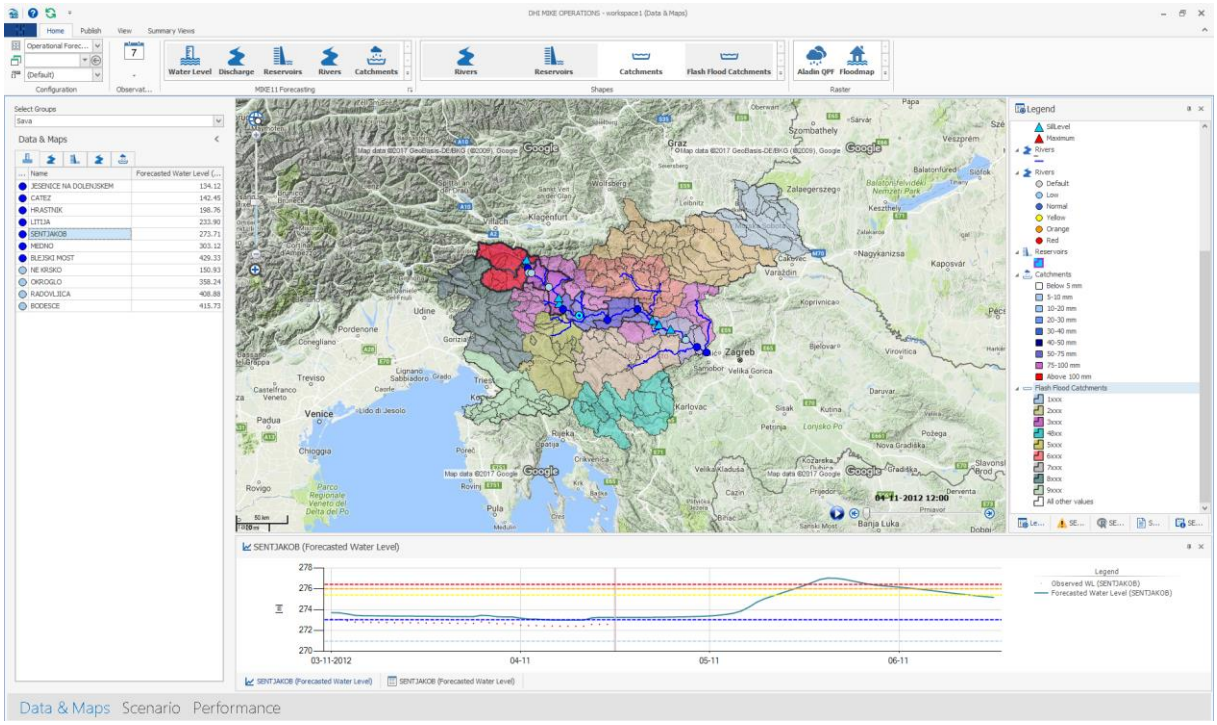


MIKE OPERATIONS

Installation Guide 2021

DHI A/S headquarters
Agern Allé 5
DK-2970 Hørsholm
Denmark

+45 4516 9200 Telephone
+45 4516 9333 Support
+45 4516 9292 Telefax

mike@dhigroup.com
www.mikepoweredbydhi.com

PLEASE NOTE

CONTENTS

MIKE OPERATIONS
Installation Guide

1 Introduction

This installation guide covers the installation of MIKE OPERATIONS 2021 and related Modules (MIKE WORKBENCH, Database Manager Utility, MIKE OPERATIONS Desktop) and required 3rd party software

MIKE OPERATIONS can be deployed in different ways – ranging from a personal installation to a corporate installation.

1. Personal installation, which allows users to work in a network independent mode on their desktop. This requires the installation of a database on the local computer;
2. Corporate installation, which allows for an office to have multiple installations (clients) all working against a central database.
3. Web installation, which allows for an organisation to access MIKE OPERATIONS over the Internet (this option requires installation of MIKE OPERATIONS Web as well).

This installation guide describes the installation process for all the different deployment patterns and required associated 3rd party software.

Installation of MIKE OPERATONS Web is described in a separate installation guide.

Important information: Please be aware that all MIKE software (including the DHI License Manager) on the same computer must be installed with the same service pack. This is due to the dependencies between MIKE software products and our wish to use the latest and technically most advanced development systems.

2 Installation Prerequisites

MIKE OPERATIONS depends on some prerequisites as listed below.

1. **Database service (optional):** Because MIKE OPERATIONS runs on a database, a supported database software or service must be installed. The following databases are supported by MIKE OPERATIONS:
   a. PostgreSQL
   b. SQLite
   c. MS SQL Server
   d. Oracle

   SQLite is installed and run automatically by MIKE OPERATIONS. The other database types run as services and must be installed by the user.

   a. **PostgreSQL**
   The MIKE OPERATIONS installer includes an optional PostgreSQL installer that installs a PostgreSQL server along with the PostGIS spatial database extender. Although the PostgreSQL installer delivered with MIKE OPERATIONS installs the latest PostgreSQL/PostGIS combination, it's also possible to use older combinations. MIKE OPERATIONS supports the following combinations of the two products:

   - PostgreSQL 9.6 and PostGIS 2.3.0 (build 15146)
   - PostgreSQL 9.6 and PostGIS 2.3.1 (build 15264)
   - PostgreSQL 9.6 and PostGIS 2.3.2 (build 15302)
   - PostgreSQL 9.6 and PostGIS 2.4.1 (build 16012)
   - PostgreSQL 9.6 and PostGIS 2.4.4 (build 16526)
   - PostgreSQL 9.6 and PostGIS 2.5.1 (build 17027)
   - PostgreSQL 9.6 and PostGIS 2.5.3 (build 17699)
   - PostgreSQL 10 and PostGIS 2.4.1 (build 16012)
   - PostgreSQL 10 and PostGIS 2.4.4 (build 16526)
   - PostgreSQL 10 and PostGIS 2.4.3 (build 16312)
   - PostgreSQL 10 and PostGIS 2.4.4 (build 16526)
   - PostgreSQL 10 and PostGIS 2.5.0 (build 16836)
   - PostgreSQL 10 and PostGIS 2.5.1 (build 17027)
   - PostgreSQL 10 and PostGIS 2.5.2 (build 17328)
   - PostgreSQL 10 and PostGIS 2.5.3 (build 17699)
   - PostgreSQL 11 and PostGIS 2.5.0 (build 16836)
   - PostgreSQL 11 and PostGIS 2.5.1 (build 17027)
   - PostgreSQL 11 and PostGIS 2.5.2 (build 17328)
   - PostgreSQL 11 and PostGIS 2.5.3 (build 17699)
   - PostgreSQL 12 and PostGIS 3.0.0 (build 17983)
   - PostgreSQL 12 and PostGIS 3.0.1 (build 3.0.1)
   - PostgreSQL 12 and PostGIS 3.0.2 (build 3.0.2)
   - PostgreSQL 13 and PostGIS 3.1.0 (build 3.1.0)
   - PostgreSQL 13 and PostGIS 3.1.1 (build 3.1.1)

   Combinations of later versions may also work but have not been tested.

   Postgres versions accepted by MIKE OPERATIONS can also be viewed in the file "DssDatabases.cfg.xml" of the MIKE OPERATIONS installation folder.

   b. **MS SQL Server**
   MS SQL Server must be installed by the user. An installer is not included with the MIKE OPERATIONS installer. Supported versions include 2016, 2017, and 2019.

c. **Oracle**
The Oracle database service must be installed by the user. An installer is not included with the MIKE OPERATIONS installer. MIKE OPERATIONS supports Oracle version 11g only.

2. The DHI License Management application. The installation wizard of the DHI License Manager is included in the MIKE OPERATIONS installer.

3. Microsoft .NET framework 4.7.2

3 MIKE OPERATIONS Installation/Upgrade

MIKE OPERATIONS 2021 is installed by running the *Setup.exe* program coming with the installation media. The installation process consists of two parts.

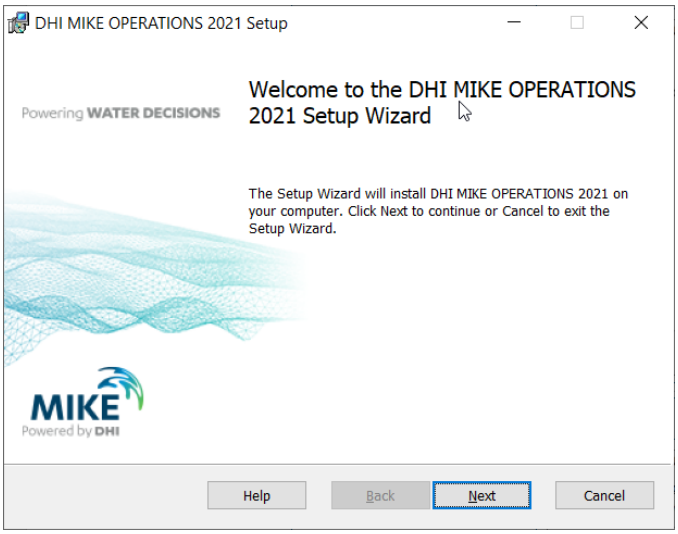
1. Installation of DHI License Management application (only if not previously installed with other MIKE software).

