

# SHARE PROGRAM LIBRARY AGENCY



PROGRAM NUMBER

093002 .

---

## University of Miami

1365 MEMORIAL DRIVE - CORAL GABLES, FLORIDA  
(305) - 284-6257

# SHARE PROGRAM LIBRARY SUBMITTAL FORM



SHARE PROGRAM LIBRARY AGENCY  
Triangle Universities Computation Center  
Post Office Box 12076  
Research Triangle Park, North Carolina USA 27709

SPLA

CONTROL NUMBER: SHR00257

This form should be completed and submitted with the program package to the SHARE Program Library Agency at the address shown above. Standards and instructions for submitting programs are in the SHARE Reference Manual, Section 6.

- (1) Program Number (to be filled by SPLA) . . . . . 370D-09.3.002
- (2) Title of Program . . . . . VM/CMS Subroutine CMS for executing  
CMS commands from within applications  
programs
- (3) System Type(s) (Machine) . . . . . IBM System/370 and 43xx
- (4) Search Key(s) . . . . . VM, CMS, FORTRAN,  
CMS commands
- (5) Programming Systems/Languages . . . . . VM/CMS FORTRAN, Assembler, etc.
- (6) Primary Subject Code . . . . . 09.3
- (7) Minimum System Requirements VM/370 and CMS
- (8) New (N) or Revision (R) (if revision, show prior Program Number in Item 1) N
- (9) Date of Submittal . . . . . 7 April 1982
- (10) Documentation (number of original pages submitted) . . . . . 3 (+ tape key)
- (11) Author's Name and Address . . . . . George H. Kaplan  
U. S. Naval Observatory  
34th St. & Massachusetts Ave. NW  
Washington, DC 20390
- (12) Direct Technical Inquiries to Name & Address (if different than Author) (same)  
Phone: (202) 254-4542
- (13) Submitter's Installation Membership Code . . . . . NOW
- (14) Abstract (should contain sufficient information for a reader to determine the value of the program). Listed on the reverse side of this form are subjects which may serve as a guide for a descriptive abstract.

## DISCLAIMER

Triangle Universities Computation Center (TUCC) serves solely as the distribution agent for contributed programs and does not test or maintain them. They are distributed essentially in the original form submitted by the author. Neither TUCC nor SHARE, INC., makes any warranty, expressed or implied, as to the documentation, function, or performance of the contributed programs.



TAPE KEY -- SUBROUTINE CMS

THE UNLABELED DISTRIBUTION TAPE CONTAINS 4 FILES AND 5 TAPEMARKS

EACH FILE IS COMPOSED OF BLOCKED CARD IMAGES (10 PER BLOCK) CONTAINING EBCDIC CHARACTERS (RECFM FB LRECL 80 BLOCK 800)

FILE 1     TAPE KEY  
            24 CARD IMAGES, 3 BLOCKS  
            T/M

FILE 2     DOCUMENTATION  
            108 CARD IMAGES, 11 BLOCKS  
            T/M

FILE 3     ASSEMBLED OBJECT DECK OF SUBROUTINE CMS  
            10 CARD IMAGES, 1 BLOCK  
            T/M

FILE 4     SOURCE DECK (ASSEMBLER LANGUAGE) OF SUBROUTINE CMS  
            128 CARD IMAGES, 13 BLOCKS  
            T/M  
            T/M

## Subroutine CMS

Entry: CALL CMS (CMD,IRCODE)

Purpose: This subroutine executes a CMS command from within a FORTRAN or other high-level applications program.

Arguments:	CMD	Hollerith literal, enclosed in apostrophes, comprising the command. Alternatively, the name of an array of EBCDIC characters comprising the command. (Input)
	IRCODE	Integer return code from the subroutine. IRCODE=0 indicates successful completion of the command. (Output)

## Discussion:

This subroutine allows for the execution of a CMS command from within a FORTRAN or other high-level applications program. The CMS command is executed as soon as subroutine CMS is called; if the command produces output to the terminal, it will appear at that time. When the command is completed (or if the command cannot be executed) control is returned to the calling program at the next executable statement.

