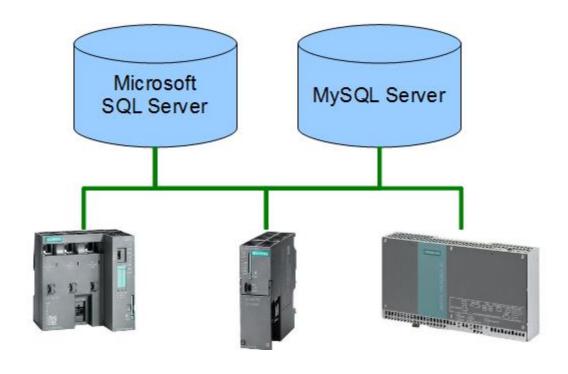


Installation Manual

MySQL for PLCSQL link

SQL Client in a Siemens S7 PLC



Revision date: 2018-09-17 Revised by: Michael Petersen, ALSMATIK A/S Version: 2018-1 Revision date: 2019-03-27 Revised by: FBH, ALSMATIK A/S Version: 2018-3

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Introduction

In order to get it to work, it is important to setup the database, to fit with the design for PLCSQL link.

This manual is for MySQL 5.7, 8.0012 but can also be used as guidance for previous versions. PLCSQL Link don't support MySQL above version 8.

For guidance in setting up PLCSQL link PLC program, we refer to the document "PLCSQL PLC Installation Manual".

If you still have questions after reading this manual, please send them to <u>info@plcsql.com</u>

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How does the system work?

We have tried to make a system where it is possible to communicate with a SQL data base without being an "SQL expert", nor being an "PLC expert" regarding communication etc. the system contains a "standard" PLC program, and a "standard" SQL data base that "fits" together.

In the PLC we are using the following basic tag types:

Bool.	Is stored in an "Bool" table in the database.
Int.	Is stored in an "Int" table in the database.
Dint.	Is stored in an "Dint" table in the database.
Real	Is stored in an "Real" table in the database.
String	Is stored in an "String" table in the database.

To distinguish between the different tags, every tag has a specific number. In the PLC there is an "Array" that contains all the tags, and in the database the different tables contain the corresponding data types and numbers as in the PLC, so you have complete control with the tags.

Now, somebody will ask, "but we have to connect an existing data base", yes that is no problem, you can easily interconnect between different data bases, so we strongly recommend to "make" a data base exclusively for PLCSQL, so you easily can check where the problem could be when something is not working.

On the following pages there is a schematic view of the layout and the possibilities you have with the PLCSQL system.



Please note the following.

Parameter 10001, 15001, and 30001 is used internally in the "Log" parameters and in the "Recipe" parameters. DON'T write to these parameters.

10001:	SetCount
15001:	SetID
30001:	DateTimeStamp.

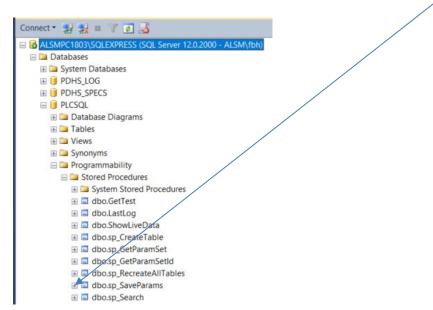
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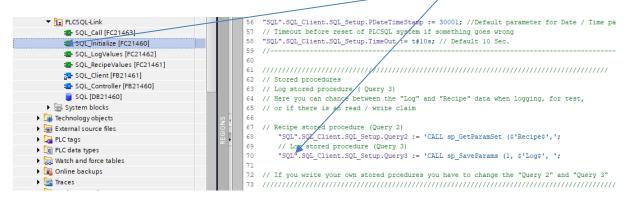
How does PLCSQL work, Log, write to SQL server

In Mssql we want to store the Value 2.3009 in the ParamID[1].

First we need to setup the Call in the PLC for the stored procedure in Mssql.



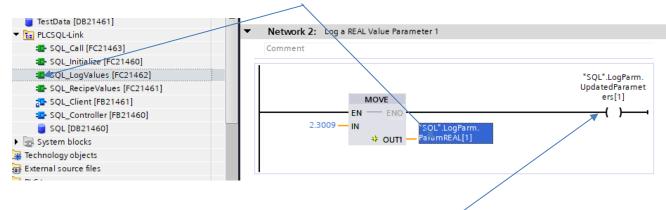
In SQL_Initialize DB you setup the SQL.SQL_Client.SQL_Setup.Query3 to match the procedure in Mssql: "SQL".SQL_Client.SQL_Setup.Query3 := 'CALL sp_SaveParams (1, \$'Log\$', ';



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In the PLC we move the value 2.3009 to the SQL DB



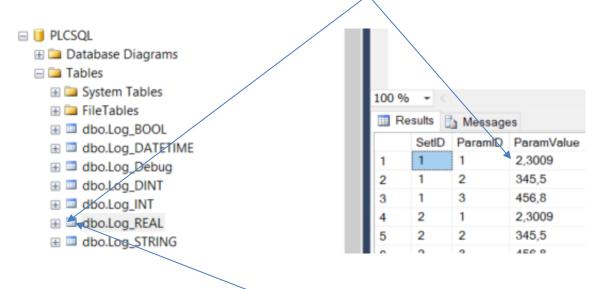
And we tell the system that there is an updated value on ParamID[1].

Last we set the bit SQL.LogStart and the value is stored in mssql.

•	Network 6: Request start log data to SQL server	
_	Comment	
	#"Now_ Program_wants_ to_log_data"	"SQL".LogStart
		(s)

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In Mssql we can see that the Value 2.3009 is stored in ParamID[1].