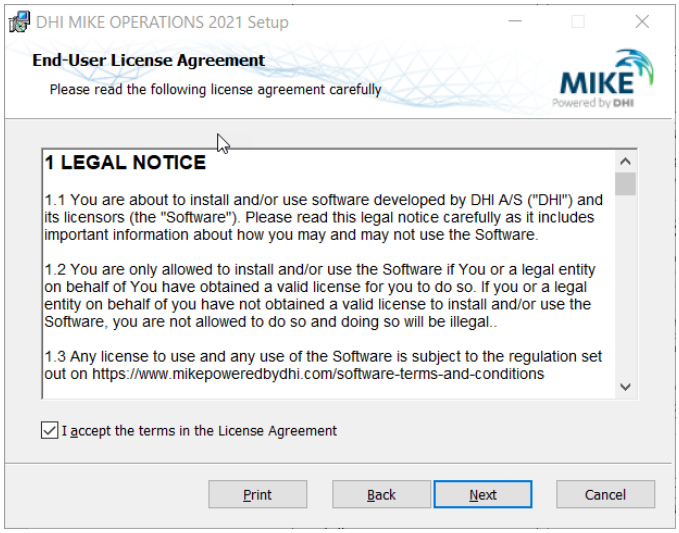
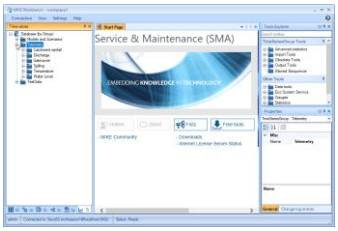
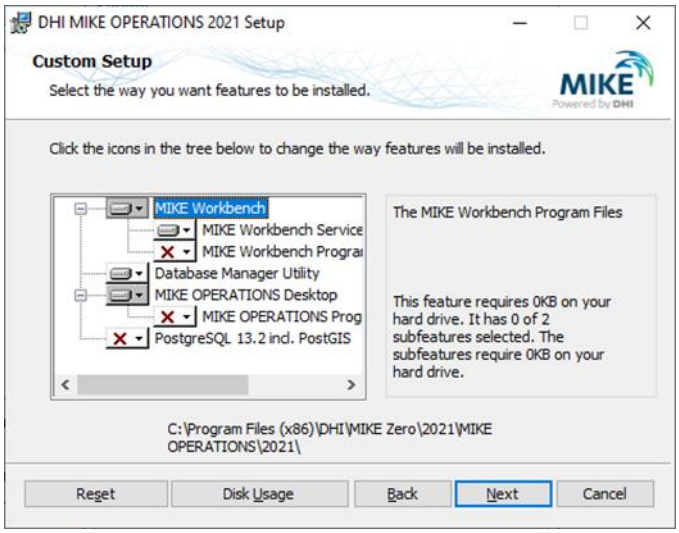
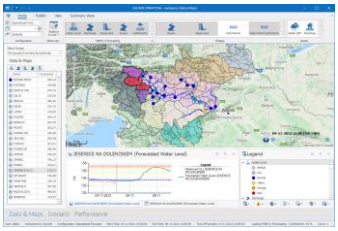
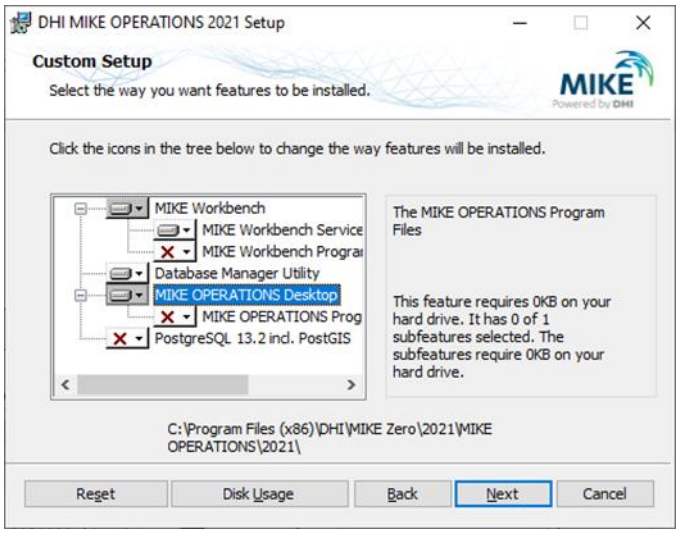
2. Installation of MIKE OPERATIONS 2021 software files including MIKE Workbench, Database Manager Utility, MIKE OPERATIONS Desktop, and PostgreSQL/PostGIS.

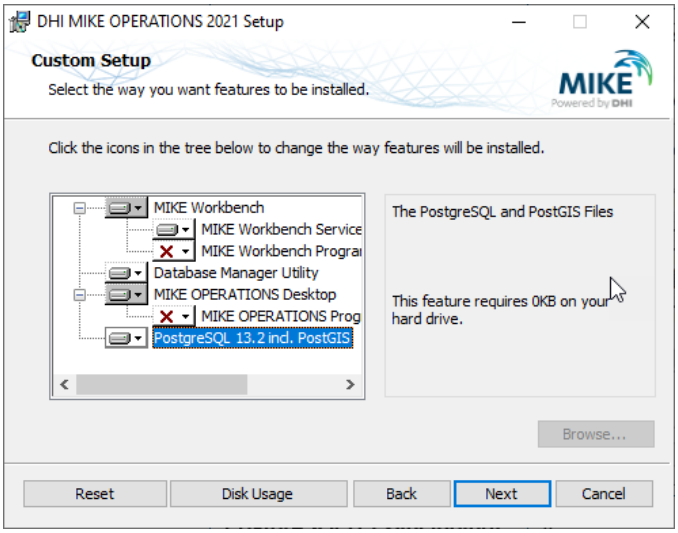
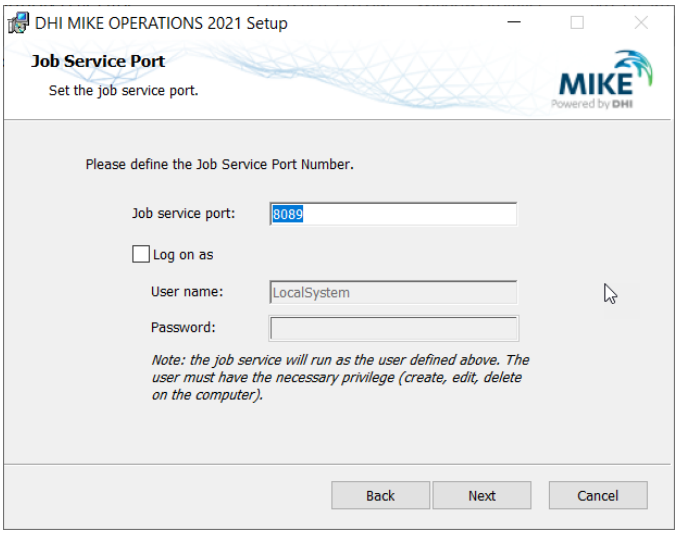
Installation of the MIKE OPERATIONS 2021 software package is simple and requires no user interactions beyond accepting the license conditions and specifying the installation folder.

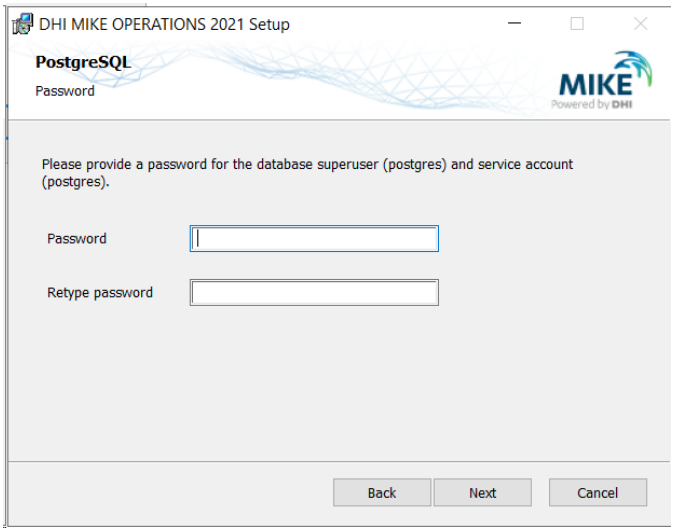
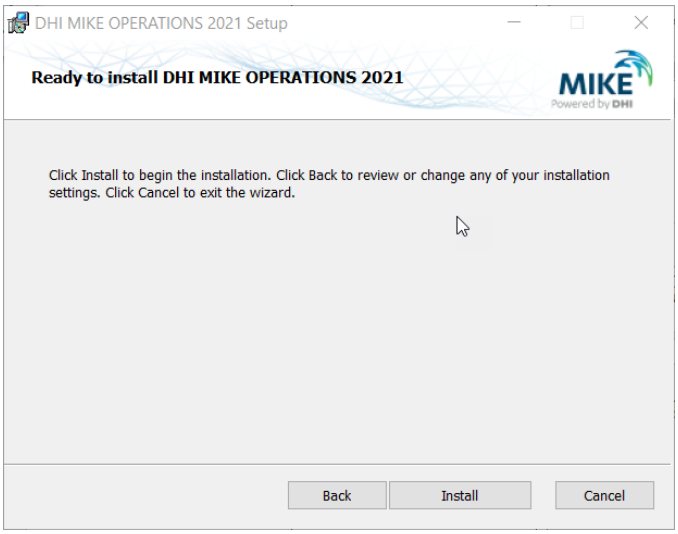
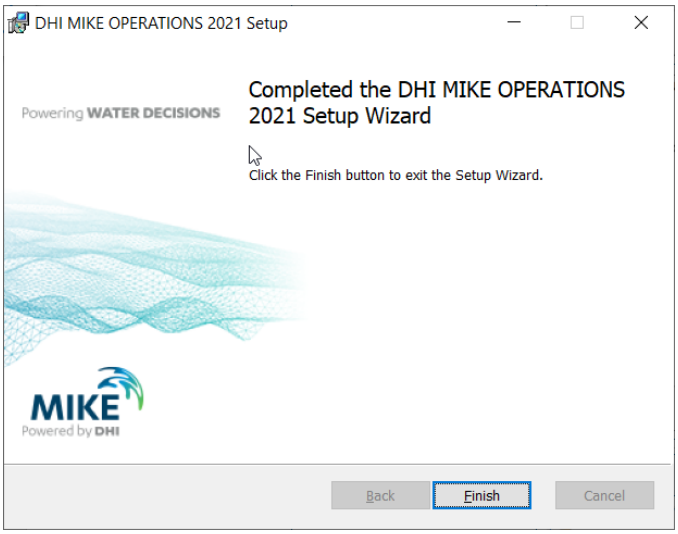
The following table explains how to install or upgrade MIKE OPERATIONS, MIKE WORKBENCH, and required 3rd party software.

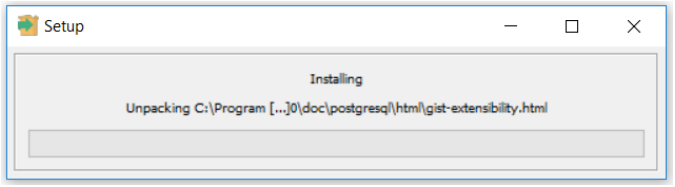
If you are installing MIKE OPERATIONS for the first time, PostgreSQL 13.2 and PostGIS 3.1.1 can be installed if you want to run on top of a PostgreSQL database. If you want to install a different combination than 13.2/3.1.1, refer to APPENDIX A.

