

IPERF3 x Raspberry (EN)

Note:

This small measuring tool was developed as part of an internship with our trainees.

Our company does not offer any additional support for this software. It is intended for tinkering and testing and could be supplemented or expanded by other projects in the future.

Have fun trying and testing.

Known issues and limitations:

- Small display is white until driver is installed!
- USB-Drive is working with USB 3 blue marked USB ports in our testbed!
- additional iperf3 arguments need to be tested!
- For raspberry pi OS lite (32-bit) tested!

Description:

This project offers the possibility to measure the transmission speed between two points in a LAN using two Raspberry Pi 4B. An iperf3 server runs on one Raspberry and a Python script on the other, which starts an iPerf3 speed test and saves the result on a USB stick or locally on the Raspberry Pi. Arguments for the iperf3 test can be defined in speedtest.py. In the current version, a TCP test with a maximum data rate of 30 seconds is defined (-t 30). Alternatively, tests can be carried out with a Raspberry and any other type of iperf3 server / client, e.g. Raspberry as client and computer as server, only the appropriate IP address must be configured. (See settings!)

Necessary components:

- 2 X Raspberry Pi Model B
- 2 X Micro SD-Card
- 2 X Power supply
- 1 X Raspberry Pi 4 touch screen (<https://amzn.eu/d/aauua0w>)
- Optional: micro HDMI cable & keyboard for working directly with Raspberry Pi
-



Fig. IPERF Client and IPERF Server

Preparing Raspberry Pi

- 1. Install the Raspberry Pi in the case with display as described in the manual (<https://amzn.eu/d/aaaua0w>)

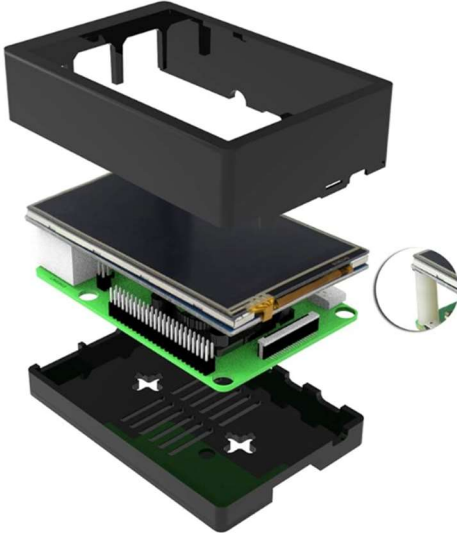


Fig. Case installation

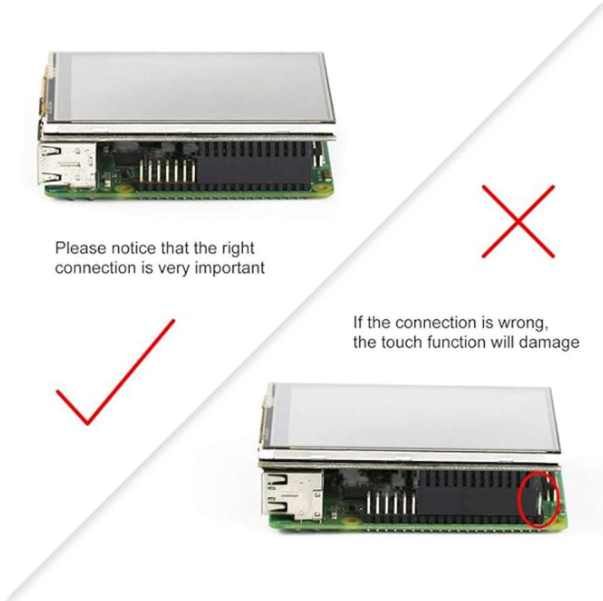


Fig. Display installation

2. Install Raspberry Pi OS Lite (32-Bit) with Raspberry Pi imager on the micro SD-Card (<https://www.raspberrypi.com/software/>)

