

Tapestry: An Infrastructure for Fault-tolerant Wide-area Location and Routing

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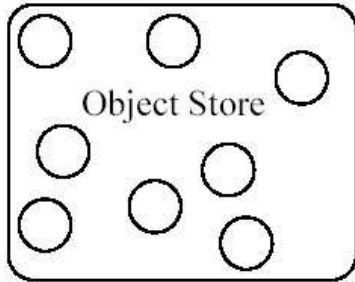
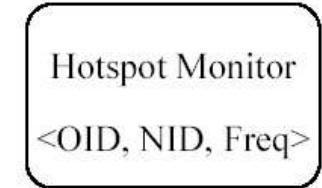
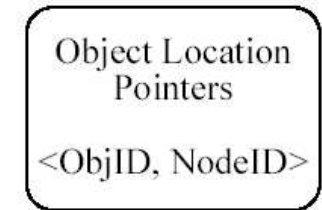
CSE-498 (Adv. Networks)

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A paper presentation on

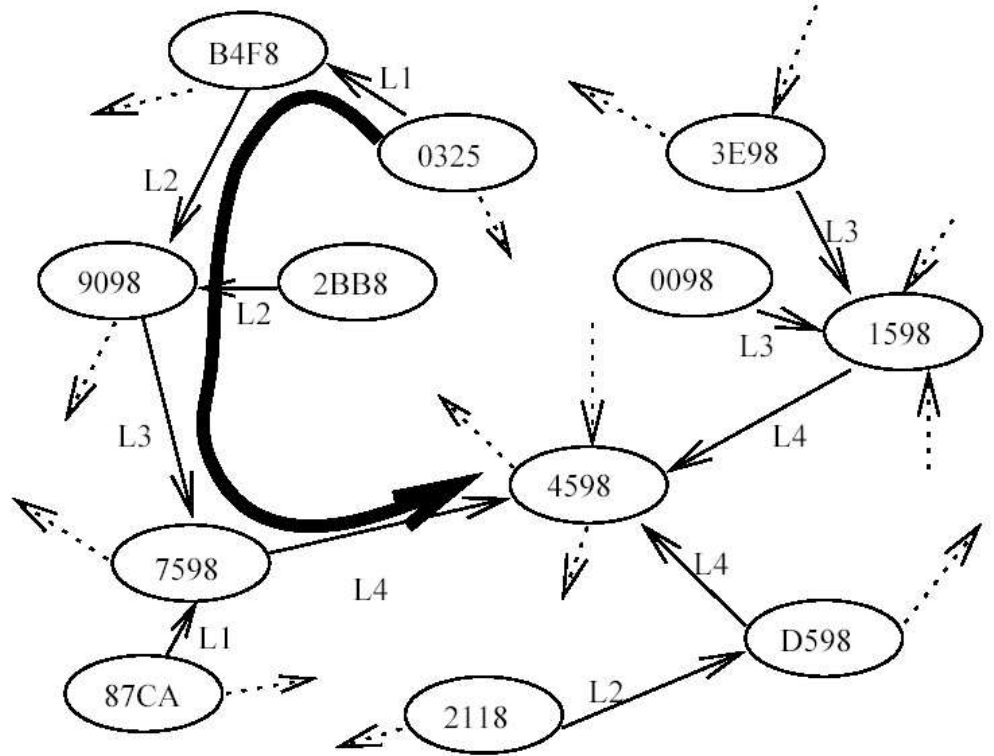
Zhao, B.Y., Kubiawicz, J., Joseph, A.D. "Tapestry: An Infrastructure for Fault-tolerant Wide-area Location and Routing." Report No. Computer Science Division, University of California, Berkley, Technical Report #UCB/CSD-10-1141, April 2001.

