u> ا
∢ Local ID	Partner ID	Partner	Туре	× ۲
and an	12		Туре	
and an	Partner ID Insert New Connection (Show/Hide Columns Optimize Column Width	Ctrl+N	Туре	
and an	Partner ID Insert New Connection (Show/Hide Columns Optimize Column Width	Ctrl+N	Type	لع (((((((((((((((((((

FIGURE 26: INSERT NEW CONNECTION

The following dialog box appears:

<u>S</u> tation:	PCStation		
Application:	OPC Server		
<u>I</u> ype:	S7 connection redundant		
	erties dialog		
Display prop			

FIGURE 27: INSERT NEW CONNECTION DIALOG BOX (DEFAULT SELECTIONS)

3. Select **Unspecified** from the **Station** drop down list, then **S7 connection** from the **Connection Type:** drop-down list (see following 3 figures):

<u>S</u> tation:	(Unspecified)
Application	(Unspecified) All broadcast stations All multicast stations PCStation
Connection	
<u>T</u> ype:	S7 connection
🔽 Display prop	erties dialog

FIGURE 28: STATION: UNSPECIFIED

Connection Partner		
<u>S</u> tation:	(Unspecified)	
Application:	J	Ŧ
Connection		
	12 1	
<u>T</u> ype:	S7 connection	•
<u>T</u> ype:	S7 connection ISO-on-TCP connection Point-to-point connection S7 connection	•

FIGURE 29: CONNECTION: S7 CONNECTION

Connection Par	P
Etation:	(Unspecified)
Application:	·
Connection	
<u>[ype:</u>	\$7 connection
Display prop	erties dialog

FIGURE 30: CONNECTION CONFIGURED

4. Click **Apply**. (The **OK** button changes to **Close**).

The **Properties - S7** dialog box appears:

Local Connec	tion End Point	Connection identification	
Eixed con	igured dynamic connection	Local ID:	
🔽 🖸 ne-way		S7 connection_1	
🗹 Establish a	an active connection	VFD Name:	
Send oper	ating mode messages	Application	
End point: Int <u>e</u> rface: Type:	PCStation/Application CP 5611 MPI	Unspecified Unspecified MPI	<u></u>
Address:	0	Address I	.

FIGURE 31: S7 CONNECTION PROPERTIES

Note The three fields in Figure 29 labled **Local ID**, **Partner**, and **Partner Address** are very important. You need to input the correct information.

In the following figure, notice that the Partner address is **3** and corresponds to the Bus addresses found in the test that was run in the Configuration Console earlier in this technote. In this example, the **LocalID:** will be **MPI1** and the **Partner End point:** will be **MPI**.

	tion End Point	1000	nection identification —	
	igured dynamic connection		al ID:	
✓ One-way		MPI		
🗸 Establish a	an active connection		Name:	
Send oper	ating mode messages	JApp	lication	
End point: nt <u>e</u> rface:	Logal PCStation/Application		Part <u>n</u> er MPI Unknown	
lype:	CP 5611			
Address:	0		3	
			Δ	dd <u>r</u> ess Details

FIGURE 32: LOCAL ID, PARTNER FIELDS

5. Click the **Address Details** button. The following dialog box appears:

Address Details		×
	Local	<u>P</u> artner
End Point:	PCStation/Application	MPI
<u>R</u> ack/Slot:		0
<u>C</u> onnection Resource (hex):	10 💌	03 💌
TSAP:	10.11	03.00
ОК		Cancel Help

FIGURE 33: ADDRESS DETAILS DIALOG BOX

Note The connection resource is automatically assigned by SIMATIC NET when you add a new connection, so leave the default value. It is very important that the **Partner Rack/Slot** value be correct. Since the **MPI** port is on the CPU module, it is likely to be **3**. Use the slot number of the CPU for this entry.

