

Installation and configuration guide CS Network for Windows



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2 Change sheet

Revision	Change	Date	Editor	Version
1	First edition	2022-04-23	TE	V.01
2	Name change	2022-04-29	TE	V.01
3	Titel changed	2022-05-05	TE	V.01
4	Configure E-Mail server	2022-11-10	TE	V.02
5	.NETCore 6.0 + AspNetCore.App 6.0	2023-02-23	TE	V.03
6	7.2 4. Path for SQL Script	2024-03-19	DS	V.04
7	New: Soft2Monitor	2025-05-03	TE	V.05



3 Prologue

Dear customer,

if you use the CS Network software, you can read out our sensors directly or save several measured values from our data recorders in a central database. You can then access these data from several clients and evaluate or display them via a user authorization concept. You can also send alarms and evaluations automatically by e-mail to the users via push message.

This documentation describes the installation and initial configuration for running the solution on a server. Several virtual platforms can be used.



4 Notes

4.1 About this document

- Read this documentation carefully.
- Keep this documentation handy for reference when needed.
- Pass this documentation on to subsequent users of the product.

CS Instruments GmbH & Co.KG makes no warranty as to the suitability for any particular purpose and assumes no liability for errors printed in these instructions for use. Nor for consequential damages in connection with the delivery, performance, or use of this software.

Hardware Server Platforms	Windows Server 2016 64bit Windows Server 2019 64bit Windows Server 2022 64bit
Virtualisation platforms	Vmware, Hyper-V, virtualBox
Main memory requirement	min. 8 GB RAM - recommended 16 GB
Hard disk space	min. 100 GB SSD (also depends on the measured values and log times)
Processors	4 CPUvCore
Windows-Clients	ab Win10 64bit

5 System requirements

The following ports must be enabled on the network for proper communication and operation of the software:

Port 50051 is used for communication between the Windows client and the Ubuntu server via gRPC. The server needs port 502 for communication with the devices/sensors via ModbusTCP.

For the broadcast for automatic device detection the port 8800 (server - devices/sensors) is used.

6 Installation / Application CS Network

There is an installation package for Windows server from version 2016 64bit.

The data storage is based on a MySQL database version 5.7.34. This is then installed with the installation package if there is no installation.

For the Windows clients an installation package "CS Network setup.exe" is available. For mobile devices there is also a MobileApp, which will be available for Android and iOS.

All packages can be download from our Website.



7 MySQL 8.0

The MySQL database only needs to be installed if a MySQL database is not already installed on the PC/server.

7.1 New installation of the MySQL database

- 1. Start MSI installer (mysql-installer-community-8.0.28.0.msi)
- 2. "Custom"

NySQL Installer		- 🗆 X
MySQL. Installer Adding Community	Choosing a Setup Type Please select the Setup Type that suits yo	ur use case.
Choosing a Setup Type	O Developer Default	Setup Type Description
Select Products	Installs all products needed for MySQL development purposes.	Allows you to select exactly which products you would like to install. This also allows to pick other server versions and architectures (depending on
Download	O Server only	your OS).
Installation	Installs only the MySQL Server product.	
Installation Complete	Client only Installs only the MySQL Client products, without a server.	
	Full Installs all included MySQL products and features.	
	Custom Manually select the products that should be installed on the system.	
		Next > Cancel

Install MySQL Server, MySQL Workbench and MySQL Shell

 a) Select products + "Next

MySQL Installer	–
MySQL. Installer Adding Community	Select Products Please select the products you would like to install on this computer. Filter:
Choosing a Setup Type	All Software, Current Bundle, Any Edit
Select Products	Available Products: Products To Be Installed:
Installation Product Configuration Installation Complete	Berry SQL Server 8.02 - X64 Dever 8.02 - X64 Applications MySQL Workbench MySQL Workbench 8.02 MySQL Workbench 8.02 MySQL Shell 8.0.28 - X64 MySQL Shell 8.0.28 - X64
	Published: Tuesday, January 18, 2022 Reliase Notes: https://dev.mysl.com/doc/relindes/mysl-shel/8.0/en/newsl-8-0-28.html



b) "Execute"

