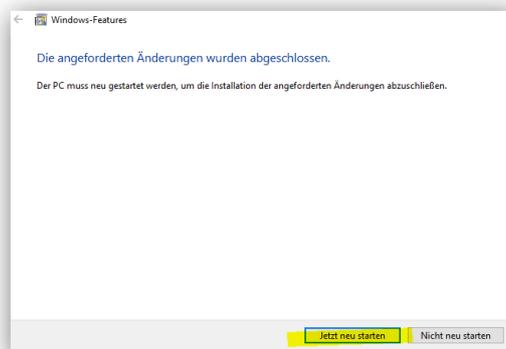
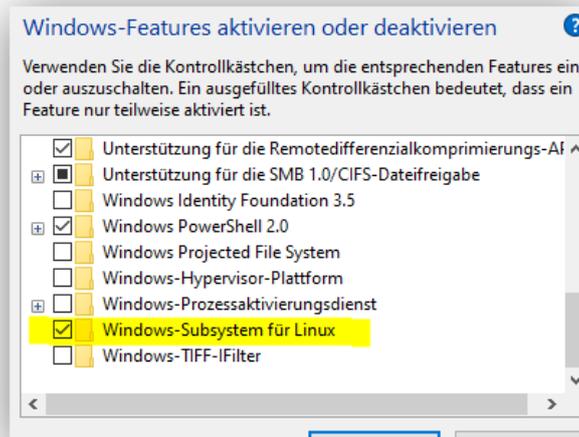
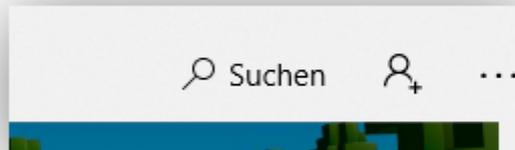
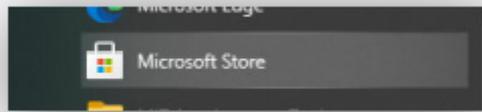


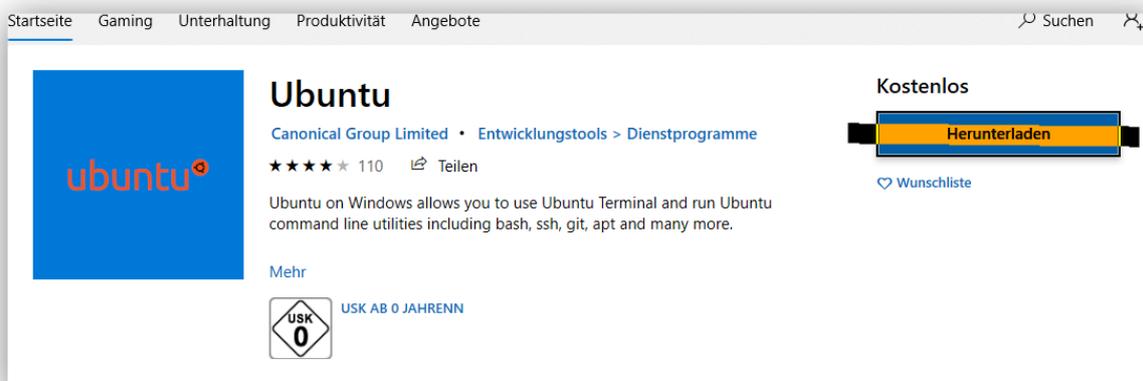
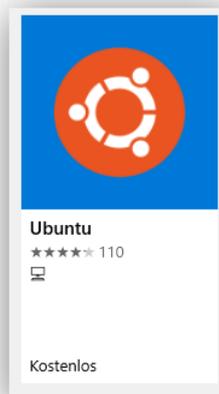
Windows 10 Home 21H1 WSL 1 - Ubuntu 20.04 LTS.....	2
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Windows 10 Home 21H1 WSL 1 - Ubuntu 20.04 LTS

