

TO: MTB Distribution
FROM: Roger A. Roach
DATE: January 20, 1976
SUBJECT: Multics Performance Test Results as of System 27.6

Attached is a summary of the results from the performance tests done between October 27, 1975 and January 19, 1976. As you can see, we have made good progress in all areas. Keep up the good work!

Current Status (System 27.6)

	27.1 values	27.6 values	% change
Elapsed Time:	61.3 min	54.8 min	-10.6%
Virtual CPU:	2247 sec	2114 sec	- 5.9%
Total CPU:	3366 sec	3048 sec	- 9.4%
Page Faults:	498671	431752	-13.4%
Memory Units:	35936	33941	- 5.6%

related MTB's:

MTB-245 Multics Performance Test Results as of System 27.1
MTB-223 Multics Performance Test Results as of System 26.4a
MTB-218 Multics Performance Test Results as of System 26.1
MTB-208 Multics Performance Test Results as of System 25.7
MTB-174 Multics Performance Test Results (System 25.2)
MTB-146 Backup Performance Gains
MTB-132 Multics Performance Test Results (System 24.1c)
MTB-126 Revision of Multics Performance Tests
MTB-087 Multics Performance Goals for 1974

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Metering Comparisons for 27.1, 27.2, 27.2c, 27.3 27.4, 27.5, 27.6

System:	27.1	27.2	27.2c	27.3	27.3 (2)	27.3	27.4	27.5	27.6
Date:	10/27/75	11/06/75	11/24/75	11/24/75	12/03/75	12/11/75	12/15/75	01/19/76	01/18/76
Write-through status:	none	none	none	none	none	none	none	none	none
SYST:	none	none	none	none	none	none	none	none	none
CPU:	A	A	A	A	A	A	A	A	A
Cache	on	on	on	on	on	on	on	on	on
Memories:	A,8	A,8	A,8	A,8	A,8	A,8	A,8	A,8	A,8
External Interlace:	off	off	off	off	off	off	off	off	off
Disk Channels:	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4

Elapsed Time:	61.3 min	57.7 min	57.2 min	58.8 min	58.0 min	57.9 min	58.0 min	55.6 min	54.8 min
Costs (shift 1):	\$535.75	\$529.07	\$516.70	\$536.46	\$525.52	\$516.30	\$527.75	\$511.44	\$505.46
Costs (shift 2):	\$290.53	\$286.95	\$280.21	\$290.98	\$285.02	\$279.98	\$286.22	\$277.37	\$274.10
Costs (shift 3):	\$190.56	\$188.29	\$183.83	\$191.00	\$187.04	\$183.65	\$187.81	\$181.98	\$179.80
CPU, total:	3366 sec	3209 sec	3180 sec	3224 sec	3193 sec	3212 sec	3175 sec	3065 sec	3048 sec
CPU, virtual:	2247 sec	2163 sec	2144 sec	2151 sec	2145 sec	2163 sec	2165 sec	2112 sec	2114 sec
CPU, good (1):	2409 sec	2306 sec	2267 sec	2311 sec	2299 sec	2310 sec	2306 sec	2264 sec	2247 sec
Memory Units:	35936	35808	34791	36550	35587	34644	35676	34493	33941
Page Faults:	498671	468720	461748	475212	466610	467153	460737	435585	431752

tfm meters:

Page Faults:	22.84%	22.52%	22.30%	22.90%	22.57%	22.55%	21.97%	21.51%	21.31%
Getwork:	2.10%	2.09%	2.09%	2.16%	2.11%	2.11%	2.13%	2.04%	2.04%
Seg Faults:	1.97%	2.10%	2.18%	2.08%	2.06%	2.14%	2.11%	1.97%	2.05%
Bound Faults:	0.34%	0.35%	0.36%	0.35%	0.34%	0.36%	0.35%	0.20%	0.21%
Interrupts:	3.06%	2.93%	3.04%	3.23%	3.02%	2.95%	2.79%	2.67%	2.64%
Idle, zero:	0.46%	0.77%	1.13%	0.81%	0.57%	0.73%	1.30%	1.18%	0.93%
Idle, MP:	3.35%	2.31%	2.44%	2.63%	2.84%	2.41%	2.80%	2.10%	2.18%
Idle, NMP:	0.23%	0.21%	0.21%	0.18%	0.31%	0.20%	0.24%	0.30%	0.15%
Idle, Loading:	0.15%	0.11%	0.14%	0.12%	0.15%	0.11%	0.12%	0.11%	0.10%
Idle, total:	4.19%	3.40%	3.92%	3.74%	3.87%	3.45%	4.46%	3.69%	3.36%
Other (good):	65.50%	66.61%	66.10%	65.54%	66.05%	66.44%	66.29%	67.92%	68.39%

dvm meters:

Bulk Reads:	506509	478621	468443	495694	481427	480083	473951	449434	440559
Bulk Writes:	254385	236761	232015	244428	234241	238190	232112	216582	214709
Bulk ATB I/O:	4.838	4.846	4.905	4.777	4.875	4.852	4.935	5.011	5.023
D191 Reads:	36098	26408	23914	25448	26943	24000	22961	19977	19202
D191 Writes:	30674	23272	20866	21718	24521	21563	21124	18308	17569
D191 ATB I/O:	55.138	69.795	76.729	74.966	67.799	76.491	79.053	87.187	89.514
D191 Avg. Page Wait:	43.477	39.555	37.441	37.272	41.211	41.160	40.150	37.313	37.671
E191 Reads:	7326	12115	15524	16293	13014	15056	13988	13675	13836
E191 Writes:	8650	12946	16182	16631	13160	14835	14107	13573	13486
E191 ATB I/O:	230.453	138.360	108.369	107.394	133.309	116.597	124.045	122.503	120.471
E191 Avg. Page Wait:	29.110	34.907	36.916	36.841	34.195	37.396	39.628	40.025	41.633

Notes:

(1) Based on Elapsed Time * percentage good (tfm meters)

(2) A new PL/I compiler was installed after the 11/24/75 test.