Right click on dbo.Log_REAL and select top 1000 rows to see the view.

ParamId[1] is defined as a REAL type in both the PLC and Mssql.

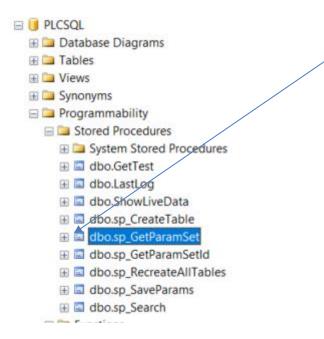
_ /		_					
👻 🔚 PLCSQL-Link	76		•	۲	Tmp_Out	Struct	
SQL_Call [FC21463]	77		•	۲	TCONpar_IP4	TCON_IP_v4	
SQL_Initialize [FC21460]	78		•	۲	SQL_Client	"SQL_Client"	
SQL_LogValues [FC21462]	79	-	•	۲	TRCV_Instance	TRCV	
SQL_RecipeValues [FC21461]	80		•	۲	TCON_Instance	TCON	
🔁 SQL_Client [FB21461]	81	1	•	۲	TSEND_Instance	TSEND	
🔁 ۶QL_Controller [FB21460]	82	a	•	۲	TDISCON_Instance	TDISCON	
👕 SQL [DB21460]	 83		•		Timeout	TON_TIME	
🕨 🔙 System blocks	84		•	+	LogParm	Struct	
🕨 🙀 Technology objects	85			•	✤ ParamREAL	Array[1"LogParmREALMax"] of 📼	
External source files	86	-			ParamREAL[1]	Real	2.3009
🕨 🔁 PLC tags	87	-			ParamREAL[2]	Real	0.0
PLC data types	88	-			ParamREAL[3]	Real	0.0
Watch and force tables	89	-			ParamREAL[4]	Real	0.0

How does PLCSQL work, Recipe, read from SQL server

In Mssql we want to read the stored value in ParamID[3].

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First we need to setup the Call in the PLC for the stored procedure in Mssql.

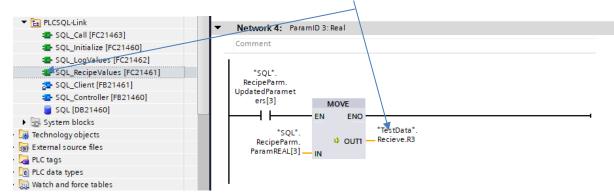


SQL_Initialize DB you setup the SQL.SQL_Client.SQL_Setup.Query2 to match the procedure in Mssql: "SQL".SQL_Client.SQL_Setup.Query2 := 'CALL sp_GetParamSet (\$'Recipe\$',';

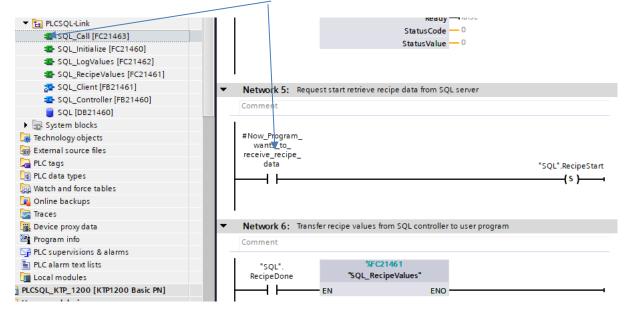
▼ E PLCSQL-Link	55 // DateTimeStamp
SQL_Call [FC21463]	56 "SQL".SQL_Client.SQL_Setup.PDateTimeStamp := 30001; //Default parameter for
-QL_Initialize [FC21460]	57 // Timeout before reset of PLCSQL system if something goes wrong
SQL_LogValues [FC21462]	58 "SQL".SQL_Client.SQL_Setup.TimeOut := t#10s; // Default 10 Sec.
SQL_RecipeValues [FC21461]	59 //
5QL_Client [FB21461]	60
SQL_Controller [FB21460]	61 ////////////////////////////////////
SQL [DB21460]	63 // Log stored procedures (Query 3)
System blocks	64 // Here you can chance between the "Log" and "Recipe" data when logging, for
Technology objects	65 // or if there is an read / write claim
External source files	66
🕨 🔁 PLC tags 🛛 🖉 –	67 // Recipe stored procedure (Query 2)
E PLC data types	68 "SQL".SQL_Client.SQL_Setup.Query2 := 'CALL sp_GetParamSet (\$'Recipe\$',';
Watch and force tables	69 // Log stored procedure (Query 3)
🕨 📴 Online backups	70 "SQL".SQL_Client.SQL_Setup.Query3 := 'CALL sp_SaveParams (1, \$'Log\$', '; 71

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Move the received data from Mssql to your variable in the PLC.

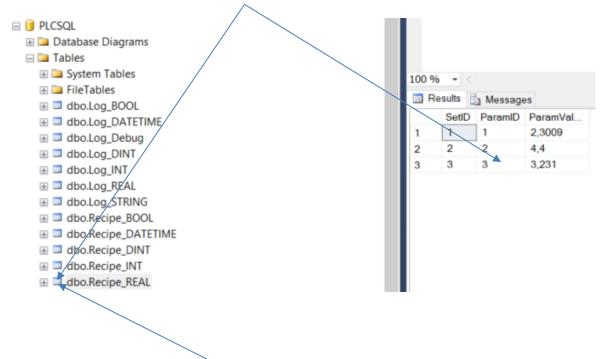


In the Plc we need to trigger the start log bit.



