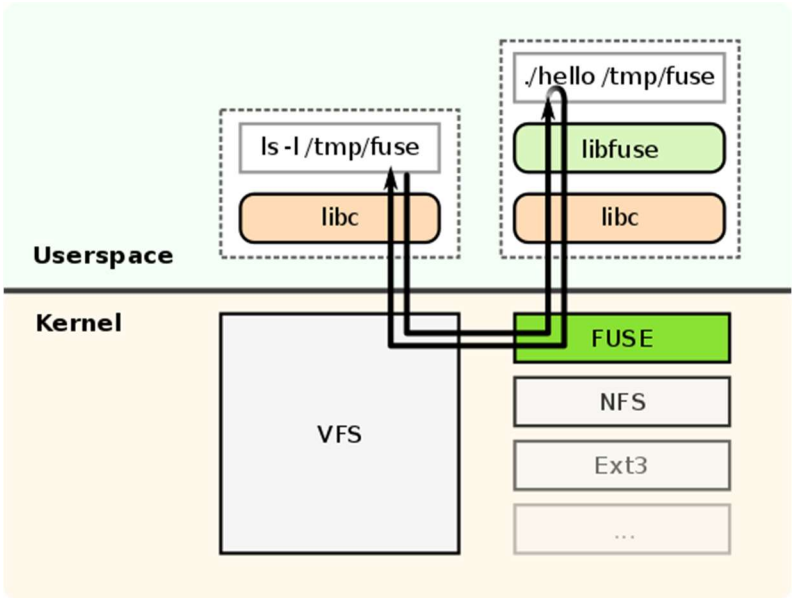
Lab 11 Fuse

Hu Zhengdong, 517370910249

1. **What is a filesystem?**
   A filesystem is the piece of software that is in charge of storing, organizing and generally taking care of data represented as files and directories.

2. **How is the Linux VFS working?**
   A virtual file system (VFS) or virtual filesystem switch is an abstract layer on top of a more concrete file system. The purpose of a VFS is to allow client applications to access different types of concrete file systems in a uniform way. A VFS specifies an interface (or a "contract") between the kernel and a concrete file system. Therefore, it is easy to add support for new file system types to the kernel simply by fulfilling the contract.
   Reference: https://en.wikipedia.org/wiki/Virtual_file_system

3. **What is FUSE, and how does it interact with the VFS? Can you sketch it quickly to make it clearer?**
   Fuse is short for “Filesystem in Userspace”, which is a software interface for Unix and Unix-like computer operating that lets non-privileged users create their own file systems without editing kernel code.



   Request from userspace to list files (ls -l /tmp/fuse) gets redirected by the Kernel through VFS to FUSE. FUSE then executes the registered handler program (./hello) and passes it the request (ls -l /tmp/fuse). The handler program returns a response back to FUSE which is then redirected to the userspace program that originally made the request.
   Reference: https://en.wikipedia.org/wiki/Filesystem_in_Userspace