Mar 13, 2023 release
SSMS 32 bit application
SSMS 19.0.2
Database tool
Need to install: SQL Server Management Studio
SQL Server (the database)
↳ SQL Server 2022 Express
free edition version 16.0

ID: QA39884 | Access Levels: TechConnect

FactoryTalk View SE - How to Setup SQL Datalogging

Document ID	QA39884
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new data source to SQL server is HallC

Summary

FactoryTalk View SE - How to Setup SQL Datalogging

Question

How do I set up data logging to a Microsoft SQL database, using ODBC in FactoryTalk View SE?

SQLServerdatalog
system password to access database
pw: HallC 6666 Login sa
Did remember password ↑ for system admin
Database name

Environment

FactoryTalk View SE

Answer

Note: Microsoft SQL Server is a Microsoft product, and while the following is a guide to get started, for the latest consult the Microsoft guides.

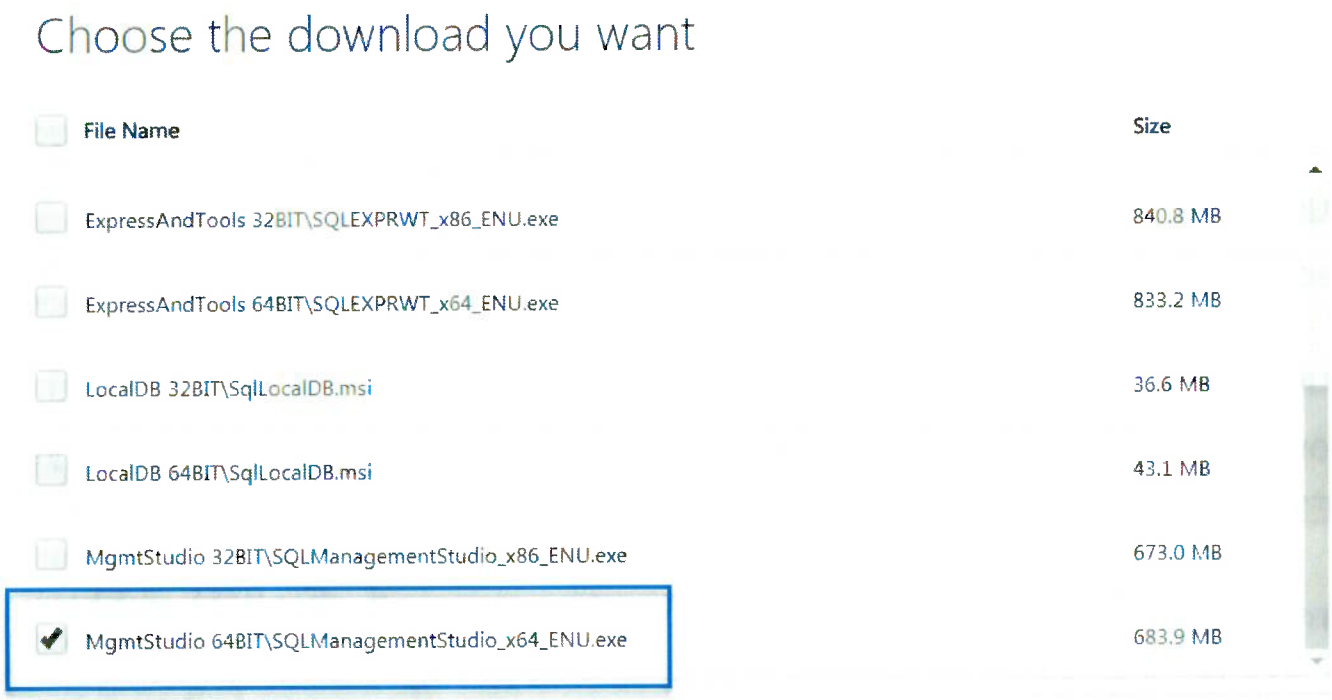
To set up ODBC Data logging, you must first create a new Instance of SQL, or choose and existing one: using SQL Server 2022 Express

- If using SQL Server 2008, follow steps 1-18 of QA18945 - Step by step - How to Install SQL Server 2008 R2 to log FactoryTalk Alarms and Events History
- If using SQL Server 2014, follow steps 1-9 of Knowledgebase Article:QA34500 - Step by Step - How to Install SQL Server 2014 to log FactoryTalk Alarms Events History in SE 9.0 in Windows 10

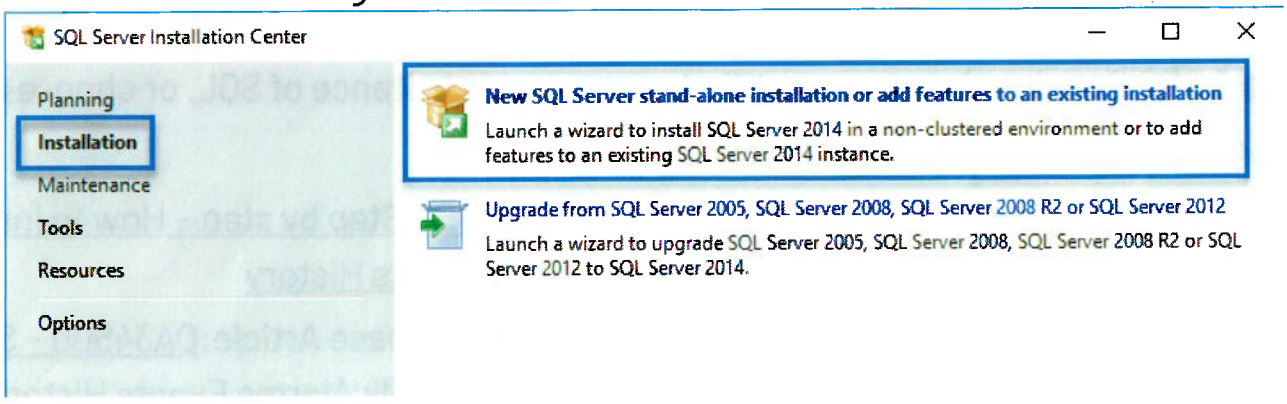
Additionally, SQL Server Management Studio is needed for this process. If using SQL Server 2014, you may need to install this tool manually. If this is the case, follow the steps below, otherwise you can skip ahead to Setup SQL server.

