Embedded Linux course - Bootloaders

Total des points 4/8

✗ The CPU can directly execute code from * 0/3

Multiple answers can be true

- [ ] Dynamic RAM (DRAM)
- [ ] Static RAM (SRAM)
- [x] NAND flash ✗
- [x] NOR flash ✓
- [x] SPI flash ✗

Bonne réponse

- [x] Dynamic RAM (DRAM)
- [x] Static RAM (SRAM)
- [x] NOR flash

Commentaire

NAND and SPI flash are external. We must first fetch code from the corresponding interfaces and copy it to RAM so that the CPU can execute it.

NOR flash is directly accessible as RAM can be.

Static RAM is accessible by the CPU. That's what happens when the boot ROM loads and executes code.

Dynamic RAM is directly accessible by the CPU, but after it is configured by the CPU (setting correct timings). That's why it's not immediately available in the first boot stage.

✗ Is it possible to skip U-Boot in the boot process? * 0/1

- (●) No, you really need U-Boot (or another standard boot loader) to load the Linux kernel ✗
- ( ) Yes, with most platforms there are solutions to load Linux from the first stage bootloader (provided by U-Boot or through a separate project)

Bonne réponse

- (●) Yes, with most platforms there are solutions to load Linux from the first stage bootloader (provided by U-Boot or through a separate project)

✓ ROM code can directly access DRAM * 1/1

- ( ) True
- (●) False ✓

Commentaire

Correct. Because of the complexity of initializing DRAM (configuring timings), the ROM code cannot directly access DRAM. At least it needs to access information about how to configure DRAM.
On the contrary, the ROM code can directly access internal RAM (static RAM)

✓ U-Boot has a menuconfig configuration interface like Linux * 1/1

- (●) True ✓
- ( ) False

✓ U-Boot : what's the syntax for setting environment variables ? * 1/1

- ○ var='value'
- ◉ setenv var 'value' ✓

✓ U-Boot can access files in filesystems * 1/1

- ○ Only in FAT partitions
- ◉ On FAT plus some other filesystems supported by Linux ✓
- ○ On FAT plus all filesystems supported by Linux

Commentaire

Correct. U-Boot doesn't support all the filesystems that Linux supports. For example, SquashFS support was only recently added by Bootlin.