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When -

NEWS

How do you Archive Tags and Messages in an SQL Database with WinCC Advanced V15?

WinCC (TIA Portal) Advanced / V15 / SQL Database

https://support.industry.siemens.com/cs/ww/en/view/61886098

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1 Introduction

The entry describes how to use WinCC Runtime Advanced V15 and Microsoft SQL Server 2014 to archive tags and messages in a Microsoft SQL database.

Two configurations are described.

Configuration 1, "Combined Installation" (Config. 1)

There is one PC station (PC Station1) on which both

- the Microsoft SQL server and
- the WinCC Runtime Advanced run.

The data of the WinCC Runtime Advanced is archived in the Microsoft SQL database.

Figure 1-1



Configuration 2, "Separate Installation" (Config. 2)

There is one PC station (PC Station1) on which

• the Microsoft SQL server runs.

There are other PC stations (PC Station2 to "n+1") on which only

• the WinCC Runtime Advanced runs.

The data of each WinCC Runtime Advanced station is archived in the Microsoft SQL database of "**PC-Station1**".

Figure 1-2



1.1 Configuration Notes

Note

When "SQL database" is mentioned in the entry, this always refers to the Microsoft SQL Database.

The Microsoft SQL Database is a component of the Microsoft SQL Server 2014.

The entry includes the principal configuration steps for

- Creating an SQL database
- Archiving tags and messages in an SQL database.
 - Configuration 1:
 - Configuration 2:
- Output of the archived values via a trend display on the Comfort Panel.
- Output of the archived values via an SQL database table.

Note There are numerous parameters and possible settings in an SQL database. The entry can only deal with the settings required for this example.

1.2 Components Used

When WinCC (TIA Portal) V15 is installed, the Microsoft SQL Server 2014 is also installed. You use the "Microsoft SQL Server Management Studio 17" tool to create and configure the SQL database.

Note The "Microsoft SQL Server Management Studio 17" tool is not included in the WinCC (TIA Portal) delivery package. You can download the tool via the Microsoft Support pages (<u>https://support.microsoft.com</u>).

2 Configuration 1: Access to the SQL Server

The SQL server and the WinCC Runtime Advanced are running together on one PC (PC Station1).

2.1 Configure an SQL Database

Requirements

The following components must be installed on the PC.

- WinCC (TIA Portal) V15
- Microsoft SQL Server 2014
- Microsoft SQL Server Management Studio 17

Furthermore you must have administrator rights.

Establish a server connection

Table 2-1	
No.	Description
1.	Open the "Microsoft SQL Server Management Studio 17" tool. Open the program folder under "Windows Start > All Programs > Microsoft SQL Server Tools 17". Start the tool via "Microsoft SQL Server Management Studio 17". "Microsoft SQL Server Management Studio 17" starts. Microsoft SQL Server 2005 Microsoft SQL Server 2008 Microsoft SQL Server 2018 Microsoft SQL Server 2014 Microsoft SQL Server 2015 Microsoft SQL Server Management Studio 17 Performance Tools Studio 17 Back Search programs and files Studio 17
2.	Establish a connection to the server
	 Via the drop-down list box you select the server on which the data is to be stored (1). If multiple servers are installed on the PC, then in the drop-down list box you select the menu "<browse for="" more="">".</browse> Under "Database Engine" you select the following server "Computer Name\WINCCPLUSMIG2014". The server you specify here is also used for configuring the data source (ODBC) (link). Click the "Connect" button.

