WSL (Windows-only):

Run a PowerShell terminal as Administrator. Enter the following commands:

dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart

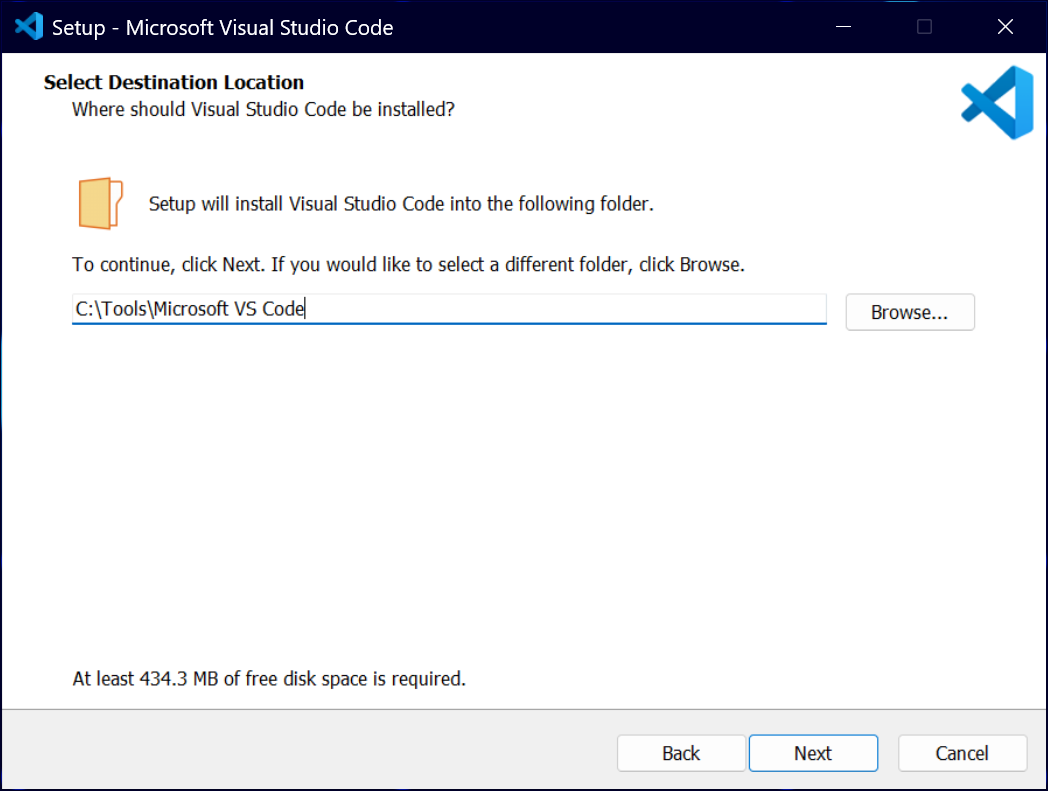
dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart

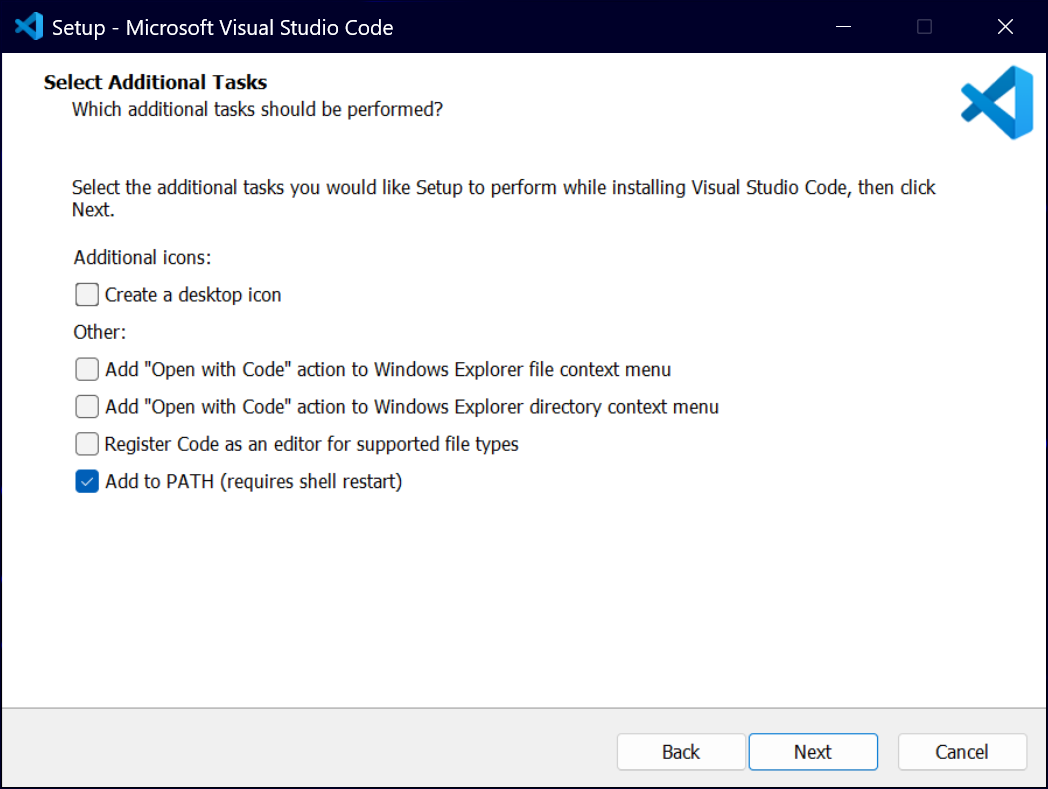
Reboot. Then re-open a PowerShell a terminal as Administrator. Run the following commands:

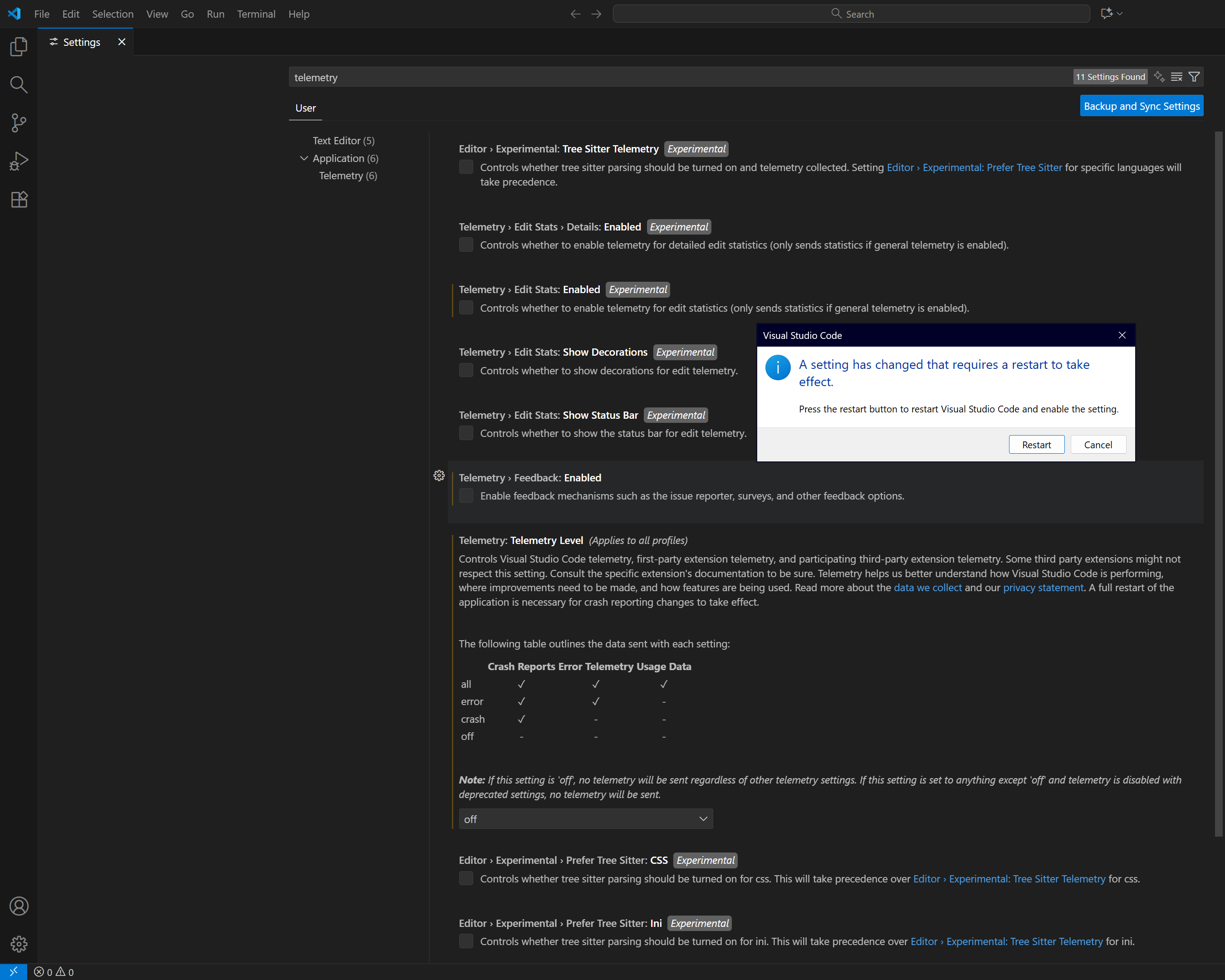
wsl --set-default-version 2

wsl --install Ubuntu-24.04

