NAME

mount -- mount file system

SYNOPSIS

sys mount; special; name / mount = 21.; not in assembler

DESCRIPTION

mount announces to the system that a removable file system has been mounted on special file special; from now on, references to file name will refer to the root file on the newly mounted file system. Special and name are pointers to null-terminated strings containing the appropriate path names.

Name must exist already. If it had useful contents, they are inaccessible while the file system is mounted.

Almost always, name should be a directory so that an entire file system, not just one file, may exist on the removable device.

FILES

--

SEE ALSO

umount

DIAGNOSTICS

Error bit (c-bit) set if special is inaccessible or dir does not exist.

BUGS

At most one removable device can be mounted at a time. The use of this call should be restricted to the super-user.

OWNER

ken, dmr
NAME           open  --  open for reading or writing
SYNOPSIS       sys    open; name; mode    / open = 5.
                (descriptor in r0)
DESCRIPTION     open opens the file name for reading (if mode is
                0) or writing (if mode is non-zero). name is the
                address of a string of ASCII characters
                representing a path name, terminated by a null
                character.

                The file descriptor should be saved for subsequent
                calls to read (or write) and close.

                In both the read and write case the file pointer
                is set to the beginning of the file.

                If the last link to an open file is removed, the
                file is not destroyed until it is closed.

FILES          --
SEE ALSO        creat, read, write, close
DIAGNOSTICS    The error bit (c-bit) is set if the file does not
                exist, if one of the necessary directories does
                not exist or is unreadable, or if the file is not
                readable.
BUGS           --
OWNER          ken, dmr
NAME quit -- turn off quit signal

SYNOPSIS sys quit; flag / quit = 26.

DESCRIPTION When flag is 0, this call disables quit signals from the typewriter (ASCII FS). When flag is 1, quits are re-enabled, and cause execution to cease and a core image to be produced. When flag is an address in the program, a quit causes control to be sent to that address.

Quits should be turned off only with due consideration.

FILES --

SEE ALSO sys intr turns off interrupts

DIAGNOSTICS --

BUGS --

OWNER ken, dmr
read -- read from file

(file descriptor in r0)
sys read; buffer; nchars / read = 3.
(nread in r0)

DESCRIPTION
A file descriptor is a word returned from a successful open call.

Buffer is the location of nchars contiguous bytes into which the input will be placed. It is not guaranteed that all nchars bytes will be read, however; for example if the file refers to a typewriter at most one line will be returned. In any event the number of characters read is returned in r0.

If r0 returns with value 0, then end-of-file has been reached.

FILES
--

SEE ALSO
open

DIAGNOSTICS
As mentioned, r0 is 0 on return when the end of the file has been reached. If the read was otherwise unsuccessful the error bit (c-bit) is set. Many conditions, all rare, can generate an error: physical I/O errors, bad buffer address, preposterous nchars, file descriptor not that of an input file.

BUGS
--

OWNER
ken, dmr
NAME     rele -- release processor

SYNOPSIS  sys rele / rele = 0; not in assembler

DESCRIPTION  This call causes the process to be swapped out immediately if another process wants to run. Its main reason for being is internal to the system, namely to implement timer-runout swaps. However, it can be used beneficially by programs which wish to loop for some reason without consuming more processor time than necessary.

FILES  --

SEE ALSO  --

DIAGNOSTICS  --

BUGS  --

OWNER  ken, dmr
NAME

seek  -- move read/write pointer

SYNOPSIS

(file descriptor in r0)
sys seek; offset; ptrname  / seek = 19.

DESCRIPTION

The file descriptor refers to a file open for reading or writing. The read (or write) pointer for the file is set as follows:

if ptrname is 0, the pointer is set to offset.

if ptrname is 1, the pointer is set to its current location plus offset.

if ptrname is 2, the pointer is set to the size of the file plus offset.

FILES

--

SEE ALSO

tell

DIAGNOSTICS

The error bit (c-bit) is set for an undefined file descriptor.

BUGS

A file can conceptually be as large as 2**20 bytes. Clearly only 2**16 bytes can be addressed by seek. The problem is most acute on the tape files and RK and RF. Something is going to be done about this.