Download and Install SQL Management Studio

1. Open the following Microsoft Knowledgebase link: Microsoft SQL Server 2014 Express
2. Select your language, then click *Download*
3. In the **Choose the download you want** window, scroll to the bottom and select **MgmtStudio 64BIT\SQLManagementStudio_x64_ENU.exe**, if you are on a 32-Bit OS, select the **x86** option

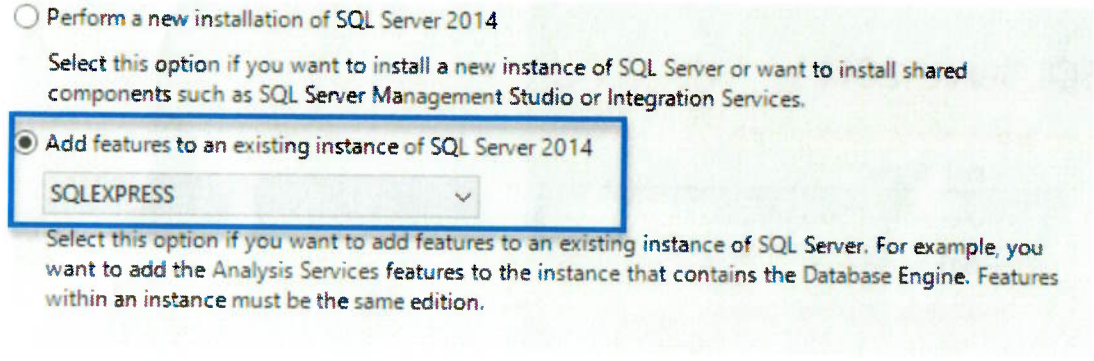


4. Once the download is finished, launch the installer. From the **Installation** menu option on the left hand side, select *New SQL Server stand-alone installation or add features to an existing installation*

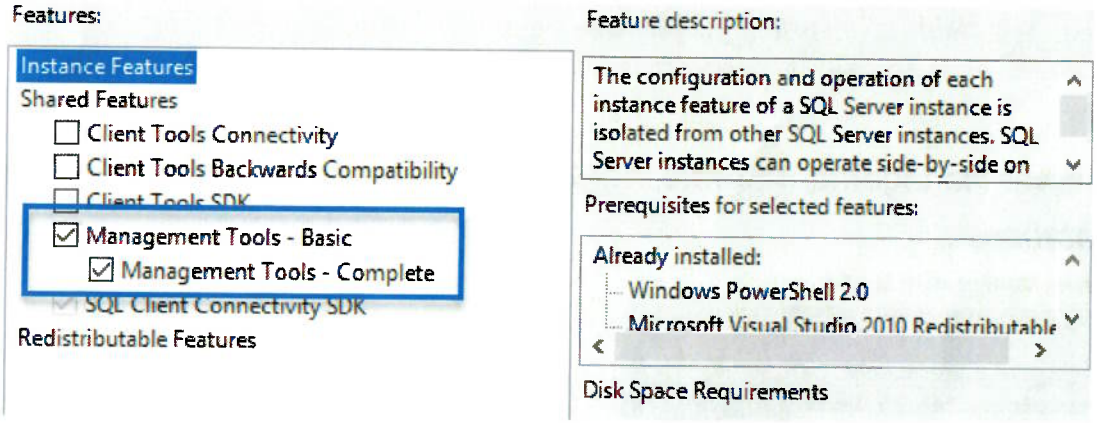


5. Follow through the prompts until you reach the **Installation Type** window. Check the radio box for **Add features to an existing instance of SQL Server 2014**, and select

your custom instance of SQL. Click *Next*



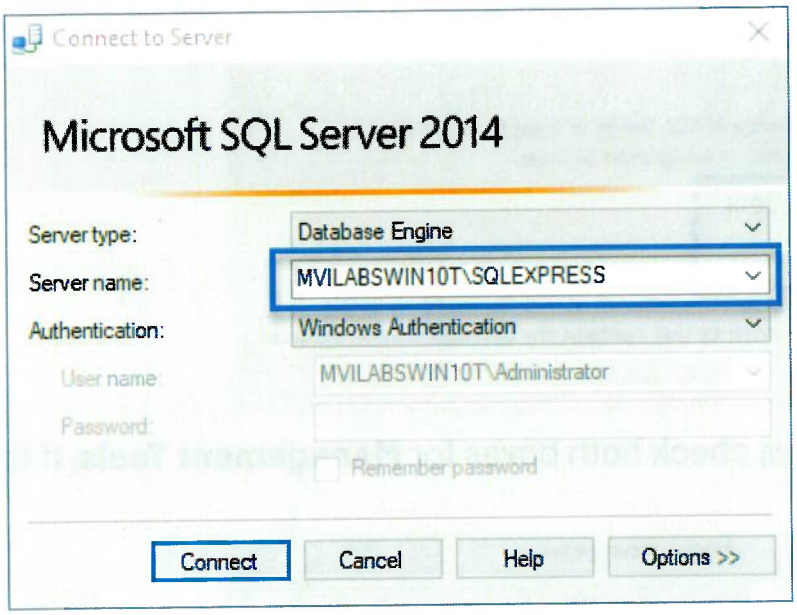
6. In the **Feature Selection** window, check both boxes for **Management Tools**, if they are not checked already.



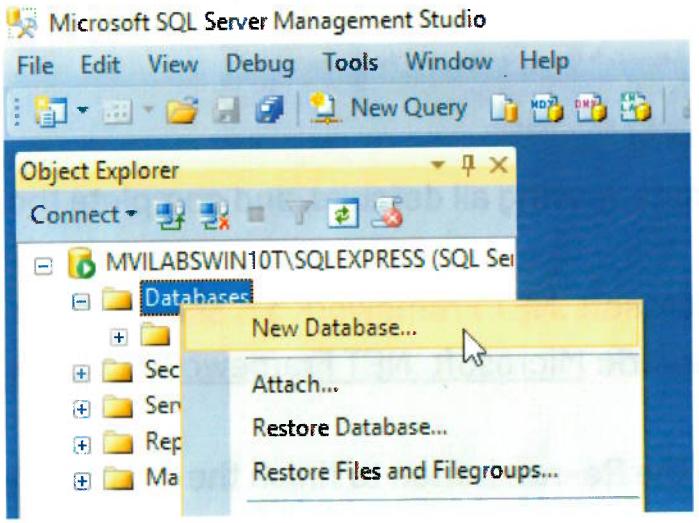
7. Continue through the rest of the prompts, leaving all defaults, and complete the installation.
   Note: If the installation fails due to Microsoft .NET Framework 3.5 Service Pack 1, follow this link to download the framework: Microsoft .NET Framework 3.5 Service Pack 1
   After the installation is complete, use the **Re-run** button to finish the Management Tools installation

Setup SQL server

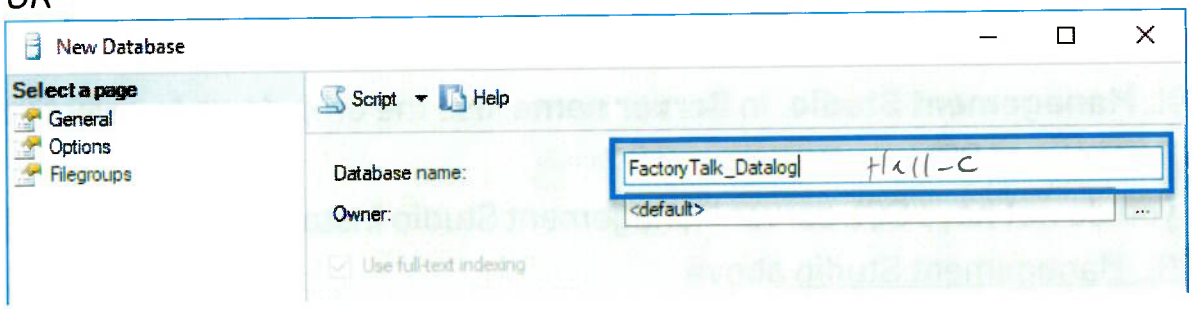
1. Open **SQL Management Studio**. In **Server name**, use the drop down to select your custom instance of SQL. → SQLServerdatalog
   Note: If you do not have SQL server Management Studio installed see Download and Install SQL Management Studio above
   Note: This must be your own created instance of SQL. Do not use FTVIEWX64TAGDB - This instance is reserved for the HMI Tag Database



