# STM6000 Edge Box HMI

# Demo Setup Guide – Database





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v1.0

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### **Preface**

### (1) About this quick start guide

This Edge Box HMI Demo Setup Guide is intended for individuals using the Edge Box HMI and its software for demonstration purposes and not for a production environment. This publication will help you quickly configure hardware, software and cloud services.



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# Any problems?

Please refer to manuals when having a problem with Edge Box HMI.

(Hardware)

STM6000 hardware manual:

https://www.proface.com/en/product/hmi/stm6000/download

(Software)

BLUE Open Studio Support /Downloads:

https://www.proface.com/en/product/soft/blue-os/download

### **Preface**

## (2) Building a development environment

Prepare the following environment.





Transfer Cable



Pro-face Edge Box HMI PFXSTM6B00DIOT

# (A) BLUE Open Studio

BLUE Open Studio is a development and runtime software that incorporates all the tools users need to create SCADA HMI applications, dashboards and OEE interfaces.

#### (B) Transfer Cable

Two ways of transferring project files



USB Cable (Type A – Micro-B) Use an optional USB transfer cable or commercial USB cable (Type A to Micro-B) for transfer.



LAN Cable

Use LAN cable (Ethernet cable) for transfer.

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# (C) Pro-face Edge PFXSTM6B00DIOT

Please visit <a href="https://www.pro-face.com">https://www.pro-face.com</a> for more information on the Pro-face Edge Box HMI.



Pro-face Edge Box HMI PFXSTM6B00DIOT

# **Preface**

### (3) How to get BLUE Open Studio

To create HMI Screen for the Edge Box HMI, the version of BLUE Open Studio needs to be V2020 SP2 or later.



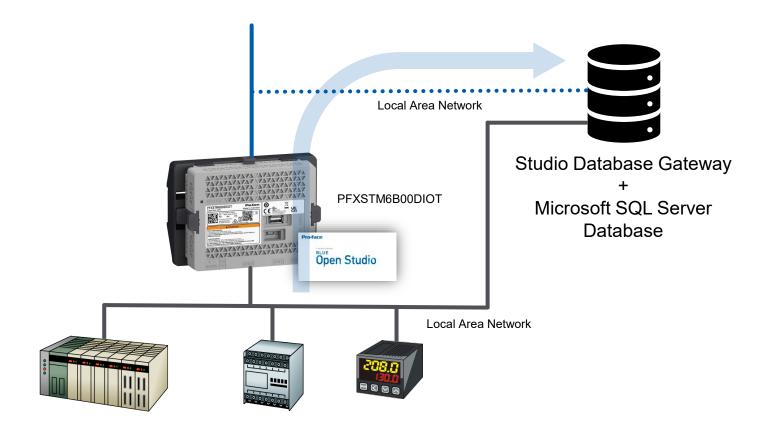
You can download BLUE Open Studio Installer from the following link. https://www.proface.com/en/service#/page/installer/bos

You can use the software without a license in Evaluation Mode for 40 hours. After the evaluation period ends, the program automatically converts into Demo Mode until you apply a valid license. You cannot reactivate the Evaluation Mode even if you reinstall the software on your computer.

Please access the activation page to check how to activate BLUE Open Studio.

# 2. STM6000 Edge Box HMI Demo Overview

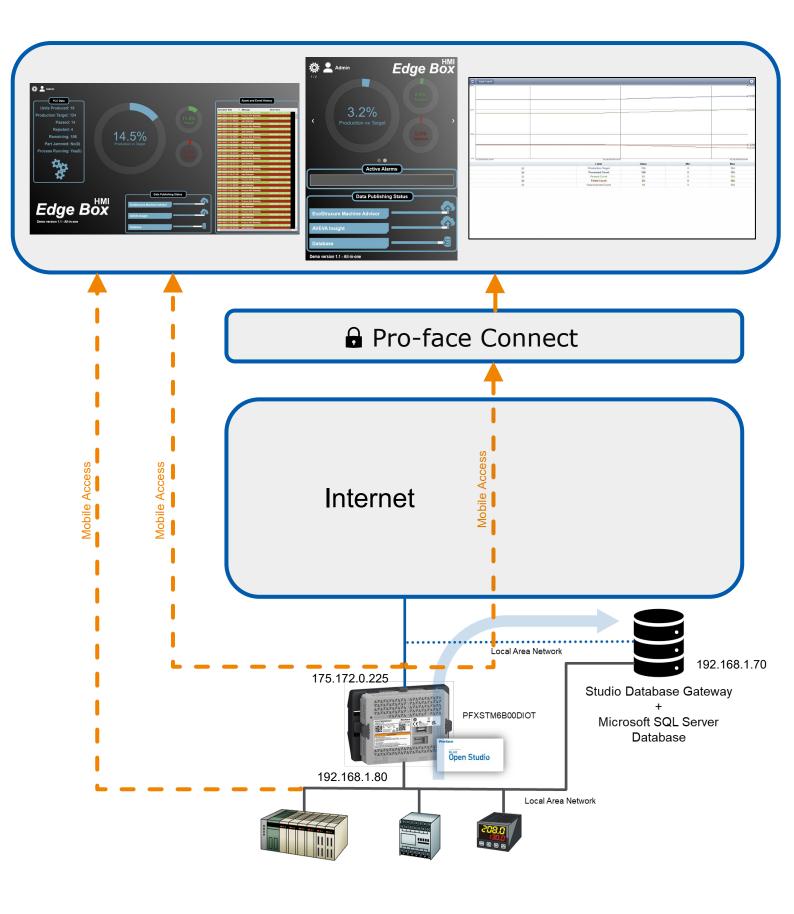
The STM6000 Edge Box HMI Demo – All-in-one demonstrates pushing data from internal tags or external devices to the cloud and a local database. EcoStruxure Machine Advisor and AVEVA Insight are used for the cloud. Microsoft SQL Server is used for the local database. Although a PLC or other device can supply data, for demonstration purposes data is internally generated.



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# STM6000 Edge Box HMI – Demo Setup Guide – Database

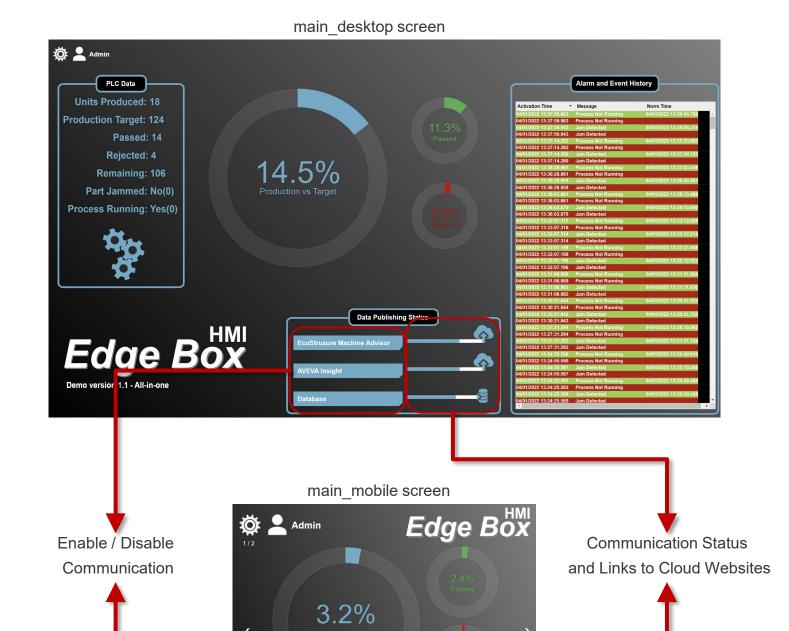
The STM6000 Edge Box HMI cannot be used with an integrated display. However, you can view screens and more within a web browser using Mobile Access. Mobile Access can be used via one of the two possible IP addresses of the Edge Box HMI. For secure remote viewing utilise Pro-face Connect + the local IP.