NySQL Installer			-		×
MySQL. Installer Adding Community	Installation The following products will be installed.				
Choosing a Setup Type Select Products Installation	Product MySQL Server 8.0.28 MySQL Workbench 8.0.28 MySQL Shell 8.0.28	Status Ready to Install Ready to Install Ready to Install	Progress	Notes	
Product Configuration Installation Complete					
	Click [Execute] to install the following pack	ages.			
		< <u>B</u> ack	E <u>x</u> ecute	<u>C</u> ance	el

c) "Next"

NySQL Installer			-		х
MySQL. Installer Adding Community	Installation The following products will be installed.				
Choosing a Setup Type Select Products	Product Image: Server 8.0.28 Image: Server 8.0.28	Status Complete Complete Complete	Progress	Notes	
Installation					
Product Configuration	Show Details >				
		< Back	<u>N</u> ext >	<u>C</u> ance	el 🛛



d) "Next"

NySQL Installer		- 🗆 🗡
MySQL. Installer Adding Community	Product Configuration	wizard for each of the following products.
Choosing a Setup Type	You can cancel at any point if you wish to products.	to leave this wizard without configuring all the
Select Products	Product	Status
la stallation	MySQL Server 8.0.28	Ready to configure
Product Configuration		
	¢	>
		Next > Cancel

e) Select "Server Computer" + "Next":

MySQL Installer	X
MySQL. Installer MySQL Server 8.0.28	Type and Networking Server Configuration Type Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server installation.
Type and Networking	Config Type: Server Computer V
Authentication Method	Connectivity
Accounts and Roles	Use the following controls to select how you would like to connect to this server.
Windows Service	Open Windows Firewall ports for network access
Apply Configuration	Named Pipe Name: MYSQL
	Shared Memory Memory Name: MYSQL
	Advanced Configuration
	Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.
	Show Advanced and Logging Options
	Next > Cancel



f) Authentication MySQL 5.X use + "Next".



g) Set ROOT password (default: 20DidnCSN!02)

MySQL Installer						×
MySQL. Installer MySQL Server 8.0.28	Accounts and Ro Root Account Password Enter the password for the p place.	les oot account. Please	remember to store thi	is password in a	a secure	
Type and Networking Authentication Method	MySQL Root Password: Repeat Password:	Password strength	n: Strong			
Accounts and Roles						
Windows Service						
Apply Configuration	MySQL User Accounts Create MySQL user accoun consists of a set of privileg MySQL User Name	nts for your users ann les. Host	d applications. Assign	a role to the us	er that <u>A</u> dd Use <u>E</u> dit Use <u>D</u> elete	er
			< <u>B</u> ack	<u>N</u> ext >	<u>C</u> ance	21

h) Create user "cs" (Default password: 2020DidnCSC!)

S MySQL User Account	×
Please specify the user name, password, and database role.	
User Name: cs	
Server Host: <all (%)="" hosts=""> ~</all>	
Role: DB Admin V	
Authentication: MySQL	
MySQL user credentials	
Password:	
Confirm Password:	
Password strength: Strong	
<u>O</u> K <u>C</u> ance	el



i) "Next"



j) "Next"

Windows Service Apply Configuration Configuration Co	MySQL Installer	– 🗆 X
Type and Networking Authentication Method Accounts and Roles Windows Service Mindows Service Apply Configuration Ren Windows Service as The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below. Image: Standard System Account Recommended for most scenarios. Custom User An existing user account can be selected for advanced scenarios.	MySQL. Installer MySQL Server 8.0.28	Windows Service ☑ Configure MySQL Server as a Windows Service
Windows Service Apply Configuration Run Windows Service as The My/SQL Server needs to run under a given user account. Based on the security requirements to your system you need to pick one of the options below.	Type and Networking Authentication Method Accounts and Roles	Windows Service Details Please specify a Windows Service name to be used for this MySQL Server instance. A unique name is required for each instance. Windows Service Name: MySQL80 Image: Start the MySQL Server at System Startup
Apply Configuration Run Windows Service as The MySQL Server needs to run under a given user account. Based on the security requirements to your system you need to pick one of the options below. Standard System Account Recommended for most scenarios. Custom User An existing user account can be selected for advanced scenarios. 	Windows Service	
< Back Next > Cancel	Apply Configuration	Run Windows Service as The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below. Standard System Account Recommended for most scenarios. Custom User An existing user account can be selected for advanced scenarios. Standard System Account An existing user account can be selected for advanced scenarios.