2. Click *Connect*
3. Once in SQL Server Management Studio, right-click on the **Databases** folder, and select *New Database...*

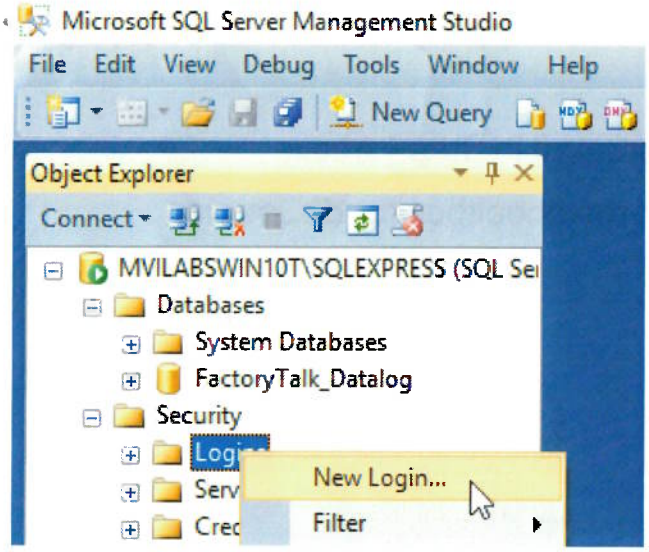


4. In **Database name**, enter a name of your choice. Leave all other defaults, and click *OK*



5. Browse to the **Security** folder and expand it. Right-click on the **Logins** folder, and select *New Login...*

login name : user Hello
pw : Hello
uncheck box



sa for system admin

sa
HallC 6666

system DSN

sa and not user HallC

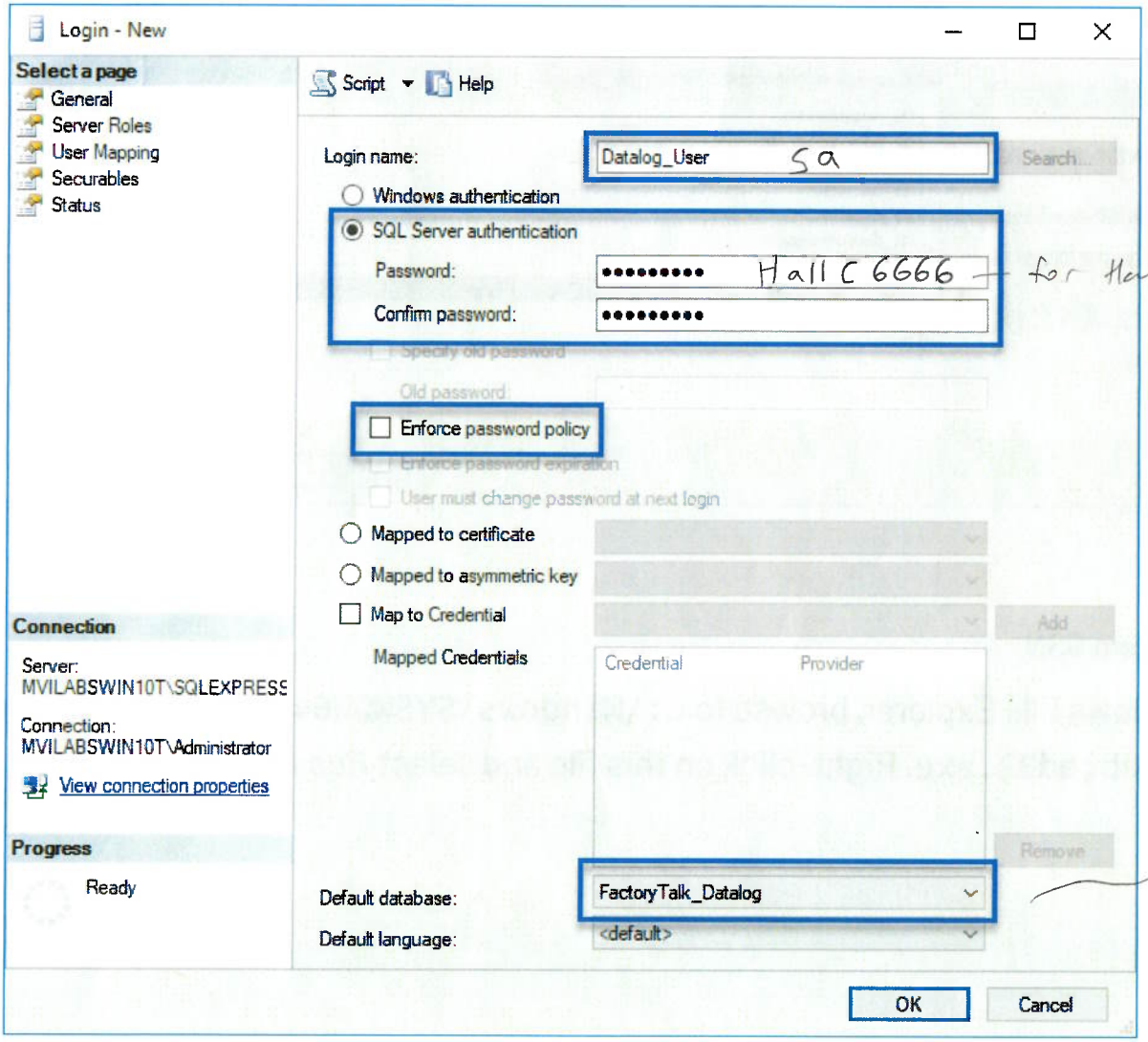
6. For **Login name**, enter a name of your choice