Argument CMD is the string of characters defining the command to be executed. The character string must end with a decimal point (period). The character string can be any length but must not contain more than 30 parameters (tokens) of not more than 8 characters each. Adjacent parameters must be separated by at least one blank; extra blanks may be inserted as padding between parameters as desired. Left or right parentheses which are part of the command need not be separated from adjacent parameters by blanks.

The subroutine places an integer return code in IRCODE, which must be a fullword fixed-point (INTEGER\*4) variable name. Argument IRCODE can be tested after the subroutine call. IRCODE=0 indicates successful completion of the command. IRCODE=-8 indicates a format problem in the CMD character string detected by subroutine CMS; in this case no attempt is made to pass the command to the CMS system for execution. The most common format errors resulting in a -8 return code are (1) no decimal point at the end of the character string, or (2) a parameter with more than 8 characters, or (3) parameters not separated by at least one blank. Other return codes are those generated by the command itself when executed -- see the descriptions of the individual commands in the IBM "CMS Command and Macro Reference" for their meanings.

In addition to CMS commands, this subroutine allows for the execution of EXECs and CP commands. To execute an EXEC, the first parameter in CMD must be the word EXEC, followed by the EXEC name and any parameters to be passed to it. To execute a CP command, the first parameter in CMD must be the word CP, followed by the CP command and any options.

Subroutine CMS may be called from Assembler, FORTRAN, or other high-level languages conforming to standard subroutine linkage conventions. Special care is required for use from PL/I, since PL/I uses its own linkage conventions. To use this routine from PL/I, the PL/I "dope vector" must be suppressed.

This subroutine has a great many applications. It allows for CMS file manipulation (including editing) from within applications programs, dynamic FILEDEFS, spool file control, etc. It allows FORTRAN or other high-level languages to be used as sophisticated EXEC processors: their arithmetic, logical, and loop control facilities can be used to control the execution of CMS and CP commands invoked by calls to subroutine CMS. This subroutine thus has the potential for greatly expanding a CMS user's capabilities and options in the performance of a given task.

#### FORTRAN Examples:

```

      DIMENSION QUERY(4),DEVIC(3)
      DATA QUERY/'CP ','Q V ',' ',' ' . '/'
      DATA DEVIC/'TAPE','DASD','UR '/'
      .
      .
      .
      CALL CMS ('PRINT PROG LISTING A (CC).',IC)
      IF (IC.NE.0) WRITE (6,3) IC
      3 FORMAT (' PRINT ERROR, RC=',I4)
      .
      .
      .
      DO 20 I=1,3
      QUERY(3) = DEVIC(I)
      20 CALL CMS (QUERY,IC)
      .
      .
      .

```

#### Installation:

The distribution tape contains four short card-image files. File 1 contains the tape key. File 2 contains this documentation. File 3 contains the assembled object deck of subroutine CMS. File 4 contains the source deck (Assembler

Language) of subroutine CMS. The installation procedure consists simply of copying file 3 onto a CMS disk using the MOVEFILE command, as follows:

```
FILEDEF INMOVE TAP1 NL 3 (RECFM FB LRECL 80 BLOCK 800)
FILEDEF OUTMOVE DISK CMS TEXT A1 (RECFM FB LRECL 80 BLOCK 80)
MOVEFILE
```

Before executing the above sequence, mount the distribution tape on a tape drive attached at virtual address 181. This sequence places the object deck of subroutine CMS into file CMS TEXT A1. If desired, it can then be added to an appropriate TXTLIB. The other files on the tape can be similarly copied onto a CMS disk.

George H. Kaplan  
U. S. Naval Observatory  
Washington, DC 20390  
(202) 254-4542