

BILH DataHub (Snowflake) User Guide

Table of Contents

- 1. Process to Request DataHub (BIH Snowflake) Access: 1
- 2. How to connect to DataHub (BILH Snowflake) 1
 - 2.1 Snowsight: The Snowflake Web Interface 2
 - 2.2 SnowSQL 4
 - 2.3 Visual Studio Code 7
 - 2.4 Dbeaver SQL Client 10

Enterprise Data Analytics team has recently introduced Snowflake as an enterprise data warehousing solution. It is hosted on BILH AWS tenant. Below guide will help with gaining access to DataHub.

1. Process to Request DataHub (BIH Snowflake) Access:

STOP and PROCEED to Step 2 if you already have an access.

Access to Datahub is two-step process

Step1. Adding user to Snowflake AD group

Step2. Provision of user access with specific role, datasets, business justification etc. on Snowflake.

Service Now request raised to gain “Access to Datahub” will accomplish both steps. Please access the link below to raise the request.

[Data & Report Access Request](#)

Once the access provisioning is complete, the user can access the DataHub.

2. How to connect to DataHub (BILH Snowflake)

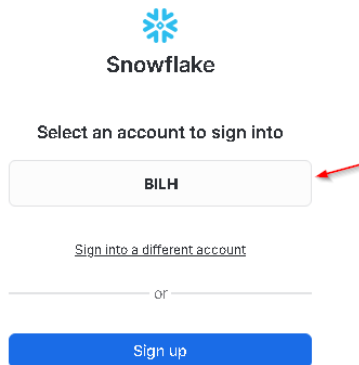
There are multiple methods to connect to DataHub. They are:

- 1. Snowsight (This is Snowflake recommended browser-based access method)
- 2. SnowSQL (This is snowflake provided command line interface – CLI)
- 3. VSCode (Visual Studio Code Integrated Development Environment – IDE)
- 4. DBeaver (Popular 3rd party SQL desktop client)

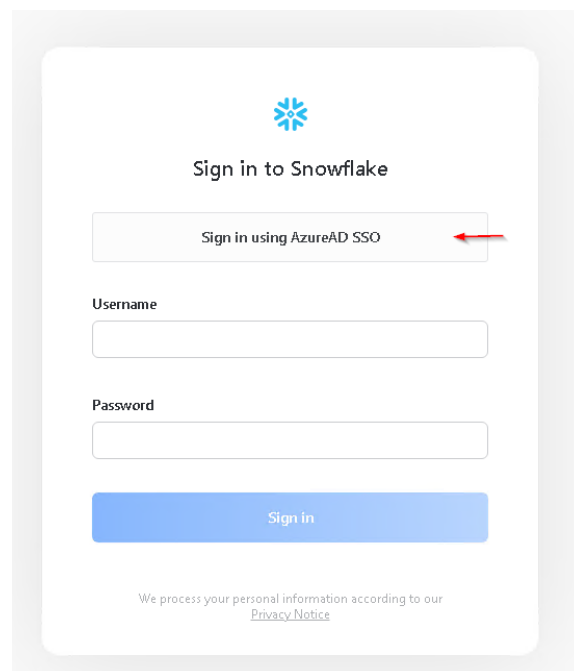
Irrespective of method used, you can only access DataHub through BIDMC VPN. (If you do not have BIDMC VPN access, please raise additional support request to gain that access first).