2 Configuration 1: Access to the SQL Server

No.	Description
	Microsoft SQL Server Management Studio (Administrator) Datei Bearbeiten Ansicht Debuggen Extras Fenster Hilfe Object Explorer ・ リン Compact Explorer ・ リン Compact # 英語 単 第 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	Connect * * * * * * * * * * * * * * * * * * *
3.	View of the established server connection The green arrow icon (1) indicates that the server connection is active. Now you can access databases already created and have the values displayed (2). How to have values displayed in the SQL database is described below (chapter 4, "Read Out/Display the SQL Database Table"). Image: Microsoft SQL Server Management Studio (Administrator) Datei Bearbeiten Ansicht Debuggen Extras Fenster Image: PHI-PC/UNINCCPLUSMIG2014 (SQL Ser Image: System Databases 2 Image: Security Image: Security Image: Security Image: Security Image: Security Imagement Imagement Imagement Imagement Imagement Imagement Imagement Imagement Imagement

Create a new database

Databases (Machine01, Machine02, for example) have already been created in the previous section "Establish a server connection".

In this section we describe how to create a new database. In this case we create a database named "Machine03".

The name you use here is specified as reference when creating the data source (ODBC) (see the following table).

Table 2-2

No.	Description
1.	First you execute Steps 1 to 3 in the "Establish a server connection" section, Table 2-1.
2.	Create a new database
	Right-click the file folder "Databases".
	 The "New Database" window opens. Enter a name in the window under
	"Database name:". The name is used subsequently when creating the data source (ODBC) (link).
	 For the menu item "Owner" and all the other parameters the default values have been accepted.
	Click "OK" to confirm the entries.
	Kicrosoft SQL Server Management Studio (Administrator) Datei Bearbeiten Ansicht Debuggen Extras Fenster Hilfe O・O 問 : 그 - 의 딸 날 을 New Query 過 品 励 요 励 . ※ 한 리 (フィマ・) 図
	Object Explorer → 中 × Connect - Ψ × Ψ = ♥ ♥ B HH-PC/WIN/CCPLUSMIG2014 (SQL Ser B HH-PC/WIN/SQL Ser
	Sys New Database New Database
	II ■ Ma Restore Database Select a page Servit Restore Database Select a page Servit Restore Files and Filenom Constance
	B Server Deploy Data-tier Applicatic Flegroups Database name: Machine 03
	Manag Import Data-tier Applicatio Winer: coeraut> Winer Coeraut> Winer
	Reports Database files:
	Refresh Logical Name File Type Filegroup Initial Size (MB) Autogrowth / Maxisze Machine03 ROWS PRIMARY 5 By 1 MB, Unlimited
	Machine03_I LOG Not Applicable 1 By 10 percent, Unlimited
	Connection Server
	HH-PC\WINCCPLUSMIG2014 Connection:
	ht-PC\hh v₩ Mew connection properties
	Progress
	Ready Add Down
	OK Cancel
3.	View of the newly created database "Machine03".
	This completes the settings at this point.
	In the course of the exercise the tags and messages will be archived in this database
	Microsoft SOL Server Management Studio (Administrated)
	Datei Bearbeiten Ansicht Debuggen Extras Fenster Hilfe
	🕴 O - O 智 - 古 - 🔄 🗎 📽 🗿 New Query 🗿 இ இ இ இ இ) ス 다 お ツ - ペ - 図
	Object Explorer 🗾 👻 🕂 🗶
	Connect → 🛱 🏋 🗮 🍸 🖒 →
	□ 📷 HH-PC\WINCCPLUSMIG2014 (SQL Sen
	B ■ System Databases
	Machine02 Machine03

2.2 Configure the Data Source (ODBC)

An ODBC data source is used for establishing a connection to a Microsoft SQL Server.

The configuration procedure is given below.

