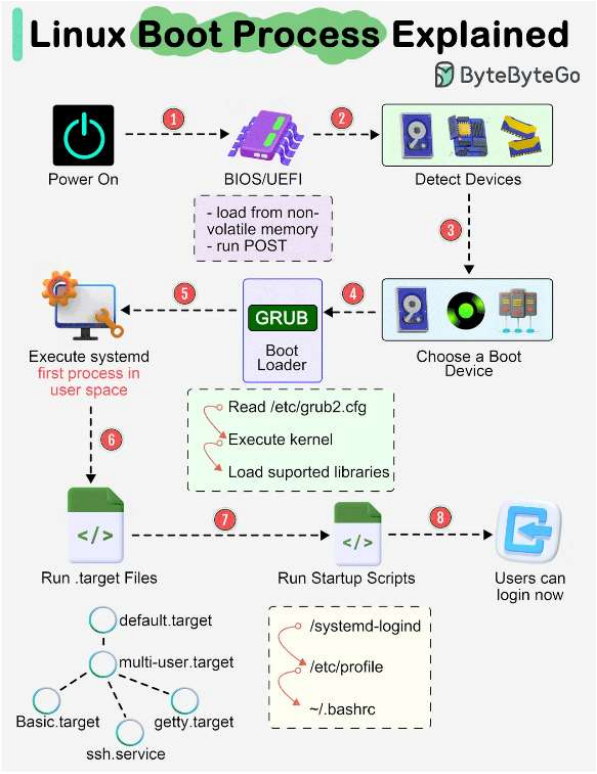
Linux Booting process



Step 1 - When we turn on the power, BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface) firmware is loaded from non-volatile memory, and executes POST (Power On Self Test).

Step 2 - BIOS/UEFI detects the devices connected to the system, including CPU, RAM, and storage.

Step 3 - Choose a booting device to boot the OS from. This can be the hard drive, the network server, or CD ROM.

Step 4 - BIOS/UEFI runs the boot loader (GRUB), which provides a menu to choose the **OS or the kernel** functions.

Step 5 - After the kernel is ready, we now switch to the user space. The **kernel starts up systemd as the first user-space process, which manages the processes and services, probes all remaining hardware, mounts filesystems, and runs a desktop environment.**

Step 6 - systemd **activates the default. target unit** by default when the system boots. Other analysis units are executed as well.

Step 7 - The system runs a set of startup scripts and configure the environment.

Step 8 - The users are presented with a login window. The system is now ready.