Plaxton Node



Neighbor Map in Memory
2 secondary neighbors
(not all pointers shown)

0642	x042	xx02	xxx0
1642	x142	xx12	xxx1
2642	x242	xx22	xxx2
3642	x342	xx32	xxx3
4642	x442	xx42	xxx4
5642	x542	xx52	xxx5
6642	x642	xx62	xxx6
7642	x742	xx72	xxx7



Plaxton Mesh

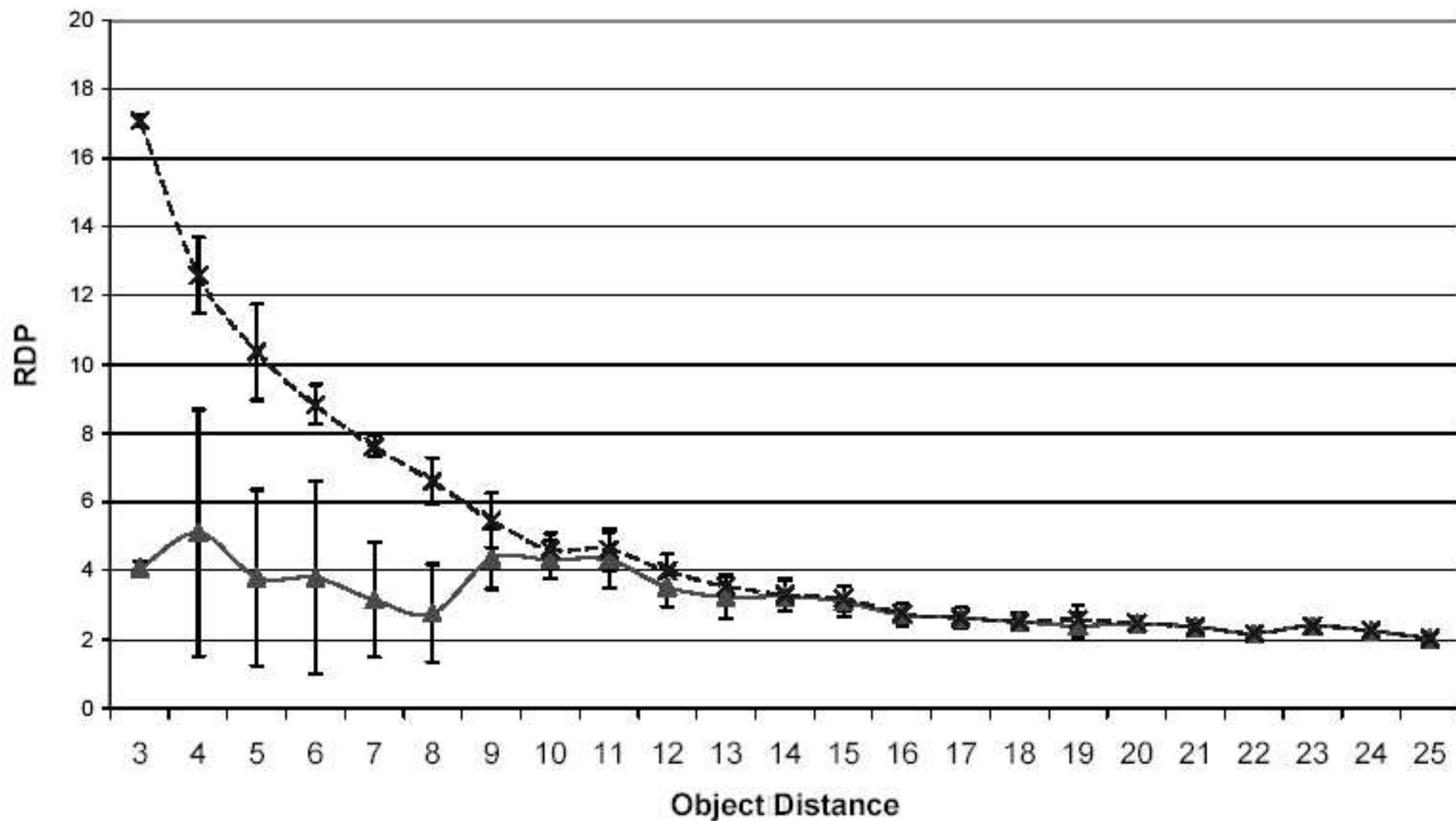
Plaxton Issues

- Low memory usage
- Route round errors
- Decentralized
- Uses locality
- Relatively efficient
- Construction a problem
- Root not vulnerability
- Lack of adaptability (e.g. hotspots)