Table 2-3

No.	Description
1.	Open the data source (ODBC)
	 Open the Windows Control Panel. Windows Start > Control Panel. Open the "Administration" menu. Open the menu "Data Source (ODBC)" menu. The menu for configuring the ODBC Data Source opens (1).
	Image: Control Panel Image: Control Panel Image: Control Panel Image: Control Panel Adjust your computer's set Image: Computer 's set Image: Computer 's set Image: Computer 's set Image: Control Panel Image: Computer 's set Image: Computer 's set Image: Computer 's set Image: Control Panel Image: Computer 's set Image: Computer 's set Image: Computer 's set Image: Computer 's set Image: Computer 's set Image: Control Panel Image: Color Management Image: Color Management Image: Color Management Image:
2.	Create new user data source
	 In the menu bar you select the "User DSN" tab (1). Click the "Add" button (2). ODBC Data Surver Ce Administrator User DSN System DSN Iver Data Sources: Add Name Driver IdBASE Files Microsoft Access dBASE Driver (*.db) IdBASE Files Microsoft Access dBASE Driver (*.db) Excel-Dateien Microsoft Access Driver (*.db) Incrosoft Access Driver (*.db) Configure Maccess Dataebank Microsoft Access Driver (*.mdb) MS Access Dataebank Microsoft Access Driver (*.mdb) MS Access Dataebank Microsoft Access Driver (*.mdb) MS Access Dataebank Microsoft Access Driver (*.mdb) M ODBC User data source stores information about how to connect to the indicated data provider. A User data source is only visible to you, and can only be used on the current machine. OK Cancel

No.	Description
3.	Select the driver "SQL Server" (1).Click "Finish".
	Create New Data Source Select a driver for which you want to set up a data source. Name Version ODBC Driver 11 for SQL ODBC Driver 13 for SQL SQL Native Client SQL Server 6.01.7601.17514 M SQL Server Native Client 10.0 SQL Server Native Client 10.0 OD 100.4042.00 M
4.	 Name (1): Here you enter the name that you have stored in the PC Runtime configuration in the archives under "Properties > General > Storage location". In this case "Database_ArchiveMessage" (link). Server (2): Via the drop-down list box you select the server that you selected when creating the database server connection. In this case "HH-PC\WINCCPLUSMIG2014" (link). Click the "Next >" button.
	Create a New Data Source to SQL Server This wizard will help you create an ODBC data source that you can use to connect to SQL Server. What name do you want to use to refer to the data source? Name: Database_ArchiveMessage How do you want to describe the data source? Description: Which SQL Server do you want to connect to? Server: HH-PC\WINCCPLUSMIG2014

No.	Description
5.	 "Windows NT authentication" (1) is used in this example. If you select "SQL Server authentication" (2), you can specify the required Login ID and Password in the bottom part of the window (3). You must have stored the data previously under "Security" in the SQL database. Enable the "Connect to" check box (4). Click the "Next >" button.
	 When you click the "Next >" button, the data source attempts to establish a connection to the SQL server. If this does not work, you get an error message. In this case you should check: That the SQL server has started. The server name. The security settings of the SQL database. The user rights of the SQL database.
	Create a New 1 purce to SQL Server Image: Comparison of the structure of the login ID? Image: Comparison of the login ID?

No.	Description
6.	 When the SQL server connection has been established, the following window is displayed. Enable the "Change the default database to:" option (1). Via the drop-down list box you select the database to be referred to (2). See the entries here that you stored when creating the SQL server connection. In this case "Machine03" (link). The values of the WinCC Runtime Advanced are archived in this SQL database. In the screen you enable the two options displayed (3). Click the "Next >" button.
7.	 You select the option (1) as shown in the figure. Click the "Finish" button. Create a New Data Source to SQL Server Change the language of SQL Server system messages to: Implish <l< th=""></l<>



Now you can start the WinCC Runtime Advanced. Information about configuring the WinCC Runtime Advanced is available in chapter <u>5</u>, <u>WinCC (TIA Portal)</u>.

3 Configuration 2: Access to the SQL Server

The SQL server runs on its own PC (PC Station1).

The WinCC Runtime Advanced runs on separate PCs

(PC Station2 to "n+1") and accesses the data of the SQL database remotely.

The data of each WinCC Runtime Advanced station is archived in the Microsoft SQL database of "PC Station1".

