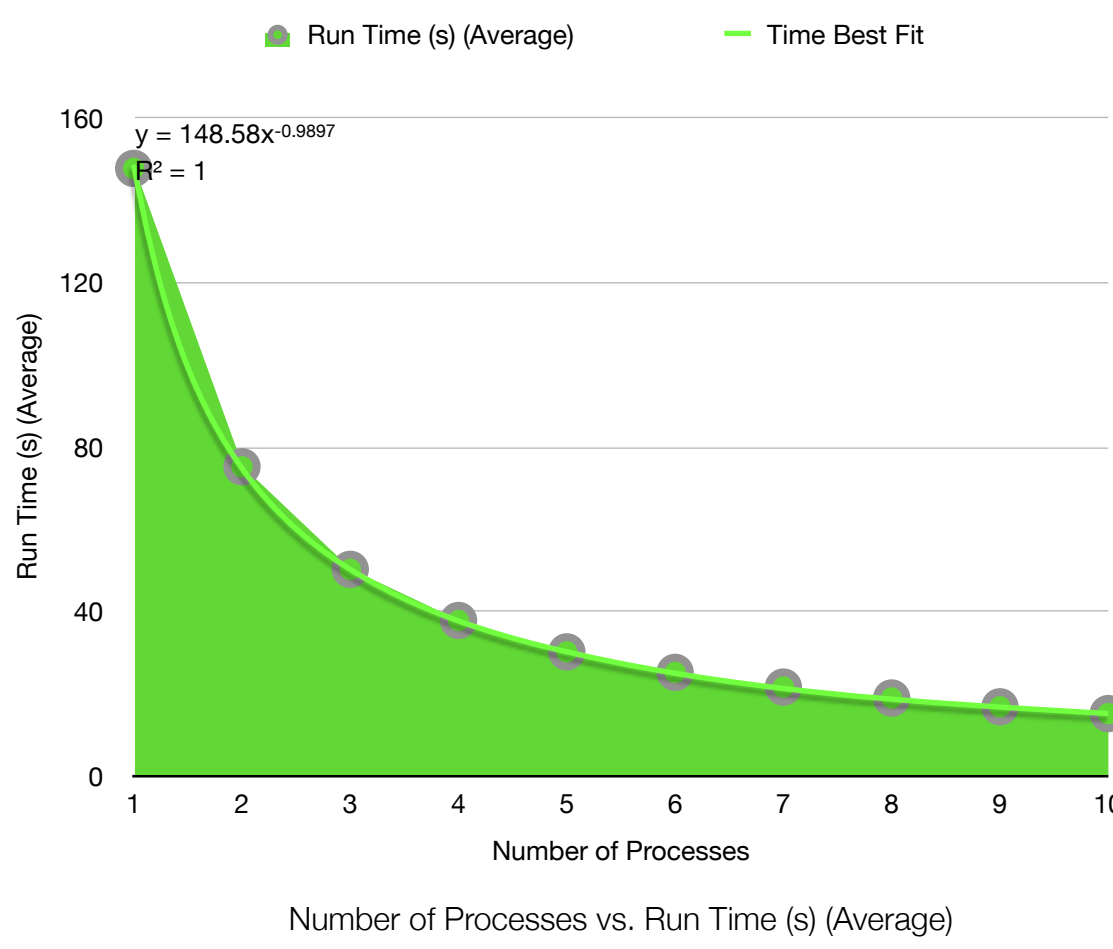
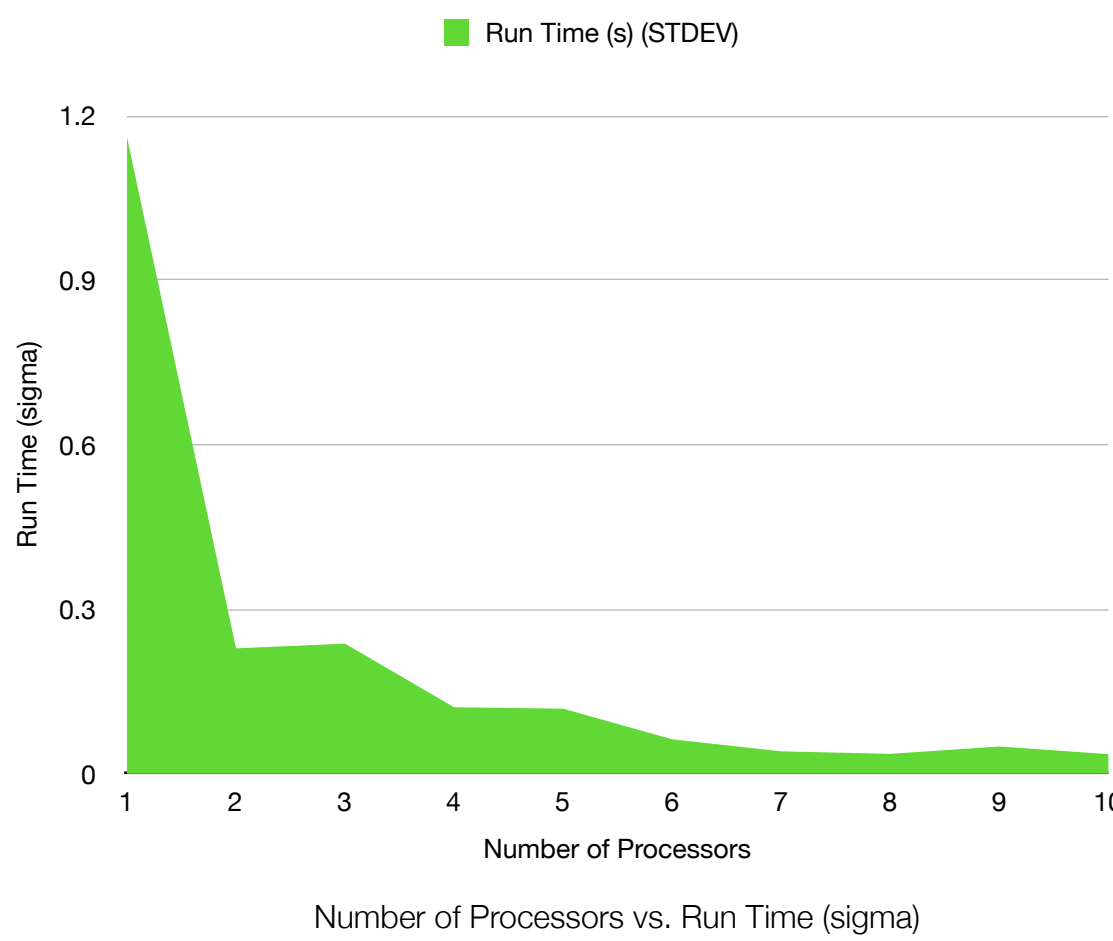
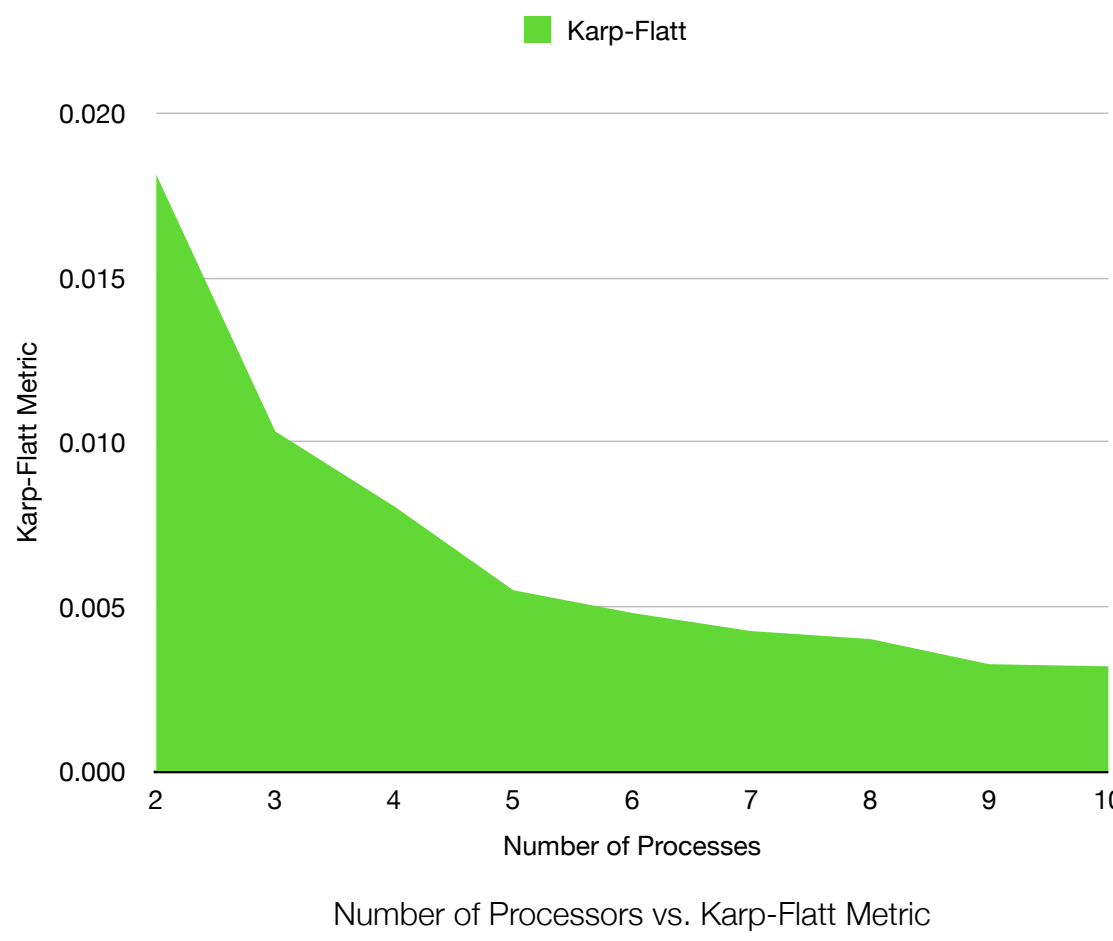
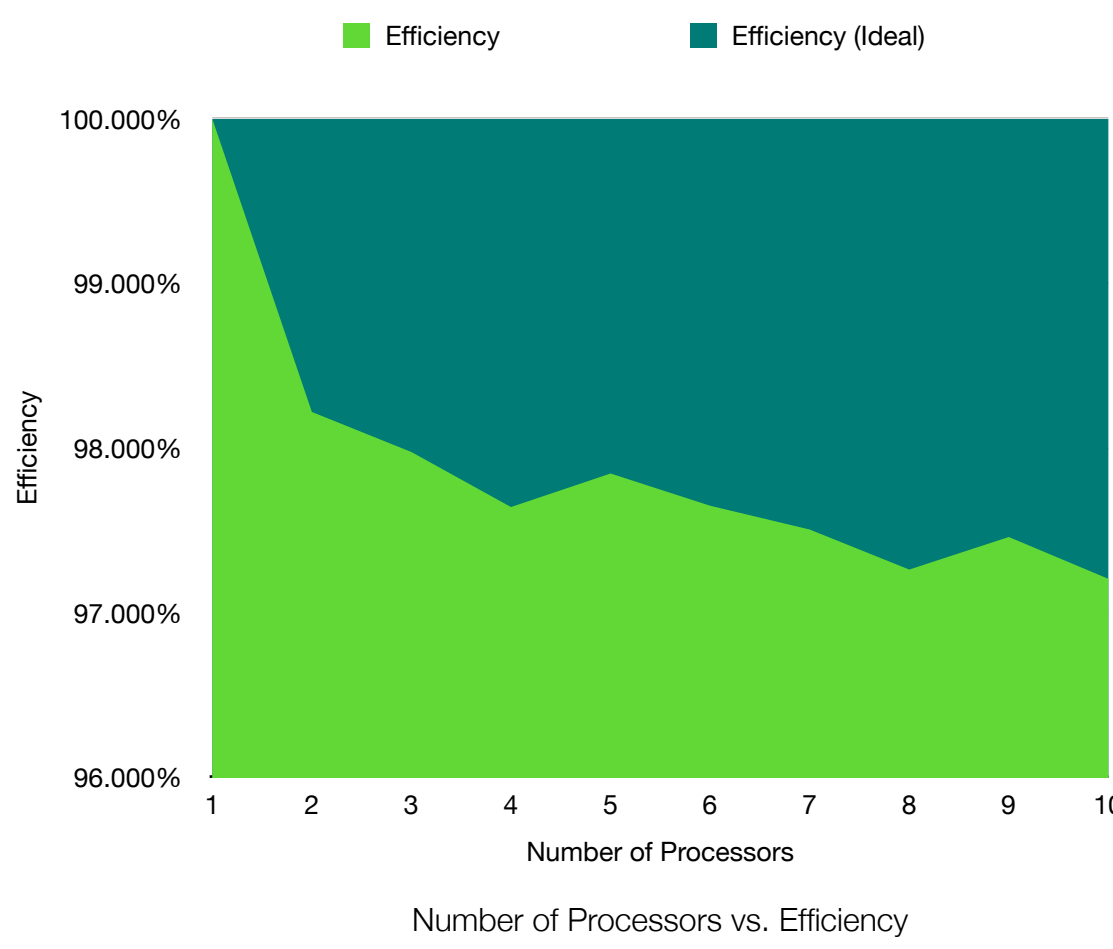
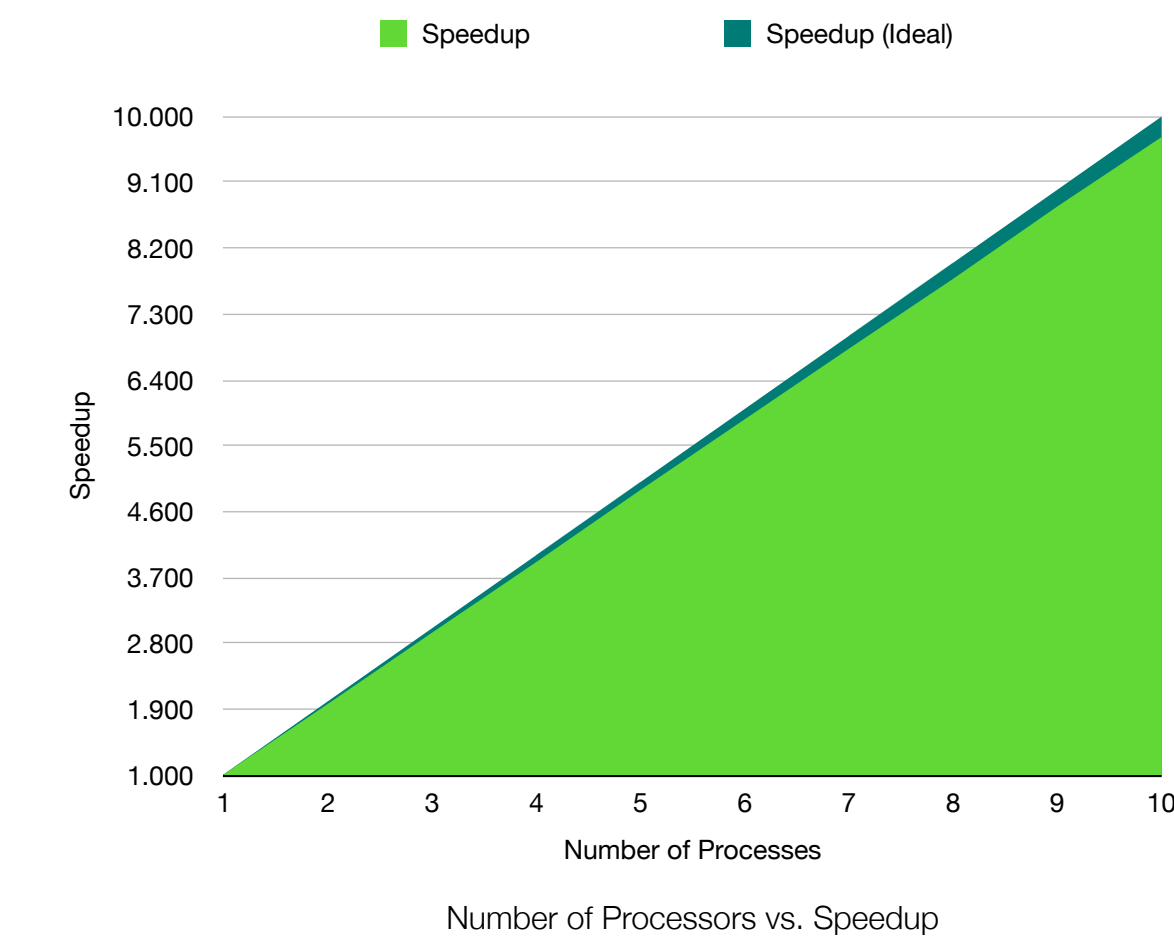


Benchmark Raw Data										
Number Processes	Number Samples	Number Dimensions	Number Clusters	Spread	Seed	Run Time (s)	Did Reach Convergence?	Iteration Count	Max Centroid Difference	
	1	1000000	25	50	3.5	1234	150.324	yes	250	0
	1	1000000	25	50	3.5	1234	149.384	yes	250	0
	1	1000000	25	50	3.5	1234	147.081	yes	250	0
	1	1000000	25	50	3.5	1234	147.1	yes	250	0
	1	1000000	25	50	3.5	1234	147.178	yes	250	0
	1	1000000	25	50	3.5	1234	147.104	yes	250	0
	1	1000000	25	50	3.5	1234	147.236	yes	250	0
	1	1000000	25	50	3.5	1234	147.264	yes	250	0
	1	1000000	25	50	3.5	1234	147.127	yes	250	0
	1	1000000	25	50	3.5	1234	147.155	yes	250	0
	2	1000000	25	50	3.5	1234	75.3997	yes	250	0
	2	1000000	25	50	3.5	1234	75.1108	yes	250	0
