

- Issue: How do I Set up a connection to SQL server, with CP Card. E.g. CP343-1 or CP443-1.
- Answer: To setup a TCP-IP communication with a SQL server you must use "Netpro". In opposite to PN ports, a CP card manages its connections, with its own CPU.

1: First!

Check that your hardware is consistent.

This is a View from our test setup, please make update for your environment

Then make a "Save and Compile".



	LC View Op	ptions V	Vindow Help			- 8
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	-2 PN/DP				E	Eind: Mt A. Profile: Standard
X2         PN-IO-300           X2 P1 R         Port 1           X2 P2 R         Port 2           2.5         DI24/D016           2.6         A15/A02           2.7         Count           2.8         Postion           3	han	E		: PROFINET-IO-System (100)		BOFIBUS DP     BOFIBUS-PA     PROFINET IO     SIMATIC 300     SIMATIC 400     SIMATIC HMI Station     SIMATIC PC Based Control 300/     SIMATIC PC Station
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	0 F N 6ES V3.32 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4	A 1 204 204 204 204 204 204 800 800 832 832 256.	Q Comment 			PROFIBUS-DP slaves for SIMATIC S7, M7, and C7
	0 F N NGES V3.32 2 2 3 3 4 3 3 4 3 4 3 3 4 3 3 3 4 3 3 3 3	A 1 2004 2004 2004 2004 2004 800 800 816 832 256	Q Comment 			✓ III PROFIBUS-DP slaves for SIMATIC S7, M7, and C7 (distributed rack)
	0 F N NGES V3.32 2 2 3 3 4 3 4 3 4 4 3 4 4 3 4 4 3 4 4 3 4 4 3 4	A 1 2004 2004 2004 2004 2004 8000 8000 8000	Q Comment 			PROFIBUS-DP slaves for SIMATIC S7, M7, and C7 (distributed rack)



# In Simatic Manager

SIMATIC Manager - [PLCSQLmesse414 File Edit Insert PLC View Ontic	D:\Data\Aktuelt Proj\PLCSQ	L\\$7Test\LA34Te_2]						
	  	No Filter >	7/ 28 @ 20					
PLCSQLmesse414	Object name	Symbolic name	Created in langu	Size in the work	Туре	Version (Header)	Name (Header)	Unlinked
± 🚮 414	System data	_	_	_	SDB	_		-
ET200Slight	G 0B1	Main Program Sweep	LAD	72	Organization Blo	0.1		-
TestPLC	G OB100	COMPLETE RESTA	STL	38	Organization Blo	0.1		_
E- CPU 314C-2 PN/DP	₽ EB55	IP CONFIG	STL	1984	Eunction Block	13	IP CONE	—
E-ST S7 Program	G FB120	FindDB	SCL	56	Function Block	1.0	FindDB	_
Sources	■ EB140	SQL Call	LAD	300	Eunction Block	0.1		( <u> </u>
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	FB142	SQL QueryBuilder	sa	2648	Function Block	10	SOLOB	2 <u>_</u> 2)
E - CP 343-1 Lean	G FB143	TCP TCON	STI	1164	Function Block	0.1	00200	_
MicroboxH_Lest	G FB144	TCP AG		1132	Function Block	12.12		
- SQLCPU	G FB146	TSEND	STI	202	Function Block	21	TSEND	10
- 🔜 HMI Large	C ED147	TDOV	CTI CTI	2.32	Function Block	2.1	TDOV	
- KTP600	ED140	TOON	OTL	1010	Function Diock	2.4	TOON	
B PLCSQL		TDISCON	STL	1010	Function Block	2.4	TORCON	
README	E FOINS	AC CEND	OTL	230	Function block	4.0		
System Blocks	APPCS	AG_SEND	SIL	1004	Function	4.2	AG_SEND	
	SP FC6	AG_REUV	SIL	1206	Function	4.7	AG_REUV	—
	FCIU	AG_UNTRL	SIL	1138	Function	1.0	AG_UNTRL	10-00
	EFC100	SQL_Client	SCL	6218	Function	1.4	PLCSQL	
	E FC101	ResetDB	STL	264	Function	0.1		
	C103	SQL_ReadDataStream	SCL	8190	Function	1.0	SQLRDS	_
	E FC104	SQL_CreateRequest	SCL	480	Function	1.0	SQLNPO	
	G FC107	SQL_CheckConnection	SCL	292	Function	1.0	SQLCHK	1. <b></b> 1
	G FC109	GetAddress	STL	266	Function	0.1		
	➡ FC110	AnyPointer	STL	108	Function	0.1	AnyPoint	
	G FC111	BLK_COPY	STL	226	Function	1.0		S - 3
	G FC112	SQL_CollectData	SCL	1458	Function	1.0	SQLCOL	_
	🗗 FC115	LSTRNG	STL	264	Function	1.2	I_STRNG	
	G FC117	MoveTestValues 4 8 1	STL	100	Function	0.1		
	G FC118	MoveLogValues 1	STL	184	Function	0.1		
	5 FC126	EQ_STRNG	STL	152	Function	1.1	EQ_STRNG	
	G DB11	OP_db	DB	408	Data Block	0.1		
	G DB100	SQL_ICALL	DB	50	Instance data bl	0.0		-
	G DB101	CONF_DB	DB	118	Data Block	0.1		-
	➡ DB120	SQL lpconf	DB	118	Data Block	1.0	ipconf	-
	DB141	SQL iController	DB	978	Instance data bl	0.0		
	C DB142	SQL Setup	DB	2298	Data Block	0.1	SAVEDATA	2 <u>-</u> 22
	C DB143	SQL Send	DB	2066	Data Block	0.1		—
	DB144	SQL Beceive	DB	10036	Data Block	01		_
	- DD14F	COL		0000	D.1. DI	0.1		
		III						
1 to get Help.				PLCSI	M.TCPIP.1			

