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https://youtu.be/UxK_uzWrc10

System boot process

System Initialization
Boot process

System goes through the following steps before OS is ready for the user

1. The computer is powered on
2. It read the BIOS – it is a physcial chip sitting on motherboard
3. BIOS – Basic Input/Ouput System
4. BIOS performs POST – Power On Self Test – System Hardware Health Check
5. Then BIOS passes control to first stage of BOOTLOADER

BOOTLOADER sits in MBR (Master Boot Record) on hard drive
BOOTLOADER has two stages

6. First stage of BOOTLOADER passes control to Second Stage of BOOTLOADER

Second stage of BOOTLOADER resides in /boot folder

7. Second stage of BOOTLOADER load vmlinuz kernel file
8. Also extracts the content of the file initramfs image file
9. Vmlinuz kernel file also load the drivers from the initramfs images
10. The kernel files starts the first process of SystemD

Now SyestemD is in comtrol

11. SystemD process
    a. Reads the configuration files from /etc/systemd directory
    b. While there it also reads runlevel file /etc/systemd/system/default.target
    c. So whatever /etc/systemd/system/default.target is set as (Multi-user or Graphical)
    d. Runlevel is loaded based on this /etc/systemd/system/default.target
    e. It executes /etc/rc.local