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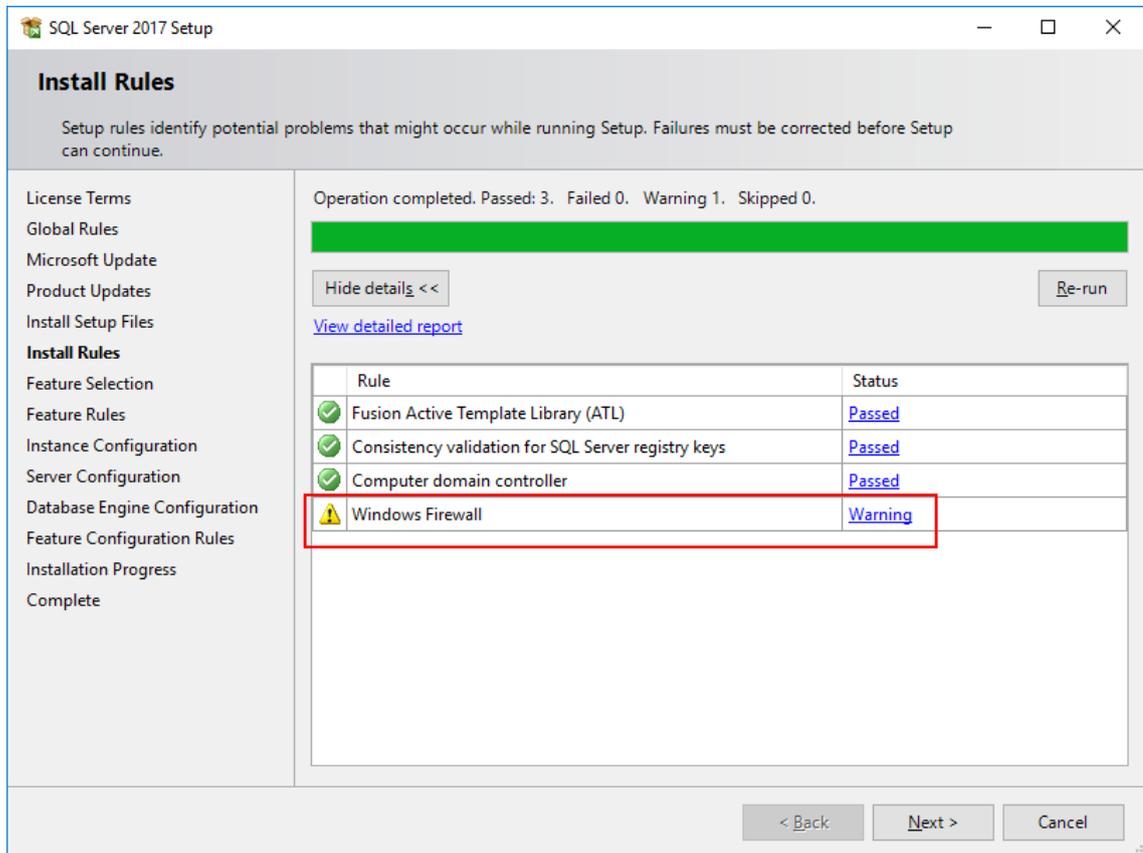
If you continue with a running firewall, that might be a reason for problems during installation.

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.