~~user HallC~~ can use for all databases

7. Select **SQL Server authentication**, then enter a password of your choice ~~HallC~~

8. Uncheck the box for **Enforce password policy**

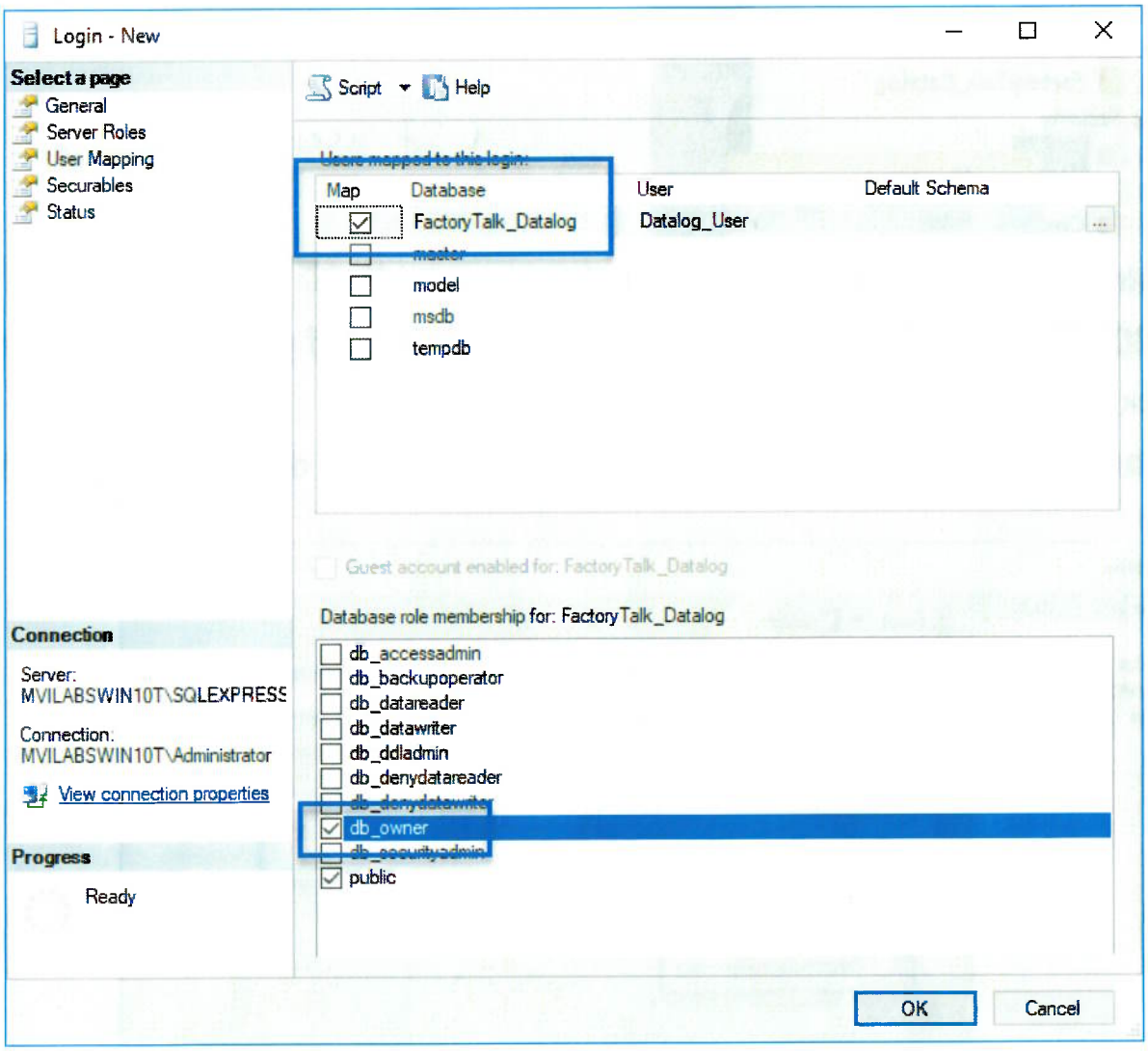
9. For **Default database**, use the drop-down to select the new database created in Step 4 above



for HallC database

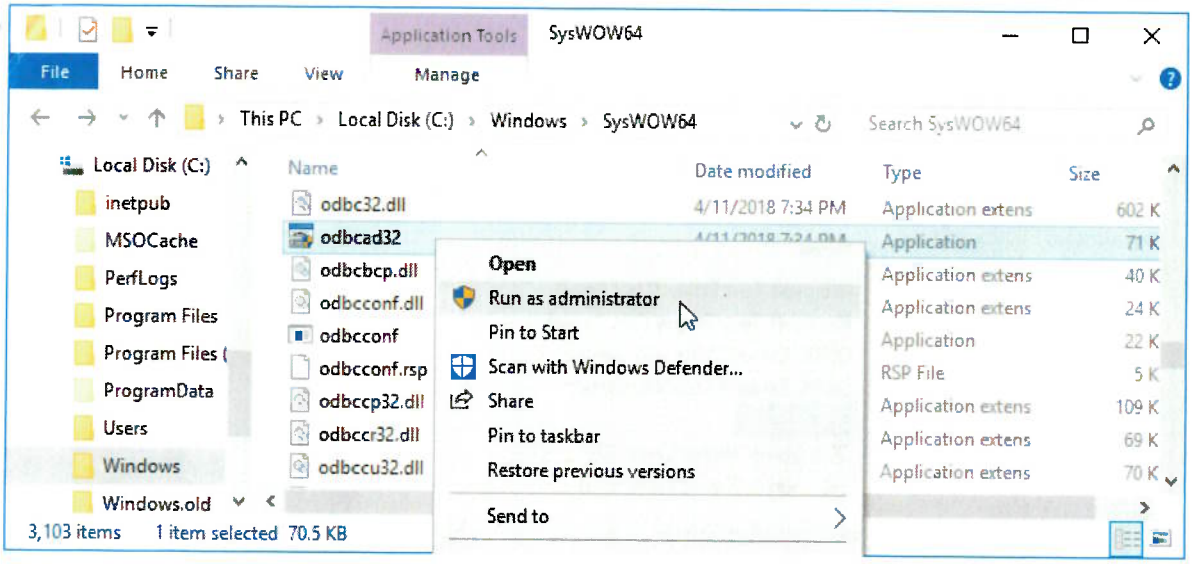
Do for each database

10. Still in the Login creation window, select **User Mapping** from the *Select a page* box on the left-hand side
11. Click the checkbox next to the database created in Step 4 above
12. Towards the bottom of the window, select the checkbox for **db_owner**
13. Click *OK*