2.1 *Snowsight: The Snowflake Web Interface*

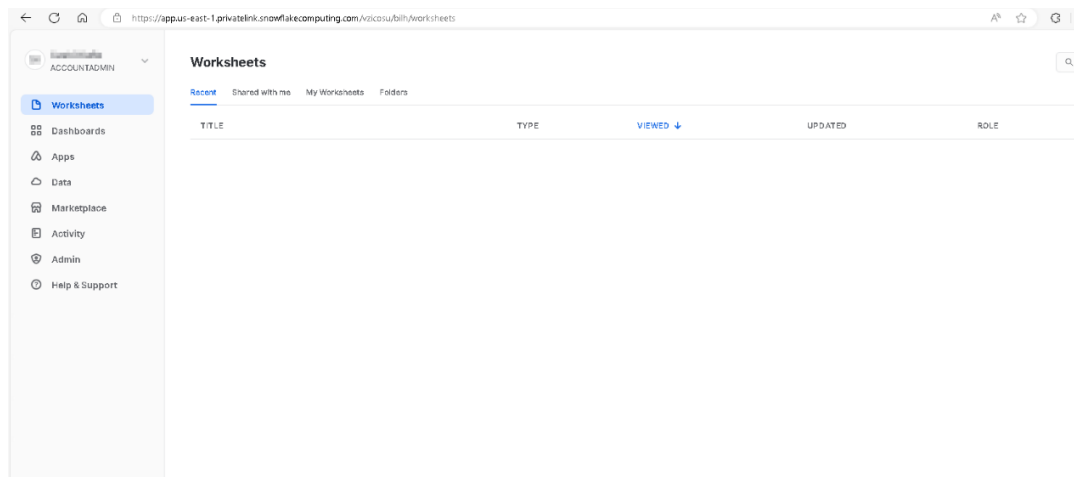
- 2.1.1 Access the URL: <https://vzicosu-bilh.privatelink.snowflakecomputing.com> in your browser and you will see the options like shared in screenshot below. Click on “BILH” button.



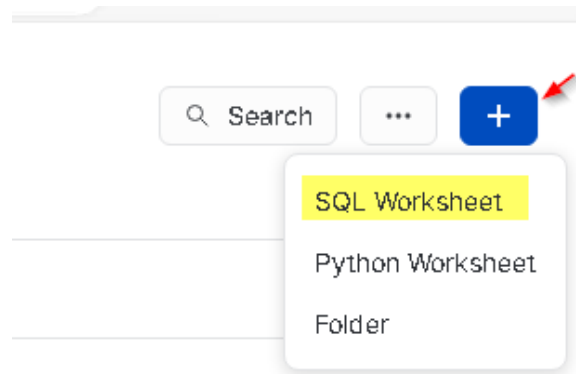
- 2.1.2 Select “Sign in using AzureAD SSO” in next page, and go through Office 365 login instructions using your account



- 2.1.3 After successful login, you will see landing page similar to screenshot below. It is called Snowsight, which is the snowflake web interface. More details on various components of Snowsight is available in Snowflake documentation <https://docs.snowflake.com/en/user-guide/ui-snowsight-gs>



- 2.1.4 From your upper right side of the screen, you can click on + sign and select SQL Worksheet to create new SQL Worksheet to run queries.



- 2.1.5 Set your worksheet context using Role, Data Warehouse and Database/Schema name. Screenshot below shows where those components are located. In this example, we have selected FR_DEV_EDW_ANALYST role giving us read access to DEV database objects and tables.

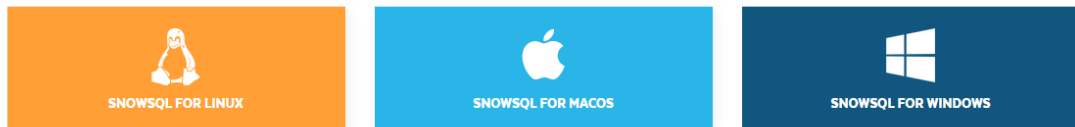


2.2 SnowSQL

SnowSQL is Command Line Interface (CLI) to access snowflake.

- 2.2.1 Download SnowSQL using the URL <https://developers.snowflake.com/snowsql/> and Install SnowSQL. For this documentation, we have used “SnowSQL For Windows”

Download the latest version for your OS



- 2.2.2 Check the snowsql installation by typing *snowsql* in the command prompt.

```
Microsoft Windows [Version 10.0.19044.3086]
(c) Microsoft Corporation. All rights reserved.

H:\> snowsql
Usage: snowsql [OPTIONS]

Options:
  -a, --accountname TEXT      Name assigned to your Snowflake account. If
                              you are not on us-west-2 or AWS deployment,
                              append the region and platform to the end,
                              e.g., <account>.<region> or
                              <account>.<region>.<platform> Honors
                              $SNOWSQL_ACCOUNT.

  -u, --username TEXT        Username to connect to Snowflake. Honors
                              $SNOWSQL_USER.

  -d, --dbname TEXT          Database to use. Honors $SNOWSQL_DATABASE.
  -s, --schemaname TEXT      Schema in the database to use. Honors
                              $SNOWSQL_SCHEMA.

  -r, --rolename TEXT         Role name to use. Honors $SNOWSQL_ROLE.
  -w, --warehouse TEXT       Warehouse to use. Honors $SNOWSQL_WAREHOUSE.
  -h, --host TEXT            Host address for the connection. Honors
                              $SNOWSQL_HOST.
```

