



Introducing the Redhat

Directory Hierarchy



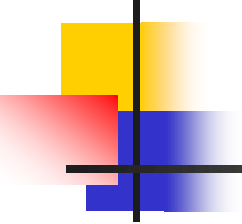
Introducing "/" (root) Subdirectories

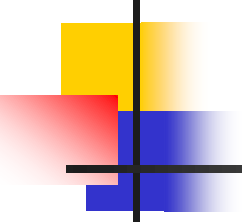
- Directory hierarchy is organized for administrative convenience
- Logically, all directories fall below the "/" (root) directory
- Important System Directories
 - / - The root of the overall file system namespace
 - /bin - A symbolic link to the "/usr/bin" directory. It is the directory location for the binary files of standard system commands

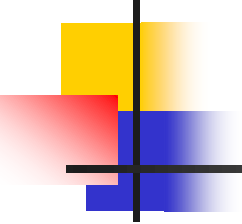


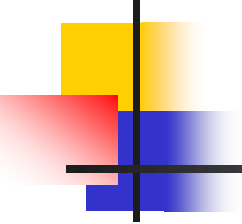
The Filesystem Hierarchy Standard

Directory	Description
/bin	Contains binary commands for use by all users
/boot	Contains the Linux kernel and files used by the boot loader
/dev	Contains device files
/etc	Contains system-specific configuration files
/home	Is the default location for user home directories
/lib	Contains shared program libraries (used by the commands in /bin and /sbin) as well as kernel modules
/mnt	Is the empty directory used for accessing (mounting) disks, such as floppy disks and CD-ROMs
/opt	Stores additional software programs
/proc	Contains process and kernel information
/root	Is the root user's home directory
/sbin	Contains system binary commands (used for administration)
/tmp	Holds temporary files created by programs

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- /etc - Holds host-specific configuration files and databases for system administration
 - EX: fstab , system , shadow , passwd ...
 - /export - The default directory for commonly used shared file systems

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- /home - The default directory or mount point for a user's home directory
 - /mnt - A convenient, temporary mount point for file systems, cdroms
 - /opt - The default directory or mount point for add-on application packages

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- /sbin - The single-user bin directory that contains essential executables that are used during the boot process and in manual system-failure recovery
 - /tmp - The directory for temporary files. The directory is cleared during the boot sequence

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- /usr – By default software's are installed in /usr directory.
 - The directory that contains programs, scripts, and libraries that are used by all system users. (usr - UNIX system resources)
 - /var - The directory for varying files, which usually includes temporary, logging, or status files



Introducing File Components

- File Names

- File names are the objects most often used to access and manipulate files. A file must have a name that is associated with an inode



■ Inodes

- Inodes are the objects the Solaris OE(Operating Environment) uses to record information about a file.
- In general inode contain two parts
- First, inodes contain information about the file, including its owner, its permissions, and its size
- Second, inodes contain pointers to data blocks associated with the file
- Inodes are numbered, and each filesystem contains its own list of inodes.
- When a new file system is created, a complete list of new inodes is also created in that file system



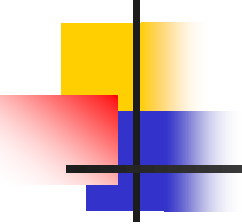
■ Data Blocks

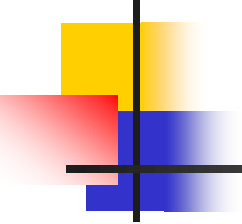
- Data blocks are units of disk space that are used to store data
- Regular files, directories, and symbolic links make use of data blocks
- Device files do not hold data



Identifying File Types

- Supports a standard set of file types that are found in nearly all UNIX-based operating systems
- Four main file types:
 - Regular or ordinary files
 - Directories
 - Symbolic links
 - Device files

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- Regular files, directories and symbolic links all store one or more types of data
 - Device files do not store data, instead, device files provide access to devices
 - The character in the first column of information that the "ls -l" command indicates the file type

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- '-' Regular files
 - 'd' Directories
 - 'l' Symbolic links
 - 'b' Block-special device files
 - 'c' Character-special device files



Creating New Hard Links

- `"#ln file1 file2"`
- Creates a new hard link named file2 for file1.
- Both the files will have the same inode number (can be verified using `"#ls -li"`)



Removing Hard Links

- Deleting one of the files has no effect on the other file.
- “#rm file1” will remove file1 and will have no effect on file2



Soft Link

- `"#ln -s file1 file2"`
- Creates a new SOFT link named file2 for file1.
- Both the files will have DIFFERENT inode number (can be verified using `"#ls -li"`)