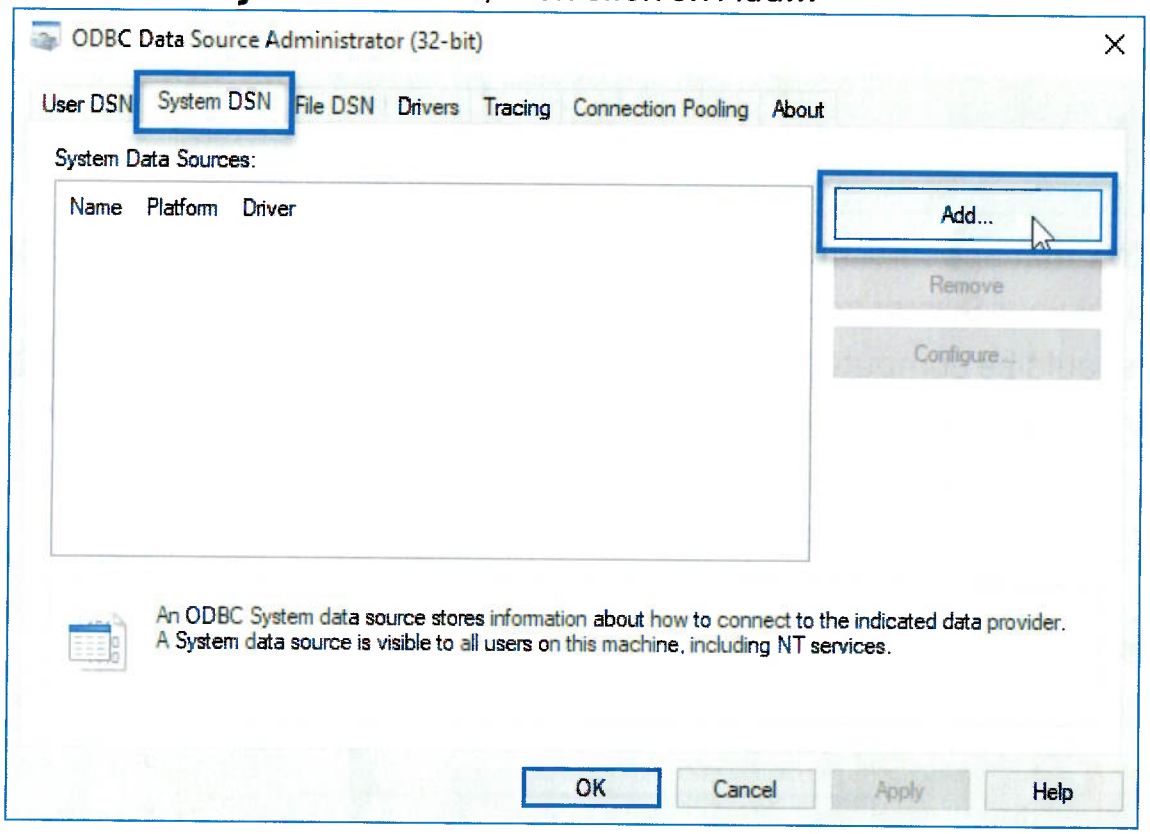


Create a System DSN

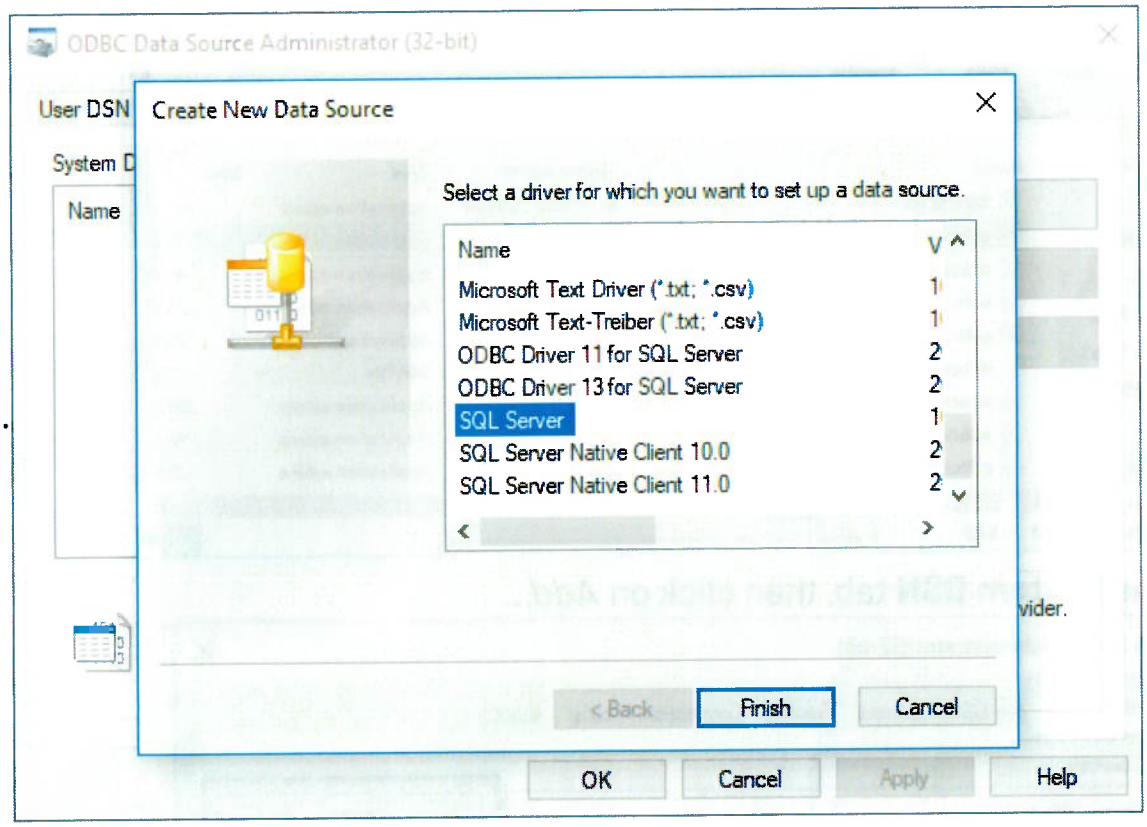
1. In Windows File Explorer, browse to `C:\Windows\SYSWOW64`, and search for the file titled `odbcad32.exe`. Right-click on this file and select *Run as administrator*



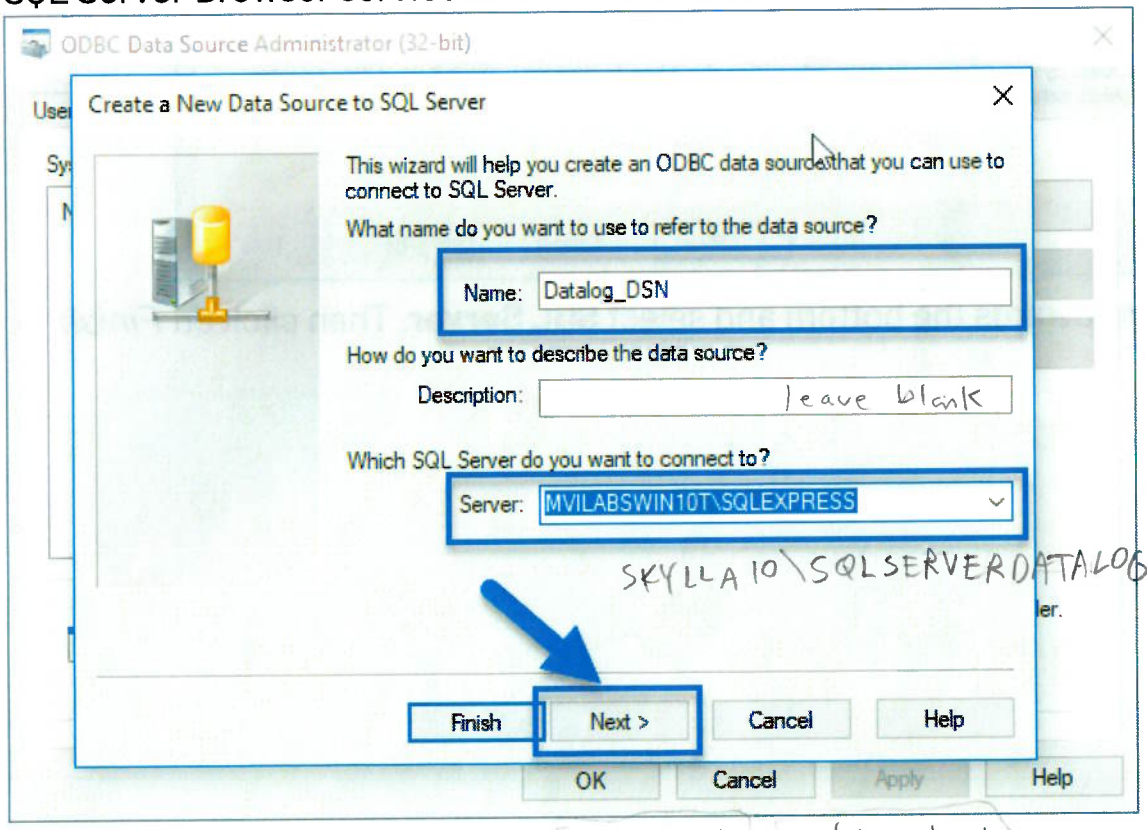
2. Click on the **System DSN** tab, then click on *Add...*