In order for the PC stations to be able to access the SQL server of "PC Station1" with the WinCC Runtime Advanced, on the "PC Station1" settings have to be made both

- in the Windows user administration and in the user administration of the SQL server, and
- in the Windows firewall.
 (Otherwise the firewall would block the incoming connection).

3.1 Configure an SQL Database

Establish a server connection

Table 3-1

No.		Description
1.	The configuration corre <u>Database</u> ". In this case the name c "Name of the PC Static	bonds to the settings in section <u>2.1</u> " <u>Configure an SQL</u> the server is: 1\WINCCPLUSMIG2014".
	Other settings	
	to this server" optio - Right-click the S - Under "Select a In the "Remote s connections to t	is enabled. L server and open the Properties. A window opens. age" you mark the item "Connections" (1). rrver connections" section you enable the "Allow remote s server" option (2).
	File Edit View Debug Tools Wi Object Explorer Connect - * * * • • • • • • • • • • • • • • • •	w Heip Server Properties - PC-STATIO Select a page General General Memory Server: reg Monitor Connection Server: PCSTATION1WINCCPLUSMIG2 Connection Pogress Progress Progress @ Configured values @ Configured values

3.2 SQL Database User Data Management

The settings are to be made on the PC on which the SQL server is installed. In this example the settings are made in the "PC Station1".

3.2.1 General Information

In the later configuration of the data source (ODBC) you can choose whether the SQL server authentication is to be made

- Via the Windows login (1) or
- Via the user administration of the SQL server (2).

The FAQ response describes the "Windows authentication".

Figure 3-1	
Create a New Sour	ce to SQL Server
2	How should SQL Server verify the authenticity of the login ID? With Windows NT authentication using the network login ID. With SQL Server authentication using a login ID and password retered by the user. To change the network library used to communicate with SQL Server, click Client Configuration.
	Client Configuration
	Connect to SQL Server to obtain default settings for the additional configuration options.
	Login ID: hh
	Password:
	< Back Next > Cancel Help

Authentication via the Windows login

When authenticating via the Windows login the login data for the SQL server must match the login data of the PC on which the WinCC Runtime Advanced is running. Example:

You login as follows on the PC Station2 with the WinCC Runtime Advanced.

User name: "User 1" Password: "100"

In the "PC Station1" you must also create a user in the Window user administration with the name "User 1" and the password "100".

How to assign the user to the SQL database is described in the course of this documentation (link).

3.2.2 Authentication via the Windows Login

Notes

- You must be logged in as administrator on the "PC Station1".
- The SQL database provides numerous settings for access protection etc. At this point one possible method of access protection is presented in an example.

Table 3-2

No.	Desc	cription
1.	PC Station1, create Windows user In the "PC Station1" you create a Windo name and password as the user on the Runtime Advanced is running. In this example: User: hh => Nickname, (User1) Password: 100	ows user. The user must have the same "PC Station2" on which the WinCC
	Note: The user must not be assigned to any so (Create new user under Windows 10). Computer Management File Action View Help Computer Management (Local System Tools Computer Management (Local System Tools Computer Management (Local Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Shared Folders Computer Management Storage Device Manager Storage Storage Storage Services and Applications	Special group.
2.	Note on the created user You do not have to be logged in on the to operate the SQL database.	PC Station1 with the new "User1" in order

