527326-13-6E AID: 258164| 27/06/2020

Drwxr-sr-x 2 dahlin prof4096 2012-02-03 08:37 bar /

-rw-r- -r- - 1 dahlin prof 0 2012-02-03 08:36

In the above links ‘-rw-r- -r- - 1 dahlin prof 0 2012-02-03 08:36’ have smallest number of links. Because old file should be existing and new is nit to create this hard link. Both the old and new files will have same “inode” numbers. Both the files will have same permission(generally specking ‘-rw-r- -r- -’). $chmod command execute o one file will affect the other file.change of file contents in one file changes the other file.

And in link ‘Drwxr-sr-x 2 dahlin prof4096 2012-02-03 08:37 bar’ both new and old files may be new or exiting ones. Both files will have diffent “inode” numbers.

Both the links have different numbers.

Most file systems that support hard links use reference counting. An integer value is stored with each physical data section. This integer represents the total number of hard links that have been created to point to the data. When a new link is created, this value is increased by one. When a link is removed, the value is decreased by one. If the link count becomes zero, the operating system usually automatically deallocates the data space of the file if no process has the file opened for access, but it may choose not to do so immediately, either for performance or to enable the undelete command.

The maintenance of this value guarantees that there will be no dangling hard links pointing nowhere (which can and does happen with symbolic links) and that filesystem file and associated inode will be preserved as long as a single hard link (directory reference) points to it or any process keeps the associated file open, relieving the burden of this accounting from programmer or user. This is a simple method for the file system to track the use of a given area of storage, as zero values indicate free space and nonzero values indicate used space.