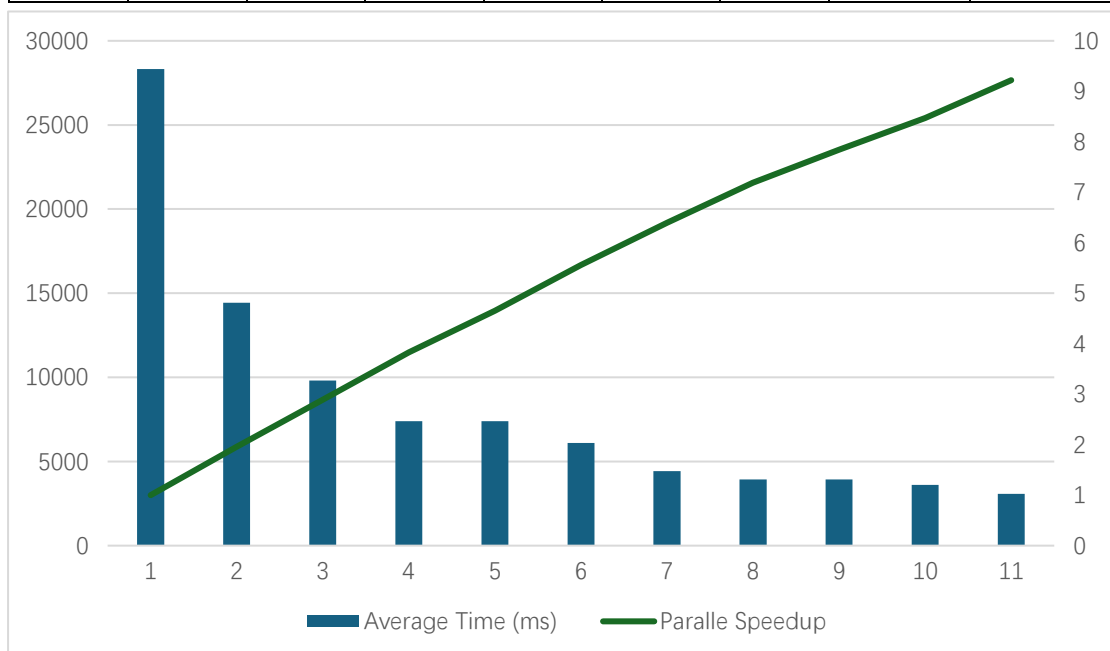


- One process - most naturally process 0 - will act as the master process, controlling the farm. The other processes - $P-1$ of them - will work as slaves or workers. The logic of the worker processes is simplest.
- *note the number of workers is one less than the -np value you specify to mpirun*

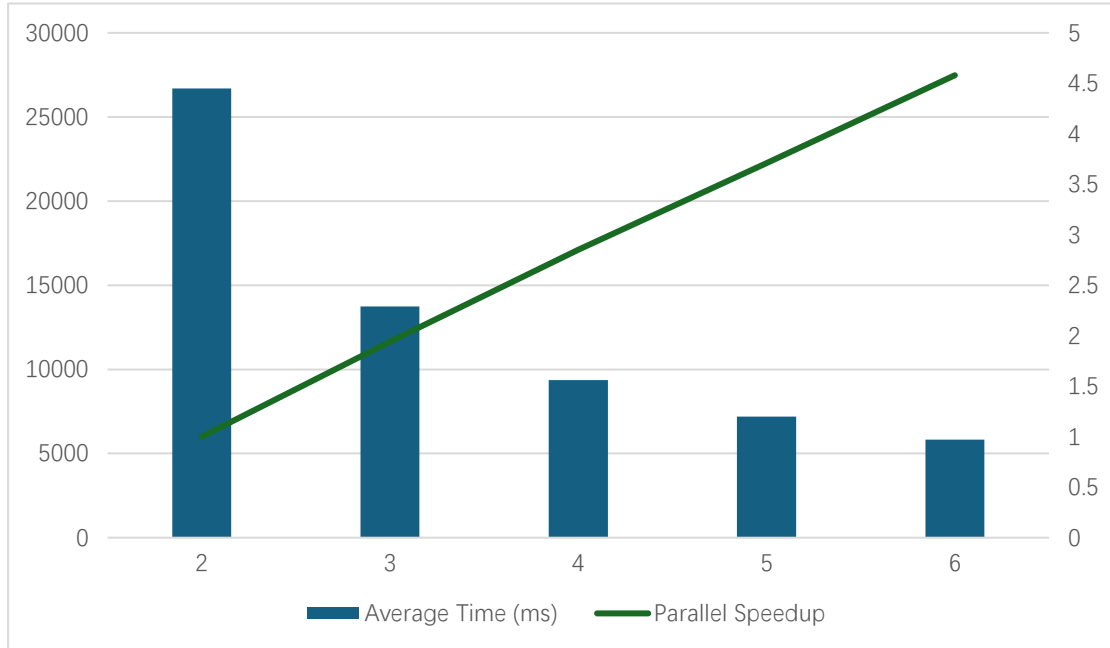
N = 1024, CUTOFF = 100000, block_size = 4, Multicore, MPJMandelbrot

