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)
  - 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)

Fuzzynet performance:

REFERENCES

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