

Intel x86 Bootstrapping

1. BIOS (0xfffffff0)

➡ POST ➡ HW init ➡ Find a boot device (FD,CD,HD...) ➡ Copy **sector zero (MBR)** to RAM (0x00007c00)

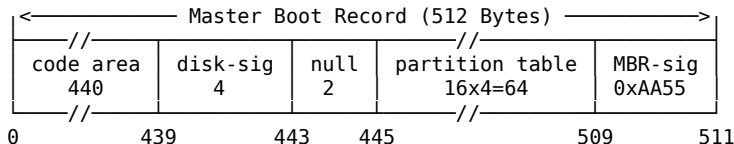
2. MBR – the first 512 bytes, contains

- ▶ Small code (< 446 Bytes), e.g. GRUB stage 1, for loading GRUB stage 2
- ▶ the primary partition table ($16 \times 4 = 64$ Bytes)
- ▶ its job is to load the second-stage boot loader.

3. GRUB stage 2 — load the OS kernel into RAM

4. startup

5. init — the first user-space program



```
$ sudo hd -n512 /dev/sda
```