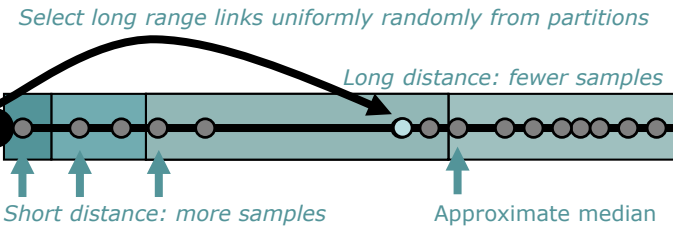


Goal: Build low-maintenance structured *ringless* overlays which deals with heterogeneity as observed in the internet (capacity of computers, bandwidth) as well as non-uniformity observed in data-oriented applications (skewed key spaces).

OSCAR (Small-World Overlays For Realistic Distributions)

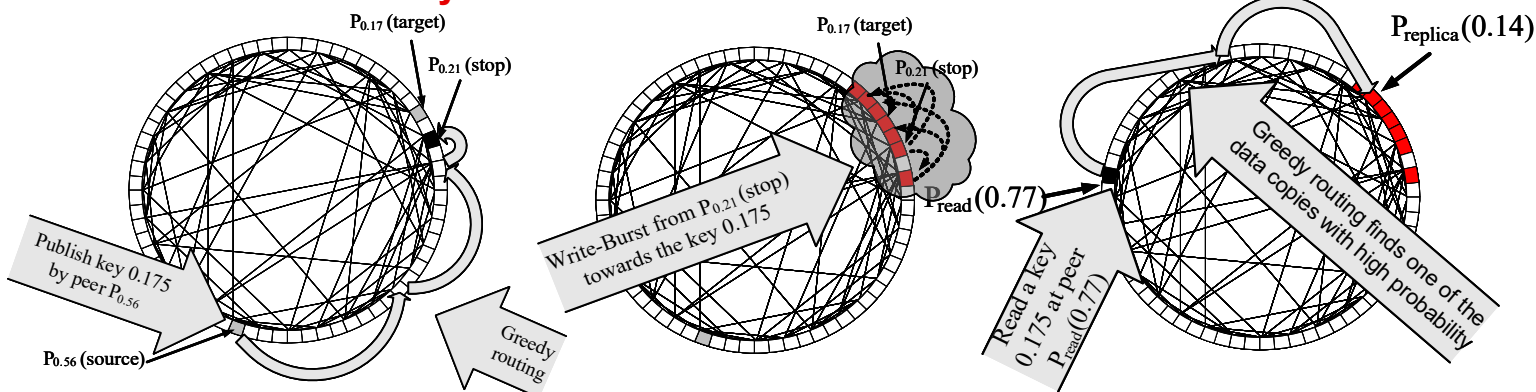
- Scalable sampling algorithm – no need to approximate the whole key pdf
- Approximate only $\log(N)$ partitions instead
- The expected performance can be theoretically bounded given a sampling error



Fuzzynet – zero maintenance ringless overlay

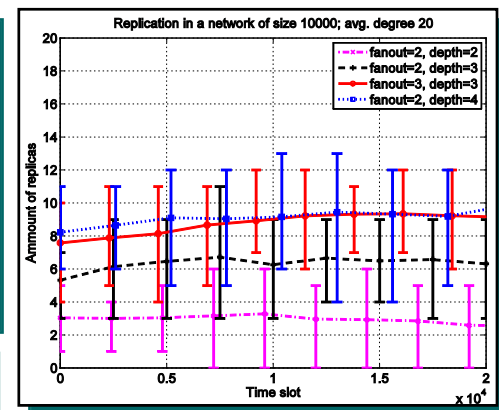
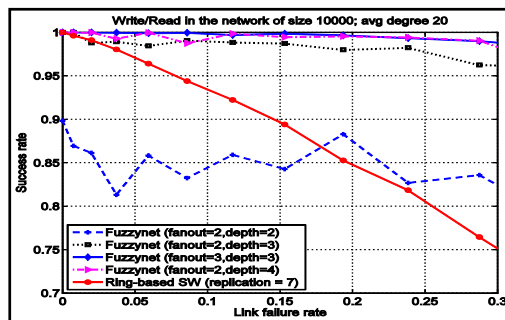
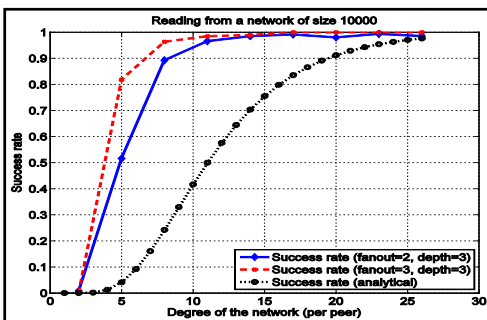
- No Ring structure required
 - “lazy replica maintenance” vs. “eager ring maintenance”
 - No predefined responsibility ranges
 - Asymptotic READ/WRITE guarantees
 - Typical DHT replication rate
- Data is probabilistically stored in the data-key vicinity
- Compatible with any Small-World network
- Network construction without the help of the ring (e.g. Oscar)

Write and Read in Fuzzynet:



- WRITE with replication (controlled “write-burst”):
 - Fan-out (FO)
 - Depth (TTL)
- Visits FO closest nodes to the target if TTL is not 0 and they were not visited before. Replicates at each visited node.

Fuzzynet performance:



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