	2	1000000	25	50	3.5	1234	75.2723	yes	250	0
	2	1000000	25	50	3.5	1234	74.9588	yes	250	0
	2	1000000	25	50	3.5	1234	75.1326	yes	250	0
	2	1000000	25	50	3.5	1234	74.9153	yes	250	0
	2	1000000	25	50	3.5	1234	75.4399	yes	250	0
	2	1000000	25	50	3.5	1234	75.437	yes	250	0
	2	1000000	25	50	3.5	1234	75.367	yes	250	0
	2	1000000	25	50	3.5	1234	74.8342	yes	250	0
	3	1000000	25	50	3.5	1234	50.8846	yes	250	0
	3	1000000	25	50	3.5	1234	50.2044	yes	250	0
	3	1000000	25	50	3.5	1234	50.2518	yes	250	0
	3	1000000	25	50	3.5	1234	50.3049	yes	250	0
	3	1000000	25	50	3.5	1234	50.0775	yes	250	0
	3	1000000	25	50	3.5	1234	50.1603	yes	250	0
	3	1000000	25	50	3.5	1234	50.159	yes	250	0
	3	1000000	25	50	3.5	1234	50.1796	yes	250	0
	3	1000000	25	50	3.5	1234	50.0326	yes	250	0
	3	1000000	25	50	3.5	1234	50.2359	yes	250	0
	4	1000000	25	50	3.5	1234	37.9243	yes	250	0
	4	1000000	25	50	3.5	1234	37.7765	yes	250	0
	4	1000000	25	50	3.5	1234	37.7857	yes	250	0
	4	1000000	25	50	3.5	1234	37.6274	yes	250	0