3. Scroll down towards the bottom and select **SQL Server**. Then click on *Finish*

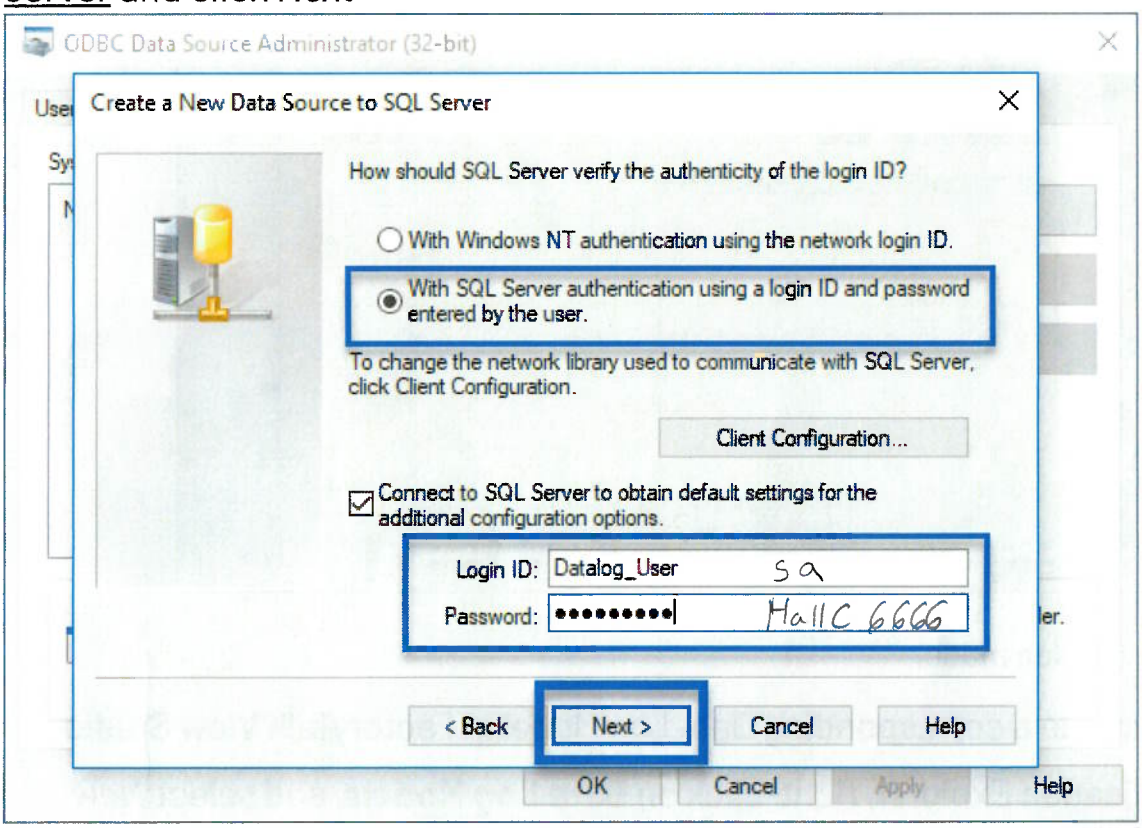


4. In the window that appears, first enter a **Name** of your choice. Then, use the drop down to select your **Server** and click *Next*
   Note: This should be computer name of your SQL server, followed by a backslash, followed by the name of your custom instance of SQL. SKYLLA10\SQLSERVERDATALOG
   If the drop down list does not display it, you can type it in manually. Verify that the SQL Server Browser service is set to automatic and started.



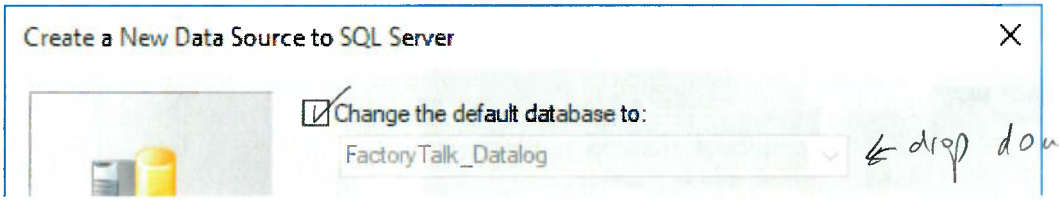
18 total Data Source Names
- Rotation
- HMS Fast Data
- HMS Dipole Data
- HMS Q1 Data
- HMS Q2 Data
- HMS Q3 Data
- SHMS Q1 Fast Data
- SHMS Q2 Fast Data
- SHMS Q3 Fast Data
- SHMS Q2 Data
- SHMS Q3 Data
- SHMS Q1 Data
- SHMS Cryo Data
- SHMS DI data
- SHMS HB Data
- SHMS HB Fast
- hs test
- hbectest

5. Check the radio box for the option which reads **With SQL Server authentication using a login ID and password entered by the user**.
6. At the bottom, enter the credentials for the user created above in Setup SQL server and click *Next*

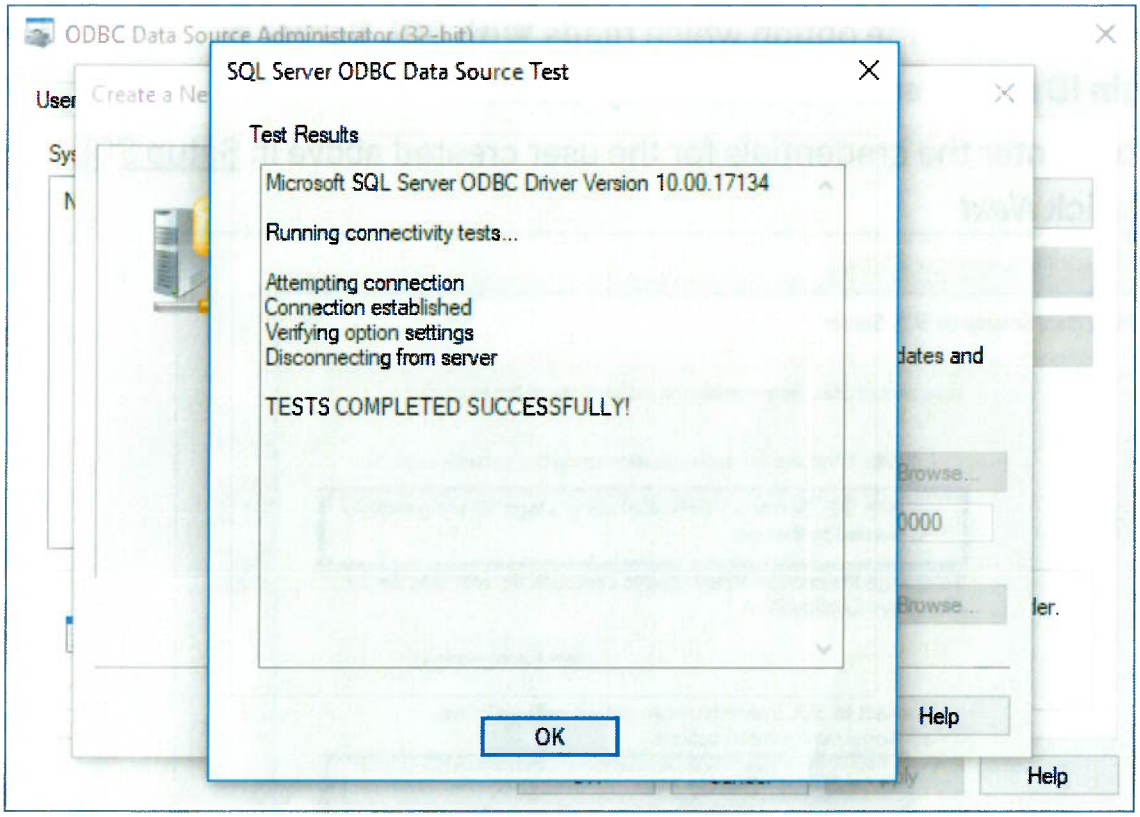


7. For the default database, verify the database created in Step 3 is chosen. Click *Next*, leave all defaults, then click *Finish*