# Click on: → Configure Network





Now you get a Picture similar to this down below. We use a S7-300 with PN and a CP Card.

→ When there is a PN connection it must be in use, so even if you do not want to use it, you must give it an IP-Address.





Now setup the connection for the CP Card. Click with the mouse in the CPU field for S7-300



	RetPro - [PLCSQL Master V1_0 (Network) DA.Data(APLCSQL:NewMaster/158397_k)       RetWork Edit Insert PLC View Options Window Help       RetWork Edit Insert PLC View Options Window Help	
ſ		
	Industrial Ethernet	
	S7-ET200S PN     S7-300     Image: Filled big	a S iymb ils
	۲	
	Local ID Partner ID Partner Type Active connection p Subnet Local interface Partner interface Local address Partner address A	
1	Ready PLCSIM.TCPIP.1 X 413 Y 289 Insert	1

In bottom of Picture there is now shown data for connection.

Dobell Click with mouse in the empty field down below the text "Local ID"



Picture "Insert New Connection" is opened.

Connection P	artner		
□       •	current project CSQL Master V1_0 HMI Large KTP400 S7-ET200S PN I IM151-8 PN/DP CPU (Unspecified) All broadcast stations All multicast stations nown project		
Project:	PLCSQL Master V1_0		₹
Project: Station:	PLCSQL Master V1_0 S7-ET200S PN		₹ <u>₹</u>
Project: Station: Module:	PLCSQL Master V1_0 S7-ET200S PN IM151-8 PN/DP CPU		₹ <u>₹</u>
Project: Station: Module: Connection—	PLCSQL Master V1_0 S7-ET200S PN IM151-8 PN/DP CPU		ŧ
Project: Station: Module: Connection— Type:	PLCSQL Master V1_0 S7-ET200S PN IM151-8 PN/DP CPU S7 connection		ŧ

# First: Setup Connection

Connection —		
Туре:	S7 connection	-
🔽 Display prop	erties before inserting	



#### Chose to make it a "TCP Connection"

[	Connection		
	Туре:	TCP connection	-
	🗹 Display prop	erties before inserting	

### Then Chose an (Unspecified) connection

l	📓 IM 151-8 PN/DP CPU
	(Unspecified)
	All broadcast stations
	All multicast stations

If this box is opened, it inform you about that if you have PLC in one IP and wish to Connect to another with the CP-Card, then remember to setup a router.