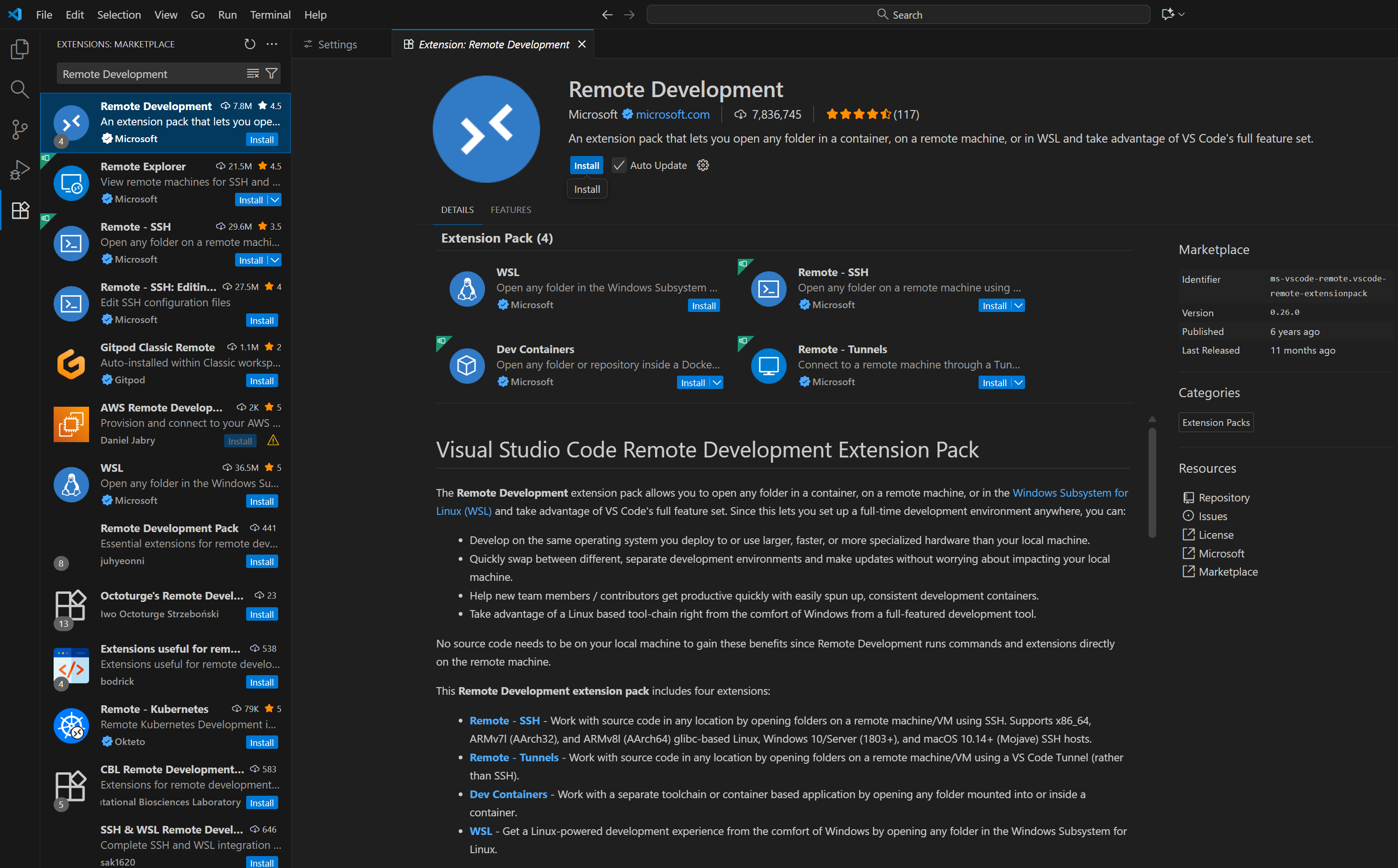
**VSCODE:**

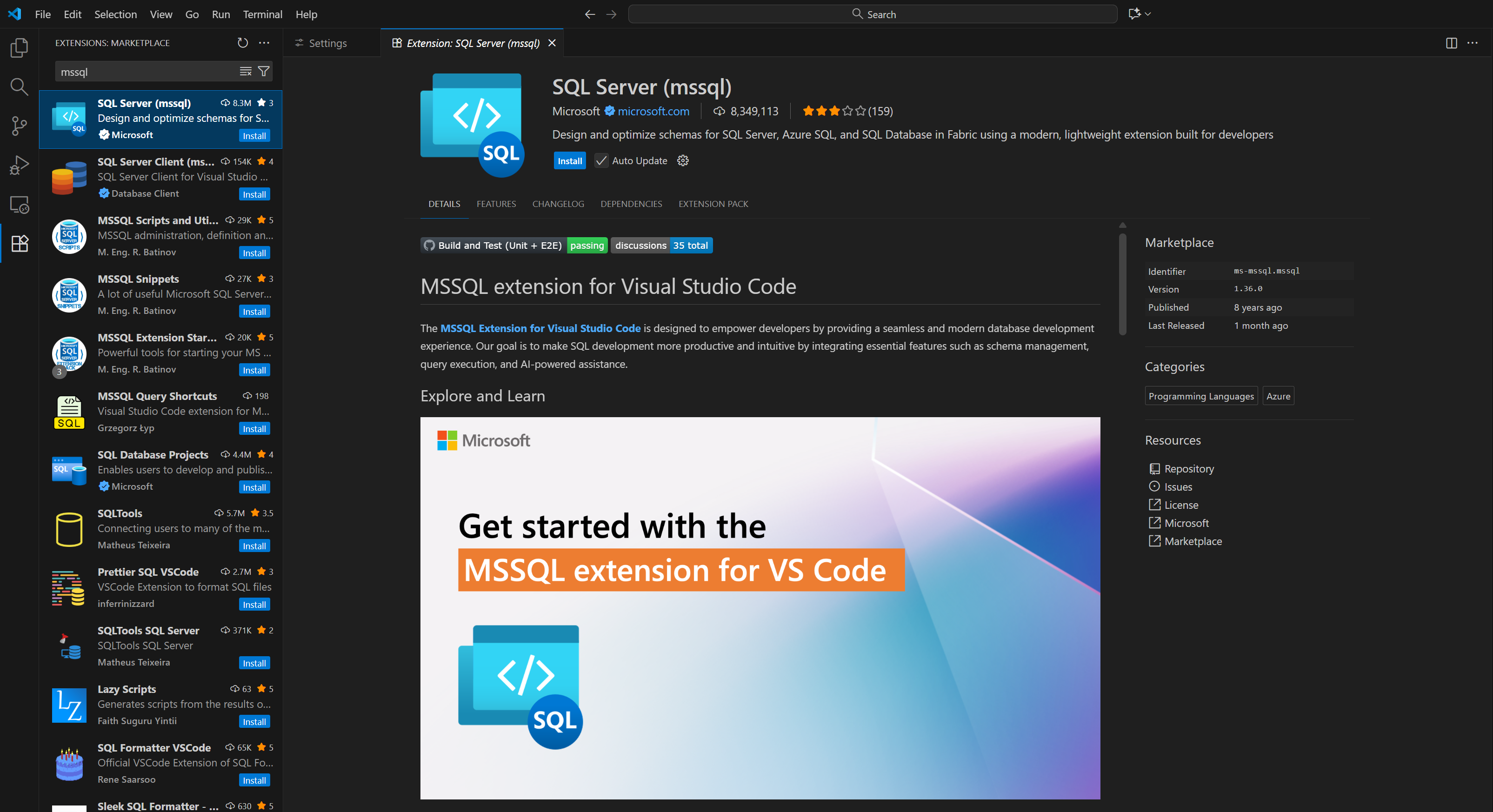


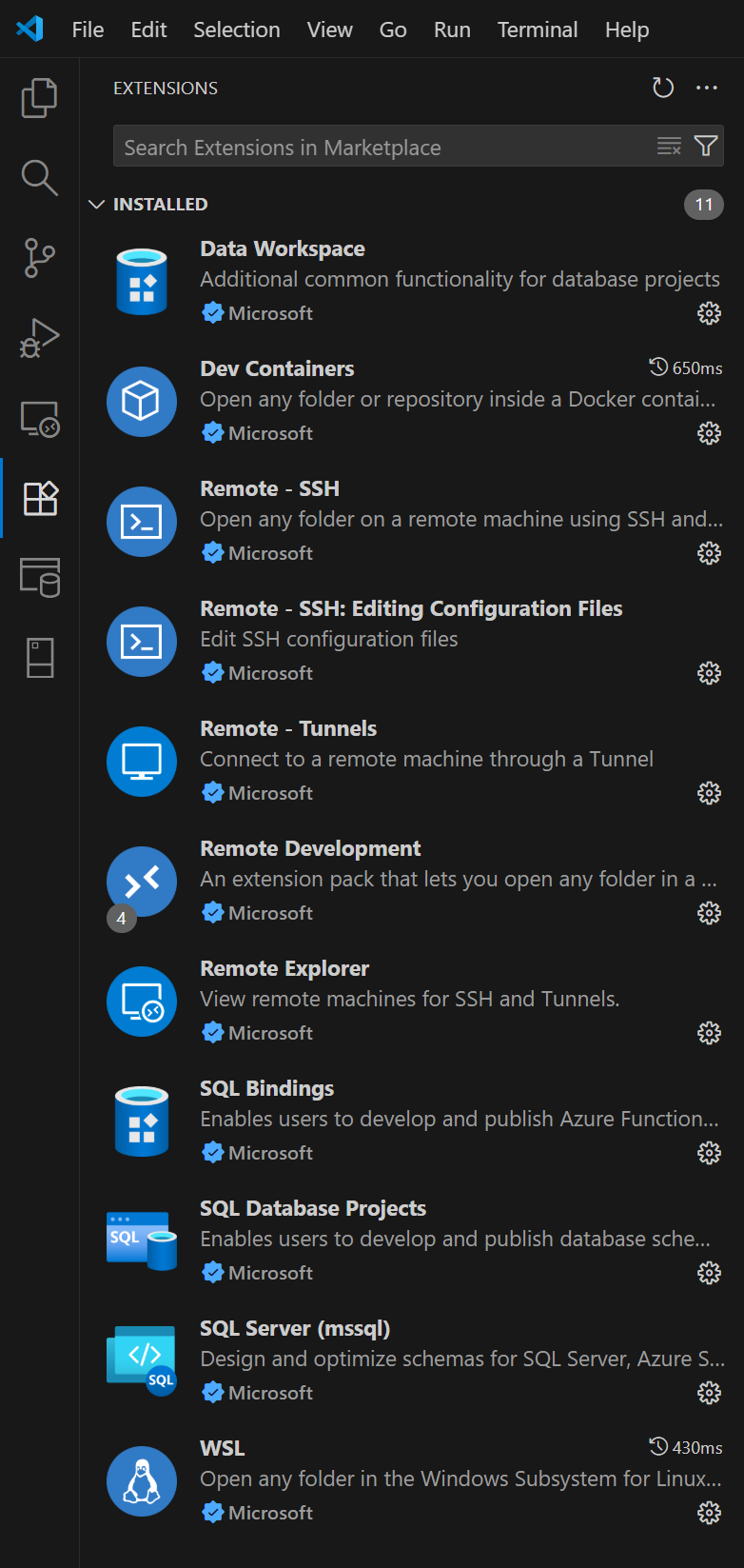




