/boot Directory

A **/boot** directory might look like the one in the screenshot below:

```
c8:/teaching/LFCW/IMAGES>cd /boot
c8:/boot>ls -l
total 410340
-rw-r--r--  1 root root    189500 Oct 16 12:52 config-4.18.0-240.1.1.el8_3.x86_64
-rw-r--r--  1 root root    135708 Dec  7 07:25 config-5.10.0-rc7
-rw-r--r--  1 root root    134919 Dec  2 06:33 config-5.9.12
-rw-r--r--  1 root root    134919 Dec  8 06:55 config-5.9.13
drwxr-xr-x. 3 root root      4096 Jun 21  2019 efi
-rw-r--r--  1 root root    184380 Aug 12  2018 elf-memtest86+-5.01
drwxr-xr-x  2 root root      4096 May 30  2020 extlinux
drwx------. 4 root root      4096 Aug 31 05:50 grub2
-rw-------. 1 root root  66208244 Jun 21  2019 initramfs-0-rescue-ce0c82382a8a4c80bbd6931a917a2f1c.img
-rw-------  1 root root  50661253 Nov 12 07:57 initramfs-4.18.0-240.1.1.el8_3.x86_64.img
-rw-------  1 root root  46681740 Nov 24 17:04 initramfs-5.10.0-rc5CLANG.img
-rw-------  1 root root  46710403 Dec  7 07:25 initramfs-5.10.0-rc7.img
-rw-------  1 root root  46664749 Dec  2 06:33 initramfs-5.9.12.img
-rw-------  1 root root  46664757 Dec  8 06:55 initramfs-5.9.13.img
drwxr-xr-x. 3 root root      4096 Jun 26 06:23 loader
-rw-r--r--  1 root root    182704 Aug 12  2018 memtest86+-5.01
lrwxrwxrwx  1 root root        23 Dec  8 06:55 System.map -> /boot/System.map-5.9.13
-rw-r--r--  1 root root   6261778 Aug 29 15:03 System.map-..
-rw-------  1 root root   4032815 Oct 16 12:52 System.map-4.18.0-240.1.1.el8_3.x86_64
-rw-r--r--  1 root root   6201597 Nov 24 17:04 System.map-5.10.0-rc5CLANG
-rw-r--r--  1 root root   6585217 Dec  7 07:25 System.map-5.10.0-rc7
-rw-r--r--  1 root root   6306990 Dec  2 06:33 System.map-5.9.12
-rw-r--r--  1 root root   6306990 Dec  8 06:55 System.map-5.9.13
lrwxrwxrwx  1 root root        20 Dec  8 06:55 vmlinuz -> /boot/vmlinuz-5.9.13
-rw-r--r--  1 root root  12353136 Aug 29 15:03 vmlinuz-..
-rwxr-xr-x. 1 root root   7872864 Jun 21  2019 vmlinuz-0-rescue-ce0c82382a8a4c80bbd6931a917a2f1c
-rwxr-xr-x  1 root root   9514352 Oct 16 12:52 vmlinuz-4.18.0-240.1.1.el8_3.x86_64
-rw-r--r--  1 root root  12920416 Nov 24 17:04 vmlinuz-5.10.0-rc5CLANG
-rw-r--r--  1 root root  12556048 Dec  7 07:25 vmlinuz-5.10.0-rc7
-rw-r--r--  1 root root  12327808 Dec  2 06:33 vmlinuz-5.9.12
-rw-r--r--  1 root root  12327488 Dec  8 06:55 vmlinuz-5.9.13
c8:/boot>
```

In this example, there are multiple possible kernels to boot into, each of which has four files associated with it:

- **vmlinuz** is the compressed kernel

- **initramfs** contains a complete initial root filesystem which is loaded as a ramdisk, as well as some essential kernel modules (generally, device drivers) and the programs needed to load them, that are required to load the real filesystem, at which point it is discarded

- **config** contains all the details about how the kernel was compiled; it is not needed for system operation

- **System.map** lists the complete kernel symbol table; it is used only for debugging purposes

Depending on which Linux distribution is being used, there will be variations in the above possible kernels. For example, the **initramfs** file may actually be called **initrd**.