ſ	Insert New Connectio	n (2443:172)	
	Connect Please of	ons beyond subnet boundaries a heck any router addresses, if req	ure possible. uired.
	ОК		Help 1
	Station:	Unspecified)	

Click "OK"



Setup Properties – TCP connection is opened.

Local Endpoint Block P ID (hex): 0001 A050 V Name: TCP connection2 W#16	Parameters
ID (hex): 0001 A050 - Name: TCP connection2 W#16	1—ID
Name: TCP connection2 W#16	
	#0100LADDR
Via CP: CP 343-1 Lean (R0/S4)	mon
Route	
Active connection establishment	
Use FTP protocol	

If you have more than one Cp-Card, use "Route" to setup witch one there is in use.

Now Clik on "Active connection establishment"

 $\rightarrow$  if "On" the Cp-Card will make the connection to remote for you

•	Active connection establishment

Write down these parameters shown here:  $\rightarrow$  ID=#1; LADDR=W#16#0100 is in Hex( Dec= 256)





# The noted "Block adress" is to be inserted in DB "SQL\_Setup"

ConnectionID: Defines the Connection nr. Made in Netpro.

Laddr:

Is the logical address for the connection, in Hex.

	1		1.1	
+2212.0	IP1	INT	172	First segment of IP address of SQL server - if IntegratedPN=FALSE, use NetPro
+2214.0	IP2	INT	20	Second segment of IP address of the SQL server
+2216.0	IP3	INT	10	Third segment of IP address of the SQL server
+2218.0	IP4	INT	100	Fourth segment of IP address of the SQL server
+2220.0	Port	INT	1433	TCP Port of SQL server. Default: MS SQL: 1433, MySQL 3306
+2222.0	DeviceID	BYTE	B#16#6	01:RTX IF1+IM151,02:315+317PN, 03:319-3PN, 05:414+416PN, 06:IF2, 0B:IF3, 0F:IF4
+2224.0	ConnectionID	INT	1	Connection-ID. Default 1. More parallel connections is possible
+2226.0	TimeOut	DINT	L#30000	Time in milliseconds before connection is restarted
+2230.0	MaxRetries	INT	3	Maximum number of retries before giving up
+2232.0	LAddr	WORD	W#16#100	Module address of IE card as given in HW-config (Only when IntegratedPN=FALSE)
+2234.0	IntegratedPN	BOOL	TRUE	TRUE: TSEND (internal PN-controller), FALSE: AG_SEND (external network card)
+2234.1	MSSQL	BOOL	TRUE	Set to TRUE to enable the Microsoft SQL Client driver
+2234.2	MySQL	BOOL	FALSE	Set to TRUE to enable the MySQL SQL Client driver
+2236.0	MaxPacket	INT	512	Maximum possible size in byte of TCP Packet to send through IE Network Card
+2238.0	MinREAL	INT	1	Must match the defined array start in SQL_TestParm and SQL_LogParm - min 1
+2240.0	MaxREAL	INT	1999	Must match the defined array end in SQL_TestParm and SQL_LogParm - max 9999
+2242.0	MinINT	INT	10001	Must match the defined array start in SQL_TestParm and SQL_LogParm - min 10001
+2244.0	MaxINT	INT	11999	Must match the defined array end in SQL_TestParm and SQL_LogParm - max 14999
+2246.0	MinDINT	INT	15001	Must match the defined array start in SQL_TestParm and SQL_LogParm - min 15001
+2248.0	MaxDINT	INT	15999	Must match the defined array end in SQL_TestParm and SQL_LogParm - max 19999
+2250.0	MinBOOL	INT	20001	Must match the defined array start in SQL_TestParm and SQL_LogParm - min 20001
+2252.0	MaxBOOL	INT	20999	Must match the defined array end in SQL_TestParm and SQL_LogParm - max 29999
+2254.0	MinSTRING	TNT	30001	Must match the defined array start in SOL TestParm and SOL LogParm - min $30001$



