

To: MTB Distribution
 From: George T. Williams
 Subject: Metering Results for 1978 - MSS 33.1/33.18
 Date: February 21, 1979

As the accompanying charts and figures show, 1978 was nothing to write home about. Although there were a number of peaks and valleys through out the year, the final figures are almost identical with the figures for 33.0 (the last system of 1977).

Pagefaults are a continuing problem area with little indication of what is the cause of the dramatic increase in pagefaults over the past year (an 8.5% increase between 33.1 and 33.18 and well over 28% since early 1976).

	33.0	33.18	% change
Elapsed Time:	61.4	59.9	-2.443
Virtual CPU:	1679	1620	-3.514
Total CPU:	3162	3141	-0.664137
Page Faults:	598775	630967	5.37631
Memory Units:	46178	45693	-1.05028
	33.1	33.18	% change
Elapsed Time:	59.7	59.9	0.335008
Virtual CPU	1675	1620	-3.28358
Total CPU.	3106	3141	1.12685
Page Faults:	581503	630967	8.50623
Memory Units:	44892	45693	1.78428

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Metering Comparisons for 33.0, 33.1, 33.2, 33.3, 33.4, 33.5b, 33.6, 33.7

System:	33.0	33.1	33.1(2)	33.2	33.3	33.4	33.5b	33.6	33.7
Date:	12/18/77	02/01/78	02/02/78	02/02/78	02/22/78	04/30/78	05/11/78	05/07/78	05/18/78
Write-through status:	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw
SYST:	none	none	none	none	none	none	none	none	none
TELAST:	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec
CPU:	A	A	A,B	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 Interlace:	off	off	off	off	off	off	off	off	off
Disk Channels:	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8
Elapsed Time:	61.4 min	59.7 min	63.2 min	60.0 min	60.0 min	62.9 min	60.7 min	61.5 min	59.6 min
Costs (shift 1):	\$612.96	\$598.49	\$628.31	\$600.92	\$609.24	\$599.31	\$608.77	\$595.34	\$601.76
CPU, total:	3163 sec	3106 sec	5496 sec	3101 sec	3142 sec	3246 sec	3155 sec	3173 sec	3124 sec
CPU, virtual:	1680 sec	1675 sec	1798 sec	1675 sec	1675 sec	1672 sec	1674 sec	1673 sec	1671 sec
CPU, good (1)	2228 sec	2208 sec	1790 sec	2231 sec	2219 sec	2245 sec	2230 sec	2249 sec	2215 sec
Memory Units:	46179	44892	46905	45112	45868	44981	45829	44614	45211
Page Faults:	598775	581503	1041393	581663	597642	617194	604382	608074	586707

ttm meters:

Page Faults:	22.62%	22.55%	23.78%	22.58%	22.97%	24.16%	22.96%	23.21%	22.69%
Network:	1.65%	1.56%	9.22%	1.58%	1.57%	1.57%	1.57%	1.61%	1.59%
Seq Faults:	3.05%	2.91%	1.67%	2.85%	2.72%	2.87%	2.88%	2.91%	2.94%
Bound Faults:	0.27%	0.29%	0.19%	0.31%	0.34%	0.30%	0.28%	0.31%	0.32%
Interrupts:	3.79%	3.56%	2.08%	3.66%	3.64%	3.59%	3.59%	3.71%	3.68%
Idle, zero:	1.81%	1.75%	1.52%	1.59%	1.38%	1.82%	1.86%	1.55%	1.96%
Idle, MP:	5.82%	5.24%	12.38%	4.90%	5.12%	5.70%	4.99%	5.24%	4.36%
Idle, NMP:	0.35%	0.35%	1.58%	0.46%	0.44%	0.43%	0.44%	0.40%	0.43%
Idle, Loading:	0.14%	0.11%	0.25%	0.09%	0.12%	0.06%	0.10%	0.08%	0.08%
Idle, total:	8.12%	7.45%	15.73%	7.04%	7.06%	8.01%	7.39%	7.37%	6.83%
Other (good):	60.50%	61.68%	47.24%	62.00%	61.69%	59.49%	61.32%	60.98%	61.94%

dvm meters:

Bulk Prior Page I/O:	289391	282510	456209	285233	287119	292434	291096	298196	285323
Bulk Other Page I/O:	615288	598280	1079741	607838	613534	632403	622829	633748	604985
Bulk ATQ I/O:	4.10	4.10	2.49	4.07	4.03	4.11	4.01	3.99	4.06
JSKA Prior Page I/O:	38891	35366	40143	35815	37075	39408	36719	39141	37321
JSKA Other Page I/O:	33113	30213	32719	30155	31321	29733	30219	30076	30952
JSKA ATB I/O:	38.7	40.9	39.5	40.8	40.0	41.0	40.9	40.2	39.6
JSKA Avg. Page Wait:	41.9	40.7	42.7	40.4	41.7	44.6	43.8	38.9	37.7

Notes:

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

Metering Comparisons for 33.7, 33.8, 33.9, 33.10, 33.11, 33.12, 33.13, 33.14, 33.15

