

ToyFS - Change inode management to use slab caches

Allocating and freeing inodes in ToyFS is currently done via simple `kmalloc()` and `kfree()` calls. This is not efficient, as inodes are very often allocated and freed.

Enhance the filesystem by handling inode allocation/freeing through a slab cache

What to Submit

- Patch(es) containing a slab cache implementation for ToyFS inodes
- Output of `/proc/slabinfo` showing the slab cache you created (add it to the patch description)

Procedure

- Clone ToyFS source code
- Ensure it builds against Linux 6.16
- Replace `kmalloc()/kfree()` calls in the inode management by a slab cache

Requirements

- All ToyFS in-core inodes created and freed through the filesystem operation shall be done by the slab cache.

Hints:

- You may need (or not) a 'special kind' of slab cache
- Look at EXT2 code for inspiration - `fs/ext2/super.c`

Points

- Maximum points for this assignment are 15.