EPLBSA-TIMES

RECEIVED
F. J. CORBATO
JAN 23 1969

Time Differences in CLOCK READINGS	Master Process: Other processes are non-preemptent, assembly # 1	2	3	4	Slave Process #1: Remainder of System idle, assembly # 1	2	3	4	5	Slave process #2: remainder of system is idle, assembly # 1	2	3	4*
1-2	.397	.0701	.1462	.0992	.3235	.1410	.1404	.1059	.3199	.3654	.1314	.1076	.1023
2-3	.110	.0648	.0625	.0299	.1240	.0582	.0732	.1756	.2489	.1096	.0648	.0288	.0286
3-4	2.273	.6574	.4121	.6228	2.3430	.7767	.4116	.4442	4.7739	1.2569	.7243	.5898	.9654
4-5	.0040	.0042	.0043	.0042	.0039	.0041	.0039	.0039	.0039	.0042	.0042	.0041	.0041
5-6	2.178	1.5175	1.6089	1.4623	2.2430	1.4682	1.5497	1.6002	3.4240	2.1305	1.4393	1.6376	1.5056
6-7	.0066	.0052	.0052	.0052	.0054	.0052	.0054	.0054	.0052	.0052	.0051	.0053	.0053
7-8	.0012	.0011	.0011	.0014	.0011	.0012	.0012	.0012	.0013	.0011	.0011	.0012	.0012
8-9	7.76	.0679	.0805	.0867	7.534	.1401	.0929	.1396	.1155	7.4405	.1100	.0688	.1329
9-10	4.853	4.0719	3.8013	4.2440	4.6620	4.2817	4.3243	4.431	11.4088	4.6874	4.1572	4.0212	5.5487
10-11	.0011	.0011	.0012	.0011	.0011	.0130	.0011	.0011	.0011	.0011	.0011	.0011	.0011
11-12	1.286	.2566	.2868	.2879	1.1519	.1787	.2452	.1937	.3767	1.1643	.1681	.2114	.8404
12-13	.0012	.0011	.0011	.0011	.0011	.0011	.0013	.0011	.0011	.0011	.0011	.0011	.0011
13-14	.0962	.0252	.0605	.0250	.0321	.0357	.0319	.0376	.0283	.0282	.0335	.0247	.0384
14-15	.648	1.7511	1.6402	1.6403	.9571	1.8735	1.293	1.6962	.1342	.8924	1.7802	1.8504	.3282
15-16	.0560	.0795	.0559	.0635	.0477	.0885	.0551	.0696	.0534	.0835	.0476	.0476	.0751
16-17	.0011	.0011	.0012	.0014	.0011	.0011	.0012	.0011	.0011	.0012	.0012	.0011	.0011
17-18	1.237	1.2010	1.2016	1.1943	1.2689	1.1995	1.2002	1.234	1.2847	[illegible]	1.2019	1.2081	1.2554
18-19	1.218	1.3915	1.3892	1.6292	1.1447	1.2952	1.4367	1.529	1.7306	1.1802	1.2136	1.4678	1.1397
19-20	.0036	.0036	.0039	.0038	.0038	.0038	.0039	.0036	.0038	.0039	.0036	.0036	.0036
20-21	.2373	.2026	.2044	.2042	.2268	.2236	.2200	.1222	.1747	.1682	.1662	.1904	.2768
21-22	5.149	5.9645	4.9791	4.9371	6.2496	5.7417	5.1954	4.7491	4.8175	6.2182	5.7176	5.9333	3.6613
Daily: Real time:	R: 29.5	R: 17.5	R: 16.2	R: 16.8	R: 30.0	R: 17.7	R: 16.6	R: 17.0	R: 29.6	R: 29.3	R: 17.2	R: 16.8	R: 17.4
CPU:	20.9	12.1	11.4	11.5	20.9	11.5	11.2	11.2	13.2	20.6	11.7	11.2	12.5
Page wts	407	211	183	200	406	214	210	204	289	389	216	201	234

Remainder of system is idle — Remainder of system is idle — Remainder of system is idle

Simultaneous assembly — Simultaneous assembly

assembly was ... with ... assembled

MASTER PROCESS

1/11/69

Test of splbsa command with real-time clock readings at key points in processing:

Master process:

Step #1. creation of <null.splbsa> via edm which contains 2 statements:

```
name null
end
```

Step #2. 4 successive assemblies of <null.splbsa> real-time clock readings printed immediately after each assembly

Step #3. creation of slave process #1 (TTY194)

SLAVE PROCESS:

See Slave process #1 log on page 2

Step #4 creation of slave process #2 (TTY196)

on page 3

Slave Process #1

Step #1 creation (via edlin) of <null1.eplbra> which contains the following 2 source statements:

```
name  null1
end
```

Step #2 4 successive assemblies of <null1.eplbra> with the real-time clock readings printed immediately after each assembly

---

See master process log (Step #4)

Step #3 simultaneous assembly (with an assembly in slave process #2) of <null1.eplbra> followed by printing of clock readings during the assemblies

Slave proces #2

Step #1 via edm, creation of <null2.gplbsa> which contains the following 2 source statements:

name null2
end

Step #2 three (3) successive assembles with the real-time clock readings printed immediately after each assembly

Step #3 assembly of <null2.gplbsa> followed by the printing of the clock readings.
(This assembly was done while an assembly was in progress done in Slave proces #1 as follows:

Slave proces #1:	Slave proces #2:
gplbsa null1	gplbsa null2
W 2316:29.8	W 2316:30.1
R 29.6 13.2 289	R 19.4 12.5 234

calls to bsa — in from new XPLB...

call no.	epl line no	when in processing
1.	124	immediately upon entering command
2.	159	after calling entryparg & concatenating to make entry_name
3.	165	after call to [illegible] $initiate for <alpha, cp_loc>
4.	185	after 2 calls to read_global (null option analyses) & get_count $chars
5	217	after setting values for working-seg $init and before $init call
6	222	after calling working_seg $init
7	236	after extracting seg ptrs from work_seg structure & setting error lines (chan. change to)
8	254	after determining that seg ptrs are good & just before calling assembler
9, 10		10 clock readings during major points of assembly: 9/10 Before & after initialization of assembler; 11/12 — " PASS1; 13/14 — " POSTP1; 15/16 — " PASS2; 17/18 — " POSTP2
19	263	immediately after returning from assembler
20	289	after setting values for $finish call & B/4 WDIR call
21	294	after wdir call & B/4 $finish call
22	309	after $finish call & checking $finish results

12 + 10 = 22 clock readings

Timed EPLBSA (in Minutes)

Mts	Total	Initial + Command	Pass 1	Postp1	Pass2	Postp2	PW	
400	116.8	38.2	12.9	.08	57.4	8.2	518	78.6
400	100.1	21.5	12.7	.07	57.6	8.2	275	78.6
400 MM	100.4	20.1	13.2	.09	57.8	9.2	253	80.29
20	29.6	14.5	1.98	.09	7.8	5.2	174	15.07
46	20.6	13.8	.93	.11	3.65	2.1	186	6.79

2 processes

2400	121.9	P1	702
2400	125.8	P2	798

(1)

8 pages EPL 4K object

	Total	Command	Initial	Pass1	Postp1	Pass2	Postp2	PW
(1)	28.21	21.0	4.93	1.15	.02	.08	1.24	392
	16.9	11.0	4.43	.17	.03	.08	1.20	218

2.6 sec

? ? high ? differences

No Measurement

Multics Null assembly

	sec	PW
1st run	25.4	448
2d run	15.1	242
3d	14.6	223
4th	14.2	219
5th	13.6	213