TO: MTB Distribution

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SUBJECT: Multics Performance Test Results as of System 26.1

Attached is a summary of the results from the performance tests
done between June 12, 1975 and July 30, 1975. As you can see, we
have finally exceeded the goals of a 50% improvement over system
23.3 as described in MTB-087. The goal was stated in terms of
elapsed time but Virtual CPU time and Total CPU time have also
kept pace. Also it is easy to observe that the fix made in
system 25.8a did have the expected performance gain suggested in
MTB-208.

Current Status (System 26.1)

	goal	26.1 values	% to goal
Elapsed Time:	65.2 min	62.6 min	104.9%
Virtual CPU:	2318 sec	2266 sec	102.7%
Total CPU:	3717 sec	3459 sec	108.5%
Page Faults:	362855	501590	53.3%
Memory Units:	25065	38573	34.1%

related MTB's:

    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

Metering Comparisons for 25.6, 25.7, 25.8a, 25.9d, 25.10a, 26.0, 26.0a, 26.1

System:	25.7	25.6	25.8a	25.9d	25.9d	25.10a	26.0	26.0a	26.1
Date:	06/12/75	06/19/75	06/30/75	07/05/75	07/07/75	07/14/75	07/21/75	07/24/75	07/30/75
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:	A	A	A	A	A	A	A	A	A
Cache	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
External Interface:	off	off	off	off	off	off	off	off	off
Paging Device Size:	2048K	2048K	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:	75.8 min	72.3 min	64.4 min	62.9 min	63.9 min	64.0 min	63.6 min	62.6 min	62.6 min
Costs (shift 1):	$892.13	$891.30	$935.65	$554.90	$572.83	$564.11	$573.39	$562.76	$565.91
Costs (shift 2):	$735.39	$734.77	$771.79	$300.96	$310.73	$305.98	$311.03	$305.24	$306.96
Costs (shift 3):	$385.77	$385.49	$405.29	$197.50	$204.01	$200.84	$204.19	$200.34	$201.49
CPU, total:	3856 sec	3685 sec	3439 sec	3384 sec	3516 sec	3529 sec	3486 sec	3492 sec	3459 sec
CPU, virtual:	2317 sec	2300 sec	2280 sec	2261 sec	2269 sec	2264 sec	2279 sec	2269 sec	2266 sec
CPU, good (1):	2418 sec	2401 sec	2399 sec	2371 sec	2421 sec	2418 sec	2430 sec	2435 sec	2451 sec
Memory Units:	36152	36207	38786	37599	39186	38419	39177	38266	38573
Page Faults:	509377	495957	465496	455258	504851	505386	504044	510695	501590

ttm meters:

	25.7	25.6	25.8a	25.9d	25.9d	25.10a	26.0	26.0a	26.1
Page Faults:	25.71%	23.33%	21.45%	21.44%	22.97%	23.20%	23.16%	23.67%	23.22%
Getwork:	2.75%	2.84%	2.60%	2.56%	2.76%	2.88%	2.15%	2.15%	2.14%
Seg Faults:	2.32%	2.33%	2.57%	2.66%	2.58%	2.61%	2.63%	2.25%	2.22%
Bound Faults:	0.34%	0.36%	0.38%	0.36%	0.37%	0.38%	0.37%	0.41%	0.41%
Interrupts:	4.58%	4.71%	3.82%	3.61%	3.71%	3.91%	3.06%	3.04%	2.99%
Idle, zero:	0.11%	0.02%	0.39%	0.53%	0.64%	0.34%	0.71%	0.30%	0.56%
Idle, MP:	9.06%	9.72%	6.27%	5.62%	3.47%	3.40%	3.91%	3.11%	2.99%
Idle, NMP:	0.09%	0.07%	0.14%	0.14%	0.16%	0.08%	0.14%	0.09%	0.09%
Idle, Loading:	1.91%	1.24%	0.29%	0.21%	0.19%	0.21%	0.23%	0.18%	0.17%
Idle, total:	11.17%	11.05%	7.09%	6.50%	4.46%	4.03%	4.99%	3.68%	3.81%
Other (good):	53.14%	55.36%	62.10%	62.86%	63.16%	62.98%	63.64%	64.80%	65.21%

dvm meters:

	25.7	25.6	25.8a	25.9d	25.9d	25.10a	26.0	26.0a	26.1
Bulk Reads:	482707	468930	472168	461732	513740	517654	514166	519703	510273
Bulk Writes:	233370	225925	230776	229310	251582	255471	256068	259174	252571
Bulk ATB I/O:	6.359	6.249	5.500	5.464	5.012	4.972	4.962	4.480	4.933
Bulk Avg. Page Wait:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D191 Reads:	60854	60925	43998	42511	45002	45640	45449	44359	43881
D191 Writes:	62932	63041	38871	38215	40608	41612	41087	40560	40316
D191 ATB I/O:	36.789	35.027	46.654	46.774	44.805	44.059	44.171	44.393	44.694
D191 Avg. Page Wait:	45.474	44.787	37.899	35.714	40.539	40.279	40.725	41.740	40.099

Notes:

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

(2) Note that runs made before 07/07/75 were done with new scheduling parameters:
    wsf=.7; ttmax=4; ocore=.25; steh=1; tforce=1; atws=on; post_purge=on; telast=2