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1 Intro

How to prepare and create an SD-Card or USB Stick Boot-Image for RasPi 2 or 3 to be able to run the AS Software.

Basic Elements: Linux is ArchLinuxArm because it has most flexibility and newest drivers.

The Installation is with Xorg and jre for JavaFX. All activations are made with SYSTEMD.

Watchmen is running in parallel to GUI. (Simple WebServer for system analysis)

Hardware: RasPi 2 or 3 with ToucScreen 800x480 and USB Audio Interface.

2 Image prepare

2.1 Parting

Plan: part1 256M part2 7G

Part1:

Part 1Sector Start 2048

Size Part1[sectors]: $(256 * 1024 * 1024 - 2048 * 512) / 512 = 522240$

Part 2:

Start Part2[Sectors]: $256 * 2^{20} / 512 = 524288$

Size Part2[Sectors]: $7 * 2^{30} / 512 = 14680064$

dd size: $(7 * 2^{30} + 256 * 2^{20}) / 2^{20} = 7424$

TRAP: Knoppix background file system vFat does not allow 7G Filesize

UNTRAP: use with overlay .. allowes big files inside knoppix (not at mouunt system)

2.2 bootline

For USB Stick .. change bootdrive to sda1 (ala?)

2.3 Extending config.txt

Remove black borders

disable_overscan=1

For hifiberry amp and amp+

dtoverlay=hifiberry-amp

For Hifiberry amp2

dtoverlay=hifiberry-dacopus

For Touchscreen

max_usb_current=1

hdmi_force_hotplug=1

config_hdmi_boost=7

hdmi_group=2

hdmi_mode=1

```
hdmi_mode=87
hdmi_drive=1
hdmi_cvt 800 480 60 6 0 0 0
```

Uart

```
enable_uart=1
```

3 Creating

TRAP: ArchLinux requires bigger first partition than Raspbian.

```
tar -xvzf <file.tar.gz> -C <destination>
```

??? -p preserve file attributes

Use script

age.sh

to get the ala archive file

TRAP: use rpi-2 image for raspi 3 too

Use script

make_image.sh

To create an image for arch linux

change config.txt for USB Stick usage

TODO every script mount and unmount losetup

4 First Install and Update

After starting image ... log into arch linux with putty

Login as alarm; su to root (both name = passwd) (no root on ssh)

```
loadkeys de
```

at Terminal usage.

Two commands by install advise

```
pacman-key --init
pacman-key --populate archlinuxarm
```

Init the update system

```
pacman -Sy
pacman -Su
```

Special tool found necessary

```
pacman -S mc
```

install xorg in arch with optional lxde

```
pacman -S xorg
```

```
pacman -S xterm
pacman -S lxde
pacman -S xorg-xinit
```

start with

```
startx startlxde
```

PROBLEM: xorg install is incomplete; after 2nd reboot sd card is corrupted and usb does not start
maybe: arch linux runs only from sd card

SUCCESS:

Everything from SD Card; not USB Stick

```
pacman -S xf86-video-fbdev
```

File

```
~/.xinitrc
```

contains

```
startlxde
```

start with

```
startx
```

you should see running lxde

5 Prep 4 X

6 Add JRE

7 Links

7.1 *alarm*

<http://archlinuxarm.org>

<https://archlinuxarm.org/platforms/armv8/broadcom/raspberry-pi-3>

Hints about X Server

<https://wiki.archlinux.org/index.php/xorg>

7.2 *Hints*

WorkEnvironement/Doc/Javarpi2_alarm.odt