OWNER

ken, dmr
NAME
setuid  --  set process ID

SYNOPSIS
(process ID in r0)
sys    setuid         / setuid = 23.

DESCRIPTION
The user ID of the current process is set to the argument in r0. Both the effective and the real user ID are set. This call is only permitted to the super-user.

FILES
--

SEE ALSO
getuid

DIAGNOSTICS
Error bit (c-bit) is set if the current user ID is not that of the super-user.

BUGS
--

OWNER
ken, dmr
NAME  smdate  --  set modified date on file

SYNOPSIS  (time to AC-MQ)
          sys   smdate; file / smdate = 30.; not in assembler

DESCRIPTION  File is the address of a null-terminated string
              giving the name of a file. The modified time of
              the file is set to the time given in the AC-MQ
              registers.

              This call is allowed only to the super-user.

FILES  --

SEE ALSO  --

DIAGNOSTICS  Error bit is set if the user is not the super-
              user or if the file cannot be found.

BUGS  --

OWNER  ken, dmr
NAME
stat -- get file status

SYNOPSIS
sys stat; name; buf / stat = 18.

DESCRIPTION
name points to a null-terminated string naming a file; buf is the address of a 34(10) byte buffer into which information is placed concerning the file. It is unnecessary to have any permissions at all with respect to the file, but all directories leading to the file must be readable.

After stat, buf has the following format:

buf, +1 i-number
+2, +3 flags (see below)
+4 number of links
+5 user ID of owner
+6, +7 size in bytes
+8, +9 first indirect block or contents block
...
+22, +23 eighth indirect block or contents block
+24, +25, +26, +27 creation time
+28, +29, +30, +31 modification time
+32, +33 unused

The flags are as follows:

100000 used (always on)
040000 directory
020000 file has been modified (always on)
010000 large file
000040 set user ID
000020 executable
000010 read, owner
000004 write, owner
000002 read, non-owner
000001 write, non-owner

FILES
--

SEE ALSO
fstat

DIAGNOSTICS
Error bit (c-bit) is set if the file cannot be found.

BUGS
The format is going to change someday.

OWNER
ken, dmr
NAME

stime  --  set time

SYNOPSIS

(time in AC-MQ)
sys  stime  /  stime = 25.;  not in assembler

DESCRIPTION

stime  sets  the  system's  idea  of  the  time  and
date.  Only  the  super-user  may  use  this  call.

FILES

--

SEE ALSO

sys time

DIAGNOSTICS

Error  bit (c-bit)  set  if  user  is  not  the  super-
user.

BUGS

--

OWNER

ken,  dmr
NAME

stty -- set mode of typewriter

SYNOPSIS

(sys descriptor in r0)

sys stty; arg / stty = 31.; not in assembler

arg: dcrsr; dcpsr; mode

DESCRIPTION

stty sets mode bits for a typewriter whose file descriptor is passed in r0. First, the system delays until the typewriter is quiescent. Then, the argument dcrsr is placed into the typewriter's reader control and status register, and dcpsr is placed in the printer control and status register. The DC-11 manual must be consulted for the format of these words. For the purpose of this call, the most important role of these arguments is to adjust to the speed of the typewriter.

The mode arguments contains several bits which determine the system's treatment of the typewriter:

200 even (M37 tty) parity allowed
100 odd (non-M37 tty) allowed
040 raw mode: wake up on all characters
020 map CR into LF; echo LF or CR as CR-LF
010 don't echo (half duplex)
004 map upper case to lower case on input (M33 TTY)

Characters with the wrong parity, as determined by bits 200 and 100, are ignored.

In raw mode, every character is passed back immediately to the program. No erase or kill processing is done; the end-of-file character (EOT), the interrupt character (DELETE) and the quit character (FS) are not treated specially.

Mode 020 causes input carriage returns to be turned into new-lines; input of either CR or LF causes CR-LF both to be echoed (used for GE TermiNet 300's).

FILES

--

SEE ALSO

gtty

DIAGNOSTICS

The error bit (c-bit) is set if the file descriptor does not refer to a typewriter.

BUGS

This call should be used with care. It is all too easy to turn off your typewriter.