Nodes	1 st (ms)	2 nd (ms)	3 rd (ms)	4 th (ms)	5 th (ms)	Ave (ms)	Parallel Speedup	Efficiency (E _p %)
2	27881	28120	28921	28121	28581	28325	1	50
3	14353	14374	14531	14461	14407	14425	1.96	65.3
4	9925	9716	9910	9696	9800	9809	2.89	72.3
5	7502	7368	7369	7364	7386	7398	3.83	76.6
6	6065	6314	6069	6053	5982	6097	4.65	77.5
7	5118	5155	5040	5123	5043	5096	5.56	79.4
8	4425	4477	4437	4394	4408	4428	6.40	80.0
9	3869	3937	3919	4018	3967	3942	7.19	79.9
10	3660	3675	3611	3559	3557	3612	7.84	78.4
11	3453	3372	3234	3406	3247	3342	8.47	77.0
12	3076	3164	2952	3015	3150	3071	9.22	76.8



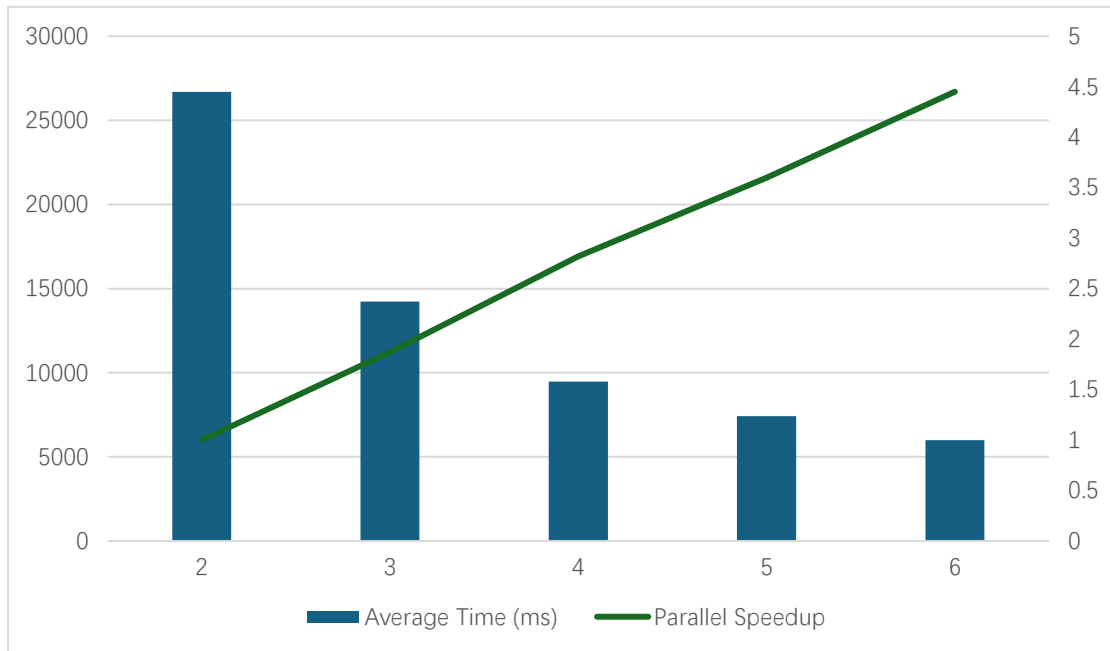
N = 1024, CUTOFF = 100000, Cluster, block_size = 4,

Nodes	1 st (ms)	2 nd (ms)	3 rd (ms)	4 th (ms)	5 th (ms)	Ave (ms)	Parallel Speedup	Efficiency (E _p %)
2	26721	26732	26692	26676	26646	26693	1	50.0
3	13645	13693	13739	13955	13660	13738	1.94	64.7
4	9293	9322	9302	9660	9293	9374	2.85	71.3
5	7172	7245	7299	7144	7147	7201	3.71	74.2
6	5802	5840	5882	5857	5814	5832	4.58	76.3