2.2.3 Use the command below to try authenticating snowflake using Single Sign On (SSO)

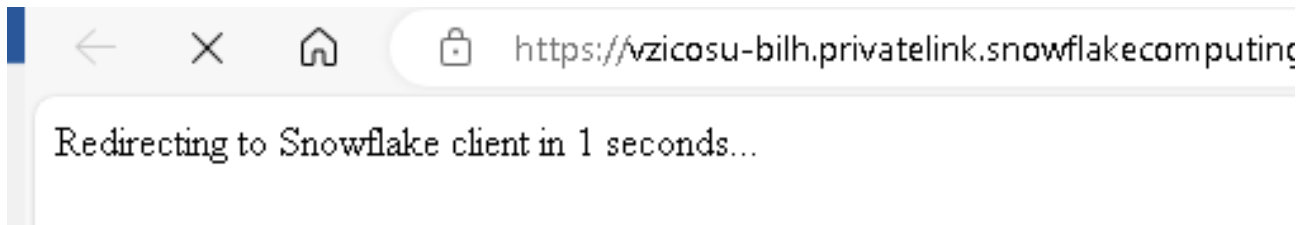
```
snowsql -a vzicosu-bilh -u {Your email} --authenticator externalbrowser
```

-a holds account info

-u login in info. Typically your Office 365 email address

-- authenticator provides means of authentication. In Azure SSO, it has to be done using externalbrowser

After entering, it will open the browser with login info.



After it prompts to close the browser, you will see info below prompting to type SQL –

```
H:\> snowsql -a vzicosu-bilh -u [redacted]@lahey.org --authenticator externalbrowser
Initiating login request with your identity provider. A browser window should have opened for you to complete the login. If you can't see it, check existin
Going to open: https://login.microsoftonline.com/3b9865a0-f866-4846-bf4d-113f4bef0755/saml2?SAMLRequest=nZJRb9owFIX%2FSuQ913E5SMEiVAykhkS3FEkn9c2JHXBX7Mx2Q
I1mjTmIDf3dUGec28ho1D0koECSayZRgJXVCNT03scy1CDyKsNVXG4sC1hGhmWQdjauT7bdt6beR3tfdDCKEPx75VdZIv4B21%2FpxRK2lkIfmt56z%2F9AE180GgQ11F3tXwq9MXEbwGSM%2F1DT61r
09e%2F3LSnww98yObLVIQH1kJMB3mOTV4tfoX2BUEe55vzU3Zcpj20P0evadmS7PvXvUx2BrM65fdgWmm8Bh13AK60buhJdrMZewTBy4dgN4yyEaBijMPbiYQcniWw1QLs%2Bsqb996HV7FCS51LI4U1r
fhmLKwgsPk4xMALX2BhtG3LKXIIlphxmeEKKq10Znz2c4vtT4SYFRDgT%2B9UP%2Fd%2Felf&RelayState=50519 to authenticate...
* SnowSQL * v1.2.28
Type SQL statements or !help
[redacted]@lahey.org#(no warehouse)@(no database).(no schema)>
```

2.2.4 You can use commands below to select database and warehouse to use-

Use {Database Name}; -- To set the database context

Use warehouse {Warehouse Name}; -- To set the warehouse context

```

* SnowSQL * v1.2.28
Type SQL statements or !help
sushil.kafle@lahey.org#(no warehouse)@(no database).(no schema)>use DEV_EDW_MANAGEMENT
;

+-----+
| status |
+-----+
| Statement executed successfully. |
+-----+
1 Row(s) produced. Time Elapsed: 1.983s
sushil.kafle@lahey.org#(no warehouse)@DEV_EDW_MANAGEMENT.PUBLIC>use WAREHOUSE COMPUTE_WH;

```

```

COMPUTE_WH
DEV_EDW_ANALYST_WH
DEV_EDW_ENGINEER_WH
DEV_EDW_LOADER_WH
PROD_EDW_ANALYST_WH
PROD_EDW_ENGINEER_WH
PROD_EDW_LOADER_WH
TEST_EDW_ANALYST_WH
TEST_EDW_ENGINEER_WH
TEST_EDW_LOADER_WH
TUNDRA_EDW_ADMIN_WH