	Descri	ption	
PC Station1, SQL da	atabase, assign Wir	ndows user	
 In the SQL datable In the pop-up m page opens. 	base you right-click the number of the tight of the tight opens you set the tight opens you set the tight opens	ne "Security" folder. select "New Login…".	The "Login - New"
Object Explorer Connect ~ ¥ ×¥ = Y C Connect ~ Y × 1 = Y C Machine01 Connect ~ Y × 1 = Y C Machine02 Machine03 Connect ~ Y × 1 = Y C Machine03 Connect ~ Y × 1 = Y C Machine03 Connect ~ Y × 1 = Y C Machine03 Connect ~ Y × 1 = Y C Security Security Security N1 Report N1 N1 <	A LUSMIG2014 (SQL Server 1 LUSMIG2014 (SQL Server 1 In## PowerShell orts SMIG2C ssh Vinmgmt 0\Administrator - New" page		
Select the "Gene	eral" page (1).		
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV1 Select the "User 	button "Windows au n" button (3). r or Group" window c rou call the previousl 15WIN10\hh). Mapping" page (4).	thentication" (2). opens. y created new Windo	ws user. In this
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV1 Select the "User 	button "Windows au n" button (3). r or Group" window c vou call the previousl 15WIN10\hh). Mapping" page (4).	thentication" (2). opens. y created new Windo	ws user. In this $- \Box \times$
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV1 Select the "User Login - New Select a page General Server Roles User Mapping Securables Status 	button "Windows au h" button (3). r or Group" window of you call the previousl 15WIN10\hh). Mapping" page (4). Source of Here Source of Here Sour	thentication" (2). ppens. y created new Windo	ws user. In this
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV1 Select the "User Login - New 1 Select a page 4 General Server Roles User Mapping Securables Status 	button "Windows au h" button (3). r or Group" window of rou call the previousl 15WIN10\hh). Mapping" page (4). Script Het Cogin name Windows authentication SQL Server authentication Password: Mapped to certificate Mapped to asymmetric key	thentication" (2). ppens. y created new Windo	ws user. In this
Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV' Select the "User Login - New Select the "User User Mapping Securables Status Connection Server: TIAPV15WIN10\Administrator Yf Mew connection properties	button "Windows au h" button (3). r or Group" window of rou call the previous 15WIN10\hh). Mapping" page (4). Source of the previous 15WIN10\hh). Source of the previous 15WIN10\hh Source of	thentication" (2). ppens. y created new Windo TIAPV15WIN10\hh Credential Provider	ws user. In this
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV' Select the "User Login - New 1 Select a page 4 General Server Roles Server Roles Status Connection Server: TIAPV15WIN10VWINCCPLUSMIG Connection: TIAPV15WIN10VAdministrator View connection properties Progress	button "Windows au h" button (3). r or Group" window of you call the previousl 15WIN10\hh). Mapping" page (4). Script Page (4). Mapping" page (4). Mapping" page (4). Mapping" page (4). Mapped to certificate Mapped to certificate Mapped to certificate Mapped Credential Mapped Credentials	thentication" (2). ppens. y created new Windo TIAPV15WIN10Vhh Credential Provider	ws user. In this
 Enable the radio Click the "Search The "Select User Via the window y case "hh" (TIAV' Select the "User Login - New Select a page General General General Securables Status Connection Server: TIAPV15WIN10\WINCCPLUSMIG Connection: TIAPV15WIN10\VINCCPLUSMIG Connection: TIAPV15WIN10\VINCCPLUSMIG Progress Ready	button "Windows au h" button (3). r or Group" window of you call the previousl 15WIN10\hh). Mapping" page (4). Script • • • Het Login name • Windows authentication • SQL Server authentication • SQL Server authentication • Assword: • Mapped to certificate • Mapped to asymmetric key • Mapped to asymmetric key • Mapped Credential Mapped Credentials Default database: Default database: Default database:	thentication" (2). ppens. y created new Windo TIAPV15WIN10\h Credential Rester cdefault>	ws user. In this