	4	1000000	25	50	3.5	1234	37.6745	yes	250	0
	4	1000000	25	50	3.5	1234	37.8457	yes	250	0
	4	1000000	25	50	3.5	1234	37.8742	yes	250	0
	4	1000000	25	50	3.5	1234	37.8673	yes	250	0
	4	1000000	25	50	3.5	1234	38.04	yes	250	0
	4	1000000	25	50	3.5	1234	37.7425	yes	250	0
	5	1000000	25	50	3.5	1234	30.2173	yes	250	0
	5	1000000	25	50	3.5	1234	30.2512	yes	250	0
	5	1000000	25	50	3.5	1234	30.1832	yes	250	0
	5	1000000	25	50	3.5	1234	30.179	yes	250	0
	5	1000000	25	50	3.5	1234	30.4781	yes	250	0
	5	1000000	25	50	3.5	1234	30.0781	yes	250	0
	5	1000000	25	50	3.5	1234	30.1345	yes	250	0
	5	1000000	25	50	3.5	1234	30.1905	yes	250	0
	5	1000000	25	50	3.5	1234	30.1391	yes	250	0
	5	1000000	25	50	3.5	1234	30.0451	yes	250	0
	6	1000000	25	50	3.5	1234	25.3527	yes	250	0
	6	1000000	25	50	3.5	1234	25.1385	yes	250	0
	6	1000000	25	50	3.5	1234	25.226	yes	250	0
	6	1000000	25	50	3.5	1234	25.2348	yes	250	0
	6	1000000	25	50	3.5	1234	25.2264	yes	250	0