7\_\_\_\_\_v1.0

The demonstration project has two user accounts:

- Guest, password = (blank)
- Admin, password = Admin



**Active Alarms** 

Data Publishing Status

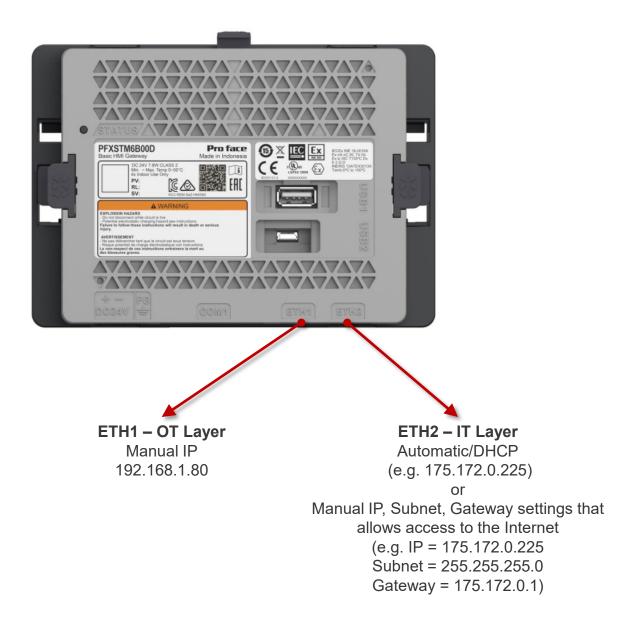
8

**EcoStruxure Machine Advisor** 

**AVEVA Insight** 

Demo version 1.1 - All-in-one

# 3. Hardware Configuration

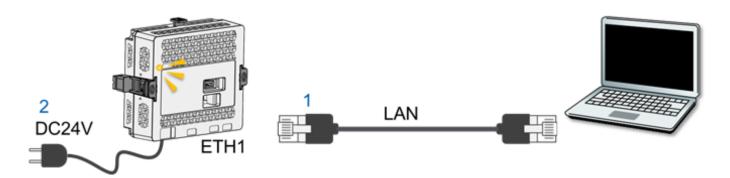


The STM6000 Edge Box HMI will have two connections for demonstration purposes:

- ETH1 is primarily for the Operational Technology layer (OT) and is potentially connected to OT devices. For an easy demonstration experience a database service can also be connected to this layer. No internet connectivity on this port.
- ETH2 is primarily for the Internet Technology layer (IT) and is potentially connected to the internet via a router, Local Area Network (LAN) or other edge/IT devices. Connections to cloud services, databases and other services can be done from this port.

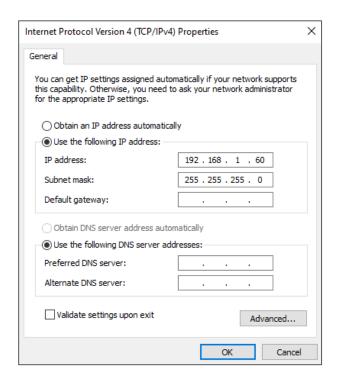
9

- Connect a USB transfer cable (micro-B) to Edge Box HMI.
   or Connect to the same network as PC (development environment) using ETH1 port of Edge
   Box HMI.
- 2. Turn on STM6000 Edge Box HMI. The status LED flashes orange.



3. Set IP address of your computer as follows:

IP address: 192.168.1.60, Subnet Mask: 255.255.255.0

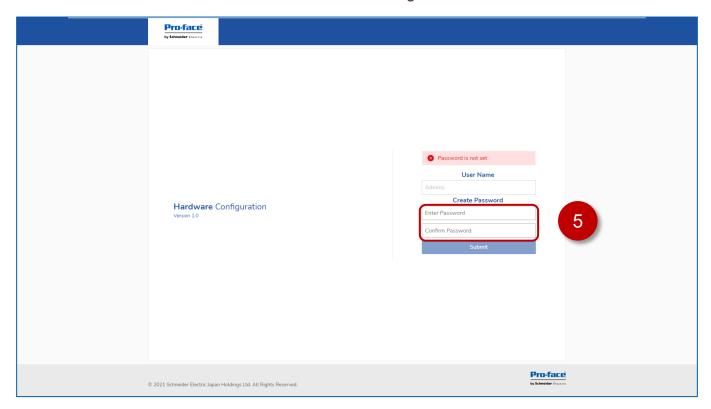


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 Open a web browser on your PC, and in the address bar enter the IP address of Edge Box HMI. (Ethernet) <a href="https://192.168.1.80">https://192.168.1.80</a>
(USB) <a href="https://169.254.100.100">https://169.254.100.100</a>

The message "Your connection is not private" is displayed. To continue, click Advanced and then click Proceed to \*\*\* (\*\*\* is the IP address).

Hardware Configuration screen is displayed.
 Set a login password and click [Submit]. e.g. !Proface1234, and click [Submit]
 Note: The user name is "Admins" and cannot be changed.

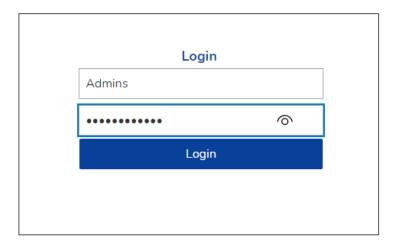


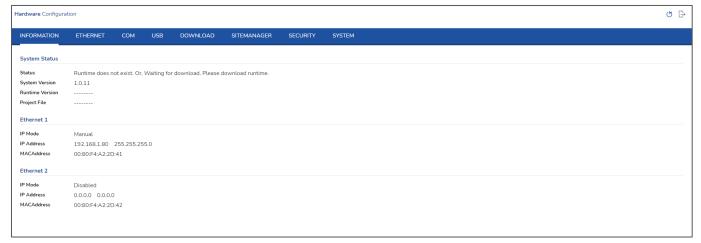
The password must meet the following requirements:

Number of characters	At least 8 single-byte characters, up to 64 characters
Types of characters	Use at least one of each of the following types of characters:  • Uppercase letter (A-Z)  • Lowercase letter (a-z)  • Number (0-9)  • Symbol (special character): ! # - =

Note: If you forget the password, note that you will not be able to reset it. To restore the product to its original state (at time of purchase), contact customer support. All user data in the product will be lost.

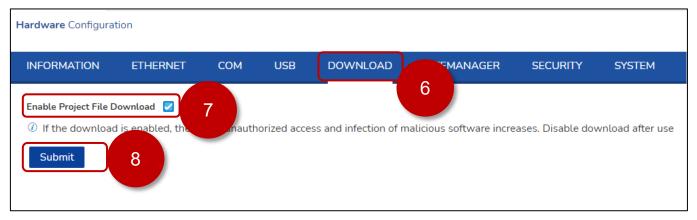
5. Enter the User Name, Admins and the newly created password, e.g. !Proface1234. Click [ Login ]



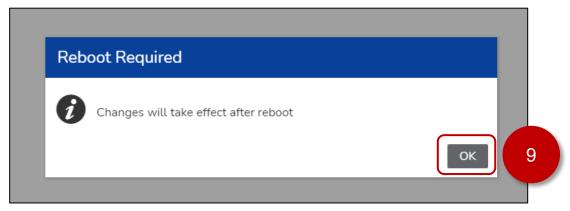


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#### 6. Click [ DOWNLOAD ].



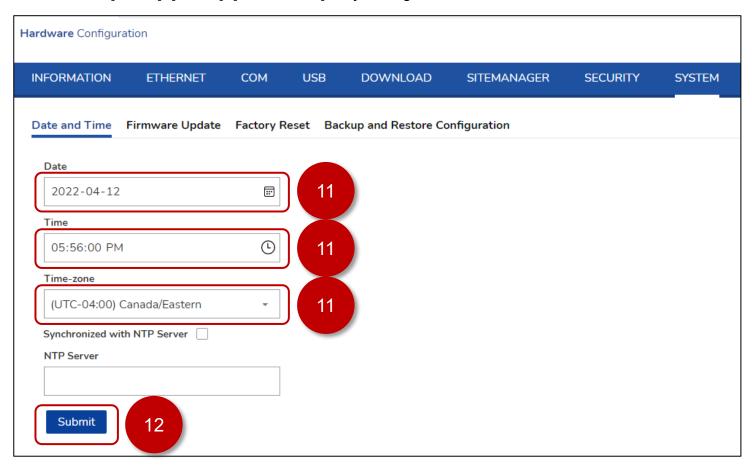
- 7. Check [Enable Project File Download]
- 8. Click [ Submit ]. Changes will take effect after a reboot.
- 9. Click [ OK ] to accept the Reboot required message.



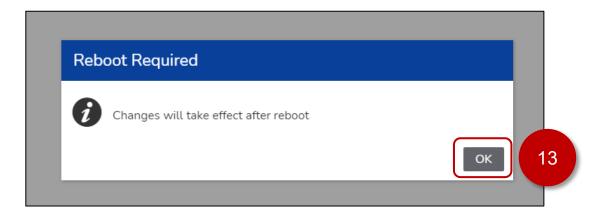
### 10. Click [ SYSTEM ]



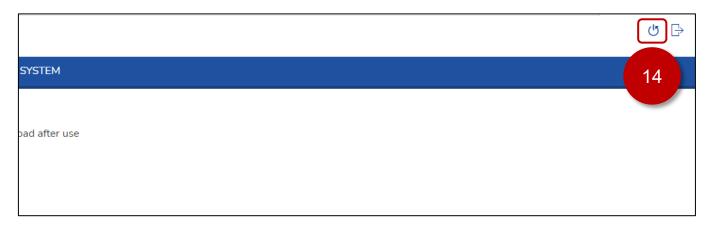
11. Set the [Date], [Time], [Time-zone] for your region.



