



Ori: A Durable Distributed File System for Users

Ali José Mashtizadeh, Andrea Bittau, Frank Huang, David Mazières



What's missing in User Storage?

Modern User Needs:

- Backup
- Versioning
- Access from Different Devices
- Multi-user Sharing

Existing solutions:

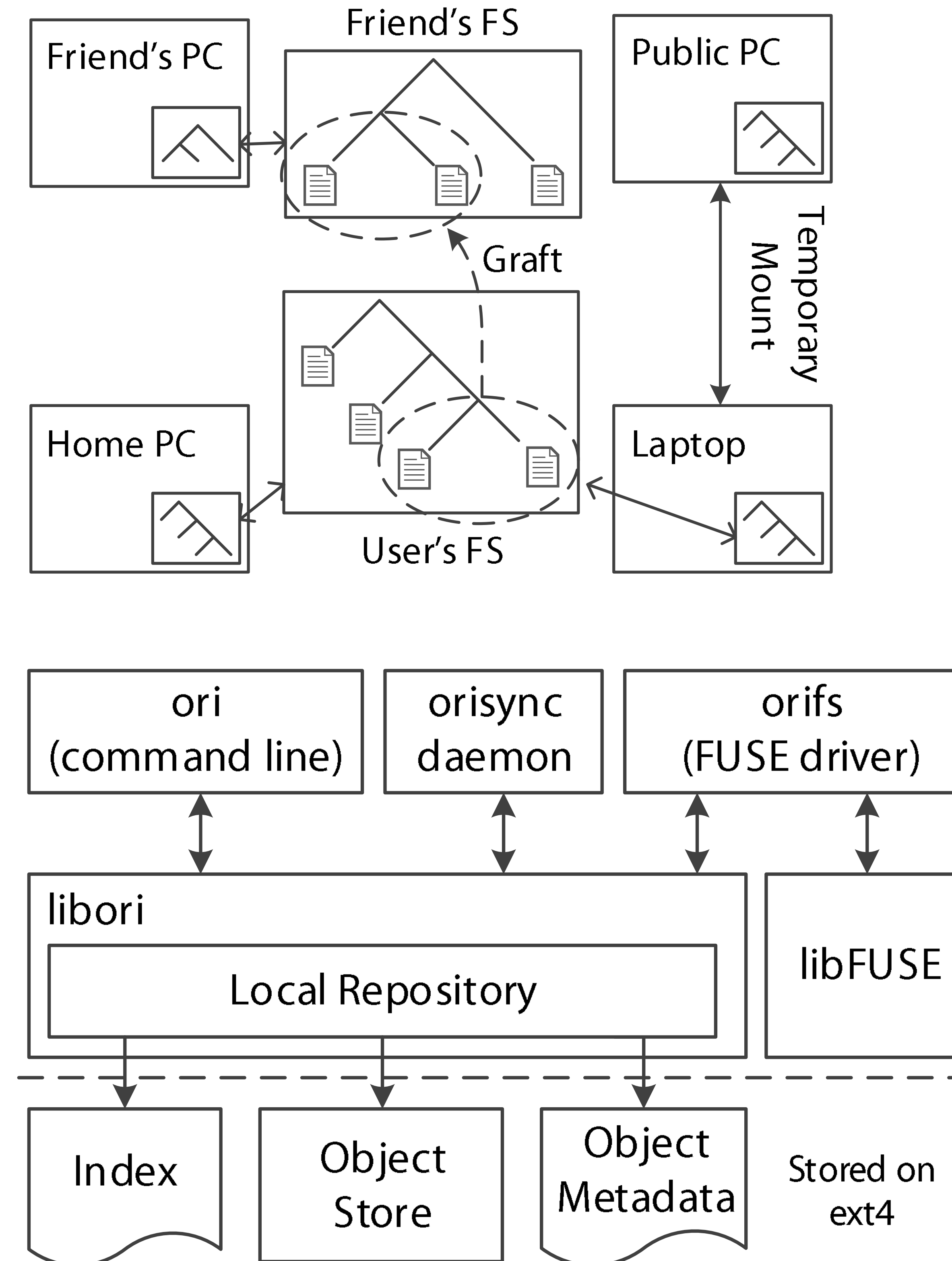
- Fragmented
- Disk space growth faster than WAN
- Do not take advantage of:
 - Mobile devices (phones/laptops)
 - Physical connection of these devices
 - Fast LAN bandwidths

