Identification

Process Directories
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Purpose

The process directory for a process provides a repository
in the File System Hierarchy for segments closely associated
with the process. It does not contain every segment in
the address space of the process, but typically contains
two classes of segments:

a)   per-process segments, such as those placed in
     the directory when the process is created (see
     BJ.2.00) and the event channel table (part of
     the interprocess communication facility - see
     BQ.6.00);

b)   temporary segments created for the duration of
     the process - for example, the linkage section
     for a procedure contains per-process data (pointers
     with segment numbers) and therefore each process
     makes its own copy of the linkage sections for
     procedures which it executes. These copies are
     kept in the process directory.

It follows that any process A which knows the pathname
of the process directory of process B can communicate
information to B by means of data segments (assuming A
has access) in B's directory. Further, all segments which
have meaning only during A's existence are contained in
A's process directory and can all be found immediately
and deleted when A is destroyed. Segments whose meaning
is not strictly limited to the duration of A's existence
should be in the working directory (see BX.8.12) rather
than in the process directory, as the working directory
is not destroyed with the process.

Discussion

Each process directory resides in the process directory
directory and has as its name the standard character-string
representation (see BY.15.01) of the process id. Hence
the pathname of a process directory might be

    >process_dir_dir>|fggxxbzqcdgbbb

Any process wishing to communicate with another process,
and knowing the process id of the other process, can easily
construct the pathname of its process directory using
the algorithm presented in BY.15.01.

Access Control

A summary of access control modes for directories can be
found in BQ.4.00 and may be a useful reference in the
following discussion.

The process directory directory resides in the hard core
ring and can be read or modified only by hard core ring
procedures, such as the process creation module (see BJ.2.00).

The process directory of a process in a process-group
A is accessible for reading and writing (read, execute,
write and append modes) to all processes in process-group
A, from all rings. (Note that this does not allow an
outer ring procedure to modify the directory entry for
inner ring segments.) Further, the directory is accessible
to all users for searching (execute attribute) in the
hard core ring. This allows processes in other process
groups to communicate with the process, but only through
a hard core ring intermediary which first validates the
communication attempt.