k) "Execute"



I) Installation was performed successfully:

MySQL Installer	_		×
MySQL. Installer MySQL Server 8.0.28	Apply Configuration The configuration operation has completed. [Configuration Steps] Log		
Type and Networking	Writing configuration file Updating Windows Firewall rules		
Accounts and Roles	 Aujusting withows server Initializing database (may take a long time) Starting the server 		
Apply Configuration	 Applying security settings Creating user accounts 		
	Click Finish to continue.	<u>F</u> inis	sh

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MySQL Installer		- 🗆
MySQL. Installer	Product Configuration	
Adding Community	We'll now walk through a configuration	wizard for each of the following products.
Choosing a Setup Type	You can cancel at any point if you wish products.	to leave this wizard without configuring all the
Select Products	Product	Status
Installation	MySQL Server 8.0.28	Configuration complete.
Product Configuration		
Installation Complete		
	<	>

m) "Finish"

MySQL Installer	– 🗆 X			
MySQL. Installer Adding Community	Installation Complete The installation procedure has been completed.			
Choosing a Setup Type	Cgpy Log to Clipboard			
Select Products	Start MySQL Workbench after setup			
Installation	✓ Start MySQL Shell after setup			
Product Configuration	The MySQL Shell is an advanced MySQL client application that can be used to work with single MySQL Server instances. Further, it can be used to create and manage InnoDB Cluster, an integrated solution for high availability and scalability of MySQL databases,			
Installation Complete	without requiring advanced MySQL expertise.			
	Refer to the following links for documentation, tutorials and examples on MySQL Shell:			
	MySQL Shell Documentation Setting up a Real World Cluster Blog			
	The All New MySQL InnoDB ReplicaSet Blog Changing Cluster Options Live Blog			
	Einish			



7.2 Create database

- 1. Start MySql-Workbench
- 2. <u>Create connection for user "cs":</u>

🔊 Setup New Conn	lection	- 🗆 X
Connection Name:	CS	Type a name for the connection
Connection Method:		Method to use to connect to the RDBMS
Parameters SSL	Advanced	
Hostname:	27.0.0.1 Port: 3306	Name or IP address of the server host - and TCP/IP port.
Username:	cs	Name of the user to connect with.
Password:	Store in Vault Clear	The user's password. Will be requested later if it's not set.
Default Schema:		The schema to use as default schema. Leave blank to select it later.
Configure Server	Management	Test Connection Cancel OK

- 3. Connect with Connection "cs".
- File -> Open SQL Script -> CreateCloudPrjDb.sql Download folder → WindowsServer\20231107_WindowsServer\DbModel
- 5. Execute



8 CS-Network

8.1 Installation

- 1. Install .NET-Core Runtime: dotnet-runtime-6.0.14-win-x64.exe
- 2. Install ASP.NET Core Runtime: aspnetcore-runtime-6.0.14-win-x64.exe
- 3. Install Soft2GrpcServer: Soft2GrpcServer Setup.exe
- 4. Install Soft2ModbusReader: ModbusReaderService Setup.exe
- 5. Install Soft2Monitor: Soft2Monitor Setup.exe

8.2 Port

To access the CS Network server, port 50051 must be open.