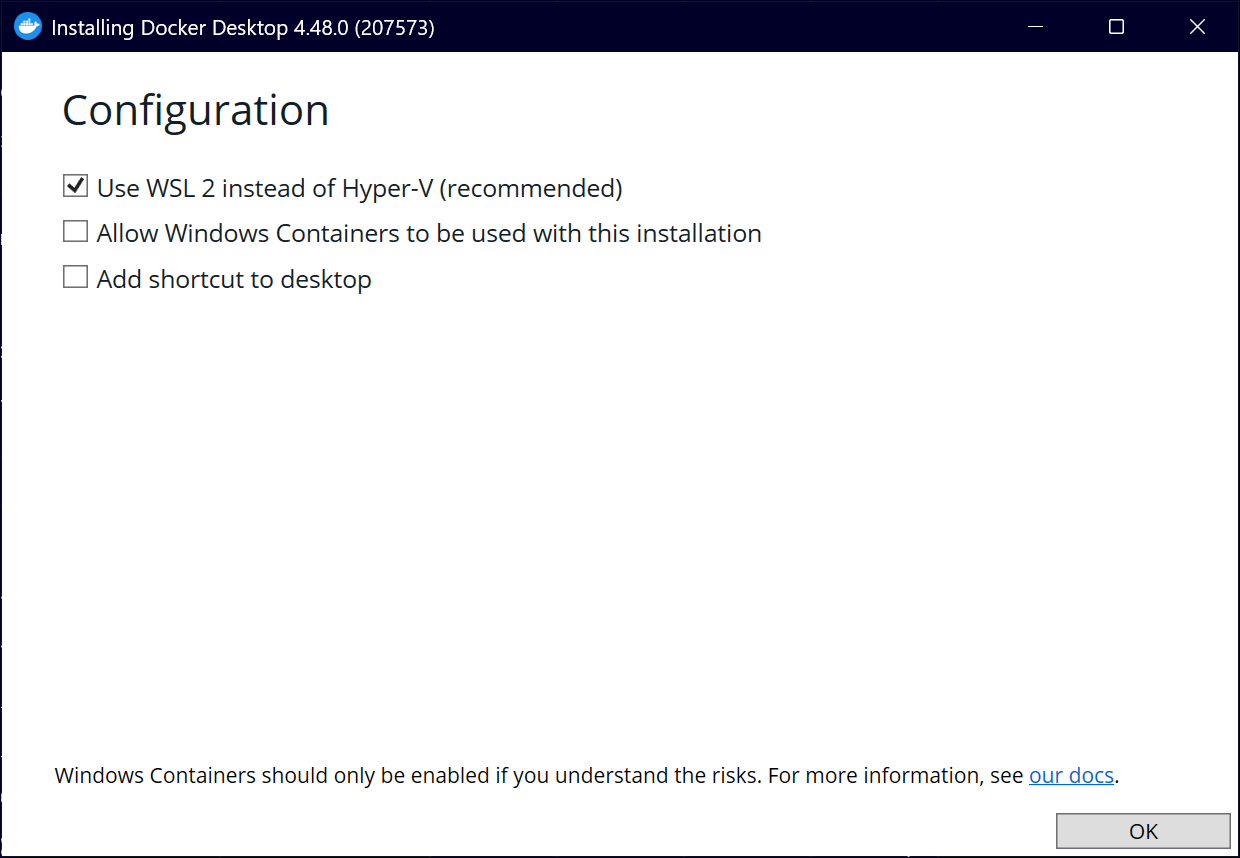
**Windows-only:**



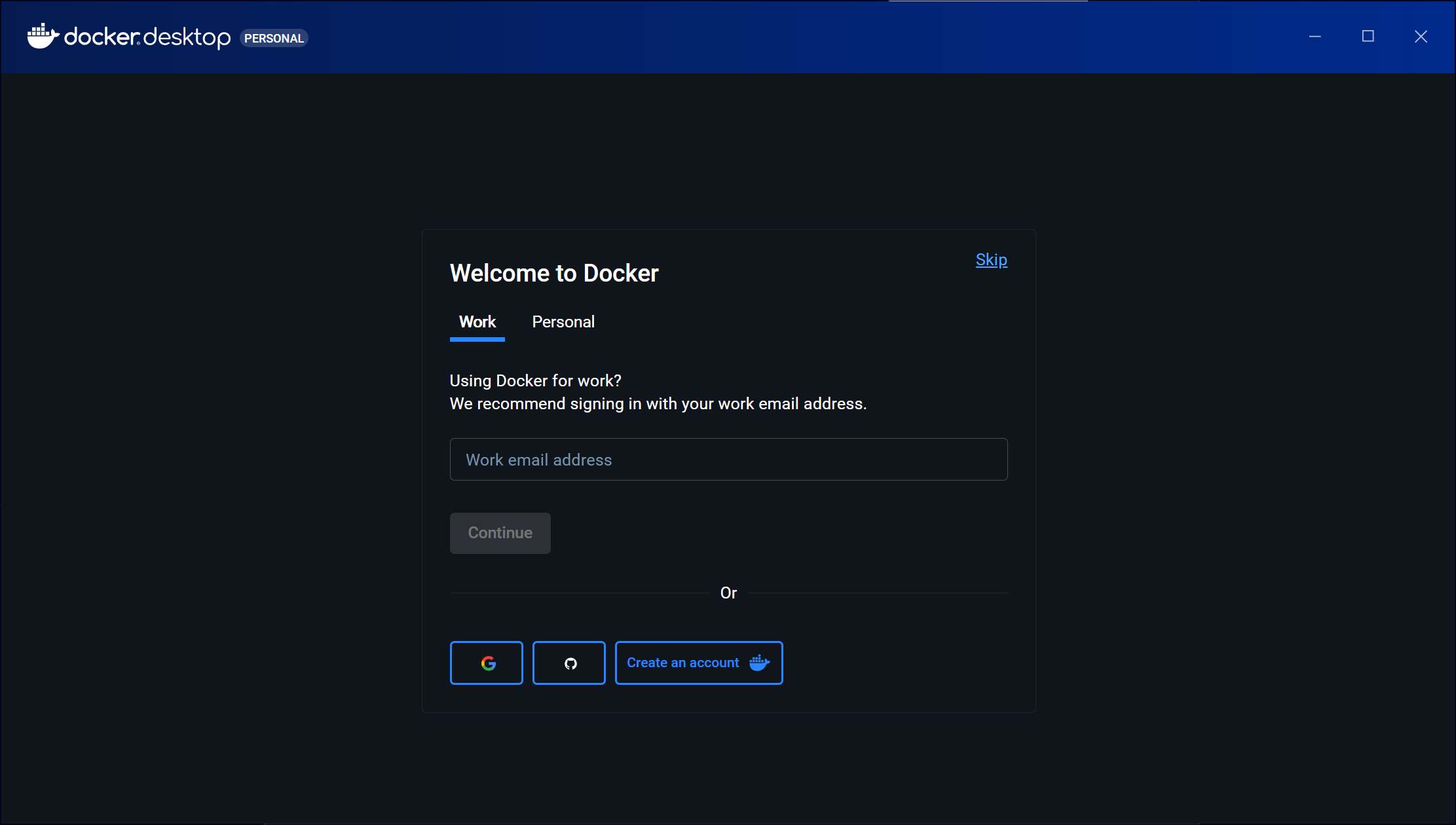