No.	Description			
5.	 "User Mapping" page Here you define the database which the user "hh" is permitted to access The final assignment is made in the settings of the data source ODBC ([Select the "Server Roles" page (1). 			
	Login - New			
	Machine01 TIAPV15WIN10\hh Machine02 TIAPV15WIN10\hh Machine03 TIAPV15WIN10\hh master			
	Connection Guest account enabled for: Machine03 Server: Database role membership for: Machine03 Connection: Database role membership for: Machine03 Connection: db_accessadmin TIAPV15VWIN10\Administrator db_backupoperator db_datareader db_datareader db_datawriter db_datawriter db_datawriter OK			
6.	 "Server Roles" page Activate the option boxes "sysadmin" and "public". Click "OK" to confirm the settings. 			
	Login Properties - TIAPV15WIN10\hh - X			
	General Script General Script Server Roles Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user. Server role is used to grant server-wide security privileges to a user.			
		_		
	OK Cancel			
7.	This completes the user settings for Windows authentication. The user "hh" has been assigned automatically to all the databases selected on the "User Mapping" page. If required, you can make further settings under "Name of the database > Security > Users".			

3.3 Windows Firewall Settings

The settings are to be made on the PC on which the SQL server is running. In this example on the "**PC Station1**".

Table 3-3	i					
No.		Description				
1.	Enable the firewall					
	 Call the Windows Firewall via "Windows Start > Control Panel > Windows Firewall". Click the text "Turn Windows Firewall on or off" (1). Another window opens. 					
	 Click the "Turn on Windows Firewall" radio button. Acknowledge th with "OK". You return this view. Note: The graph ison indicates that the firewall is turned on (2) 					
			×			
	← → ✓ ↑ 🔗 > Control Pan	el > All Control Panel Items > Windows Firewall	✓ ♂ Search Control Panel Ø			
	File Edit View Tools Help					
	Control Panel Home	Help protect your PC with Windows Fire	wall			
	Allow an app or feature through Windows Fire	Windows Firew 2 help prevent hackers or malicion	ous software from gaining access to your PC through the			
	Change notification settings	Private networks	Not connected $\overline{ ext{ }}$			
	Turn Windows Firewall on or off	Guest or public networks	Connected 🔗			
	Kestore deraults Advanced settings	Networks in public places such as airports or coffee	shops			
	Troubleshoot my network	Windows Firewall state:	On			
		Incoming connections:	Block all connections to apps that are not on the list of allowed apps			
	See also	Active public networks:	Hetwork 3			
	Security and Maintenance Network and Sharing Center	Notification state:	Notify me when Windows Firewall blocks a new app			
2.	Add firewall rule		I			
	 You have to add a firewall rule to ensure that the incoming connection of the Station2" is not blocked by the Windows Firewall of the "PC Station1". No rurequired if the Windows Firewall is turned off. First open the Windows Firewall again. Click the text "Advanced Settings". The following screen is displayed. Click "Inbound Rules" (1). A new window opens. 					
	Windows Firewall with Advanced S File Action View Help	iecurity	- □ ×			
	Windows Firewall with Conner Windows Firewall with Conner Windows Windows Connection Security Rules	Findows Firewall with Advanced Security on Local Co Image: Windows Firewall with Advanced Security provides n Overview Domain Profile Image: Windows Firewall is on. Opened provides in the do not match a nile are block	Actions etwork s Windows Firewall with Advanced Secu ▲ etwork s Import Policy Export Policy Export Policy Restore Default Policy Diagnose / Repair View View			
		Outbound connections that do not match a rule are all	owed.			
	·		·			

No.	Description		
3.	 In this window you click "New Rule" (2). The "New Inbound Rule Wizard" window opens. The program file of the SQL server is called via the wizard. This measure ensures that incoming queries to the SQL server are no longer blocked by the Windows Firewall. 		
4.	Windows Firewall with Advanced Security File Action View Help Windows Firewall with Advanced Inbound Rules 2 Windows Firewall with Advanced Eiters Firefox (C:\Program Files\Mozilla Firefox) 2 Windows Firewall with Advanced Eiters OPC UA Local Discovery Server 7 OPC UA Local Discovery Server OPC UPC Bonjour Serice 9 OPC UPC Bonjour Serice 0 9 Windows OfficeScan Listener View 1		
	 In the first screen you select the "Program" radio button (1). Then click the "Next >" button. In the second screen you select the "This program path:" radio button and then click "Browse" (2). 		
	Action Program Rule that controls connections for a pro Prodefined: Alloyn Router Rule that controls connections for a TC Predefined: Alloyn Router Rule that controls connections for a TC Predefined: Alloyn Router Rule that controls connections for a TC Predefined: Alloyn Router Rule that controls connections for a TC Program Custom Custom Next Next Program Action Profile Name This program path: Example: Cinpath/program.exe %/Program Rule Stylen: Cinpath/program.exe %/Program Stylen: Cinpath/program.exe %/Program %/Program		