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In Mssql we want to read a Real value with ParamID 3 from Recipe



Right click on dbo.Log_REAL and select Top 1000 rows to see the view.

ParamId[3] is defined as a REAL type in both the PLC and Mssql.

	\sim		_				
🔻 🔚 PLCSQL-Link		85		• -	Re	cipeParm	Struct
🔹 SQL_Call [FC21463]		86			•	ParamREAL	Array[1"RecipePar
SQL_Initialize [FC21460]		87				ParamREAL[1]	Real
SQL_LogValues [FC21462]		88	-		•	ParamREAL[2]	Real
SQL_RecipeValues [FC21461]		89	-		•	ParamREAL[3]	Real
SQL_Client [FB21461]		90				ParamREAL[4]	Real
SQL_Controller [FB21460]		91				ParamREAL[5]	Real
🕤 SQL [DB21460]		92				ParamREAL[6]	Real
🕨 🔙 System blocks		93				ParamREAL[7]	Real
Technology objects		94			•	ParamREAL[8]	Real
External source files		95			•	ParamREAL[9]	Real
PLC tags		96	-00		•	ParamREAL[10]	Real

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Example software

In this example we are using the program "MySQL Server" Ver. 5.7.23 Installed on "Windows 10 Professional 64 bit".

With this installation manual you are able to setup the database server, for getting and putting data by the PLCSQL link.

Downloading MySQL

Download MySQL Installer from https://dev.mysql.com/downloads/installer/.

Generally Available (GA) Releases			
MySQL Installer 8.0.12			
Select Operating System: Microsoft Windows]	Looking versions	for previous GA ?
Windows (x86, 32-bit), MSI Installer	8.0.12	17 11	Download
(mysql-installer-web-community-8.0.12.0.msi) Windows (x86, 32-bit), MSI Installer	8.0.12	MD5 275.4M	10f0c21b81686 Signature Download
(mysql-installer-community-8.0.12.0.msi)		MD5: 53b3a9bb89db0618629	69b67c68b6f67 Signature
We suggest that you use the MD5 checksums and GnuPG signal	gnatures to verify the integrity of the pack ses y	ou download.	

MySQL suggest to download the latest version. Click on "Looking for previous GA versions?" to find the 5.7.23 version.

MySQL Installer 5.7.23			
Select Version: 5.7.23]	Looking version	g for the latest GA ?
Select Operating System:			
Microsoft Windows •			
Windows (x86, 32-bit), MSI Installer	5.7.23	15.9M	Download
(mysql-installer-web-community-5.7.23.0.msi)		MD5: 348be559b268b9ec56	bdfd0b46ba49c6 Signature
Windows (x86, 32-bit), MSI Installer	5.7.23	371.0M	Download
(mysql-installer-community-5.7.23.0.msi)		MD5: 95e92084366994464a	b377ec196d9ecc Signature

Download the complete package (my-installer-community-5.7.23.0.msi)

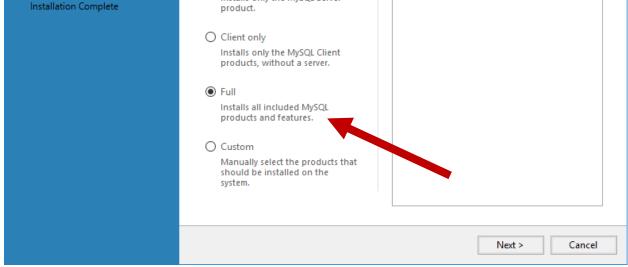
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Install MySQL Server

MySQL Installer MySQL. Installer Choosing a Setup Type Adding Community Please select the Setup Type that suits your use case. Setup Type Description Choosing a Setup Type O Developer Default Installs all of the products available in this catalog Installs all products needed for including MySQL Server, MySQL Shell, MySQL Installation MySQL development purposes. Router, MySQL Workbench, MySQL Connectors, documentation, samples and examples and Product Configuration O Server only much more. Installs only the MySQL Server

 \times

After download execute my-installer-community-5.7.23.0.msi.



Under Choosing a Setup Type, select Full to install MySQL Server, MySQL Workbench and more.

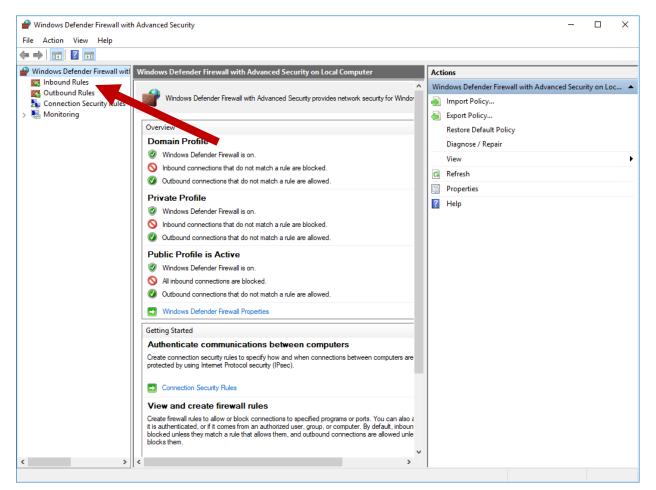
Follow the installation guide of the software.