8. Next dialog: "Server Configuration"
   This step contains the "Collation" settings on the 2nd 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!
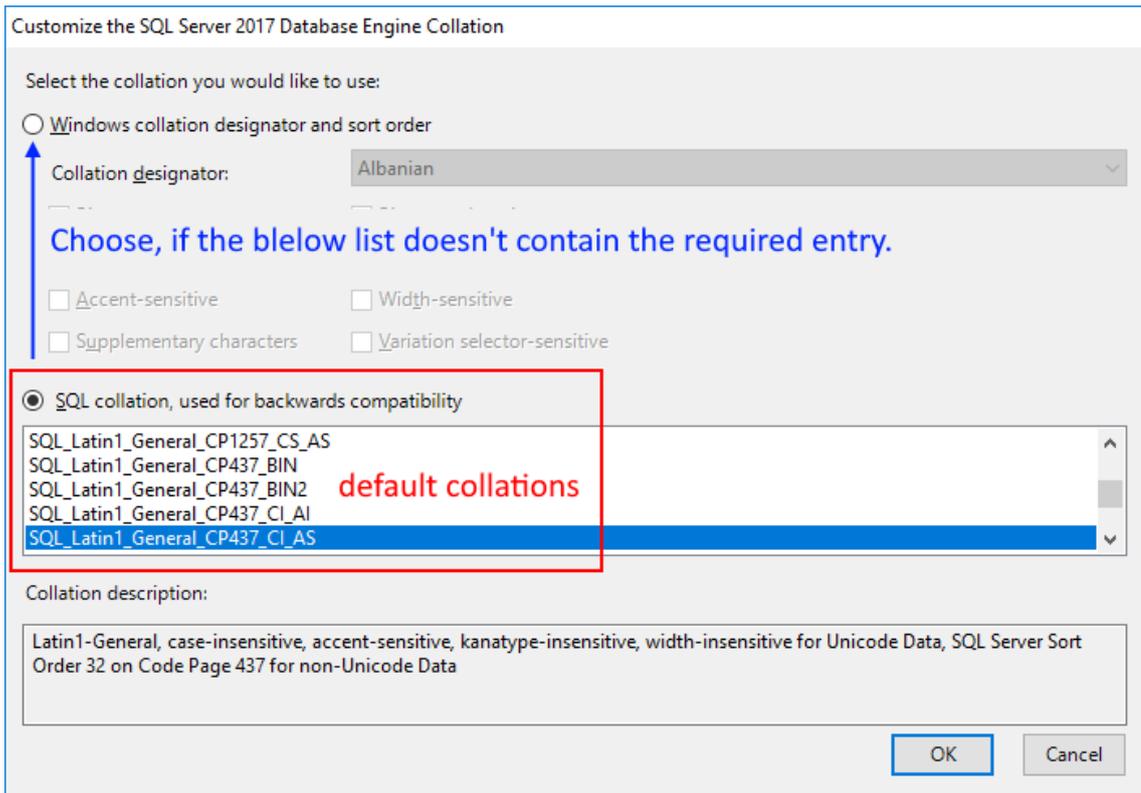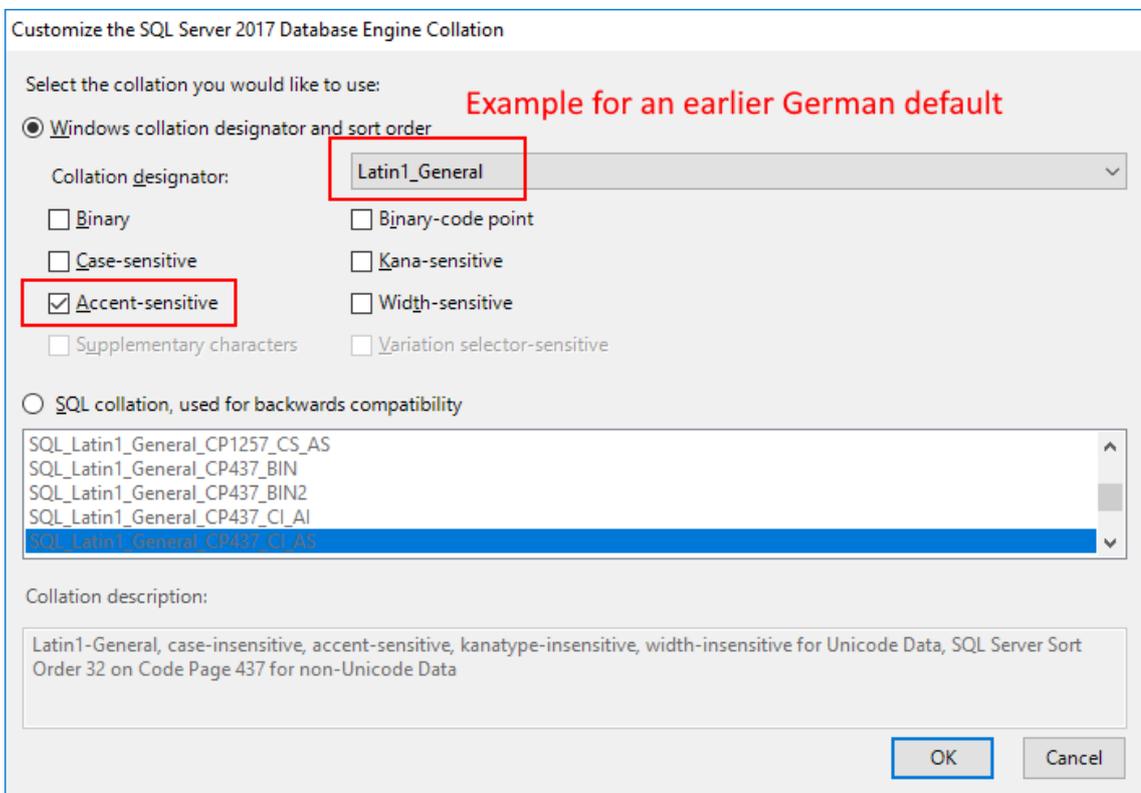   