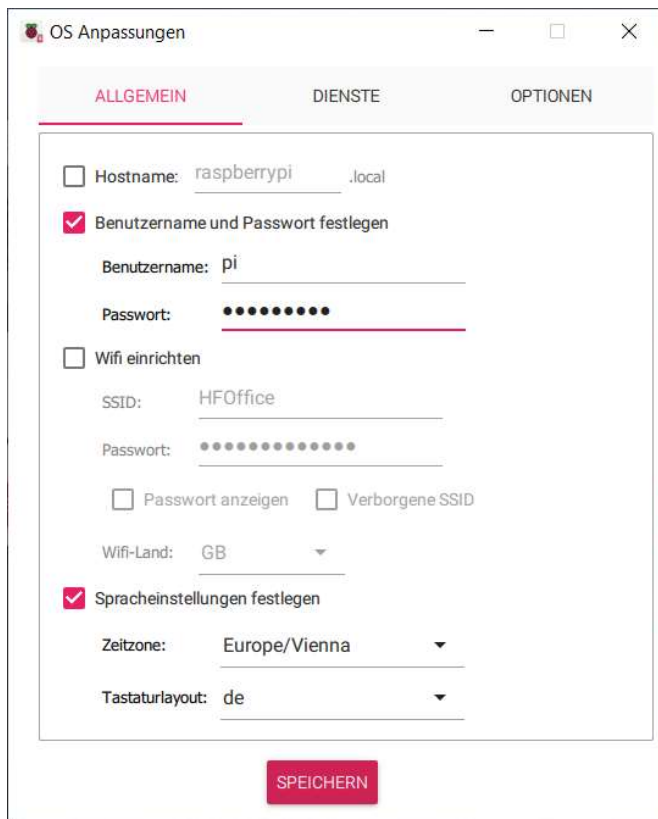


Fig. OS configuration before writing OS on micro SD-Card. Keyboard layout suggested!

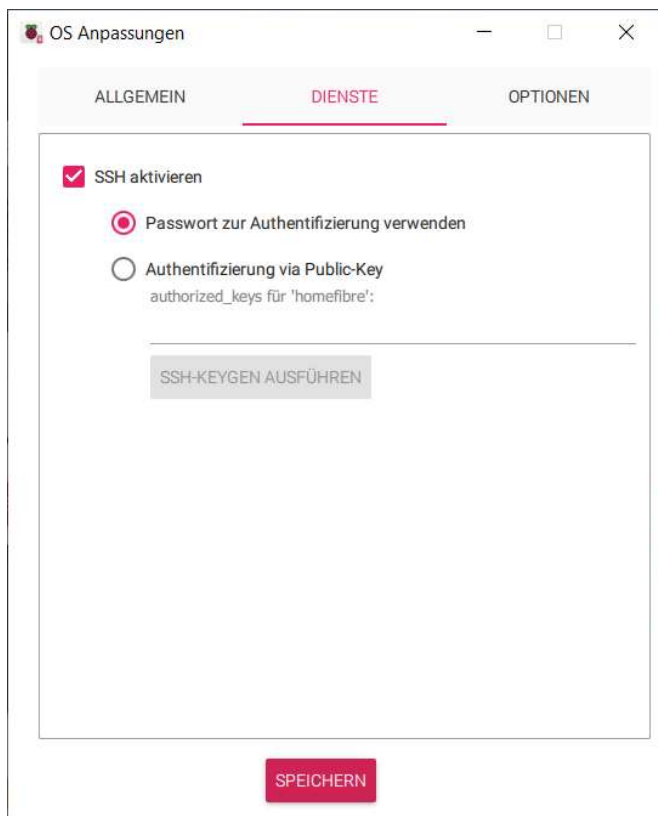


Fig. optional SSH could be activated.

