TO:  MSPM Distribution  
FROM: D. E. Joel  
DATE: 09/7/66 

Change in BE.6.01  
The following changes in function have occurred  

1. BSA has been removed  
2. Specification of BFS permanent file has been added.  
3. Ability to call for segments from a Segment library at 645 execution time has been added
Identification

64.5 Driver
D. E. Joel

Purpose

This program is an alternative to the command MRGEDT in the CTSS system. It is a card driven program which produces a jobstream on magnetic tape.

Operation

Two card decks are required as the input for this job. The first is a program deck which is standard, and the second is the data deck wherein the user describes his requirements.

Additionally, it is required to use the tape library which has been set up specifically for running 6.36 and 64.5 jobs.

The Program Deck

```
$ SNUMB XXXXX
$ IDENT XX,64.5,DRIVER,INPUT RUN FOR THE 64.5 SYSTEM.
$ CONVERT
$ READ IN,A1R
$ INPUT MIXED
$ DISC OT,A1S,20L
$ LIBRARY LB
$ OPTION NOMAP
$ USE .DJ645
$ ENTRY .DJ645
$ EXECUTE
$ LIMITS 40,25000,,500
```
The Program Deck (Continued)

$ DISC IN, A1R, 20L
$ DISC 6B , A2R, 20L
$ DISC F8, A3R, 20L
$ DISC F1, A4R, 20L
$ DISC F2, A5R, 20L
$ DISC F3, A6R, 20L
$ DISC F4, A7R, 20L
$ DISC F5, A8R, 20L
$ DISC F6, A9R, 20L
$ DISC F7, A10R, 20L
$ DISC F9, A11R, 20L
$ DISC FA, A12R, 20L
$ DISC FB, A13R, 20L
$ TAPE OT, A1D,,SCRATCH
$ TAPE LB, A2S,,645,LIBRARY
$ COMMENT AFTER END JOB USE *SCRATCH* AS GECOS INPUT TAPE.
$ ENDJOB
***EOF

The Data Deck

The data deck contains control cards and 'data' cards. The control cards inform the 64.5 Driver of the functions to be perform. (A control card has $645 in columns 1-4, type starting in column 8, and parameters, if any, starting in column 16). Control cards are:

(A) Identification Card

$645 RUN Runname,programmer-ID
This card is the first card recognized in the data deck.

Runname and programmer-ID are restricted to maximum of 6 characters each.

(B) EPLBSA Assembly Card

$645 EPLBSA System-name, Segment-name, options

This card precedes the source deck which is to be assembled.

'System-name' is a 6 or less character name which is used within the system to reference this segment and its associated parts.

'Segment-name' is a 31 or less character name which defines the segment uniquely.

The options available are:

- NDECK - No deck required
- NOLOAD - Not to be loaded for simulation

In the absence of option specification, a binary deck is produced and execution (via the simulator) is attempted.

The source deck to be assembled may be in either of two formats:

(a) BCD cards with conventions described in BE.6.00

(b) Column binary 7 punch cards from CTSS of a file produced by EDA.

(C) Object Card

$645 OBJECT

This card precedes object text and link decks - as many as required. An attempt at simulation is implied.

(D) Library Card

$645 LIB Segment-name

This card results in a request to the 645 loader to load the named segment (prior to execution of the 645 process) from the 645 Segment Library.
'Segment-name' is a 31 or less character name which uniquely defines the called segment. The name is restricted to alphabets (considered lower case), numerics, and the underline.

(E) Permanent File Card

$645 PERM

This card specifies that the user requires the permanent file capability of EFS (BE.1.01) at 645 execution time.

