

```

1  #ifndef PROC_H
2  #define PROC_H
3
4  /* Here is the declaration of the process table.  It contains all process
5   * data, including registers, flags, scheduling priority, memory map,
6   * accounting, message passing (IPC) information, and so on.
7   *
8   * Many assembly code routines reference fields in it.  The offsets to these
9   * fields are defined in the assembler include file sconst.h.  When changing
10  * struct proc, be sure to change sconst.h to match.
11  */
12  #include <minix/com.h>
13  #include "const.h"
14  #include "priv.h"
15
16  struct proc {
17      struct stackframe_s p_reg;      /* process' registers saved in stack frame */
18      struct segframe p_seg;          /* segment descriptors */
19      proc_nr_t p_nr;                 /* number of this process (for fast access) */
20      struct priv *p_priv;             /* system privileges structure */
21      short p_rts_flags;               /* process is runnable only if zero */
22      short p_misc_flags;              /* flags that do not suspend the process */
23
24      char p_priority;                 /* current scheduling priority */
25      char p_max_priority;             /* maximum scheduling priority */
26      char p_ticks_left;               /* number of scheduling ticks left */
27      char p_quantum_size;             /* quantum size in ticks */
28
29      struct mem_map p_memmap[NR_LOCAL_SEGS]; /* memory map (T, D, S) */
30
31      clock_t p_user_time;             /* user time in ticks */
32      clock_t p_sys_time;              /* sys time in ticks */
33      clock_t p_recent_time;           /* recent time in ticks */
34
35      struct proc *p_nextready;        /* pointer to next ready process */
36      struct proc *p_caller_q;         /* head of list of procs wishing to send */
37      struct proc *p_q_link;           /* link to next proc wishing to send */
38      message *p_messbuf;              /* pointer to passed message buffer */
39      int p_getfrom_e;                 /* from whom does process want to receive? */
40      int p_sendto_e;                  /* to whom does process want to send? */
41
42      sigset_t p_pending;               /* bit map for pending kernel signals */
43
44      char p_name[P_NAME_LEN];         /* name of the process, including \0 */
45
46      endpoint_t p_endpoint;           /* endpoint number, generation-aware */
47
48      #if DEBUG_SCHED_CHECK
49          int p_ready, p_found;
50      #endif
51  };
52
53  /* Bits for the runtime flags.  A process is runnable iff p_rts_flags == 0. */
54  #define SLOT_FREE      0x01          /* process slot is free */
55  #define NO_PRIORITY    0x02          /* process has been stopped */
56  #define SENDING        0x04          /* process blocked trying to send */
57  #define RECEIVING      0x08          /* process blocked trying to receive */
58  #define SIGNALLED      0x10          /* set when new kernel signal arrives */
59  #define SIG_PENDING    0x20          /* unready while signal being processed */
60  #define P_STOP         0x40          /* set when process is being traced */
61  #define NO_PRIV        0x80          /* keep forked system process from running */
62  #define NO_ENDPOINT    0x100        /* process cannot send or receive messages */
63
64  /* These runtime flags can be tested and manipulated by these macros. */
65

```