

Salga

MPM 120

3/30/71

users = 48

MFTN 3

14.12

***** MULTICS PERFORMANCE ANALYSIS *****

USER NO	COMMAND	TIME	CPU TIME	NO OF P.F.
0	login	1441	4.020	20 + 124
	edm	1450	6.750	122 + 281
	fortran	1451	5.167	21 + 191
	edm	1456	2.929	49 + 178
	fortran	1457	5.338	6 + 229
	rename	1458	1.003	2 + 54
	print	1458	1.259	2 + 58
	a_prime\$prime	1500	4.064	37 + 155
	list	1500	.831	2 + 42
	df	1501	1.668	3 + 66
	edm	1510	5.587	139 + 294
	fortran	1511	3.900	10 + 216
	edm	1516	3.201	76 + 174
	fortran	1517	4.744	14 + 197
	rename	1518	.704	3 + 41
	print	1518	1.060	3 + 34
	b_prime\$prime	1520	2.800	12 + 118
	list	1520	.885	3 + 36
	df	1521	1.704	4 + 74
	logout			+

384 K core
2 CPU's

***** SUMMARY *****

USER NO	TOTAL CPU TIME	TOTAL REAL TIME	TOTAL NO OF P.F.	NO OF INTER-ACTIONS	AVERAGE CPU TIME	AVERAGE RESPONSE TIME	AVERAGE NO OF P.F.
USER 0	53.594	2356	508 + 2438	66	.812	7.1 (4.3)	7 + 36

***** # users

(29.009	1156	244 + 1254	33	.909	6.7 (4.3)	7 + 38	49 first half
	24.585	1168	264 + 1184	33	.745	7.4 (4.3)	8 + 35	48 second half

↑
average except "fortran"

The result is a little better than that of MPM 118.

Total metering time 0:39:18

MPM120

Ave queue length 9.62 ← rather short
 Ave eligible 5.80
 Working-set factor .50
 Working-set addend 0
 Te first (seconds) 2
 Te last (seconds) 2
 Ti max (seconds) 8

IDLE TYPE	TIME	%
Total idle	0:13:22	17.01
Multi-prog idle	0:11:40	14.84
Non-multi-prog idle	0:00:14	.31
Zero idle	0:00:00	0.00

COUNTER	TOTAL	ATB	#/INT
Interactions	780	3.024 sec	
Loadings	5101	.462 sec	6.540
Blocks	3580	.659 sec	
Wakeups	3567	.661 sec	
Waits	156159	15.104 msec	200.204
Notifies	433991	5.435 msec	
Schedulings	4593	.514 sec	5.888
Pre-empts	172907	13.641 msec	221.676

Time	%Int	%Cum	Ave	%T	%CumT
0.0	70	70	.247	35	35
.5	15	85	.735	23	58
1.0	6	91	1.291	16	74
1.5	4	95	1.853	14	88
2.0	1	96	2.408	5	93
2.5	1	97	2.865	6	99
3.0	1	98	3.388	6	104
3.5	1	98	3.915	5	110
4.0	0	98	4.435	2	112
4.5	0	99	4.992	4	116
5.0	0	99	5.321	2	118
5.5	0	99	5.915	2	120
6.0	0	99	6.480	1	121
6.5	0	99	6.958	3	123
7.0	0	99	7.787	1	124
7.5	1	100	8.084	-32	100

DEPTH	%PF	TBPF	%GTW	TBS	%CPU
1	19.6	22.3	17.1	15.4	17.5
2	19.5	29.6	17.4	19.9	22.9
3	18.9	28.1	18.8	16.9	21.1
4	17.6	25.0	18.9	13.9	17.5
5	15.4	22.1	17.0	12.0	13.6
6	12.1	21.4	13.8	11.2	10.4
7	.5	0.0	.5	0.0	.5

r 1522 3.986 18+101

Multics 14.12, load 49.0/54.0; 48 users

r 1522 .354 2+18

fsm -all

Total metering time 0:41:38

Deactivations	8309
Ast grace	0:00:19
Used ASTs	412
Free ASTs	0
Held ASTs	221
Seg Faults	10365

	#	ATB
Meadc	232414	21.406 msec.
Steps	725217	6.889 msec.
Ceiling	4006	.021 min.
Laps	2031	2.460 sec.
Skip wired	8461	590.481 msec.
Skip used	412536	12.111 msec.
Skip mod	47447	105.298 msec.
Skip os	24359	205.101 msec.

