

FogBus Testing Results

Number of tasks (in 5 min)

	With Blockchain			Without Blockchain		
Max Load	94	88	267	653	135	1693
0.2 instr/sec	51	49	50	52	43	60

Energy per second - Power (watts)

	With Blockchain			Without Blockchain		
Max Load	22.5	136	21	29.5	148	28
0.2 instr/sec	21.5	134	20	23.5	135	22

Energy per task (joules)

	With Blockchain			Without Blockchain		
Max Load	71.80851	463.6364	23.59551	13.55283	328.8889	4.961607
0.2 instr/sec	126.4706	820.4082	120	135.5769	941.8605	110

Data packets sent / second

	With Blockchain			Without Blockchain		
Max Load	892	7214	142	1857	1482	1126
0.2 instr/sec	412	3241	146	483	2165	141

Data packets received / second

	With Blockchain			Without Blockchain		
Max Load	3949	45968	524	2858	4792	3219
0.2 instr/sec	504	29824	513	519	1133	506

Network Usage per task

	With Blockchain			Without Blockchain		
Max Load	51.5	604.3409	2.494382	7.220521	46.47407	2.56645
0.2 instr/sec	17.96078	674.7959	13.18	19.26923	76.69767	10.78333

Latency (seconds)

Remarks

Obtained from in script measurements

Obtained through Joulemeter application

Power X 5 minutes / Number of tasks

Obtained from Windows performance monitor

Obtained from Windows performance monitor

Data packets (sent + recd) / Number of tasks

Legend

Fog Only

Cloud Only

Master Only

	With Blockchain			Without Blockchain		
Max Load	3.178858	3.486904	1.166281	0.460067	2.240126	0.17726
0.2 instr/sec	3.043652	3.210355	1.188388	0.583891	2.368366	0.158922

Obtained from in script measurements

Master CPU Usage (%)

	With Blockchain			Without Blockchain		
Max Load	9.08	28.12	28.32	10.55	27.18	28.5
0.2 instr/sec	8.46	28.43	13.67	8.78	18.67	22.96

Obtained from Windows performance monitor

Master RAM Usage (%)

	With Blockchain			Without Blockchain		
Max Load	49.03	65.159	46.26	48.218	60.16	53.258
0.2 instr/sec	49.175	66.017	48.19	47.509	59.86	46.64

Obtained from Windows performance monitor

Master Cache Usage (E08 bytes)

	With Blockchain			Without Blockchain		
Max Load	1.43	2.02	2.52	1.42	2.08	2.15
0.2 instr/sec	1.43	1.98	1.98	1.43	2.04	1.98

Obtained from Windows performance monitor