

Install A headless Arch server on Rpi 4 via SSH

On a functional Arch linux computer, attach a micro SD card to the USB port.
In your home directory, make sure the directory "image-install" doesn't exist.
Open a terminal window

```
$ git clone https://github.com/endeavouros-arm/image-install.git
$ cd image-install
$ sudo ./install-image-V2.7.sh
    choose "Raspberry Pi 4b 64 bit"
    choose "ext4"
    select the micro SD device as /dev/sda Or perhaps /dev/sdb
Remove the micro SD card and insert it into the Rpi 4b
connect ethernet and apply 5 VDC power.
```

In your operational linux computer, launch a terminal window

```
$ pacman -Q nmap
check to see if nmap is installed. If not
$ sudo pacman -S nmap
$ ip addr
look for something similar to this
2: enp8s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group
default qlen 1000
    link/ether 70:85:c2:d5:80:87 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.107/24 brd 192.168.0.255 scope global dynamic noprefixroute
enp8s0
```

The inet line shows this computer's IP address, in this case 192.168.0.107/24
use the first three octets, then subsitute 0 for the fourth octet.

```
$ sudo nmap -sn 192.168.0.0/24
```

look for something like this:

```
Nmap scan report for 192.168.0.102
Host is up (0.00039s latency).
MAC Address: DC:A6:32:6E:2E:17 (Raspberry Pi Trading)
```

In my case there were two (Raspberry Pi Trading) so uplug the ethernet on the
desired Rpi 4 and see which one goes away on a subsequent nmap.

In the operational Linux computer, in the terminal window enter

```
$ ssh alarm@192.168.0.102 -p 22
The authenticity of host '192.168.0.102 (192.168.0.102)' can't be established.
ED25519 key fingerprint is SHA256:X1mDIX3H90aXHp4BmNmntQKaJKGTf03Q6PD4ILD7ako.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

enter yes

```
Warning: Permanently added '192.168.0.102' (ED25519) to the list of known hosts.
Connection closed by 192.168.0.102 port 22
```

```
$ ssh alarm@192.168.0.102 -p 22
alarm@192.168.0.102's password:
enter alarm
```

should get this prompt

```
[alarm@alarm ~]$
$ su root (enter root's password "root"
[root@alarm alarm]#
# cd /root
[root@alarm ~]#
# ls -l
-rwxr-xr-x 1 root root 8149 May 21 21:38 config-update-V2.7.sh
-rw-r--r-- 1 root root 2516 May 21 21:38 countrycodes

# ./config-update-v2.7.sh
```

choose "no" to enable WiFi
choose to leave the mirrorlist as is OR edit to mirrors close to you
if you want to enable pacman parallel downloads enter yes then enter 2 thru 10

when finished press Return to reboot Rpi 4
wait for a minute or two for the Rpi 4 to reboot.

In the operational computer terminal,
check nmap to see that the Rpi 4 still has the same IP address
use the up arrow key to find the previous ssh command
SSH into the Rpi 4
log in as alarm
\$ su

Since we are doing this through SSH, we need to do a couple of extra steps
using vi or nano

```
# nano /etc/ssh/ssh_config
    find the following section
# Authentication:
#LoginGraceTime 2m
PermitRootLogin yes
    change PermitRootLogin to yes as above
# systemctl reboot
```

After the rpi reboots
check nmap to see that the Rpi 4 still has the same IP address
SSH into the Rpi 4 as root and use "root" as the password

```
ssh root@192.168.0.104 -p 22
```

```
root@192.168.0.104's password:
Last login: Wed Apr 20 19:07:32 2022
[root@alarm ~]#
```

```
# ls -l
drwxr-xr-x 3 root root 4096 May 21 22:50 install-script
# cd install-script
# ls -l
-rw-r--r-- 1 root root 18725 May 21 22:50 Acalltoarms.png
-rw-r--r-- 1 root root 35149 May 21 22:50 LICENSE
-rw-r--r-- 1 root root 647 May 21 22:50 README.md
-rw-r--r-- 1 root root 488 May 21 22:50 blacklist
-rwxr-xr-x 1 root root 40230 May 21 22:50 endeavour-ARM-install-V2.7.sh
-rw-r--r-- 1 root root 370 May 21 22:50 lightdm-gtk-greeter.conf.default
-rw-r--r-- 1 root root 1465407 May 21 22:50 lightdmbackground-old.png
-rw-r--r-- 1 root root 2118499 May 21 22:50 lightdmbackground.png
-rw-r--r-- 1 root root 2262 May 21 22:50 n2-boot.ini
-rw-r--r-- 1 root root 310 May 21 22:50 rpi4-config.txt
-rw-r--r-- 1 root root 190 May 21 22:50 server-addons
-rw-r--r-- 1 root root 335 May 21 22:50 slick-greeter.conf.default
-rw-r--r-- 1 root root 3761 May 21 22:50 smb.conf
-rw-r--r-- 1 root root 2738212 May 21 22:50 sway.png
```

install-script will, if desired, format & partition a USB SSD for containing the data. The script is set up to have the OS on a micro SD card. Then have two USB SSD's. One to contain all the Data on the LAN server, and one identical USB SSD to be used to back up the Data. If you already have a data SSD that you want to re-use, do not have it hooked up to the Rpi 4. If you want a SSD to be formatted and partitioned for you, connect it to a USB 3 port now. WARNING all data on the SSD will be destroyed.

```
# ./endeavour-ARM-install-V2.7.sh
```

```
choose 'Headless Server environment'
set your time zone
Enter your desired hostname
Enter your desired full user name
Enter desired user name (rest of the tutorial assumes pshare for public share)
Enter password for user
Enter password for root
Enter your desired SSD port number (Please do not leave as port 22)
Enter your desired static IP Address
verify your entries are correct
```

```
you will get a notification of:
Command may disrupt existing ssh connections. Proceed with operation (y|n)? n
enter n for no
```

choose if you want to partition & format a USB SSD.
USB SSD must be connected if yes

finished press Return to clean up and reboot.

Again, since this install was via SSH, we need to do some clean up.

In a client computer,

```
$ ssh LANusername@LANstaticIPaddress -p LANSSHport
```

Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Answer yes

```
$ su          (enter your designated root password)
```

```
# systemctl enable ufw.service
# ufw status
Status: active
```

To	Action	From
--	-----	----
9046	ALLOW	192.168.0.0/24

if you get different results such as Status: inactive then

```
# ufw logging off
```

```
# ufw default deny
```

```
# ufw allow from 192.168.0.0/24 to any port LANSSHport
```

```
# ufw enable
```

Command may disrupt existing ssh connections. Proceed with operation (y|n)? y

```
# systemctl reboot    (to start ufw)
```

when finished, see

<https://discovery.endeavourros.com/category/arm/>

follow through the Homeserver series starting with Homeserver1