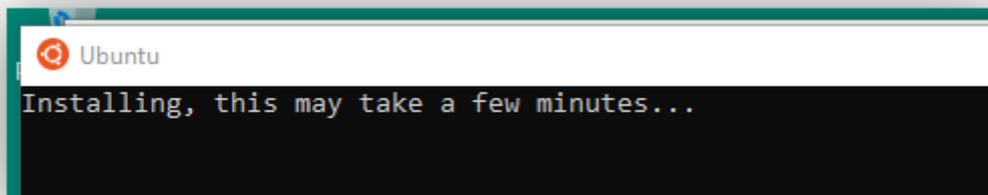
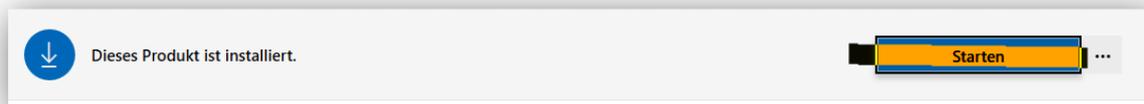
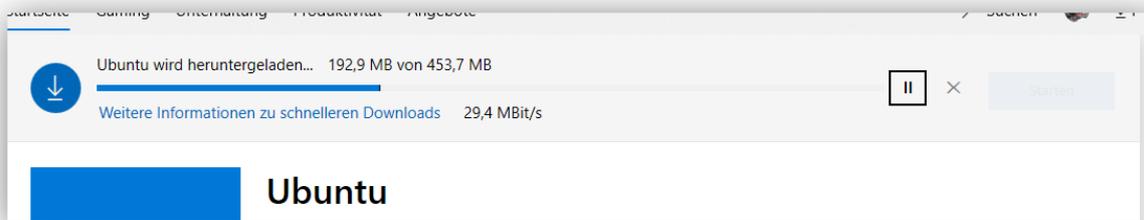
- Systemsteuerung\Alle Systemsteuerungselemente\Programme und Features
- Windows-Features aktivieren oder deaktivieren
- Windows-Subsystem für Linux
- OK
- Rechner neu starten (alles Wichtige vorher sichern)



- ubuntu



- Jetzt muss man sich mit seinem Microsoft Konto anmelden



Ein paar Minuten später:

- username
- password
- password

```
dde@Fruehling: ~  
passwd: password updated successfully  
Installation successful!  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 4.4.0-19041-Microsoft x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:   https://landscape.canonical.com  
* Support:      https://ubuntu.com/advantage  
  
System information as of Fri: Apr  2 15:15:03 CEST 2021:  
  
System disk: 54,0 G / 100,0 G  
Init system: systemd  
Memory usage: 20% / 7,7 G  
Swap usage: 0%  
  
1 update can be installed immediately.  
0 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
This message is shown once a day. To disable it please create the  
/home/dde/.hushlogin file.  
dde@Fruehling:~$
```

- `sudo apt update`
- `sudo apt upgrade`
- `sudo apt install gcc`
- `sudo apt install g++`
- `sudo apt install make`
- `sudo apt install git`
- `sudo apt install gdb`
- `sudo apt install build-essential`

--- System ist erstmals installiert ---

RailControl laden, und übersetzen

```

Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
dde@Fruehling:~$ git clone https://github.com/teddych/railcontrol.git
Cloning into 'railcontrol' ...
remote: Enumerating objects: 222, done.
remote: Counting objects: 100% (222/222), done.
remote: Compressing objects: 100% (150/150), done.
remote: Total 11717 (delta 135), reused 132 (delta 72), pack-reused 11495
Receiving objects: 100% (11717/11717), 11.19 MiB | 4.67 MiB/s, done.
Resolving deltas: 100% (9482/9482), done.
dde@Fruehling:~$

```

```

Resolving deltas: 100% (9482/9482), done.
dde@Fruehling:~$ cd railcontrol
dde@Fruehling:~/railcontrol$