Installation step	Screen
Run the setup.exe file from the installation media/download folder. *Note: In case the DHI License Manager is not installed, the installation wizard of the DHI License Manager will start.* *Refer to the installation guide of the DHI License Manager for more information about features and license configuration.* **Click** Next	

Installation step	Screen
Accept the license agreement **Click** Next	
Select the components to install. **MIKE Workbench** and the **Database Manager Utility** *are required components when installing MIKE OPERATIONS.* 	
MIKE OPERATIONS Desktop (optional) 	

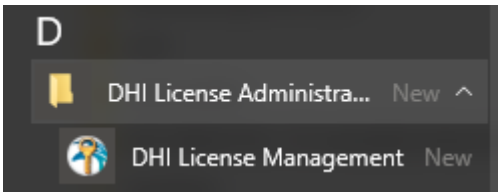
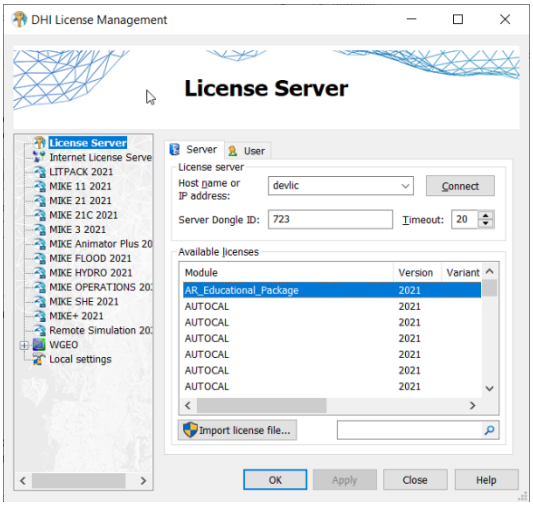
Installation step	Screen
PostgreSQL 13.2 including PostGIS (optional)	
Job Service Port Specify the port to use for the Job Manager Service. Use the default port (8089). It's possible in this step to specify a computer user profile to be used when running jobs. This can be edited later. *Note: If the Job Manager fails to start, this might be because the default port used for the Job Manager Service is already used. In that case, please restart the installation process and select a different port number.* **Click** Next	

Installation step	Screen
If you've selected a **PostgreSQL installation**, you will be asked to provide a password for PostgreSQL database. **Provide** Password to the PostgreSQL database **Click** Next Note: The password should be used whenever the Database Manager Utility is used or PostgreSQL native software PgAdmin is applied	
Click Install	
Click Finish	

Installation step	Screen
If you are doing a **PostgreSQL installation**, wait until installation of PostgreSQL and PostGIS is complete And **Click** OK to complete the installation	

4 DHI License File

The DHI license is handled through the DHI License Management software, which can be found under DHI License Administration in the Start Menu.

Installation step	Screen
Open the DHI License Management program in the start menu as **admin**	
There three different options: • Internet License • Network License • Local License (dongle) **Note: All Users must be ticked to allow job execution (if job service is using another user profile)** Please look in the documentation found by clicking the **Help** button or contact your local MIKE Sales representative.	

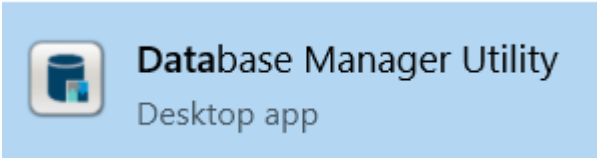
5 Set up database

Once the software is installed for the first time, it is required to set up a database. This includes connecting to a database file or server, creating a database, and making a database connection. Instructions for database setup and connection are provided in the help file for the **Database Manager Utility.** The following database types are supported:

- PostgreSQL
- SQLite
- Oracle
- MS SQL Server

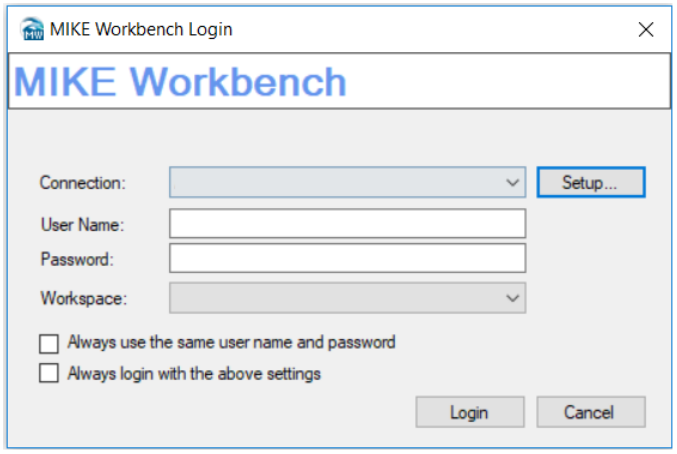
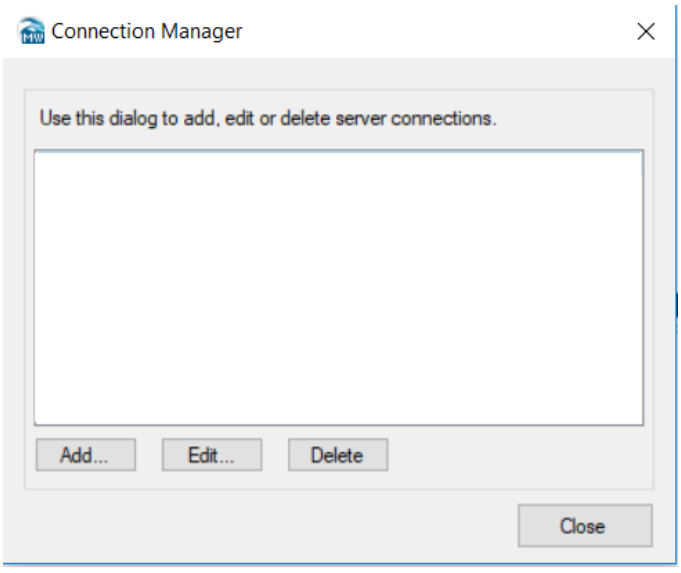
It's also possible to use Azure Database for PostgreSQL instead of a local PostgreSQL service.

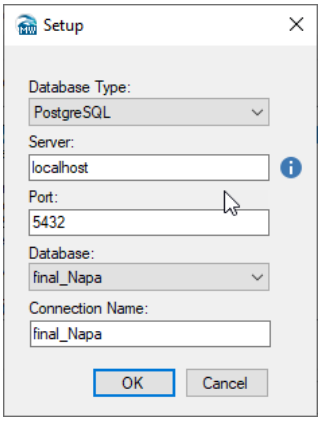
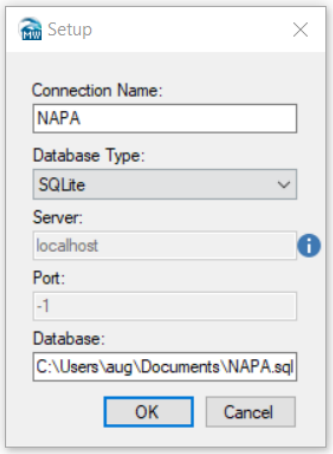
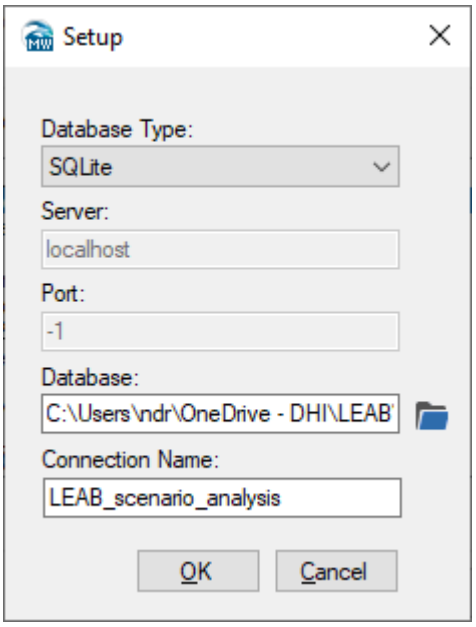
To launch **Database Manager Utility**, go to the Start menu and search for **Database Manager Utility**.

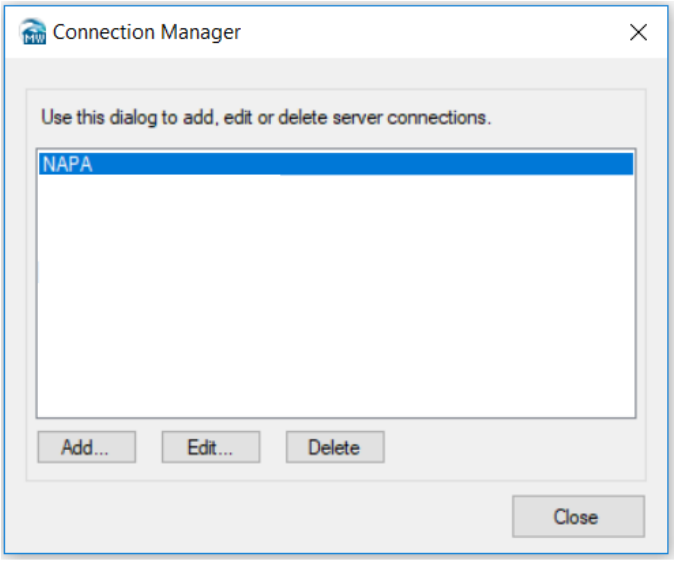
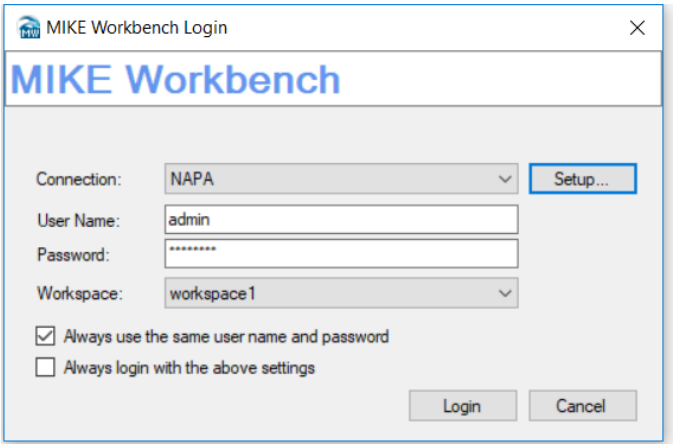


6 Connect to a database in MIKE Workbench

After a database has been created in the Database Manager Utility, a connection to the database must be created in MIKE WORKBENCH.

