

# Visual Studio 2022: How to debug a console app which runs with root privileges

## Setup Visual Studio for remote debugging

Install VsLinuxDebug from Visual Studio Marketplace.

- Visual Studio – Options... – Linux Debugger – General: Adjust .NET Path to the fully-qualified path to the dotnet executable. Check if the path to the vsdbg executable is correct.

▼ Local Settings	
Delete 'launch.json' after build.	False
PLink Local Path (blank to use embedded)	
▼ Misc	
HostPort	22
▼ Remote Credentials	
Host IP Address	192.168.50.252
SSH Key File Enabled	False
SSH Private Key File (optional)	C:\Users\Thomas\.ssh\id_rsa
SSH Private Key Password (optional)	
User Group Name (optional)	
User Name	pi
User Password	raspberrypi
▼ Remote Debugger	
.NET Path	/home/pi/.dotnet/dotnet
Upload to folder	./VsLinuxDbg
Visual Studio Debugger Path	~/vsdbg/vsdbg
▼ Warning Experimental	
Debug Display GUI	True
Use Command Line Arguments	True

**.NET Path**  
Path to .NET on remote machine. (Samples: `dotnet`, `~/dotnet/dotnet`)

- Install vsdbg if not already done by VsLinuxDebug.  
`curl -sSL https://aka.ms/getvsdbgsh | /bin/sh /dev/stdin -v latest -l ~/vsdbg`
- Connect to the remote system using putty.exe before trying to run the remote debugger.

## Run vsdbg with elevated privileges

- Rename the original vsdbg binary to something convenient:  
`mv ~/vsdbg/vsdbg ~/vsdbg/vsdbg-bin`
- Create new text file with the name "vsdbg":  
`sudo nano ~/vsdbg/vsdbg`
- Paste following content into the new vsdbg file, exit and save using Ctrl+X.  
`#!/bin/bash  
sudo ~/vsdbg/vsdbg-bin $@`
- Add execute permissions to the new vsdbg file:  
`sudo chmod +x vsdbg`

### Known Problems:

- If the raspberry pi sdcard is reinstalled with a new operating system and the same IP address is used, make sure you connect to the raspberry pi using putty.exe. It eventually shows a warning that the fingerprint of the ssh keys has changed. Agree and update to the newer fingerprint.  
reg delete HKCU\Software\SimonTatham\PuTTY\SshHostKeys /f
- Remove old fingerprints from %userprofile%\ssh\known\_hosts file:  
del %userprofile%\ssh\known\_hosts

### Links:

<https://github.com/SuessLabs/VsLinuxDebug>

<https://marketplace.visualstudio.com/items?itemName=SuessLabs.VSLinuxDebugger>

<https://learn.microsoft.com/en-us/dotnet/iot/debugging?tabs=self-contained&pivots=vscode>