No.		De	scription		
5.	 Navigate to and select the correct important if there is ame PC (see in Click the "Open" Then click the "I Tip: 	mark the program t file for the SQL e are different ver nformation under ' button. Next >" button.	n file "sqlservr. database bein sions of the S("Tip").	exe". Make sure g used. This is j QL server install	e that you particularly led on the
	"sqlserver.exe" on di If you have installed	rive "C". multiple SQL server bein	vers, then mak	e sure you use	ra the file
	Popen		y useu.		×
		ogram Files (x86)\Microso	ft SQL Server\MSSQL1	2.WINCCPLUSMIG2014	\MSSQL\Binn
	Organize 🔻 New folde	er			
	Common Fi ^	Name	Date modified	Туре	Size
	Internet Exp	DIITmp22	27 12 2017 11-50	File folder	
	Microsoft A	Besources	27.12.2017 11:50	File folder	
	Microsoft H	Templates	27.12.2017 11:37	File folder	
	Microsoft SI	BackupToUrl.exe	18.06.2016 02:44	Application	40 KB
	Microsoft S	📧 DatabaseMail.exe	21.02.2014 06:17	Application	30 KB
	80	DCEXEC.EXE	21.02.2014 06:18	Application	73 KB
	90	SQLAGENT.EXE	03.07.2017 12:14	Application	445 KB
	100	SQLIOSIM.EXE	21.02.2014 06:17	Application	1.966 KB
	110	sqlmaint.exe	21.02.2014 06:17	Application	94 KB
	120	sqiservr.exe	21.02.2017 12:14	Application	190 KB
	140	xpadsi.exe	21.02.2014 06:28	Application	64 KB
	 File na	ame: sqlservr.exe		✓ Programs (*.ex	e) ~
				Open	Cancel
ο.	 In the following screens the displayed default settings have been used. In the last screen you specify a name and close the wizard via the "Finish" button. This completes the settings for the Windows Firewall. 				
	Steps:				
	Rule Type What action should be taken Program	when a connection matches the specified o	onditions?		
	Action Allow the connection This includes connection	s that are protected with IPsec as well as tho	se are not.		
	Profile Name Name This incl	ound Rule Wizard			
	will be st Rule not Specify the pro	files for which this rule applies.	New Inbound Rule Wizard		
	Custon Steps:	Nar	ne		
	Block t 💩 Rule Type	When does this rule apply?			-
	Action Action Profile Name	Domain Applies when a compute Private Applies when a compute or work place. Public Applies when a compute	le Type ogram tion offie ame		
	Destantile DO		< Back	Finish Cancel	
1.	Kestart the PC or log	g out and log in ag	gain.		

3.4 Configure (Remote) the Data Source (ODBC)

An ODBC data source is used for establishing a connection to a Microsoft SQL Server.

The ODBC data source is configured on the PC on which the RT Advanced is running/installed.

The configuration procedure is given below.

Note If you cannot establish a connection to the remote server, this might be due to the firewall of the operating system. For testing or during commissioning you can try to turn off the firewall where the SQL database is installed. Bear in mind in this case that you might run the risk of allowing access to unauthorized users.