↳ so will do this 18 times



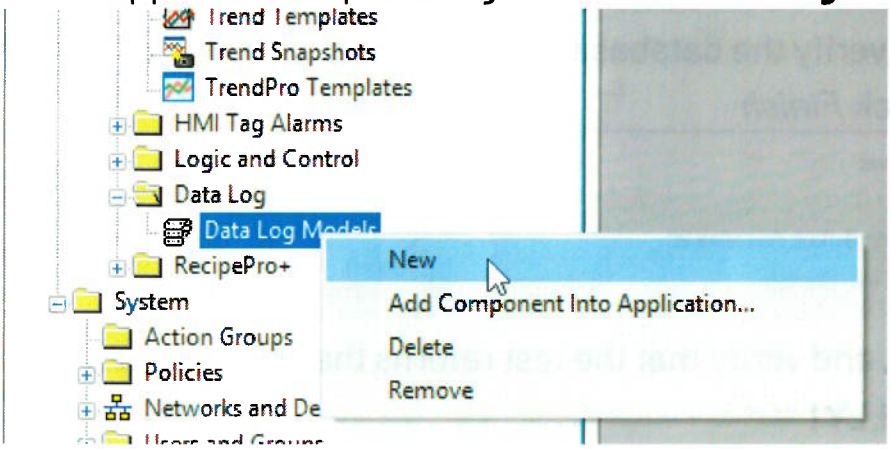
8. Click on *Test Data Source*, and verify that the test returns the message TESTS COMPLETED SUCCESSFULLY! ✓
9. Click *OK* on all remaining windows to save the System DSN we have created



Create and setup Datalog model

Finally, we will create a corresponding Data Log Model in FactoryTalk View Studio

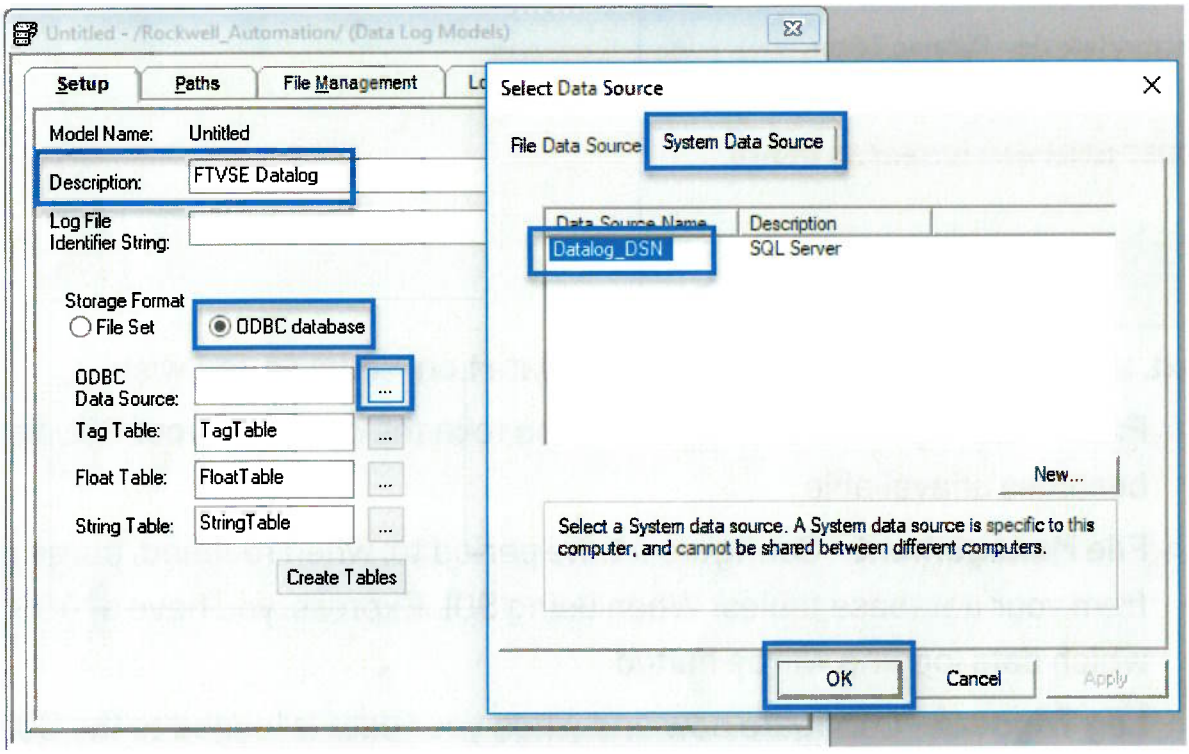
1. In the Application Explorer, right-click on **Data Log Models**, and select *New*



