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Identification

The Entry Point Vector Maker  
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Purpose

The Entry Point Vector Maker (EPVMK) is an inner module of the Switching Complex. It is called by the Not-Founder at attach-time for a given ioname, and whenever that ioname is referenced in a new process of the user-group. EPVMK also is called by the Not-Founder (but only once per initial use of the IOS by a user group) to link the Not-Founder to the IOSW. The linkage created by the latter call allows the Not-Founder to compress all outer calls (recall from MSPM BF.2.10 that the Not-Founder forwards outer calls to the IOSW) into only one call for each different argument-list length.

Discussion

The IOSW forwards a given outer call to the appropriate outer module. The IOSW calls that outer module at the same entry point at which it received control. Hence, the IOSW must, in effect, be linked to the given outer module. EPVMK is called at attach-time to create the required linkage. The EPVMK creates this linkage in the form of an array of pointers (forced links) called an Entry Point Vector. (Since forced links are pointers, valid only for the process in which they were forced, this must be repeated for each new process which references the ioname.) The links are made (and offset in the EPV) in an order which is independent of the particular outer module. The IOSW knows this order and references the correct link by using an appropriate index at each of its entry points.

EPVMK has a single external entry. The call is as follows:

```
call epvmk (outer_module, epvptr, entry_mask, code);  
  
dcl outer_module char (*),  
    epvptr ptr,  
    entry_mask bit (72),  
    code fixed;
```

Here, outer module is the name of the outer module for which an EPV is to be constructed; epvptr is a pointer to the EPV returned to the caller; entry\_mask, also a return argument, informs the caller of the outer calls handled by the outer module by setting bit-n to "1"b if the outer module has an entry point for outer-call-n; code is set to 0 by EPVMK if no error was encountered in constructing the EPV.

Implementation

Generate\_ptr (BY.13.02) is called by EPVMK to obtain the forced links. The "table" of outer call names is built into a sequence of assignment statements contained in a do-group. The assignment is, in each case, to the same varying string. Each time the do-group is executed a different outer call name is selected by a switch also contained in the do-group. The selected outer call is used to form the entry point name in the form of a non-varying character string. By the techniques described, varying string data is stored, initialized and manipulated without the overhead of declaring and accessing a structure containing varying strings.