System Utility Programs - J. H. Saltzer

CALIB - Processor Stolen cycle calibrator

CALIB runs in a tight loop for 10 seconds as measured by the CTSS supervisor simulated interval timer. (The core B cell 5 clock.) At the end of the 10 seconds, it takes a trap, and prints out the number of machine instructions executed during the 10 seconds. It also computes and prints out the percentage of the estimated number of instructions which should be executed by a 7094 CPU in 10 seconds.

As a non-standard FMS job (not background to FMS), CALIB has produced a figure of 100 percent (or 67 percent if the instruction overlap switches are set incorrectly). On foreground CTSS, the figure normally varies from 95-99 percent depending on load. The difference between the computed percentage and 100 percent is assumed to represent time spent in core-A traps from the clock and data channels. If the Kludge (channel D) is in operation, CALIB may produce a figure in the range of 70-80 percent depending on the picture being displayed.

Usage:

    FAP   CALIB

    VLOAD   CALIB

    SAVE   CALIB

    RESUME CALIB

FORCE - force command for another user.

    Usage:

    MAD   FORCE

    NCLOAD   FORCE

    SAVE FORCE

    RESUME FORCE PROBNO PROGNO COMMND

PROBNO PROGNO is the identification of some logged in user. (If the user

is not logged in, FORCE will report this fact and do nothing.)

COMMND is the name of a command to be executed for this user. (No arguments

can be given to the command.)

FORCE will, if necessary, return the user to command level by

patching a quit signal into his input; then forces the user to

execute the command by patching the command into his input.

If COMMND is "HANGUP", FORCE will log out and hang up the user with

no message printed at his console.

FORCE can only be used by a person with authority to patch core-A.

WATCH - Watch length of CTSS Scheduling queues.

WATCH prints out, once every 60 seconds, the average number of users

in the queues for the last three minutes.

Usage:

MAD WATCH

NVLOAD WATCH

SAVE WATCH

SD MONSC1 14

(MONSCI will print out a location number Y, and its contents, Z)

RESUME WATCH Y

Method:

Supervisor Module SCDD, at entry point MONSC1, keeps an integrated

average queue length. This queue length is updated on every clock trap.

Location 14 relative in MONSC1 contains a floating point number equal to

1000 times the average queue length.

MEMTST- Test validity of memory storage and swapping

MEMTST writes 25000 random numbers into upper core, goes to sleep for 1 second, then regenerates and checks the 25000 random numbers. After repeating this check 10 times, it generates a new set of random numbers and starts another 10 checks. MEMTST can only be stopped by pressing "QUIT". If a memory location contains a wrong number, the location, correct, and incorrect contents are printed. This program is useful if supervisor or hardware bugs are suspected which affect swapping of memory on and off the drum.

Usage:

    MAD   MEMTST

    VLOAD   MEMTST

    START