The Data

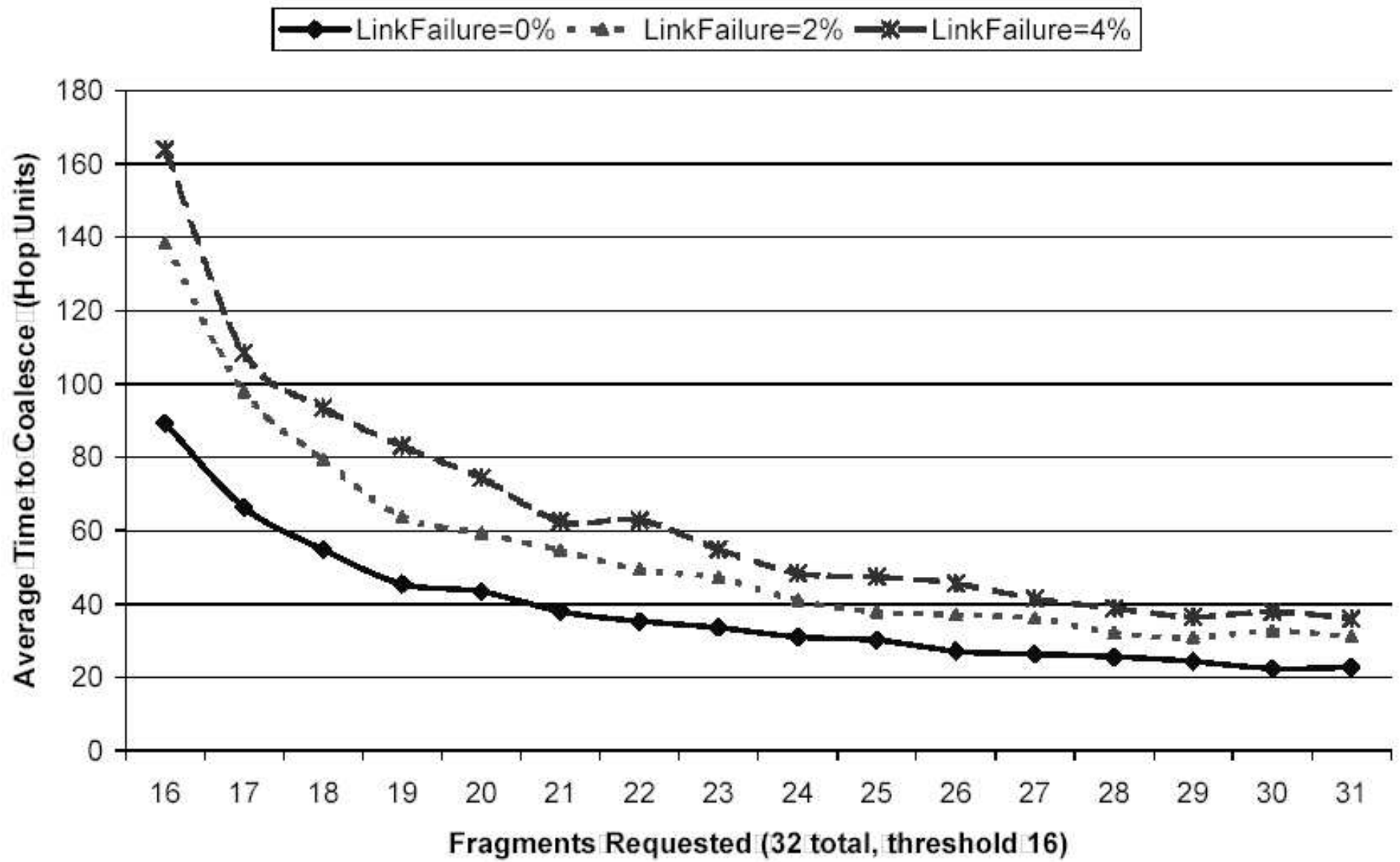
RDP vs Object Distance (TI5000)

