

COMPUTATIONAL RESULTS

CPU Benchmark:

Workload	Concurrency	MyCPUBench Measured Ops/Sec (GigaOPS)	HPL Measured Ops/Sec (GigaOPS)	Theoretical Ops/Sec (GigaOPS)	MyCPUBench Efficiency (%)	HPL Efficiency (%)
QP	1	24.813	N/A	585.0000	4.2	N/A
QP	2	28.011	N/A	585.0000	4.76	N/A
QP	4	21.321	N/A	585.0000	3.62	N/A
HP	1	24.272	N/A	295.0000	8.22	N/A
HP	2	27.322	N/A	295.0000	9.26	N/A
HP	4	22.573	N/A	295.0000	7.65	N/A
SP	1	20.242	N/A	147.0000	13.77	N/A
SP	2	25.252	N/A	147.0000	17.17	N/A
SP	4	23.980	N/A	147.0000	16.12	N/A
DP	1	24.691	37.067	73.5000	30.026	50.05
DP	2	26.881	68.75	73.5000	33.135	91.89
DP	4	22.935	70.014	73.5000	31	94.59

Memory Benchmark:

Workload	Concurrency	Blocksize	MyRAMBench Measured Throughput (GB/sec)	pmbw Measured Throughput (GB/sec)	Theoretical Throughput (GB/sec)	MyRAMBench Efficiency (%)	pmbw Efficiency (%)
RWS	1	1KB	3.7377	16.5	67.28	5.56	24.5243757
RWS	1	1MB	4.189	21.4	67.28	6.23	31.8073721
RWS	1	10MB	6.182	20.1	67.28	9.19	29.8751486
RWS	2	1KB	8.579	21.2	67.28	12.75	31.5101070
RWS	2	1MB	8.67	15	67.28	12.89	22.2948870
RWS	2	10MB	12.89	35	67.28	19.16	52.0214030
RWS	4	1KB	6.82	22	67.28	10.14	32.6991676
RWS	4	1MB	12.72	40	67.28	18.91	59.4530321
RWS	4	10MB	16.25	31.1	67.28	24.15	46.2247324
RWR	1	1KB	1.431	3.5	67.28	2.13	5.20214030
RWR	1	1MB	3.872	0.61	67.28	5.76	0.90665874
RWR	1	10MB	3.225	0.49	67.28	4.79	0.72829964

Disk Benchmark:

Workload	Concurrency	Block Size	MyDiskBench Measured Throughput (MB/sec)	IOZone Measured Throughput	Theoretical Throughput (MB/sec)	MyDiskBench Efficiency (%)	IOZone Efficiency (%)
RS	1	1MB	127.15	250	372	34.18	67.20
RS	1	10MB	318.87	250	372	85.72	67.20
RS	1	100MB	280.87	250	372	75.50	67.20
RS	2	1MB	349.57	263	744	46.99	35.35
RS	2	10MB	332.69	270	744	44.72	36.29
RS	2	100MB	282.85	293	744	38.02	39.38
RS	4	1MB	348.75	272	1488	23.44	18.28
RS	4	10MB	340.5	290	1488	22.88	19.49
RS	4	100MB	286.19	300	1488	19.23	20.16
WS	1	1MB	87.8	255	172	51.05	148.26
WS	1	10MB	201.05	252	172	116.89	146.51
WS	1	100MB	213.2	225	172	123.95	130.81
WS	2	1MB	123.18	301	344	35.81	87.50
WS	2	10MB	197.36	311	344	57.37	90.41
WS	2	100MB	216.08	360	344	62.81	104.65
WS	4	1MB	186.15	346	688	27.06	50.29
WS	4	10MB	205.31	371	688	29.84	53.92
WS	4	100MB	211.13	355	688	30.69	51.60
RR	1	1MB	742.37	135	540	137.48	25.00
RR	1	10MB	88.81	150	540	16.45	27.78
RR	1	100MB	454.04	147	540	84.08	27.22

RR	2	1MB	284.05	161	1080	26.30	14.91
RR	2	10MB	318.84	170	1080	29.52	15.74
RR	2	100MB	1540.14	175	1080	142.61	16.20
RR	4	1MB	211.71	160	2160	9.80	7.41
RR	4	10MB	344.45	162	2160	15.95	7.50
RR	4	100MB	1828.55	165	2160	84.66	7.64
WR	1	1MB	183.3	240	410	44.71	58.54
WR	1	10MB	185.14	242	410	45.16	59.02
WR	1	100MB	454.04	248	410	110.74	60.49
WR	2	1MB	187.63	281	820	22.88	34.27
WR	2	10MB	191.21	289	820	23.32	35.24
WR	2	100MB	1540.14	301	820	187.82	36.71
WR	4	1MB	188.62	200	1640	11.50	12.20
WR	4	10MB	182.28	211	1640	11.11	12.87
WR	4	100MB	1828.55	211	1640	111.50	12.87