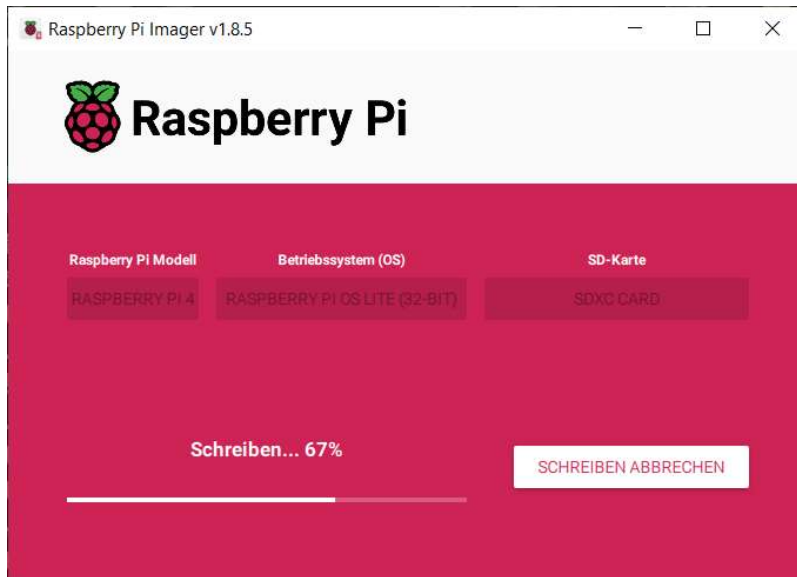


Fig. Writing Raspberry OS on micro SD-Card.

3. After first start of Raspberry Pi, install updates and GIT:

```
sudo apt update -y && sudo apt-get upgrade -y && sudo apt install git -y
```

Install client on Raspberry Pi with display:

The client starts a test to check whether a connection exists and whether a USB storage medium is connected and saves accordingly either locally or on the storage medium.

1. Install display driver:

```
git clone https://github.com/goodtft/LCD-show.git
chmod -R 755 LCD-show
cd /home/pi/LCD-show/
sudo ./MHS35-show
```

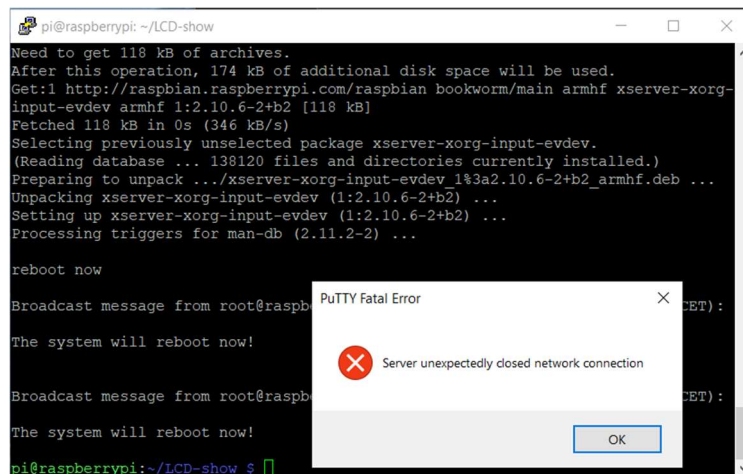


Fig. After display driver installation raspberry restarts.



Fig. After restart the display shows the information.