```

```

dde@Fruehling: ~/railcontrol
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/gzread.o Hardware/zlib/gzread.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/adler32.o Hardware/zlib/adler32.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/gzwrite.o Hardware/zlib/gzwrite.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/inflate.o Hardware/zlib/inflate.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/inffast.o Hardware/zlib/inffast.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/inftrees.o Hardware/zlib/inftrees.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/trees.o Hardware/zlib/trees.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/crc32.o Hardware/zlib/crc32.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/inftrees.o Hardware/zlib/inftrees.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/gzclose.o Hardware/zlib/gzclose.c
cc -g -O2 -Wno-implicit-function-declaration -c -o Hardware/zlib/compress.o Hardware/zlib/compress.c
g++ -g Storage/sqlite/sqlite3.o ArgumentHandler.o Config.o Languages.o Manager.o RailControl.o Version.o WebServer/WebServer.o WebServer/WebClientCluster.o WebServer/HtmlTagButtonCommandToggle.o WebServer/HtmlTagFeedback.o WebServer/HtmlTagAccessory.o WebServer/HtmlTagTrackBase.o WebServer/HtmlTagButtonPopup.o WebServer/HtmlTagRoute.o WebServer/HtmlFullResponse.o WebServer/HtmlTagSwitch.o WebServer/WebClientTrackBase.o WebServer/HtmlResponseNotFound.o WebServer/Response.o WebServer/HtmlResponseNotImplemented.o WebServer/WebClient.o WebServer/WebClientSignal.o WebServer/HtmlTagButtonCommand.o WebServer/HtmlTagSignal.o WebServer/HtmlTagInputInteger.o WebServer/HtmlTagInputSliderLocoSpeed.o WebServer/HtmlTagInputSlider.o WebServer/HtmlTag.o WebServer/HtmlTagButtonCommandPressRelease.o WebServer/HtmlTagInput.o WebServer/HtmlResponse.o WebServer/HtmlTagSelect.o WebServer/HtmlTagButton.o WebServer/WebClientTrack.o DataModel/AccessoryBase.o DataModel/Serializable.o DataModel/Track.o DataModel/TrackBase.o DataModel/Route.o DataModel/Relation.o DataModel/Switch.o DataModel/Feedback.o DataModel/LocoFunctions.o DataModel/Accessory.o DataModel/Loco.o DataModel/Cluster.o DataModel/LockableItem.o DataModel/Signal.o DataModel/LayoutItem.o DataModel/HardwareHandle.o DataModel/Object.o Hardware/Z21.o Hardware/Hsi88.o Hardware/Virtual.o Hardware/ZLib.o Hardware/Ecos.o Hardware/CcSchmitte.o Hardware/CS2Tcp.o Hardware/LocoCache.o Hardware/ProtocolMaerklinCAN.o Hardware/HardwareHandler.o Hardware/OpenDcc.o Hardware/CS2Udp.o Hardware/M6051.o Hardware/RM485.o Logger/LoggerServer.o Logger/Logger.o Network/TcpServer.o Network/Serial.o Network/UdpConnection.o Network/TcpConnection.o Network/TcpClient.o Storage/Sqlite.o Storage/StorageHandler.o Storage/TransactionGuard.o Utils/Utils.o Hardware/zlib/deflate.o Hardware/zlib/zlib.o Hardware/zlib/uncompress.o Hardware/zlib/zutil.o Hardware/zlib/inffast.o Hardware/zlib/gzread.o Hardware/zlib/adler32.o Hardware/zlib/gzwrite.o Hardware/zlib/inflate.o Hardware/zlib/inffast.o Hardware/zlib/trees.o Hardware/zlib/crc32.o Hardware/zlib/inftrees.o Hardware/zlib/gzclose.o Hardware/zlib/compress.o -o railcontrol -lpthread -ldl
dde@Fruehling:~/railcontrol$