```

After setting up your context, you can write your SQL commands to run query –

```

* SnowSQL * v1.2.28
Type SQL statements or !help
sushil.kafle@lahey.org#(no warehouse)@(no database).(no schema)>use DEV_EDW_MANAGEMENT
;

+-----+
| status |
+-----+
| Statement executed successfully. |
+-----+
1 Row(s) produced. Time Elapsed: 1.983s
sushil.kafle@lahey.org#(no warehouse)@DEV_EDW_MANAGEMENT.PUBLIC>use WAREHOUSE COMPUTE_WH;

+-----+
| status |
+-----+
| Statement executed successfully. |
+-----+
1 Row(s) produced. Time Elapsed: 0.592s
sushil.kafle@lahey.org#COMPUTE_WH@DEV_EDW_MANAGEMENT.PUBLIC>SELECT *
FROM DEV_EDW_MANAGEMENT.ETL.INGESTION_METADATA_CONFIG
ORDER BY LOGICAL_NAME;

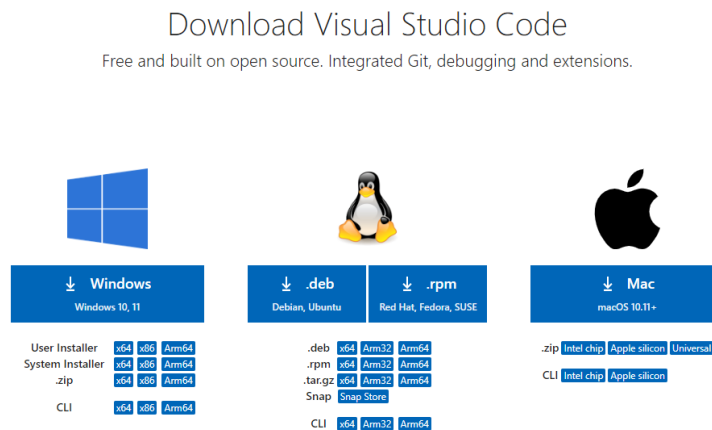
+-----+
| METADATA_CONFIG_KEY | CHANGE_TRACKING | CHANGE_TRACKING_TYPE | ENABLED | LOGICAL_NAME | SOURCE_TYPE | DATABASE_NAME | S |
+-----+
| 0df24a81da53b4d916e387f27ec4736a03527e27f9a5a12538350ebed9fdf054 | 0 | undefined | 0 | Caboodle | SQL Server | CDW_Reporting | d |
| 49258d57729b8d710fdca222759ec2b867832c3da328ce597a40d972a06b578c | 0 | undefined | 1 | Caboodle | SQL Server | CDW_Reporting | d |
| e93732fbfe6691727c8e5fd2b7af6a27e2d93e1ced597847d65cc48d0e3c8eb9 | 0 | undefined | 1 | Caboodle | SQL Server | CDW_Reporting | d |
| 4.550000000 +0000 | 1 | Caboodle | 1 |  |  |  |  |

```

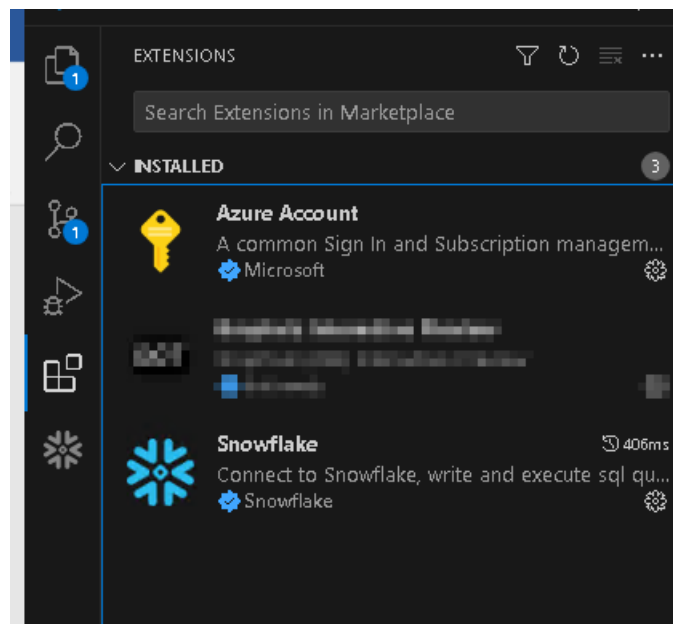
2.3 Visual Studio Code

Visual Studio Code is very popular Integrated Development Environment (IDE) which can be used to connect to Snowflake BILH Datahub to run queries and analysis.