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Firewall

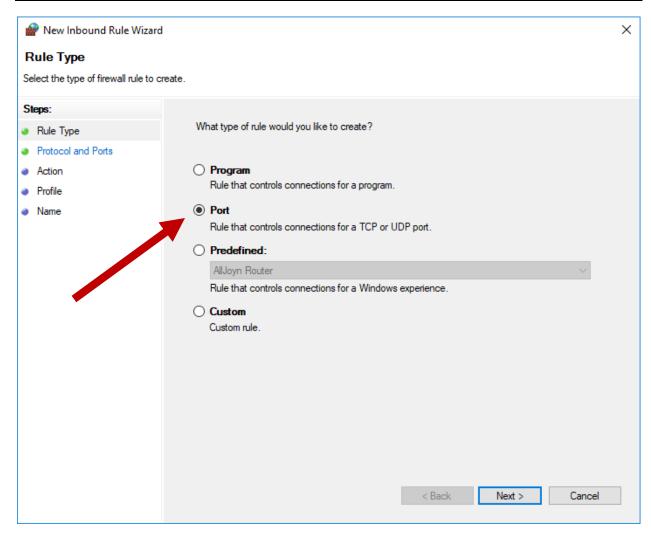
After installing MySQL server port 3306 need to be opened in the firewall.

On Windows 10, open Windows Defender Firewall with Advanced Security. Click Start, type Windows Defender Firewall, and the press ENTER.



Right click on Inbound Rules and select New Rule...

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In New Inbound Rule Wizard select Port and click Next >

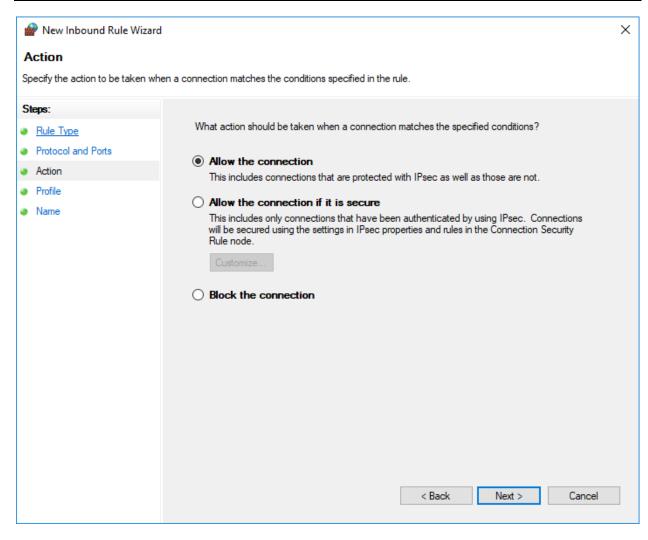
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Prew Inbound Rule Wizard	d	×
Protocol and Ports		
Specify the protocols and ports to	which this rule applies.	
Steps:		
Rule Type	Does this rule apply to TCP or UDP?	
Protocol and Ports	TCP	
Action	○ UDP	
Profile		
Name	Does this rule apply to all local ports or specific local ports?	
	○ All local ports	
	Specific local ports: 3306	
	Example: 80, 443, 5000-5010	
	< Back Next > Cancel	

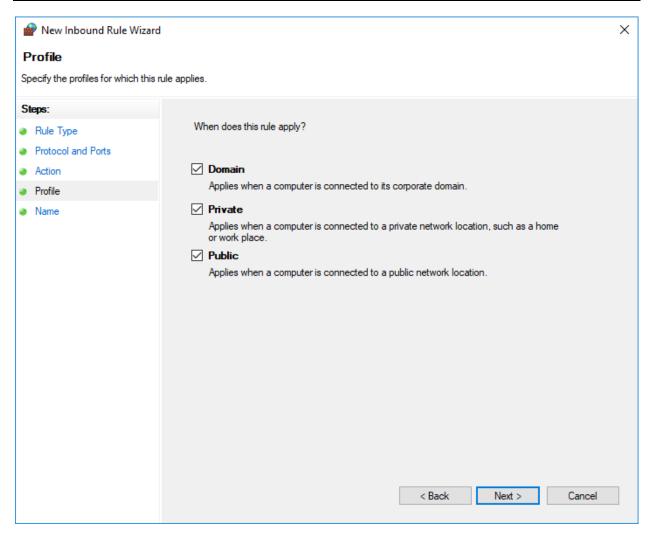
Under Specific local ports, enter 3306 and click Next >

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Click Next >

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Click Next >

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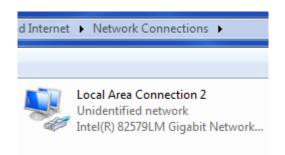
	P New Inbound Rule Wizard					×
N	lame					
Sp	becify the name and description	of this rule.				
S	leps:					
۲	Rule Type					
۲	Protocol and Ports					
۲	Action					
۲	Profile		Name:			
۲	Name		MySQL 3306			
			Description (optional):			
				< Back	Finish	Cancel

Enter a name of the rule and click Finish.

Verify that the MySQL server can be accessed remotely. Try from another computer to access the MySQL by using MySQL Workbench.

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Setting up MySQL Server IP address.



Select the net card you want to use to communicate with the PLC.

Local Area Conn	ection 2 Status		23
General			
Connection			
IPv4 Connectiv	ity:	No Internet acc	ess
IPv6 Connectiv	ity:	No Internet acc	ess
Media State:		Enat	oled
Duration:		03:35	:04
Speed:		100.0 M	bps
Details]		
Activity ———			
	Sent — 💄	Receiv	/ed
Packets:	407		0
Properties	🚱 Disable	Diagnose	
			lose

Double click on the net card to open the setup utility.