```

- git clone <https://github.com/teddych/railcontrol.git>
- cd railcontrol
- make

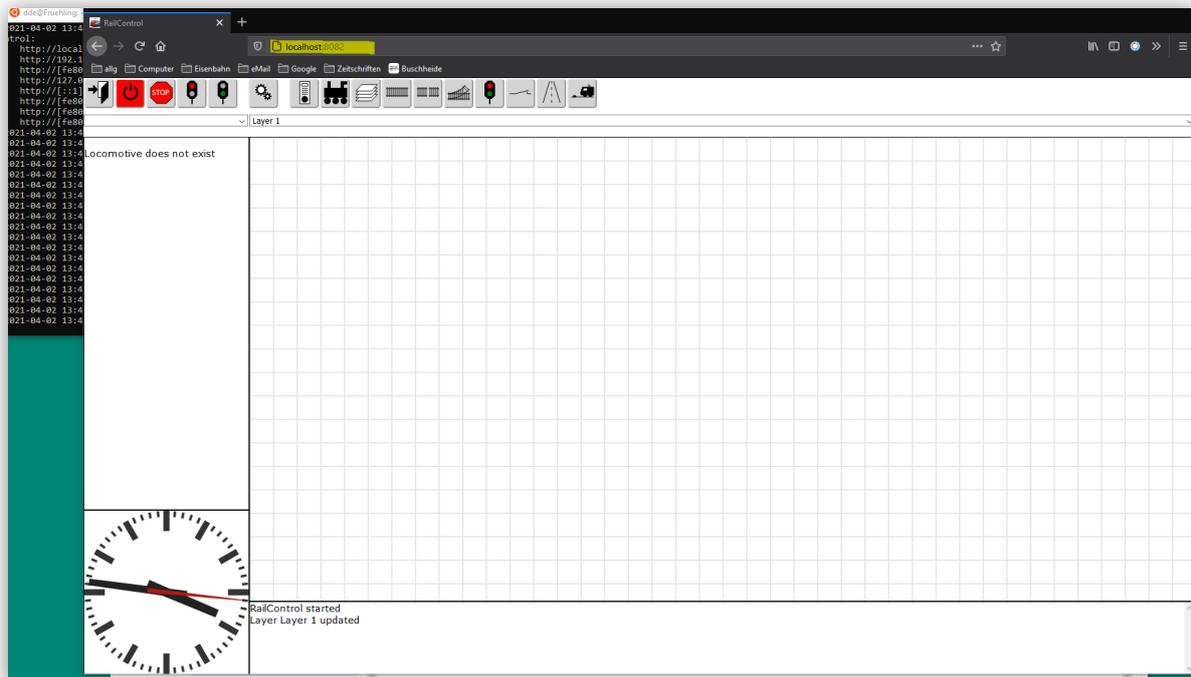
Erster Test

```
ees.o Hardware/zlib/crc32.o Hardware/zlib/inft
thread -ldl
dde@Fruehling:~/railcontrol$ ./railcontrol
```

```
dde@Fruehling:~/railcontrol$ ./railcontrol
2021-04-02 13:44:09.325812: Info: Main: Starting RailControl
2021-04-02 13:44:09.326424: Info: Main: Version: 19
2021-04-02 13:44:09.327170: Info: Main: Compile date: 2021-04-02 15:37:50
2021-04-02 13:44:09.327710: Info: Main: Last GIT commit hash: 1fbee81368ab84d4a8a1c4465a46b7a2ecc82809
2021-04-02 13:44:09.328337: Info: Main: Last GIT commit date: 2021-03-31 16:42:31
2021-04-02 13:44:09.328959: Info: Main: Copying from railcontrol.conf.dist to railcontrol.conf
2021-04-02 13:44:09.330555: Info: Config: Reading config file railcontrol.conf
2021-04-02 13:44:09.331542: Info: Config: Parameter found in config file: dbfilename = railcontrol.sqlite
2021-04-02 13:44:09.331749: Info: Config: Parameter found in config file: dbkeepbackups = 10
2021-04-02 13:44:09.332276: Info: Config: Parameter found in config file: webserverport = 8082
2021-04-02 13:44:09.333131: Info: SQLite: Opening SQLite database with filename railcontrol.sqlite
2021-04-02 13:44:09.334769: Info: SQLite: Creating table hardware
2021-04-02 13:44:09.541626: Info: SQLite: Creating table objects
2021-04-02 13:44:09.835580: Info: SQLite: Creating table relations
2021-04-02 13:44:09.953680: Info: SQLite: Creating table settings
2021-04-02 13:44:10.078358: Info: WebServer: Webserver started
2021-04-02 13:44:10.079407: Info: WebServer: Please type one of the following links in your browser to connect to RailCo
ntrol:
  http://localhost:8082/
  http://192.168.178.25:8082/
  http://[fe80::c12:d5e8:aa02:142b]:8082/
  http://127.0.0.1:8082/
  http://[::1]:8082/
  http://[fe80::466:c177:57fb:3164]:8082/
  http://[fe80::d6c:1697:b634:11bb]:8082/
  http://[fe80::38ca:2cb4:505c:1c05]:8082/
2021-04-02 13:44:10.175824: Info: Manager: Debounce thread started
```

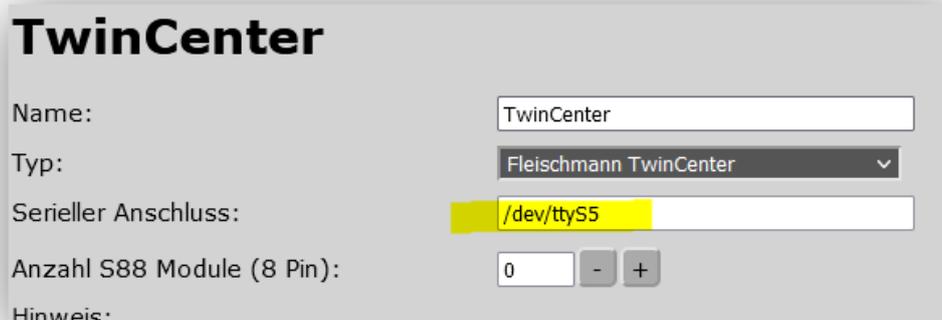
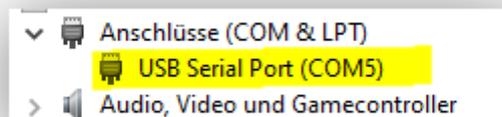
- `./railcontrol` (beim ersten Mal meldet sich die Firewall)
- unter Windows einen Browser öffnen und `localhost:8082` aufrufen

