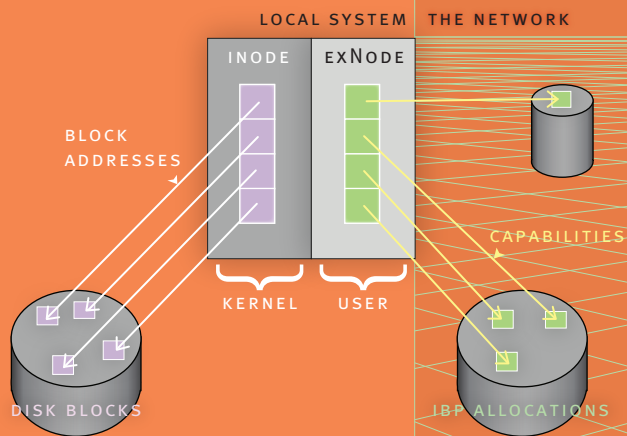


# EXNODE

## INODE VS. EXNODE



The exNode is a network analogue of the inode data structure found in Unix file systems.

### INODE

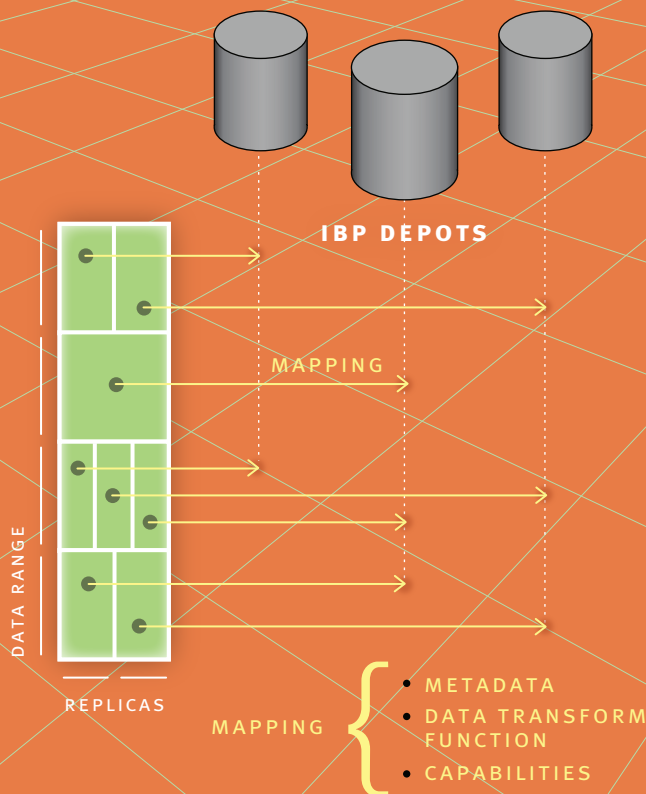
- One-to-one mappings
- Fixed block size
- Fixed metadata
- No data transformation prior to storage
- Provides no fault-tolerance
- Addresses only local storage
- Non-portable

### EXNODE

- One-to-many mappings
- Variable block size
- Arbitrary metadata
- Application directed data tranformation
- Arbitrary levels of fault-tolerance
- Addresses any network attached storage
- Highly portable

## EXNODE

- A single file extent can be fragmented or striped across servers.
- One-to-many mappings can represent file replication and caching.
- Aggregation operators can employ RAID-like error correction encodings for fault-tolerance.
- Additional metadata can assist in the implementation of end-to-end services such as compression and encryption.
- Accessing file storage through the exNode can require the client to make complex choices between replicas; higher level tools implement these resolution algorithms.



<http://loci.cs.utk.edu/exnode>

