

S3LogFS

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What is S3LogFS?

- Log Structured File System
 - All writes appended to log.
 - Inode updated with new addresses of updated blocks.
 - Inode appended to log.
 - Imap maps inode IDs to addresses.
- Amazon S3 for storage
 - Key -> object

What's New About S3LogFS?

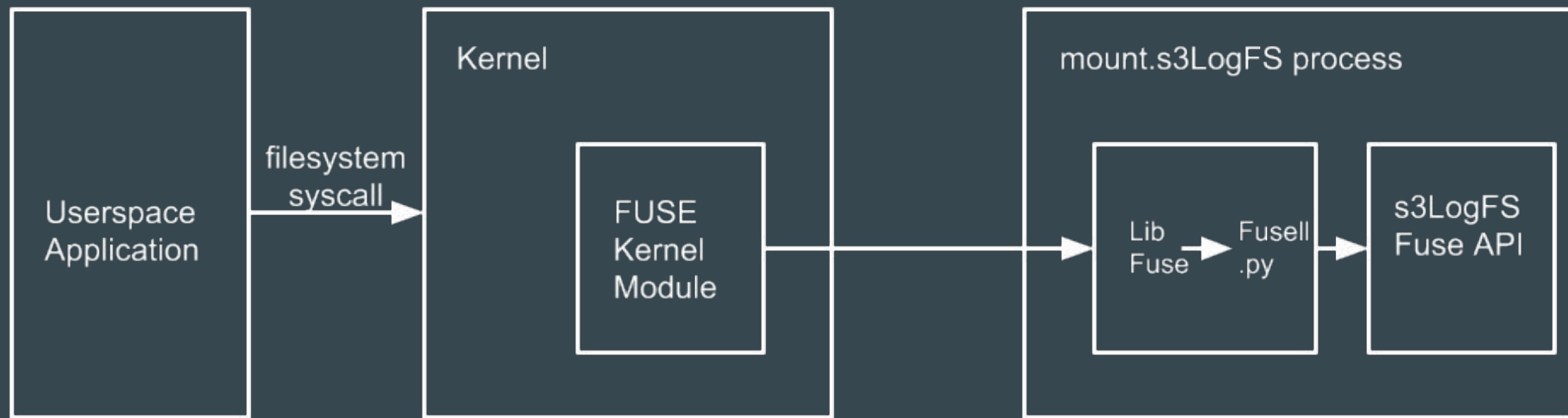
Existing Projects

- Create one s3 object per file
 - Requires re-writing whole file for any update.
- Break single files into multiple objects.
 - Requires one request for every block that is written.

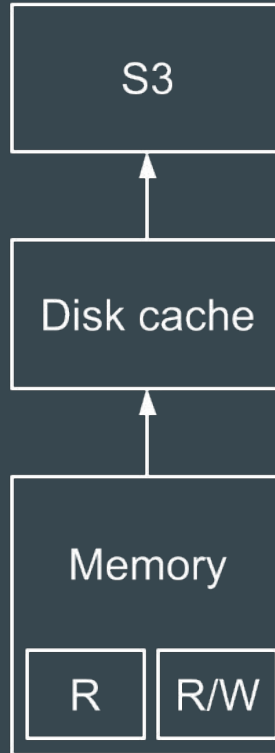
S3LogFS

- Creates 1 object per segment.
- Each segment contains changes to multiple files.
- Reduces the number of requests to S3 for writes.

