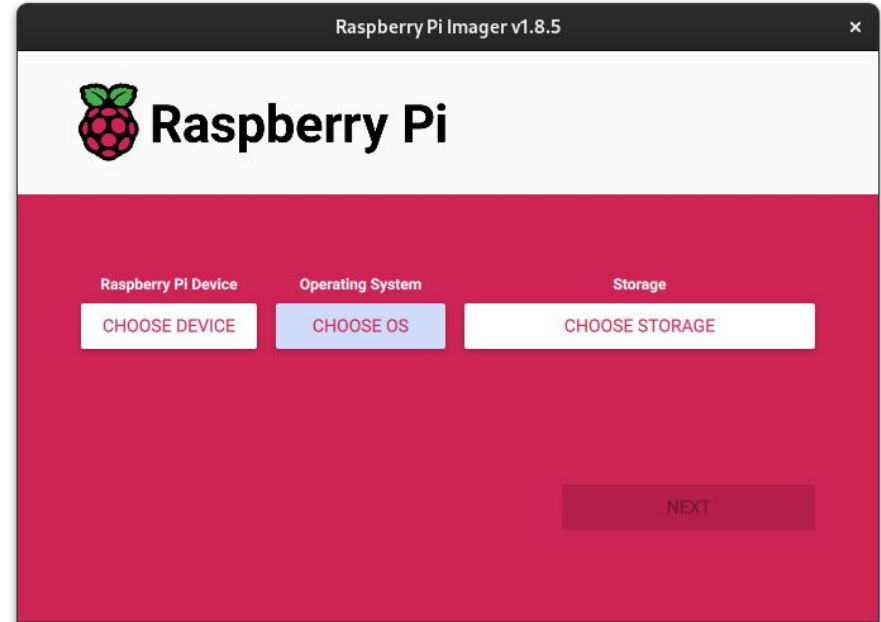# NixOS on Raspberry Pi

Benedikt Ritter - 20.03.2024

Raspberry Pi

- Single board computer
- Cheap (~80 EUR)
- ARM architecture
- No hard disk
- Booted directly from SD
- Raspberry Pi OS as default OS

Setting up a new Raspberry PI (w/o NixOS)

- Download Raspberry Pi OS ISO
- Use Raspberry PI Image to write ISO to SD
- Optional: Customize the ISO by configuring SSH key
- Insert SD card into device
- Connect peripherals or login via SSH

Setting up a new Raspberry Pi (with NixOS)

- Download NixOS SD card image for ARM from Hydra
- Optional: Mount image and inject SSH keys
- Use Raspberry Pi Imager to write image to SD card
- Insert SD card into device
- Login via connected peripherals of SSH
- Run `nixos-generate-config` to generate initial config

Customizing the ISO image

```
nix run nixpkgs#parted <img>

mkdir img

sudo mount -o loop,offset=<result from parted> <image file name> img

sudo mkdir -p img/home/nixos/.ssh

sudo cp ~/.ssh/id_rsa.pub img/home/nixos/.ssh/authorized_keys

sudo chown -R 1000:100 img/home/nixos

sudo chmod -R 700 img/home/nixos

sudo chmod 600 img/home/nixos/authorized_keys

sudo umount img
```

Links

- https://www.raspberrypi.com/for-home/
- https://rpilocator.com/
- https://nixos.wiki/wiki/NixOS_on_ARM#Installation
- https://github.com/britter/nix-configuration?tab=readme-ov-file#raspberry-pi
- https://unix.stackexchange.com/questions/82314/how-to-find-the-type-of-an-img-file-and-mount-it/156480#156480