## Microsoft SQL Server Express 2017 Installation

This document just gives a short overview about the recent steps of a manual SQL Server Express installation. Please check the Microsoft pages for more detailed descriptions, if you want to do an advanced installation.

Please regard that, especially in a company network environment, there are various security issues that can occur during or after the installation, which can cause problems running the SQL Server instance or connecting to it from a user workstation. So, installations to a company server can only be done by the house internal IT, as detailed and confidential knowledge about the network are required!

During setup, there will be a warning if a running firewall is detected, because it might cause problems during installation. That depends a lot on the firewall configuration, so please discuss with your IT department how to proceed with this.

- 1. For starting the installation, use the option "Run as administrator" for the setup file.
- 2. Start a new SQL Server installation.



3. Next dialog: Accept license terms and hit <Next>.

- 4. Next dialog: If you enable the update check, the installation takes more time, as update packages get downloaded.
- 5. Next dialog: The installer recommends to disable firewalls for the installation process and shows a warning if a running firewall is detected.

📸 SQL Server 2017 Setup			_		×
Install Rules Setup rules identify potential p	roblems that might occur while running Setup. Failures must be correct	ed before Setu	ıp		
can continue.					
License Terms	Operation completed. Passed: 3. Failed 0. Warning 1. Skipped 0.				
Global Rules					
Microsoft Update					
Product Updates	Hide details <<			<u>K</u> e-r	un
Install Setup Files	View detailed report				
Install Kules	Rule	Status			
Feature Rules	Second Active Template Library (ATL)	Passed			
Instance Configuration	Consistency validation for SQL Server registry keys	Passed			
Server Configuration	Computer domain controller	Passed			
Database Engine Configuration	Windows Firewall	Warning			
Feature Configuration Rules		<u></u>			
Installation Progress					
Complete					
	-0.1	N		<u> </u>	
	< <u>B</u> ack	Nex		Cancel	

If you continue with a running firewall, that might be a reason for problems during installation.

- 6. Next dialog: Only change the feature selection if required.
- 7. Next dialog: Choose a name for the SQL Server instance. That name is required in the Helios 3D login dialog.

The default name would be SQLExpress as in the below screenshot. If that name is already used, our alternative would be SQLHELIOS3D.

髋 SQL Server 2017 Setup					_		×
Instance Configuration Specify the name and instance	ID for the instance of S	QL Server, Instance II	) becomes part of th	ne installation path.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules <b>Instance Configuration</b> Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress Complete	○ <u>D</u> efault instance N <u>a</u> med instance:	SQLExpress					
	Instance <u>I</u> D:	SQLEXPRESS					
	SQL Server directory: Installed instances:	C:\Program Files\M	licrosoft SQL Server∖	MSSQL14.SQLEXPRESS			
	Instance Name	Instance ID	Features	Edition	Ve	rsion	
				< <u>B</u> ack <u>N</u> ext :	>	Cance	1

## 8. Next dialog: "Server Configuration"

This step contains the "Collation" settings on the 2<sup>nd</sup> tab. The collation should be exactly matching the setting of other SQL Servers in your company that might be related to Helios, e.g. additional Helios installations with independent SQL Server instances. Moving a database between servers for example requires the collation to match!

The below screenshot shows how to customize the collation setting at the example of a common collation type for Germany. **The defaults most likely are different for any other country!** 



The default collations have apparently changed in Microsoft SQL Server Express 2017, so if the default list doesn't contain the required collation, please choose "Windows collation designator and sort order" and set the correct collation.

Customize the SQL Server 2017 Databas	e Engine Collation				
Select the collation you would like to	use:				
O Windows collation designator and	sort order				
Collation <u>d</u> esignator:	Albanian ~				
	——————————————————————————————————————				
Choose, if the blelow	list doesn't contai	n the required entry	/.		
<u>A</u> ccent-sensitive	Wid <u>t</u> h-sensitive				
Supplementary characters	<u>Variation selector-sensitiv</u>	e			
SQL collation, used for backwards	compatibility				
SQL_Latin1_General_CP1257_CS_AS SQL_Latin1_General_CP437_BIN SQL_Latin1_General_CP437_BIN2 SQL_Latin1_General_CP437_CI_AI	default collations			^	
SQL_Latin1_General_CP437_CI_AS				~	
Collation description:		•			
Latin1-General, case-insensitive, accent-sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL Server Sort Order 32 on Code Page 437 for non-Unicode Data					
			OK Cano	:el	

If you want to ensure the compatibility with other SQL Servers, please check their collation setting and configure it likewise. The below example shows a collation that has been used in Germany.