(F) Descriptor Word Setting Card

$645 OPTION parameters

Parameters which may be specified are:

<table>
<thead>
<tr>
<th>MNEMONIC</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0</td>
<td>Directed Fault 0</td>
</tr>
<tr>
<td>F1</td>
<td>Directed Fault 1</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>F7</td>
<td>Directed Fault 7</td>
</tr>
<tr>
<td>DATA</td>
<td>Slave Procedure</td>
</tr>
<tr>
<td>SLVPRAC</td>
<td>Master Procedure</td>
</tr>
<tr>
<td>MASPAC</td>
<td>Execute Only</td>
</tr>
<tr>
<td>SLVACC</td>
<td>Slave Access</td>
</tr>
<tr>
<td>WPERMT</td>
<td>Write Permit</td>
</tr>
</tbody>
</table>

If no OPTION card is present, standard settings are used:

SLVPRAC, SLVACC, WPERMT

The settings specified in an OPTION card remain in effect until another OPTION card is encountered.
If no parameters are specified in an OPTION card, standard settings are reverted to.

(I) Pagesize Setter

\$645 \text{ RSPGSZ \ Size}

Page sizes are:

0   - Unpaged
64  - 64 word pages
1024 - 1024 word pages

The settings specified in an RSPGSZ card remain in effect until another RSPGSZ card is encountered.

(J) GE635 Subprogram Inclusion

\$645 \text{ SYSTEM \ Activity-name}

The activity names (within the 64.5 system) are:

\begin{itemize}
  \item INITIAL - Initializer
  \item EBSASS - EPLBSA Assembler
  \item BSAPRE - BSA preprocessor
  \item BSAPST - BSA post processor
  \item PACKER - Packer
  \item FILEMK - Filemarker
  \item LODSIM - 645 Loader/Simulator
  \item DUMPER - Dumper
\end{itemize}

GE635 object decks, including octal corrections, which follow a SYSTEM card are included during the execution of the named 64.5 activity.

(K) Entry Card

\$645 \text{ ENTRY \ Segment,symbol}

This card defines the location at which simulation is to be commenced. Segment and Symbol are restricted to 31 characters each.
Default entry parameters (segment main, symbol start) are used if no ENTRY card is encountered.

(L) Foundation Cards

<table>
<thead>
<tr>
<th>Card</th>
<th>Default</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>$645</td>
<td>DSPGSZ</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Descriptor Segment Page Size</td>
</tr>
<tr>
<td>$645</td>
<td>NTPGSZ</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name Table Page Size</td>
</tr>
<tr>
<td>$645</td>
<td>LSPGSZ</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Page Size of Linkage Segments</td>
</tr>
<tr>
<td>$645</td>
<td>STPGSZ</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stack Segment Page Size</td>
</tr>
<tr>
<td>$645</td>
<td>PBLKSZ</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Block Size of Page Tables and Other Unpaged Segments</td>
</tr>
<tr>
<td>$645</td>
<td>DSGBND</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Highest Block Number Permitted in Descriptor Segment</td>
</tr>
<tr>
<td>$645</td>
<td>NMTBND</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Highest Block Number Permitted in Name Table Segment</td>
</tr>
<tr>
<td>$645</td>
<td>FLTBAS</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Base of Fault Vector in 636</td>
</tr>
<tr>
<td>$645</td>
<td>LODORG</td>
<td>FLTBAS+384</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loading of Origin</td>
</tr>
<tr>
<td>$645</td>
<td>TIME</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thousands of 636 Memory Cycles Permitted.</td>
</tr>
</tbody>
</table>

These cards are used to set loading parameter which do not change during loading. As indicated, default values are set for all of these parameters, so that a typical user deck might not include any of these cards.

(M) Foreign File Card

$645 FILE Name

Name is a 31 or less character file name.

This card precedes the deck which contains a data file for the user's program. The data deck may be in one of two formats:
a) BCD card image with convention described in BE.6.00.

When explicit line feed control is not defined as the last entry on a card, a newline character is added to the end of the data stream. A fill character (octal 000) is used to complete a partially filled word at the end of the information from each card.

b) Column binary 7-punch which is produced by CTSS (e.g., from an EDA file).

The data deck is terminated by an end-of-file card (**EOF in columns 1-6).