Select "Properties"

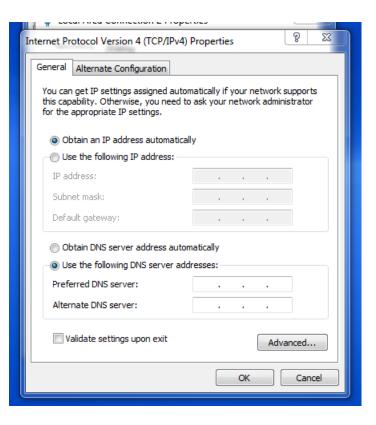
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Local Area Connection 2 Status
Local Area Connection 2 Properties
Networking Sharing
Connect using:
Intel(R) 82579LM Gigabit Network Connection
Configure
This connection uses the following items:
 Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) Link-Layer Topology Discovery Mapper I/O Driver Link-Layer Topology Discovery Responder
Install Uninstall Properties Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK Cancel

Select "Internet Protocol Version 4 (TCP/IPv4)"

Select "Properties"

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Select "Use the following IP address"

Internet Protocol Version 4 (TCP/IPv4)	roperties	8	23
General			
You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.			
Obtain an IP address automatical	/		
• Use the following IP address:			
IP address:			
Subnet mask:			
Default gateway:			
Obtain DNS server address autom	atically		
Ose the following DNS server add	esses:		
Preferred DNS server:			
Alternate DNS server:		•	
Validate settings upon exit		Advance	:d
	ОК		ancel

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General You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.	natically if your network supports o ask your network administrator
You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.	ə ask your network administrator Iy
this capability. Otherwise, you need to for the appropriate IP settings.	ə ask your network administrator Iy
💿 Obtain an IP address automatical	
Ose the following IP address:	
IP address:	172 . 20 . 92 . 100
Subnet mask:	255.255.255.0
Default gateway:	
Obtain DNS server address auton	natically
Ose the following DNS server add	resses:
Preferred DNS server:	
Alternate DNS server:	• • •
Validate settings upon exit	Advanced
	OK Cancel

Type the IP address you want the server to have, Click "OK". It is necessary that the SQL server has a fixed IP address.

Local Area Connection 2 Status	x									
Local Area Connection 2 Properties	X									
Networking Sharing										
Connect using:										
Intel(R) 82579LM Gigabit Network Connection										
Configure	ə									
This connection uses the following items:										
 Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) 										
Install Uninstall Properties	s									
Description Allows your computer to access resources on a Microsoft network.										
Close Ca	ancel									

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If you want to test the connection to the SQL server from another PC, you may use the build in command "Ping".

From Windows 10, the "Ping" answer is blocked by the firewall, so you have to enable the server to answer the "Ping" request.

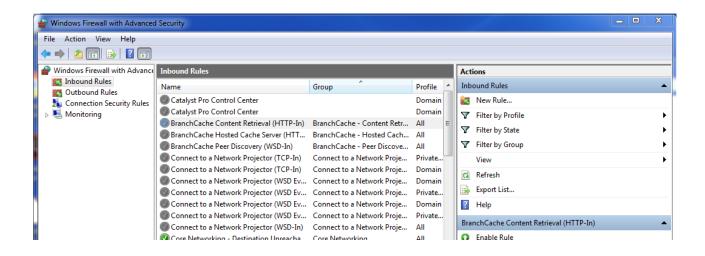
🕞 🕞 🗢 🕍 🕨 Control Panel 🕨	All Control Panel Items 🕨 Windows Firewall	
Control Panel Home	Help protect your computer with Wi	ndows Firewall
Allow a program or feature through Windows Firewall	Windows Firewall can help prevent hackers or n through the Internet or a network.	nalicious software from gaining access to your computer
🚱 Change notification settings	How does a firewall help protect my computer?	2
🚱 Turn Windows Firewall on or	What are network locations?	
off restore defaults	🛛 🥑 Home or work (private) netv	works Connected (
🚱 Advanced settings	Networks at home or work where you know ar	nd trust the people and devices on the network
Troubleshoot my network	Windows Firewall state:	On
	Incoming connections:	Block all connections to programs that are not on th list of allowed programs
	Active home or work (private) networks:	automatic-syd.local
	Notification state:	Notify me when Windows Firewall blocks a new program
	Vublic networks	Connected
	Networks in public places such as airports or c	offee shops
	Windows Firewall state:	On
	Incoming connections:	Block all connections to programs that are not on th

Open firewall, and select "Advanced settings"

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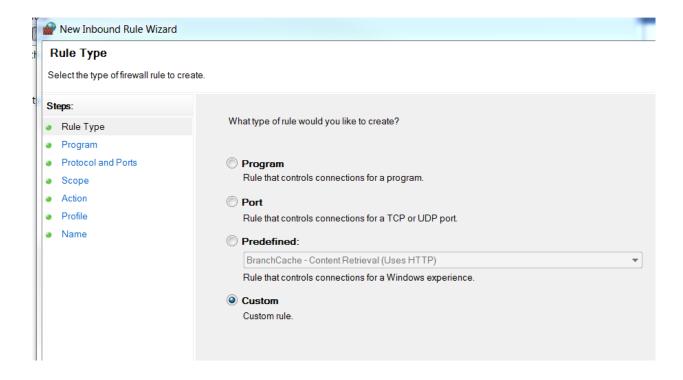


Select "Inbound Rules"



Select "New Rule.....

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As "Rule Type", select "Custom".

P New Inbound Rule Wizard				
Protocol and Ports				
Specify the protocols and ports to which this rule applies.				
Steps:				
Rule Type	To which ports and protocols does this rule apply?			
Program				
Protocol and Ports	Protocol type:	Any 👻		
Scope	Protocol number:			
 Action 				
ProfileName	Local port:	All Ports 👻		
• Name				
		Example: 80, 443, 5000-5010		
	Remote port	All Ports		
		Example: 80, 443, 5000-5010		
	Internet Control Messa settings:	ge Protocol (ICMP) Customize		
	ocungo.			