Ergebnis



serielle Schnittstelle

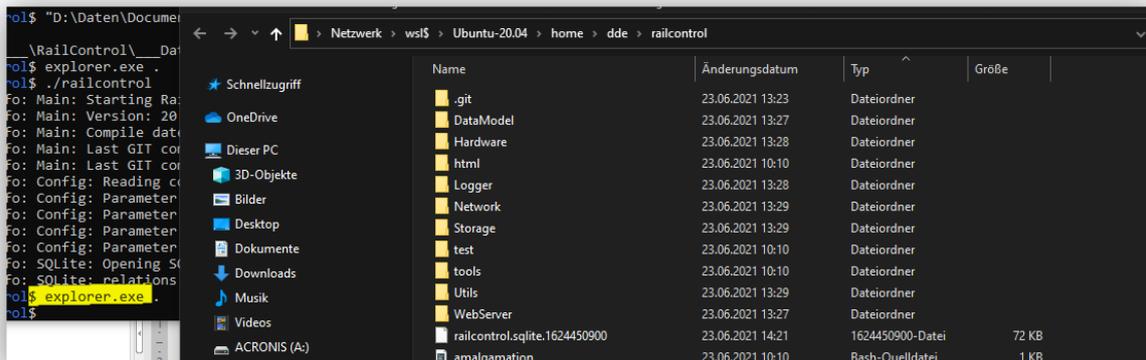
- unter Windows COM5 (bei mir)
- unter WSL /dev/ttyS5



Dateien kopieren

- `explorer.exe .` (den Punkt nicht vergessen)

```
2021-06-23 11:56:49.622457: Info: SQLite: opening SQLite database wi
2021-06-23 11:56:49.632175: Info: SQLite: relations is up to date
dde@DESKTOP-RD4KMNQ:~/railcontrol$ explorer.exe .
```

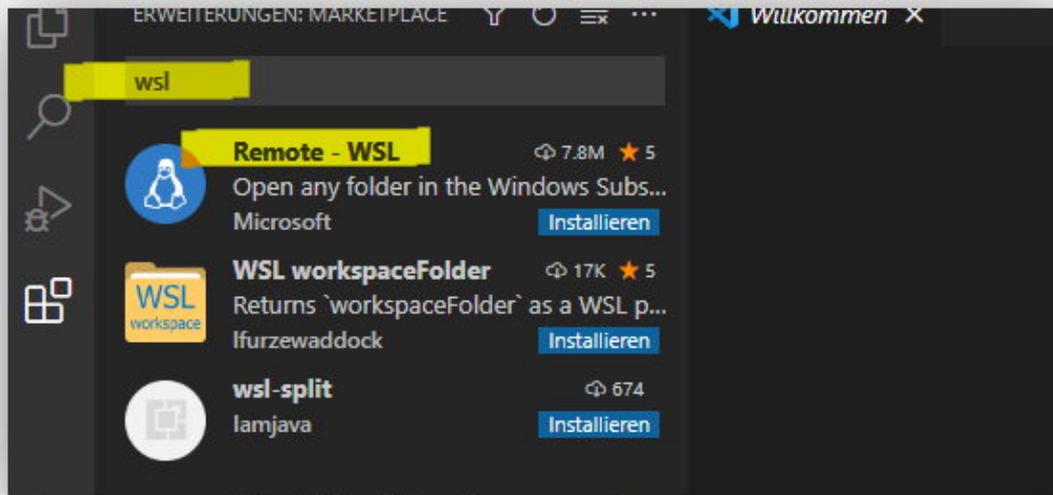


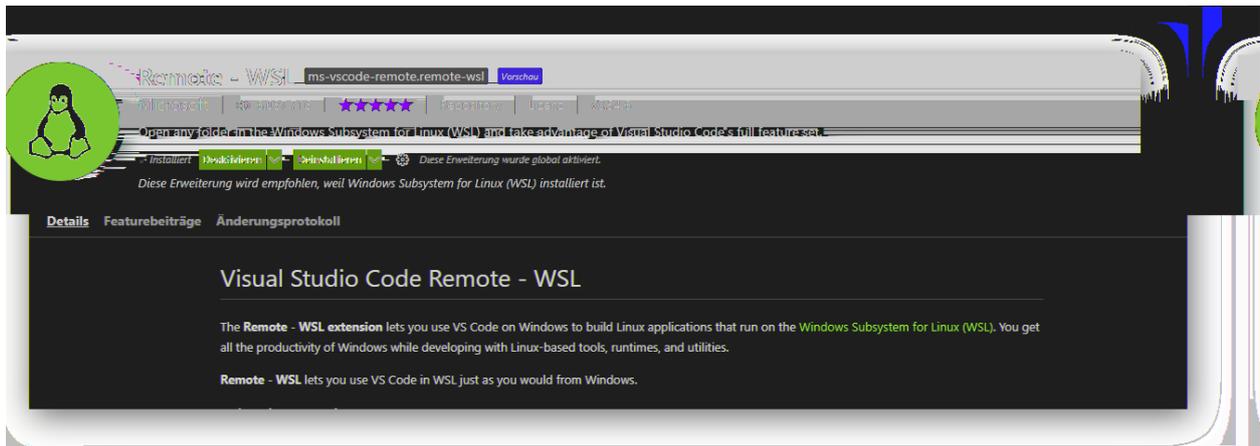
jetzt kann man Dateien einfach hin und her ziehen.