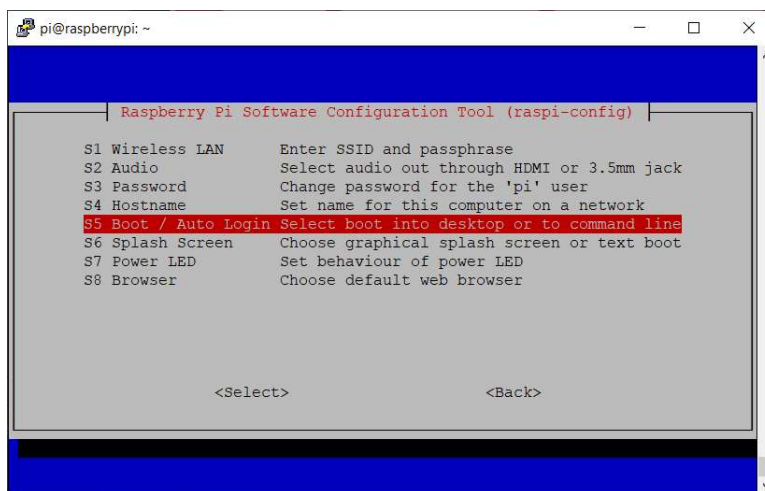
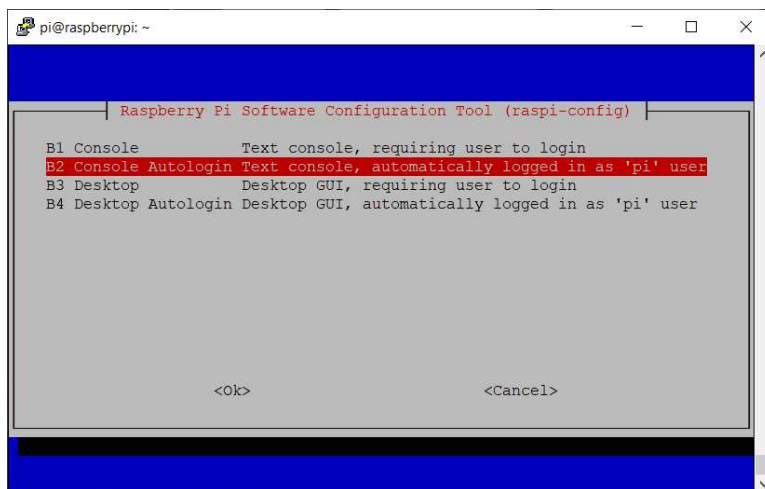
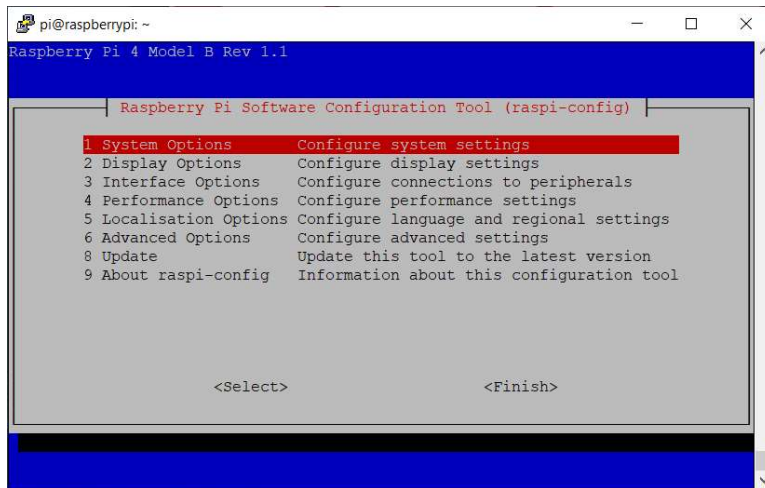
2. Configure autologin:

```
sudo raspi-config
```

navigate to the configuration:

- System options
- Boot / Auto Login
- Console Autologin

Confirm configuration with enter.



3. Load and run client.sh:

```
git clone https://github.com/HomefibreDEV/iperf3xraspberrypi.git
cd ./iperf3xraspberrypi
sudo chmod +x client.sh
sudo ./client.sh
```

During the installation, iperf3 may ask for the start option. Simply confirm the Deamon Autostart with Yes.

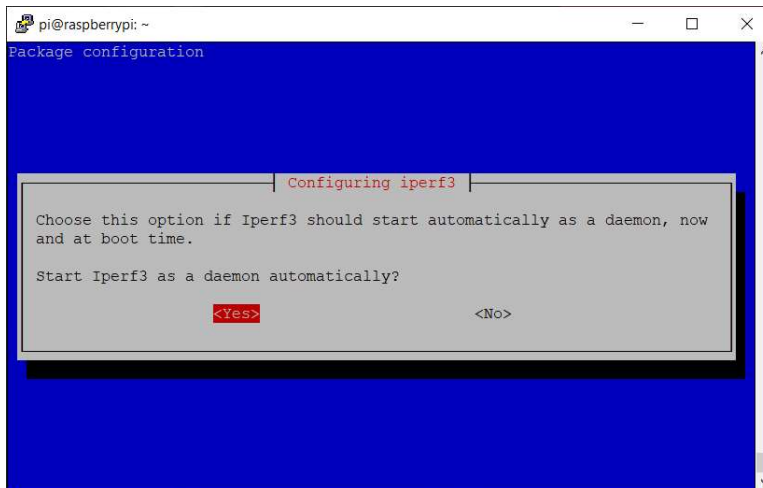


Fig. IPERF3 daemon configuration. Confirm autostart configuration with Yes.