Workload	Con- currency	Block Size	MyDiskBench Measured Latency (ms)	IOZone Measured Latency (ms)	Theoretical Latency (ms)	MyDiskBench Efficiency (%)	IOZone Efficiency (%)
RR	1	1KB	0.003	1.3	0.5	99.4	-160
RR	2	1KB	0.003	1.2	0.5	99.4	-140
RR	4	1KB	0.001	2.1	0.5	99.8	-320
RR	8	1KB	0.008	1.2	0.5	98.4	-140
RR	16	1KB	0.0061	0.7	0.5	98.78	-40

RR	32	1KB	0.0045	1.1	0.5	99.1	-120
RR	64	1KB	0.0018	1.1	0.5	99.64	-120
RR	128	1KB	0.0011	0.61	0.5	99.78	-22
WR	1	1KB	0.81	1.8	0.5	-62	-260
WR	2	1KB	0.88	1.9	0.5	-76	-280
WR	4	1KB	0.61	3.1	0.5	-22	-520
WR	8	1KB	0.6	0.81	0.5	-20	-62
WR	16	1KB	0.39	0.87	0.5	22	-74
WR	32	1KB	0.21	0.5	0.5	58	0
WR	64	1KB	0.17	0.55	0.5	66	-10
WR	128	1KB	0.11	0.67	0.5	78	-34

Workload	Concurrency	Block Size	MyDiskBench Measured IOPS	IOZone Measured IOPS	Theoretical IOPS	MyDiskBench Efficiency (%)	IOZone Efficiency (%)
RR	1	1KB	333333.33	521122	363281.25	8.24	-43.44863656
RR	2	1KB	333333.33	367812	726562.5	54.12	49.3764129
RR	4	1KB	100000	211134	1453125	93.12	85.47034839
RR	8	1KB	125000	411991	2906250	95.70	85.82396559
RR	16	1KB	476190.762	768711	5812500	91.81	86.77486452

RR	32	1KB	222222.22	521113	11625000	98.09	95.51730753
RR	64	1KB	555555.56	481133	23250000	97.61	97.93061075
RR	128	1KB	909090.091	856112	46500000	98.04	98.15889892
WR	1	1KB	123456.9	219111	167968.75	26.50	-30.44747907
WR	2	1KB	113636.63	241525	335937.5	66.17	28.10418605
WR	4	1KB	163934.26	135678	671875	75.60	79.80606512
WR	8	1KB	166666.71	526133	1343750	87.60	60.84591628
WR	16	1KB	256410.56	712223	2687500	90.46	73.49867907
WR	32	1KB	476190.762	884525	5375000	91.14	83.54372093
WR	64	1KB	588235.95	811567	10750000	94.53	92.45053953
WR	128	1KB	909090.09	658901	21500000	95.77	96.93534419

Network Benchmark:

Protocol	Concurrency	BlockSize	MyNETBench Measured Throughput (Mb/sec)	iperf Measured Throughput (Mb/sec)	Theoretical Throughput (Mb/sec)	MyNETBench Efficiency (%)	iperf Efficiency (%)
TCP	1	1KB	1599.9	2000.11	10000	15.999	20.0011
TCP	1	32KB	1970.73	2218.52	10000	19.7073	22.1852

TCP	2	1KB	2362.5	3062.63	10000	23.625	30.6263
TCP	2	32KB	2337.9	4071.25	10000	23.379	40.7125
TCP	4	1KB	2422.47	4710.32	10000	24.2247	47.1032
TCP	4	32KB	2514.81	4898.22	10000	25.1481	48.9822
TCP	8	1KB	2459.7	3912.32	10000	24.597	39.1232
TCP	8	32KB	2511.31	4991.62	10000	25.1131	49.9162
UDP	1	1KB	881.78	1500	10000	8.8178	15
UDP	1	32KB	2301.34	6211.35	10000	23.0134	62.1135
UDP	2	1KB	1019.52	1481.2	10000	10.1952	14.812
UDP	2	32KB	3923.78	8108.32	10000	39.2378	81.0832
UDP	4	1KB	1265.34	3502.32	10000	12.6534	35.0232
UDP	4	32KB	4281.76	8110.32	10000	42.8176	81.1032
UDP	8	1KB	1183.45	1341.36	10000	11.8345	13.4136
UDP	8	32KB	4310.11	9110.35	10000	43.1011	91.1035

Protocol	Concurrency	MessageSize	MyNETBench Measured Throughput (Mb/sec)	Ping Measured latency Measured latency (ms)	Theoretical Throughput (Mb/sec)	MyNETBench Efficiency (%)	iperf Efficiency (%)
TCP	1	1B	0.216	0.0045	0.0007	-30757.1429	-542.8571429
TCP	2	1B	0.0919	0.003	0.0007	-13028.5714	-328.5714286
TCP	4	1B	0.053	0.0031	0.0007	-7471.42857	-342.8571429
TCP	8	1B	0.0241	0.006	0.0007	-3342.85714	-757.1428571
UDP	1	1B	0.11	0.0039	0.0007	-15614.2857	-457.1428571
UDP	2	1B	0.23	0.0025	0.0007	-32757.1429	-257.1428571
UDP	4	1B	0.17	0.00085	0.0007	-24185.7143	-21.42857143
UDP	8	1B	0.28	0.00071	0.0007	-39900	-1.428571429