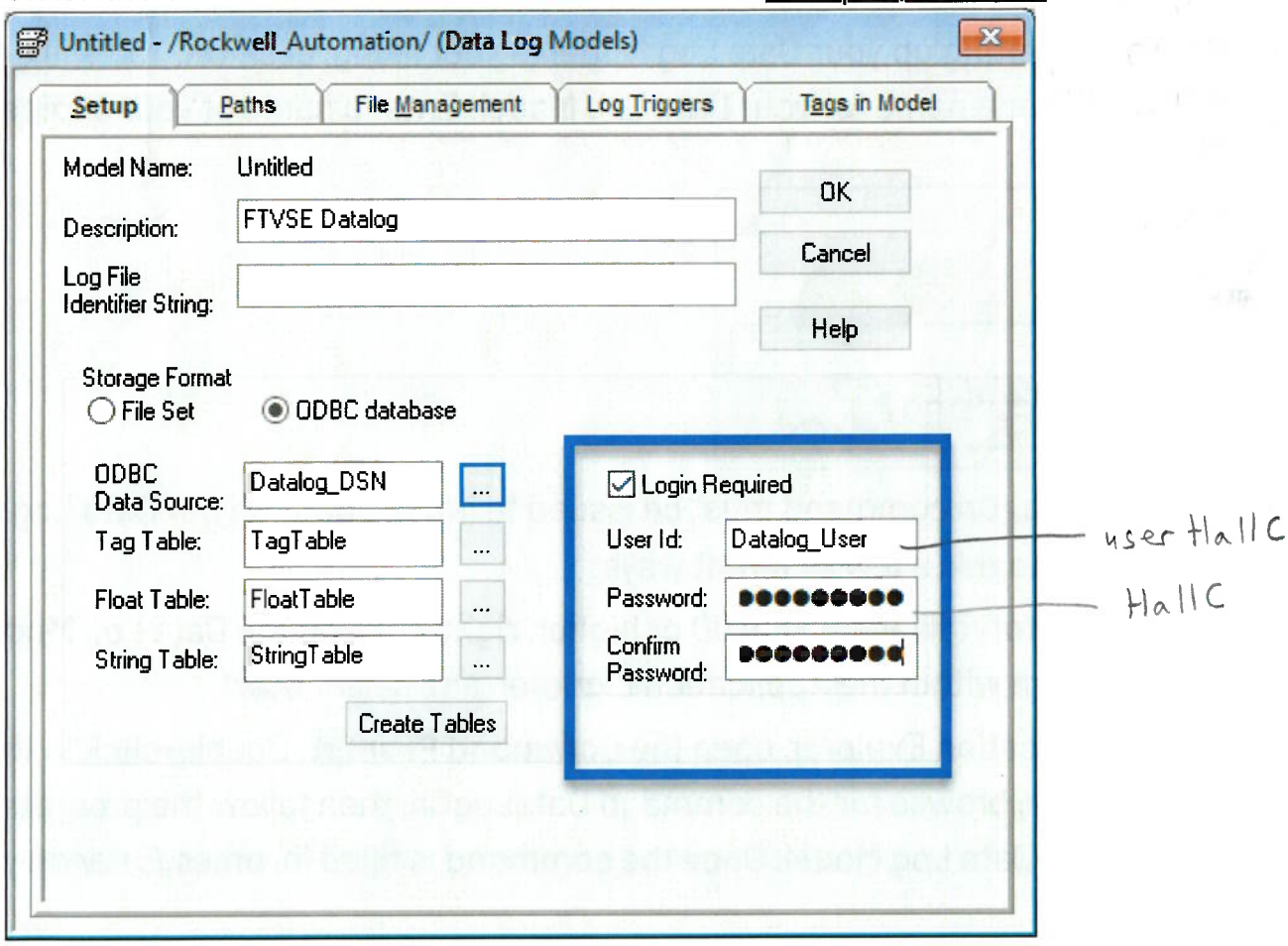
Don't need to do step 1

2. In the window that appears:
    1. Enter a **Description** of your choice
    2. For **Storage Format**, select *ODBC database*
    3. Click the ellipsis **...** next to the text box for ODBC Data Source
    4. Click on the **System Data Source** tab
    5. Click on the Data Source Name that matches the name we gave our DSN in Create a System DSN. Click *OK*

- say Yes to app changes

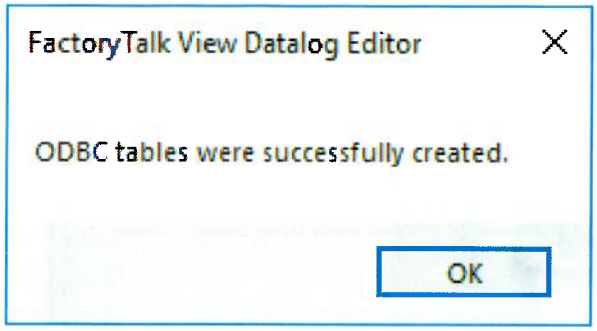


3. Back in the Data Log Model creation window, check the box for **Login Required**, and enter the credentials of the user we created in Setup SQL server above.

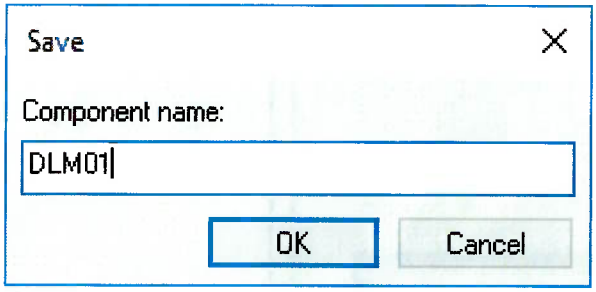


4. Still in the same window, click on *Create Tables*. You should receive the following message:

↳ Don't need to do, they are already created.



5. Next, use the other tabs to configure the Data Log Model as you wish.
   - **Paths** - Configure a backup path to log to in the case that your SQL Server becomes unavailable
   - **File Management** - Configure a time period to, when reached, purge records from your database tables. When using SQL Express, you have a 10GB limit at which data logging will be halted
   - **Log Triggers** - Configure how and when your data is logged to the SQL database
   - **Tags in Model** - Configure which tags are kept track of and logged as part of this Data Log Model
6. When finished setting up your Data Log Model to your liking, click *OK*. You will get prompted to enter a name for your Data Log Model. Enter a name of your choice, then click *OK*



7. Finally, a `DataLogOn` command must be issued to initiate and run our Data Log Model. You can do this a few different ways:
   - If using FactoryTalk View SE 9.00 or higher, right-click on the Data Log Model we created from within the Application Explorer, and select **Start**
   - In the Application Explorer, open the **Command Prompt**. Double-click in the white space, browse for the command DataLogOn, then follow the prompts to select your Data Log Model. Once the command is filled in, press *Enter* on your keyboard
   - Add the aforementioned DataLogOn command to a new or existing Macro. When configuring a FactoryTalk View SE Client, add this Macro to the **Startup Macro**

option

- In the Application Explorer, right-click on your HMI Server and select **Properties**. Go to the **Components** tab, and check for box for **Data logging**. Then, use the drop down to select your Data Log Model. Click *Apply*, then click *OK*

Note: Anytime you make a change to a Data Log Model, you must **Stop** and **Start** so that the changes may be reflected.

Notes About the System Databases

Do not log to the SQL server Master Database, or any other system databases!

Always create a new database for data logging as described above. The following information about the Master database is from Microsoft:

The master database records all the system-level information for a SQL Server system. This includes instance-wide metadata such as logon accounts, endpoints, linked servers, and system configuration settings. In SQL Server, system objects are no longer stored in the master database; instead, they are stored in the Resource database.
Also, master is the database that records the existence of all other databases and the location of those database files and records the initialization information for SQL Server. Therefore, SQL Server cannot start if the Master database is unavailable.

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Connecting data models to SQL Server 2022 steps:

1. stop datalog model by Rt clicking on its name in FactoryTalk View SE
2. open up by double clicking on model name
3. ODBC data source → System Data Source HallC o/c
   login required
   user Id sa
   pw HallC6666
   OK
   [...] → Yes System Data Source tab
   HallC
4. start datalog
5. File management
   change to 6 months

10GB per database? data model?

1. stop data log model by Rt clicking on its name
2. open up by double clicking on model name
3. Click on box [...] next to ODBC Data Source
   Yes to make changes
   System Data Source tab
   HallC (Data Source name)
   description SQL server)

SQL MS DI

☑ Login Required
user Id sa
password HallC6666
OK

In Microsoft SQL Server Management studio
Rt click on
- HallC → Reports → Disk usage
  13%

4. File management
   purge oldest records in database to 6 months → OK (saves changes)
5. start datalog model by Rt clicks on its name.