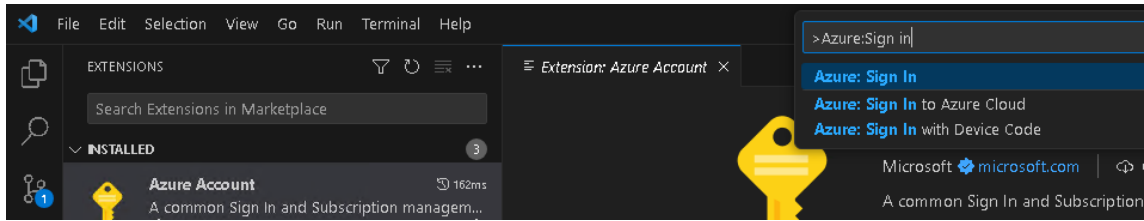
2.3.1 Install Visual Code using the URL <https://code.visualstudio.com/download>. For the context of this documentation, we are using Windows.



2.3.2 After Visual Studio Code Installation, Install Snowflake and Azure Account Extensions. Make sure those are verified extensions denoted by 



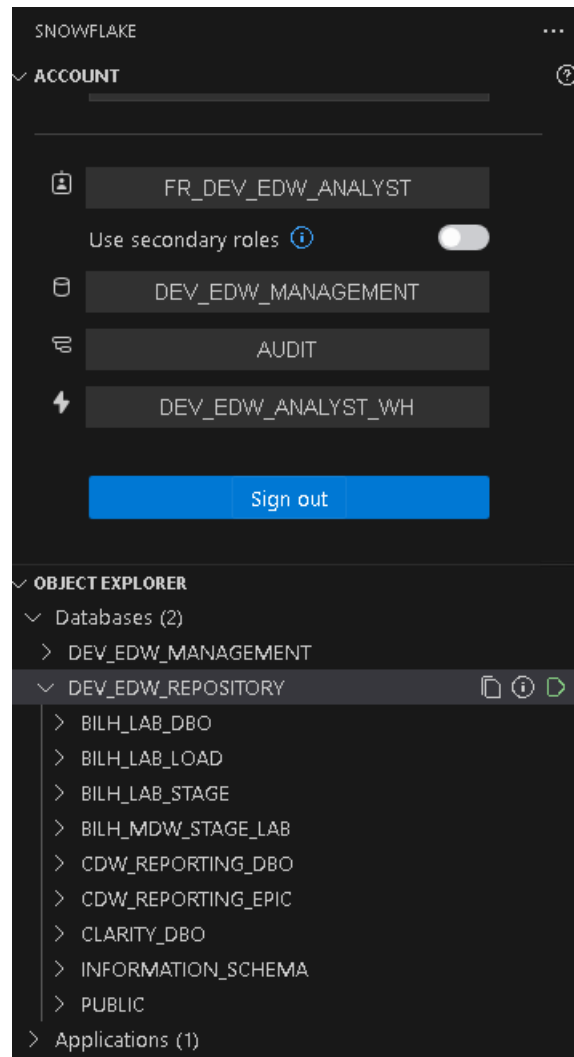
2.3.3 Login to Azure using your Office 365 account by typing >Azure: Sign In and following instructions