**Docker Desktop:**



**Logout and then log in.**

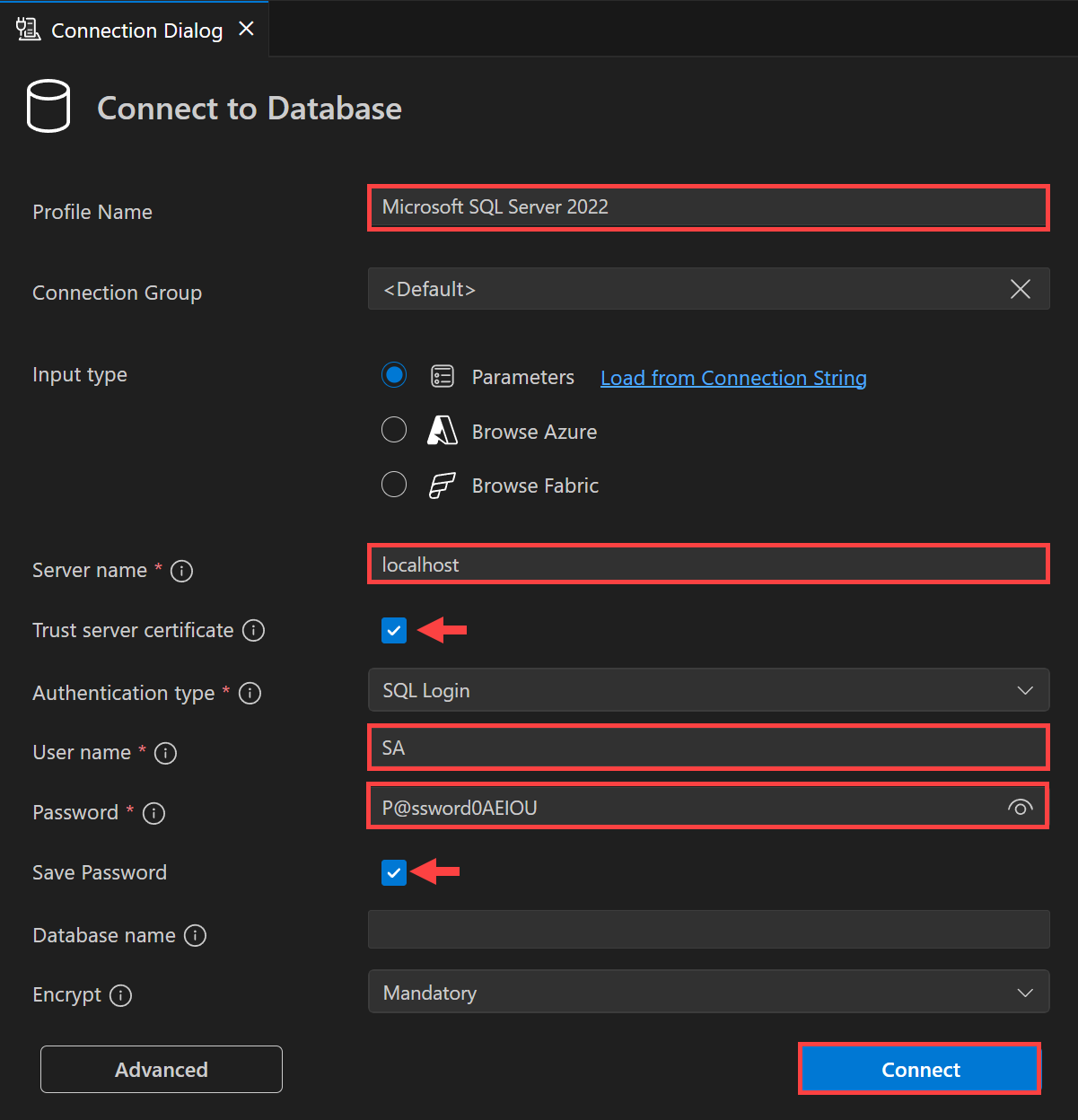


MSSQL:

In a (WSL) terminal, enter the following commands:

docker network create tc1004b

docker run -d --name mssql --network tc1004b -e "ACCEPT\_EULA=Y" -e "SA\_PASSWORD=P@ssword0AEIOU" -p 1433:1433 mcr.microsoft.com/mssql/server:2022-latest



CREATE DATABASE tc1004b;

GO

USE tc1004b;

CREATE TABLE prj (

id INT IDENTITY(1,1) PRIMARY KEY,

timestamp DATETIME NOT NULL,

sensor VARCHAR(25) NULL,

value REAL NULL);

INSERT INTO prj (timestamp, sensor, value)

VALUES (GETDATE(), 'sensor', 0.0);

USE master;

GO

DROP DATABASE tc1004b;

GO

MOSQUITTO

In a (WSL) terminal, enter the following commands:

docker run -d --name mosquitto --network tc1004b -p 1883:1883 eclipse-mosquitto:latest

docker exec mosquitto /bin/sh -c 'cat << \_\_EOF\_\_ >> /mosquitto/config/mosquitto.conf

listener 1883

allow\_anonymous true

\_\_EOF\_\_

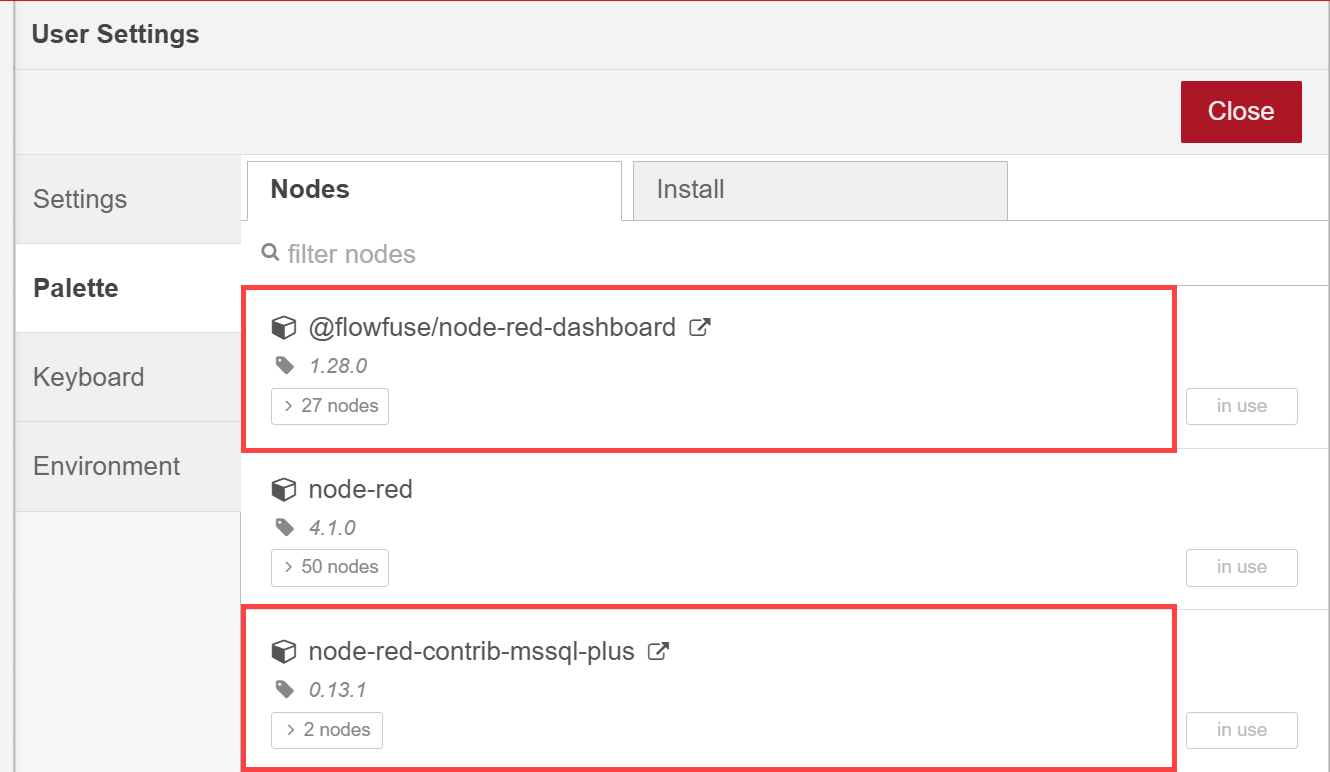
'