The CPU in our example is located in slot **3**, so that is what is entered (see following figure):

Address Details		×
	Local	Partner
End Point:	PCStation/Application	MPI
<u>R</u> ack/Slot:		0 3
Connection Resource (hex):	10 💌	03 💌
TSAP:	10.11	03.03
ОК		Cancel Help

FIGURE 34: MPI RACK/SLOT: SETTINGS

6. Click **OK** twice to exit the dialog boxes. The **Insert New Connection** dialog box should now be visible:

Station:	(Unspecified)	<u> </u>
Application:		*
Connection		
[ype:	S7 connection	•
Display pro	perties dialog	

FIGURE 35: INSERT NEW CONNECTION DIALOG BOX WITH CLOSE BUTTON

7. Click **Close**.

The main **NetPro** window should now be visible. The following figure shows the new connection in the NetPro window:

	×	Active connection
		Active connector
and a second	S7 COTHECTOR	105
1	ther ID Partner	

FIGURE 36: MAIN NETPRO WINDOW CONNECTION DISPLAY

7. Save and compile your PCStation in NetPro by selecting **Network/Save and Compile** from the main menu (see following figure):

Net				m Files\\S7proj\/			
22				Options Window H			
6	8	Open Close	CA1+O		<u>. k?</u>		
M	1	Save					<u>*</u>
M	1	Save and Compile	Chi+5				
		Check Consistency	Ctrl+Alt+K				-
	5	Print Print Preview Page Setup Print Setup	Ct/HP				
		Ext	At+F4				
4							<u>ت</u>
Local I	D.		Partner ID	Partner	Type		Active connectior +
14/12				MPI	S7 connection		Yes
				_			<u> </u>
-							
							لتے.
Count 1	and	generates system da	ta for the ores	t entrust		 X 1 Y 1	Insert Chg
201021	and i	Acres ares system de	carrier une curren	C LIGHTWERE		N 1 1 1	mout king 12

FIGURE 37: SAVE AND COMPILE THE CONNECTION CONFIGURATION

Note Whenever you make changes to NetPro (i.e. add a new connection), you MUST Save and Compile.

The following dialog box appears:



FIGURE 38: COMPILE AND CHECK EVERYTHING

8. Click **OK**.

You should see the following:

		cy check for D:\Program Files\SIEMENS\SIMATIC.NCM\S7proj\Mpi2\MPI2]	-0×
	Edit Insert PLC View (XX
2 8 8 8		<u> 12 0 1 12</u>	
MPI(2) MPI	*	1	<u>*</u>
	CStation CP OPC Se Set I over 0	Compile X	ے۔ عر
Local ID	Partner ID		Active connection +
MP12		Cancel	Yes
4			,č
Ready			1 from 1 selected Insert

FIGURE 39: COMPILE PROGRESS

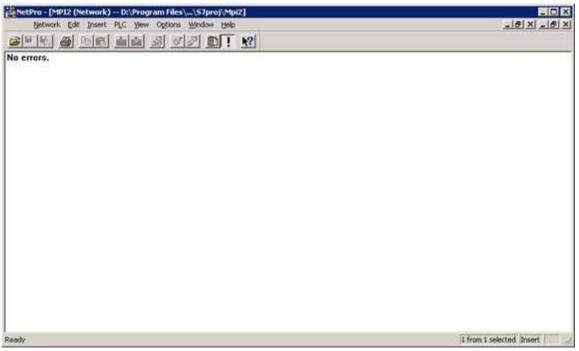


FIGURE 40: NO COMPILE ERRORS

(Optional) For an OPC Server Connection, repeat the steps 2 thru 7 (above) for the **CP5611** OPC connection.

In **Step #2**, click the **OPC Server** to highlight it instead of the Application. Then continue through steps 3-7 to complete the configuration.