2.3.4 Click on Snowflake tab to connect to Snowflake account.

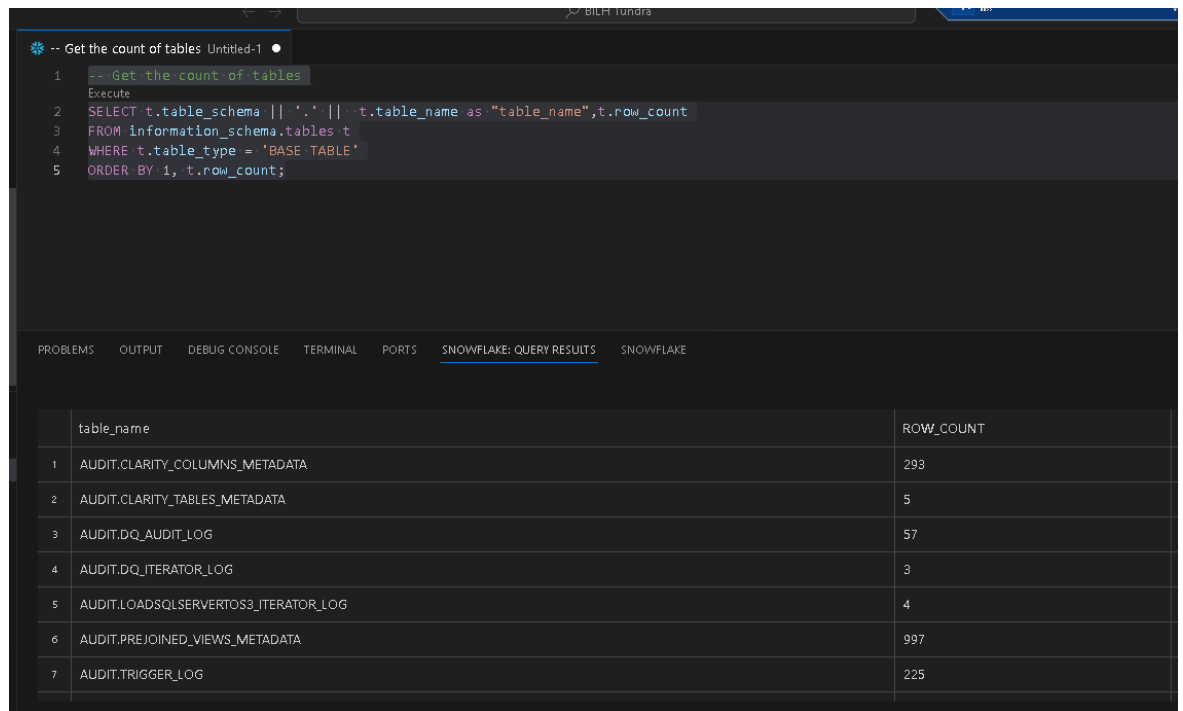


Add your username (typically BILH Office 365 email) and click on “Sign in with Single Sign On”. This will open up in browser to authenticate your account. After successful authentication, come back to visual studio code and set your context by selecting role, database, schema, and warehouse.




You can see Object Explorer with details of databases that are available for the role that you selected. You can browse objects like schema, tables, views etc. from there.

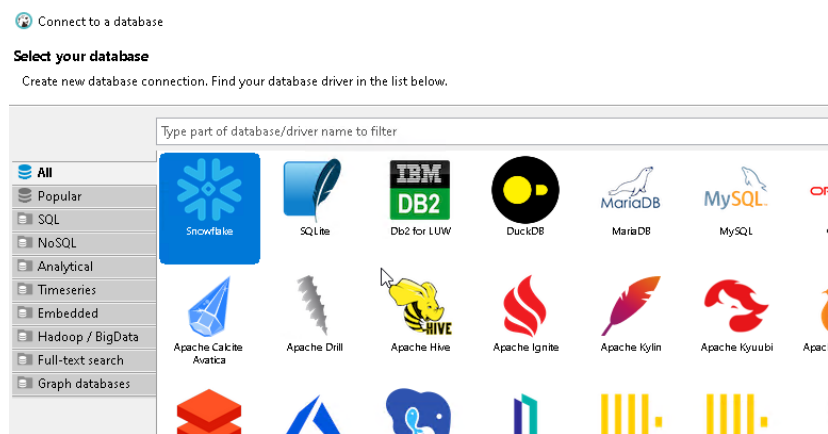
- 2.3.5 Go to File > New File and select “Snowflake SQL File” to open a query window and start writing your SQL.



