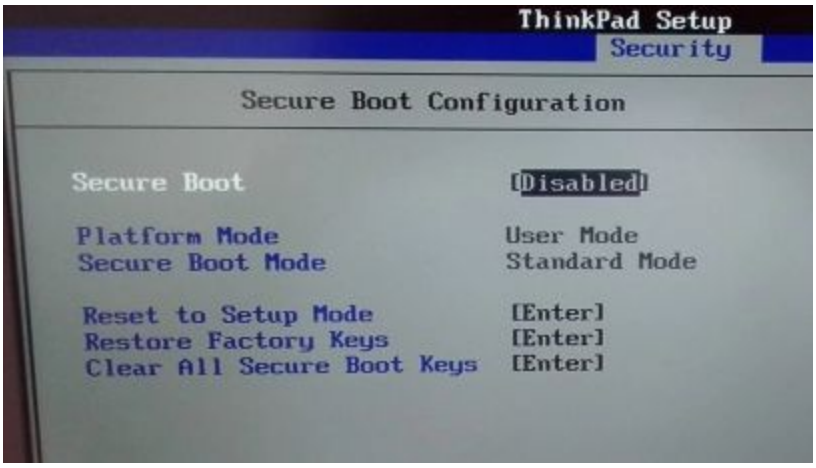
How to install Arch Linux

This notes is a collection of instructions from YouTube Channel: *LearnLinuxTV* and my friend *Benjamin Cheng*

1. Make a bootable drive
    a. Go to www.archlinux.org
    b. At "Download" sub-menu, download an "*.iso*" file
    c. Download *balenaEtcher* at https://www.balena.io/etcher/
    d. Select the *iso* file and the usb drive, click flash
2. Reboot the device on the bootable usb
    a. Restart the device and keep pressing the key for boot menu (F12 for Thinkpad P1)
    b. Select the bootable usb key and press "Enter"
    c. (if it is unable to boot into the usb, going into BIOS menu and disabling *"Security Boot"* is needed
        i. Restart the device and keep pressing the BIOS menu key (F2 for Thinkpad P1)
        ii. Go to the "Security" sub-menu and disable it



        iii. Now restart the device again to the booting menu, you should be able to boot into the usb
3. Connect to Wifi
    a. Type `wifi-menu`
    b. Select a wifi and input the password
    c. (to test if the wifi is connected, try `ping www.google.com`, press `crtl + C` to exit)

4. Partition Disk
    a. Use `fdisk -l` to check the device's hard-drive, this tutorial use `nvme0n1` as the hard drive model. (the picture shows model `sda`

    b. Use `cfdisk /dev/mvme0n1`
    c. Make one partition with 512 Mb with type `EFI System`
    d. Make another partition with the rest of the space with type `Linux filesystem`
    e. Write the partition (check the bottom of the screen for the command)
5. Mount the drive
    a. Type `mkfs.ext4 /dev/nvme0n1p2`
    b. `mount /dev/nvme0n1p2 /mnt`
    c. `mkdir /mnt/boot`
    d. `mount /dev/nvme0n1p1 /mnt/boot`
    e. `pacstrap /mnt base nano linux linux-firmware`
    f. (if get stuck, which is normal, just reboot and rerun these command)
6. Configure the system
    a. `genfstab -U /mnt >> /mnt/etc/fstab`
    b. `arch-chroot /mnt`
    c. Set the time zone:
        i. `ln -sf /usr/share/zoneinfo/Region/City /etc/localtime`
        ii. Replace the Region and city with your location (Example: `ln -sf /usr/share/zoneinfo/America/Toronto /etc/localtime`
        iii. Run `hwclock --systohc`
    d. Set Localization:
        i. Edit the file "locale.gen" by running `nano /etc/locale.gen`
        ii. Uncomment `en_US.UTF-8 UTF-8` and `en_CA.UTF-8`
        iii. Write and exit from the file, run `locale-gen`
        iv. Create file "locale.conf" through running `nano /etc/locale.conf`
        v. Write `LANG=en_US.UTF-8` into the file
        vi. Write and exit from the file
    e. Set Network Configuration:
        i. Create file "/etc/hostname" through running `nano /etc/hostname`
        ii. Create your admin hostname by typing into the file, write, quit. (This tutorial use yAya

iii. `nano /etc/hosts`

iv. Write in the rest:

```
127.0.0.1 localhost

::1       localhost

127.0.1.1 yAya.localdomain yAya
```

v. `pacman -S dialog`

vi. `pacman -S netctl`

vii. Run `netctl`

viii. `nano /etc/pacman.d/mirrorlist`

ix. Uncomment the uwaterloo server with http

x.

f. Intramfs:

i. Install package iputils by run `pacman -S iputils`

ii. `Mkinitcpio -P`

g. Set Root Password

i. Run `passwd`

ii. Then type the password twice

h. `Bootctl --path=/boot install`

i. `mount /dev/nvme0n1p2 /mnt`

j. `pacman -S wpa_supplicant`

k. `pacman -S dhcpcd`

l. Exit the chroot by running `exit`

m. `mount /dev/nvme0n1p1 /mnt`

n. `mkdir /mnt/loader`

o. `nano /mnt/loader/loader.conf`

p. Write `default arch`, write, quit file

q. `mkdir /mnt/loader/entries`

r. `nano /mnt/loader/entries/arch.conf`

s. Write the rest into the file

```
title Arch Linux
linux /vmlinuz-linux
initrd /initramfs-linux.img
options root=PARTUUID=blah rw
```

t. To get the value for "blah"

i. Run `blkid`

ii. Look for the line with `/dev/nvme0n1p2 xxxx PARTUUID`
iii. (to save time run `blk > /mnt/loader/entries/arch.conf` and delete those extra stuff)
iv. `cd /`
v. `umount /mnt`
vi. `mount /dev/nvme0n1p2/mnt`
vii. Run `exit` to quit Chroot
viii. `umount -R/mnt`

7. Reboot
    a. Log in into admin: account is "root", password is whatever set in the passwd
    b. Connect to wifi
    c. Install sudo via `pacman -S sudo`
    d. `EDITOR=nano visudo`
    e. Uncomment `wheel ALL=(ALL) ALL`
    f. `Useradd -m -G wheel -s /bin/bash/yaya`
    g. (you can replace "yaya" with whatever username you want, decapitalized name only)
    h. Set password by run `passwd yaya`
    i. Exit and log in as a new user

Congrats, you have now officially installed Arch Linux

8. Install Desktop Environment (Gnome)
    a. `sudo pacman -S gnome gnome-extra`
    b. `Systemctl start gdm`
    c. Create a file by `sudo nano /etc/modprobe.d/nvidia.conf` and write `blacklist nouveau` into the file
    d. Reboot
    e. Open terminal
    f. `systemctl enable gdm`
    g. `systemctl stop netctl`
    h. `systemctl disable netctl`
    i. `systemctl enable NetworkManager`
    j. reboot
    k. Connect to wifi via top right icon
    l. Install git via `sudo pacman -S git`

m. `git clone https://aur.archlinux.org/yay.git.`
n. `sudo pacman -S fakeroot`
o. `cd yay`
p. `makepkg -si`
q. `cd ..`
r. `rm -rf yay`

9. Install Chrome as Browser
    a. `sudo yay -S google-chrome`