Instructions	Screen
When opening MIKE WORKBENCH, a connection window appears **Click** “Setup…”	
A connection manager them allow you to create a connection **Click** “Add…”	

Instructions	Screen
In the Setup window, a database connection is defined. If the selected database type is **PostgreSQL**, **MS SQL Server**, or **Oracle**, you should define the server name. In the current example, we work with a database installed locally and the server name should be set to “localhost”. The port should be set to the port associated with the server. This association is made in Database Manager Utility for local services. The Database is selected from the databases available from the given server/port combination. The Connection Name is set to the database name by default but can be changed. **Click** OK	 
For **SQLite**, you should define the path to the sqlite file. The Connection Name is set to the database name by default but can be changed. **Click** OK	

Instructions	Screen
The newly created connection appears in the list. **Click** Close	
The Connection menu now shows the newly created database connection. By default, the pre-configured administrator account is called “admin”. The password is “dssadmin” This can be changed after logging in to the system. See the MIKE Workbench documentation for more information. **Click** “Login”	

7 Updating Existing Database

If you are doing an update, you should ensure the database version and the MIKE OPERATIONS version are consistent. Indeed, from one version to another one, the database schema usually evolved.

Instructions for updating a database are provided in the help file of the Database Manager Utility.

Beware that after updating the database, MIKE OPERATIONS users working with the earlier version of the software will not be able to use the database. After the database has been updated everybody using the database should update the client.

8 Database Server Update

This chapter concerns users:

- **Installing** MIKE OPERATIONS on a computer different from the database server
- **Upgrading** MIKE OPERATIONS on a computer different from the database server
- **Updating** a database with Database Management Utility from a computer different from the database server

From version 2017.5, the Mesh Database was implemented in MIKE OPERATIONS. This requires a specific dll to be located on the database server. The installer and the Database Management Utility will copy automatically is PostgreSQL is installed locally. In the case PostgreSQL is not installed locally, the user will need to carry out the following steps to ensure MIKE OPERATIONS works correctly:

- Locate and copy the file called “DHI_mesh.dll” in the MIKE OPERATIONS bin folder[1]
- Log in to the computer on which the database server is installed (PostgreSQL)
- Paste the file to the “lib” folder of the PostgreSQL installation[2].

[1] E.g. C:\Program Files (x86)\DHI\MIKE OPERATIONS\2021\bin\PostgreSQL

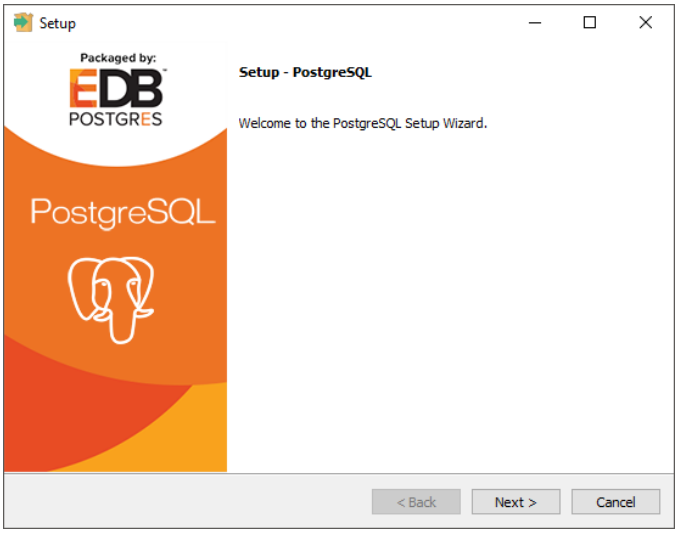
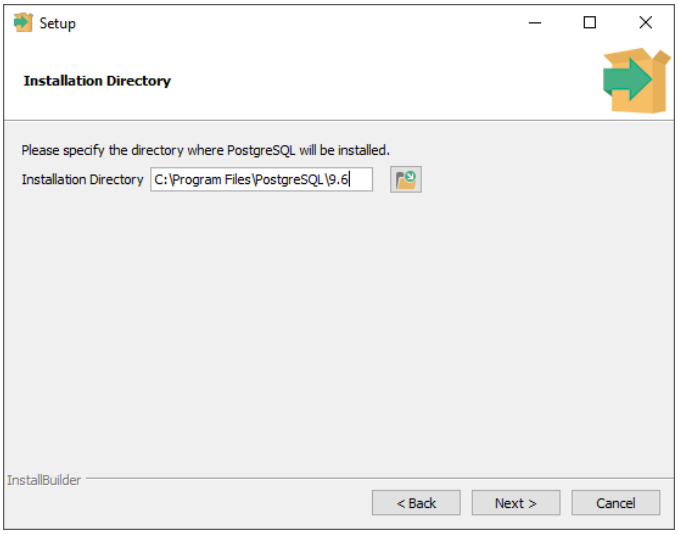
[2] C:\Program Files\PostgreSQL\12\lib (or relevant DB folder)

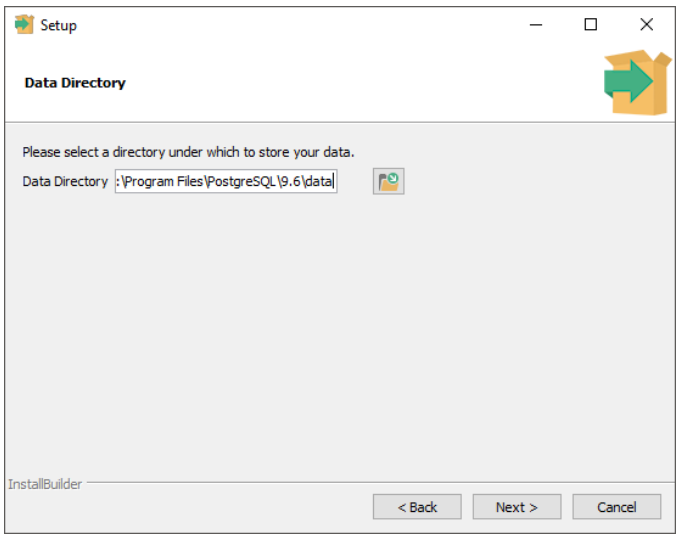
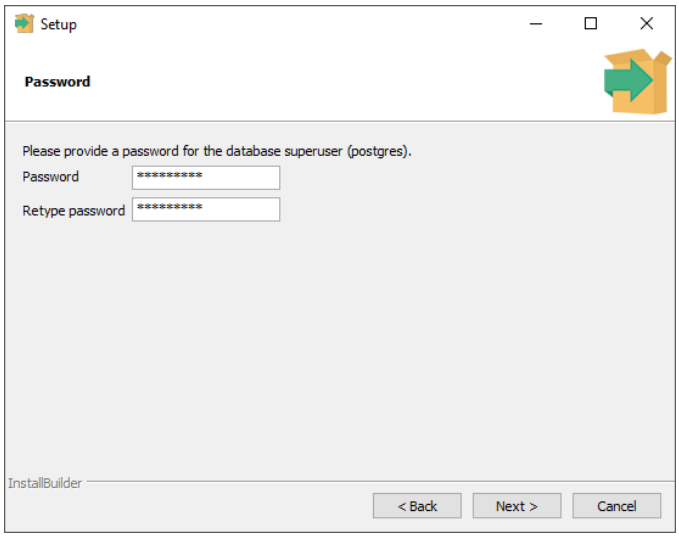
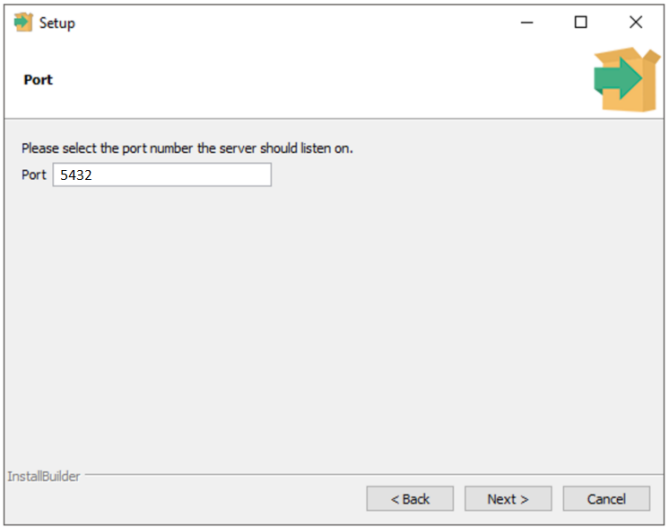
APPENDIX A: Install different version of PostgreSQL

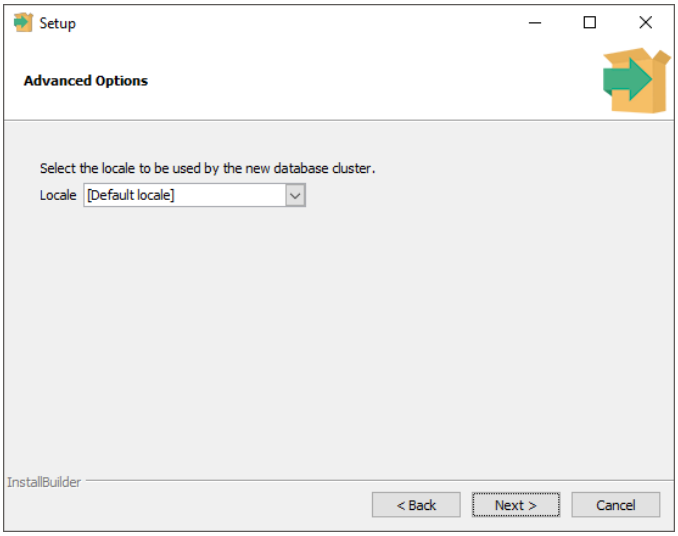
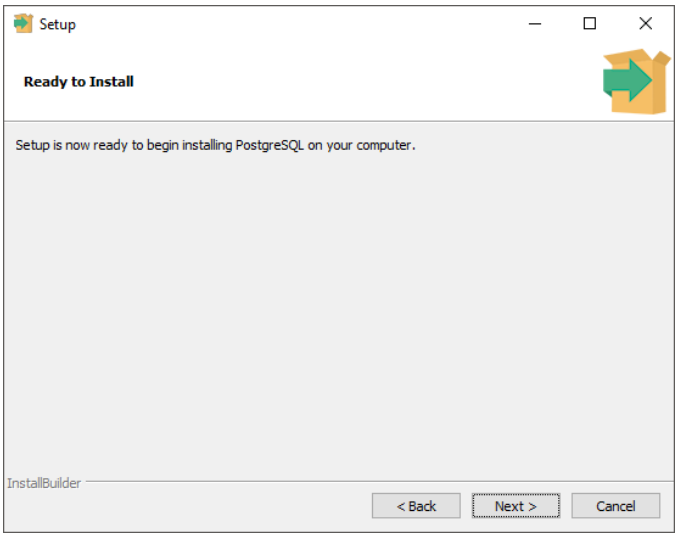
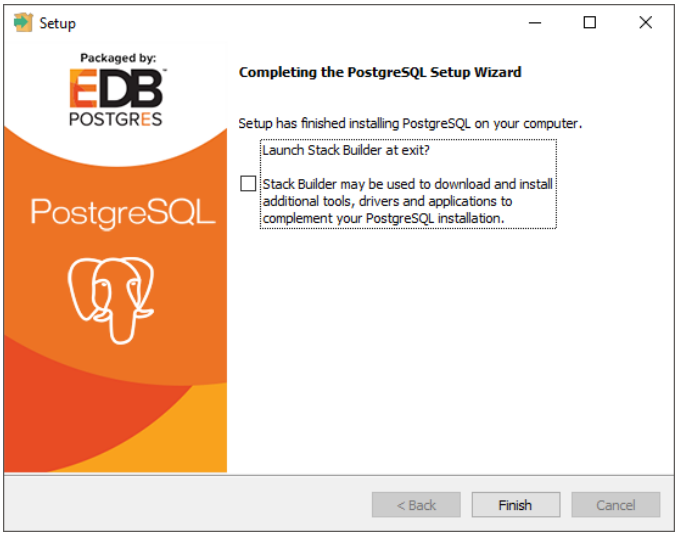
As mentioned in Chapter 2, it is possible to use several versions of PostgreSQL database.