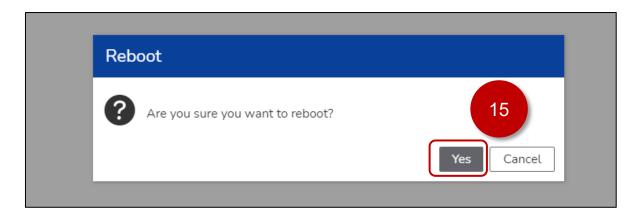
- 12. Click [ Submit ], changes will take effect after reboot.
- 13. Click [ OK ] to dismiss the Reboot Required dialog.



14. Click the [Reboot] icon ( at the top right of the web page.



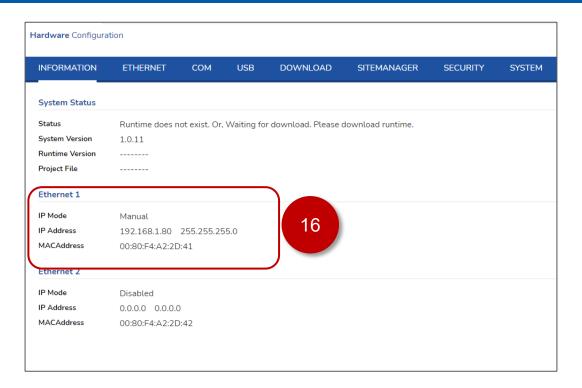
15. Click [Yes] in the Reboot dialog.

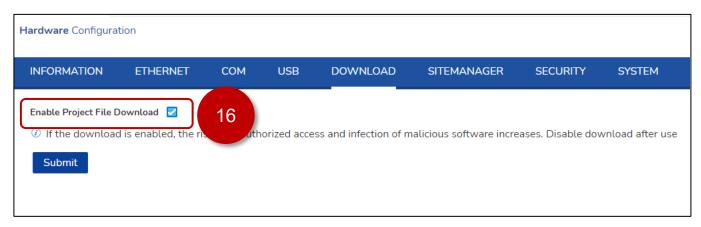


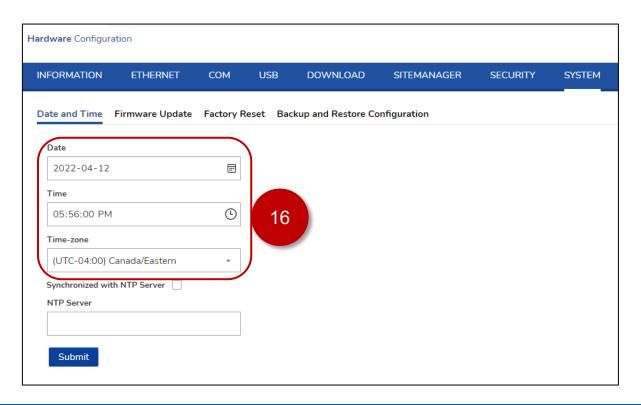
16. After the Edge Box HMI has rebooted. Confirm the [Ethernet 1] Settings, [Enable Project File Download] check box, [Date], [Time], [Time-zone] are as previously selected.

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# STM6000 Edge Box HMI – Demo Setup Guide – Database



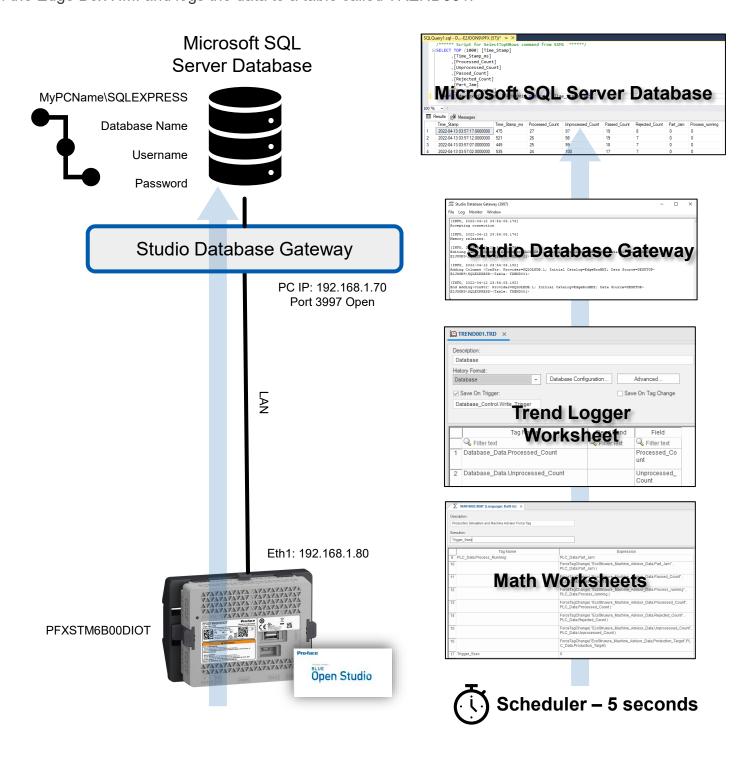




# 4. Database Configuration

## **Overview**

The STM6000 Edge Box HMI Demo – Database uses a Trend Logger worksheet to log data to a Microsoft SQL Server Database. Trend Logger data is logged every 5 seconds. Each time the trend logger sheet is triggered data is sent via the Studio Database Gateway which contains the communication driver for Microsoft SQL Server. The Studio Database Gateway establishes a connection to the database on behalf of the Edge Box HMI and logs the data to a table called TREND001.



# STM6000 Edge Box HMI – Demo Setup Guide – Database

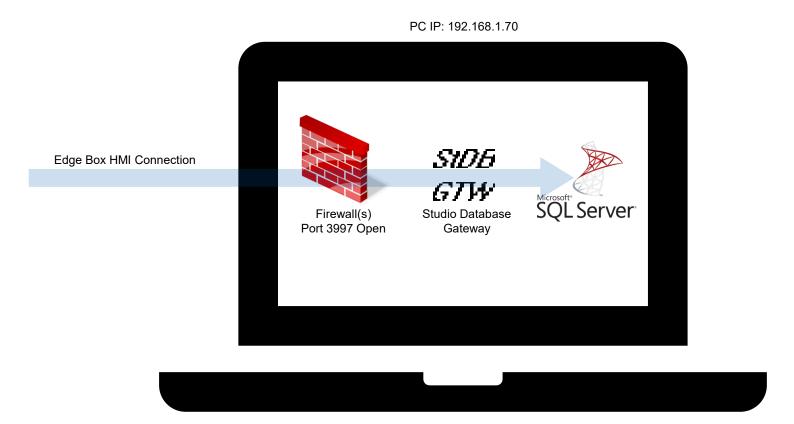
A simple configuration would have both the SQL Server instance and the Studio Database Gateway installed on the same Windows PC. The PC is configured with an IP Address of 192.168.1.70

For example, SQL Server 2019 installed on a Windows 10 PC with the following:

- Path to SQL Server = PCNAME\SQLEXPRESS
- Database name = EdgeBoxHMI
- Mixed mode authentication with a local user account as db\_Owner for the EdgeBoxHMI database and login rights
  - Username = EdgeBoxHMI
  - Password = !Proface1234

On the same PC as SQL Server the Studio Database gateway is installed and running on port 3997.

PC Firewall(s) open for port 3997 for access to the Studio Database Gateway.



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# Microsoft SQL Server 2019 Installation and Configuration

(requires internet connection)

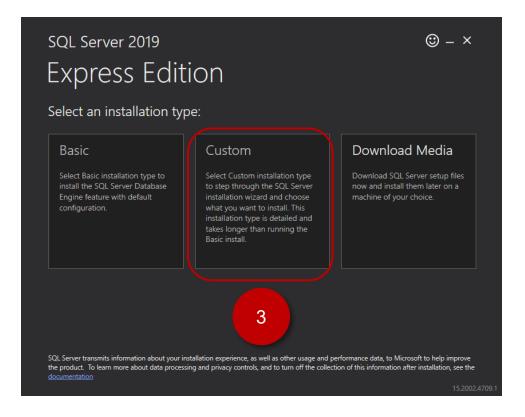
For ease of configuration both Microsoft SQL Server 2019 and Microsoft SQL Management Studio will be required. It is assumed that there is no existing Microsoft SQL Server 2019 instance and no existing Microsoft SQL Management Studio installed on the PC.

