

Performance Report: Lab 4

Matmul.s

Size	GHz	Time Elapsed (sec)	Instructions	Predicted Time (sec)	Insn per cycle	Percent Difference
16	1.517	0.006684952	3,703,923	0.00301433384	0.81	54.91%
64	1.987	0.137948798	236,214,927	0.13509111897	0.88	2.07%
256	1.999	9.194479430	15,482,588,276	9.22043657305	0.84	.28%
1024	1.999	596.598254002	1,015,692,840,360	597.765259312	0.85	.19%

Matmul-mul.s

Size	GHz	Time Elapsed (sec)	Instructions	Predicted Time (sec)	Insn per cycle	Percent Difference
16	0.813	0.003772617	416,994	0.00102581549	0.50	72.80%
64	1.821	0.011153702	7,523,117	0.00724791371	0.57	35.01%
256	1.994	0.587017121	307,098,340	0.57041186522	0.27	2.82%
1024	1.997	34.461252725	16,996,044,150	34.00909285	0.25	1.31%

Ahmdal's law: $S(N) = 1/((1-P) + (P/N))$, 94 cpus on arm server. Assuming 100% speedup:

$$100 = 1/((1-P) + (P/94)) \Rightarrow P = 1.00064$$