Ori Provides:

- Replication (used as Backup)
 - Access everywhere
 - Repair silent disk corruption
 - Recovery from disk failures
- Versioning
 - Durable
 - Accessible locally
 - Automatic snapshots
- Multiple access mechanisms
 - Temporary mount points
 - Grafting (File Sharing)

Architecture

Support different access methods:

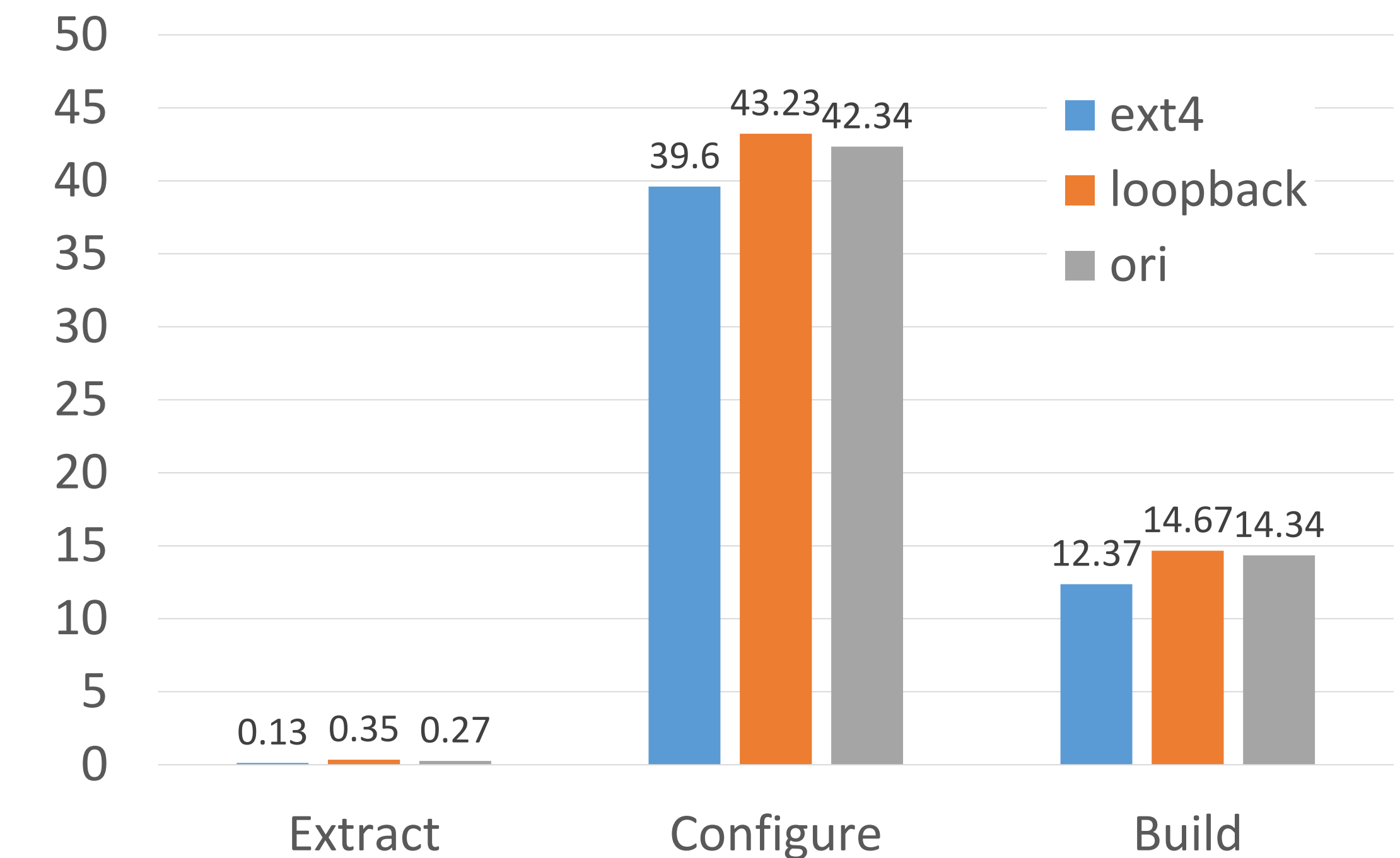


Design Features

- Grafting: History preserving file copy
- Content Addressable Object Store
 - File checksumming
 - Automatic repair from replicas
 - Deduplication
- FUSE Implementation