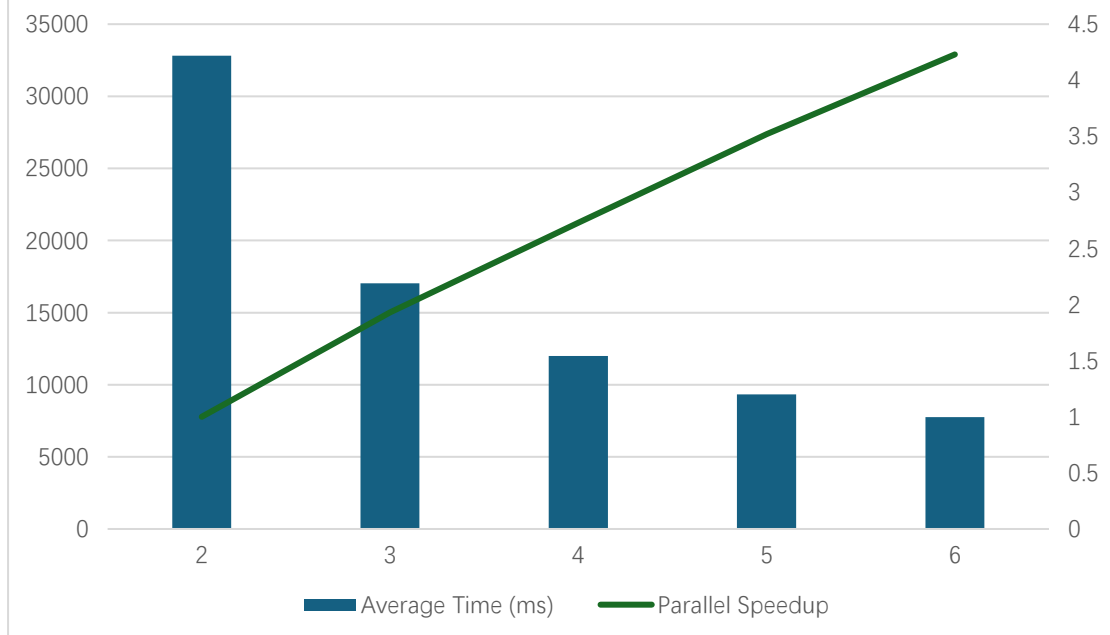
N = 1024, CUTOFF = 100000, block_size = 4, Multicore-Cluster (one head node with 2 worker nodes) (2-node data from above)

Nodes	1 st (ms)	2 nd (ms)	3 rd (ms)	4 th (ms)	5 th (ms)	Ave (ms)	Parallel Speedup	Efficiency (E _p %)
2	26721	26732	26692	26676	26646	26693	1	50.0
3	14398	14178	14339	14102	14171	14238	1.87	62.3
4	9357	9497	9487	9510	9537	9478	2.82	70.5
5	7345	7635	7213	7415	7481	7424	3.60	72.0
6	6045	6012	5998	5943	5968	5993	4.45	74.2



New code, N = 1024, CUTOFF = 100000. Block_size = 64, Multicore mode

Nodes	1 st (ms)	2 nd (ms)	3 rd (ms)	4 th (ms)	5 th (ms)	Ave (ms)	Parallel Speedup	Efficiency (E _p %)
2	34161	32682	32054	32624	32512	32807	1	50.0
3	17056	16970	16859	17148	17159	17038	1.93	64.3
4	11798	12349	12215	11935	11703	12000	2.73	68.3
5	9483	9343	9269	9186	9367	9330	3.52	70.4
6	7655	7565	7806	7758	8021	7761	4.23	70.5



New code, N = 1024, CUTOFF = 100000. Block_size = 64, cluster mode

Nodes	1 st (ms)	2 nd (ms)	3 rd (ms)	4 th (ms)	5 th (ms)	Ave (ms)	Parallel Speedup	Efficiency (E _p %)
2	71283	71460	72024	71409	72095	71654	1	50.0
3	52680	52778	52821	52930	52473	52736	1.36	45.3
4	46652	46874	46919	46942	46813	46840	1.53	38.2
5	43958	44080	44102	44010	44081	44046	1.63	32.5
6	42352	42305	42118	42092	42329	42239	1.70	28.3