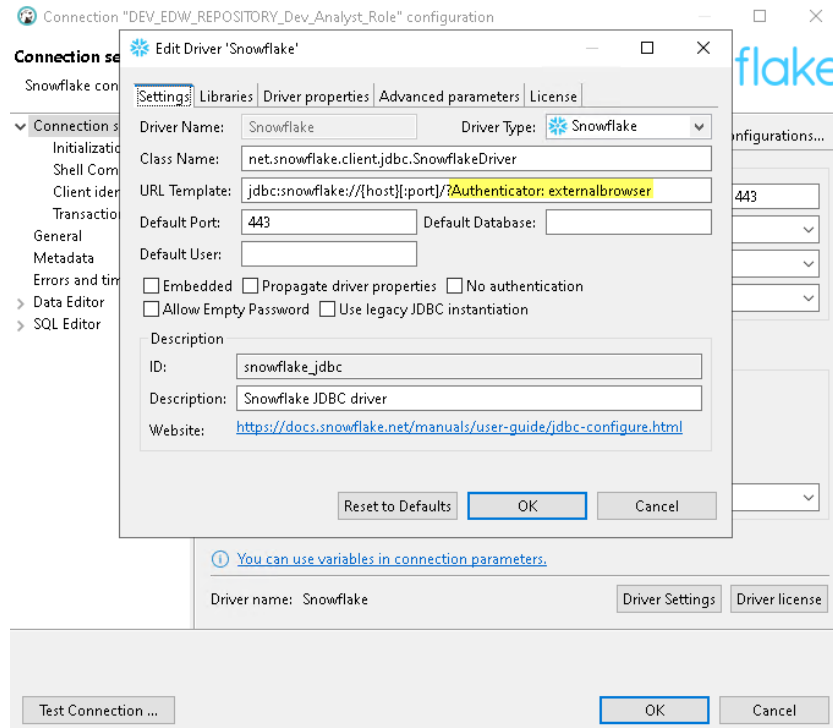
2.4 Dbeaver SQL Client

Dbeaver is popular SQL Client tool that can connect to various databases that are available in the market. You can use the tool to have the connection established to Snowflake to write your queries.

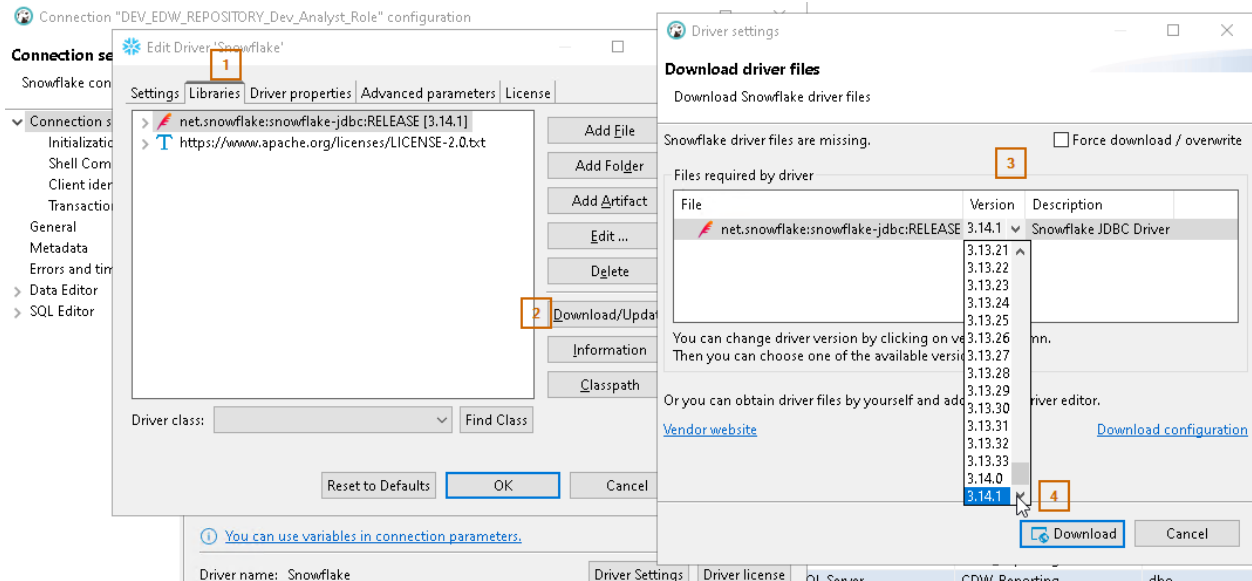
- 2.4.1 Download “DBeaver Community Edition” from URL <https://dbeaver.io/> and install it in your machine.
- 2.4.2 After installation, select your database options using  icon. In the all section, you should see Snowflake as an option. Select and Click Next



