Identification

Summary of Calls to the SMM "write-around"
John W. Gintell

Purpose

The smm "write-around" provides the interface between calls to the old segment management module (smm) and the new BFS calls so that calls made to the smm will be properly directed to the file system. These calls are available outside of ring 0.

Note: The term "callname" used in this document has the same meaning as "reference name" in the overview BG.18.00 and is retained in recognition of the nomenclature of the earlier segment management facility.

Available Calls

1. smm$initiate (callname, dpath, ename, copysw, segptr, status);
   initiates the segment located by path name "dpath>ename" for the call name callname.

   It returns segptr, the pointer to the initiated segment and status, an indication of the results of the initiation.

   \[ \text{status} = 0 \text{ means } \text{segment segptr initiated as per request} \]

   \[ 1 \text{ \quad segment segptr previously initiated for callname} \]

   \[ 2 \text{ \quad unable to initiate the segment indicated by } "dpath>ename" \]

   copysw is used to determine whether an original version or a copy of the segment is to be obtained.

   \[ \text{copysw} = 0 \text{ means use the value of the copy switch in the branch} \]

   \[ \text{copysw} = 1 \text{ means use the original segment} \]

   \[ \text{copysw} = 2 \text{ means obtain a copy of the original segment} \]
2. \texttt{smm\$get\_segment} (callerptr, callname, relname, copysw, segptr, relptr);

gets two segments:

a. one for the call name \texttt{callname} as wanted by the segment \texttt{callerptr}

b. one for the call name \texttt{callname}||\texttt{relname} and related to the segment found for a. If \texttt{relname} is the null string, """, then no such related segment is obtained.

\texttt{copysw} is applied as in initiate above to the related segment only. It returns pointers to these segments, \texttt{segptr} and \texttt{relptr}, respectively. A null pointer indicates that no segment was found.

3. \texttt{segptr = smm\$get\_seg\_ptr} (callname, callerptr);

returns \texttt{segptr}, the pointer to the segment (previously initiated for the call name \texttt{callname}) which is available to the segment \texttt{callerptr}. A null pointer indicates that no segment was found.

4. \texttt{smm\$get\_path\_name} (segptr, dirname, entryname);

returns the path name of the segment \texttt{segptr}. \texttt{dirname} is the directory in which the segment resides and \texttt{entryname} is the last call name initiated for that segment.

5. \texttt{smm\$set\_name\_status} (callname, dpath, ename, msegptr, scirgco, maxsize, trewa, segptr, uname, status);

action taken depends on the value of \texttt{scirgco} (which represents Search, Create, Initiate, Relate, Global and Copy).

Relate and Global are always ignored. If Initiate is off no action is taken and return is made with \texttt{segptr} set to null.

\texttt{status} is always returned set to 0.

For all other values of \texttt{scirgco}, \texttt{segptr} points to the initiated segment or is set to null if the segment could not be initiated.
For those values of scirco for which dpath has any meaning, if it is the null string: ":", it is taken to mean the name of the process directory.

If Create is on, Search and Copy are ignored and a segment whose call name is callname is placed in the directory named dpath with maximum size maxsize, access attributes trewa, and ring brackets {validation level, validationlevel}. The entry name will be ename or if ename = "" it will be the unique characters generated by the uniqued_id.

If Create is off, then an attempt is made to initiate a segment named callname in the directory named dpath. If not successful and if Search is on the search rules are used to search other directories for an entry named callname.

The fixed binary value of the Copy bits are used as is copysw in the entry smm$initiate. (If CO = "00"b then the value of the copy switch in the branch is used, if "01"b the original segment is used, if "10"b a copy of the original segment is initiated when a copy is made).

uname is returned with the unique name of the entry in the process directory for the copied segment.

6. smm$terminate (callname, callerptr);

terminates the segment whose call name is callname when referenced by the segment to which callerptr is a pointer.

**Argument Declarations**

dcl (callname, dpath, ename, relname)

    char (*) varying [or char (*)];

dcl (segptr, callerptr, relptr, msegptr)ptr;

dcl smm$get_seg_ptr ext entry ptr;

dcl copysw fixed bin (2);

    /* = 0 means use the copy switch setting in the hierarchy

               = 1 means use the original segment

               = 2 means make and use a copy of the segment*/
dcl status fixed bin (17);
dcl (dirname, entryname) char (*) varying [or char(*)];
dcl uname char (15);
dcl scirgco bit (7); /*represents Search, Create, Initiate, Relate, Global and Copy switches*/
dcl maxsize fixed bin (9); /*maximum size for created segment - number of 1024 word blocks*/
dcl trewa bit (5); /*represents Trap, Read, Execute, Write and Append attributes for created segment*/