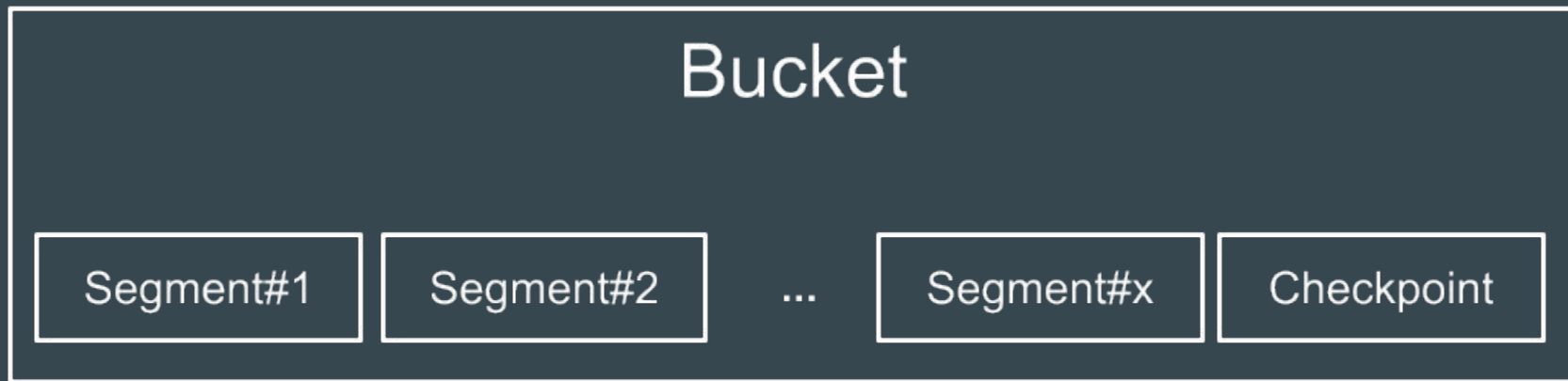
FUSE Structure

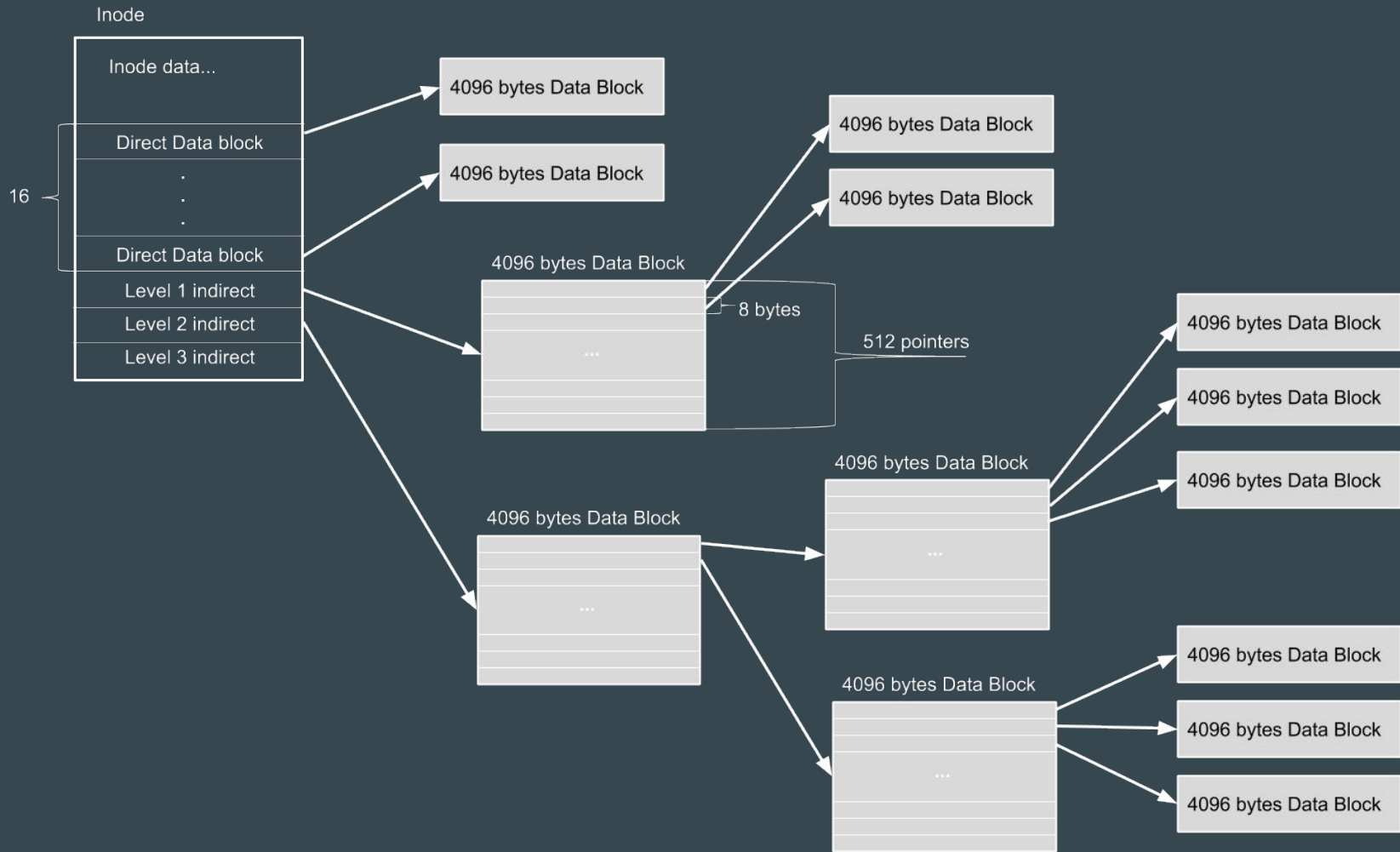


Cache Structure



Bucket Structure





Limitations and Known Issues

- Single client connection
- Only level 2 indirection files (1GB)
- Known bug with remounting
- No Garbage Collection

Demo

Thank You