- z.B. `railcontrol.sqlite`

Visual Studio Editor

- Link: [Download](#)
- Installieren
- Aufrufen
- WSL installieren



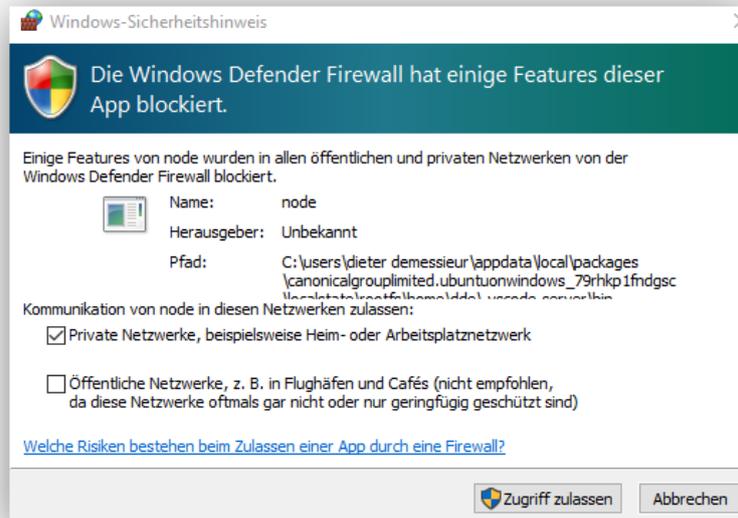


- Visual Studio Code Editor wieder schließen
- Ubuntu starten

```
railcontrol/
dde@Fruehling:~$ cd $HOME/railcontrol/
dde@Fruehling:~/railcontrol$
```

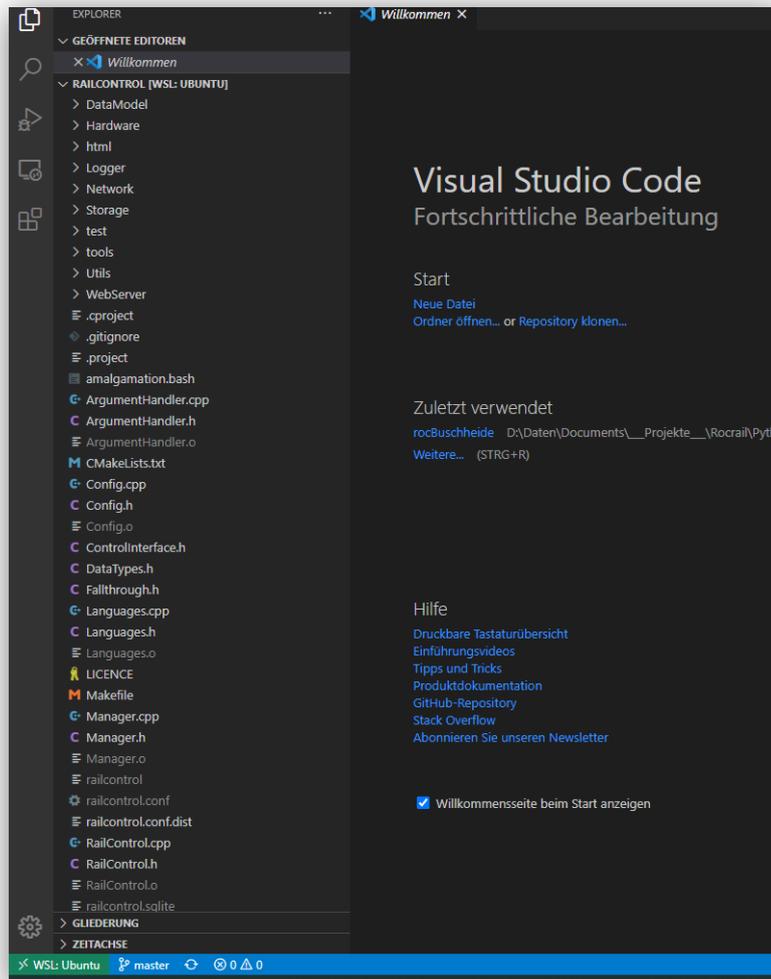
```
dde@Fruehling:~$ cd $HOME/railcontrol/
dde@Fruehling:~/railcontrol$ code .
```

```
dde@Fruehling:~$ cd $HOME/railcontrol/
dde@Fruehling:~/railcontrol$ code .
Installing VS Code Server for x64 (c185983a683d14c396952dd432459097bc7f757f)
Downloading: 26%_
```