To see what the final NetPro configuration looks like, select **Window** from the main NetPro menu, then select your project from the sub-menu (see following figure):

▶ NetPro - [CP5611-TN303 (Network) D:\Pr	ogram Files\\S7proj\Cp5611_t]	_ 🗆 X
Network Edit Insert PLC View Options	Window Help	_ & ×
No errors.	New Window Arrange Arrange Icons	
	Minimize All Close All	
	Move Split	
	Save Arrangement in Project Restore Arrangement	
	1 CP5611-TN303 (Network) D:\Program Files\\57proj\Cp5611_t 2 Outputs for consistency check for D:\Program Files\SIEMENS\SIMATIC.NCM\S7proj\Cp5611_t\CP5611-TN303	
	PROFIBUS-DP slaves for M7, and C7 (distributed rac	
Activates this window.	1 from 1 selected Insert	

FIGURE 41: SELECT YOUR PROJECT

At this point your project is complete. The following figure shows two connections: one for the Application CP5611 at Bus address 0, and the optional **OPC Server** connection:

Settero - Mariz	(Network) - D:\Program (neet PLC Yew Oglic	n Files\\S7pro) ns Window Help	(Mpl2]	
WH-1		- 11 - 11 - 12 - 12 - 12 - 12 - 12 - 12	1	
	T			
PCS	Station			
	CP DPC IN Solt Iver			
- <u>-</u>	0			
	100			
10				
•				<u>1</u>
ocal ID	Partner ID	Partner	Туре	Active connection partner
ocal ID	Partner ID	Partner	Type EP connection	
cel ID	Partner D			Active connection partner
ocal ID	Partner D			Active connection partner
ocal ID	Partner ID			Active connection partner
cal ID	Partner ID			Active connection partner
ocal ID	Pather D			Active connection partner
ocal ID	Pather D			Active connection partner
ocal ID	Partner ID			Active connection partner
ocal ID	Partner ID			Active connection partner
e occal ID @C2	Partner ID			Active connection partner

FIGURE 42: OPC CONNECTION DISPLAY

Note If necessary, you can edit your S7 connections by double-clicking the blank cell under the **Partner ID** column heading in the MPI2 row.

If you open your current project **MPI2** in SIMATIC Manager , you will see the following screen. It contains an overview of the PCStation in PC Config, and NetPro (see following figure):

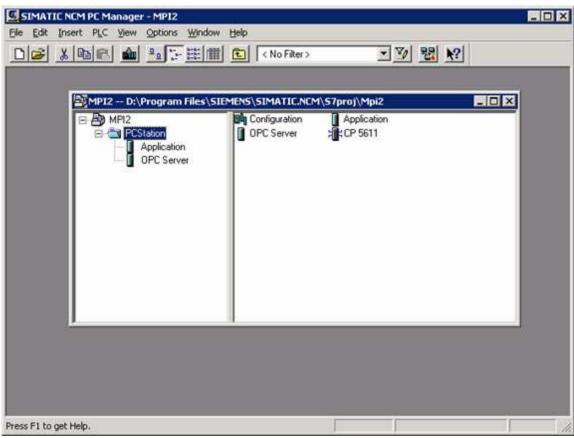


FIGURE 43: CONNECTION OVERVIEW

Setting the Access Point Active in the SIMATIC NET Configuration Console

1. Start the Configuration Console (**Start/Simatic/SIMATIC NET/Settings/Configuration Console**).

Note 1: If you are running the Configuration Console for the first time, or if you switch your PCStation from one module to another, (i.e., you setup a TCP/IP connection instead of an MPI) you will likely see the **Commissioning Wizard**. If you have already set your access point to reflect the current module, then you can cancel out of the Commissioning Wizard and continue to use the Configuration Console. Even if you haven't configured any access points in the Configuration Console at the time you first open it, you can still click the **Cancel** button to continue making manual configuration changes in the Configuration Console. Doing so is recommended for this technote (see following figure):



FIGURE 44: CANCELLING THE WIZARD TO MAKE MANUAL CONFIGURATION CHANGES

Click **Cancel** and continue through Step 2 (below) after you see the **Configuration** console main screen:

Action Server 🗢 🕂 💽				
Tree	Access points			
	Access point	Interface parameter assignment	Noble	
PC Station Statistics Configuration Statistics Configuration Statis		CP5611(PROFIBUS) TCP(IP -> 3Con 3C920 Integrat	CP5611	
2377700077204077	(SHP)	CP5611(PROFIBUS)	CP5611	
	STONLINE	PC internal (local)	KBU5	
Start 🔄 💋 💭 🔯 🖉) 🔯 🖬	W. S.S. Mrs. 20. 3	2w Ko. 25. 85. 84c-	· · · · · · · · · · · · · · · · · · ·
FIGURE 45: CON	TINUE MA	NUAL CONFIGURA	TION	

Note In the previous figure, the (default) MPI Access point is the CP5611 Module.