System:	33.7	33.8	33.9	33.10	33.11	33.12	33.13	33.14	33.15
Date:	05/18/78	06/11/78	06/15/78	06/29/78	06/29/78	07/09/78	07/27/78	09/21/78	09/27/78
Write-through status:	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw	dirw
SYST:	none	none	none	none	none	none	none	none	none
TELAST:	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec
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 Interlace:	off	off	off	off	off	off	off	off	off
Disk Channels:	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8
Elapsed Time:	59.6 min	59.9 min	60.5 min	59.2 min	59.7 min	60.1 min	59.8 min	59.9 min	61.2 min
Costs (shift 1):	\$601.76	\$602.95	\$619.65	\$598.09	\$617.31	\$597.19	\$604.28	\$629.65	\$611.82
CPU, total:	3124 sec	3149 sec	3169 sec	3132 sec	3154 sec	3147 sec	3089 sec	3131 sec	3176 sec
CPU, virtual:	1671 sec	1674 sec	1677 sec	1677 sec	1678 sec	1678 sec	1675 sec	1676 sec	1675 sec
CPU, good (1):	2215 sec	2222 sec	2234 sec	2200 sec	2200 sec	2241 sec	2220 sec	2228 sec	2248 sec
Memory Units:	45211	45304	46804	44842	46534	44754	45419	47716	46101
Page Faults:	586707	598080	614259	589820	604918	612988	590681	613189	625163

tfm meters:

Page Faults:	22.69%	22.87%	23.14%	22.88%	23.33%	23.06%	22.39%	22.96%	23.33%
Garbage:	1.59%	1.61%	1.57%	1.60%	1.55%	1.61%	1.57%	1.55%	1.61%
Seg Faults:	2.94%	3.10%	2.81%	2.83%	2.81%	2.86%	2.83%	2.73%	2.78%
Bound Faults:	0.32%	0.26%	0.29%	0.32%	0.36%	0.30%	0.29%	0.33%	0.35%
Interrupts:	3.68%	3.67%	3.55%	3.68%	3.57%	3.02%	2.99%	2.93%	3.11%
Idle, zero:	1.96%	1.34%	1.78%	1.37%	1.45%	1.14%	1.89%	1.75%	1.54%
Idle, MP:	4.36%	4.84%	4.77%	4.23%	3.88%	5.37%	5.72%	5.17%	5.32%
Idle, NMP:	0.43%	0.39%	0.46%	0.44%	0.51%	0.42%	0.32%	0.45%	0.40%
Idle, Loading:	0.08%	0.10%	0.09%	0.08%	0.06%	0.09%	0.11%	0.13%	0.10%
Idle, total:	6.83%	6.67%	7.10%	6.12%	5.90%	7.02%	8.04%	7.50%	7.36%
Other (good):	61.94%	61.83%	61.55%	62.57%	62.49%	62.13%	61.89%	62.00%	61.46%

dvm meters:

Bulk Prior Page I/O:	285323	288181	292838	284998	290744	291904	285246	288322	298150
Bulk Other Page I/O:	604985	513153	629578	605670	626678	627527	608588	629567	647834
Bulk ATB I/O:	4.06	4.02	3.97	4.02	3.93	3.96	4.05	3.95	3.91
DSKA Prior Page I/O:	37321	37384	37323	37491	35682	39396	36900	35719	39546
DSKA Other Page I/O:	30952	30697	30013	30505	29443	29890	30842	30407	30466
DSKA ATB I/O:	39.6	39.5	40.7	39.6	41.2	39.5	40.2	40.1	39.7
DSKA Avg. Page Wait:	37.7	40.5	40.9	31.9	40.0	40.2	41.3	41.3	41.1

Notes:

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

Metering Comparisons for 33.16, 33.17, 33.18,

System:	33.16	33.17	33.18
Date:	10/29/78	11/15/78	12/13/78.
Write-through status:	dirw	dirw	dirw
SYST:	none	none	none
TELAST:	1 sec	1 sec	1 sec
CPU:	A	A	A
Cache:	on	on	on
Memories:	A,B	A,B	A,B
External Interlace:	off	off	off
Disk Channels:	2,8	2,8	2,8
Elapsed Time:	59.0 min	58.6 min	59.9 min
Costs (shift 1):	\$622.31	\$619.50	\$603.87
CPU, total:	3131 sec	3111 sec	3141 sec
CPU, virtual:	1630 sec	1631 sec	1620 sec
CPU, good (1):	2177 sec	2182 sec	2186 sec
Memory Units:	47315	47051	45693
Page Faults:	605873	615723	630967

ttm meters:

Page Faults:	23.33%	23.84%	23.91%
Getwork:	1.58%	1.56%	1.62%
Seg Faults:	2.74%	2.88%	2.78%
Bound Faults:	0.35%	0.32%	0.33%
Interrupts:	3.01%	2.97%	3.12%
Idle, zero:	1.82%	1.52%	1.74%
Idle, MP:	5.02%	4.28%	5.05%
Idle, NMP:	0.55%	0.46%	0.46%
Idle, Loading:	0.10%	0.12%	0.13%
Idle, total:	7.49%	6.38%	7.38%
Other (good):	61.49%	62.06%	60.87%

ivm meters:

Bulk Prior Page I/O:	271870	273232	281723
Bulk Other Page I/O:	625492	632179	644073
Bulk ATB I/O:	3.98	3.92	3.91
SKA Prior Page I/O:	36354	35464	40222
SKA Other Page I/O:	30629	29913	31332
SKA ATB I/O:	40.01	40.06	38.49
SKA Avg. Page Wait:	41.17	40.92	40.49

notes:

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