The below screenshot shows how to customize the collation setting at the example of a common collation type for Germany. **The defaults most likely are different for any other country!**
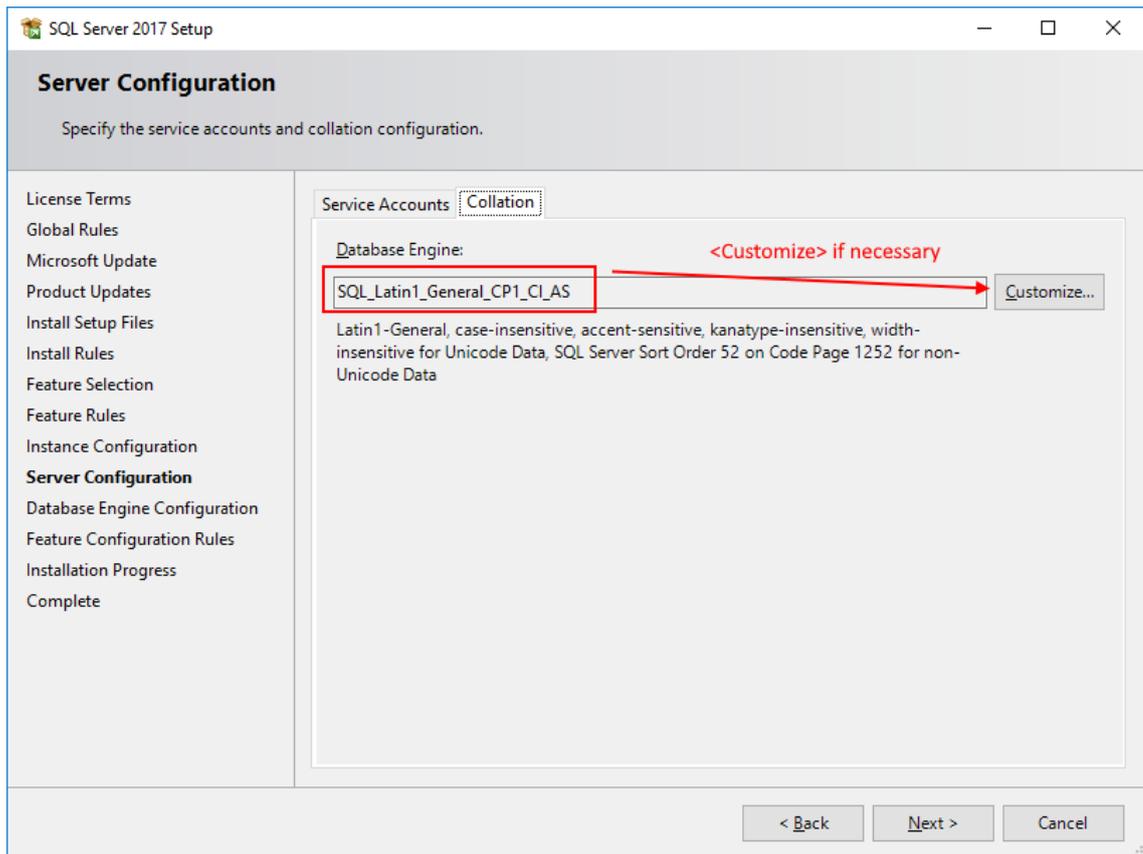

The default collations have apparently changed in Microsoft SQL Server Express 2017, so if the default list doesn't contain the required collation, please choose "Windows collation designator and sort order" and set the correct collation.

Customize the SQL Server 2017 Database Engine Collation

Select the collation you would like to use:

○ Windows collation designator and sort order

Collation designator: Albanian

Choose, if the blelow list doesn't contain the required entry.

☐ Accent-sensitive   ☐ Width-sensitive
☐ Supplementary characters   ☐ Variation selector-sensitive

◉ SQL collation, used for backwards compatibility

SQL_Latin1_General_CP1257_CS_AS
SQL_Latin1_General_CP437_BIN
SQL_Latin1_General_CP437_BIN2   **default collations**
SQL_Latin1_General_CP437_CI_AI
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   Cancel

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 Database Engine Collation

Select the collation you would like to use: **Example for an earlier German default**

◉ Windows collation designator and sort order

Collation designator: Latin1_General

☐ Binary   ☐ Binary-code point
☐ Case-sensitive   ☐ Kana-sensitive
☑ Accent-sensitive   ☐ Width-sensitive
☐ Supplementary characters   ☐ Variation selector-sensitive

○ 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
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   Cancel

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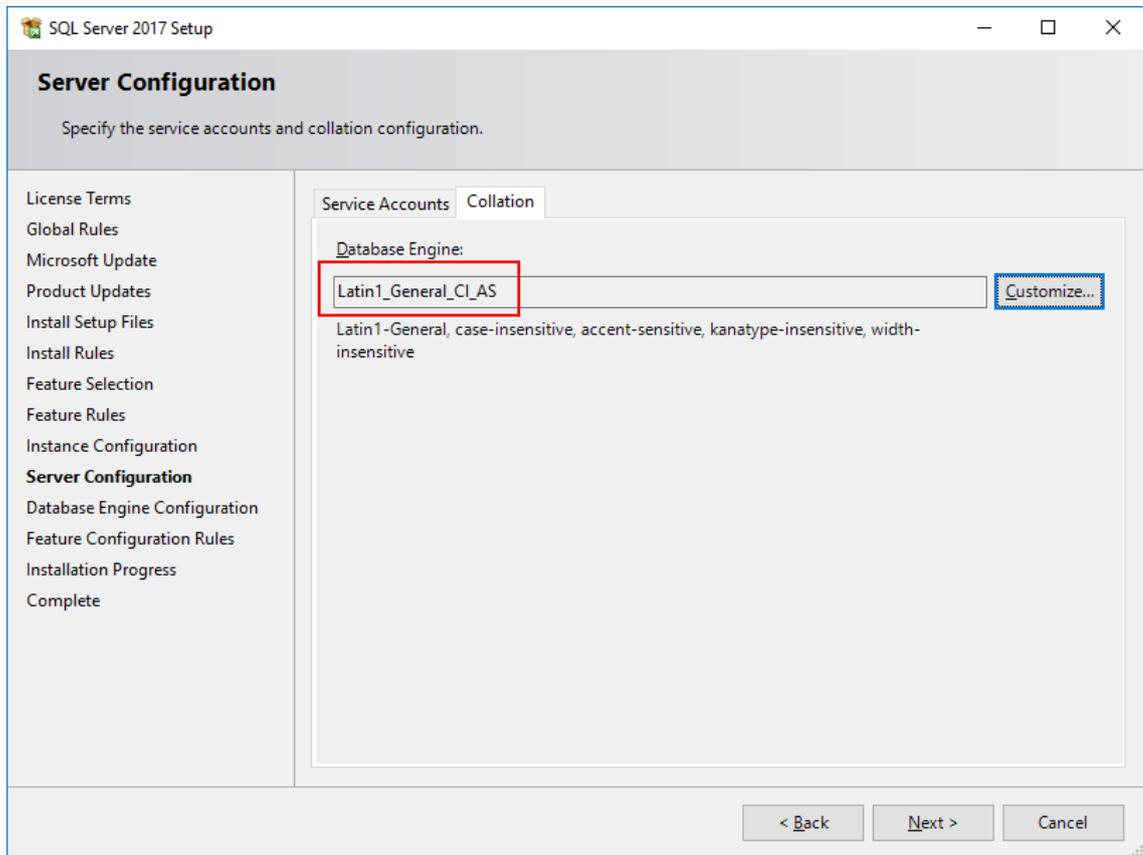
9. Next dialog: In the "Database Engine Configuration" enable the "Mixed Mode", so the 'sa' account gets enabled for administration. The local Helios 3D installation procedure uses the password "Helios-3D!" for the 'sa' user. If your password policy is stricter than that, you might need a longer password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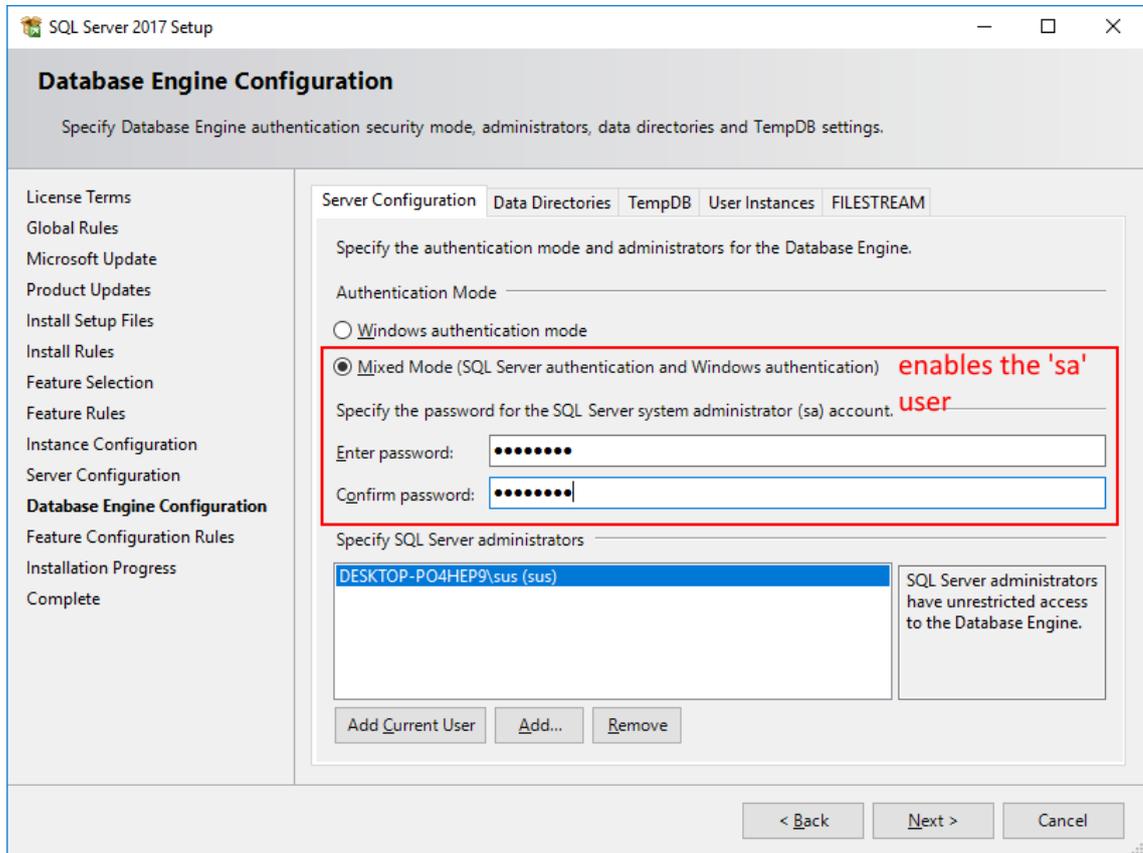

Please note down the set password, as there is no way for us to assist you with SQL Server related problems, if the password is lost!

10. Next dialog: The installation should complete without errors.
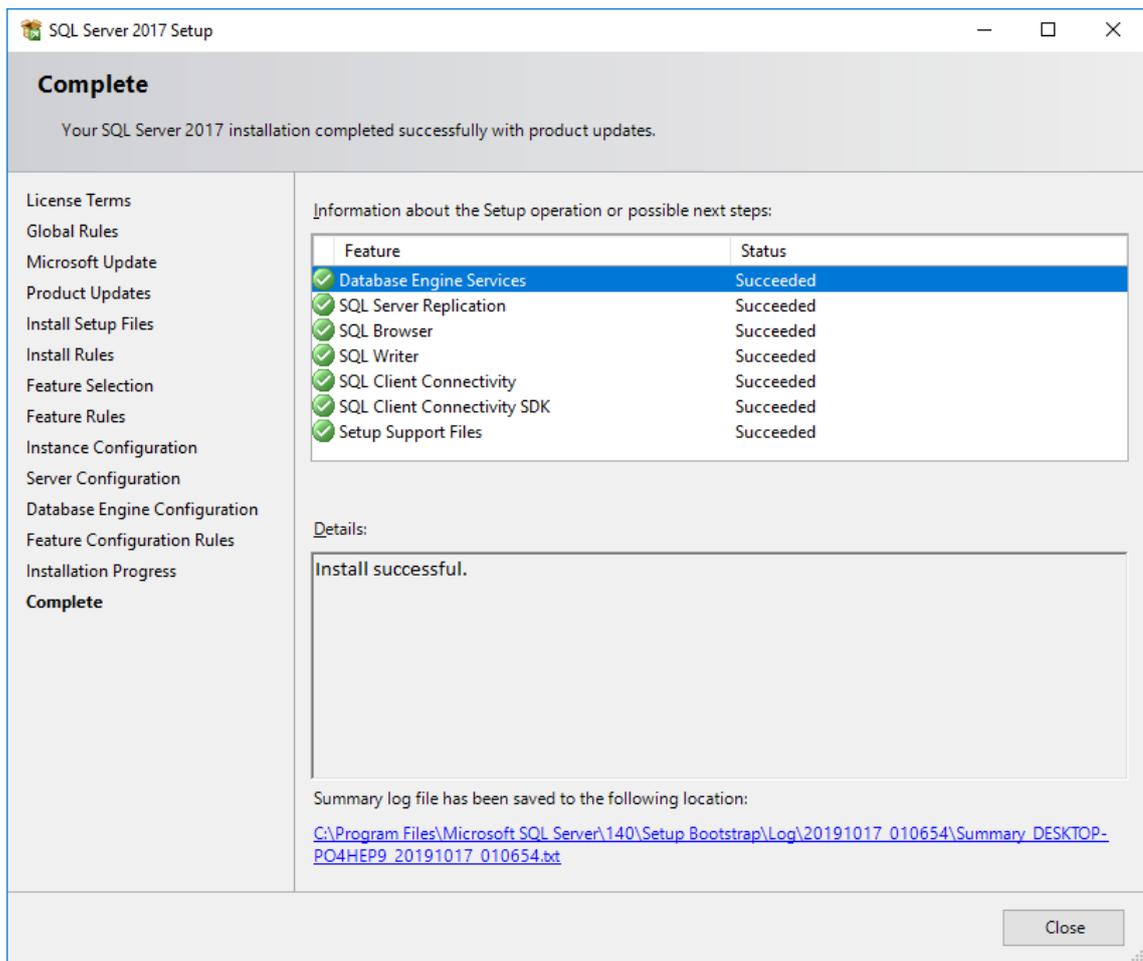
11. Go to the Computer Management and check if the installed SQL Server is running properly, before you try to use it. The below screenshot shows the default SQL Server name (SQLEXPRESS).
The SQL Server Browser is only required for showing the server name on the network.
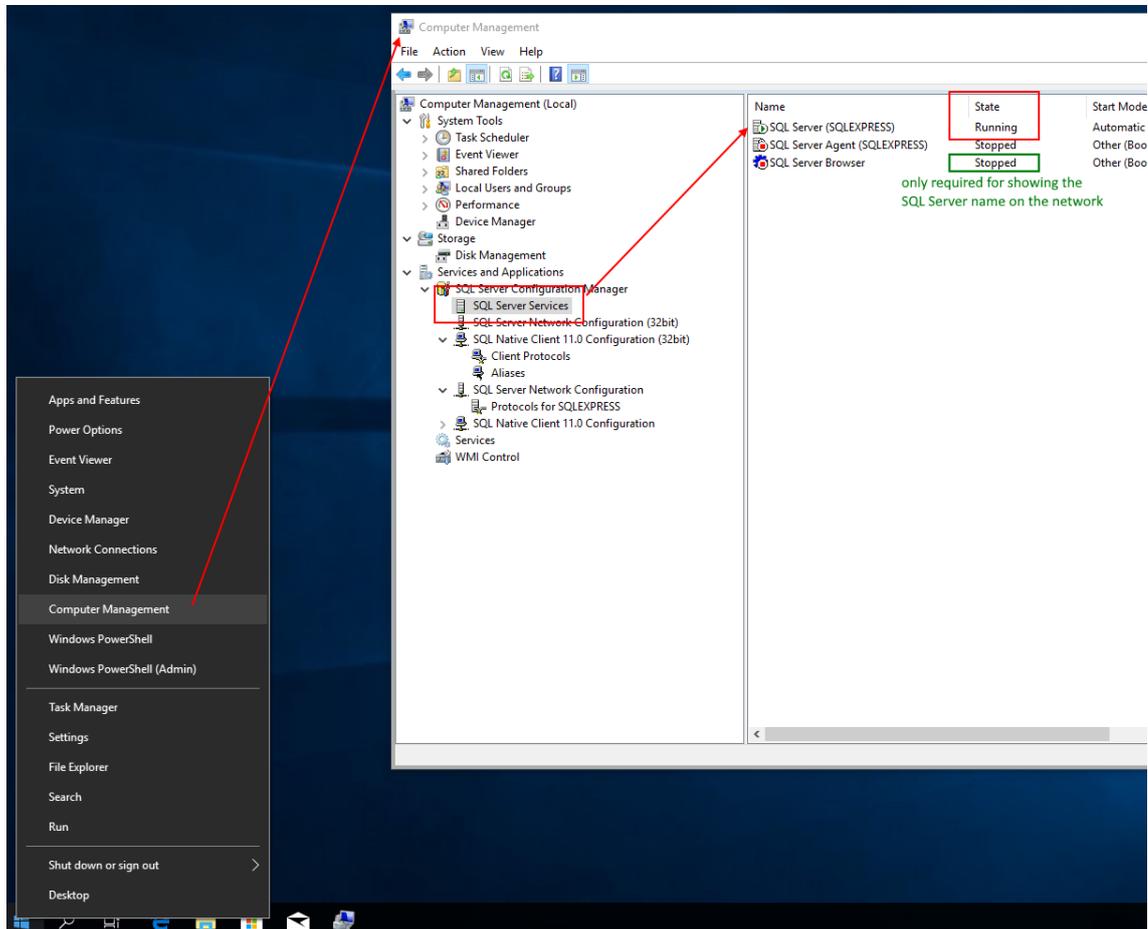
12. If the SQL Server should be accessible though the network, the network services must be enabled. Additionally, the SQL Server Browser should be set to "running" in the previous step.
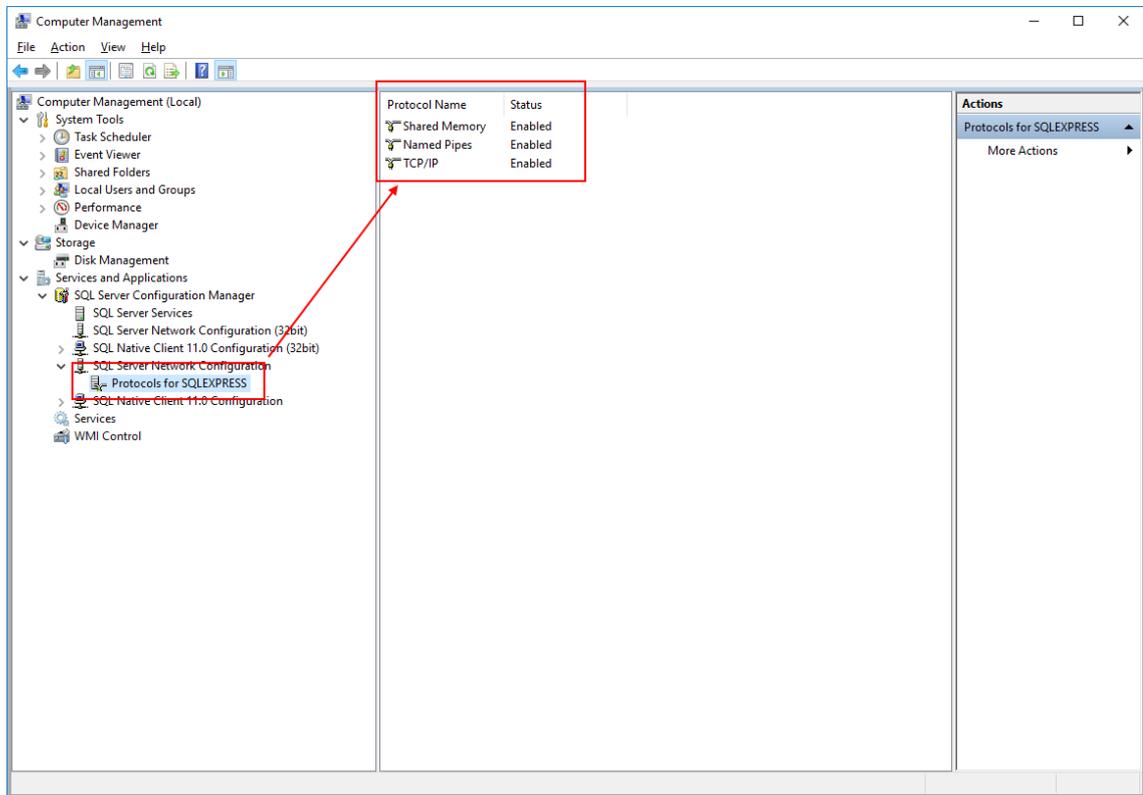
After this procedure, the SQL Server should run properly and the Helios 3D login dialog should find it, when the user refreshes the selection boxes. As we point out at the beginning of this document, especially user rights and other security related rules can cause connection problems in a network environment.
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!