2. Highlight **Access Points**, and expand the hierarchy tree to view the available access points for the **CP5611** module (see following figure):

Configuration Console			Statement of the local division of the local	Statement of the local division of the local	X
Action Yew		34 2			
Tree	Access ponts				
IC Station	Access point	Interface parameter assignment	erit Module		
STMATEC NET Configuration Applications Modules STM 3Com 3C920 Integra STM 3Com 3C920 Integra	00,HL1: 00,L2,1: 00,L2,2: 00,9N,1: 00,9N,1: 00,9N,1: 00,9N,1:	709)99 -> 30om 30920 Integ			
	STONLINE.	CPS611(PROFIBUS)	CP5631 KBL5		
Access ponts		PC internal (local)			
<u>u</u> 1					-
					N N

FIGURE 46: HIGHLIGHT AND EXPAND MODULES

In the above figure the Access point **MPI** is highlighted. You will use this access point when you configure the S7 I/O Server later in this technote.

3. Expand the **PCStation** entry in the Configuration Console (in the tree view pane/left-hand side of the window). Drill down to the **Modules/CP5611**.

4. In the **General: Module properties** pane, select **Configuration mode** from the drop-down list as the mode of the module (see following figure):

ee.	And a second		
	General Module propertie	8	
PC Station Constraints PC Station PC S	Type of module: Mode of the module:	PROFIBUS: PG operation Not yet specified PG operation Confected modes CPS611	
	CP5611(Auto) CP5611(FwC) CP5611(MPI) CP5611(PR0FIBUS) (Ac	live	
	Module reaction:		
	<u></u>	Cancel Help	

FIGURE 47: SELECT THE MODULE MODE

5. After selecting the **Mode of the module:** to be **Configuration mode**, a selection for the **Index** value appears.

6. Expand the drop-down list and select index **2**, since it was configured in your S7 Project. Notice that the **Apply** button becomes enabled (see following figure):

Action ⊻ew	S 🖬 🗳		
Iree	General Module property	#£	
PC Station StMATIC NET Configuration StMATIC NET Configuration Configuration StMAtes StMATIC NET Configuration StMAtes StMAte	Type of module:	PROFIBUS	
	Mode of the module:	Configured mode	
	ngra	Index 1 =	
	Interface profile for:	CP5611 3	
	CP5611(Auto) CP5611(FwL) CP5611(PRU) CP5611(PRUFIBUS) (Au	4 5 6 7	
	Terrary Color Management of Net Colors	18_ <u>×</u> 1	
	Betato		
	-	, , , , , , , , , , , , , , , , , , , ,	
	Apply	Cancel Help	
start 1 1 1 1 1 1 1 1 1	B RSL SAW SAR		Q8 44 40 388 30 0

FIGURE 48: SELECT INDEX VALUE

7. Click **Apply**. The following dialog box appears:

Configura	ation Console	×
	If you change the component configuration or component properties, the entire PC station the existing database will be lost !	will be reconfigured and

FIGURE 49: CHANGE CONFIGURATION PROMPT

8. Click **OK** since you need to configure the PCStation in your project to use the **CP 5611** module.

The following screen shows that the CP5611 module is now configured and ready for use with your S7 project:

Configuration Console	-		
Action View	General Module propertie		
PC Station	Type of module:	PROFIBUS	
 B SIMATIC NET Configuration 	Mode of the module:	Configured mode	
General Version Address Network Diagnos Bus Nodes Firmware Trace CP simulation Access points	Interface profile for: CP5611[Auto] CP5611[PWL] CP5611[PROFIBUS] <act Module reaction: Restart Apply</act 	CP5611	

FIGURE 50: COMPLETED CONFIGURATION

You can now close the **Configuration Console**.

