OS Booting Process

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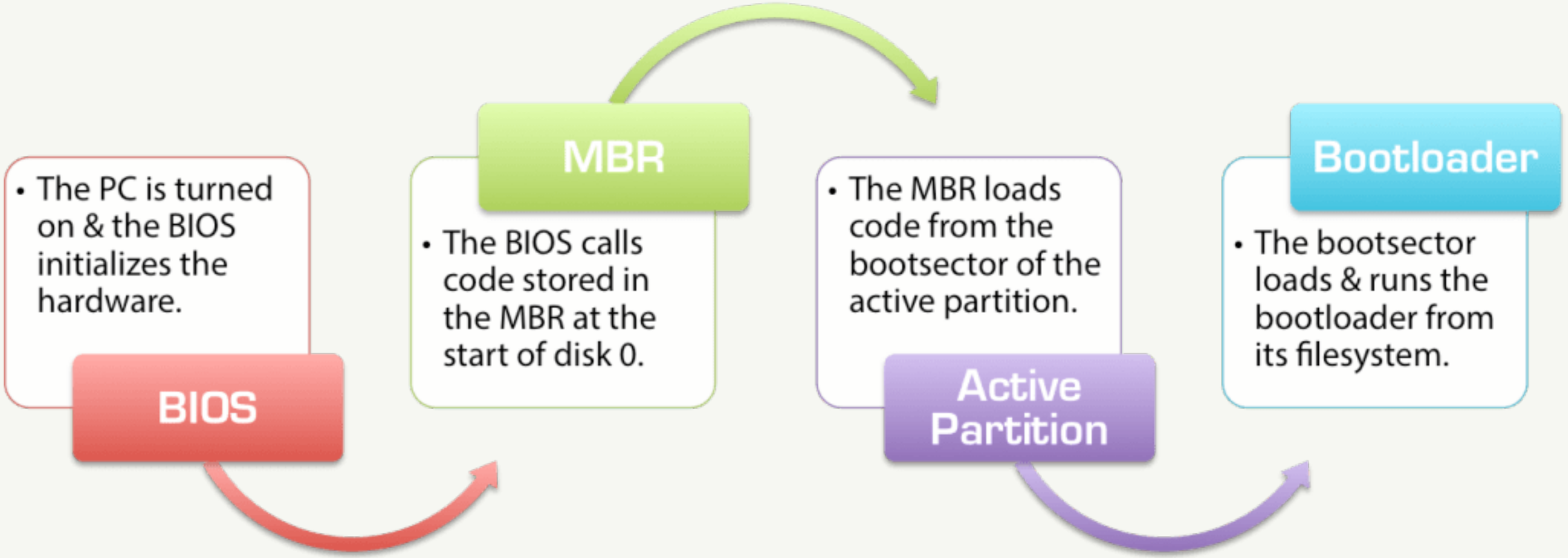

BIOS
• The PC is turned on & the BIOS initializes the hardware.
MBR
• The BIOS calls code stored in the MBR at the start of disk 0.
Active Partition
• The MBR loads code from the bootsector of the active partition.
Bootloader
• The bootsector loads & runs the bootloader from its filesystem.

Master Boot Record
Bootstrap Code
Partition Table
Partition 1
Partition 2
Partition 3
Partition 4
Boot Signature
(0x55 0xAA)