PostgreSQL Installation

The following table explains how to install a PostgreSQL installer downloaded from internet.

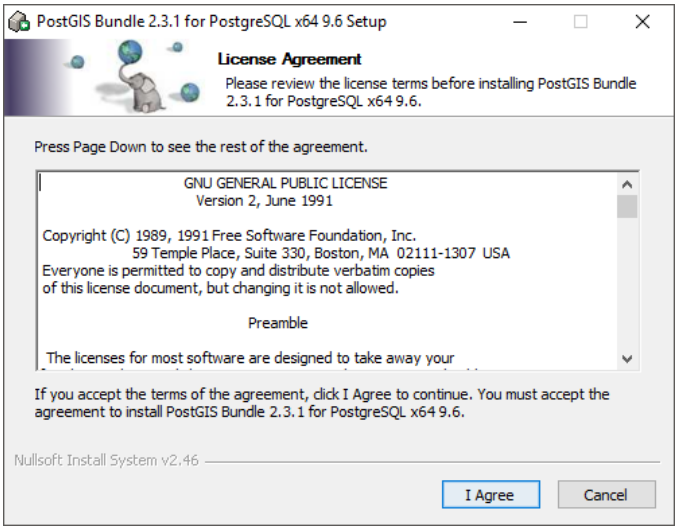
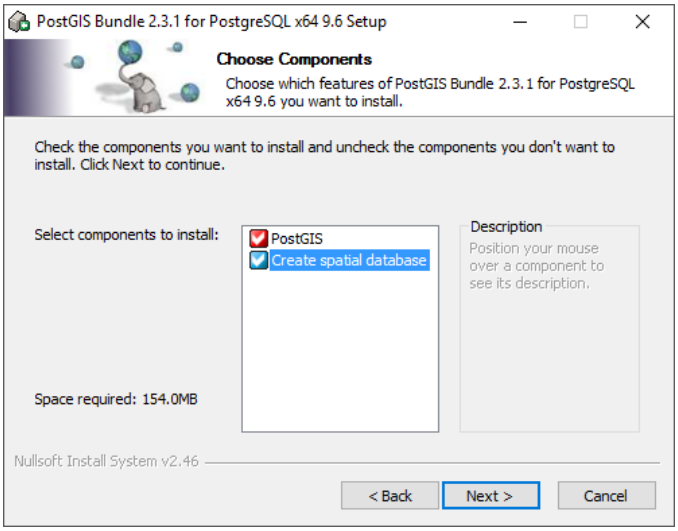
Installation step	Screen
Run the database installation program e.g. postgresql-XX.X-X-windows-x64.exe	
Start of installation **Click** Next	
Accept the default installation folder **Click** Next	

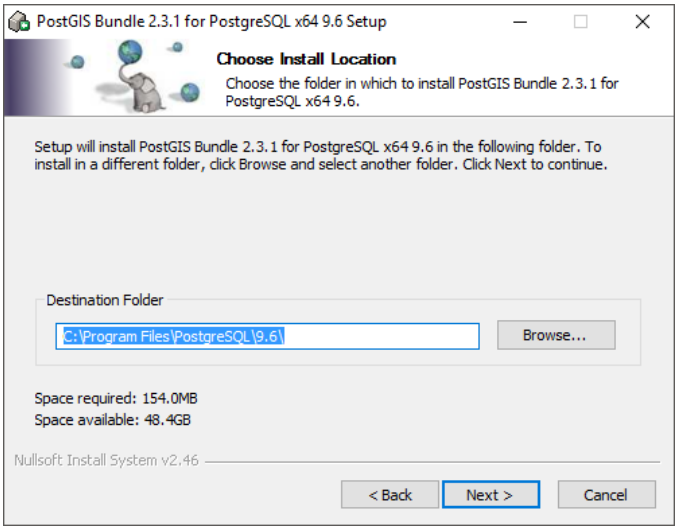
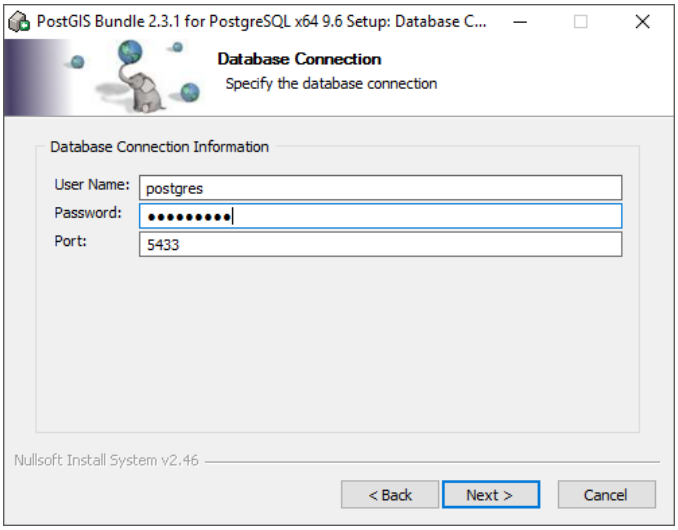
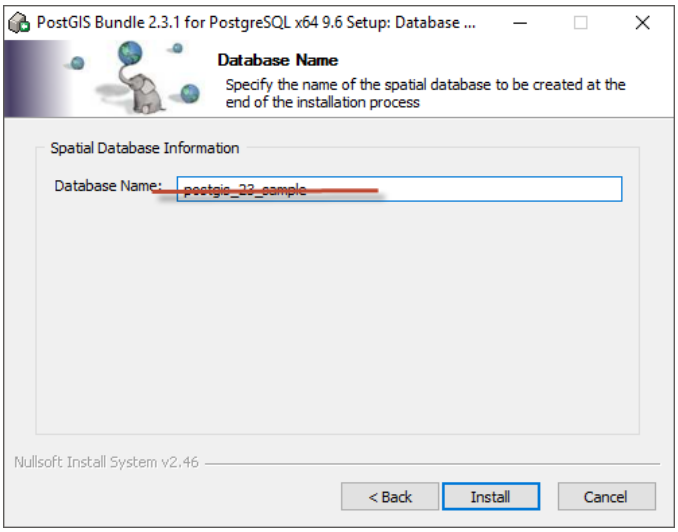
Installation step	Screen
Accept the default data folder. **Click** Next	
Type in a password of your choice for the “postgres” user (the administrator for the database server). **Note:** Do not forget this password **Click** Next	
Accept the default port number (5432) **Click** Next	

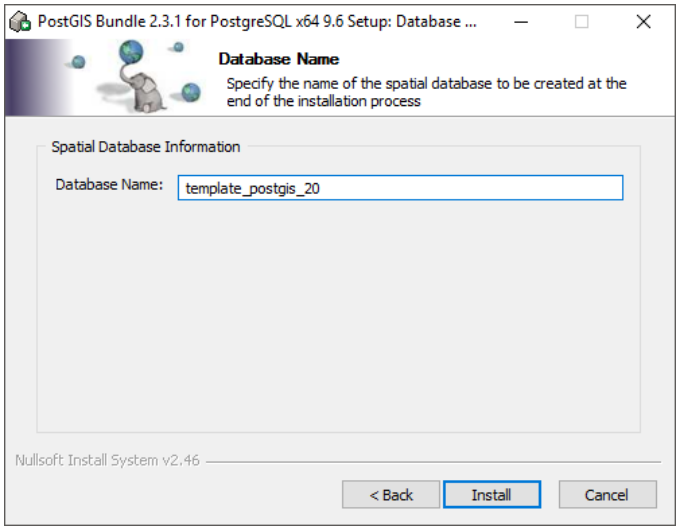
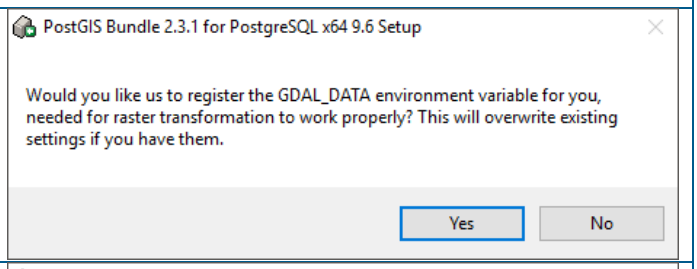
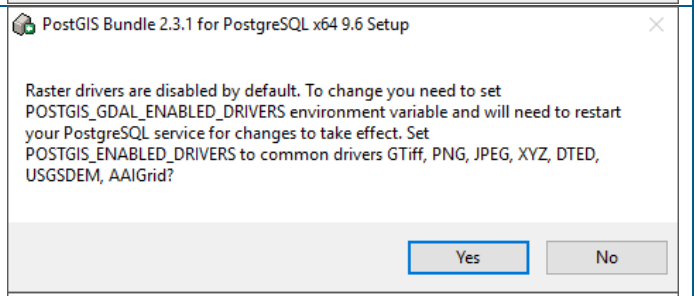
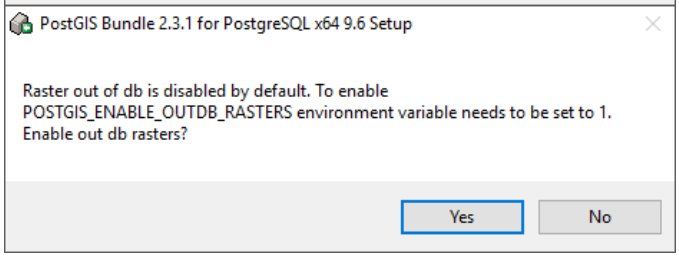
Installation step	Screen
Leave the "Locale" as “Default Locale” **Click** Next	
Click Next	
The database server installation has finished **Click** off the “Launch Stack Builder at exit?” option and then **click** Finish	