Configuring the Station Configuration Editor (It Appears in the System Tray, and it Looks Like a Computer!)

1. Open the Station Configuration Editor. After setting the CP5611 to **Configuration Mode**, it will automatically be added to the Station Configuration Editor as index **2** (see following figure):

Note The **Station:** name (**PCStation**) in the following figure is the same as the one entered in Step 4 of **Starting a New Project**.

Return to Step 4

Index	Name	Туре	Ring	Status 🔺
1	Value opposite	005014		
2	H CP5611	CP5611		
3				
4 5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
al 16				<u> </u>
<u> </u>				
vew diag	gnostic entry arrived!			
A	dd Edit.	Delete	Ring <u>O</u> N	1
	l			
Station	Name Import ×	DB		

FIGURE 51: STATION CONFIGURATION EDITOR

2. Highlight index **1** (as shown in the above figure), and click the **Add** button to add the **Application** component to the Station Configuration Editor (see following figure):

Add Component		×
Type: Application		•
Index: 1		
Name:		
Parameter assig.:		
<u>K</u>	<u>C</u> ancel	Help

FIGURE 52: ADD COMPONENT

Note The configuration in the Station Configuration Editor should match up with the configuration in NetPro. (i.e. index 1 – Application, index 2 – CP 5611, [optional:index 3 – OPC Server]).

3. Enter **Application** in the name field to match the component type (see following figure):

Add Component			×
Туре:	Application		•
Index:	1 💌		
Name:	Application		
Parameter assig.:			
<u></u> K		<u>C</u> ancel	Help

FIGURE 53: NAME APPLICATION COMPONENT

4. Click **OK** to add the **Application** component. The following pop up message will appear:



FIGURE 54: CHANGE CONFIGURATION MESSAGE

5. Click **OK**. The Station Configuration Editor should now display two components, **Application** as index 1, and the **CP 5611** as index **2** (see following figure):

Index	Name		Туре		Ring	Status	
1	Application		Application			and the second	1
2	CP5611		CP5611				
3							
4							
5							
6							
7							
8							
9							
10							
11			-				
12							
13							
14							
15							+
16	10					•	ſ
	gnostic entry arrived! dd <u> </u>		<u>D</u> elete	Bir	1g <u>O</u> N	1	
<u>S</u> tation	n Name Impo	rt XDB					

FIGURE 55: APPLICATION AND CP5611 COMPONENTS

5. If required, repeat steps 2 thru 5 to add the **OPC Server** component as index **3** (see following figure):

Add Component		×
	OPC Server	•
Index:	Application OPC Server	
Name:		
Parameter assig.:		
<u>K</u>		<u>C</u> ancel <u>H</u> elp

FIGURE 56: ADD OPC SERVER COMPONENT

6. The following figure shows the completed Station Configuration Editor window with all three components from **PCStation** (Application, CP 5611, and OPC Server):

	-	- 16- 				
tation:	PCStation					
Index	Name		Туре	Ring	Status	
1	🚺 Applicati	on	Application			
	CP5611		CP5611		N.	
3	OPC Sei	ver	OPC Server			
4						
5						
6						_
7						-
8						
9					-	-
10						
11						
12						_
13						-
14 15						
10						•
۱				10)	1
lew diagno	ostic entry an	ived!		Ka:-		
Add		<u>E</u> dit	Delete	Ring <u>O</u> N		
<u>S</u> tation N		Import XDB				

FIGURE 57: THREE PCSTATION COMPONENTS

Note the red X next to the Application and OPC Server rows in the above figure. This means that the database is not updated.

You must now download the configuration from the the **PCStation (Configuration)** main window and the NetPro interface (step 12 below).