Performance

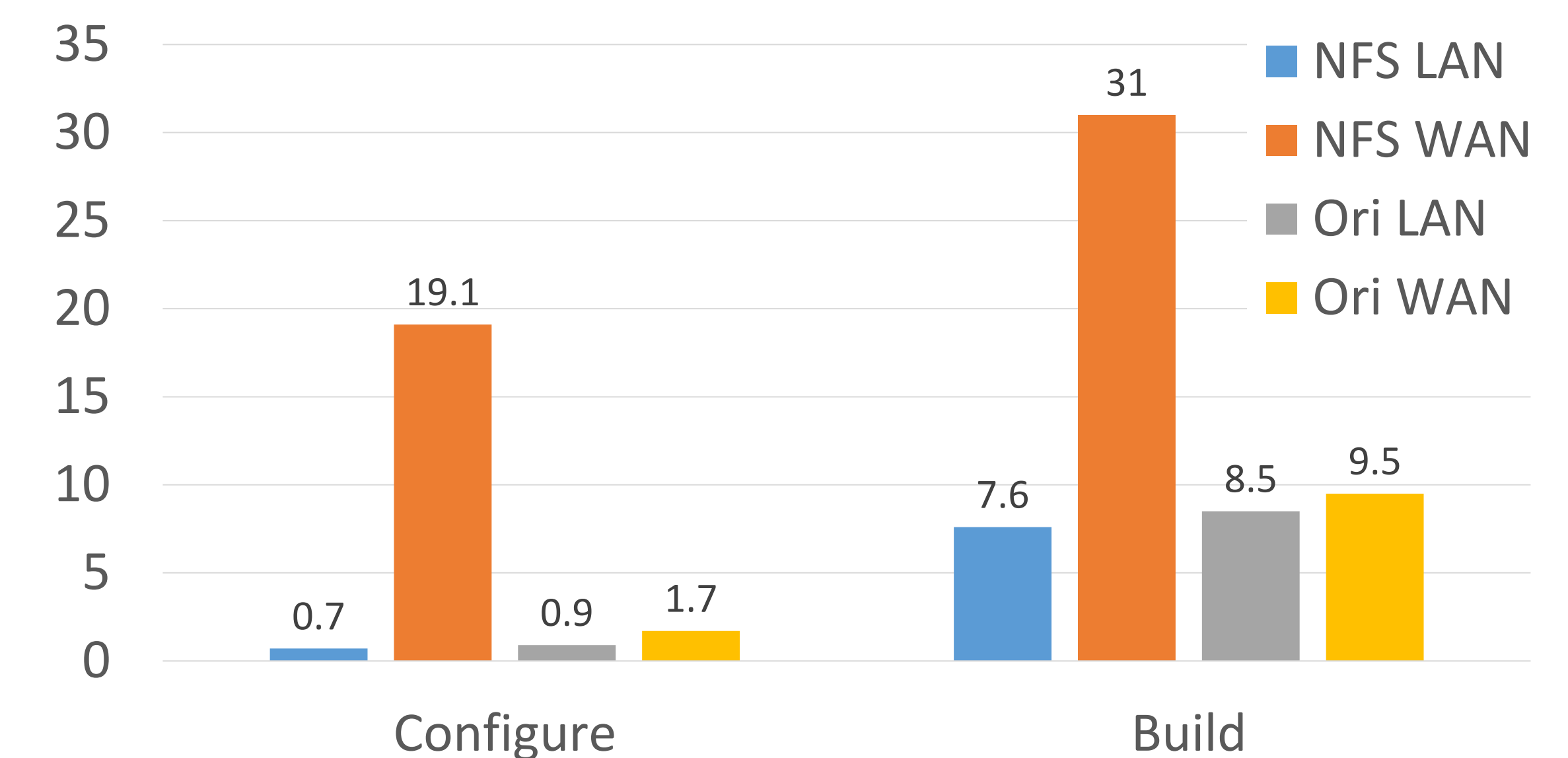
wget build (Normal File System)



Instant Access (on-demand):

User's won't wait for all their data to transfer, giving an NFS-like experience

zlib build (NFS Alternative)



Accelerated Data Transfer using Local Replicas