1. Download SQL Server 2019 Express installer (SQL2019-SSEI-Expr.exe or similar @ ~6MB) from the following link:

#### https://www.microsoft.com/en-ca/sql-server/sql-server-downloads

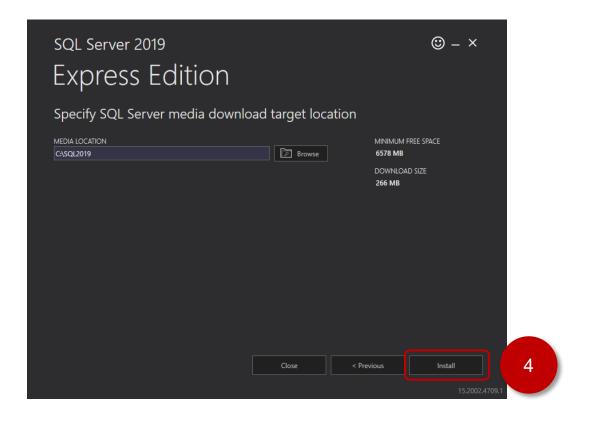
**Note:** other versions of SQL Server can be used however this procedure is specifically for SQL Server 2019 Express as of April 2022. Choose your localised language version, as necessary.

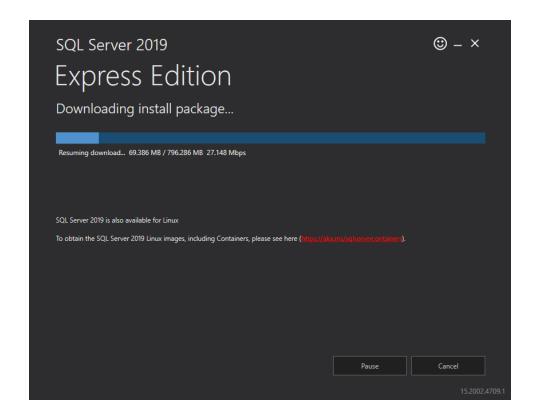
- 2. Run SQL2019-SSEI-Expr.exe
- 3. Select [ Custom ]



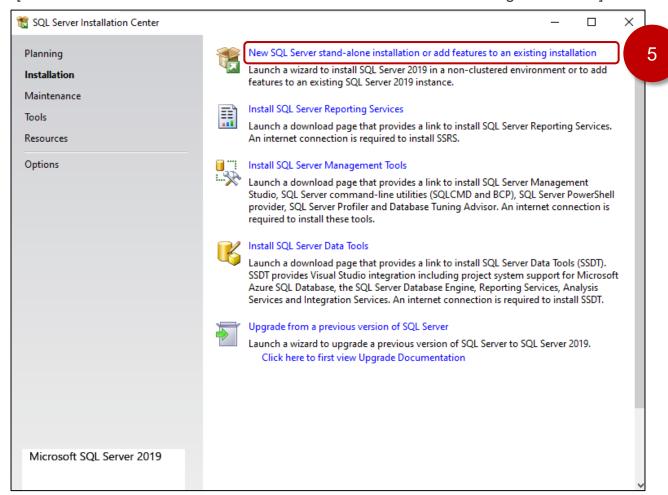
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4. Confirm the download location is acceptable and there is enough free space on the drive. Click [Install]

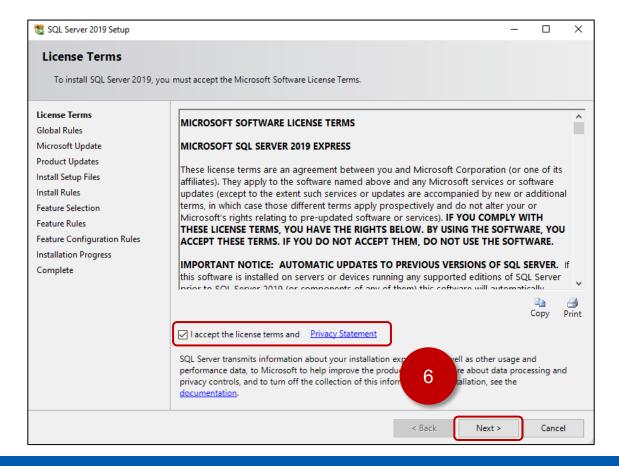




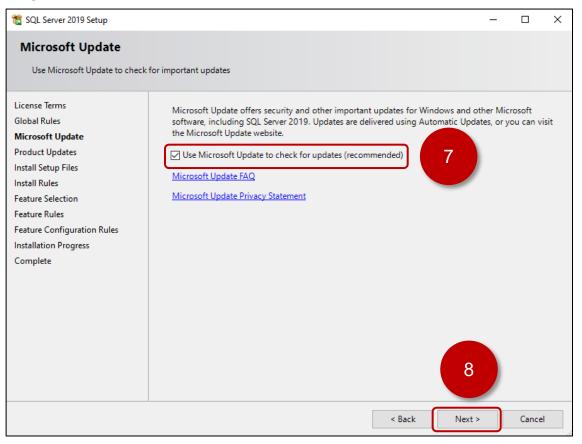
5. Click [ New SQL Server stand-alone installation or add features to an exiting installation ]



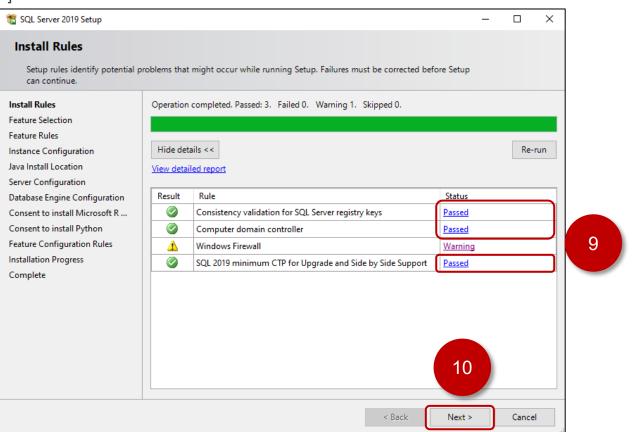
6. Check the "I accept the license terms..." checkbox and click [ Next ]



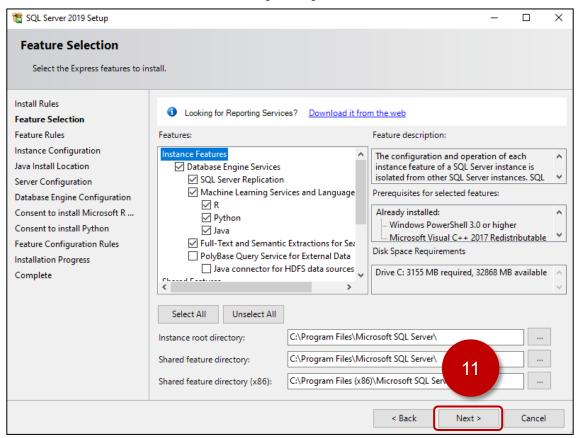
- 7. Optional: Check the "Use Microsoft Update to check for updates..."
- 8. Click [Next]



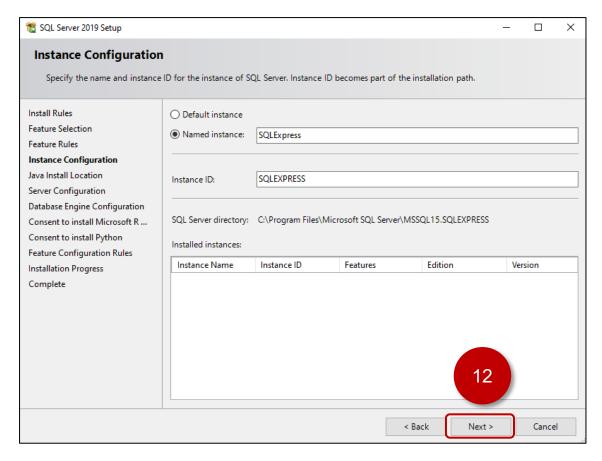
- Confirm status is "Passed" for 3 of the 4 entries. Windows Firewall exception is option for SQL server itself for the purposes of the demo. The Studio Database Gateway cover later will require a firewall exception.
- 10. Click [Next]



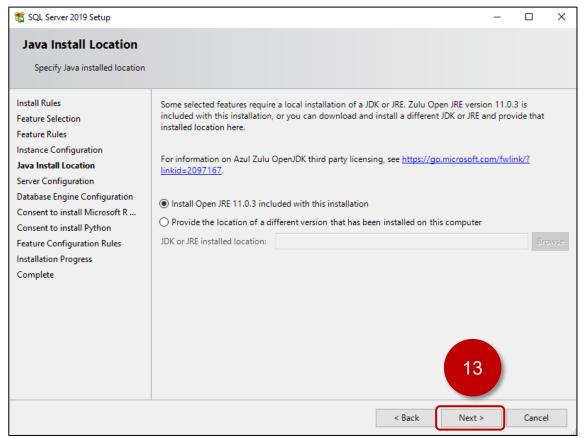
11. Leave the Feature Selection as default. Click [ Next ]