7. The following figure shows downloading your current project configuration to the S7 CPU through your MPI connection (**PLC/Download**):

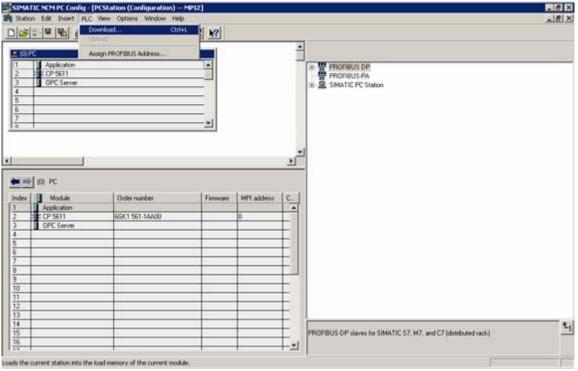


FIGURE 58: DOWNLOAD THE PROJECT CONFIGURATION

8. When you select the **Download** command from the menu, the following pop up appears:

Module	Inde
Application CP 5611	
OPC Server Station Manager	12
Select <u>A</u> ll	

FIGURE 59: TARGET MODULE SELECTION

9. Click **OK** to select the four modules.

Over which station address is the programming device connected to the model Manager? Back: Image: Connected to the model of the model	×
Slot: 125 - Destination Station: © Local	ule Station
Destination Station: 💿 Local	
Connection to destination station	
Type Address	
Local 1	
Local 2	
Local 3 Local 125	
,	
OK Cancel	Help

FIGURE 60: SELECT STATION ADDRESS

10. Click **OK** to continue with the download.

stop Target Modules		>
The following modules will data.	be stopped for loading of the system	
Module	In	dex
CP 5611		2
	i martina i i	-
	Cancel Help	_

FIGURE 61: STOP TARGET MODULES

11. Click **OK** to select the CP 5611 module.

12. In NetPro, highlight **PCStation** and select **PLC/Download Selected Stations** from the main menu (see following figure). Click **OK** when the download is complete.

🔀 NetPro - [CP5611-TN303 (Network) D:\Program Files\\57proj\Cp5611_t]	
Pretwork Edit Insert PLC View Options Window Help	_ 8 ×
Download Selected Stations Ctrl+L Connections and Gateways	
Activate Connection Status	Selection of the network PROFIBUS DP PROFIBUS-PA Stations Subnets
	PRDFIBUS-DP slaves for SIMATIC S7, M7, and C7 (distributed rack)
Downloads the selected stations (HW data, connection data, gateway data). X 341 Y 0 Insert Chg	

FIGURE 62: DOWNLOAD SELECTED STATIONS

At this point, your SIMATIC NET configuration is complete. Proceed to the next section to configure the S7 IOServer.

Configuring the S7 I/O Server

1. Start the S7 I/O Server. Select **Configure/Topic Definition** from the main menu (see following figure):

D:	:\Program Files\FactorySuite\I	0Server\S7\test.cfg -	57	
File	Configure Data View Help	_		
D	Automatic Topic Generation	y 🔛 🐴 🧝 📔		
	Topic Definition	here a subscription of the	727	
Торі	Server Settings	Items	Errors	Write Status
	Logger			
	Security			
1		_		
Care Co	an and benefit and Grantson			ALL INA
Config	gure topic definition.			NUM //.

FIGURE 63: CONFIGURE/TOPIC DEFINITION

A blank **Topic Definition** dialog box appears.

2. Click **New** to add the topic **MPITEST** or whatever you want to call your topic. After adding **MPITEST** as your topic name, select **MPI** as your CP-Name, **Application** as the VFD, and **MPI1** as your connection.

