newuserfs

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Combining the best of the Hurd and Linux^{TM}...

What is it?

A loadable filesystem module for Linux 2.4 implemented as userspace servers...

Kernel calls out to server for most operations: **`mount`**, **`readinode`**, **`readdir`**, **`read`**, ...

Binary IPC mechanism.

Server may be implemented in any language.

Linux-specific — exports the kernel API.

Makes Linux a bit more like a microkernel system.

For developers:

- Prototype new filesystems.
- Write filesystems in high-level languages.
- Debug filesystems using `gdb`
- Link to userspace libraries.

Applications

Keep application complexity out of the kernel!

- Version control in the filesystem
- Network filesystems (FTP, CIFS, HTTP, rsync, . . .), with local caching
- Compression (zipfs, tarfs)
- Hierarchical storage and replication
- Writable CDs, stacked directories . . .
- Filesystem interface to databases

Similar work

- GNU Hurd
- Plan 9 from Bell Labs
- FiST (special cross-kernel code)
- Podfuk (CODA)
- userfs for Linux 2.0