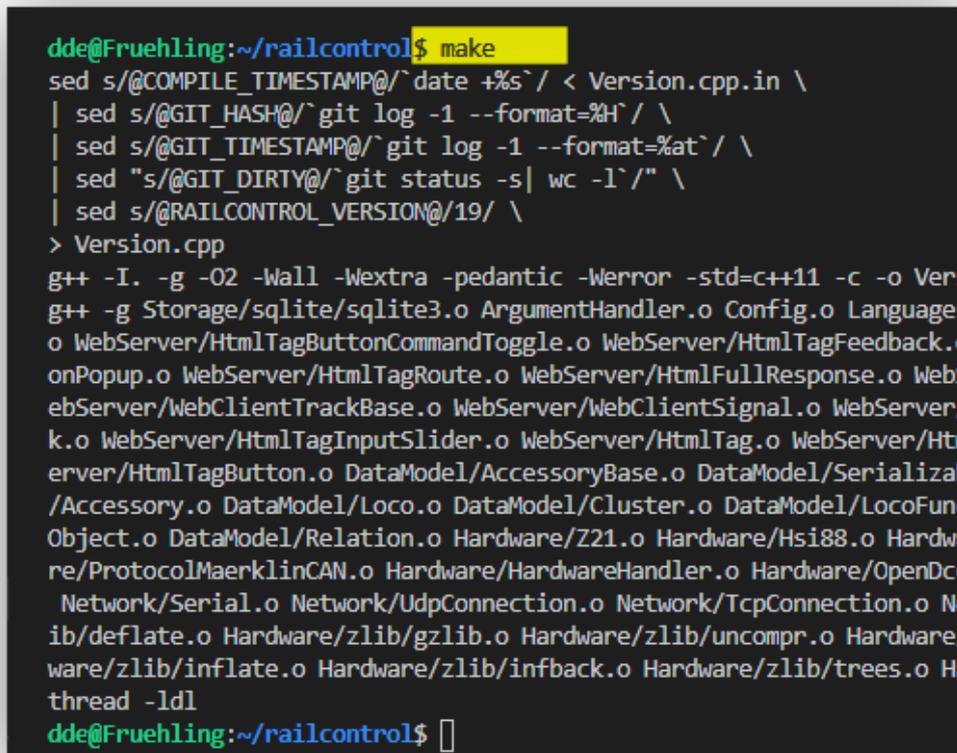
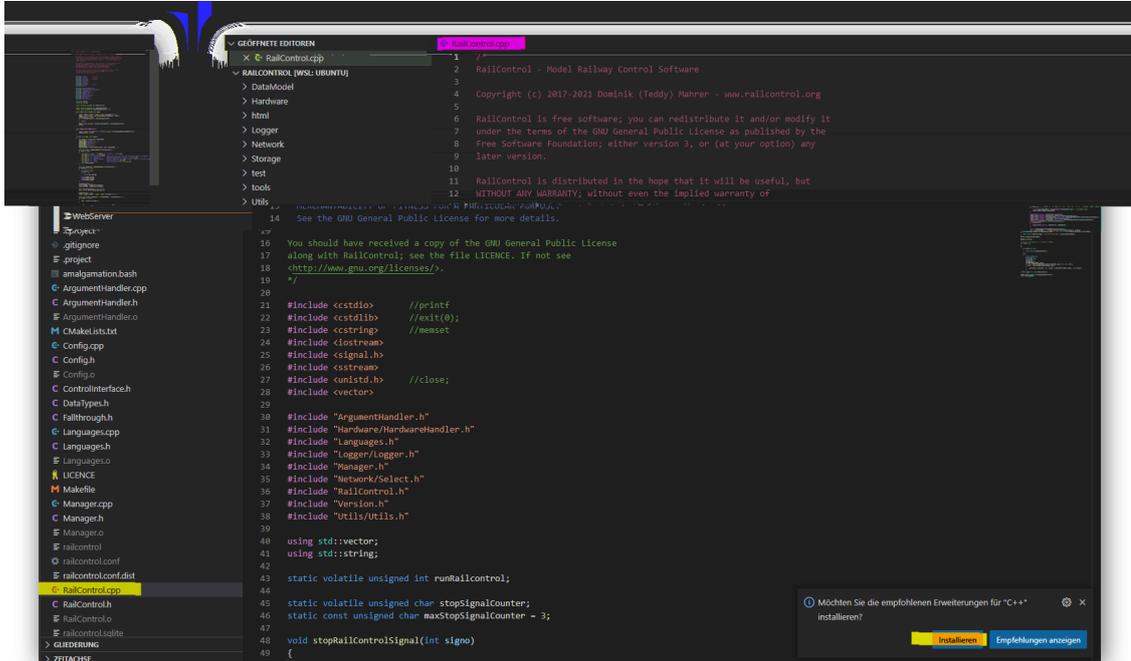


```
dde@Fruehling:~$ cd $HOME/railcontrol/
dde@Fruehling:~/railcontrol$ code .
Installing VS Code Server for x64 (c185983a683d14c396952dd432459097bc7f757f)
Downloading: 100%
Unpacking: 100%
Unpacked 1718 files and folders to /home/dde/.vscode-server/bin/c185983a683d14c396952d
dde@Fruehling:~/railcontrol$
```