Select "Protocols and Ports".

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Protocol and Ports

Specify the protocols and ports to which this rule applies.

Steps:		
Rule Type	To which ports and protocols does this rule apply?	
Program		
Protocol and Ports	Protocol type:	Any
Scope	Protocol number:	Any
Action	Protocornamber.	Custom
Profile		HOPOPT ICMPv4
	Local port	IGMP
Name		TCP
		UDP
		IPv6 IPv6-Route
	Remote port:	IPv6-Frag
		GRE
		ICMPv6
		IPv6-NoNxt
		IPv6-Opts
	Internet Control Messag	ge P <mark>VRRP</mark> PGM
	settings:	L2TP

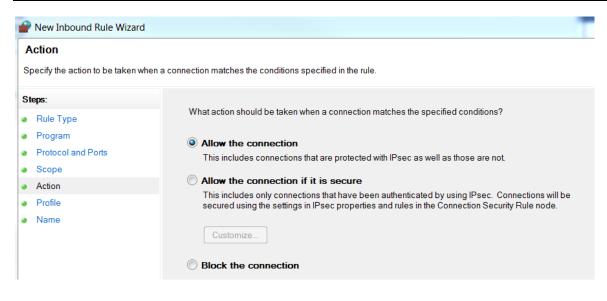
Select "ICPMv4", next.

Pww Inbound Rule Wizard					
Scope					
Specify the local and remote IP add	resses to which this rule applies.				
Steps:					
Rule Type					
Program	Which local IP addresses does this rule apply to?				
Protocol and Ports	Any IP address				
 Scope 	These IP addresses:				
Action		Add			
Profile					
Name		Edit			
		Remove			
	Customize the interface types to which this rule applies:	Customize			
	Which remote IP addresses does this rule apply to?				
	Any IP address				
	These IP addresses:				
		Add			
		Edit			
		Remove			

Here you can specify witch IP the rule apply to.

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Installation Manual: MySQL for PLCSQL link



If the connection not is "allowed" it makes no sense in this case.

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	Prew Inbound Rule Wizard				
tł	Name				
l	Specify the name and description of this rule.				
t	Steps:				
	Rule Type				
	Program				
L	Protocol and Ports	Name:			
L	Scope	Allow_Ping			
L	Action				
L	Profile	Description (optional):			
L	Name				
L					
L					
L					
L					

Give the rule a name.

Now you should have the possibility to "Ping" the server IP with the build in "Ping" command.

I want also to check if the port 1433 is available, and I found a free tool on the internet that can check the IP and the Port with the same tool.

The tool is called "Tcping", just search on the internet.

The tool is running in the "CMD" prompt, just like "Ping".

C:\Users\KJA>tcping64 172.20.92.100 1433
Probing 172.20.92.100:1433/tcp - Port is open - time=7.728ms Probing 172.20.92.100:1433/tcp - Port is open - time=1.098ms Probing 172.20.92.100:1433/tcp - Port is open - time=1.023ms Probing 172.20.92.100:1433/tcp - Port is open - time=1.094ms
Ping statistics for 172.20.92.100:1433 4 probes sent. 4 successful, 0 failed.
Approximate trip times in milli-seconds: Minimum = 1.023ms, Maximum = 7.728ms, Average = 2.736ms

The connection is OK and the port is open.

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Create PLCSQL database.

Included in the delivery, there is a script that creates the following in the SQL database. The default name of the database is "PLCSQL"

- 1: Tables for "Log" data from the PLC to SQL.
- 2: Tables for "Recipe" data from SQL to PLC.
- 3: Default user "plcsql" (you may change the user before you run the script).
- 4: Permissions to the user "plcsql" to access, read, and write in PLCSQL database.
- (you may change the name of the database before you run the script)
- 5: Stored procedures that is used to handle the data flow between SQL and PLC.

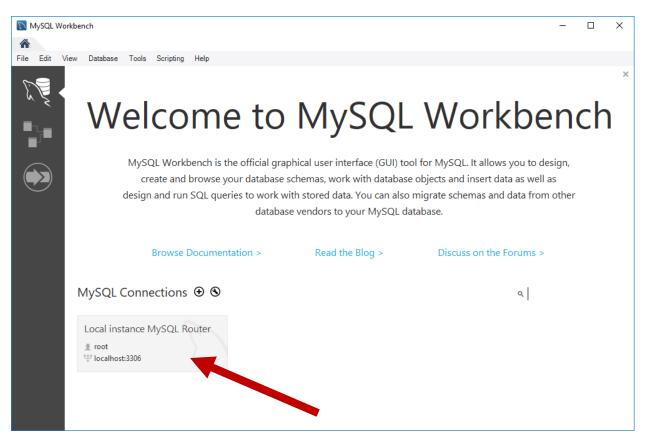


To Create the database needed for PLCSQL, you will need the program MySQL Workbench. If you have chosen Setup Type Full server installation, then the file is already installed, if not, then you have to download it from <u>https://dev.mysql.com/downloads/workbench/</u>. Select the newest version of MySQL Workbench.

The name of the script, is "Create-database-plcsql_mysql_v02.sql", and is included in the delivery.

