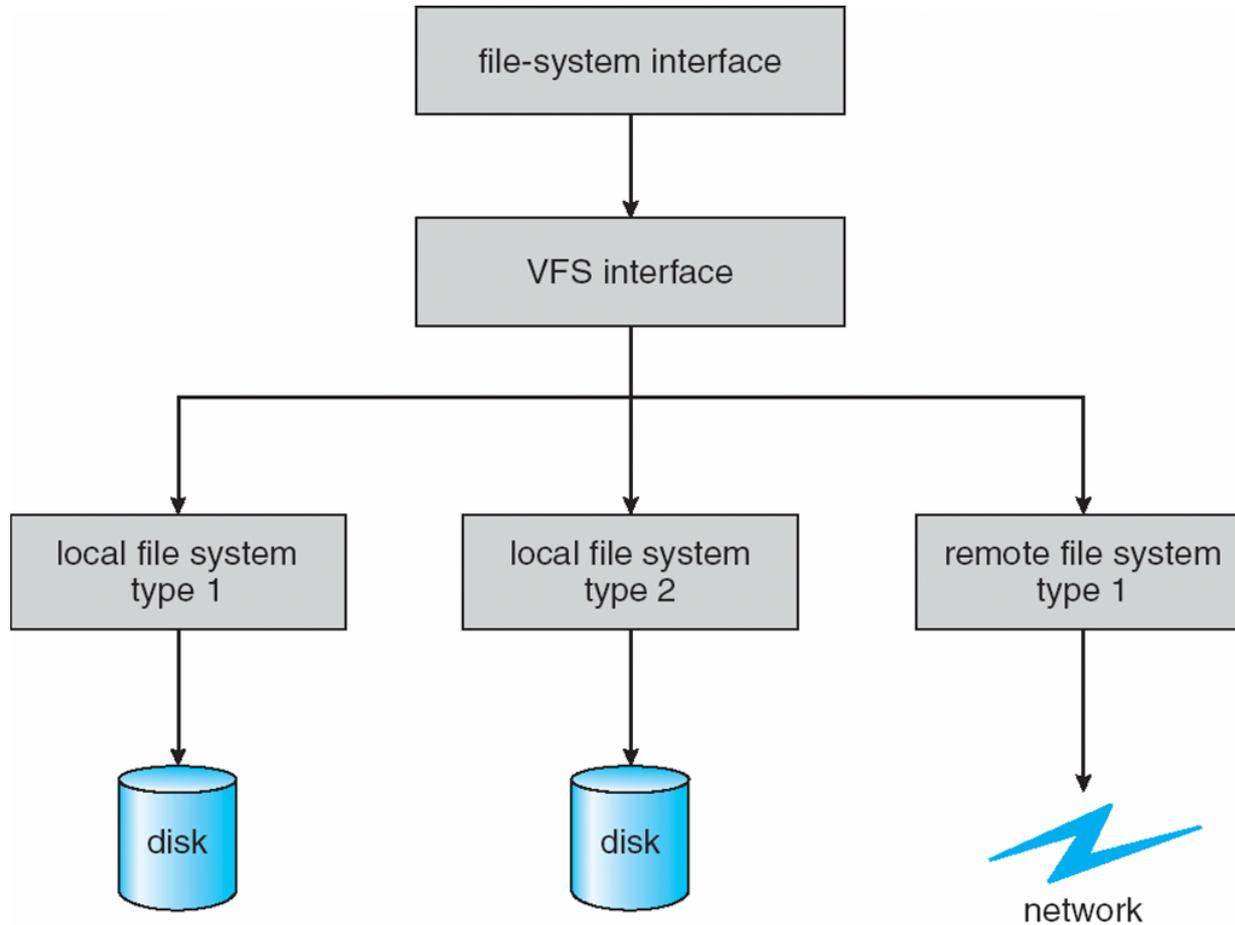


# VFS

- ❑ Old days: "the" file system
- ❑ Nowadays: many file system types and instances co-exist
- ❑ VFS: an FS abstraction layer that transparently and uniformly supports multiple file systems
  - A VFS specifies an interface
  - A specific FS implements this interface
    - Often a struct of function pointers
  - VFS dispatches FS operations through this interface
    - E.g., `dir->inode_op->mkdir();`

# Schematic View of Virtual File System



# Key Linux VFS Data Structures

- ❑ *struct file*
  - information about an open file
  - includes current position (file pointer)
- ❑ *struct dentry*
  - information about a directory entry
  - includes name + inode#
- ❑ *struct inode*
  - unique descriptor of a file or directory
  - contains permissions, timestamps, block map (data)
  - inode#: integer (unique per mounted filesystem)
  - Pointer to FS-specific inode structure
    - e.g. *struct ext2\_inode\_info*
- ❑ *struct superblock*
  - descriptor of a mounted filesystem