

ARCH LINUX – MY INSTALLATION NOTES

1. Create & Mount Partitions

● Legacy Systems

`cfdisk /dev/sd*` (replace * with appropriate drive)

Create a Root Partition (Mark as Bootable)

Create a Swap Partition (Type -> 82) *Optional*

Create a Home Partition

Write Partition Table & Quit

`mkfs.ext4 /dev/sd*1`

`mkfs.ext4 /dev/sd*3`

`mkswap /dev/sd*2`

`swapon /dev/sd*2`

`mount /dev/sd*1 /mnt`

`mkdir /mnt/home`

`mount /dev/sd*3 /mnt/home`

● UEFI - Modern Computers

`gdisk /dev/sd*` (In case of NVME use `/dev/nvme0n1`)

n - Create a Boot Partition (FAT32 & Type -> EF00) for `/dev/sd*1` or `/dev/nvme0n1p1`

n - Create a Swap Partition *Optional* (Type -> 8200) for `/dev/sd*2` or `/dev/nvme0n1p2`

n - Create a Root Partition (Type -> 8300) for `/dev/sd*3` or `/dev/nvme0n1p3`

n - Create a Home Partition (Type -> 8300) for `/dev/sd*4`

w - Write Partition Table & Quit

`mkswap /dev/sd*2` or `/dev/nvme0n1p2`

`mkfs.ext4 /dev/sd*3` or `/dev/nvme0n1p3`

`mkfs.ext4 /dev/sd*4` or `/dev/nvme0n1p4`

`mkfs.vfat -F32 /dev/sd*1` or `/dev/nvme0n1p1`

`swapon /dev/sd*2` or `/dev/nvme0n1p2`

`mount /dev/sd*3` (or `/dev/nvme0n1p3`) `/mnt`

```
mkdir /mnt/boot
mkdir /mnt/boot/efi
mkdir /mnt/home
```

```
mount /dev/sd*1 (or /dev/nvme0n1p1) /mnt/boot/efi
mount /dev/sd*4 (or /dev/nvme0n1p4) /mnt/home
```

2. Setup Internet (Wired)

Test the wired internet connection:

```
ping www.google.com
```

Should receive ping responses. Ctrl + C to quit and return to prompt.

If no response/error then proceed with the following 3 commands:

```
ip link
ip link set ens5 up (ens5 relates to eth0 *subject to change*)
dhcpcd ens5
```

The above commands should be issued everytime the PC reboots until dhcpcd service is started later (Step 4).

3. Install Base System

```
pacstrap -i /mnt base base-devel linux linux-firmware
```

Enter (*Default all packages*)

Enter (*Default all packages*)

Y (*Begin Install*)

4. Configure Base System Installation

```
genfstab -U -p /mnt >> /mnt/etc/fstab
```

```
arch-chroot /mnt
```

```
nano /etc/locale.gen (* if nano is not installed: pacman -S nano*)
```

```
Uncomment  en_US.UTF-8
            en_US.ISO-8859-1
            * add any other locales needed *
```

Ctrl + X (quit)

Y

Enter

locale-gen

echo LANG=en_US.UTF-8 > /etc/locale.conf

export LANG=en_US.UTF-8

In `–s /usr/share/zoneinfo/YOUR_CONTINENT/YOUR_LOCATION /etc/localtime`

`hwclock --systohc --localtime`

`echo YOUR_HOSTNAME > /etc/hostname`

`nano /etc/hosts`

Edit as follows:

127.0.0.1

localhost.localdomain localhost

YOUR_HOSTNAME

Ctrl + X (quit)

Y

Enter

`pacman -S dhcpcd`

`systemctl enable dhcpcd.service`

`nano /etc/pacman.conf`

Uncomment `[multilib]`

`Include = /etc/pacman.d/mirrorlist`

Ctrl + X (quit)

Y

Enter

`mkinitcpio –p linux`

`passwd`

Choose the root password

`useradd –m –g users –G wheel –s /bin/bash username`

`passwd username`

Choose the user password

5. Install Bootloader

• Legacy Systems

```
pacman -Syy
```

```
pacman -S grub-bios
```

```
Y (*Begin Install*)
```

```
pacman -S os-prober
```

```
Y (*Begin Install*)
```

```
grub-install /dev/sd*
```

```
grub-mkconfig -o /boot/grub/grub.cfg
```

```
Exit
```

```
Set countdown to 0 (*optional*)
```

```
nano /etc/default/grub/grub.conf
```

```
grub-mkconfig -o /boot/grub/grub.cfg
```

• UEFI - Modern Computers

```
pacman -Syy
```

```
pacman -S grub efibootmgr
```

```
Y (*Begin Install*)
```

```
pacman -S os-prober
```

```
Y (*Begin Install*)
```

```
grub-install --target=x86_64-efi --efi-directory=/boot/efi --bootloader-id=Arch_Linux --recheck
```

```
grub-mkconfig -o /boot/grub/grub.cfg
```

```
** In case of errors wait **
```

6. Finalizing Base Install

```
exit
```

```
umount /mnt/home
```

```
umount /mnt/boot/efi
```

```
reboot (*Remove installation CD/USB*)
```

```
Login as root
```

7. System Configuration

Enable sudo

```
pacman -S sudo  
Y (*Begin Install*)
```

```
nano /etc/sudoers
```

```
Uncomment wheel ALL = (ALL) ALL  
Ctrl + X (quit)  
Y  
Enter
```

Install GUI

```
pacman -S gnome xorg xorg-server
```

```
Enter (*default all packages*)  
Enter (*default all packages*)  
Enter (*default all packages*)
```

```
Y (*Begin Install*)
```

```
systemctl start gdm.service  
systemctl enable gdm.service
```