	6	1000000	25	50	3.5	1234	25.2167	yes	250	0
	6	1000000	25	50	3.5	1234	25.171	yes	250	0
	6	1000000	25	50	3.5	1234	25.1335	yes	250	0
	6	1000000	25	50	3.5	1234	25.2141	yes	250	0
	6	1000000	25	50	3.5	1234	25.171	yes	250	0
	7	1000000	25	50	3.5	1234	21.7122	yes	250	0
	7	1000000	25	50	3.5	1234	21.6635	yes	250	0
	7	1000000	25	50	3.5	1234	21.6251	yes	250	0
	7	1000000	25	50	3.5	1234	21.6052	yes	250	0
	7	1000000	25	50	3.5	1234	21.589	yes	250	0
	7	1000000	25	50	3.5	1234	21.6942	yes	250	0
	7	1000000	25	50	3.5	1234	21.6411	yes	250	0
	7	1000000	25	50	3.5	1234	21.5935	yes	250	0
	7	1000000	25	50	3.5	1234	21.6421	yes	250	0
	7	1000000	25	50	3.5	1234	21.6271	yes	250	0
	8	1000000	25	50	3.5	1234	19.0289	yes	250	0
	8	1000000	25	50	3.5	1234	19.0487	yes	250	0
	8	1000000	25	50	3.5	1234	18.954	yes	250	0
	8	1000000	25	50	3.5	1234	18.9716	yes	250	0
	8	1000000	25	50	3.5	1234	18.9363	yes	250	0
	8	1000000	25	50	3.5	1234	19.0059	yes	250	0
	8	1000000	25	50	3.5	1234	18.9579	yes	250	0
