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SHARE PROGRAM LIBRARY SUBMITTAL FORM

SHARE PROGRAM LIBRARY AGENCY
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Attention: Mr. Joe Ragland

SPLA CONTROL NUMBER:

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 Program Library Standards Manual".

- (1) Program Number (to be filled in by SPLA) 360D-11.3.015
- (2) System Type (machine) System/360 Model 44
- (3) Search Key 360/44 Commercial Feature Emulator
- _____
- _____
- (4) Programming Language Assembly
- (5) Author's Name and Address Eric F. Brubaker
Computing Center
Oberlin College; Oberlin, O. 44074
- (6) Direct Inquiries to Name and Address
(if different than Author) _____
- _____
- (7) Title of Program Commercial Feature Emulator for
System/360 Model 44
- _____
- (8) Submitter's Installation Membership Code..... OBC
- (9) Submitter's Own Program Identification and Suffix(Optional)... _____
- (10) Primary Subject Code..... 11.3
- (11) Operating or Monitor System Required none (stand-alone program)
- (12) New or Revision Code (if revision, show prior Program Number in Item 1).. N
- (13) Year Completed..... 1972
- (14) Date of Submittal..... 1 March 1973
- (15) Documentation (number of original pages submitted)..... 4
- (16) 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

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COMMERICAL FEATURE EMULATOR FOR
SYSTEM/360 MODEL 44 (LEVEL G1)

The level G1 Commerical Feature emulator is a direct replacement for the IBM level G emulator for any Model 44 with 128k or more memory with the Commercial Feature (#8501). Written to provide a performance improvement for emulated instructions, it yields an increase of at least 15 to 20 percent in execution speed for a typical instruction mix. For a DOS or OS system, this will result in a noticeable increase in system throughput.

The distribution tape is unlabelled, and contains two files, one for source and one for object material. The object file is first, it may be punched off tape, then loaded into extension storage with the Emulator Load key on the system console, just as the IBM emulators. To retrieve the G1 object deck, the following 44PS job could be used.

```
// JOB
//SYS002 ALLOC CFG1TAPE,2400=
// EXEC UTILS
PUNCH SIZIN=(1600,20),START=(,122)
/*
/&
```

As it is distributed, the G1 emulator supports storage protection and ASCII mode arithmetic. If these features are not required, the program may be re-assembled with different parameter values. The SETA symbols controlling these features are described below.

&PROT controls storage protection: a value of zero indicates no protection support is desired, a non-zero value indicates support is desired. If support is not assembled, the storage protection instructions ISK and SSK do not cause operation exceptions. The emulator maintains a table of storage keys as set by the operating system and provides the appropriate key when an insert is issued. This, in conjunction with a minor system patch, makes it possible to run a DOS or OS multiprogramming system on a machine without storage protection hardware. If storage protection is not present &SIZE should also be set to indicate the machine size. As distributed, it is set to 128; it should be set to 256 for a system with more than 128k bytes of memory.

&ASKY controls ASCII mode arithmetic support. Setting it to zero deletes this support to the extent that the ASCII bit of the user's PSW will never be examined, and EBCDIC results will always be generated. WARNING: Your IBM customer engineer will most probably insist upon having ASCII support for running diagnostics! without it, he will receive many pages of error messages and a generally nauseous sensation. Therefore, it would be wise to keep an extra emulator for him, with ASCII support included.

The SETA statements for these variable symbols are located in the source as follows:

<u>Symbol</u>	<u>Sequence</u>
&PROT	CFG10200
&ASKY	CFG10260
&SIZE	CFG10310

To assemble an emulator from the distributed source, the following 44PS job could be used.

```

//      JOB    ...etc.
//SYS002  ALLOC  CFG1TAPE,2400=
//      LABEL  1600
//      EXEC   ASSEMBLE(UPDASMB3,DECK)
//      SKPTO  CFG10000
&PROT    SETA   0                      ....CFG10200
&SIZE    SETA  256                      ....CFG10310
                        ENDUP            ....CFG99999
/*
/&

```

The deck produced from this assembly consists of a two-card loader, one ESD card, TXT cards, one RLD card and an END card, in that order. Remove the ESD and RLD cards, and the emulator is ready for loading.

This emulator is the product of over two years of occasional work begun by Judson Leonard of Oberlin College. Programming and testing was completed by Dennis Hall of Ohio University and Eric Brubaker of Oberlin. The contributions of these and other Oberlin programmers are greatly appreciated.