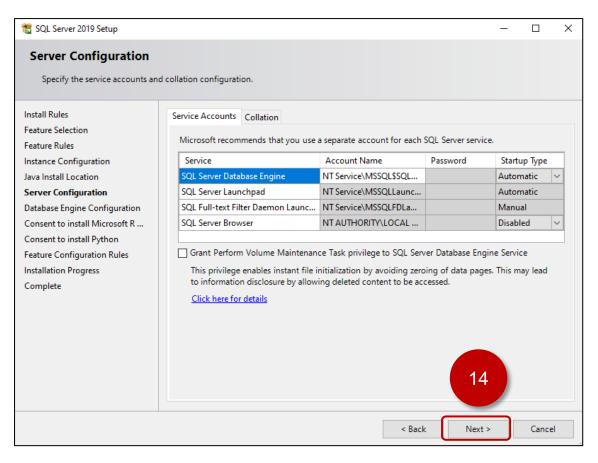
12. Leave the Instance Configuration as default. Click [ Next ]



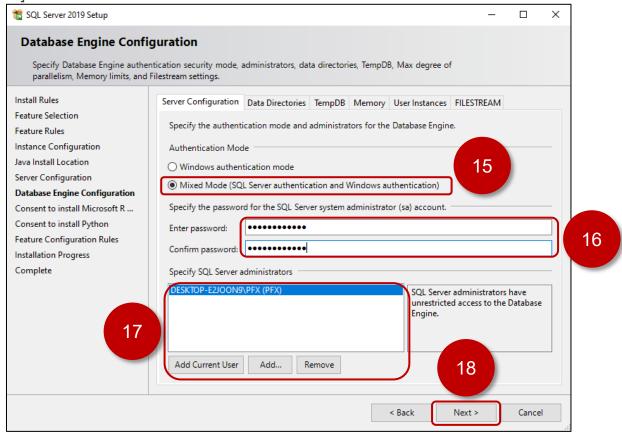
13. Leave the Java Install as default. Click [ Next ]



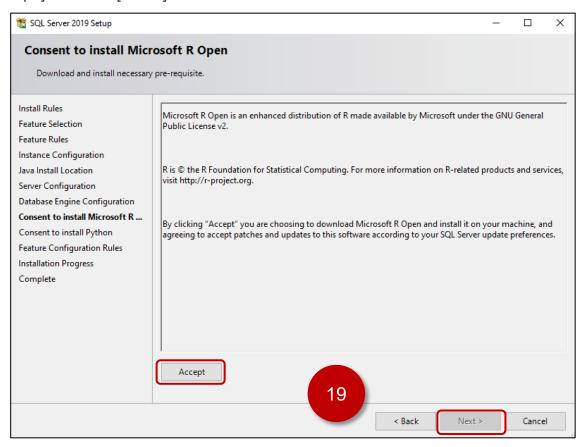
14. Leave the Server Configuration as default. Click [ Next ]



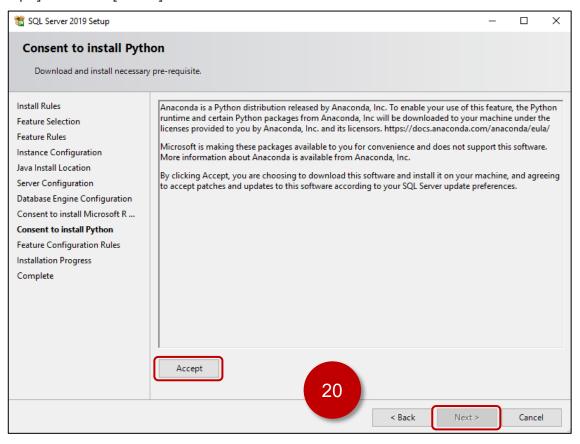
- 15. Set the Authentication Mode to "Mixed Mode".
- 16. Enter the sa account password.
- 17. Specify Windows accounts that will act as administrator for SQL Server. Can be left as default.
- 18. Click [ Next ].

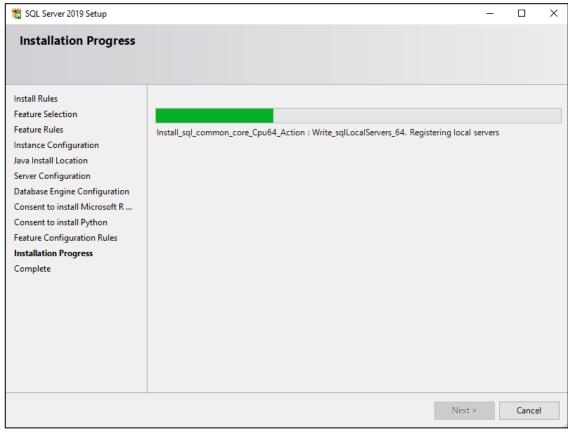


19. Click [ Accept ] and click [ Next ].



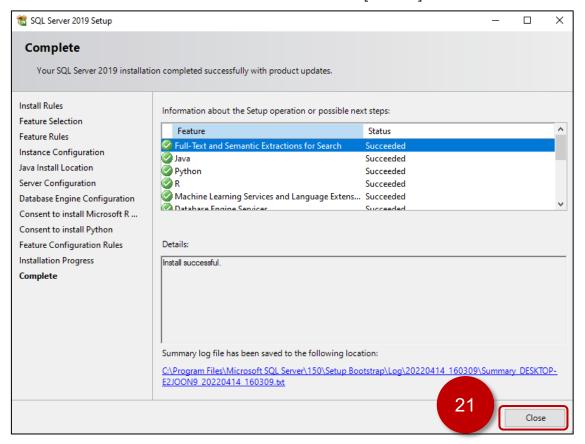
#### 20. Click [ Accept ] and click [ Next ]



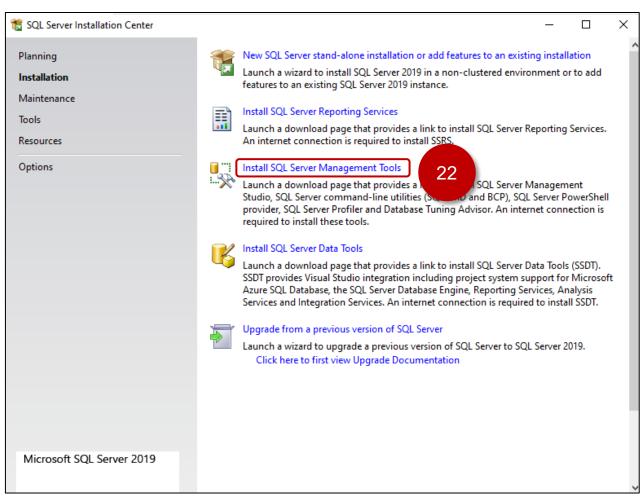


21. Click [ Accept ] and click [ Next ].

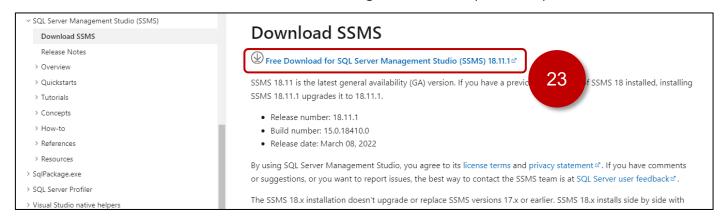
#### 21. Confirm that all features show Status as "Succeeded". Click [ Close ]



#### 22. Click [ Install SQL Server Management Tools ].



23. Download the latest version of SQL Server Management Studio (~690 MB)

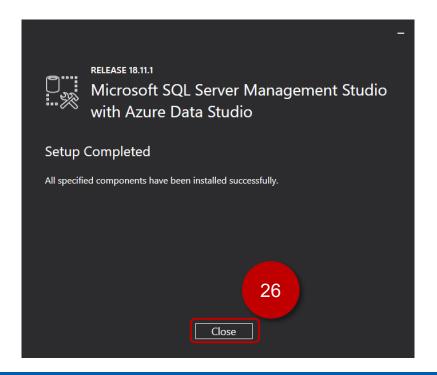


24. Run the SSMS-SETUP\_ENU.exe or similar installer that was downloaded.

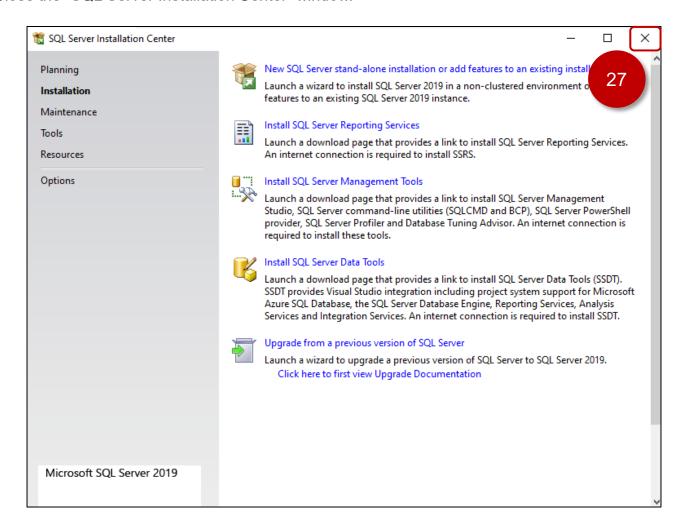
25. Click [ Install ].



