NAME

physio, minphys – perform physical I/O

SYNOPSIS

```
#include <sys/types.h>
#include <sys/buf.h>
#include <sys/uio.h>

int physio(int (*strat)(struct buf *), struct buf *bp, dev_t dev, int rw,
        void (*mincnt)(struct buf *), struct uio *uio);

void  minphys(struct buf *bp);
```

INTERFACE LEVEL

Solaris DDI specific (Solaris DDI).

ARGUMENTS

physio( )

strat	Pointer to device strategy routine.
bp	Pointer to a **buf**(9S) structure describing the transfer. If *bp* is set to **NULL** then **physio( )** allocates one which is automatically released upon completion.
dev	The device number.
rw	Read/write flag. This is either **B_READ** when reading from the device, or **B_WRITE** when writing to the device.
mincnt	Routine which bounds the maximum transfer unit size.
uio	Pointer to the **uio** structure which describes the user I/O request.

minphys( )

bp	Pointer to a **buf** structure.

DESCRIPTION

physio( ) performs unbuffered I/O operations between the device *dev* and the address space described in the **uio** structure.

Prior to the start of the transfer **physio( )** verifies the requested operation is valid by checking the protection of the address space specified in the **uio** structure. It then locks the pages involved in the I/O transfer so they can not be paged out. The device strategy routine, **strat( )**, is then called one or more times to perform the physical I/O operations. **physio( )** uses **biowait**(9F) to block until **strat( )** has completed each transfer. Upon completion, or detection of an error, **physio( )** unlocks the pages and returns the error status.

physio( ) uses **mincnt( )** to bound the maximum transfer unit size to the system, or device, maximum length. **minphys( )** is the system **mincnt( )** routine for use with **physio( )** operations. Drivers which do not provide their own local **mincnt( )** routines should call **physio( )** with **minphys( )**.

minphys( ) limits the value of *bp***->b_bcount** *to a sensible default for the capabilities of the system. Drivers that provide their own* **mincnt( )** routine should also call **minphys( )** to make sure they do not exceed the system limit.

RETURN VALUES

physio( ) returns:

0	on success.
non-zero	on failure.

CONTEXT

physio() can be called from user context only.

SEE ALSO

strategy(9E), **biodone**(9F), **biowait**(9F), **buf**(9S), **uio**(9S)

Writing Device Drivers

WARNINGS

Since **physio( )** calls **biowait( )** to block until each buf transfer is complete, it is the drivers responsibility to call **biodone**(9F) when the transfer is complete, or **physio( )** will block forever.