The Dissident File System

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Background and Motivation

How do you protect your data?

- Encryption
- Steganography

Powerful adversary: Like a government?

- If found, Steganography won’t prevent them from reading your data.
- If found, Encryption won’t protect you from adversary.

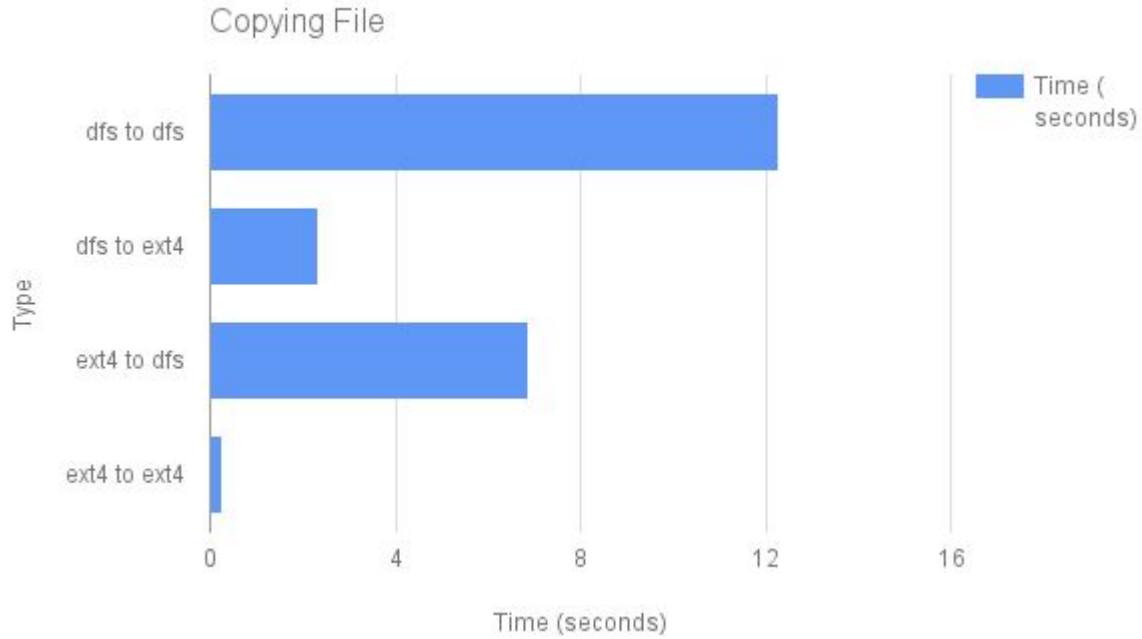
Some combination of both?

Overview

- Each file is split into N “XOR components”.
- Each component is the same size as original.
- Let’s call these components “dummy files”.

- Read: Read N dummies and XOR them.
- Write: Split into N dummies and write each.

Evaluation



Copying a 242 MB file between file systems.

Conclusion and Future Work

What have we learned so far?

- It works.... somewhat.
- Performance is bad, as expected.
- N-times more disk space needed, obviously.

What's still left?

- Full-fledged file system that can be mounted off disk/partition device files.
- Better performance: Concurrent operations, enabling parallelism?
- Better security: Dummies are still XOR components. XOR works in a certain way.

Thank you