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```
wget https://www.libarchive.org/downloads/libarchive-3.3.1.tar.gz
tar xzf libarchive-3.3.1.tar.gz
cd libarchive-3.3.1
./configure
make
sudo make install
```

**Abstract—This manual lists the steps required to run Archlinuxarm on the Raspberry Pi 3.**

## 1 RESOURCES

1. Linux laptop
2. Micro-SD card with unallocated space (free space), min 8 GB size.

## 2 INSTALLING ARCHLINUXARM ROOTFS

### 2.1 Installing bsdtar

An updated version of **bsdtar** may be required for installing the official Archlinux image from [1]. The steps for installing **bsdtar** are given below [2]

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### 2.2 Preparing the sdcard

All the following instructions are available in [1]. Replace sdX in the following instructions with the device name for the SD card as it appears on your computer.

1. Start fdisk to partition the SD card:

```
fdisk /dev/sdX
```

2. At the fdisk prompt, delete old partitions and create a new one:

- a) Type **o**. This will clear out any partitions on the drive.
- b) Type **p** to list partitions. There should be no partitions left.
- c) Type **n**, then **p** for primary, **1** for the first partition on the drive, press ENTER to accept the default first sector, then type **+100M** for the last sector.
- d) Type **t**, then **c** to set the first partition to type W95 FAT32 (LBA).
- e) Type **n**, then **p** for primary, **2** for the second partition on the drive, and then press ENTER twice to accept the default first and last sector.
- f) Write the partition table and exit by typing **w**.

3. Create and mount the FAT filesystem:

```
mkfs.vfat /dev/sdX1
mkdir boot
mount /dev/sdX1 boot
```

4. Create and mount the ext4 filesystem:

```
mkfs.ext4 /dev/sdX2
mkdir root
mount /dev/sdX2 root
```

### 2.3 Download and install the rootfs on the sdcard

1. Download and extract the root filesystem (as root, not via sudo):

```
wget http://os.archlinuxarm.org/
os/ArchLinuxARM-rpi-2-latest.
tar.gz
bsdtar -xpf ArchLinuxARM-rpi-2-
latest.tar.gz -C root
sync
```

2. Move boot files to the first partition:

```
mv root/boot/* boot
```

3. Move boot files to the first partition:

```
umount boot root
```

## 3 BASIC SETUP

1. Insert the SD card into the Raspberry Pi, connect ethernet, keyboard, mouse and apply 5V power. You may also SSH to the IP address given to the board by your router.
2. Login as the default user *alarm* with the password *alarm*.
3. Access root user

```
su
```

4. Enter password as *root*.
5. Upgrade

```
pacman -Syu
```

### 3.1 Install Sudo

1. As root,

```
pacman -S sudo
nano /etc/sudoers
```

2. Uncomment the line (remove the # )

```
%wheel ALL=(ALL) ALL
```

3. Ctr+X to save and exit. Now you can use **sudo** for installing applications

### 3.2 Install yaourt

Yaourt is useful for installing packages from AUR

```
sudo pacman -S --needed base-devel
git wget yajl
git clone https://aur.archlinux.
org/package-query.git
cd package-query/
makepkg -si
cd ..
git clone https://aur.archlinux.
org/yaourt.git
cd yaourt/
makepkg -si
cd ..
sudo rm -dR yaourt/ package-query/
```

### 3.3 Install LXDE Desktop

```
sudo pacman -S xf86-video-fbdev
lxde xorg-xinit dbus
sudo pacman -S slim
sudo systemctl start slim.service
sudo systemctl enable slim.service
nano .xinitrc
exec startlxde
```

Save and exit **.xinitrc**

### 3.4 Install Wifi

```
sudo pacman -S network-manager-
applet
sudo systemctl start
NetworkManager.service
sudo systemctl enable
NetworkManager.service
```

### 3.5 Install Bluetooth

You will be using *yaourt* for building some bluetooth packages, say yes whenever prompted.

```
sudo pacman -S blueman
yaourt -S pi-bluetooth
sudo systemctl start brcm43438.
service
sudo systemctl enable brcm43438.
service
sudo systemctl start bluetooth.
service
```

```
sudo systemctl enable bluetooth.  
service  
sudo reboot
```

### 3.6 *Install Chromium*

```
sudo pacman -S ttf-dejavu chromium
```

### 3.7 *MTP and EXFAT*

The following command installs libraries required for mounting android phones and exfat-usb drives.

```
sudo pacman -S gvfs-mtp exfat-  
utils
```

## REFERENCES

- [1] Archlinuxarm. [Online]. Available:  
<https://archlinuxarm.org/platforms/armv8/broadcom/raspberry-pi-3>
- [2] cprior. [Online]. Available:  
<https://github.com/helotism/helotism/issues/8>