	8	1000000	25	50	3.5	1234	18.9491	yes	250	0
	8	1000000	25	50	3.5	1234	18.9781	yes	250	0
	8	1000000	25	50	3.5	1234	18.987	yes	250	0
	9	1000000	25	50	3.5	1234	16.9338	yes	250	0
	9	1000000	25	50	3.5	1234	16.8611	yes	250	0
	9	1000000	25	50	3.5	1234	16.7802	yes	250	0
	9	1000000	25	50	3.5	1234	16.8382	yes	250	0
	9	1000000	25	50	3.5	1234	16.8107	yes	250	0
	9	1000000	25	50	3.5	1234	16.8381	yes	250	0
	9	1000000	25	50	3.5	1234	16.8288	yes	250	0
	9	1000000	25	50	3.5	1234	16.7647	yes	250	0
	9	1000000	25	50	3.5	1234	16.8929	yes	250	0
	9	1000000	25	50	3.5	1234	16.8355	yes	250	0
	10	1000000	25	50	3.5	1234	15.2009	yes	250	0
	10	1000000	25	50	3.5	1234	15.1887	yes	250	0
	10	1000000	25	50	3.5	1234	15.1883	yes	250	0
	10	1000000	25	50	3.5	1234	15.1579	yes	250	0
	10	1000000	25	50	3.5	1234	15.2525	yes	250	0
	10	1000000	25	50	3.5	1234	15.1761	yes	250	0
	10	1000000	25	50	3.5	1234	15.2619	yes	250	0
	10	1000000	25	50	3.5	1234	15.1596	yes	250	0