P Windows Defender Firewall with Advanced Security -	- [٥	×
Eile Action View Help			
Windows Defender Firewall with Inbound Rules Actions			
🗱 Inbound Rules Name Group Profile Frat 🛆			
Control of the second s			
Connection Security Rules			
Monitoring Port 3006 All Yes			
We for the same f			•
Connection Security Automotive (Connection) Allows Router Domain Ver			•
Security Associations Anioymodel Anioy			
Ouick Mode BranchCache Hosted Cache Server (HTT BranchCache - Hosted Cache All No			
Branch Cache Perr Discovery (WSD-In) Branch Cache - Perr Discover, All No			
Cast to Device functionality (aWave-TCP Cast to Device functionality Private Yes 📑 Export List			
Cast to Device functionality (gwave-UDP Cast to Device functionality Private Yes			
Cast to Device SSDP Discovery (UDP-In) Cast to Device functionality Public Yes			
Cast to Device streaming server (HTTP-St., Cast to Device functionality Public Yes Selected Items			•
Cast to Device streaming server (HTTP-St., Cast to Device functionality Domain Yes Sisable Rule			
Cast to Device streaming server (HTTP-St., Cast to Device functionality Private Yes			
🖉 Cast to Device streaming server (RTCP-St Cast to Device functionality Private Yes			
💋 Cast to Device streaming server (RTCP-St Cast to Device functionality Domain Yes			
🧭 Cast to Device streaming server (RTCP-St Cast to Device functionality Public Yes 🛛 🔀 Delete			
🔮 Cast to Device streaming server (RTSP-Str Cast to Device functionality Public Yes 🛛 🔀 Help			
🔮 Cast to Device streaming server (RTSP-Str Cast to Device functionality Private Yes			
✓ Cast to Device streaming server (RTSP-Str Cast to Device functionality Domain Yes			
🔮 Cast to Device UPnP Events (TCP-In) Cast to Device functionality Public Yes			
COM+ Network Access (DCOM-In) COM+ Network Access All No			
COM+ Remote Administration (DCOM-In) COM+ Remote Administrati All No			
🧭 Core Networking - Destination Unreacha Core Networking All Yes			
🧭 Core Networking - Destination Unreacha Core Networking All Yes			
🐼 Core Networking - Dynamic Host Config Core Networking All Yes			
🔮 Core Networking - Dynamic Host Config Core Networking All Yes			
🔮 Core Networking - Internet Group Mana Core Networking All Yes			
🔮 Core Networking - IPHTTPS (TCP-In) Core Networking All Yes			
🔮 Core Networking - IPv6 (IPv6-In) Core Networking All Yes			
🔮 Core Networking - Multicast Listener Do Core Networking All Yes			
🔮 Core Networking - Multicast Listener Qu Core Networking 🛛 All Yes 🗸			

Port50051 Properties ×
 General
 Programs and Services
 Remote Computers

 Protocols and Ports
 Scope
 Advanced
 Local Principals
 Remote Users
 Protocols and ports TCP 6 Protocol type: ~ Protocol n<u>u</u>mber: Specific Ports ~ Local port: 50051 Example: 80, 443, 5000-5010 ~ Remote port: All Ports Example: 80, 443, 5000-5010 Internet Control Message Protocol Qustomize... OK Cancel Apply



8.3 E-Mail-Server Configuration

An e-mail server can be configured for sending alarms and reporting.

1. Open the JSON configuration file with an editor %ProgramFiles%\CS Instruments\Soft2GrpcServer\appsettings.json



2. In the MailkitSmtpSettings parameter, entert he data as follows:

Host: IP address of the SMTP server for sending emails

Port: SMTP Port

User: Username to send the email via this SMTP server

WithAuthentification:With or without authentificationtruewith authentificationfalsewithout authentification

Password: User password

secureSocketOptions: Security socket options None no encryption Auto Automatic recognition (SSL/TLS/none) SslOnConnect SSL/TLS StartTls STARTTLS StartTlsWhenAvailable STARTTLS/SSL