26. Click [ Close ]



27. Close the "SQL Server Installation Center" window.

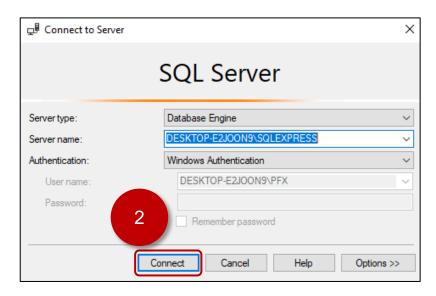


# **Create a SQL Database**

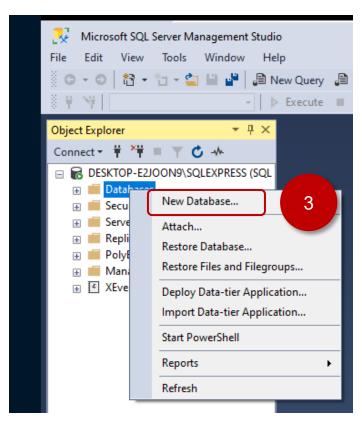
This procedure assumes there is not an existing database for use with the project.

This database setup is for demonstration purposes only. Please ensure the appropriate security measures are taken before deploying any database in a production environment.

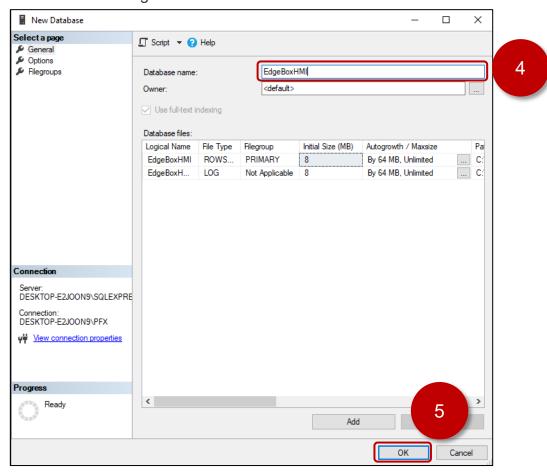
- 1. Start [ Microsoft SQL Management Studio]
- 2. If you followed the previous section's instructions and the current Windows user account is an administrator for SQL, leave the [Connect to Server] dialog settings as default and click [Connect]. If not, enter the correct Server name and Authentication details.



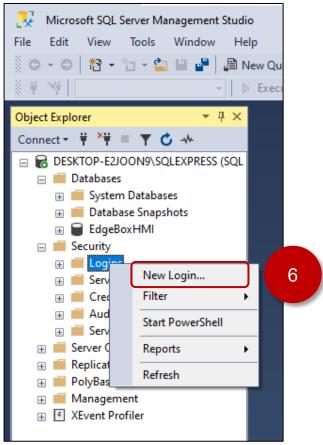
3. [Object Explorer] -> [Databases] right-click [Databases] and click [New Database...].



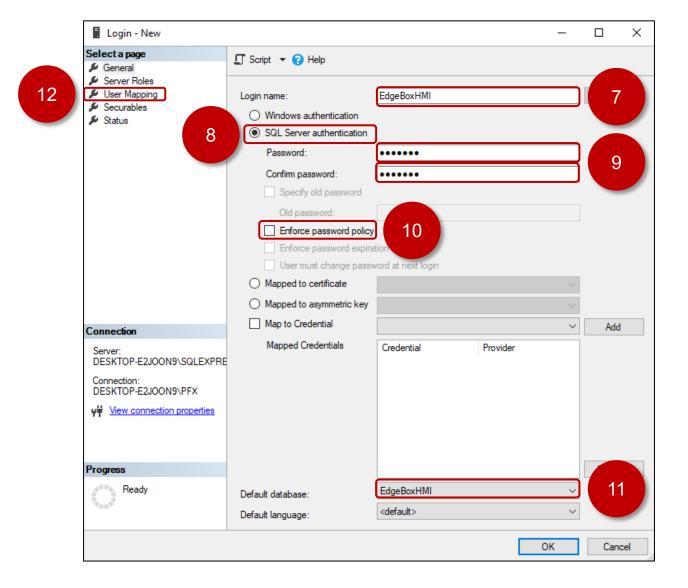
- 4. Enter the Database name as "EdgeBoxHMI"
- 5. Click [OK]



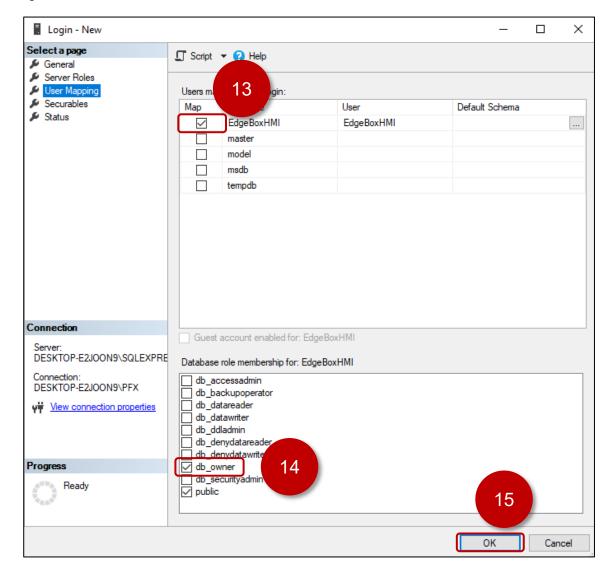
6. [Object Explorer] -> [Security] -> [Logins] right-click [Logins], click [New Login...]



- 7. Enter a Login Name: EdgeBoxHMI
- 8. Select [ SQL Server Authentication ]
- 9. Enter a password and confirm the password: !SE1234
- 10. Uncheck [ Enforce password policy ]
- 11. Change the [ Default Database ] to [ EdgeBoxHMI ]
- 12. Select the [User Mapping] page.



- 13. Check [ Map ] for the [ EdgeBoxHMI ] database
- 14. Check [db\_owner]
- 15. Click [ OK ]



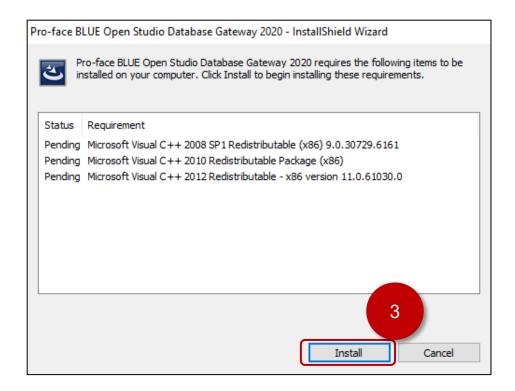
# **Studio Database Gateway Installation**

To allow the HMI runtime running on the Edge Box HMI to communicate with SQL Server the Studio Database Gateway needs to be installed on a Windows PC on the same network as the Microsoft SQL Server. For an easy demonstration configuration, install the Studio Database Gateway on the same Windows PC as the Microsoft SQL Server Database.

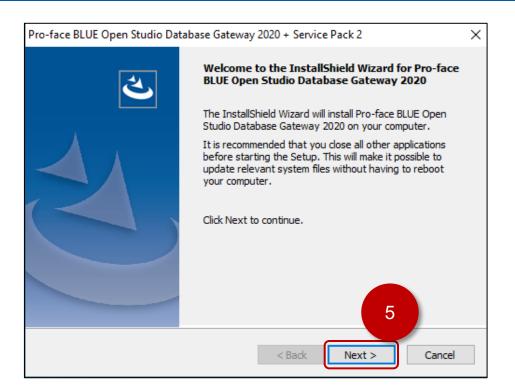
If BLUE Open Studio is already installed on the Windows PC, the Studio Database Gateway is already installed in the BLUE Open Studio BIN directory. The default path would be:

C:\Program Files (x86)\Pro-face\BLUE Open Studio 2020\Bin\DatabaseGateway\StADOSvr.exe
Skip to STEP 11 if BLUE Open Studio is already installed. Otherwise install the Studio Database gateway by starting at STEP 1.