Now change to show properties for "Addresses"

General Information	Addresses	Options Overview	Status Infon	mation
Ports from 1025 throu (For further ports, refe	igh 65535 are availa erto online help)	ble.		
	Local	Remote		
IP (dec):	172.20.92.12			
PORT (dec):	2000			
	1			

Data for Remote IP must be given.:

Remote Port is always = 1433 Remote IP (dec) must be given by you:



In our test project we do use setup to another subnet.

ſ	properties - TCP connection	ction		23
	General Information	Addresses	Options Overview Status Information	1
	Ports from 1025 throug (For further ports, refer	gh 65535 are avai to online help)	ilable.	
		Local	Remote	
	IP (dec):	1/2.20.92.12	10.10.3.98	
	PORT (dec):	2000	1433	
Ы				
1				
Ш				
			1	
	ОК		Cancel H	elp

The 2 last Properties is not in use. So Click "OK".

Now double Click on the CP-Card. When Click do it on the "Green" Square, otherwise you will get the setup for the CP-Card and not for the IP-Port.





The picture show the setup and IP-address for this CP-Card.

IP address: 172.20.92.12 Subnet mask: 255.255.255.0 Gateway O Do not use router (© Use router Address: 172.20.92.1 Subnet: not networked OperatorNet SQLnet Ethemet Test Delete	General Parameters		
not networked     New       OperatorNet     Properties       SQLnet     Delete	IP address: 172.20.92.12 Subnet mask: 255.255.255.0	Gateway O Do not use router O Use router Address: 172.20	92.1
	not networked OperatorNet SQLnet EthemetTest		New Properties Delete

We are in test working with 3 types of nets, and therefore you can see 3 net, we have chosen Ethernet Test.

The most important here is the setup of router if you will use 2 IP-net as we do here.

Type in your IP address:

IP address:	172.20.92.12	
Subnet mask:	255.255.255.0	

Type in your Router address, if in use:

<ul> <li>Use router</li> </ul>	
Address:	172.20.92.1

Click "OK"



In your project the CPU is turned to be "Red".



Then make a "Save and Compile". It can be done here:

Or by the "Network"

Open	Ctrl+
Close	
Save	
Save and Compile	Ctrl+
Check Consistency	Ctrl+Alt+
Check Cross-Project Consistency	Ctrl+Alt+1
Print	Ctrl+
Print Preview	
Page Setup	
1 PLCSQL Master V1_0 (Network) D:\Data\Aktuel	lt Proj\PLCSQL\NewMaster\158397_k
2 PLCSQLmesse414 (Network) D:\Data\Aktuelt P	roj\PLCSQL\S7Test\LA34Te_2
3 PLCSQL_V2 (Network) D:\Data\Aktuelt Proj\PL	CSQL\TestProj\prog\PLCSQL_1
4 PLCSQLSmurfit (Network) D:\Data\Aktuelt Pro	j\PLCSQL\PLCSQLSm
Exit	Alt+F
	2
III	

Depending of the actual state it will show this picture:



Save and Compile	
Compile	
C Compile and check everything	-
<ul> <li>Compile changes only</li> </ul>	
OK Cancel	Help

Either with check in "Compile and check everything" or "Compile changes only", but just let the pc chose and check the "OK".



The most important is that all CPU is White = OK.



Now chose the S7-300 CPU and download:

