

Network Installation Guide



# Network Installation Guide



Version compatible with Autodesk Civil 3D 2021 to 2024

April 18, 2024

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## Installation sources

For any purchase, the installation package is provided on a flash drive, which contains the essential installation sources and optional, additional data.

Download links only contain the minimum installation package.

### Installation flash drive

The flash drive contains:

- Setup.exe, which starts the Helios 3D installation.
- msoledbsql.msi, in case problems accessing the SQL Server occur during regular setup
- Local and network installation guides in German and English (PDF format)
- Subfolders containing:
  - Microsoft SQL Server Express installation package (for manual installation)
  - Management Studio Express
  - Sentinel driver package (for licensing issues)
  - Updates (if newer than the installation source)
  - Several folders with help videos

## System requirements

Due to the enhanced performance of commercial computers, the software combination of Autodesk Civil 3D and Helios 3D can be used on nearly every modern computer.

Recommended requirements:

- Modern Intel or AMD – 64 bits – Processor (at least 3,0 GHz or more)  
A higher clock rate is recommended, as just a single core is used!
- Windows 11 and 10
- Fast SSD
- 16 GB RAM or more
- 20 GB free disc space for a HELIOS 3D and Autodesk Civil 3D system
- 1920 x 1200 screen resolution with 32-bit color depth (True Color)
- Modern high-end or Autodesk certified graphics adapter

Autodesk recommends the following features:

- Basic: 2 GB GPU with 29 GB/s Bandwidth and DirectX 11 compliant
- Recommended: 8 GB GPU with 106 GB/s Bandwidth and DirectX 12 compliant

Note:

- DirectX 12 with Feature Level 12\_0 is required for some features.
- Dedicated VRAM recommended.

**To use Helios 3D with a CAD, Autodesk Civil 3D 2021 to 2024 must be installed and we recommend doing the Civil installation in advance. To use networks, TCP/IP must be set up.**

**The latest service packs for Autodesk Civil 3D should always get installed.**

Helios 3D CAD-workstations may have higher requirements according to the used version of Autodesk Civil.

A preinstalled **Microsoft SQL Server (Express)** is required for adding a database catalogue during Helios 3D installation. **We recommend to use the SQL user 'sa' for installation processes and to note down the password, as there is no way for our support to recover the password!** The below example password was used as default in earlier versions.

User:	sa
Password:	Helios-3D!

Helios 3D can be used as single workstation solution or as multi workstation network solution with a central server. Different installation modes (Standard, User-defined) are not available.

**The update search and downloads of help documents use an FTP connection to <ftp://stoehr-sauer.de>, so a firewall exception is required for getting access to the latest patches and help easily!**

## **Before you start**

Before you begin the installation process, you need to decide the target structure of the Helios 3D system.

The simplest network installation procedure would be running the local installation to a server and sharing the database and all necessary paths as fix drive mappings. The drive mappings are set once for any Helios 3D installation and thus must be equal to any client!

This would give you a single server running both, the SQL Server and the program. For the SQL Server being accessible from a client the steps from section "SQL Server network access" are still required.

**The SQL Server must always be installed before Helios 3D**, so the database can be added.

**Both, the SQL Server and the Helios 3D program files must get installed servers or at least fully shared systems! Any mixtures like a shared SQL Server on a real server and program files on a local workstation are not suitable for getting shared, as database and program files have a 1:1 relation!**

## Overview System Architecture

The following overview shows all relations between different parts of the software including the FTP-server for updates at Stöhr + Sauer.

The server part on the right side can be hosted by a single server or on three different servers. In case the program and data parts get separated it can be even four servers.

The used ports are displayed as well.

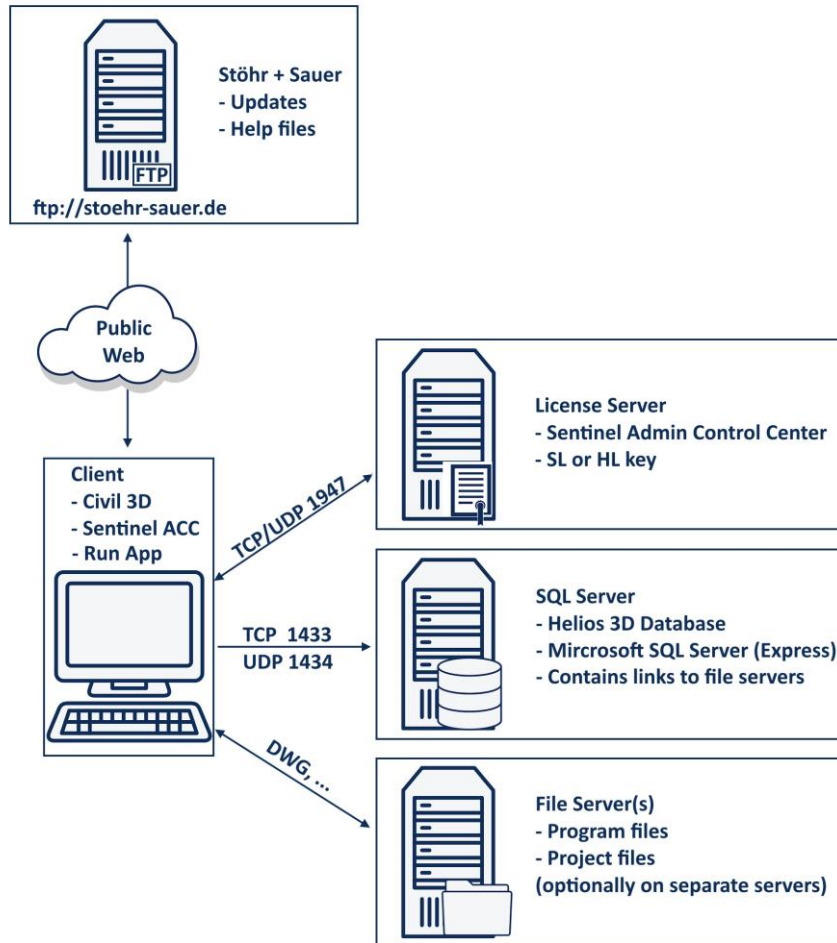


Figure 1: Program architecture of a client-server concept including update server access

## SQL Server (Express) installation

This description just contains the most recent points for the SQL Server installation and configuration. The installation should be executed by a professional with knowledge about SQL Server, if possible.

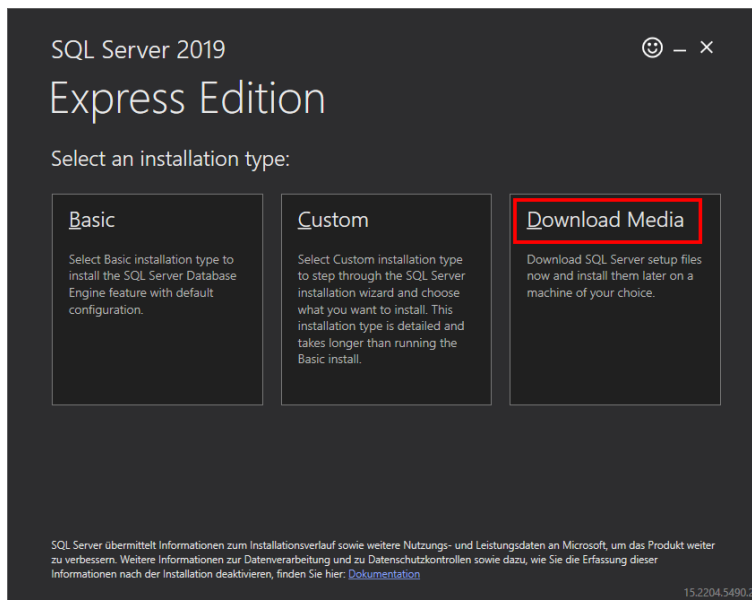
For administrators without experience, there is a more detailed example of an SQL Server Express 2017 in a separate document. Please note that specific steps might be different for any version for SQL Server.

**We recommend to use the latest version from the Microsoft web pages which is compatible with the used operating system!**

We recommend to use the latest version possible for your operating system.

For the SQL Server setup:

- When the installation starts, we recommend choosing the option “Download Media” to avoid problems loading contents during the main process.



- use the advanced setup and enable mixed authentication mode (without the ‘sa’ user, maintenance might not be possible)
- if you have other SQL Servers which should stay compatible e.g., if you want to move databases between them, you should check that the “Collation” of the new SQL Server matches the other ones.

The SQL Server is not accessible from the network by default.

## SQL Server network access

For accessing the SQL Server installation from other systems the following steps are required:

1. Open Computer Management, navigate to “Services and Applications” and open the “SQL Server Configuration Manager”. When you select the “SQL Server Services”, you can see all local SQL Servers. The default instance is called „SQLEXPRESS“ or „SQLHELIOS3D“ (in case the first option was already in use during Helios 3D installation).
2. For the SQL Server and the SQL Server Browser, the states should be running and start modes should be set to automatic.  
If the SQL Server Browser can't get started from here, please try in the Windows Services.
3. Under “Client Protocols”, Shared Memory, TCP/IP and Named Pipes must be enabled for accessing the SQL Server from the network. If you enable those protocols, both the SQL Server-Browser and the Server from step 2 need a restart.

The following figure shows the steps 1 to 3.

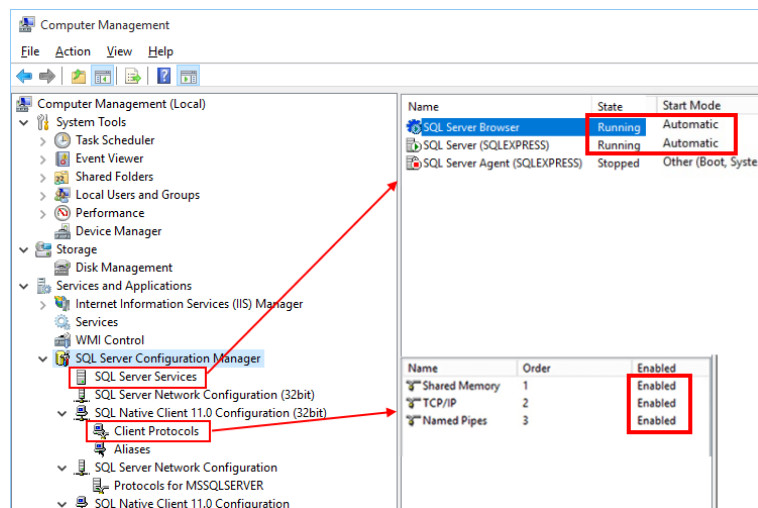


Figure 2: Important SQL Server Services and Client Protocols

4. The following firewall exceptions are required:
  - a. For the server: Protocol: TCP; Port: 1433
  - b. For the Server-Browser: Protocol: UDP; Port: 1434
  - c. For the “sqlservr.exe“ you can define an exception as well.  
The correct path can be checked in the Windows Services, by looking at the properties of the service “SQL Server (SQLEXPRESS)”.



## Helios 3D installation

The installation of Helios 3D can be started by the Setup.exe on the Helios 3D-flash drive. You can start the local installation on the server or from a client and put all files to a server. The second method requires administrator rights for all related systems.

**Firewalls or antivirus software might disturb the setup execution or copy processes on the network!**

For network installations, this procedure should not be done to a local workstation! Instead, all Helios 3D clients will access this installation, which must get shared by a network drive mapping, like "H:\Helios3D".

**It is never allowed to do multiple local installations and access a shared database, as this will cause trouble managing updates and sharing data!**

**Backup all important data!!!**

Insert the Helios installation flash drive. Start the Setup.exe from the main directory.

After selecting the program language and accepting the license agreement, the following dialogs for basic decisions get displayed.

### Selecting a product

**Only if** there is already a Helios 3D installation on your computer, you will see the following dialog after starting the Setup.exe:

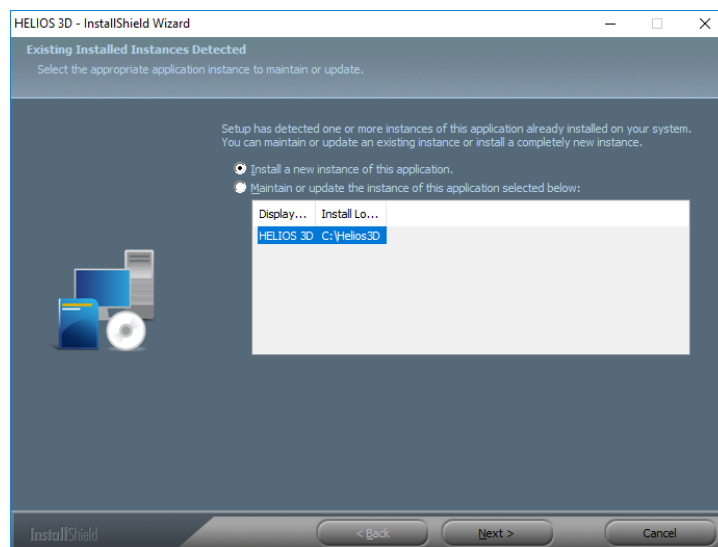


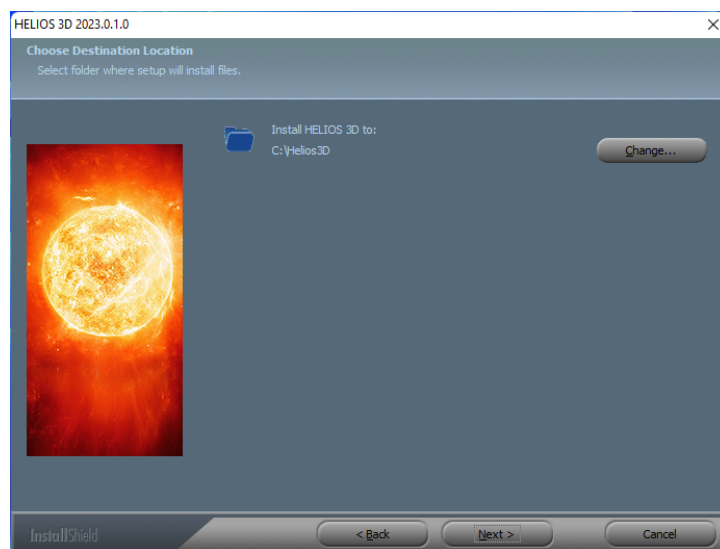
Figure 3: Product Selection

Here you can choose to install an additional version of Helios 3D or select one of the installed versions for update.

The following dialogs offer you to select a language for the current installation and to accept the license agreement. Please, read the license agreement thoroughly before you accept them. Please be aware of that the installation will only continue if you accept the license agreement.

### Selecting a path

Afterwards you can select a path for your installation.



*Figure 4: Path Selection*

The default path "C:\Helios3D" was chosen on purpose for a local installation, because otherwise there were problems with the user rights. Helios needs write access for its program base path.

**It is NOT recommended using the path "C:\Program Files", as the Windows user needs write access to several subdirectories. If you still use that path, Helios 3D must be run with the option "Run as administrator".**

## Selecting the features

If there still is no Helios 3D installation on your system, you will directly reach this dialog after starting the SETUP.EXE:

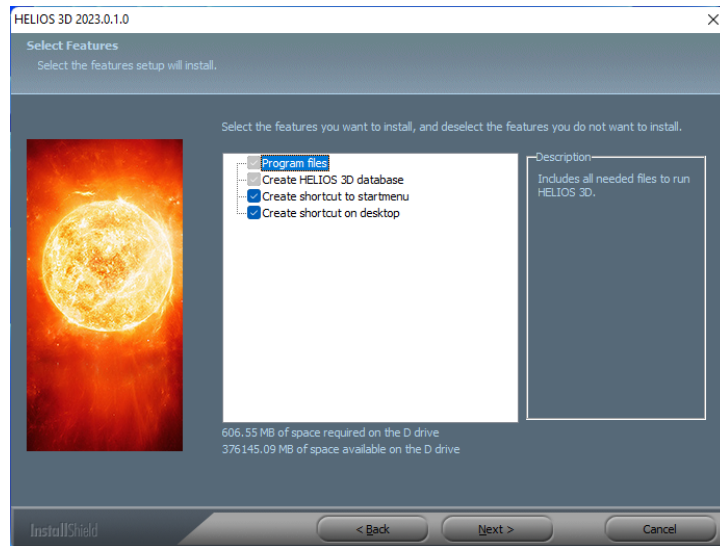


Figure 5: Feature Selection

Here you can select if a shortcut with Helios 3D should be created to start menu or/and on desktop.

In the next step, Install Shield checks some pre-conditions for the installation of Helios 3D and installs the SafeNet driver, when needed.

## SQL Server Login

Please enter the login data for the SQL Server in the next dialog.

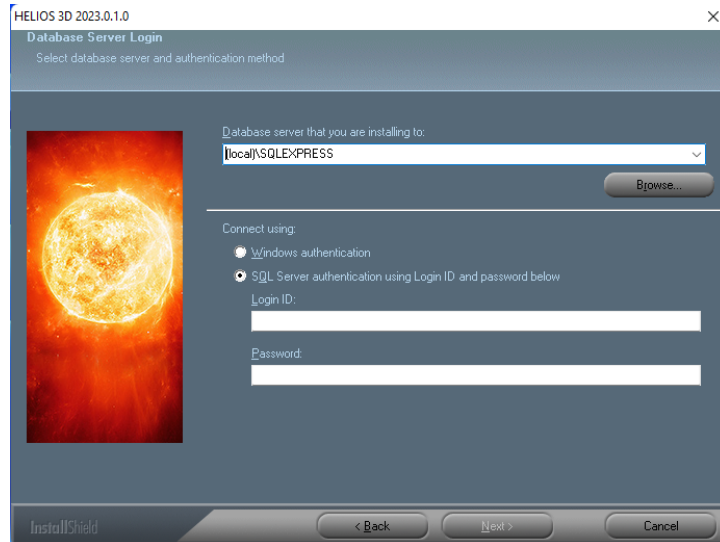


Figure 6: MS SQL Server Login

Typing the server name can be much faster than searching the network with <Browse...>.

## Create Database

You can now accept the default database name “Helios3D” or enter a new unique name.

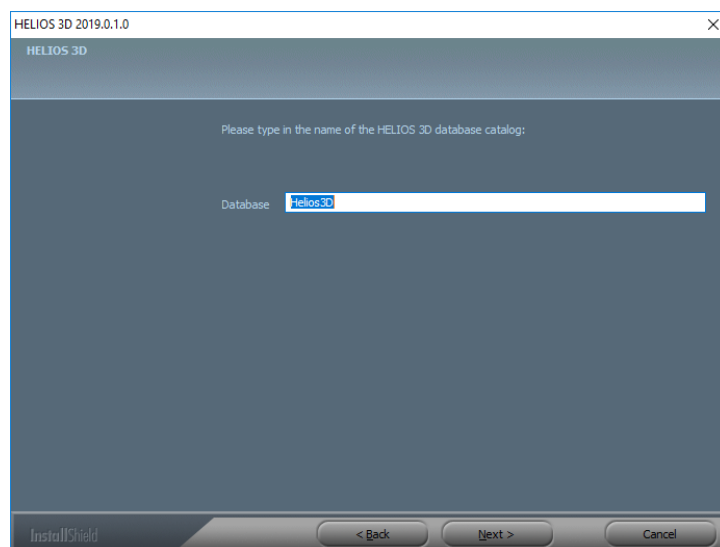


Figure 7: Naming the Database

The installation will go on with <Next >, when the database name is valid.

**If database script errors occur on this step, please restart Windows. After the restart, check whether the SQL Server is running properly before you run the Helios 3D setup to the already running SQL Server.**

**If the “CREATE DATABASE” script fails, you can also manually create the database catalogue “Helios3D” and during this step confirm that the existing database should be used. You can do so with SQL Server Management Studio.**

## **Sharing the Helios 3D installation**

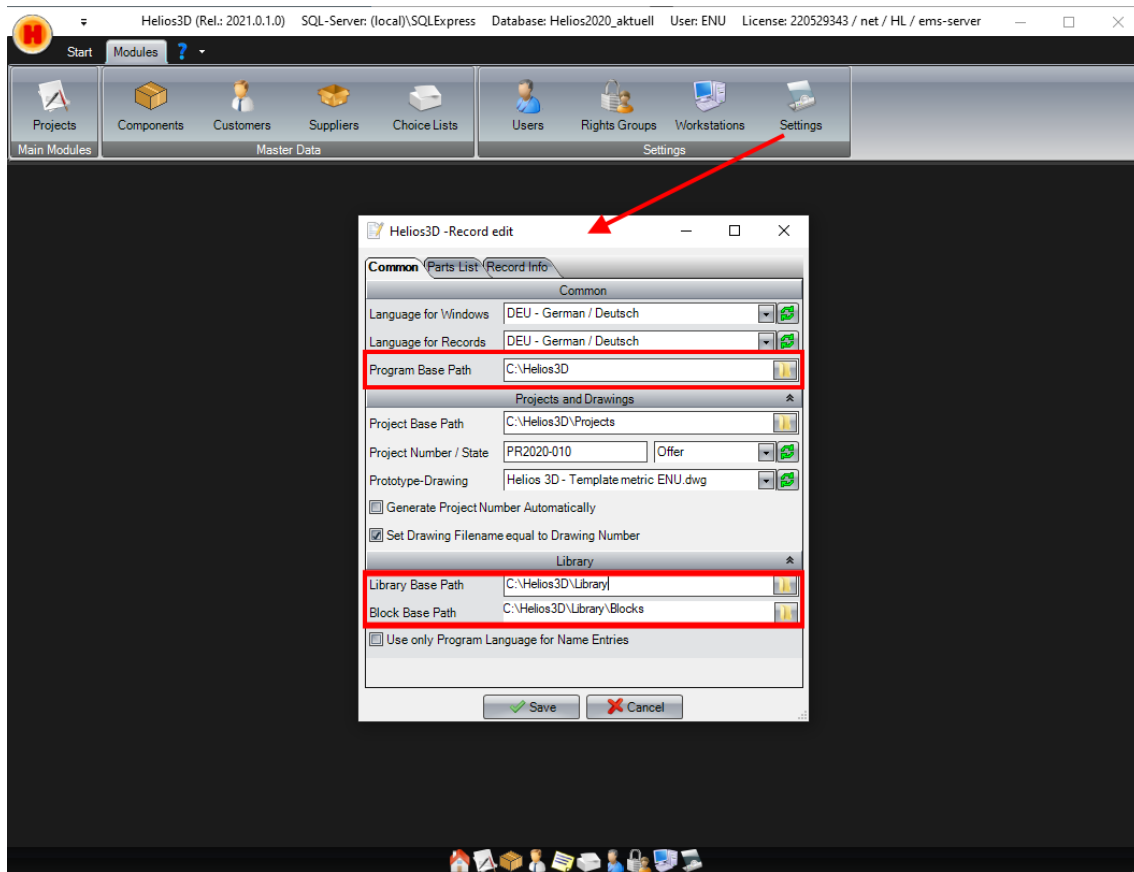
For sharing the installation, the main installation folder “Helios3D” must be accessible the same way from any client e.g., with the same drive letter. That means the folder which contains the directories “Bin”, “Bitmaps”, “CAD”, etc.

Example: “H:\Helios3D”

In case the project and/or article related data should be put to an individual location, the subfolders “Projects” and “Library” can be copied.

When Helios 3D gets started for the first time, the mentioned paths need being adjusted in the system settings. This step can be done on the server, if that has the drive mapping, or from the first client. As license dongles get shipped with a short time pre-activation, this can be done even before the final activation is provided by Stöhr + Sauer.

The path settings can be found under “System settings”.



## Add a new client

To avoid additional steps from the section “First steps”, we recommend installing Civil 3D before adding a client to the Helios 3D installation.

A client just requires the Sentinel driver for licensing being installed and a desktop link to the application. The easiest way getting started, would be running the setup.exe from the folder “Client Setup” inside the main directory “Helios3D”.

For just installing the Sentinel driver without running the client setup, you can run the Install.bat from the directory “.\Client Setup\Hardlock”.

## Licensing

The USB dongle represents your HELIOS 3D license, which means that the loss of a dongle is equivalent to the loss of the license! We want to suggest the availability of electronics insurances.

The delivery only includes a temporary activation (usually for 7 days) on your HL Key (dongle). Before you can use HELIOS 3D, any dongle has to be registered and permanently activated at STÖHR+SAUER. In order to do this, please follow the instructions below.

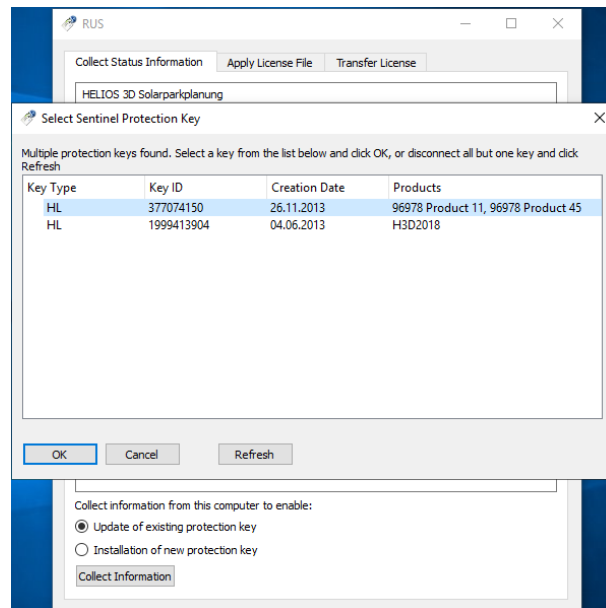
**For a reinstallation or installation of additional workstations there is no need for a new license activation, as the key just knows the program version and license runtime.**

1. Any Helios 3D client as well as the license server (only network license with a red HL key) needs the Sentinel driver being installed locally. The driver is automatically installed on any workstation you run a local installation or the client setup to.

On a workstation with a copy of a Helios 3D environment or on a server you need to run the Install.bat either from the folder "Client Setup" inside the installation directory or from the folder "Hardlock" on your installation flash drive. That executes the haspdinst.exe of the same directory.

2. Plug the dongle into a USB port of the license server or into a USB port of the workstation that should manage the license(s).
3. Execute the SuSRUS.exe from the subdirectory ".\Client Setup\Hardlock" of the installation or from the folder "Sentinel\_Driver\_8.0" on the flash drive.
4. In the SuSRUS program-window click the "Collect Information" button at the bottom. The Option "Update of existing protection key" must be selected on that.

When multiple license keys are found at your workstation, the following selection dialog appears:



*Figure 8: Select HASP key Dialog*

**We only need the data for any HASP Key that needs being activated.** The Key Type HL means a dongle, while an SL Key stands for a soft-license.

5. Save the **.c2v** file to the hard disk and send it to: [helios3d@stoehr-sauer.de](mailto:helios3d@stoehr-sauer.de)
6. You will receive a **.v2c** file from us with the license information. Save this file to the hard disk (e.g. the desktop).
7. You can apply the license by starting the **SuSRUS** program again and selecting the **“Apply License File”** tab.
8. Select the **.v2c**-file from the hard disk and click on **“Apply Update”**.
9. Now Helios 3D is licensed and can be used.



## Special Configuration for Network Keys

The following steps are only needed in case the dongle is not found on a client system!

There might be several problems for the local driver finding the network dongle at the server. These can be caused by network policies and especially firewalls. If the following steps still don't solve the license detection problems, please add an exception for port 1947 for TCP and UDP or try temporarily disabling local firewalls on the client and on the server for verifying if problems are firewall related.

1. Open ACC in your web browser: <http://localhost:1947>
2. Choose the option "Sentinel Keys" and check if your dongle is listed.  
**If the dongle is already listed, this procedure is not necessary!**
3. Please choose the option "Configuration".
4. Go to tab 3 "Access to Remote License Managers".
  - a. Enable the "Aggressive Search for Remote Licenses".
  - b. Add your servers name or IP as "Remote License Search Parameters".

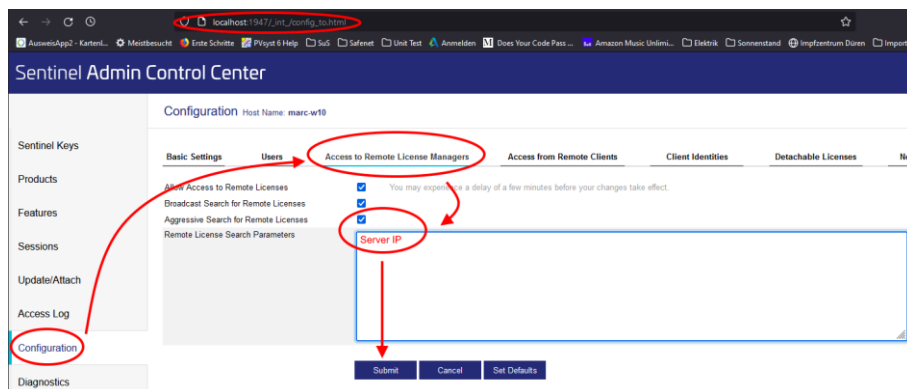


Figure 9: Network License Access Configuration

## Special Information for SL Keys

Customers who use a software license (SL, without a dongle) should note, that the protection system checks the hardware of the server. So, changes to the hardware of the server might disable the license key and thus any license it contains. For moving the license management to another server, a free license transfer is needed.

For virtual license servers or Cloud-based servers a separate configuration will be used, to avoid false cloning protections due to the below checks.

**Copying a virtual server is generally not possible! Licenses can only get transferred to another server manually.**

The following values get checked for SLs:

Physical server:

- HDD serial number
- Motherboard ID

Changing just one of these two points will be tolerated by the protection system. If both points get changed at the same time, all keys and thus all licenses get disabled.

Virtual Server:

- virtual MAC address
- CPU data of the host system
- UUID of the virtual machine

Any change to one of these parameters will disable all keys and thus all licenses.

**In case a key gets disabled permanently, we will bring the 500 € per license for generation and activation of a new key to account!**

## License driver installation issues

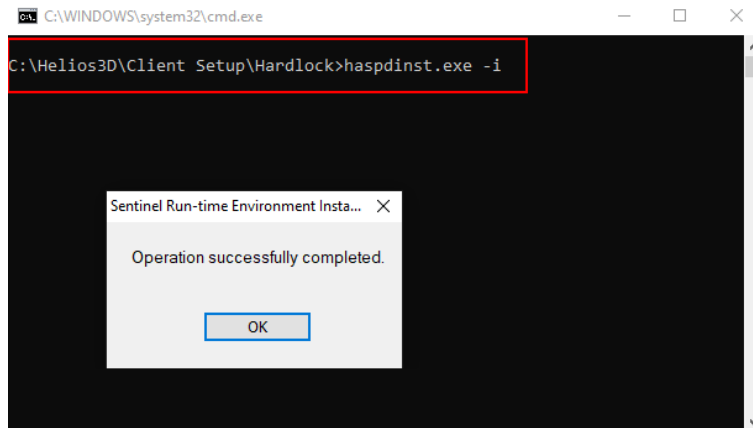
Sometimes the unattended driver installation fails, so the page <http://localhost:1947> is not accessible.

Any Helios 3D installation contains the driver package in the subfolder „.\Client Setup\Hardlock“. For a local installation that would be „C:\Helios3D\Client Setup\Hardlock“. For a network installation, please check the path set during installation.

The contained Install.bat calls the haspdinst.exe with the parameter -i. That can be done manually in a command line with administrator privileges.

The below dialog shows the command ending with a success message. The installation is successful when the message appears only!

## Network Installation Guide



Reasons for the installation to fail might be:

- Missing user rights to perform the installation.
- Security systems preventing the installation to be executed.
- Issues running the installation over the network or from special drives. This can be avoided by copying the files to your local C drive and running the command again.

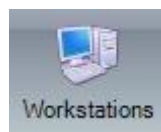
## First steps

The procedure described in the section “Configuration Helios 3D” has to be done once for each client.

The settings for Autodesk Civil 3D in the section “Setting up an Autodesk Civil 3D profile” should not be necessary, as the start process generated that profile automatically. Just if that fails, it needs to be done manually for that Windows user.

## Configuration Helios 3D

First Helios 3D needs a default configuration. For this purpose, open the module “Workstation configuration” in your Helios 3D application. You can find it in the program tab “Modules” by the button:



Select the station you want to edit in the list and then go to the window “Additional data” (below the list of stations) and to the tab “Program configuration”.

In this list there must be at least a standard configuration which connects Helios 3D to a CAD application. For adding this one or an additional configuration, right-click into the list and select the function “New...” in the context menu. In the opening dialog you can add a new configuration as the following figure shows by the example of Autodesk Civil 3D.

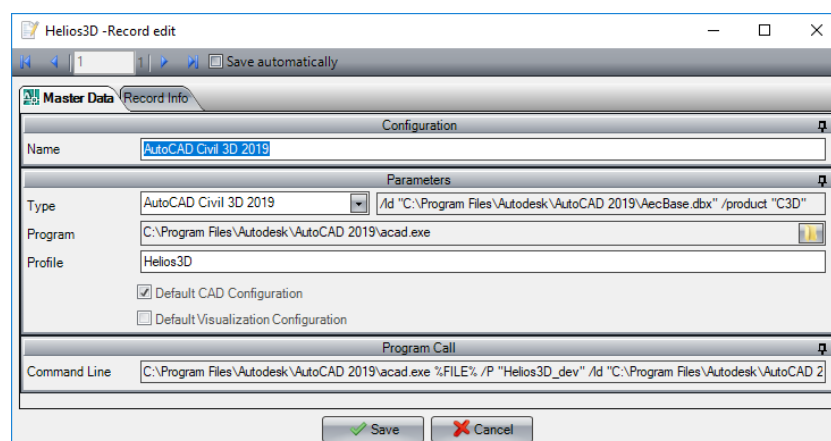


Figure 10: Configuration Helios 3D

Here you have to enter a name the parameters for configuration:

- Type (Select a program type from the list)
- Program (Program path of the execute file of the program)

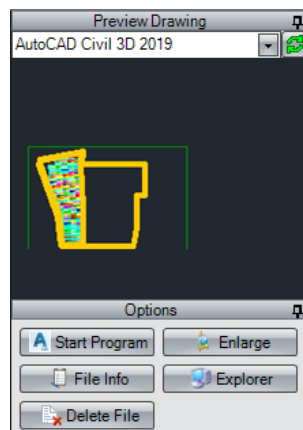
- Profile (Name of the profile from the selected program. This profile will automatically be get loaded on program start-up. Remarks for setting up a profile will follow in the next section.)

If you enable the “Default CAD configuration” option (optionally), the current configuration will be preselected on start-up of Helios 3D. If no program configuration is set as default, the first one in the list (sorted by name) will be preselected.

The call command and the command line call will automatically be shown and cannot be edited.

### Selecting a program configuration

You have to select a program configuration before starting a drawing. For that, move to the “Drawings” tab in your “Project management”. On the very right you will find a drawing preview and the “Options” including the “Start program” button as shown in the following figure.



*Figure 11: Civil 3D Start and File Preview / Options*

We recommend using the refresh button before selecting a new configuration from the drop-down menu above the preview.

As long as the new configuration is selected all drawings will be opened with its settings.

## Setting up Autodesk Civil 3D

### Creating a Civil Profile

This procedure can be used for initial creation as well as for replacing an old profile. **Usually, Helios 3D should create this profile and all necessary settings automatically, when starting Civil 3D!** So, these settings just need to be done exceptionally.

**A quick workaround** might be starting Civil 3D without Helios and deleting the profile “Helios3D” (see step 2). After that Civil can be closed and started again out of Helios. If this fails, the manual procedure is inescapable.

#### Step 1:

Enter the command “options” to the command line. (If you use another Civil 3D language version than English, please try “\_options” or the corresponding translation in your language.)

#### Step 2:

Select the “Profiles” tab (further on the right) of the “Options” dialog. The following figure shows an already created profile “Helios3D”.

If you want to use a profile which is already existing you can use it by clicking “Set Current” and close this dialog.

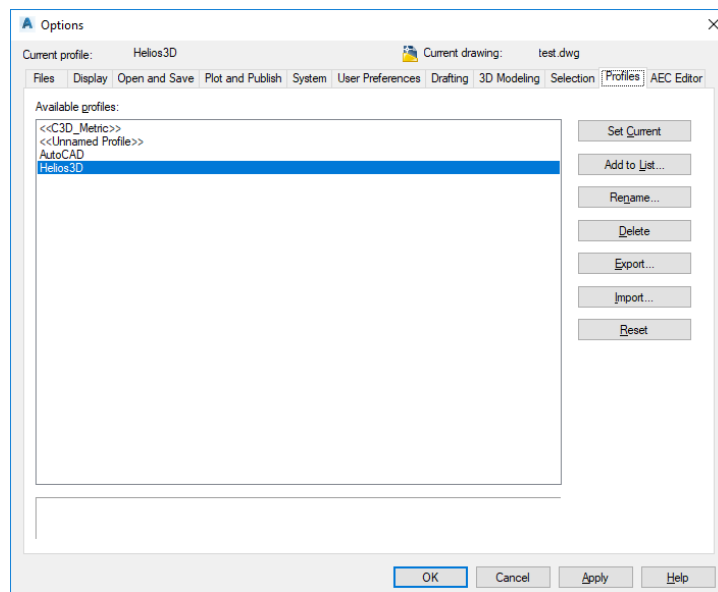


Figure 12: Autodesk Civil 3D Profiles

#### Step 3:

Go to profile “<<C3D\_Metric>>” and make it <Current>.

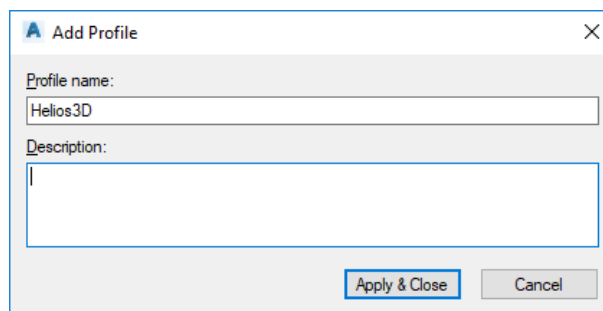
**Step 4: (only if an already existing profile “Helios3D” should be replaced)**

Select the profile “Helios3D” and press <Delete>.

**Step 5:**

Copy the profile “<<C3D\_Metric>>” by using the <In list...> button.

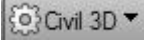
Please enter the profile name “Helios3D” in the appearing dialog and close it by pressing <Proceed & Close>.



*Figure 13: Add Profile*

**Step 6:**

Go to the new profile and press <Current>. Afterwards you can close the dialog with <OK>.

After setting up the profile you can now start the Helios-Palette. Please regard that the workspace is set to .

A right click into the drawing opens the context menu. Under “Helios 3D – More commands” there is the command “Show palette...”. Use it to load the Helios-Palette whenever it has not been loaded automatically.

**Adding a Support Path and Trusted Locations**

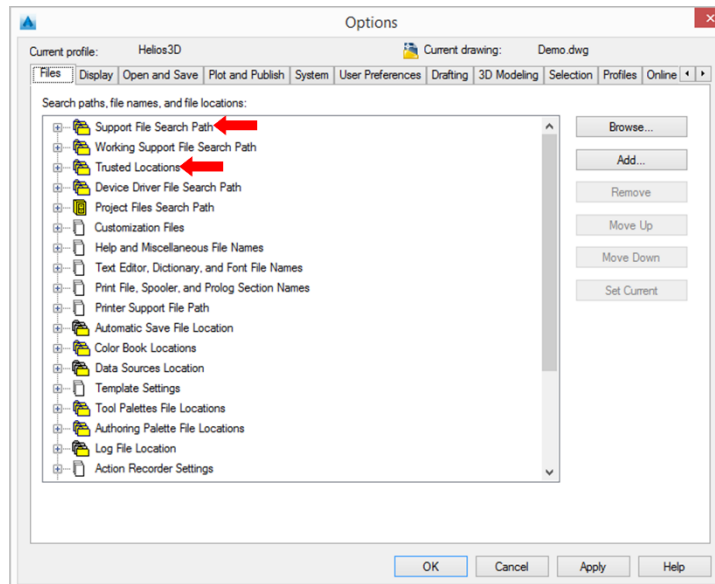
**These steps should come automatically with the “Helios3D” profile and so are just necessary in exceptional cases!**

The “Bin” directory from your Helios 3D installation path must be added as “Support File Search Path” to the top of the list.

You need to add the program base path of Helios 3D to the trusted locations. Otherwise, it is needed to manually confirm anytime you start Civil 3D out of Helios 3D, that the Helios 3D DLL files should get loaded.

So, you need to open the Civil 3D options dialog and activate the profile “Helios3D”. Then navigate to the Files tab.

There you can find the entries “Support File Search Path” and “Trusted Locations”, which are displayed below.



*Figure 14: Path Settings for the Civil 3D Profile*

Here you can <Add> a new entry.

As search path please add the “Bin” directory of your installation path and use <Move Up> for bringing it to the top of the list.

Example: “H:\Helios3D\Bin”

As trusted path you can add the installation path of Helios 3D or a part of its root path with three dots at the end of the entry (makes all sub paths being trusted, too).

“H:\...” makes the whole drive I being trusted, while “H:\Helios3D\...” just makes the installation directory a trusted location.



## Adding a User Account (optional)

- This step is optional, because on the default installation a Windows user and the 'sa' user automatically get created.
- For creating user accounts, you will need an MS SQL Server Management Studio Express and administrator access for the SQL server.
- The recommended workflow equals the structure of these instructions.

### Login Account SQL Server

First a new user needs a login for the SQL server. For that an administrator has to login to the server and he has to create a new user login in Object Explorer. Just open the structure tree and go to the point "Server Name\Security\Logins", right click it and select "New login...".

The dialog for creating a new login is separated into several pages. You only need the pages "General" and "Server Roles".

### General

On "General" page you can enter the login information for the new account, as displayed in the following figure.

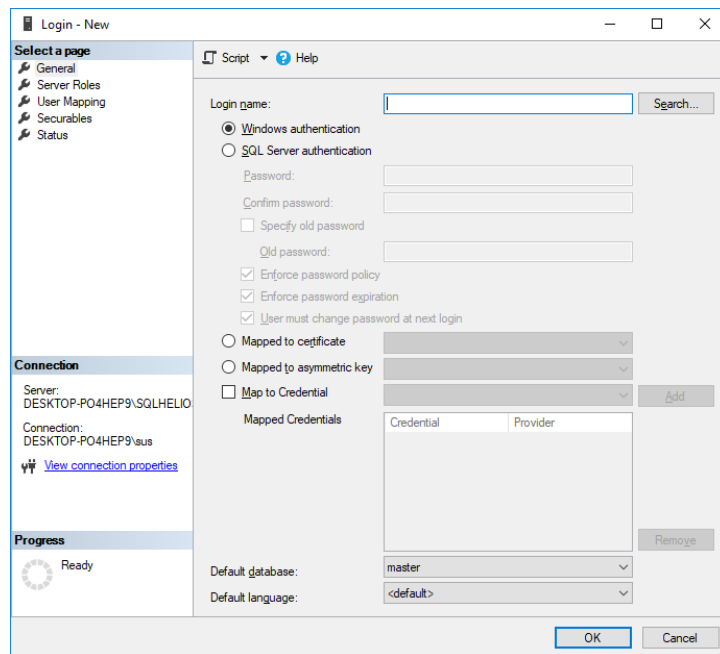


Figure 15: Creation dialogue for a new user

Here you can create a new login or you can select a Windows-Authentication account and use it for the SQL server.

For SQL Server-Authentication please go on with the data concerning the password.

For Windows-Authentication please push <Search...> and then click <Advanced> in the upcoming dialog.

The next figure shows the extended selection dialog for users or user groups. There you can use the <Find Now> button to read and to display all login accounts available in the “Search results” list.

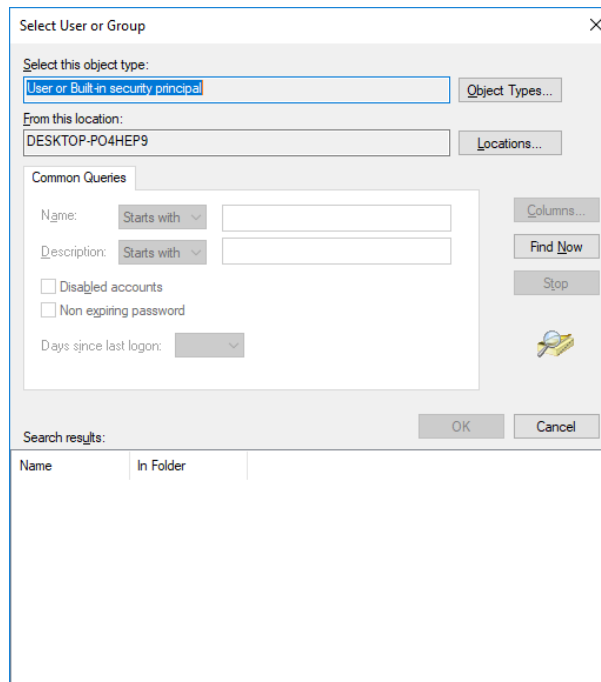


Figure 16: Dialogue for users or group privileges

**Please note that any user needs his own user account (section “*User Account Helios 3D Application*”) for the Helios database, even if you use user groups for login to the server!**

Close all selection dialogs for users and groups with <OK> and go to the “Server Roles” tab.

### Server Roles

On “Server Roles” page you can set the server wide security permissions for the user. Any user at least needs the role “public” for working with Helios 3D, as displayed below.

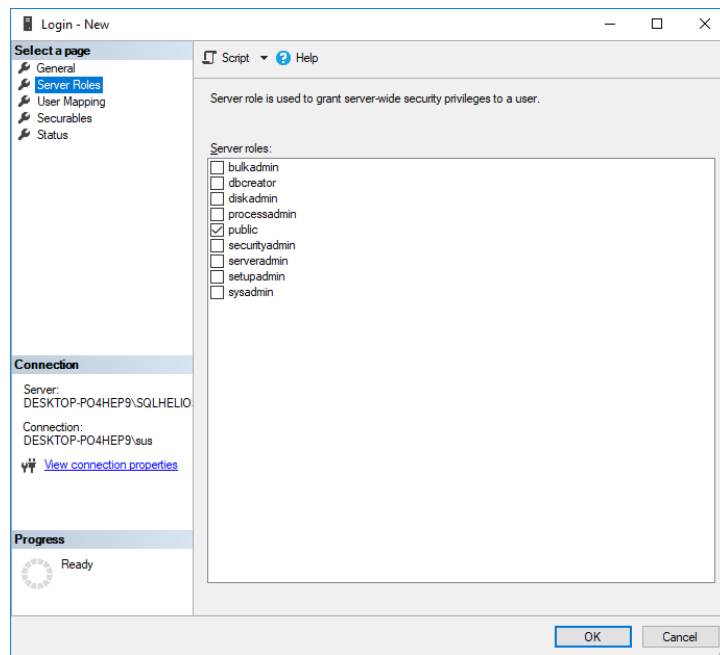


Figure 17: Setting of server roles

Another permission needed is locking records on SQL server. Logins with administrator rights automatically get this permission, whereas other logins need it to be granted by hand.

For that, an administrator ('sa') has to run one of the following commands, depending on the login method, on 'master' database:

For Windows-Authentication:

**GRANT VIEW SERVER STATE TO [Domain\Login]**

For SQL Server-Authentication:

**GRANT VIEW SERVER STATE TO [Login]**

### User Account Helios3D Database

For accessing the Helios database, a user account (can be named equal to the login account) for any user is needed. For that an administrator can go to "**Database Name\SecurityUsers**" in Object Explorer and there he can right click "Users" and select "New User...".

The dialog for creating a new user account is separated into several pages. You need to go to the pages "General", "Owned Schemas" and "Membership" (for the roles).

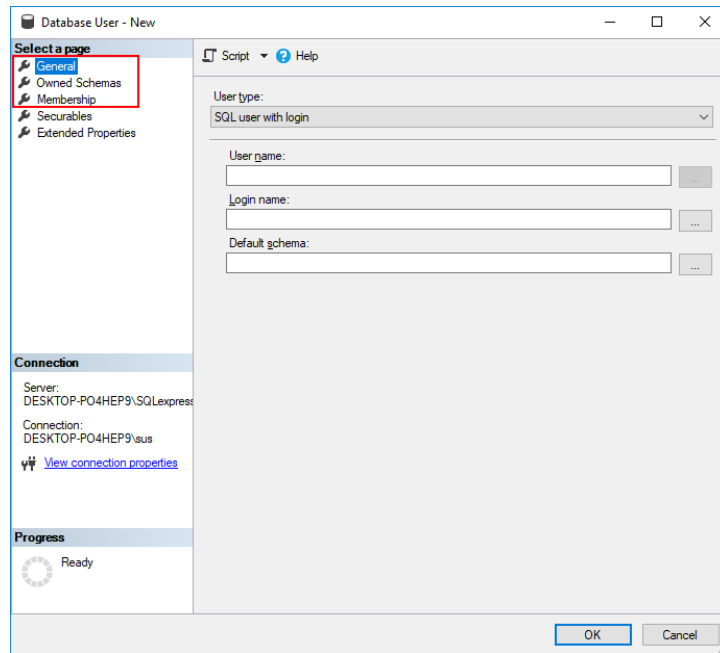


Figure 18: New Database User Account (Page "General")

Here you can enter a login name and you can select the corresponding login, created like described in section "General".

Required Schemes:

- db\_Helios3D


Required memberships in database roles:

- db\_datareader
- db\_datawriter
- db\_Helios3D

## User Account Helios 3D Application

In Helios 3D database application, any user needs a user account named equal to the user account from section "User Account Helios3D Database".

Please follow this procedure:

1. Start Helios 3D with administrator permissions (the user 'sa' would be ideal).
2. Open the  User Management.
3. Right click the user list -> "New..."

4. Enter a login name as displayed in the following figure and press <OK>.

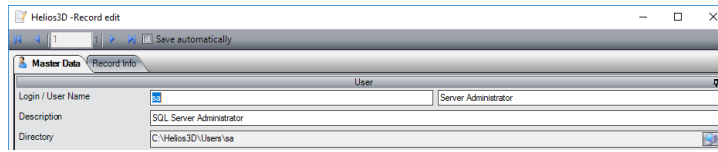

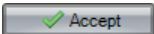


Figure 19: Excerpt of the Editing Dialog for User Accounts from Helios 3D Application

5. Select the new user (line appears blue then) and go to the “Assigned to” tab in “Additional Data” frame below the users list.
6. Right click the list and select the option  “New Assignment...”.
7. In the following dialog you can select one or more rights groups and afterwards press . After that you can close the dialog.

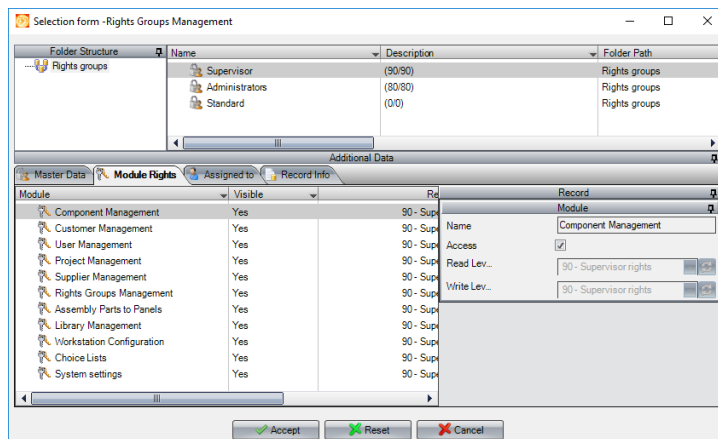


Figure 20: Selection Form - Rights Groups Management

8. When you go to the “Rights” tab (next to “Assigned to” tab), the corresponding rights should be displayed. If necessary, please press F5 to refresh the list view.

Now the user is able to login.

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