

TO: MTB Distribution
 FROM: Grace E. Ackerman-Lewis
 DATE: April 30, 1976
 SUBJECT: Multics Performance Test Results as of System 28.3

Attached is a summary of the results from the performance tests done between February 26, 1976 and April 26, 1976. We are beginning to gain back, at least in some areas, some of the performance loss we suffered with the installation of NSS (28.0). Also, we are still running with the "DEBG DIRW" card to protect the hierarchy.

Current Status (System 28.3)

	28.0 values	28.3 values	% change
Elapsed Time:	58.0 min	57.2 min	-1.4%
Virtual CPU:	2153 sec	2072 sec	-3.9%
Total CPU:	3201 sec	3125 sec	-2.4%
Page Faults:	471476	471887	0.1%
Memory Units:	32904	33206	0.9%

related MTB's:

MTB-267 Multics Performance Test Results as of System 28.0
 MTB-252 Multics Performance Test Results as of System 27.6
 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 28.0, 28.0a, 28.0b, 28.1 28.1a, 28.2, 28.2, 28.2, 28.3

System:	28.0	28.0a	28.0b	28.0b(2)	28.1	28.1a	28.2	28.2	28.2	28.3
Date:	02/25/76	03/03/76	03/08/76	03/10/76	03/22/76	03/24/76	03/31/76	04/07/76	04/17/76	04/21/76
Write-through status:	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw
SYST:	none	none	none	none	none	none	none	none	none	none
CPU:	A	A	A	A	A	A	A	A	A	A
Cache:	on	on	on	on	on	on	on	on	on	on
Memories:	A,B	A,B	A,B	A,B	A,B	A,B	A,B	A,B	A,B	A,B
External Interfaces:	off	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	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4	2,8&2,4
Elapsed Time:	58.0 min	57.2 min	56.3 min	57.3 min	55.9 min	55.9 min	57.6 min	56.9 min	56.9 min	57.2 min
Costs (shift 1):	\$496.48	\$497.61	\$492.61	\$496.38	\$488.31	\$493.81	\$499.78	\$496.03	\$491.97	\$494.79
Costs (shift 2):	\$269.18	\$269.83	\$267.10	\$269.16	\$264.79	\$267.79	\$271.04	\$268.99	\$266.78	\$268.32
Costs (shift 3):	\$176.46	\$176.96	\$175.14	\$176.52	\$173.66	\$175.66	\$177.92	\$176.45	\$174.97	\$176.00
CPU, total:	3201 sec	3154 sec	3153 sec	3169 sec	3093 sec	3019 sec	3132 sec	3131 sec	3116 sec	3125 sec
CPU, virtual:	2153 sec	2107 sec	2109 sec	2104 sec	2064 sec	2065 sec	2070 sec	2074 sec	2075 sec	2072 sec
CPU, good (1):	2293 sec	2266 sec	2252 sec	2264 sec	2203 sec	2201 sec	2239 sec	2228 sec	2204 sec	2237 sec
Memory Units:	32904	33268	32798	33168	32662	33157	33675	33310	32938	33206
Page Faults:	471476	476300	476308	483063	468759	473384	479869	476506	468694	471887

tfm meters:

Page Faults:	21.76%	22.09%	22.09%	22.41%	22.08%	22.35%	22.37%	22.43%	22.21%	22.28%
Network:	2.22%	2.23%	2.23%	2.27%	2.25%	2.24%	2.26%	2.26%	2.23%	2.26%
Seg Faults:	2.58%	2.44%	2.51%	2.30%	2.36%	2.35%	2.26%	2.32%	2.36%	2.30%
Bound Faults:	0.22%	0.22%	0.22%	0.21%	0.24%	0.23%	0.23%	0.22%	0.25%	0.24%
Interrupts:	3.63%	3.70%	3.70%	3.76%	3.69%	3.69%	3.80%	3.71%	3.74%	3.74%
Idle, zero:	0.69%	0.58%	0.24%	0.37%	0.49%	0.55%	0.97%	0.57%	0.90%	0.68%
Idle, MP:	2.76%	2.40%	2.22%	2.65%	2.98%	2.21%	3.01%	3.02%	3.31%	3.08%
Idle, NMP:	0.17%	0.24%	0.07%	0.11%	0.13%	0.15%	0.21%	0.14%	0.30%	0.08%
Idle, Loading:	0.13%	0.10%	0.10%	0.12%	0.15%	0.12%	0.15%	0.13%	0.15%	0.18%
Idle, total:	3.75%	3.32%	2.63%	3.25%	3.75%	3.03%	4.34%	3.86%	4.66%	4.02%
Other (good):	65.85%	66.01%	66.63%	65.81%	65.63%	66.11%	64.74%	65.21%	64.54%	65.15%

dvm meters:

Bulk Reads:	478834	488206	484028	491690	474190	482466	492629	485903	475389	483373
Bulk Writes:	253817	257062	255882	259146	245398	247904	252800	249136	247916	249431
Bulk ATB I/O:	4.760	4.612	4.574	4.589	4.671	4.600	4.646	4.654	4.728	4.691
DSKA Reads:	24965	24787	23668	25406	31716	27980	35287	40582	36103	36492
DSKA Writes:	22373	22206	21526	22606	14936	13828	15807	18951	15381	16013
DSKA ATB I/O:	73.676	73.153	74.894	71.771	56.808	80.377	54.053	46.631	53.371	51.285
DSKA Avg. Page Wait:	38.219	37.347	35.947	37.231	93.667	83.574	81.554	91.020	87.337	82.110
DSKB Reads:	11263	11965	12483	13370	14588	16979	13546	6764	12799	12048
DSKB Writes:	9439	10194	10377	11103	6870	8955	6783	3255	6003	6589
DSKB ATB I/O:	168.470	155.138	148.066	140.803	123.181	129.576	131.016	228.281	143.228	146.072
DSKB Avg. Page Wait:	35.450	36.310	37.382	37.334	65.897	91.948	78.828	48.402	68.801	62.764

Notes:

- (1) Based on Elapsed Time * percentage good (tfm meters)
- (2) SST card changed from "39. 560. 317. 104. 12." to "39. 606. 355. 90. 12."