

Processes : From Power-up: POST -> O/S

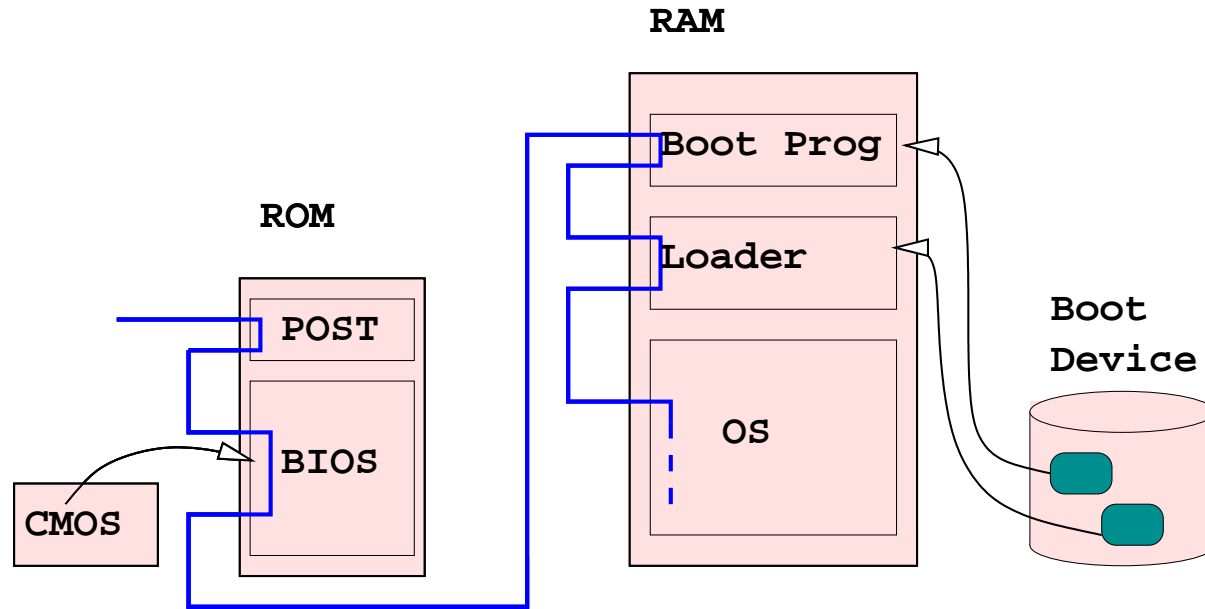


diagram from G Nutt.
Operating Systems 3rd Ed.
Addison Wesley

Processes : From Power-up: O/S onward

Gnu/Linux specific:

Master Boot Record (MBR) loaded from /dev/sda contains

- lilo (linux loader)
 - image = /vmpatched
 - root = /dev/hda1
 - label = patched
 - read-only

This loader copies the kernel image into memory and starts the kernel

- kernel
 - gets memory map from bios
 - performs various checks
 - reserves memory for hash-tables
 - sets up interrupts & identifies PCI
 - sets up network buffers etc.
 - initialises hardware, swapd
 - set up swap, mount root file system
 - run /sbin/init

Processes : From Power-up : The first process

init is the first process to run

reads initialisation script

- /etc/inittab

runs the script defined in the line

```
# System initialization (runs when system boots).
```

```
si:S:sysinit:/etc/rc.d/rc.S
```

This is a group of scripts that

- loads modules

- does filesystem integrity checks

- remounts / read write

- mounts entries in filesystem table

- sets up the network

- mounts remote file systems

It then switches to the runlevel selected by the line

```
# Default runlevel. (Do not set to 0 or 6)
```

```
id:3:initdefault:
```

Processes : An Aside

```
# These are the default runlevels in Slackware:  
# 0 = halt  
# 1 = single user mode  
# 2 = unused (but configured the same as runlevel 3)  
# 3 = multiuser mode (default Slackware runlevel)  
# 4 = X11 with KDM/GDM/XDM (session managers)  
# 5 = unused (but configured the same as runlevel 3)  
# 6 = reboot
```

Processes : Finally!