SenderEmail: Sender email address

SenderName: Plain text for the sender address



3. Stop server: IMPORTANT: note the order!

G Services (Local)	Services (Local)					
	Soft2ModbusReader Stop the service Restant the service	Name Secondary Logon Secure Socket Tunneling Pr Sensor Data Service Sensor Monitoring Service Sensor Service Server Shared PC Account Manager Shared PC Account Manager Schreiter Sch	Description Enables star Provides su The startup Delivers dat Monitors va A service fo Supports fil Manages pr Provides no Manages ac Creates soft Allows the s Receives tra	Status Running Running Running Running	Startup Type Manual Manual Automatic Disabled Manual (Trig Automatic (Tr Disabled Automatic Manual Manual Automatic Automatic Automatic	Log * Loc Loc Loc Loc Loc Loc Loc Loc Loc Loc
		Software Protection Special Administration Con Spot Verifier SSDP Discovery State Repository Service Still Image Acquisition Events <	Enables the Allows adm Verifies pote Discovers n Provides re Launches a	Running	Automatic (D Manual Manual (Trig Disabled Manual Manual	Net Loc Loc Loc Loc

Services -> Soft2ModbusReader -> Stop

Services->Soft2Monitor->Stop

	G 📑 🔟 🗊 🕨 🔲 II ID					
🚱 Dienste (Lokal)	O Dienste (Lokal)	2				
	Soft2Monitor	Name	Beschreibung	Status	Starttyp	Anmel ^
	Den Dienst <u>starten</u>	 Sekundäre Anmeldung Sensordatendienst Sensordienst Sensorüberwachungsdienst Senver Shared PC Account Manager Shellhardwareerkennung Sicherheitskonto-Manager Smartcard Smartcard SnMP-Trap 	Aktiviert das S Liefert Daten v Ein Sensordie Überwacht ver Unterstützt Da Manages profi Zeigt Meldun Durch den Sta Verwaltet den Erstellt Softwa Empfängt Tra	Wird au Wird au Wird au	Manuell Deaktivi Manuell Automa Deaktivi Automa Automa Manuell Deaktivi Manuell	Lokale Lokale Lokale Lokale Lokale Lokale Lokale Lokale Lokale Lokale
		Soft2GrpcServer			Automa	Lokale
		Soft2Monitor			Automa	Lokale
		Software Protection Speicherdienst SSDP-Suche	Aktiviert das Stellt Unterstü Sucht nach N	Wird au	Automa Manuell Deaktivi	Netzw Lokale Lokale
		😪 SSTP-Dienst 🎑 Standardsammlungsdienst 🧟 StateRepository-Dienst	Unterstützt SS Standardsam Bietet die erfo	Wird au	Manuell Manuell Manuell	Lokale Lokale Lokale
		Storage Tiers Management	Optimiert die		Manuell	Lokale ~



Services -> Soft2GrpcServer -> Stop

Services					- 🗆	\times
Eile Action View	Help					
🗢 🔿 📷 📾 🛛	3 🕞 🛛 📷 🛛 🕨 💷 🖬					
Services (Local)	Services (Local)	1				
	Soft2GrpcServer	Name	Description	Status	Startup Type	Log ^
	Stop the service Restart the service	Secondary Logon Secure Socket Tunneling Pr Security Accounts Manager	Enables star Provides su The startup	Running	Manual Manual Automatic	Loc Loc
		Sensor Data Service	Delivers dat Monitors va		Disabled Manual (Trig	Loc
		Sensor Service Server Shared PC Account Manager	A service fo Supports fil Manages pr	Running	Manual (Trig Automatic (T Disabled	Loc Loc Loc
		Shell Hardware Detection	Provides no Manages ac	Running	Automatic Manual (Trig	Loc Loc
		Smart Card Device Enumera Smart Card Removal Policy SNMP Trap	Creates soft Allows the s Receives tra		Disabled Manual Manual	Loc Loc
		Soft2GrpcServer		Running	Automatic	Loc
		Soft2ModbusReader Software Protection Special Administration Con Special Administration Con Soft Verifier Soft Discovery State Repository Service Still Image Acquisition Events	Enables the Allows adm Verifies pote Discovers n Provides re Launches a	Running Running	Automatic Automatic (D Manual Manual (Trig Disabled Manual Manual	Loc Net Loc Loc Loc Loc
	Extended / Standard /	¢				>

4. Start server:

Services -> Soft2GrpcServer -> Start Services -> Soft2Monitor -> Start Services -> Soft2ModbusReader -> Start