293 pages, 34 wired.
Average steps 3.120

	DRUM	DSU270	DSU170
Left	657	12381	7770
Reads	197972	26323	2613
ATB	25.236	189.798	1912.001
Writes	129350	13123	720
ATB	38.624	380.710	6938.971
ATB I/O	15.263	126.656	1498.968
% Cpcty	27	83	14
Ave Latency	23.267	112.789	70.091
N Errors	0	0	0
F Errors	0	0	0

← DS170 is more frequently used than before, but DS270 is still saturated.

r 1523 1.921 12+35

ttn -all

Total metering time 0:42:55

	%	AVE
Page Faults	12.64	3898.634
Drum interrupts	6.74	2516.263
Getwork	10.22	1404.199
Seg Faults	3.48	16611.279
Interrupts	5.17	4192.548
Gate faults	2.41	3670.000
MP Idle	15.30	
Loading idle	1.90	
NMP Idle	.28	
Zero idle	0.00	
Other	41.86	

r 1524 1.500 1+10

hmu

Multics 14.12, load 51.0/54.0; 50 users

r 1524 .508 2+23

>udd>m>w>o>ppmt -all

Total metering time 0:43:22

Working-set factor	.50
Working-set addend	0
Min-eligible	2
Max-eligible	6
% bad pre-paging	32.48 ←
Drum faults/pre-paging	1.01
% drum priority moves	17.26
% misses	10.69
Ave post size	61.79
Ave purge size	19.92
% purged	32.24
Ave pre size	28.45
Ave pre-pagings	12.55
% pre-paged	44.11
Thrashing percentage	7.80 ←
Ave post in core	43.95
Ave working-set size	23.15
Ave used in quantum	52.60
Pre-page time	26.74
Post-purge time	41.11
Calls	5023

r 1525 2.042 12+50

>udd>m>jhs>cf

```

cpu b 5
cpu a 4
gioc a 2 0 7 11 13
mem c 200 on
mem d 200 on
mem e 200 on
clock b 1 25 est 5
drum 0 7700 1 4 5 6
d270 0 60650 a 37 12 121314151605 6071011
d170 0 105340 a 27 10 102030405 607
part mult 0 7700 0 57650 0 105340 0 0
part salv 0 0 57650 1000 0 0 0 0
int 27 30 31 32 37
sst 50
schl 400000 20 20 100
mpds 11 1000.
ttyb 4 144
tty a 60 3 1200.
tty a 70 3 1200.
tty a 100 32. 133.
tty a 200 32. 133.
tty a 300 24. 150.
intk 77 mult

```

} 2 CPUs

} 384 k core

r 1526 1.752 2+27

Multics 14.12, load 49.0/54.0; 48 users

r 1527 .381 3+19

>udd>m>w>o>q

avg = 15, elapsed time = 1164 sec, 24 active last 15 sec.

flags	tu	dtu	te	ts	ti	tssc	event	d	ws	process
NLERI	74	28	2084	0	0	-.174	0 0		9	Sekino
NLEI	60	27	1454	0	0	-.157	4300 1		17	Spall
LERI	298	57	915	0	0	-.004	0 0		5	RHoward
WNLEI	0	0	934	0	0	-.113	75104 2		50	JAndrews
LETI	52	52	192	0	0	-.169	72010 1		24	Shih
NLEI	117	39	42	0	0	-.177	0 0		18	Strayhorn
W	27	19	0	0	0	2.995	0 0		38	Schramm
W	68	27	0	0	0	2.334	0 0		19	DClark
W	156	20	0	0	0	2.157	0 0		14	Cohen
W	100	93	0	0	0	1.239	0 0		17	Hunter
W	1232	128	0	0	0	.881	0 0		10	IO
W	1301	63	64	0	0	.117	0 0		44	not found
W	420	73	43	4003	2072	6.139	0 0		50	Install
W	1606	86	47	6020	8000	2.246	0 0		58	Translator
	173	38	82	6001	8000	8.108	0 0		18	Lema
W	370	75	55	0	8000	99.121	0 0		49	Abramson
W	195	58	0	0	0	279.175	0 0		82	Niles
	49	22	116	0	8000	82.798	0 0		33	Steinbrecher
W	236	68	37	0	8000	73.596	0 0		56	Eddy
W	1234	72	84	0	8000	29.823	0 0		54	Backup
W	117	61	29	0	8000	18.352	0 0		19	Dunten
	70	44	18	0	8000	5.360	0 0		13	VanVleck

r 1529 5.048 35+208

rzd scs 200

200 600000000000

r 1529 .632 6+40

ppm -all

Pre-paging mode is ON.

r 1529 .671 2+41

hmu

Multics 14.12, load 52.0/54.0; 51 users

r 1529 .308 6+9