

Benchmark Results

malloc-c and malloc-rs

C:

Number of allocations	Malloc runtime (ns)	Free runtime (ns)
10	282	149
100	2087	1296
1000	187746	49918
10000	2965090	1407816

Rust:

Number of allocations	Malloc runtime (ns)	Free runtime (ns)
10	456	171
100	5031	1488
1000	782390	160985
10000	10270961	2961104

matrix-c and matrix-rs

C:

Matrix dim.	Runtime (ns)	
40	33537	80
281912	160	2807064
320	23935532	

Rust:

Matrix dim.	Runtime (ns)	
40	49020	80
413897	160	3187199
320	25249436	

sort-c and sort-rs

C:

Array length	Insertion sort runtime (ns)	Merge sort runtime (ns)
Radix sort runtime (ns)	Validation runtime (ns)	
10	168	688
1843	21	100
2963	8984	5295
126	1000	135559
96818	39920	982
10000	14868382	1112055

Array length	Insertion sort runtime (ns)	Merge sort runtime (ns)
Radix sort runtime (ns)	Validation runtime (ns)	
392420	9463	

Rust:

Array length	Insertion sort runtime (ns)	Merge sort runtime (ns)
Radix sort runtime (ns)	Validation runtime (ns)	
10	116	490
1478	16	100
1688	5516	3155
55	1000	106577
68256	21687	452
10000	9510456	813836
221366	4489	

concurrency-c and concurrency-rs

C:

Number of threads	Matrix size	Runtime (ns)
1	10	41852
2	10	54338
4	10	92583
6	10	183286
8	10	227091
1	100	657328
2	100	400184
4	100	251194
6	100	264599
8	100	286981
1	400	46047054
2	400	24367671
4	400	12156049
6	400	9415956
8	400	9658438

Rust:

Number of threads	Matrix size	Runtime (ns)
1	10	39372
2	10	55271
4	10	85267
6	10	133467

Number of threads	Matrix size	Runtime (ns)
8	10	162697
1	100	923054
2	100	552538
4	100	307088
6	100	309694
8	100	313766
1	400	51287927
2	400	26605527
4	400	13590651
6	400	11203079
8	400	13722652