

Performance of Threaded Linked Lists

CS 220, Intro to Parallel Computing

Implementation	Number of Threads			
	1	2	4	8
Read-Write Locks	0.213	0.123	0.098	0.115
One Mutex for Entire List	0.211	0.450	0.385	0.457
One Mutex per Node	1.680	5.700	3.450	2.700

1000 initial keys. 100,000 total ops, 99.9% **Member**, 0.05% **Insert**, 0.05% **Delete**. Times in seconds.

Implementation	Number of Threads			
	1	2	4	8
Read-Write Locks	2.48	4.97	4.69	4.71
One Mutex for Entire List	2.50	5.13	5.04	5.11
One Mutex per Node	12.00	29.60	17.00	12.00

1000 initial keys. 100,000 total ops, 80% **Member**, 10% **Insert**, 10% **Delete**. Times in seconds.