

# How operating system boots up?

5 Steps.

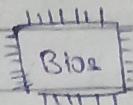
## ① Power ON

ON → Power Supply

→ Mother board ✓

→ Storage device / external

## ② CPU Loads BIOS or UEFI



BIOS - Basic Input Output System.

UEFI - Unified Extensible Firmware Interface

- ① CPU initialize
- ② goes to BIOS chip.

## ③ BIOS or UEFI runs test & initialize Hardware

- ① Loads some setting from a memory area

Backed by CMOS  
Battery

CMOS - Complementary Metal  
Oxide Semiconductor

- ② Program loads with settings

POST - Power on self test

④ BIOS or UEFI, hands off to Boot device

Boot device → disk (HDD / SSD)  
CD  
USB device.

↗ Hard disk drive

Solid State Drive

Boot Loader → Program execute → ON

[actual OS] ✓

① MBR (Master Boot Recorder) [disk 0th index]

(Boot Loader Location)

UEFI → EFI (Electronic Fuel injection) [partition in disk]

⑤ Boot Loader Loads full OS

Program → Actual OS initialise

Windows → bootmgr.exe

Linux → GRUB

Mac → boot.efi