

```

/* ptinit.c - ptinit */

#include <xinu.h>

struct ptnode *ptfree;          /* List of free message nodes */
struct ptnode porttab[NPORTS]; /* Port table */
int32 ptnextid;                /* Next table entry to try */

/*-----
 * ptinit - Initialize all ports
 *-----
 */
syscall ptinit(
    int32 maxmsgs          /* Total messages in all ports */
)
{
    int32 i;                /* Runs through the port table */
    struct ptnode *next, *curr; /* Used to build a free list */

    /* Allocate memory for all messages on all ports */

    ptfree = (struct ptnode *)getmem(maxmsgs*sizeof(struct ptnode));
    if (ptfree == (struct ptnode *)SYSERR) {
        panic("ptinit - insufficient memory");
    }

    /* Initialize all port table entries to free */

    for (i=0 ; i<NPORTS ; i++) {
        porttab[i].ptstate = PT_FREE;
        porttab[i].ptseq = 0;
    }
    ptnextid = 0;

    /* Create a free list of message nodes linked together */

    for ( curr=next=ptfree ; --maxmsgs > 0 ; curr=next ) {
        curr->ptnext = ++next;
    }

    /* Set the pointer in the final node to NULL */

    curr->ptnext = NULL;
    return OK;
}

```