—▲— Locality Pointers - * - No Pointers



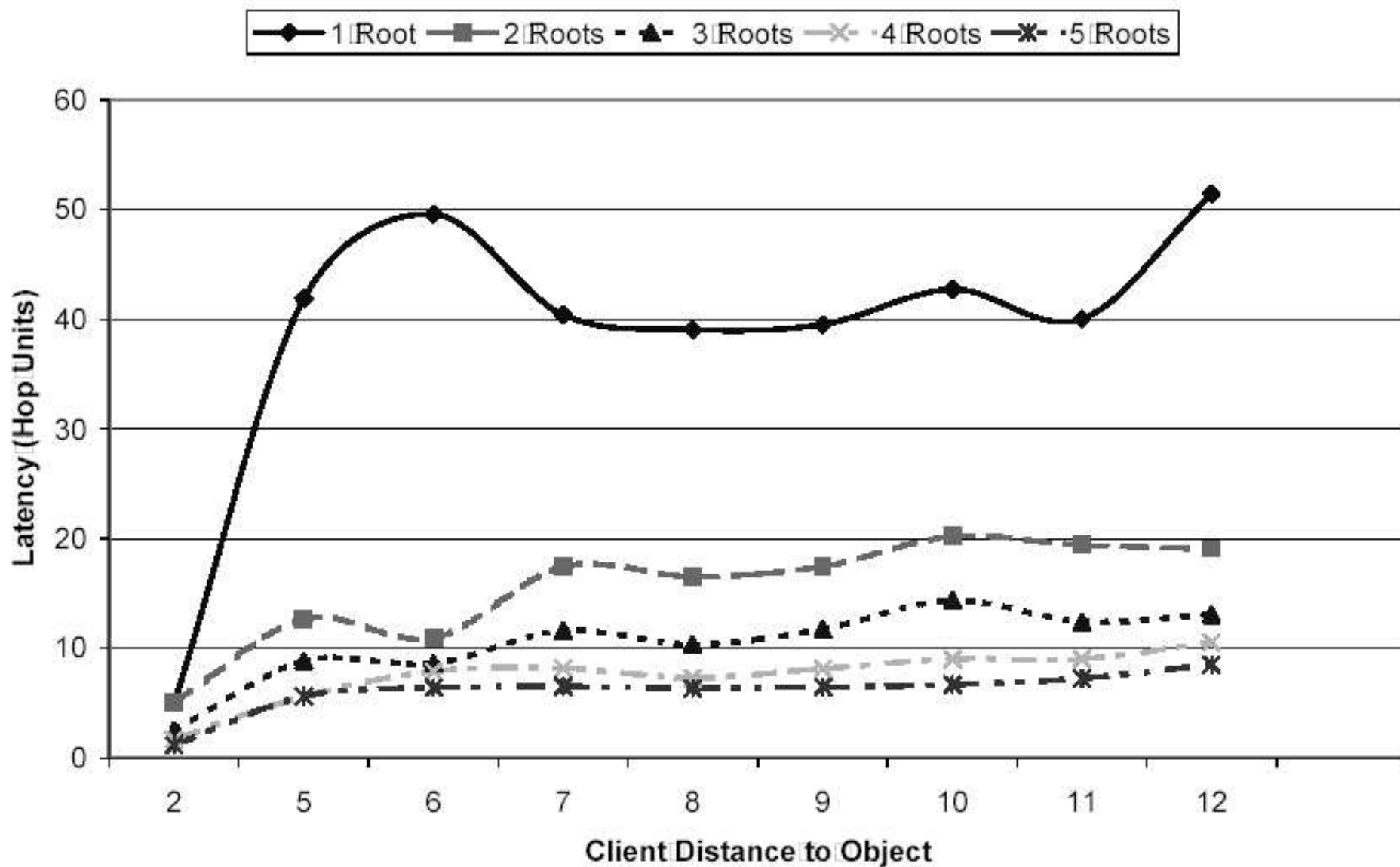
The Data

Time to Coalesce in Presence of Failures



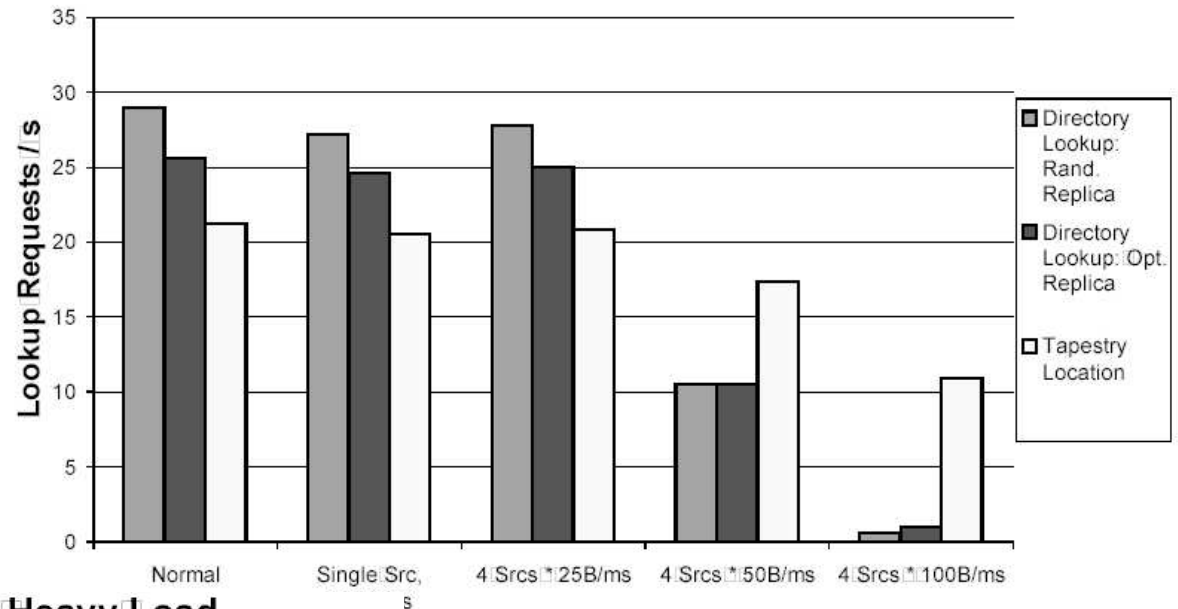
The Data

