

Saltzer

CAM: T VanVleck on CP/CMS-67

Aug. 7, 1969

- gave history of CTSS, Multics
- "Knows least-well the '67"

- CP/CMS up sup 24 hrs/day - (6am - ~~9pm~~ 9pm)²⁰¹⁵ → ~~at~~ CTSS pattern soon

1 - CPU (1/2 of a duplexed system)

1 - Drum (sup jams up at ~ 22 users)

- drum reserved at login whether needed or not; extra users page onto disc!

1 - 2702 (Supports 31 line of which 29 are in the local network)

data switch is a bottleneck now!

2 - 2701 (one will be replaced by ARDS multiplexor (cap. 16))

will probably check up at less than 16; will use 1200 baud; could be higher speed but an experiment

other for remote printers + stations, 1130's etc.

→ not sooner than ~ December 1968

1 - 2314 ; one more on order - del. April 1970 ; 1 spindle for users

2 - 2311 ; will add more as soon as possible; real limit on users comm

more 2311's in Nov., Dec. 1968

- 1-2311 for users; 1 for system

Have considered running 67 in shifts w/ changeover of 2314 packs! for more capacity

For remaining eq. see LH writing

#

CP provides user a virtual mod 65 incl. priv. instr in any reasonable config.

Can config w/ 4M wds, machine sim w/ 256K; diff from CTSS, Multics where ~~real~~ virtual machine is no known machine; "really do have a new machine!"

To get a new config, only need to modify a card deck

Other major feature of is T-S; done by m-p; processor util ought to be very high but it isn't!

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CP (cont)

When give i/o instrs, hardware actually tries + interprets; ~~can program directly for 67~~

When users page from is determined by sequence of login on a ~~user~~ first come - first served

CP controls all of 2314, divided into cylinders; e.g. 2 cyl on a spindle in the virtual machine

Space not used is wasted

- ? can other users share cyl: 0? Ans. No

- ? can there be temp cyl: ? Ans. Doesn't work + not supported; (not at U.L. either).

(There have been probs w/ intermed. fill of assemblies)

Kind of VIRT machines

3 kinds

1. OS (esp. if have mult. discs; also good for dev't of OS systems)

2. DOS (i.e. Disc Op Sys) - run 1 mach w/ APL system + expect by end of month there will be an APL service offered (e.g. Wholesale / retail relationship)

APL works well at Univ. of Alberta + runs several hours ^{per day} exclusively

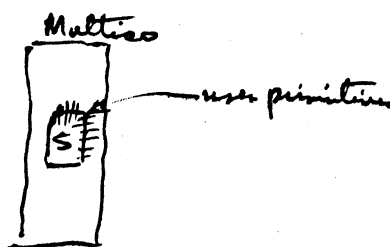
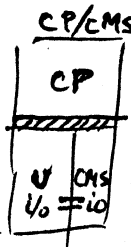
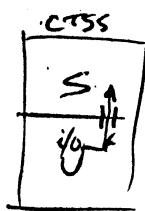
3. CMS - single non interactive Sep.; could run on a 40 ... but would be expensive

Provides: a) file sep
b) commands (VV quest w/ pthen designed!)

Popular lang:

PL/I - same as under OS w/ minor ch. } not present in CTSS
PL/E - " " " " " " }
assembler

Learning New Environment



Commands to CP are read after button on 360! e.g. IL CMS

i/o has a choice in CP/CMS although normally do via CMS; (possible end run to CP)

user image: (cont.)

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cf. typing: CTS input to sup. buff.

CP can type to either CP, ~~CP~~ or CMS

^{CP} in/CMS consider disc tied to user space; cf. Mullin w/ Disc in Sup.

Kuh's people have taken CMS mod w/ file sup "TROUBLE"

- Advantages:
- 1) it is a 360 and it is widespread
import/exportability high
 - 2) likely that programs exported will run under OS
~ 70%+ of install in co.
 - 3) if receive a pgm under OS or DOS can probably run
e.g. Registrar office w/ DOS can use ILS 360/67 as a backup
- current worry is dropped tapes
 - 4) Supported by IBM: (also a disadvantage)
manuals (often correct);
"at moment no Mullin man"; CTS went 2 1/2 years
 - 5) Future prob w/ IBM support only of an unmodified system
 - 6) System in being; can plan ahead since IBM has inertia!

Disadvantages:

- 1) many bugs in software
- 2) hardware trouble (per ~ 3 ~~per~~ mach checks/day)
- 3) Cost: high cf. CTS 3rd shift \$150/hr
vs 365/hr + \$5/hr ~~per~~ dial up time
(w/o disc change!! - will distinguish in time)
There is a drain for shift diff.

~~Batch service~~

Batch service is \$125/hr if no priority (clock hrs (incl. tape overruns which may go w/ MVT later this year))

mod. 65 is a bit faster; also CP has CP overhead

Number has it 7.35/1; no hard figures - application dependent

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Disadv. (cont.)

- no file sharing:
 - LL has done internal "plumbing" in file sys.
 - ~~no ability~~ - no ability for many users at same time
 - file sys. is a bit clumsy
- ? Will IPS use LL changes Ans. Scared off by ZBM prod support policy + rapidity of changes; also LL mod. an older version of CMS
- CMS file sys can be destroyed since
- no backup policy or pgn but unsupplied; users can back up tapes
- 4 Tape drives (9 track) avail for users (have 7tr for ^{3C4020} cal comp)
- also ch-ll links for 65-40 + 67 on order; ZBM give run around on ^{delivery} ~~date~~ _{date}
- C occupies 40 of 128 pages of core (cf. CTSS in 32K)
- cleaning up commands some

Bugs:

non IBM support al but IPS support: 1130, ARDS
~~1 very bad bug~~ in support package
 Mean time to recover ~ 1 1/2 minute ^{if up & running a few hours} (cf. 30-40 hrs in CTSS)
 CTSS: trouble of last ~~weekend~~ weekend

Questions: Matthews: frightened to 1965 ² comp. of CTSS when ^{CTSS} file backup already working etc.
 "Things look very bleak for pushing a large database around"

W. Vanover - will have trouble as long as deliver is April 1970 of next 2314
 Is MIT committed to IBM as a vendor; ^{talking to other} vendors often improves del. schedule

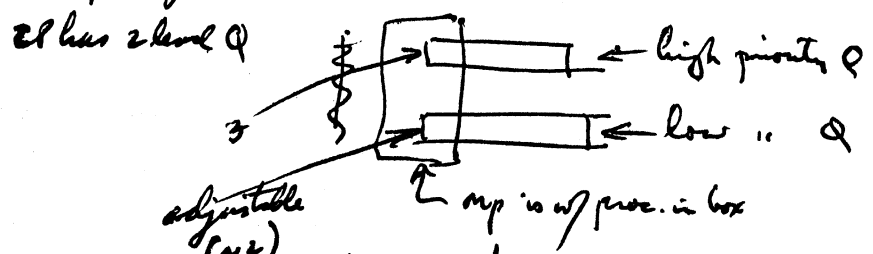
V.V. - prob. is knowing user plans

X items - doesn't make sense for CAM & Day in ?

V.V. - Real issue is compatibility w/ other insell ~~if~~ + if just fits limitations then ok but
 not all prob. can be the 67
 ↑ thinks CTSS, Multics do T-S better but, 67 has its place"

3

Sched alg: mysterious + seems to be 1st that come to mind



percolate from high-priority to low-priority is unclear
interest w/ page sched unclear
page removal is single-minded

W/ ~~any~~ suspects surgery + tuning poss.