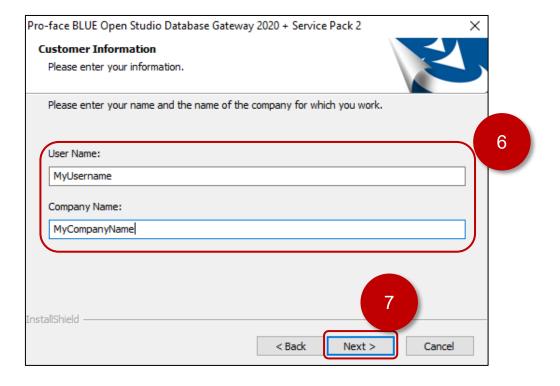
- 1. If not already installed on the Microsoft SQL Server Windows PC, install .NET Framework 3.5 via [Turn Windows features on or off ].
- On the BLUE Open Studio development PC copy the [ GatewaySteup.exe ] from C:\Program Files
  (x86)\Pro-face\BLUE Open Studio 2020\Redist\DatabaseGateway\GatewaySetup.exe to the
  Windows PC that has Microsoft SQL Server installed.
- 3. Run the GatewaySetup.exe
- 4. If prompted to install redistributables, click [Install]



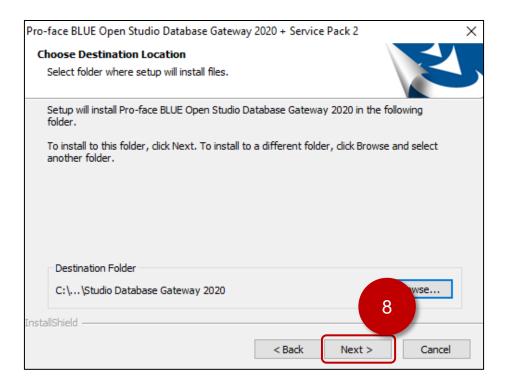
5. Click [ Next ].



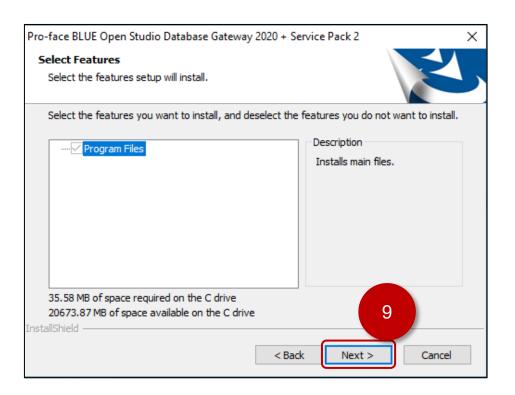
- 6. Enter a [User Name] and [Company Name]
- 7. Click [Next]



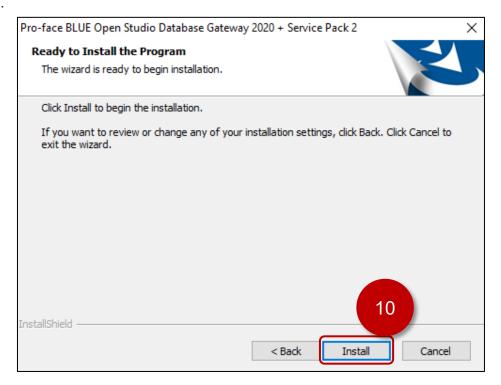
#### 8. Click [ Next ].



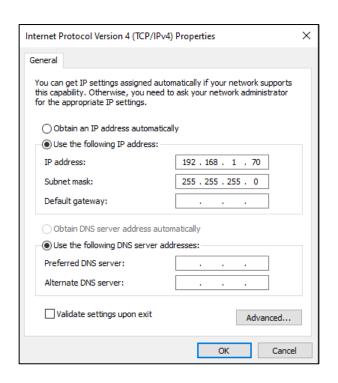
#### 9. Click [Next]



#### 10. Click [ Install ].



- 11. Create a firewall exception for the Studio Database gateway which uses port 3997. For example configure Microsoft Windows Defender Firewall and any other security software that would block communication.
- 12. Set the IP Address of the Windows PC that is running the Studio Database Gateway to 192.168.1.70



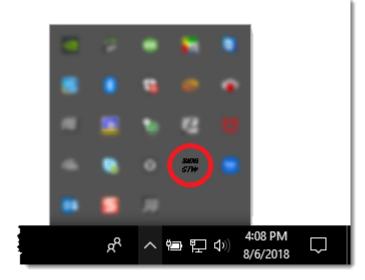
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11. Start the Studio Database Gateway Manually or set the program to autostart on Windows log in using a shortcut in the startup folder, task scheduler, registry or other method to auto start a program in Windows.

To manually start the Studio Database Gateway on a Windows PC without BLUE Open Studio installed, execute: C:\Program Files (x86)\Studio Database Gateway 2020\StADOSvr.exe

To manually start the Studio Database Gateway on a Windows PC with BLUE Open Studio installed, execute: C:\Program Files (x86)\Pro-face\BLUE Open Studio
2020\Bin\DatabaseGateway\StADOSvr.exe

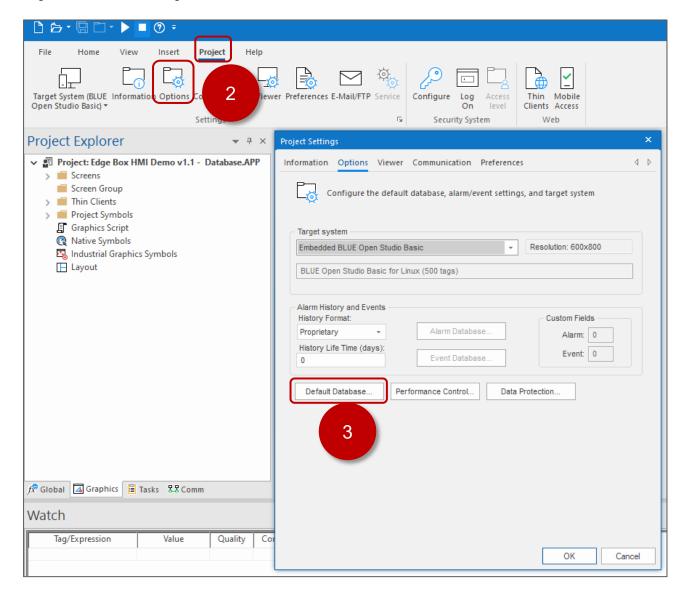
12. Confirm the Studio Database Gateway is running by checking for the Icon in the notification area of the taskbar.



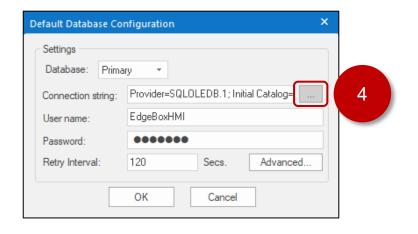
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# **BLUE Open Studio Project settings**

- 1. Open the Edge Box HMI Demo v1.1 Database.app project in BLUE Open Studio
- 2. [Project] menu -> [Options]
- 3. Click [ Default Database ]



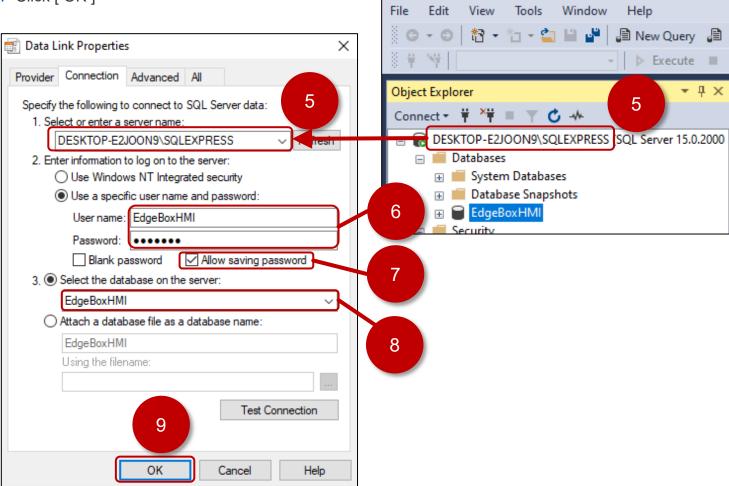
4. Click [ ... ]



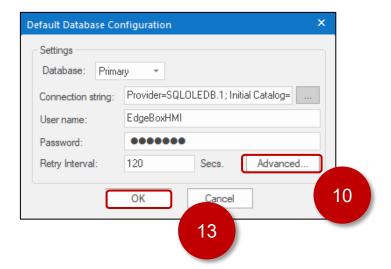
# STM6000 Edge Box HMI – Demo Setup Guide – Database