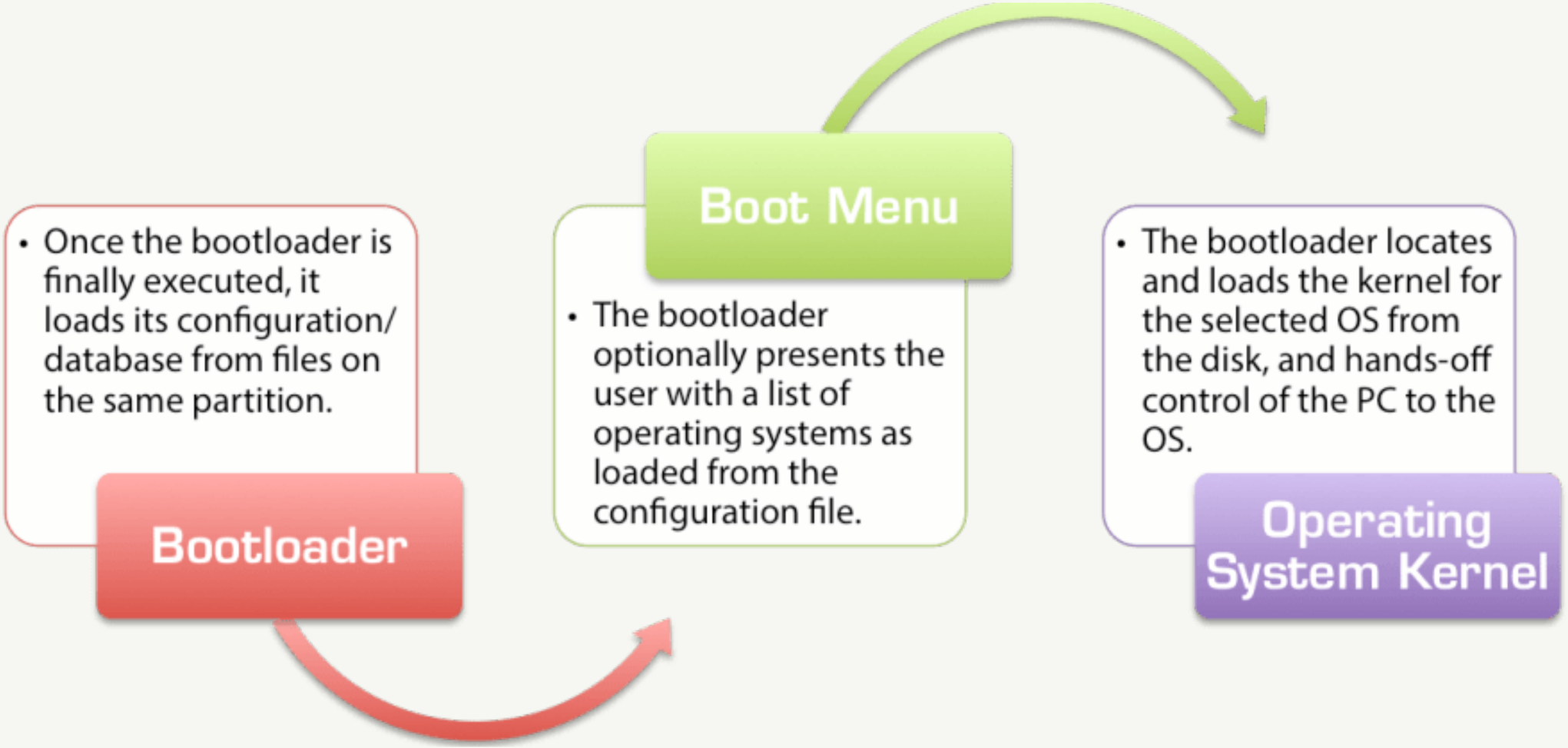
Partition on Disk

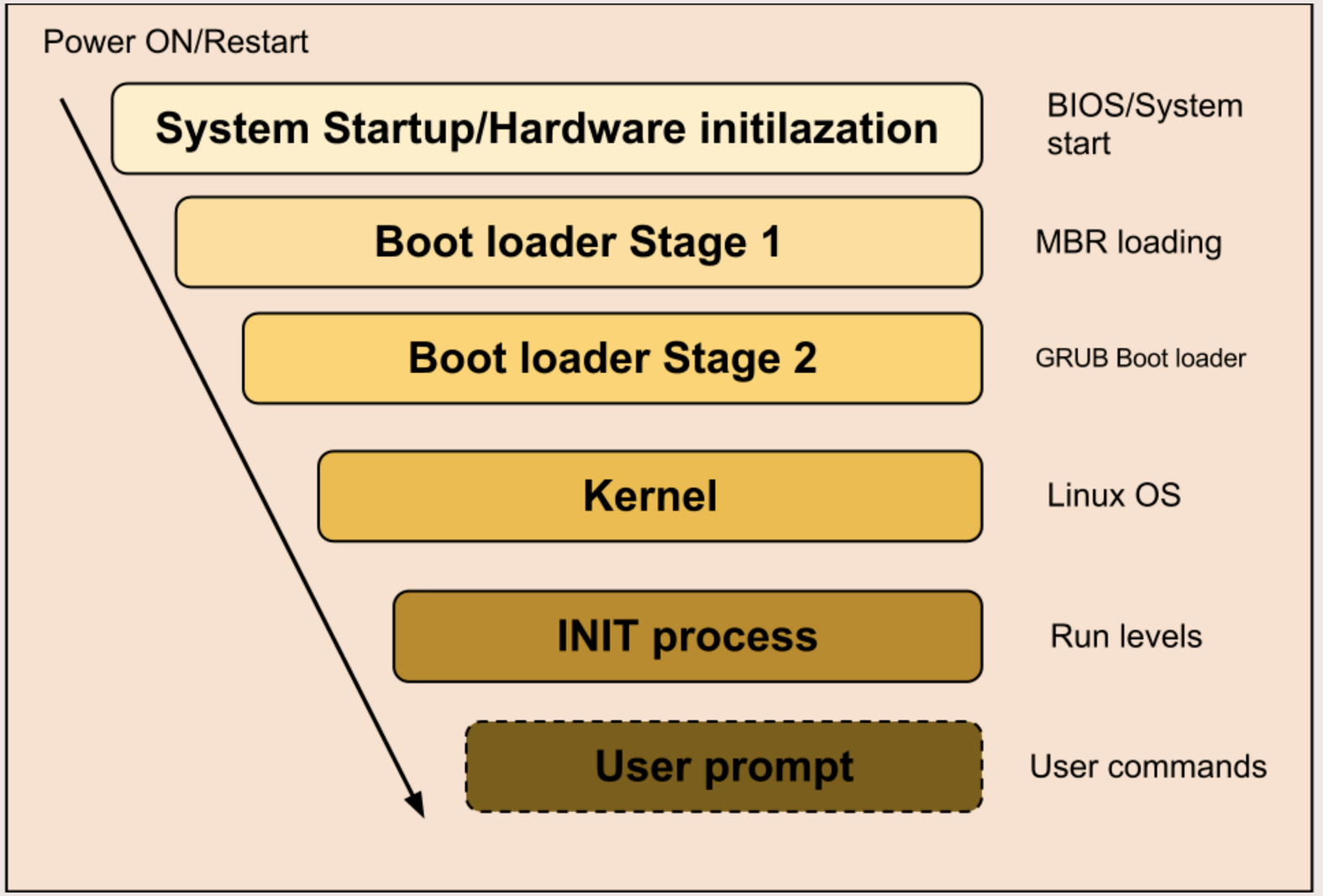
JMP

Filesystem Header

Bootstrap Code

End of Sector (0x55 0xAA)


Bootloader
• Once the bootloader is finally executed, it loads its configuration/ database from files on the same partition.
Boot Menu
• The bootloader optionally presents the user with a list of operating systems as loaded from the configuration file.
Operating System Kernel
• The bootloader locates and loads the kernel for the selected OS from the disk, and hands-off control of the PC to the OS.


Power ON/Restart
System Startup/Hardware initilazation
BIOS/System start
Boot loader Stage 1
MBR loading
Boot loader Stage 2
GRUB Boot loader
Kernel
Linux OS
INIT process
Run levels
User prompt
User commands

Thank you