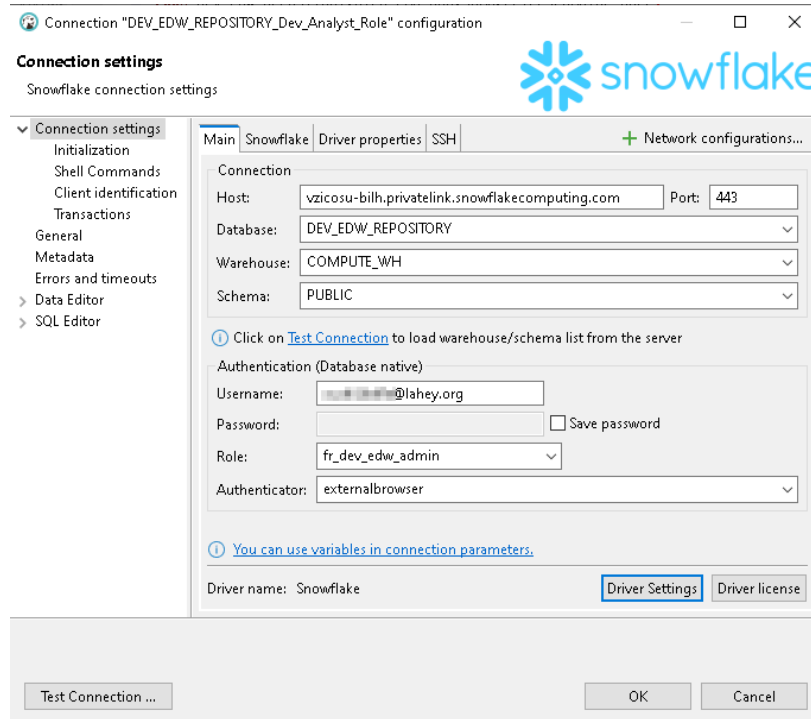
2.4.3 In the Connection Settings, Click the Driver Setting add “Authenticator: externalbrowser” in the URL Template.



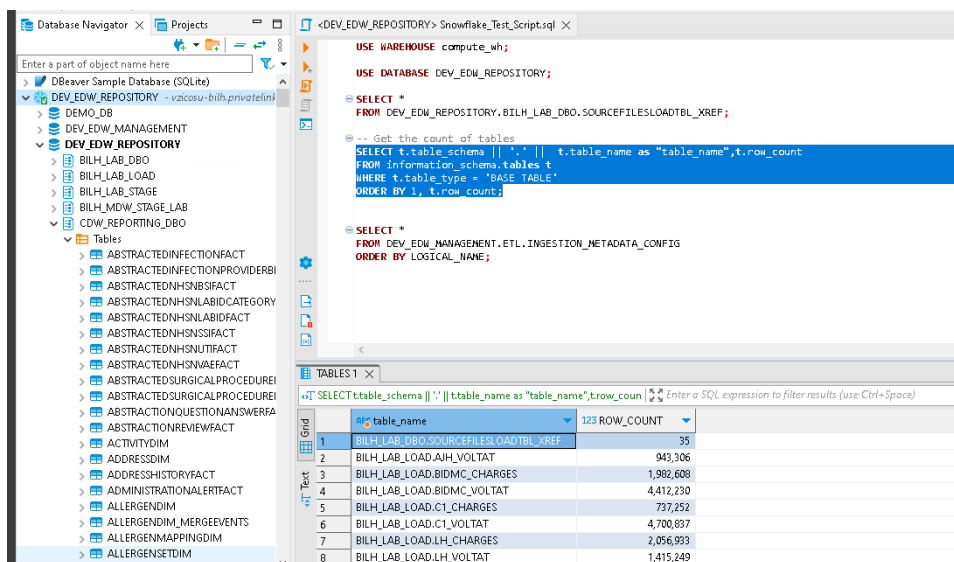
2.4.4 Go to Libraries tab, select the driver and click on Download/Update to get the latest Snowflake jdbc driver available and download. Drivers 3.13.6 and up should work.



- 2.4.5 Fill in the info as shown below with your login and click OK. It will open browser to authenticate. After successful authentication, close the tab and return to DBeaver.



- 2.4.6 Database Navigator Pane will show green check mark after successful authentication. You can explore database objects in there. You can click on “New SQL script” and start writing SQL statements and queries. Example below



References:

Snowsight Detail Guide: <https://docs.snowflake.com/en/user-guide/ui-snowsight-gs>

SnowSQL Detail Guide: <https://docs.snowflake.com/en/user-guide/snowsql>

Search Snowflake documentation about SQL syntaxes or anything related Snowflake:
<https://docs.snowflake.com/>