



Virtual File System

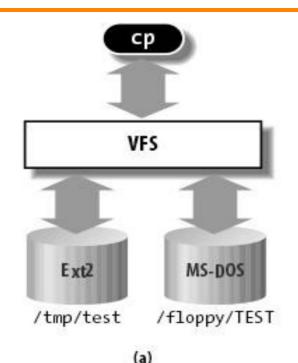
presented by Jyothi

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Introduction

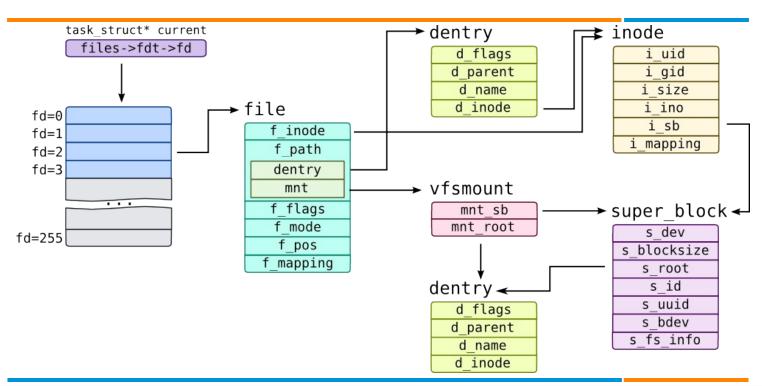
- A VFS is a kernel software layer that handles all system calls related to a standard UNIX filesystem
- VFS was first designed by Sun microsystems in 1986, then UNIX included VFS
- Later Linux also used the same and now it supports various filesystem
- Main strength to provide common interface to several kinds of filesystems
- \$cp /floppy/test /temp/test



(b)

VFS Data Structures

- Superblock object
- Inode object
- Dentry object
- File object



Superblock Object

- Implemented by each filesystem, and is used to store information describing that specific filesystem
- The superblock object is represented by struct super_block
- The superblock operations table is represented by struct super_operations

Inode Object

- The inode object represents all the information needed by the kernel to manipulate a file or directory
- The inode object is represented by struct inode
- The inode operations table is represented by struct inode_operations

Dentry Object

- VFS employs the concept of a directory entry (dentry)
- A dentry is a specific component in a path
- Dentry objects are represented by struct dentry
- The dentry_operations structure specifies the methods that the VFS invokes on directory entries on a given filesystem

File Object

- The file object is used to represent a file opened by a process
- The file object is represented by struct file
- The file object methods are specified in file operations

References

- GLMS videos
- Linux Kernel Development by Robert Love
- Understanding the Linux Kernel by Bovet

Any Queries?

Feedback

Large enough to Deliver, Small enough to Care





Global Village IT SEZ Bangalore



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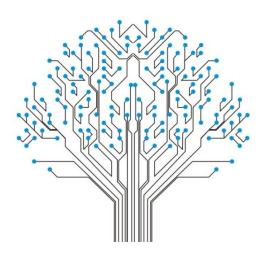
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Thank you



Fairness

Learning

Responsibility

Innovation

Respect