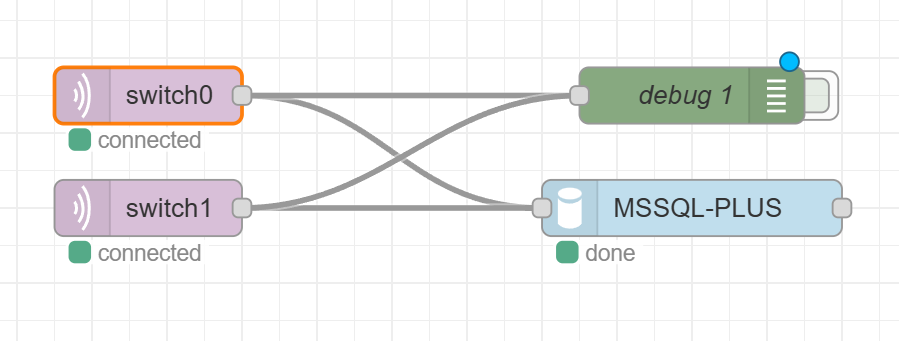
docker restart mosquitto

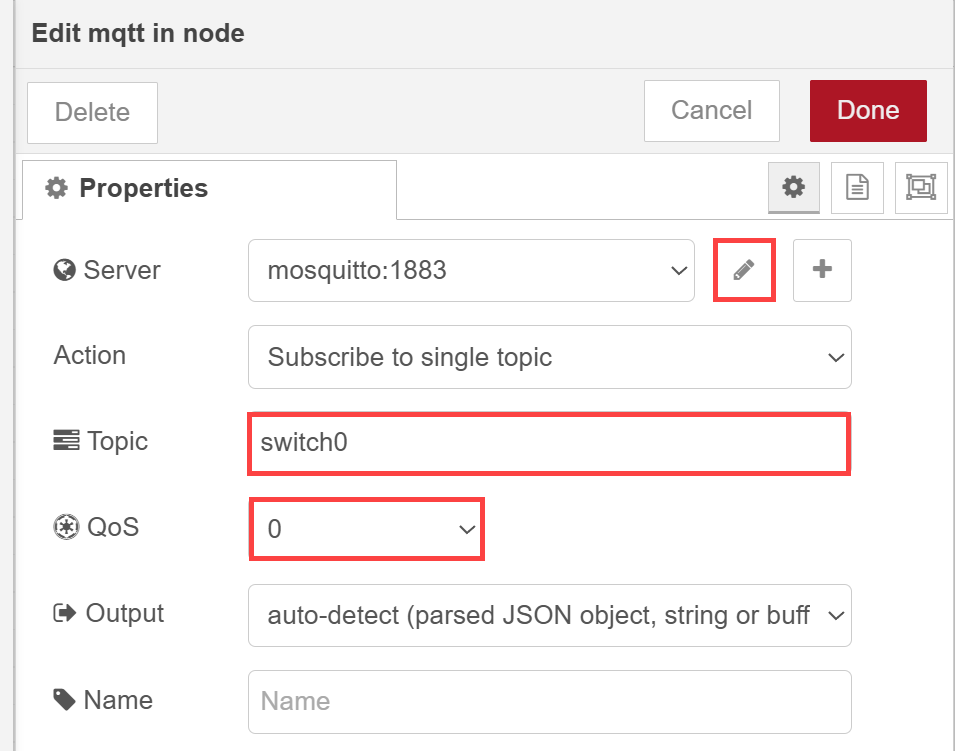
NODE-RED

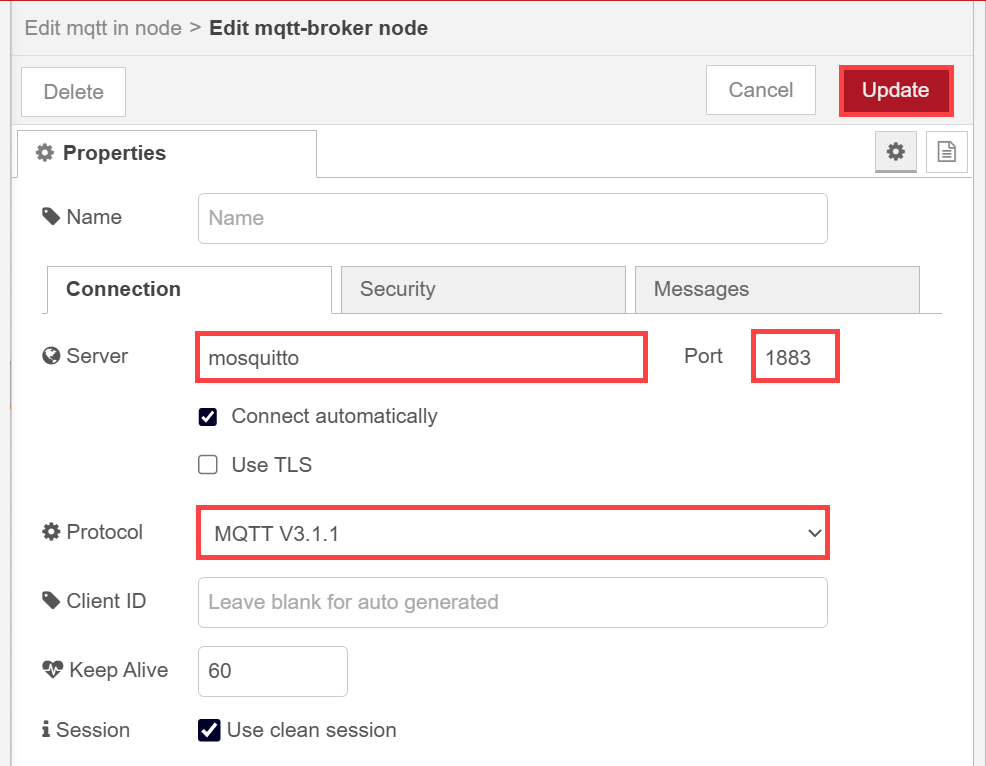
docker run -d --name nodered --network tc1004b -p 1880:1880 nodered/node-red