	10	1000000	25	50	3.5	1234	15.1819	yes	250	0
	10	1000000	25	50	3.5	1234	15.1743	yes	250	0

Metrics											
Number Processes	Number Samples (Average)	Number Dimensions (Average)	Number Clusters (Average)	Spread (Average)	Seed (Average)	Run Time (s) (Average)	Run Time (s) (STDEV)	Iteration Count (Average)	Speedup	Efficiency	Karp-Flatt
1	1000000	25	50	3.5	1234	147.6953	1.16058501052989	250	1.000	100.000%	
2	1000000	25	50	3.5	1234	75.18676	0.228644552866574	250	1.964	98.219%	0.018
3	1000000	25	50	3.5	1234	50.24906	0.23718394268303	250	2.939	97.975%	0.010
4	1000000	25	50	3.5	1234	37.81581	0.121233635321776	250	3.906	97.641%	0.008
5	1000000	25	50	3.5	1234	30.18961	0.11871861643773	250	4.892	97.845%	0.006
6	1000000	25	50	3.5	1234	25.20847	0.0628473291220699	250	5.859	97.649%	0.005
7	1000000	25	50	3.5	1234	21.6393	0.040914762345366	250	6.825	97.505%	0.004
8	1000000	25	50	3.5	1234	18.98175	0.0363672089785412	250	7.781	97.261%	0.004