Note If the VFD and Connection values don't show up automatically, you might have done something wrong in your S7 Project. Try re-starting the I/O Server and re-creating the topic, or re-save and compile your configuration in the SIMATIC PC Config. section of SIMATIC Manager (see following figure):

<u>I</u> opic Name:	MPITEST		OK
C <u>P</u> -Name:	MPI	•	Cancel
<u>∨</u> FD:	Application	•	AutoGen
Connection:	MPI1	•	Help
<u>U</u> pdate Inte	erval: 1000 ms		- Optimization
Enable acces	s to update interval: 🗖		C S7 SAPI
E	(ead contiguous IO: 🗖		 Block read Auto
<u>D</u> isabl	e S7 cyclic service: 🔽		- Poke mode
- Cyclic Servi	ces	-15	Control mode
c use may	imal available	-94	C Transition mode
C limit for a	cyclic services; 0	1	C Full optimization
			Alarm and Events
Block Servi Initial Value:			Disable All
		\$	C Enable Alarms
Update Tim	eout: 5000 m	3	C Enable Events

FIGURE 64: NEW TOPIC

3. Click **OK** to save the new topic.

<u>D</u> one
<u>N</u> ew
<u>M</u> odify
Dejete

FIGURE 65: NEW TOPIC DEFINITION

4. Click **Done** to exit the **Topic Definition** dialog box.

The S7 I/O Server configuration is now complete.

Testing Your S7 Configuration With wwClient

1. Start wwClient, select **Connections/Create** to create a new connection to the S7 ioserver (see following figure):

1	Vonder	ware Client			
File	Script	Connections	Item	Help	_ 8 ×
		Create			
		Connect			
		Disconnect	ŧ.		
		Delete			
			126		
1					

FIGURE 66: CREATE A NEW CONNECTION

Node:	localhost	×
Application:	s7	•
lopic:	MPITEST	<u>•</u>
Connection 1 © DE		C IOT - Thread

FIGURE 67: DDE CONNECTION

2. After entering the above information, click the **Create** button, and then **Done**. The following figure shows the DDE connection to the S7 I/Oserver:

W W	/onder	ware Client					
Eile	Script		Item	Help			_ 8 ×
		ost\s7IMPITE		Тор	0x002f2458	0	
- T							

FIGURE 68: DDE CONNECTION

3. Click on **Item**, and the following window appears:

Connections \\localhost\s7 MPITEST 0x002f24a8	Register
	Advise
	Unadvise
	Request
	Unregiste
Item	Poke
mb90 Integer	AdviseEx
Value	UnadviseE
3	Done

FIGURE 69: ITEM PROPERTIES

4. Enter in **mb90** (or any valid item in the PLC) for the **Item**, and click the **AdviseEx**, and **Done** buttons. The following figure shows a "good" value (0X00C0) counting on the second line of the wwClient window:

Wonderware Client				
Eile Script Connections Item	Help			_ & ×
DDE \\localhost\s7 MPITEST mb90	62	0x002f24a8 478 11:17.56.0656	01/27/2003	0x00c0

FIGURE 70: WWCLIENT WINDOW

The following figure shows the S7 I/O Server window with the item **mb90** on advise and a topic status of **GOOD**, and **0** errors:

D:\Program Files\Fac <u>File Configure D</u> ata Via	CONTRACTOR OF CONTRACTOR OF CONTRACTOR	er\S7\test.cfg	- 57	
	and the second secon	3 🐴 😵		
Торіс	Status	Items	Errors	Write Status
MPITEST	GOOD	1	0	complete
teady				NUM

FIGURE 71: S7 I/O SERVER WINDOW

The following screen shows the **S7 Data Monitor** with the item **MB90** with a good Quality value (**00C0**).

📲 57 - Data Monitor			
Iopic: MPITEST		OK	
Update Interval: 1000 ms Longest Interval: 1000 ms		<u>D</u> ump	
PDU size: 480 Bytes		Help	
1 Items: Errors (0) only OrderID PDU Quality Time		Name	
P 0 24/20 00C0 11:18:47	F7	MB90	
: Franse 72: 67 Dies Marie			

FIGURE 72: S7 DATA MONITOR

You have successfully configured SIMATIC NET 6.0 to communicate to the Wonderware Siemens S7 IOServer.

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