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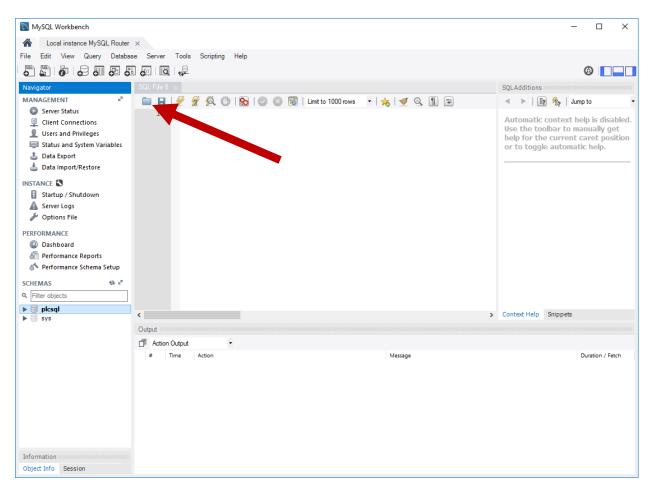
On Windows 10, open MySQL Workbench. Click Start, type mysql workbench, and the press ENTER.



Click on Local instance MySQL Router

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After connected to the Local instance, you will able to manage the MySQL server.



Click on Open SQL Script and select Create-database-plcsql_mysql_v02.sql.

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After the Create-database-plcsql_mysql_v02 script has been loaded press Execute.

MySQL Workbench		- 🗆 X
A Local instance MySQL Router	×	
File Edit View Query Databas	se Server Tools Scripting Help	
8 8 6 8 8 8 8		Ø — —
Navigator	Create-database-plcsql_mysql ×	SQLAdditions
MANAGEMENT 🖉	🗀 🗟 🗲 🐔 🔍 🕑 🗞 🥥 🛞 😤 Limit to 1000 rows 🔹 🔸 孝 🔍 🕥 🗊	◄ ▷ ፲ ⅔ ⅔ Jump to -
Server Status	1 ₽/* . for MySQL database	 Automatic context help is disabled.
Client Connections Users and Privileges	2 PLCSQL Link 22 3 L*/	Use the toolbar to manually get
Status and System Variables	4 5 • SET SQL MODE = "NO AUTO V. ON ZERO";	help for the current caret position or to toggle automatic help.
🛓 Data Export	6 • SET time_zone = "+00:00";	or to toggie automatic neip.
📥 Data Import/Restore	7 8 ● /*!40101 SET @OLD CHARACTER SET CLIENT=@@CHARACTER SET CLIENT */;	
INSTANCE	9 /*!40101 SET @OLD CHARACTER SET RESULTS =@@CHARACTER SET RESULTS */; 10 /*!40101 SET @OLD COLLATION CONNECTION=@@COLLATION CONNECTION */;	
Startup / Shutdown	11 • /*!40101 SET NAMES utf8 */;	
Server Logs Options File	12 13 • CREATE DATABASE IF NOT EXISTS `plcsql` DEFAULT CHARACTER SET latin1 COLLATE la	
PERFORMANCE	14 • USE `plcsql`; 15	
Dashboard	16 DELIMITER \$\$	
8 Performance Reports	<pre>17 • CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_GetParamSet`(18 TablePrefix TEXT, /* String argument containing table prefix name (Log, Te</pre>	
👌 Performance Schema Setup	19 tstring TEXT /* String argument containing Array of ParamID,ParamValue */	
SCHEMAS 🚸 🖉	21 DETERMINISTIC	
Q Filter objects	22 ☐ BEGIN 23 ☐ /* ==================================	
▶ 🛢 plcsql	24 Author: Anders Jorsal, Automatic Syd A/S	Context Help Snippets
▶ 🗏 sys	Output	
	Action Output	
	# Time Action Message	Duration / Fetch
Information		
Object Info Session		

The script will now create database, tables, stored procedures and user.

After script has successful executed. Click on Refresh SCHEMAS to show the plcsql database.



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System parameters.

There are 3 "system parameters" placed in "Log" and "Recipe" In both tables it is the following 3 parameters.

10001:	SetCount	Data type "Int"
15001:	SetID	Data type "Dint"
30001:	DateTimeStamp.	Data type "String"

The "SetCount" parameter 10001 contains the number of parameters excluding parameter 10001,15001, and 30001 in "this" actual "dataset".

The "SetID" parameter 15001, contains the unique number that every "dataset" get when something is stored in the SQL database. The "SetID" number changes only when something is stored in the SQL database, e.g. you trigger the "Log data" function from the PLC or you generate a new "Recipe" in the SQL database. Every time you save a "dataset" in the SQL database, all parameters in this specific "dataset" will get the same "SetID" number, it is the "SetID" number that "connects" all the parameters in this specific "dataset" together.

The "DateTimeStamp" contains the date and time when this "dataset" was stored in the SQL database.

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Appendix, Code Snippets



Attention! Some the following code examples is not intended to use on a "Company" data base, they are intended to use on a local "test" data base, so you can find out how the system is working.

Generate a "Recipe" in the SQL data base.

Normally the "Recipe" data will be generated elsewhere in the "system", but for testing purposes you can generate you own recipes.

CALL sp_SaveParams(1, N'Recipe',N'1;1.111;10002;1;15002;11111111;30003;HelloWorld 1');

Explanation

sp_SaveParams, is the name of the "Procedure" that saves the data
"1", is a "user" number, the number is mandatory, but you can change the value.
"N" sets the character set to Unicode.
'Recipe' is the "Table" we are using.
"1;1.111" the first "1" is the parameter number, the "1.111" is the value to place in the parameter "10002;1" is again parameter number "10002" and value "1"
"15002;11111111" is again parameter number "15002", and value "1111111"
"30003;HelloWorld 1" is again parameter number "30003", and value "HelloWorld 1"
All parameter and values are typed as "strings", the "" at start and end defines a string.

