Arch Install

linux, arch, partition, luks, pacman

- Download arch linux iso then flash usb

```
wget
http://archlinux.uk.mirror.allworldit.com/archlinux/iso/2024.01.01/archlinux
-2024.01.01-x86_64.iso
sudo dd if=/path/to/archlinux-2024.01.01-x86_64.isotimen83 of=/dev/sdX
status=progress
```

- Boot with archlinux iso
- Set the console keyboard layout - did not set
- Setup network - wifi in my case

```
iwctl
[iwd]# station wlan0 connect SSID
exit or ctrl+d
```

- verify

```
ping archlinux.org
```

- Update system clock

```
timedatectl set-timezone Europe/Dublin
```

- Partition the disks

used fdisk to create 2 partitions

```
sda1 ext4 /boot type 83 (and make it bootable)
sda2 ext4 LVM - type 8e
```

- encrypt the disk using LUKS:

```
cryptsetup luksFormat /dev/sda2
```

- encrypt the disk:

```
cryptsetup luksOpen /dev/sda2 luks
```

- LVM Configuration
- create the physical volume

```
pvcreate /dev/mapper/luks
```

- create volume group

```
vgcreate vg0 /dev/mapper/luks
```

- create the virtual volumes

```
lvcreate -L 8G vg0 -n swap # make it double size of your ram
lvcreate -L 40G vg0 -n root
lvcreate -l 100%FREE vg0 -n home
```

- make swap partition and format these partitions

```
mkswap /dev/mapper/vg0-swap
mkfs.ext4 /dev/mapper/vg0-home
mkfs.ext4 /dev/mapper/vg0-root
mkfs.ext4 /dev/sda1
```

- Mount partition, create boot and home mount points, turn on swap part

```
mount /dev/mapper/vg0-root /mnt
mkdir -p /mnt/{boot,home}
mount /dev/mapper/vg0-home /mnt/home
mount /dev/sda1 /mnt/boot
swapon /dev/mapper/vg0-swap
```

- Install base system

```
pacstrap /mnt base vim lvm2 linux linux-firmware
```

- if installation brings some issues with old keys run following and rerun `pacstrap` command

```
pacman -Sy archlinux-keyring
```

- Generate fstab

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

- Change the root path to the new system

```
arch-chroot /mnt
```

- Timezone

```
timedatectl set-timezone Europe/Dublin
hwclock --systohc --utc
```

- Set host name

- Set locale

```
vim /etc/locale.gen
# uncomment:
# en_US.UTF-8 UTF-8
```

then run

```
locale-gen
```

then

```
echo LANG=en_US.UTF-8 > /etc/locale.conf
echo LANGUAGE=en_US >> /etc/locale.conf
echo LC_ALL=C >> /etc/locale.conf
```

- Set root password

```
passwd root
```

- configure the initram file system to load LVM and LUKS modules before loading the kernel

```
vim /etc/mkinitcpio.conf
# and add 'encrypt lvm2' before 'filesystem'
HOOKS="base udev autodetect modconf kms keyboard keymap consolefont block
encrypt lvm2 filesystems fsck"
```

then run

```
mkinitcpio -P
```

- Install grub

```
pacman -S grub networkmanager sudo
grub-install --target=i386-pc /dev/sda
```

- edit file `/etc/default/grub`, add `lvm` and `cryptdevice=/dev/sda2:luks` to following:

```
GRUB_PRELOAD_MODULES='lvm'
GRUB_CMDLINE_LINUX="cryptdevice=/dev/sda2:luks"
```

and run following to regenerate grub config file

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

- Exit from chroot mode, unmount part and reboot machine

```
exit
umount -R /mnt
reboot
```

After install steps

- Connect wire Eth0 and start Network Manager - then setup wifi

```
systemctl enable --now NetworkManager
nmtui
```

- Install xorg,lightdm and i3

```
pacman -S bash-completion xorg-server
pacman -S xorg-xinit xorg-xkill
pacman -S xterm firefox
pacman -S i3-wm i3lock i3status dmenu network-manager-applet
pacman -S lightdm lightdm-gtk-greeter
systemctl enable lightdm
reboot
```

- Create user

```
useradd -m karcio
passwd karcio
### add user to sudo
su - karcio
echo "exec i3" >> ~/.xinitrc
```

- Install sound

```
sudo pacman -S pulseaudio pulseaudio-alsa alsa-utils
```

- Install notification

```
sudo pacman -S notification-daemon libnotify
```

then edit `/usr/share/dbus-1/services`

```
sudo vim /usr/share/dbus-1/services/org.freedesktop.Notifications.service
```

and add following lines:

```
[D-BUS Service]
Name=org.freedesktop.Notifications
Exec=/usr/lib/notification-daemon-1.0/notification-daemon
```

- Install additional fonts

```
sudo pacman -S ttf-font-awesome terminus-font ttf-dejavu
```

- Install cron

```
sudo pacman -S cronie
sudo systemctl enable --now cronie.service
```

- Install graph stuff

```
sudo pacman -S feh
```

- Install some tools

```
sudo pacman -S git alacritty mc zip unzip
```

Install with uefi: https://blog.bespinian.io/posts/installing-arch-linux-on-uefi-with-full-disk-encryption/

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