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Identification

Process Definition Block

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Purpose

All per-process data items of the Hard Core Supervisor which need not be in wired down core are kept in the Process Definition Block, an area in the Process Definition Segment. The latter is described in Section BJ.1.06. The remaining part of this section describes the individual data items in the process definition block, and gives their declaration.

Discussion

The following items are contained in the process definition block. The order that the items appear here is the same as their order in the declaration given at the end of this section.

1. Account id. This is the identification required by the accounting system to identify charges incurred by the current process. See Section B0.
2. Process Group id. This character string is used to identify the current process group. It is set at process creation time and is used by the file system in connection with access control lists and by others. See BQ.0.
3. Base Directory. This character string gives the current root to be used for this process in the file system. See BG.8.03.
4. Base Directory Size. This integer is the number of meaningful characters in the previous item. See BG.8.03.
5. Process Data Segment Number. This item is the segment number of the process data segment used in retrieving the process data segment when the current process is loaded. See BG.3.03.

6. Stacks Array. This is an array of 64 items containing the pointers to the stacks in each of the 64 possible protection rings. See Section BD.9.01 for a further discussion.
7. Inhibit trap. This item is set non-zero by a process to indicate that it is unwilling to accept file traps in accessing a segment. See BG.9.00 for further discussion.
8. Hard core ring call-out pointers. There are three situations in which procedures outside of the hard core ring must be called by procedures in the hard core ring. These calls are made indirectly through the pointers listed below, so that the segment numbers of the called procedures can be set at process creation time, rather than at system initialization time. Because the hard core procedures are prelinked, any segment called in the usual way must have its segment number known at system initialization time.
  - 8.1 Linker pointer. This points to the linker, in the administrative ring. It is used by the Fault Interceptor Module (FIM) after a linkage fault. See BK.3.03.
  - 8.2 Signal caller pointer. This item is used by the FIM to reflect certain faults to the user as signals. See BK.3.03.
  - 8.3 Process initialization pointer. This item, used exactly once, leads to the process initialization procedure in the administrative ring. See BJ.9.01.

PL/I Declarations

A suitable declaration for the process definition block follows.

```

declare (
    pdf$account_id bit(36),      /* identification for accounting
                                module */

    1 pdf$process_group_id,     /* identify process group... */
    2 name char(24),           /* ...name of user */
    2 project char(24),        /* ...his project identification */
    2 instance_tag char(2),     /* ...login instance */

    pdf$base_dir char(64),      /* current root for file system */
    pdf$base_dir_size fixed,    /* number of characters in previous
                                item */

    pdf$process_data_segno
                                fixed, /* segno for loading of pds */

    pdf$stacks (0:63) ptr,      /* location of stacks in 64
                                rings */

    pdf$inhibit_trap
                                fixed binary(1), /* inhibit file traps */

    pdf$linker_ptr ptr,         /* call out to linker */
    pdf$signal_caller_ptr ptr, /* call out to signal */
    pdf$proc_init_ptr ptr      /* initialize process */

) external;

```