

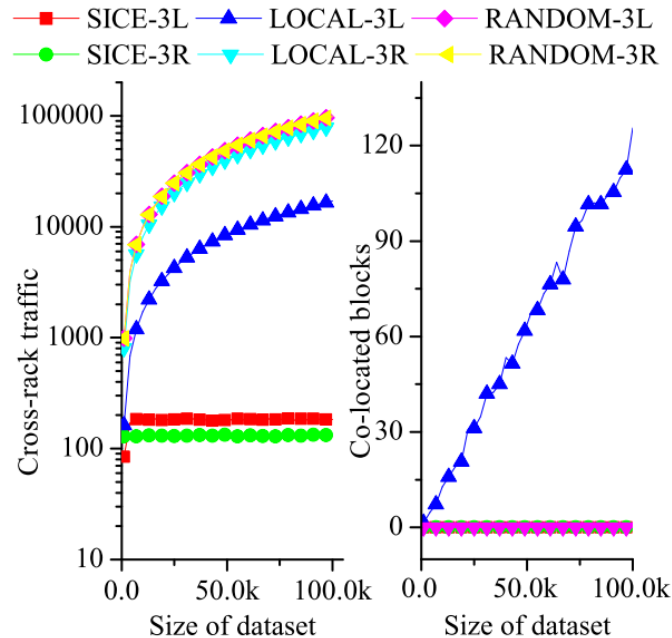
Non-sequential striping encoder
from replication to erasure coding
for distributed storage system

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Frontiers of Computer Science, DOI: [10.1007/s11704-019-8403-y](https://doi.org/10.1007/s11704-019-8403-y)

Problems & Ideas

- Problem: Encoders based on sequential striping for distributed storage systems with both redundancy schemes can cause
 - Much cross-rack traffic, I/O burst
 - Unreliable data because of co-located blocks
- Ideas: ASICE: an amortized encoder based on non-sequential striping
 - Select blocks for stripes non-sequentially to avoid cross-rack reads and co-located blocks
 - Amortize the encoding overheads into the whole period of popularity degradation



Main Contributions

- Reduce cross-rack traffic and disk I/O consumption
- Amortize the encoding overheads