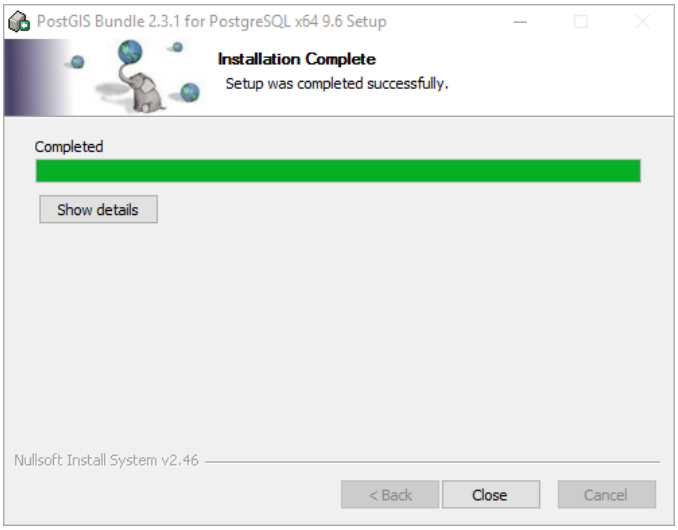
PostGIS Manual Installation

The following table explains how to install PostgreSQL exemplified by using a PostGIS postgis-bundle-pgXXx64-setup-X.X.X-X.exe installer from internet.

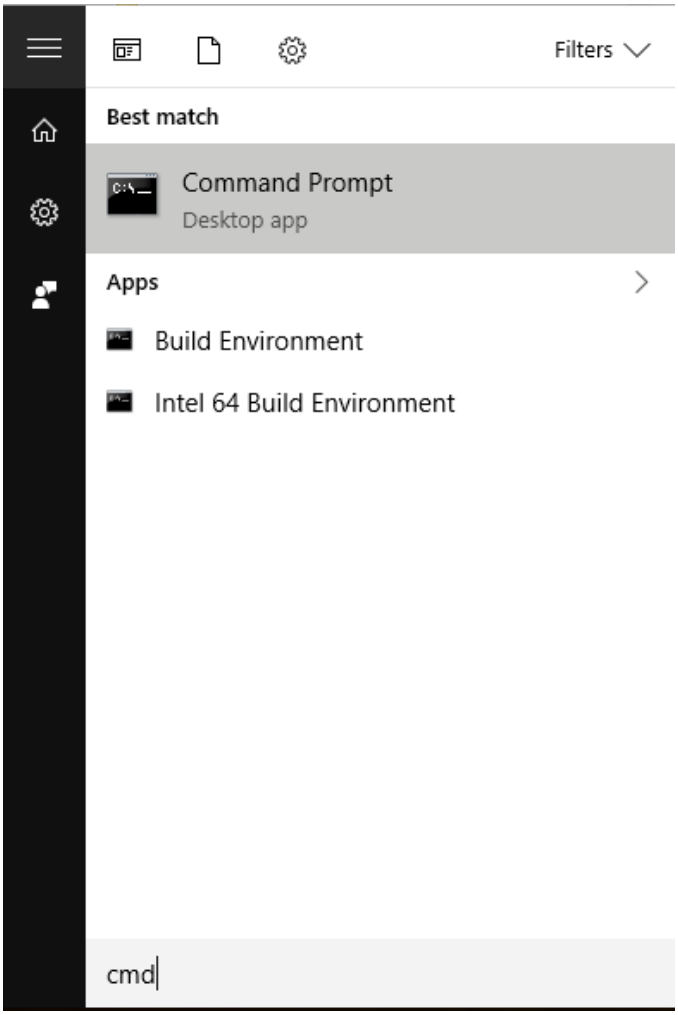
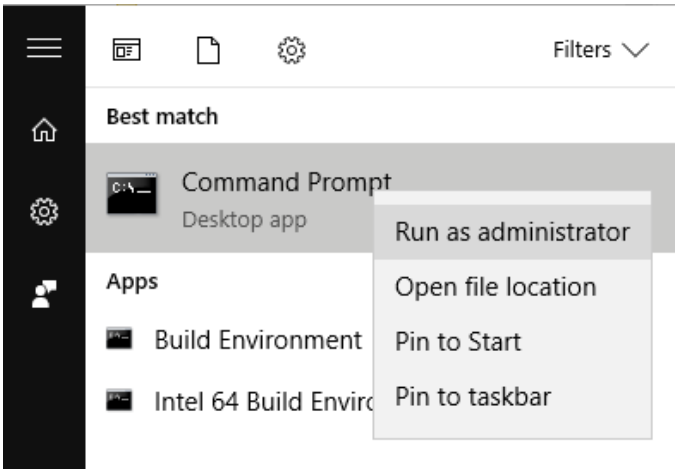
Installation step	Screen
Run the PostGIS installation program (e.g. postgis-bundle-pg96x64-setup-2.3.1-1.exe)	
Start of installation **Click** I Agree	
Check “Create spatial database” **Click** Next	

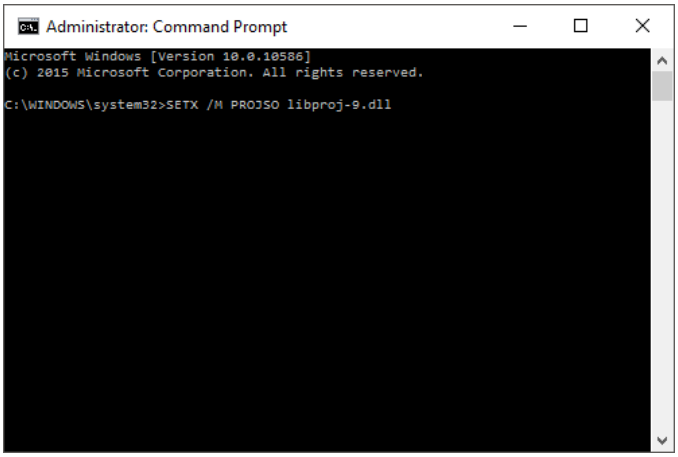
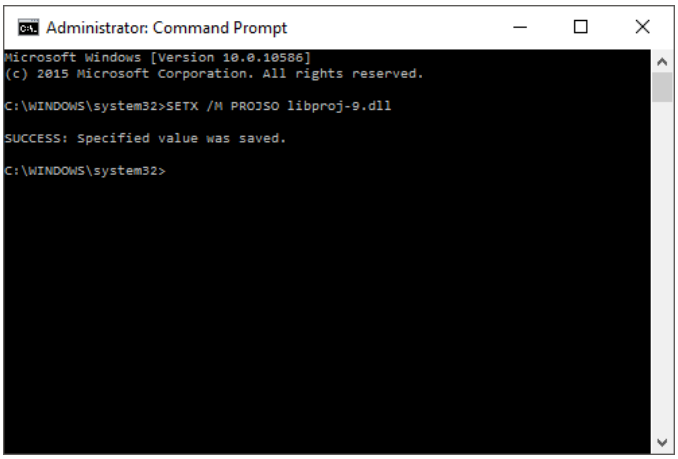
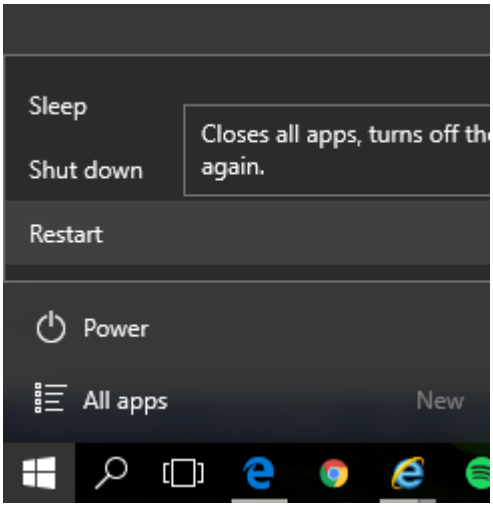
Installation step	Screen
Accept the default folder. **Click** Next	
Type in the password that was specified for the “postgres” user when installing the PostgreSQL database server **Click** Next	
Rename the Spatial database: **template_postgis_20**	

Installation step	Screen
	
Yes, to the GDAL_Data environment variable **Click** Yes	
Yes, to both set of environment variables **Click** Yes	 

