

TO: MTB Distribution  
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DATE: November 5, 1974  
SUBJECT: Multics Performance Test Results

Attached is a summary of the results from the performance tests done between October 10, 1974 and November 4, 1974. Note that there were two special tests done in this period (10/10/74 and 11/04/74). The table below shows the current status of meeting our performance goals as of system 24.1c:

	goal*	24.1c	% to goal
Elapsed Time:	59.3 min.	92.0 min.	44.9%
Virtual CPU:	2107 sec.	3392 sec.	39.0%
Total CPU:	3379 sec.	5156 sec.	47.4%
Page Faults:	329868	508680	45.8%
Memory Units:	22786	36698	38.9%

\* See MTB-126

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metering Comparisons for 24.0a, 24.1a, 24.1b, 24.1c

MTB-132

System:	24.0a	24.0a	24.0a	24.0a	24.0a	24.1a	24.1b	24.1c	24.1c (2)
Date:	10/10/74	10/12/74	10/14/74	10/16/74	10/21/74	10/24/74	10/26/74	11/03/74	11/04/74
Script:	script2	script2	script2	script2	script2	script2	script2	script2	script2
Write-through status:	none	none	none	none	none	none	none	none	none
Device Checking:	1	1	1	1	1	1	1	1	1
SYST:	2	2	2	2	2	2	2	2	2
CPU:	B	B	B	A	A	A	A	B	B
Memories:	B,C	A,B	A,B	A,B	A,B	A,B	A,B	A,B	A,B
External Interlace:	off	off	off	off	off	off	off	off	off
Paging Device Size:	2048K	1024K	2048K	2048K	2048K	2048K	2048K	2048K	2048K
Disk Channels:	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8

Elapsed Time:	93.1 min	115.2 min	94.2 min	93.5 min	94.4 min	93.0 min	92.8 min	92.0 min	87.4 min
Costs (shift 1):	\$951.42	\$960.05	\$955.11	\$966.67	\$954.94	\$948.47	\$962.50	\$943.19	\$1029.04
Costs (shift 2):	\$783.49	\$790.54	\$786.50	\$796.19	\$786.41	\$781.03	\$792.72	\$776.57	\$848.30
Costs (shift 3):	\$410.37	\$414.02	\$411.93	\$417.14	\$411.93	\$409.06	\$415.30	\$406.64	\$445.04
CPU, total:	5148 sec	5978 sec	5185 sec	5168 sec	5209 sec	5161 sec	5163 sec	5156 sec	4828 sec
CPU, virtual:	3369 sec	3422 sec	3392 sec	3373 sec	3373 sec	3370 sec	3368 sec	3392 sec	3322 sec
CPU, good (1):	3290 sec	3301 sec	3291 sec	3273 sec	3291 sec	3264 sec	3274 sec	3284 sec	3341 sec
Memory Units:	37257	37493	37357	38089	37438	37091	37876	36698	41787
Page Faults:	522747	622678	522659	528220	535092	515425	525590	508680	512194

tfm meters:

Page Faults:	27.08%	30.40%	26.90%	27.15%	27.48%	26.92%	27.24%	26.85%	25.42%
Getwork:	2.83%	3.28%	2.84%	2.88%	2.84%	2.92%	2.91%	2.91%	2.73%
Seg Faults:	2.70%	2.31%	2.76%	2.76%	2.73%	2.82%	2.74%	2.82%	1.82%
Bound Faults:	0.49%	0.40%	0.48%	0.48%	0.48%	0.48%	0.49%	0.50%	0.48%
Interrupts:	4.08%	6.44%	4.12%	4.03%	4.33%	4.23%	4.13%	4.05%	2.68%
Idle, zero:	0.21%	0.02%	0.11%	0.13%	0.13%	0.11%	0.14%	0.32%	1.90%
Idle, MP:	3.43%	8.56%	4.24%	3.93%	3.63%	3.72%	3.27%	2.79%	1.07%
Idle, NMP:	0.05%	0.05%	0.02%	0.01%	0.02%	0.03%	0.02%	0.03%	0.17%
Idle, Loading:	0.25%	0.80%	0.27%	0.26%	0.28%	0.24%	0.24%	0.22%	0.03%
Idle, total:	3.94%	9.43%	4.64%	4.33%	4.06%	4.10%	3.67%	3.36%	3.17%
Other (good):	58.88%	47.74%	58.26%	58.37%	58.09%	58.52%	58.82%	59.51%	63.70%

dvm meters:

Bulk Reads:	530927	620296	527221	532647	544449	519581	531173	512102	528580
Bulk Writes:	297000	375350	296731	297300	303434	292523	294620	288574	274198
Bulk ATB I/O:	6.753	6.951	6.859	6.760	6.685	6.871	6.744	6.897	6.538
Bulk Avg. Page Wait:	0.566	0.575	0.567	0.567	0.568	0.568	0.567	0.567	0.558
D191 Reads:	53336	118155	54949	54425	57788	56176	56237	53676	27208
D191 Writes:	48867	98188	49966	49698	52213	51071	51042	49605	25280
D191 ATB I/O:	54.708	31.991	53.873	53.886	51.531	52.032	51.915	53.475	100.003
D191 Avg. Page Wait:	45.479	53.327	46.006	44.131	43.546	41.531	41.351	40.857	36.922

Notes:

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

(2) The performance test on 11/04/74 was run with a priority\_sched\_inc of 1 sec instead of the usual 80 sec and timax was left at 8 sec instead of the usual 1 sec for such runs.