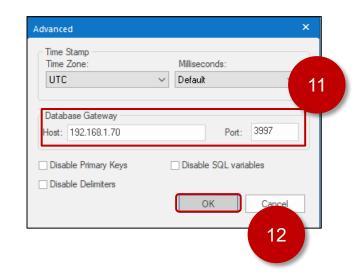
Microsoft SQL Server Management Studio

- 5. Enter the server name so that it matches the SQL server instance name.
- 6. Enter the user name and password if different (user name = EdgeBoxHMI, password = !SE1234)
- 7. Check [ Allow saving password ]
- 8. Enter the database if different (EdgeBox HMI)
- 9. Click [OK]

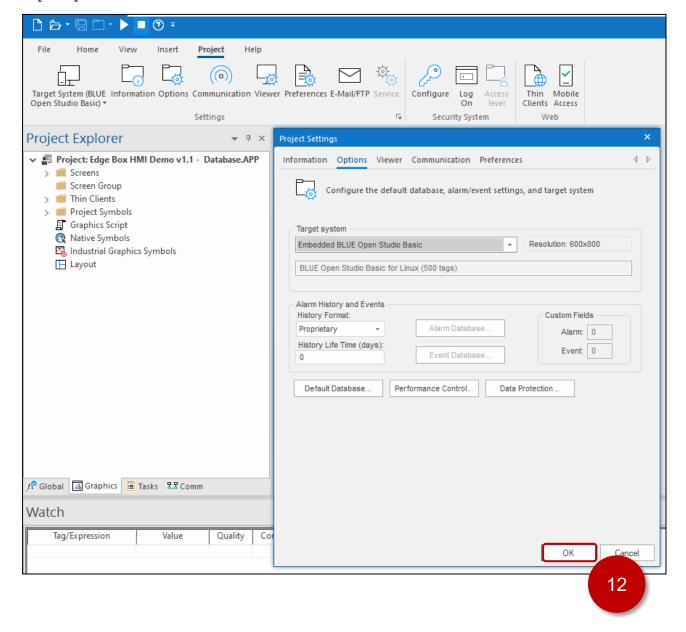


- 10. Click [ Advanced ]
- 11. Enter the Database Gateway Host and Port if different (Host = 192.168.1.70, Port = 3997)
- 12. Click [ OK ]
- 13. Click [ OK ]



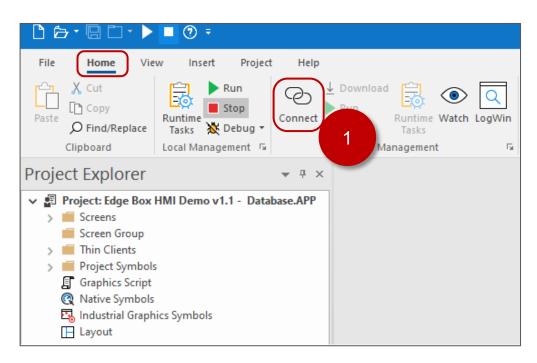


#### 14. Click [ OK ]

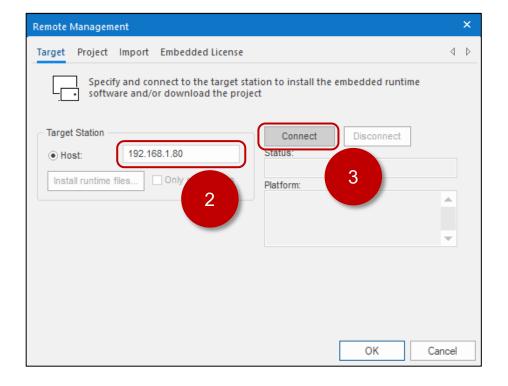


# 5. Transfer Runtime and Project Files

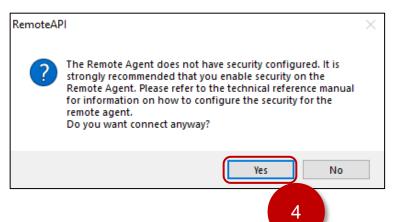
1. [ Home ] tab and Click [Connect] in Remote Management.



- 2. Set the IP Address of your Edge Box HMI e.g. 192.168.1.80
- 3. Click [Connect]



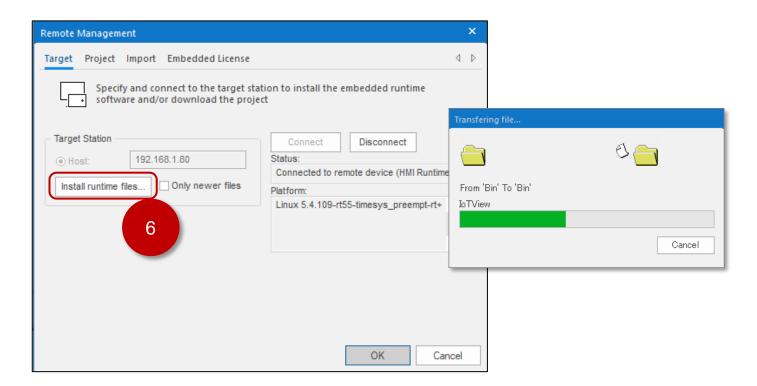
4. If prompted about Remote Agent, click [Yes]



5. Answer the question by clicking [Yes] or [No] as apprecie.

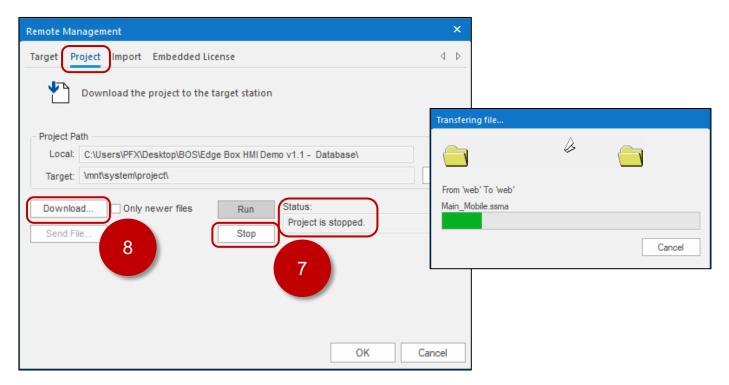


6. Click [Install Runtime Files]

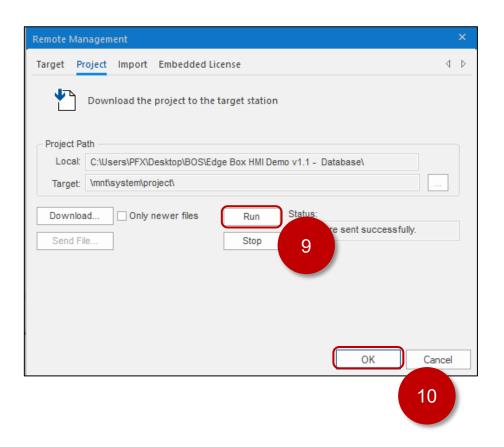


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- 7. [Project] tab, confirm that the Status is stopped. If running, click [Stop]
- 8. Click [ Download ]



- 9. Click [Run]
- 10. Click [ OK ]



# 6. Mobile Access

Mobile access is used for both local and remote viewing of Edge Box HMI. You can use either ETHERNET 1 or ETHERNET 2 as the IP address for mobile access.

There are a several mobile access URL options to view the Edge Box HMI.

- Mobile Access Generic Interface
- Mobile Access Direct to screen access
- Mobile Access Watch screen Access

Web Browser URL Examples for the Edge Box HMI Demo:

Link	Description
https://192.168.1.80/MA	Generic Interface login prompt
https://192.168.1.80/MA/#guestuser=1	Generic Interface auto login as Guest
https://192.168.1.80/MA/#user=Admin&password=Admin	Generic Interface auto login as Admin
https://192.168.1.80/MA/#screen=main_desktop	Direct to main_desktop screen login prompt
https://192.168.1.80/MA/#screen=main_desktop&guestuser=1	Direct to main_desktop screen auto login as Guest
https://192.168.1.80/MA/#screen=main_desktop&user=Admin&password=Admin	Direct to main_desktop screen auto login as Admin
https://192.168.1.80/MA/#screen=main_mobile	Direct to main_mobile screen login prompt
https://192.168.1.80/MA/#screen=main_mobile&guestuser=1	Direct to main_mobile screen auto login as Guest
https://192.168.1.80/MA/#screen=main_mobile&user=Admin&password=Admin	Direct to main_mobile screen auto login as Admin
https://192.168.1.80/MA/#watch=1	Watch screen login prompt Guest access denied
https://192.168.1.80/MA/#watch=1&guestuser=1	Watch screen auto login as Guest Guest access denied
https://192.168.1.80/MA/#watch=1&user=Admin&password=Admin	Watch screen auto login as Admin