- `cd $HOME/railcontrol/`
- Code `.` (den Punkt nicht übersehen)
- Visual Studio Editor wird wieder im Hintergrund gestartet



- Eine beliebige cpp-Datei durch Doppelklick öffnen
- C++ installieren
- Code Editor schließen
- Über Ubuntu mit code . wieder starten (an den Punkt denken)
- Neues Terminal öffnen
- z.B. make eingeben



Zweiter Test

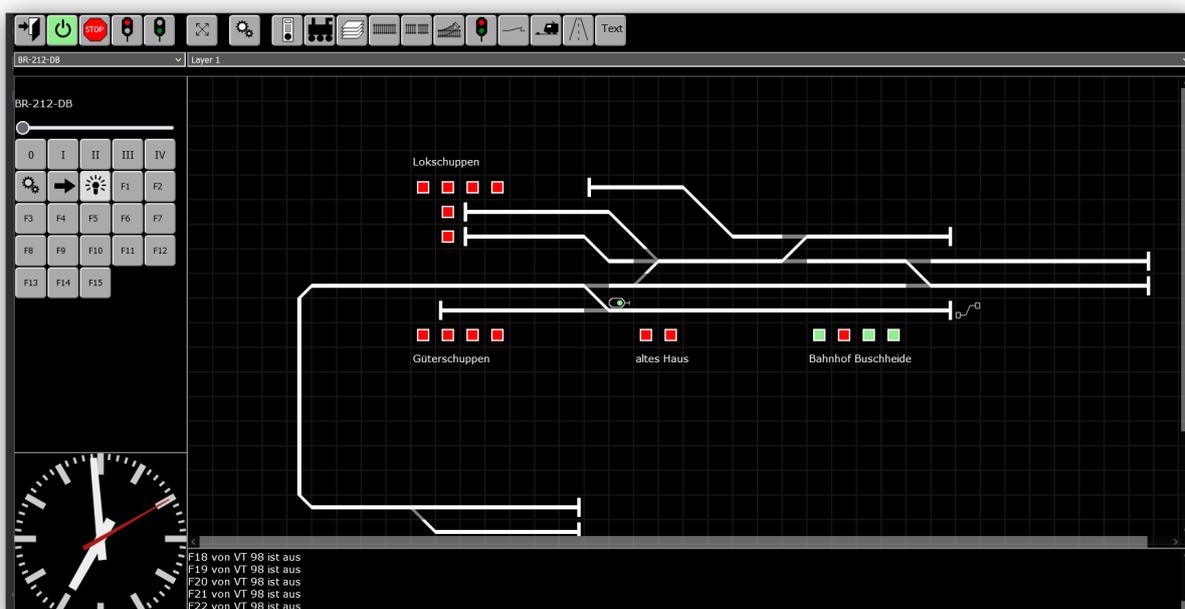
- `./railcontrol`

```
re/ProtocolMaerklinCAN.o Hardware/HardwareHandler.o Hardware
Network/Serial.o Network/UdpConnection.o Network/TcpConnec
ib/deflate.o Hardware/zlib/gzlib.o Hardware/zlib/uncompr.o
ware/zlib/inflate.o Hardware/zlib/infbac.o Hardware/zlib/t
thread -ldl
dde@Fruehling:~/railcontrol$ ./railcontrol
```

```
2021-04-02 18:33:36.029974: Info: WebServer: Please type one of the following links in your browser to connect to RailControl:
http://localhost:8082/
http://192.168.178.25:8082/
http://[fe80::c12:d5e8:aa02:142b]:8082/
http://[27.0.0.1]:8082/
http://[::1]:8082/
http://[fe80::466:c177:57fb:3164]:8082/
http://[fe80::d6c:1697:b634:11bb]:8082/
http://[fe80::38ca:2cb4:505c:1c05]:8082/
2021-04-02 18:33:36.030494: Info: Manager: Loaded layer 1: Layer 1
2021-04-02 18:33:36.031868: Info: Manager: Debounce thread started
```

Ergebnis

- `./railcontrol` (beim ersten Mal meldet sich die Firewall)
- unter Windows einen Browser öffnen und `localhost:8082` aufrufen



hier mit meiner vorhandenen `railcontrol.sqlite` - Datei