Table 3	3-4
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No.	Description			
1.	The configuration corresponds to the settings in section <u>2.2</u> " <u>Configure the Data</u> <u>Source (ODBC)</u> ".			
	The only difference is in table item No. 4.			
	For the menu item "Server" you now do not select the local server but the server to which you want to have remote access and on which the SQL database is installed.			
	Server:			
	 Via the drop-down list box you select the remote server that you selected when creating the database server connection. In this case "PC Station1\WINCCPLUSMIG2014" (link). 			
	Click the "Next >" button.			
	Microsoft SQL Server DSN Configuration			
	This wizard will help you create an ODBC data source that you can use to connect to SQL Server.			
	What name do you want to use to refer to the data source?			
	Name: Database_ArchiveMessage			
	How do you want to describe the data source?			
	Description:			
	Which SQL Server do you want to connect to?			
	Server: PC-STATION1\WINCCPLUSMIG2014			
	Finish Next > Cancel Help			

4 Read Out/Display the SQL Database Table

The archived tag values of the HMI Runtime Advanced are stored in the assigned database. Proceed as follows to output the archived values via the tool "Microsoft SQL Server Management Studio 17".

Table 4-1

No.	Description		
1.	 First perform the steps 1 to 3 as in section <u>2.1</u> "<u>Configure an SQL Databas</u> Select the database whose values you want to have displayed and open the folder tree. Open the "Tables" file folder. The archive files are displayed in the folder. => dbo.Archivename 		
	In our example these are "dbo.Alarm_log_10" and "dbo.Speed_Monitoring0". Note: The "0" in the file name is generated by the system. Microsoft SQL Server Management Studio (Administrator) Date Bearbeiten Ansicht Debuggen Extras Fenster Hilfe		
	Object Explorer Image: Amage: Ama		





5 WinCC (TIA Portal)

5.1 Archive Configuration

You configure the archives in the usual manner. The only difference is in the specification of the storage location and the data source. Table 5-1

No.	Description		
1.	You call the archive via the project tree and open the Properties. In this example: "Speed_Monitoring".		
1. 2.	You call the archive via the project tree and open the Properties. In this example: "Speed_Monitoring". Define the storage location • You define the storage location in the menu "Properties > General". Select the "Database" menu from the drop-down list box (1). • Enter the name of the data source (2). This name is used to address the ODBC database with the archived tag names (link). Data logs • Name ▲ Storage location Data records per log Fai Name of data source Logging method Number of sequent • Speed_Monitoring Database ▼ 10000 ● C Database_ArchiveMessage Circular log ▼ 10 • Add new> • C Logging tags • Name ▲ Process tag Acquisition mode Logging cycle High limit • Sample_Speed_1 Sample_Speed_1 On change • Sample_Speed_3 Sample_Speed_3 On change • Add new> • C Monitoring [Data_log] • Properties Events Texts		
-	General Storage location Logging method Speed_Monitoring Restart behavior Storage location: Comment Data records per log Number: 10000		
3.	I his completes the Special Settings for archiving in the SQL database. If you are using other archives, you can use the same data source name.		

5.2 Operation of the Sample Application

The sample application is for testing the tag archiving and message archiving. Table 5-2

No.	Description	
1.	"Theme A" page	
	The "SimulateTag" function is used to assign speed values to the three motors displayed. The simulated values are archived in an SQL database. You call the page with a trend archive via the ">>" button (1). The speed values archived in the database are read out via the trend archive. Via the icon (2) you call the system page to terminate the Runtime.	
	2/5/2018 4:53 PM Siemens Industry Online Support	
	With tags in a SQL Database Overview Theme A Theme B No No <	1
2.	"Theme B" page	
	You use the buttons to simulate fault messages. The simulated messages are archived in an SQL database.	
	2/5/2018 4:56 PM Siemens Industry Online Support	
	Image: Control Description Control Description Control Contro Control Control </th <th></th>	
	Simulate fault messages: P3 F2 F3 F3 F6 F7 F8	