

Performance Evaluation for openMP

Run Time

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	0.0010	0.0010	0.0020	0.0040	0.0080
2	0.00008	0.0001	0.0002	0.0004	0.0008
4	0.00002	0.00005	0.0001	0.0002	0.0004
8	0.000015	0.000025	0.00005	0.0001	0.0002
16	0.00001	0.0000125	0.000025	0.00005	0.0001

speedups

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	1.0	1.0	1.0	1.0	1.0
2	12.5	10	10	10	10
4	50	20	20	20	20
8	66.667	40	40	40	40
16	100	80	80	80	80

Effeciencies

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	1.0	1.0	1.0	1.0	1.0
2	6.25	5	5	5	5
4	12.5	5	5	5	5
8	8.333	5	5	5	5
16	6.25	5	5	5	5

Performance Evaluation for MPI

Run time

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	0.000045	0.00015	0.00045	0.00180	0.00720
2	0.000023	0.00008	0.00022	0.00090	0.00360
4	0.000011	0.00004	0.00011	0.00045	0.00180
8	0.000006	0.00002	0.00005	0.00022	0.00090
16	0.000003	0.0010	0.0020	0.0040	0.0080

speedups

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	1.0	1.0	1.0	1.0	1.0
2	1.957	1.875	2.045	2	2
4	4.091	3.75	4.091	4	4
8	7.5	7.5	9	8.182	8
16	15	0.15	0.225	0.45	0.9

Effeciencies

comm_sz	Order of Matrix				
	1024	2048	4096	8192	16,384
1	1.0	1.0	1.0	1.0	1.0
2	0.978	0.938	1.023	1	1
4	1.023	0.938	1.023	1	1
8	0.938	0.938	1.125	1.023	1
16	0.938	0.009	0.014	0.028	0.056