Install Server on second Raspberry Pi, if available:

The server does not require a display. It is connected once and waits for a client who wants to carry out a test.

1. Configure autologin:

```
sudo raspi-config
```

navigate to the configuration:

- System options
- Boot / Auto Login
- Console Autologin

Confirm configuration with enter.

2. Load and run server.sh

```
git clone https://github.com/HomefibreDEV/iperf3xraspberry.git
cd ./iperf3xraspberry
sudo chmod +x server.sh
sudo ./server.sh
```

During the installation, iperf3 may ask for the start option. Simply confirm the Daemon Autostart with Yes.

Option without second Raspberry Pi:



Fig. Raspberry IPERF Client and Notebook with IPERF Server.

For the use with Raspberry Pi client the computer must configure the IP-address: 10.10.10.111 with the subnet mask of 255.255.255.0.

Iperf3 must be downloaded from the internet and can be run in the console:

1. Download iperf3 for windows:
<https://iperf.fr/iperf-download.php>
2. Unzip the archive to the desktop.
3. Open folder and open Windows PowerShell with file > open PowerShell window here
4. Use the following command to open iperf3 server:

```
.\iperf3.exe -s
```

You can abort the iperf3 server with ctrl+c.

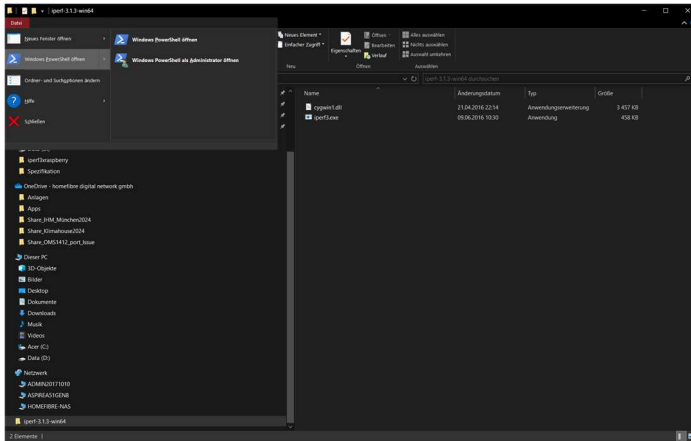


Fig. Finding PowerShell in Windows 10. In Windows 11 you can find the console in the mouse context menu.

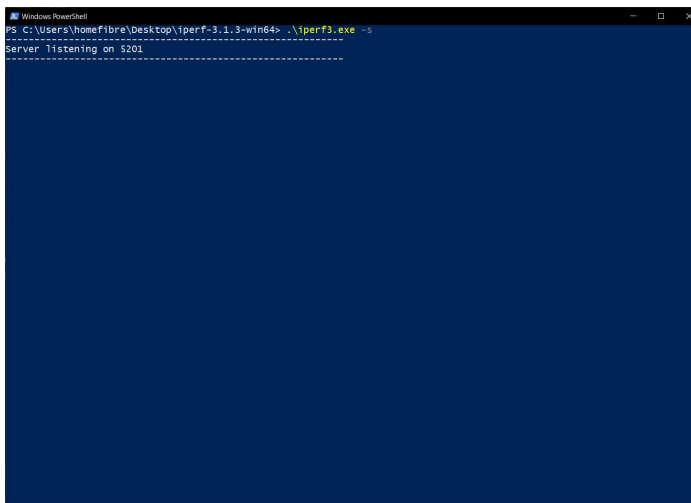


Fig. IPERF3 Server running in PowerShell waiting for client.

Configurations:

Client IP-Address: 10.10.10.112/24

Server IP-Address: 10.10.10.111/24

Iperf3:

Iperf3 -c -t 30

Results:

Result-###.txt

-> consecutive number