Installation step	Screen
The installation has finished **Click** Close	

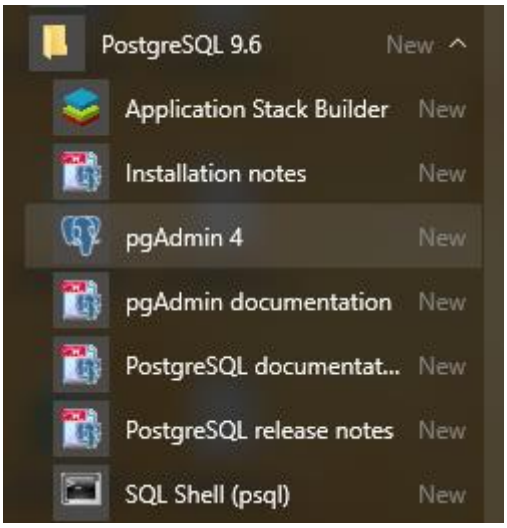
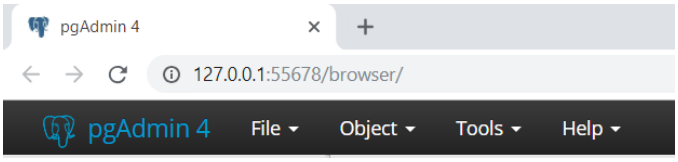
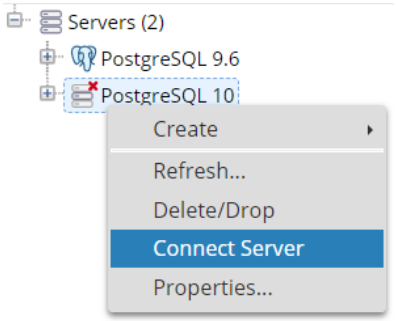
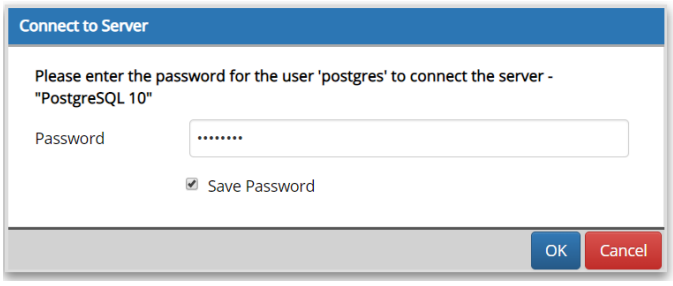
Configuration of PostGIS

Installation step	Screen
Open the Windows Command Prompt Click the Windows Start Menu and type “cmd”	
Right-click on cmd.exe and choose **Run as administrator**	

Installation step	Screen
In the command prompt type **SETX /M PROJSO libproj-9.dll** and press enter	 
Restart the computer to make the environment variable available to PostGIS	

APPENDIX B: Advanced PostgreSQL Database management tool

The PostgreSQL database password provided during installation can be stored in the database for easy access in the future. It is an optional configuration.

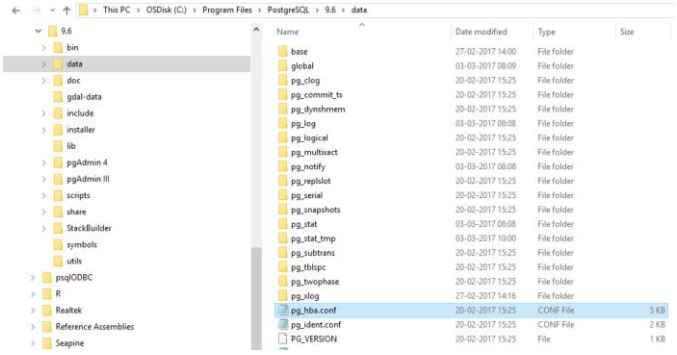
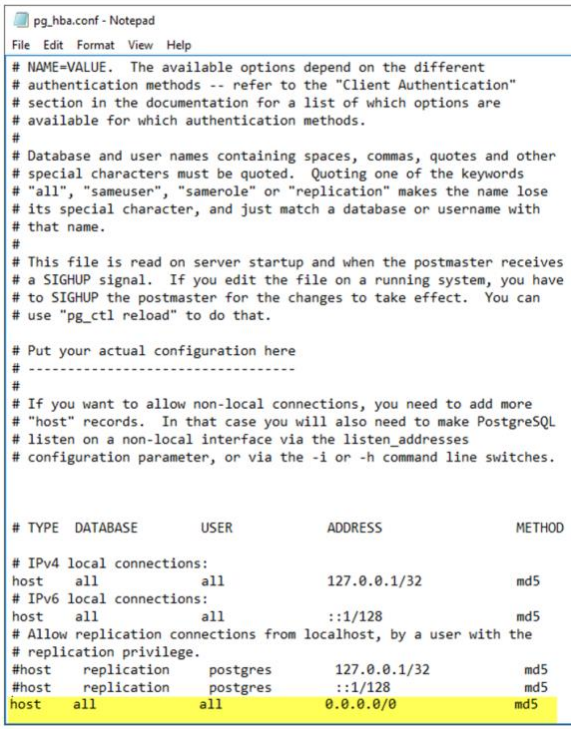
Installation step	Screen
Start the `pgAdmin 4` database administration tool from the Windows Start menu	
An **internet browser** opens	
Right click the database server entry for `localhost` under the Servers node to access “Connect Server”	
Provide the password for the “`postgres`” user and check on the “Store password” option **Note:** Clicking on “Store password” leads to a warning. **Click** OK on the warning dialog	

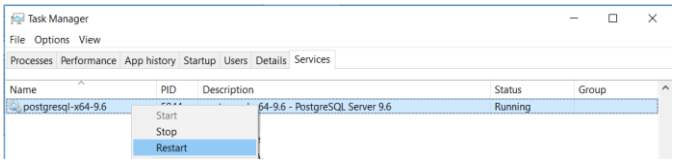
APPENDIX C: Configuring the PostgreSQL Database Server for remote access

IMPORTANT: This is only needed if the database server shall accept connection from remote computers.

The section describes how to configure the PostgreSQL database server for running in corporate mode.

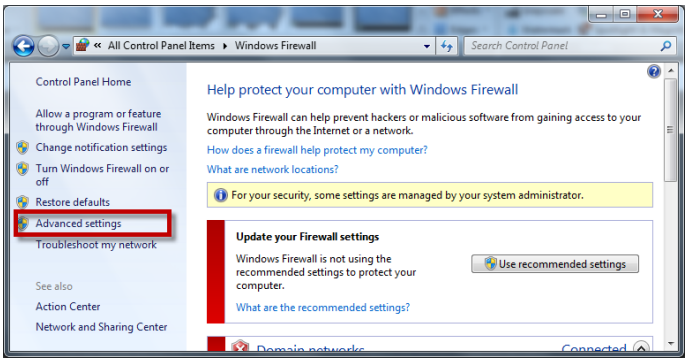
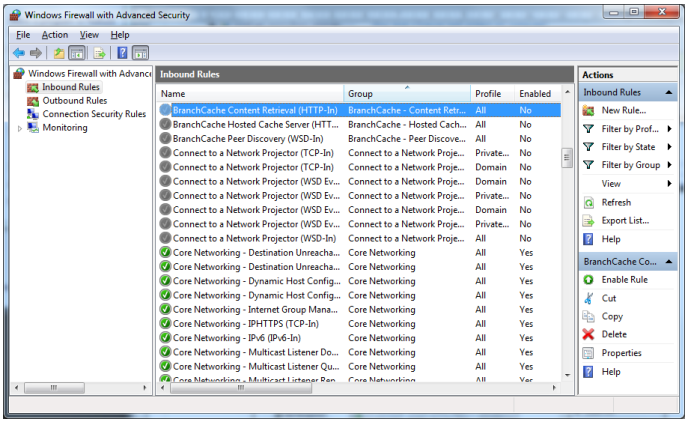
Start by enabling password save as shown in APPENDIX B.

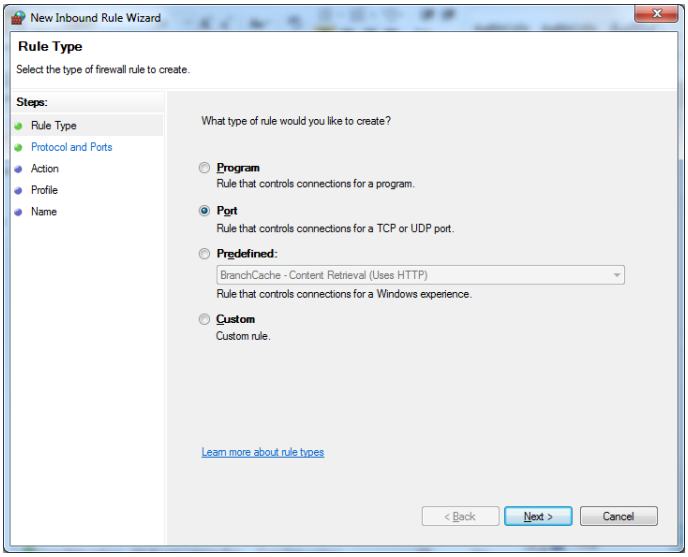
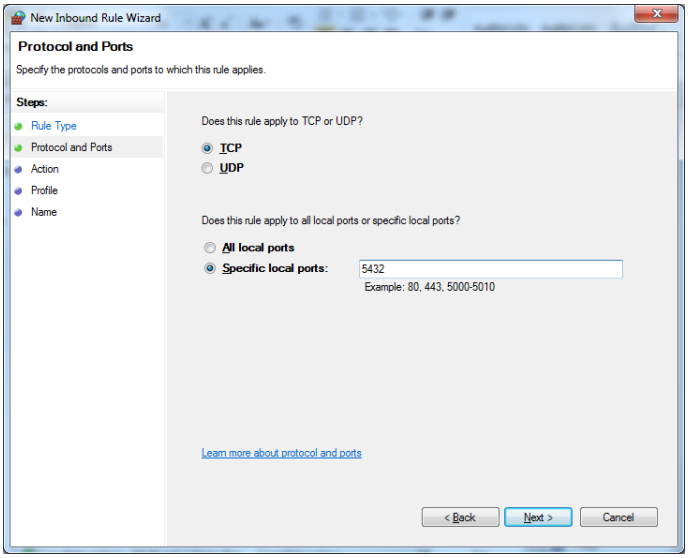
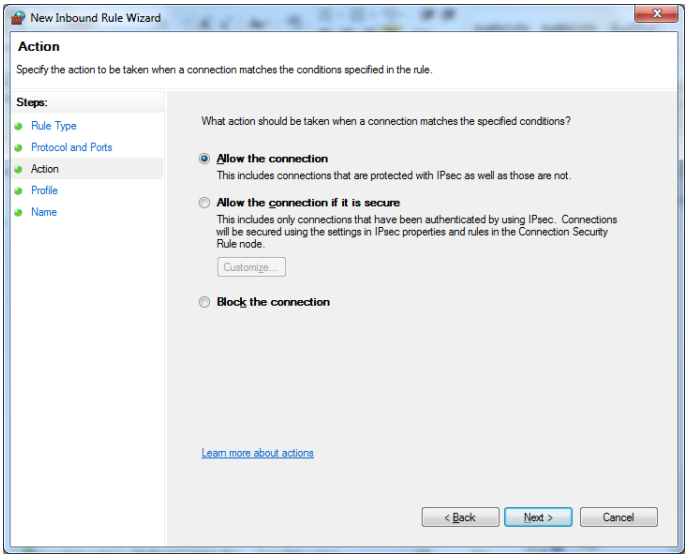
Installation step	Screen
Locate the pg_hba.conf file in the data folder (**C:\Program Files\PostgreSQL\10\data**) and open it in an editor e.g. Notepad	
Insert a new line to open up for all non-local connections to database as shown on the right **host all all 0.0.0.0/0 md5** **Adjust spaces!** **Save** the configuration.	