The login prompt appears.

If authentication succeeds then the login process will start your default shell.

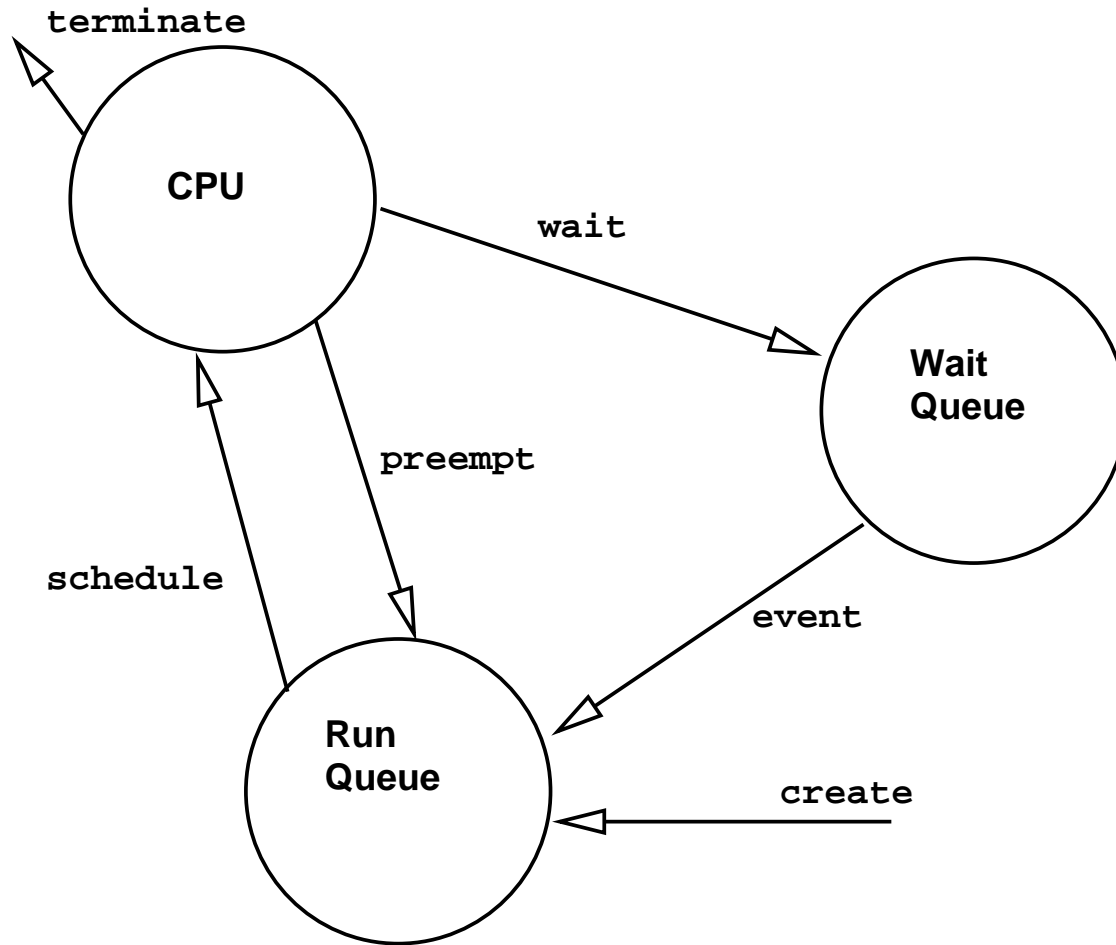
Or if a display manager is being used then it will start your default window manager.

To study the boot messages, login to a gnu/linux terminal and enter

```
dmesg | more
```

on the command line. This will allow you to page up and down through the messages that were written to the screen during the boot sequence. Discuss with your lab tutor.

Processes : Lifecycle



Processes : Lifecycle