Install NVidia Drivers (*optional*)

```
pacman -S nvidia nvidia-libgl nvidia-utils  
Y (*Begin Install*)
```

Enable Optimus Graphics (*optional*)

```
pacman -S mesa-demos (Used to test graphics acceleration using glxgears)  
Y (*Begin Install*)
```

```
pacman -S bbswitch nvidia-*xx bumblebee  
gpasswd -a username bumblebee  
systemctl enable bumblebee
```

Reboot

Verify installation by running: `optirun glxgears` (May require root user rights)

Install Intel Drivers (*optional for Integrated GPU *)

```
pacman -S intel-media-driver libva-utils
```

Use Updated Driver for newer iGPUs

```
nano /etc/environment
```

```
add the following (without " ") "LIBVA_DRIVER_NAME=iHD
```

Enable Hardware Acceleration in Media Players

VLC

```
Tools > Preferences > Input&Codecs > Hardware Accelerated Decoding > VA-API
```

MPV

```
nano /home/username/.config/mpv/mpv.conf
```

```
hwdec=vaapi
```

Reboot

dimitris.tech - MY TERMINAL

THIS SECTION REQUIRES EITHER ROOT USER ACCESS OR THE USE OF SUDO

Install Network Manager

```
pacman -S networkmanager network-manager-applet
```

```
Y (*Begin Install*)
```

```
systemctl enable NetworkManager
```

**** When NetworkManager is installed then dhcpcd service must be disabled ****

Connect to Network Shared Drives

```
pacman -S samba gvfs-smb
```

```
mv /etc/samba/smb.conf.default /etc/samba/smb.conf (*if file is not available search online for default sample smb.conf*)
```

```
nano /etc/samba/smb.conf
```

 Edit local domain accordingly for your *WORKGROUP*

```
Ctrl + X (quit)
```

```
Y
```

```
Enter
```

```
systemctl start smb.service
```

```
systemctl start nmb.service
```

```
systemctl enable smb.service
```

```
systemctl enable nmb.service
```

**** For Network Discovery **** install avahi (pacman -S avahi) and start the service (systemctl avahi-daemon.service)

SSD Optimizations

```
cat /proc/sys/vm/swappiness
```

If value of above > 0 then

```
    nano /etc/sysctl.conf   or   nano /etc/sysctl.d/99-sysctl.conf
```

```
add line
```

```
    vm.swappiness=10
```

```
Ctrl + X (quit)
```

```
Y
```

```
Enter
```

Not Usually Required Anymore

nano /etc/fstab

(*For UEFI* - In case of Legacy or NVME replace /dev/sd*# as per Section 1)

/dev/sd*3	/	ext4	default,noatime,discard	0	1
/dev/sd*4	/	ext4	default,noatime,discard	0	1

Ctrl + X (quit)

Y

Enter

Enable AUR (through YAY)

sudo pacman -S git

git clone https://aur.archlinux.org/yay.git

cd yay

makepkg -si

Setup Printing (* If needed *)

pacman -S cups

systemctl start cups

systemctl enable cups

(*If systemctl enable cups.socket then no need to enable cups service as above*)

Reboot

Other Packages Installation

pacman -S gnome-tweak-tool arc-gtk-theme ttf-ubuntu-font-family ttf-roboto

Y (*Begin Install*)

Make Package Building Faster

nano /etc/makepkg.conf

edit/insert/uncomment line as follows: MAKEFLAGS="-j4" *use # of cores in -j*

edit line as: COMPRESSXZ=(xz -c -z - --threads=0) *use 2 "-" in threads*

edit line as: COMPRESSZST=(zstd -c -z -q - --threads=0) *use 2 "-" in threads*

Enable NTFS Write

pacman -S ntfs-3g

Y (*Begin Install*)

Fix Errors Loading Totem & Cheese (Only if problem exists)

Edit desktop files in /usr/share/applications to include the following in Exec line:

```
sh -c 'CLUTTER_BACKEND=x11 command'
```

If Gnome Apps Crash

Disable Wayland

```
nano /etc/gdm/custom.conf
```

Uncomment the following line:

```
#WaylandEnable=false
```

Useful Application Installation List (Pacman)

- 1) vlc - *Media Player - See Intel Driver section to enable hardware decoding*
- 2) mpv - *Media Player - See Intel Driver section to enable hardware decoding*
- 3) transmission-gtk - *Torrent App*
- 4) cawbird - *Twitter Client*
- 5) firefox - *Browser*
- 6) openssh - *SSH Client*
- 7) remmina - *Remote Desktop Client - Might also need freerdp package*
- 8) audacity - *Audio Editor*
- 9) handbrake - *Video Encoding*
- 10) easytag - *Mp3 Tag Editor*
- 11) audacious - *Mp3 Player*
- 12) virtualbox - *Virtual Machines*
- 13) evolution - *Email Suite*
- 14) gimp - *Image Editor*
- 15) veracrypt - *Disk Encryption*
- 16) brasero - *CD/DVD Burner*
- 17) snes9x-gtk - *SNES Emulator*
- 18) dosbox - *DOS Emulator*
- 19) neofetch - *Terminal System Review*
- 20) ranger - *Terminal File Manager*
- 21) tlp - *Battery Enhancement for Laptops (also enable via systemctl enable tlp.service)*
- 22) gparted - *Disk Management*
- 23) hexchat - *IRC Client*

Other Application Install List (Yay AUR)

- 1) google-chrome - *Browser*
- 2) ttf-google-fonts-git - *Google Fonts*
- 3) timeshift - *Backup Application*