OWNER

ken, dmr
NAME tell -- get file pointer

SYNOPSIS (file descriptor in r0)
sys tell; offset; ptrname / tell = 20.
(value returned in r0)

DESCRIPTION The file descriptor refers to an open file. The value returned in r0 is one of:

if ptrname is 0, the value returned is offset;

if ptrname is 1, the value is the current pointer plus offset;

if ptrname is 2, the value returned is the number of bytes in the file plus offset.

FILES --

SEE ALSO seek

DIAGNOSTICS The error bit (c-bit) is set if the file descriptor is unknown.

BUGS Tell doesn't work. Complain if you need it.

OWNER ken, dmr
NAME                time -- get time of year
SYNOPSIS            sys time / time = 13.
                     (time AC-MQ)
DESCRIPTION         time returns the time since 00:00:00, Jan. 1, 1971, measured in sixtieths of a second. The high order word is in the AC register and the low order is in the MQ.
FILES               --
SEE ALSO            --
DIAGNOSTICS        --
BUGS                The chronological-minded user will note that 2**32 sixtieths of a second is only about 2.5 years.
OWNER               ken, dmr
NAME umount -- dismount file system

SYNOPSIS sys umount; special / umount = 22.; not in assembler

DESCRIPTION umount announces to the system that special file
special is no longer to contain a removable file
system. The file associated with the special
file reverts to its ordinary interpretation (see
mount).

The user must take care that all activity on the
file system has ceased.

FILES --

SEE ALSO mount

DIAGNOSTICS Error bit (c-bit) set if no file system was
mounted on the special file.

BUGS Use of this call should be restricted to the
super-user.

OWNER ken, dmr
NAME       unlink -- remove directory entry

SYNOPSIS   sys    unlink; name   / unlink = 10.

DESCRIPTION Name points to a null-terminated string. Unlink removes the entry for the file pointed to by name from its directory. If this entry was the last link to the file, the contents of the file are freed and the file is destroyed. If, however, the file was open in any process, the actual destruction is delayed until it is closed, even though the directory entry has disappeared.

FILES --

SEE ALSO link

DIAGNOSTICS The error bit (c-bit) is set to indicate that the file does not exist or that its directory cannot be written. Write permission is not required on the file itself. It is also illegal to unlink a directory (except for the super-user).

BUGS Probably write permission should be required to remove the last link to a file, but this gets in other problems (namely, one can donate an undeletable file to someone else).

If the system crashes while a file is waiting to be deleted because it is open, the space is lost.

OWNER     ken, dmr
NAME    wait -- wait for process to die

SYNOPSIS    sys    wait    / wait = 7.
(process ID in r0)

DESCRIPTION    wait causes its caller to delay until one of its
    child processes terminates. If any child has
    already died, return is immediate; if there are
    no children, return is immediate with the error
    bit set. In the case of several children several
    waits are needed to learn of all the deaths.

FILES    --

SEE ALSO    fork

DIAGNOSTICS    error bit (c-bit) on if no children not previously
    waited for.

BUGS    A child which dies but is never waited for is not
    really gone in that it still consumes disk swap
    and system table space. This can make it impos-
    sible to create new processes. The bug can be
    noticed when several "&" separators are given to
    the shell not followed by a command without an
    ampersand. Ordinarily things clean themselves up
    when an ordinary command is typed, but it is pos-
    sible to get into a situation in which no com-
    mands are accepted, so no waits are done; the
    system is then hung.

    The fix, probably, is to have a new kind of fork
    which creates a process for which no wait is
    necessary (or possible); also to limit the number
    of active or inactive descendants allowed to a
    process.

OWNER    ken, dmr
NAME  write -- write on file
SYNOPSIS  
  (file descriptor in r0)
  sys write; buffer; nchars  / write = 4.
  (number written in r0)
DESCRIPTION  A file descriptor is a word returned from a successful open or creat call.

  buffer is the address of nchars contiguous bytes which are written on the output file. The number of characters actually written is returned in r0. It should be regarded as an error if this is not the same as requested.

For disk and tape files, writes which are multiples of 512 characters long and begin on a 512-byte boundary are more efficient than any others.

FILES  --
SEE ALSO  sys creat, sys open
DIAGNOSTICS  The error bit (c-bit) is set on an error: bad descriptor, buffer address, or count, physical I/O errors;
BUGS  --
OWNER  ken, dmr