

Filesystem Layout

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Here is a list of the main directories which should be present under /:

Main Directories

Directory	In FHS?	Purpose
/	Yes	Primary directory of the entire filesystem hierarchy
/bin	Yes	Essential executable programs that must be available in single user mode
/boot	Yes	Files needed to boot the system, such as the kernel, initrd or initramfs images, and boot configuration files and bootloader programs
/dev	Yes	Device Nodes , used to interact with hardware and software devices
/etc	Yes	System-wide configuration files
/home	Yes	User home directories, including personal settings, files, etc.
/lib	Yes	Libraries required by executable binaries in /bin and /sbin
/lib64	No	64-bit libraries required by executable binaries in /bin and /sbin , for systems which can run both 32-bit and 64-bit programs
/media	Yes	Mount points for removable media such as CD's, DVD's, USB sticks, etc.
/mnt	Yes	Temporarily mounted filesystems
/opt	Yes	Optional application software packages
/proc	Yes	Virtual pseudo-filesystem giving information about the system and processes running on it; can be used to alter system parameters

Directory	In FHS?	Purpose
/run	Yes	System information data describing the system since it was booted; should be cleared at every reboot
/sys	No	Virtual pseudo-filesystem giving information about the system and processes running on it; can be used to alter system parameters, is similar to a device tree and is part of the Unified Device Model
/root	Yes	Home directory for the root user
/sbin	Yes	Essential system binaries
/srv	Yes	Site-specific data served up by the system; seldom used
/tmp	Yes	Temporary files; on many distributions lost across a reboot and may be a ramdisk in memory
/usr	Yes	Multi-user applications, utilities and data; theoretically read-only
/var	Yes	Variable data that changes during system operation

A system should be able to boot and go into single user, or recovery mode, with only the **/bin**, **/sbin**, **/etc**, **/lib** and **/root** directories mounted, while the contents of the **/boot** directory are needed for the system to boot in the first place.

Many of these directories (such as **/etc** and **/lib**) will generally have subdirectories associated either with specific applications or sub-systems, with the exact layout differing somewhat by Linux distribution. Two of them, **/usr** and **/var**, are relatively standardized and worth looking at.

Directories Under /usr

Directory	Purpose
/usr/bin	Non-essential binaries and scripts, not needed for single user mode; generally this means user applications not needed to start system
/usr/include	Header files used to compile applications

Directory	Purpose
/usr/lib	Libraries for programs in /usr/bin and /usr/sbin
/usr/lib64	64-bit libraries for 64-bit programs in /usr/bin and /usr/sbin
/usr/sbin	Non-essential system binaries, such as system daemons
/usr/share	Shared data used by applications, generally architecture-independent
/usr/src	Source code, usually for the Linux kernel
/usr/X11R6	X Window files; generally obsolete
/usr/local	Local data and programs specific to the host; subdirectories include bin , sbin , lib , share , include , etc.

Directories Under /var

Directory	Purpose
/var/lib	Persistent data modified by programs as they run
/var/lock	Lock files used to control simultaneous access to resources
/var/log	Log files
/var/mail	User mailboxes
/var/run	Information about the running system since the last boot
/var/spool	Tasks spooled or waiting to be processed, such as print queues
/var/tmp	Temporary files to be preserved across system reboot; sometimes linked to /tmp
/var/www	Root for website hierarchies