Customize the SQL Server 2017 Data	base Engine Collation	
Select the collation you would like	to use: Example for an earlier German default	
Collation <u>d</u> esignator:	Latin1_General	~
Binary	Binary-code point	
<u>C</u> ase-sensitive	<u>K</u> ana-sensitive	
✓ Accent-sensitive	☐ Wid <u>t</u> h-sensitive	
Supplementary characters	<u> </u> <u></u>	
O <u>SQL</u> collation, used for backwar	rds compatibility	
SQL_Latin1_General_CP1257_CS_A SQL_Latin1_General_CP437_BIN	S	^
SQL_Latin1_General_CP437_BIN2 SOL_Latin1_General_CP437_CI_AI		
SQL_Latin1_General_CP437_CLAS		~
Collation description:		
Latin1-General, case-insensitive, a Order 32 on Code Page 437 for no	rccent-sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL Server Som n-Unicode Data	t.
	OK Can	cel

After saving the collation by hitting <OK>, you will see the final name. Compare that name carefully with the collation name you need to set, as any difference might cause serious compatibility issues.

📸 SQL Server 2017 Setup	- 🗆 X
Server Configuration	
Specify the service accounts and	d collation configuration.
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress Complete	Service Accounts   Collation     Database Engine:
	< <u>B</u> ack <u>N</u> ext > Cancel

9. Next dialog: In the "Database Engine Configuration" enable the "Mixed Mode", so the 'sa' account gets enabled for administration. The local Helios 3D installation procedure uses the password "Helios-3D!" for the 'sa' user. If your password policy is stricter than that, you might need a longer password (e.g. just double it).

髋 SQL Server 2017 Setup				_		×
Database Engine Confi	guration					
Specify Database Engine auther	ntication security mode, a	administrators, data directori	es and TempDB settings			
License Terms Global Rules	Server Configuration	Data Directories TempDB	User Instances FILEST	REAM		
Microsoft Update	Specify the authenti	cation mode and administrat	tors for the Database Eng	gine.		
Product Updates	Authentication Mod	le				_
Install Setup Files	O Windows authen	tication mode			1	
Feature Selection	<u>Mixed Mode (SQL Server authentication and Windows authentication)</u> enables the 'sa'					
Feature Rules	Specify the password for the SQL Server system administrator (sa) account.					
Instance Configuration	Enter password:	•••••				
Database Engine Configuration	C <u>o</u> nfirm password:	•••••				
Feature Configuration Rules	Specify SQL Server a	dministrators				_
Installation Progress	DESKTOP-PO4HEP9	\sus (sus)		SQL Server	administrate	ors
Complete				to the Data	ncted acces base Engine	s
	Add Committle	Add				
	Add <u>C</u> urrent User	<u>A</u> dd <u>K</u> emove				
			< <u>B</u> ack	<u>N</u> ext >	Cance	el

Please note down the set password, as there is no way for us to assist you with SQL Server related problems, if the password is lost!

10. Next dialog: The installation should complete without errors.

🃸 SQL Server 2017 Setup			-		$\times$
Complete Your SQL Server 2017 installati	on completed successfully with product upda	stes.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress <b>Complete</b>	Information about the Setup operation or	possible next steps:			
	Feature     Database Engine Services     SQL Server Replication     SQL Browser     SQL Writer     SQL Client Connectivity     SQL Client Connectivity SDK     Setup Support Files	Status Succeeded Succeeded Succeeded Succeeded Succeeded Succeeded			
	Summary log file has been saved to the fol <u>C:\Program Files\Microsoft SQL Server\144</u> <u>PO4HEP9 20191017 010654.bt</u>	lowing location: 0\Setup Bootstrap\Log\20191017_010654	I\Summar	<u>y DESKT(</u>	<u>DP-</u>
				Close	•

11. Go to the Computer Management and check if the installed SQL Server is running properly, before you try to use it. The below screenshot shows the default SQL Server name (SQLEXPRESS).



The SQL Server Browser is only required for showing the server name on the network.

12. If the SQL Server should be accessible though the network, the network services must be enabled. Additionally, the SQL Server Browser should be set to "running" in the previous step.



After this procedure, the SQL Server should run properly and the Helios 3D login dialog should find it, when the user refreshes the selection boxes. As we point out at the beginning of this document, especially user rights and other security related rules can cause connection problems in a network environment.

The network ports 1433 (TCP) and 1434 (UDP) are essential for reaching a network server and must not get blocked by any firewall. If there are different firewalls used in the network and on a local machine, both firewalls might being configured!