

Booting Linux

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Poornam Info Vision

Linux Boot Sequence

- BIOS
- LILO or GRUB
- Kernel
- init
- Run Levels
- Login Prompt

BIOS

- The BIOS starts and checks for hardware devices.
 - Is stored in the computer's ROM and described as firmware.
 - Finds the hardware devices (diskette drives, CD-ROM drives, and hard drives) needed by the boot process.
 - Loads and initiates the boot program stored in the **Master Boot Record**, and passes control to the boot program.
 - MBR, residing in the first sector of the device

The Boot Manager GRUB

- Presents the user with different OS kernels it has been configured to boot.
- Finds the kernel image in the `/boot` directory.
 - The kernel is usually named `/boot/vmlinuz`
- Hands control to the kernel.

Kernel

- initialise devices
- mounts root filesystem
- runs /sbin/init which is process number 1 (PID=1)
- init prints:

INIT: version 2.76 booting

init Process

- Init parses the **/etc/inittab** file to determine the specifics of what programs to run and at what level
- **id:5:initdefault:**
- **si::sysinit:/etc/rc.d/rc.sysinit**
 - Tells the init program to run the rc.sysinit script.

init Process

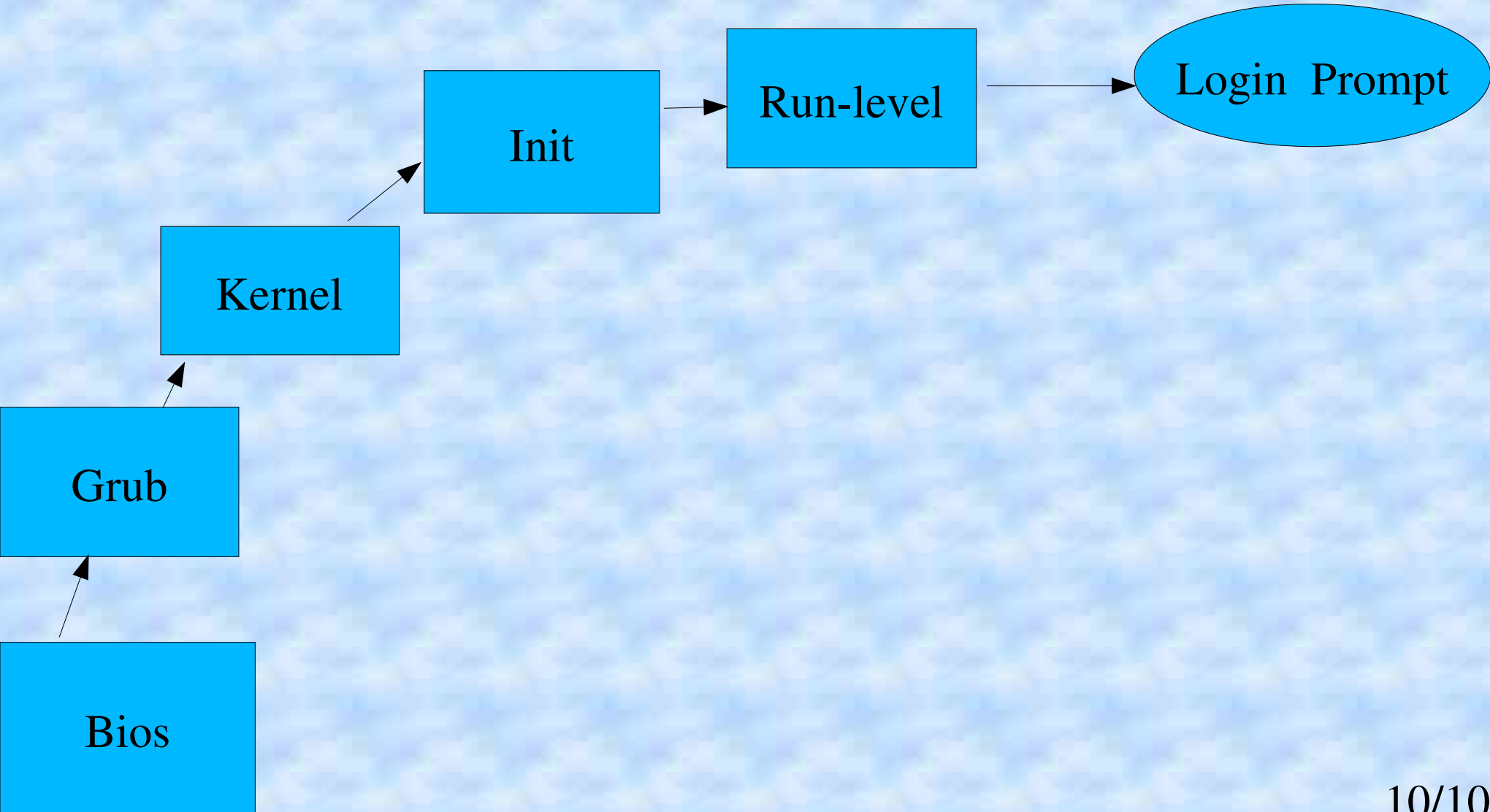
- Some task often performed in startup scripts
- Setting the name of the computer
- Setting the time zone
- Checking the disk with **fsck**
- Configuring network interfaces
- Starting up the daemons and network services

Run-Levels

- 0 -used to **halt the system**. The system performs an init 0 command and the system is halted.
- 1- Puts the system into **single-user mode**.
- 2 -**Multuser** mode / No networking.
- 3 -Puts the system into the standard full multuser mode but no Graphics.

Run-Levels

- 4- Unused.
- 5 -X11; Puts the system into standard multiuser mode with a **graphical (X-based) login.**





The End