Effect of Multiple Roots on Latency

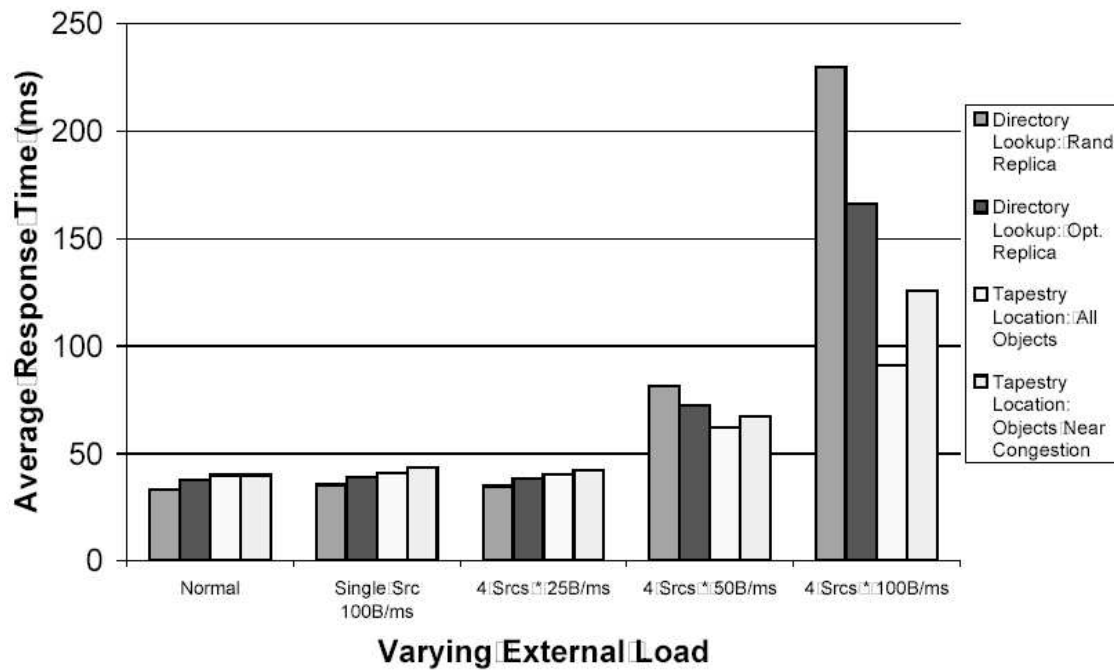


The Data

System-wide Throughput Under Heavy Load



Average Response Time Under Heavy Load



Varying External Load

Varying External Load