Type definitions

19999	REAL type.
1000114999	INT type, signed.
1500119999	DINT type, signed
2000129999	BOOL type
3000130999	STRING types, length 1254 characters.

CAUTION

Parameter number 10001, 15001, and 30001 are used internally and may not be written to by the user.

Output from the PLCSQL data base

Result Grid 🔢 🚷 Filter Rows:					
	SetID	ParamID	ParamValue		
•	1	1	0.45		
	1	2	-45.23		

Table "Recipe_REAL" The "SetID" is "1"

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Result Grid					
	SetID	ParamID	ParamValue		
•	1	10002	12345		
	2	10002	2311		

Table "Recipe_INT" The "SetID" is "1"

Result Grid					
	SetID	ParamID	ParamValue		
•	1	15002	12345678		
	2	15002	121111111		
	2	15000	101111111		

Table "Recipe_DINT" The "SetID" is "1"

Result Grid 🔢 🚷 Filter Rows:					
	SetID	ParamID	ParamValue		
•	1	30002	Recipe A		
	2	30002	AJOTEST		

Table "Recipe_STRING" The "SetID" is "1"

Re	Result Grid 🔢 🚷 Filter Rows:				
	SetID	SetCount	UserID	ParamValue	
•	1	7	1	2018-08-06 08:23:09	
	2	6	1	2018-09-12 11:11:15	
	3	6	1	2018-09-12 11:39:46	

Table "Recipe_DATETIME"

The "SetID" is "1"

"SetCount" is 4, meaning we have 4 entries in this recipe.

"UserID" is 1

"ParamValue" the date and time where this recipe was stored in the data base.

If you now from the PLC run the following command "GetParamSet;30003;HelloWorld 1",(syntax not correct, only shown for better understanding).

Then you will get the 4 parameter's in this recipe. You can choose any of the 4 parameter in the "GetParamSet" command, because all other parameters with the same "SetID" will be send to the PLC.

Next time you store the same recipe or another recipe, the "SetID" will change (+1)

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Delete the CONTENT of the "Log" tables.

use PLCSQL truncate table Log_string truncate table Log_bool truncate table Log_dint truncate table Log_int truncate table Log_real truncate table Log_datetime

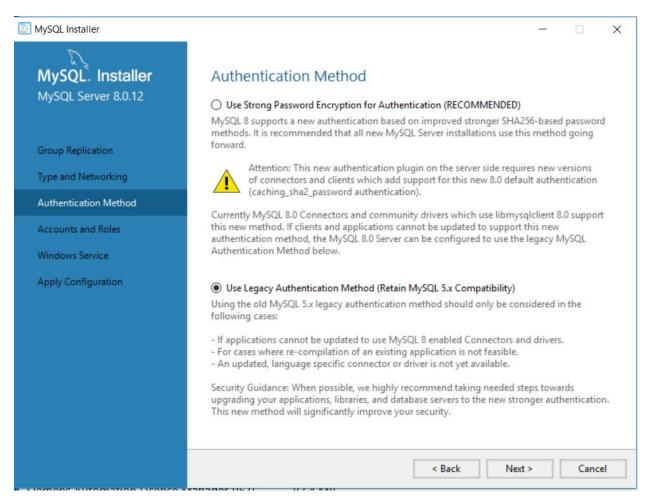
Delete the CONTENT of the "Recipe" tables.

use PLCSQL truncate table Recipe_string truncate table Recipe_bool truncate table Recipe_dint truncate table Recipe_int truncate table Recipe_real truncate table Recipe_datetime

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MySQL 8.xx Authentication and User

Be aware when installing MySQL 8.xx to use Legacy Authentication Method.



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If you want to use password to connect to Mysql database please select Authentication Type Standard. Only implemented in TIA V 15.1

MySQL Workbench						
Local instance MySQL57 ×						
File Edit View Query Databas	se Server Tools	Scripting Help				
	6 I G					
Navigator	sha1* Admini					
MANAGEMENT ²⁸	Local inst	tance MySQL57				
Server Status		and Privileges				
Client Connections	User Accounts	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Details for account Cust	omer xxx@%		
Users and Privileges	User	From Host		dministrative Roles Schema Privileges		
🔄 Status and System Variables 🏝 Data Export	Customer_xxx	%	Account Limits Ac	uministrative Roles Schema Privileges		
Data Export La Data Import/Restore	mysql.infoschema	localhost	Login Name:	Customer_xxx	You may create multiple accounts v to connect from different hosts.	
	mysql.session mysql.sys	localhost localhost				
INSTANCE Startup / Shutdown	plcsql	%	Authentication Type:	Standard \vee	For the standard password and/or select 'Standard'.	
Server Logs	root	localhost			select Stanuard.	
Options File			Limit to Hosts Matching:	%	% and _ wildcards may be used	
PERFORMANCE			Password:	*****	Type a password to reset it.	
Dashboard			- doshordi	Consider using a password with 8 or r		
Performance Reports				mixed case letters, numbers and pun		
👌 Performance Schema Setup			Confirm Password:	***********	Enter password again to confirm.	
SCHEMAS 🚸 🖉				Expire Password		
Q Filter objects						
▼ 📄 plcsql 🔨						
▼ Tables ▶ □ log_bool						
► ■ log_datetime						
▶ ■ log_dint						
▶ log_int ▶ log_real						
► log_string						
 recipe_bool recipe_datetime 						
<pre>recipe_dint</pre>						
recipe_int						
Information						
No object selected						
object to for the second	Add Account	Delete Refresh				
Object Info Session						

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