In a browser enter: http://localhost:1880/



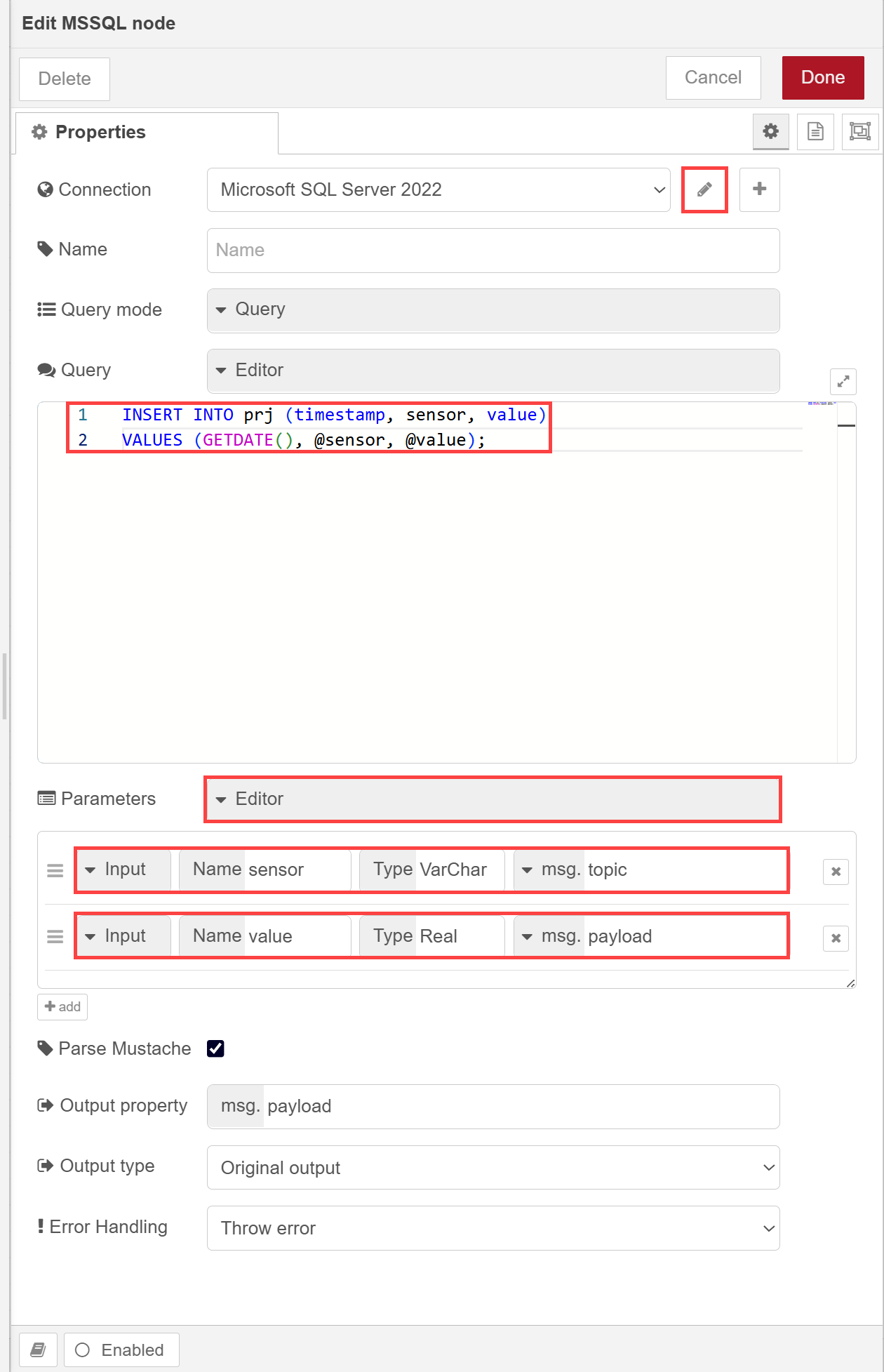


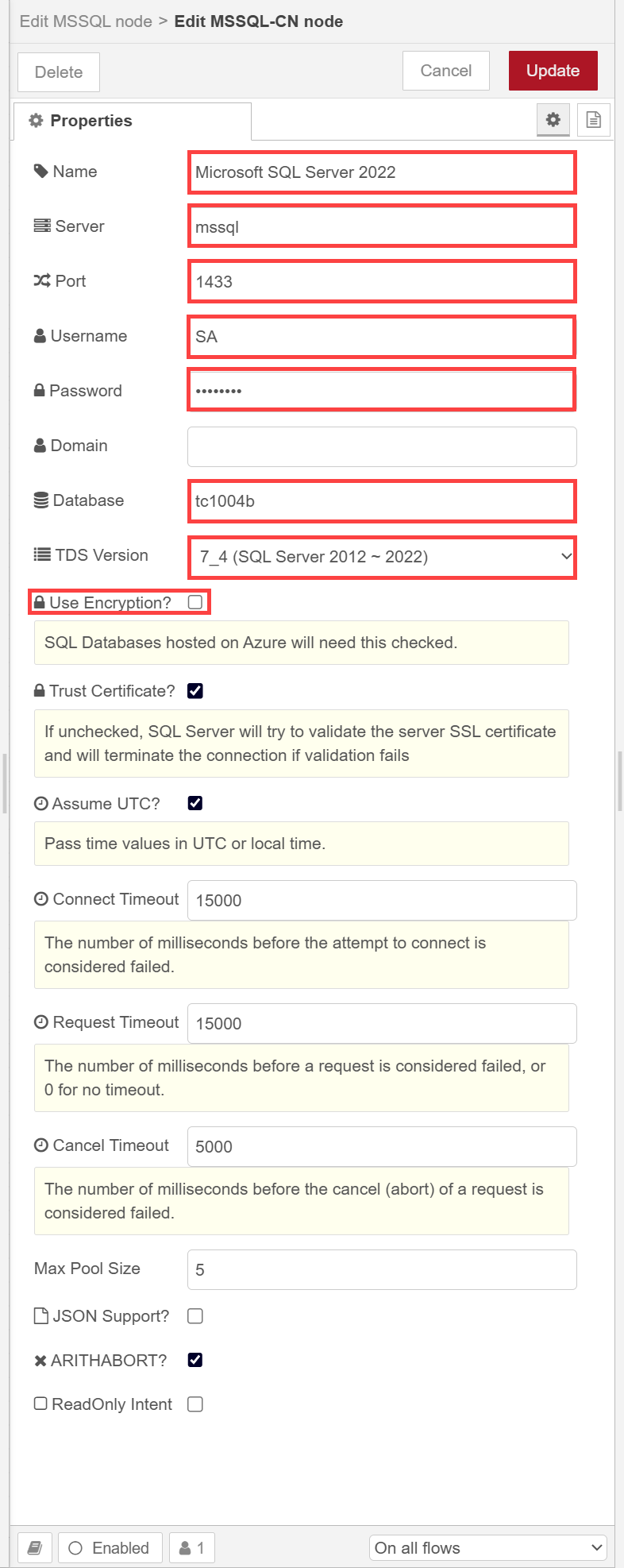




INSERT INTO prj (timestamp, sensor, value)

VALUES (GETDATE(), @sensor, @value);





mosquitto\_pub -t switch0 -m 3.1416

SELECT TOP (10) [id]

,[timestamp]

,[sensor]

,[value]

FROM [tc1004b].[dbo].[prj]

ORDER BY id DESC