9	1000000	25	50	3.5	1234	16.8384	0.0497478307734786	250	8.771	97.459%	0.003
10	1000000	25	50	3.5	1234	15.1942	0.0357178589006178	250	9.720	97.205%	0.003



Pivot Benchmarks

Number Processes	Number Samples	Number Dimensions	Number Clusters	Spread	Seed	Run Time (s) (Average)	Run Time (s) (STDEV)	Iteration Count
1	1000000	25	50	3.5	1234	147.6953	1.16058501052989	250
2	1000000	25	50	3.5	1234	75.18676	0.228644552866574	250
3	1000000	25	50	3.5	1234	50.24906	0.23718394268303	250
4	1000000	25	50	3.5	1234	37.81581	0.121233635321776	250
5	1000000	25	50	3.5	1234	30.18961	0.11871861643773	250
6	1000000	25	50	3.5	1234	25.20847	0.0628473291220699	250
7	1000000	25	50	3.5	1234	21.6393	0.040914762345366	250
8	1000000	25	50	3.5	1234	18.98175	0.0363672089785412	250
9	1000000	25	50	3.5	1234	16.8384	0.0497478307734786	250
10	1000000	25	50	3.5	1234	15.1942	0.0357178589006178	250
Grand Total	1000000	25	50	3.5	1234	43.899867	38.9783126388655	250