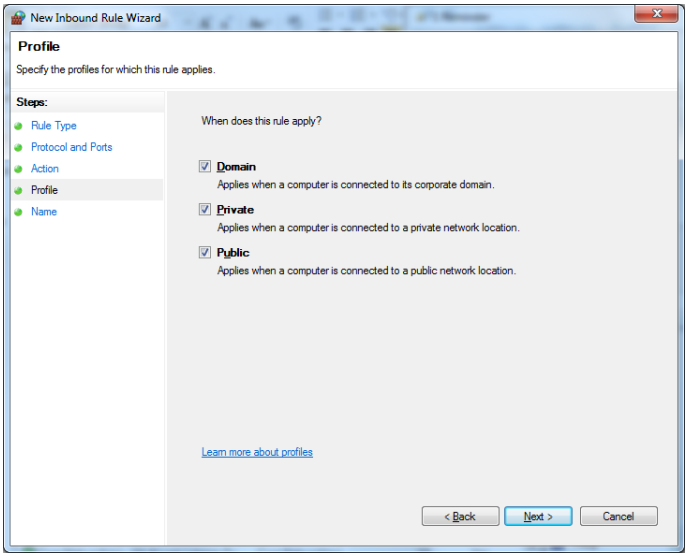
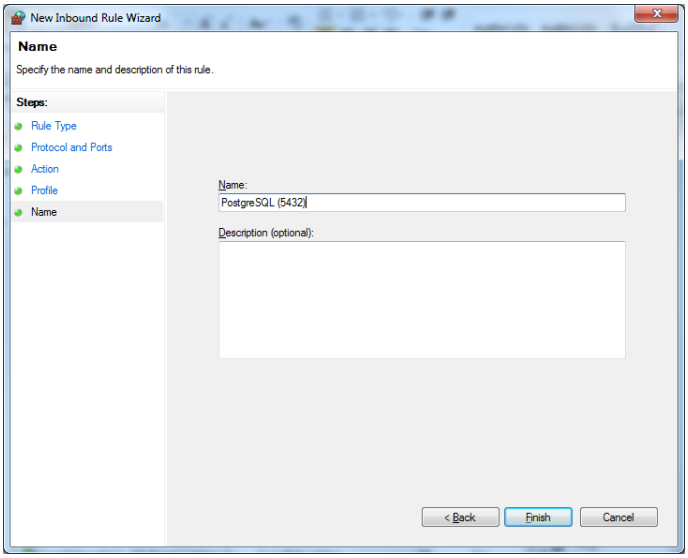
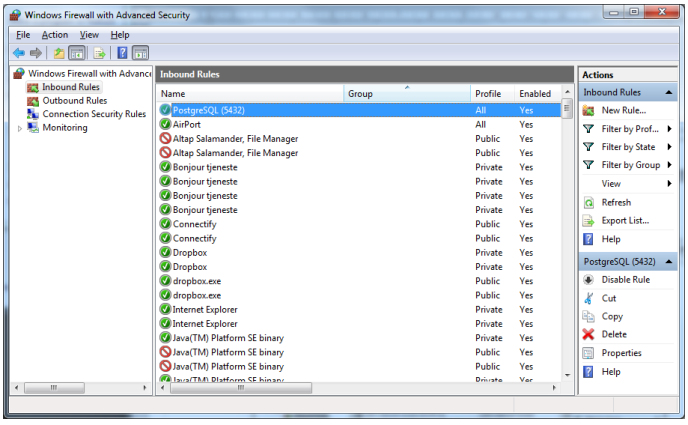
Installation step	Screen
Restart the services to apply the update	

Configuring the Windows Firewall for remote access to MIKE OPERATIONS

The section describes how to configure the Windows firewall for MIKE OPERATIONS running in enterprise mode.

Installation step	Screen
Open the Firewall applet in the Windows Control Panel **Click** Advanced Settings	
Select Inbound Rules **Click** New Rule in the Actions panel to the right	

Installation step	Screen
Select Port **Click** Next	
Select TCP, Specific local ports and **enter** 5432 (or the port number specified when installing PostgreSQL) **Click** Next	
Select Allow the connection **Click** Next	

Installation step	Screen
Click on for all profiles **Click** Next	
Specify a rule name – e.g. “PostgreSQL (5432)” – and a description **Click** Finish	
The new rule is now added to the list of Inbound rules	

APPENDIX D: Troubleshooting

Event Manager will not start (System.PlatformNotSupportedException)

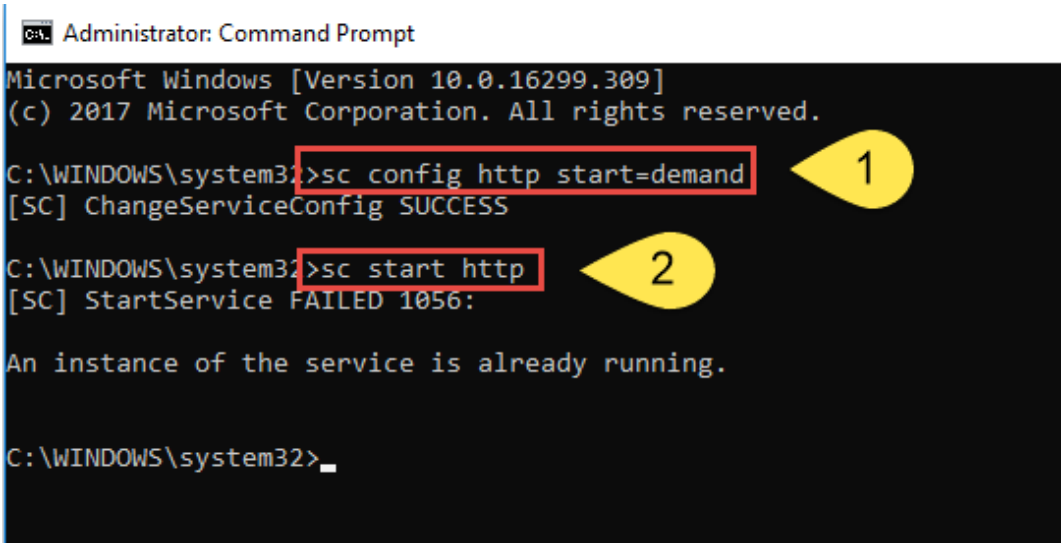
If the DHI Event Manager is not starting during the installation, the installation cannot complete and will roll back.

The following stack trace can be found in the Windows Event Viewer.

```
Service cannot be started. System.PlatformNotSupportedException: Operation is not supported on this platform.
   at System.Net.HttpListener..ctor()
   at System.ServiceModel.Channels.SharedHttpTransportManager.OnOpen()
   at System.ServiceModel.Channels.TransportManager.Open(TransportChannelListener channelListener)
   at System.ServiceModel.Channels.TransportManagerContainer.Open(SelectTransportManagersCallback selectTransportManagerCallback)
   at System.ServiceModel.Channels.TransportChannelListener.OnOpen(TimeSpan timeout)
   at System.ServiceModel.Channels.HttpChannelListener`1.OnOpen(TimeSpan timeout)
   at System.ServiceModel.Channels.CommunicationObject.Open(TimeSpan timeout)
   at System.ServiceModel.Dispatcher.ChannelDispatcher.OnOpen(TimeSpan timeout)
   at System.ServiceModel.Channels.CommunicationObject.Open(TimeSpan timeout)
   at System.ServiceModel.ServiceHostBase.OnOpen(TimeSpan timeout)
   at System.ServiceModel.Channels.CommunicationObject.Open(TimeSpan timeout)
   at DHI.Solutions.EventManager.Service...
```

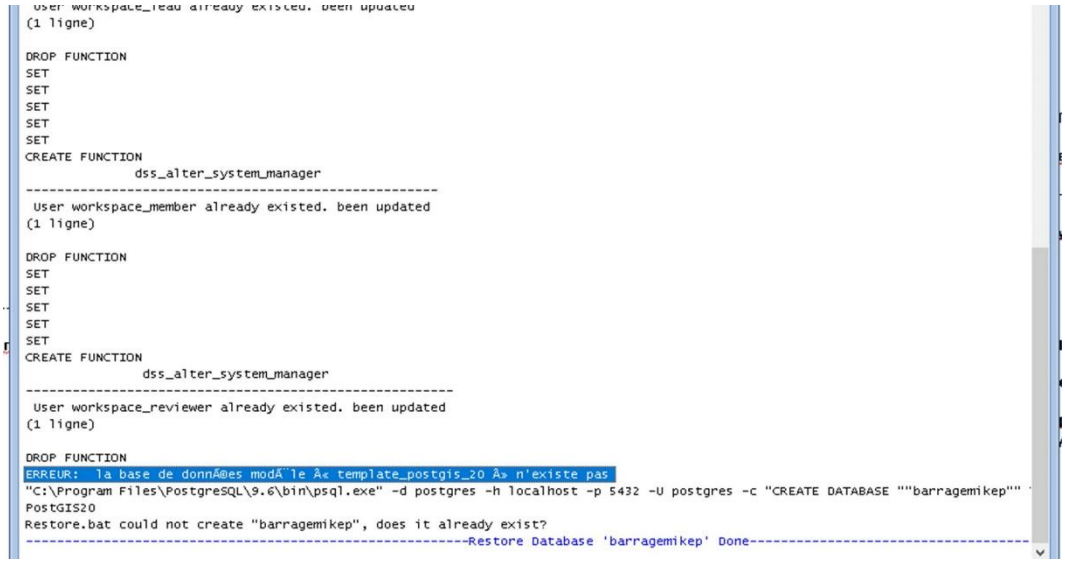
To solve the System.PlatformNotSupportedException issue:

a. Start a command prompt “as administrator”.
b. Run “sc config http start=demand”
c. Run “sc start http” (to make sure that the http service is running)



Template_postgis_20 does not exist

After making a fresh installation of MIKE OPERATIONS, when trying to create a new database, if you receive an error message mentioning a missing database model “template_postgis_20”, it means that PostGIS was not installed correctly.



The solution is to reinstall PostGIS (see APPENDIX A). The download file can be found online.