## NAME

pullupmsg – concatenate bytes in a message

## SYNOPSIS

**#include <sys/stream.h>**

**int pullupmsg(mblk_t** **mp*, **int** *len***);**

## INTERFACE LEVEL

Architecture independent level 1 (DDI/DKI).

## ARGUMENTS

*mp* Pointer to the message whose blocks are to be concatenated. **mblk_t** is an instance of the **msgb**(9S) structure.

*len* Number of bytes to concatenate.

## DESCRIPTION

**pullupmsg( )** tries to combine multiple data blocks into a single block. **pullupmsg( )** concatenates and aligns the first *len* data bytes of the message pointed to by *mp*. If *len* equals **-1**, all data are concatenated. If *len* bytes of the same message type cannot be found, **pullupmsg( )** fails and returns **0**.

## RETURN VALUES

On success, **1** is returned; on failure, **0** is returned.

## CONTEXT

**pullupmsg( )** can be called from user or interrupt context.

## EXAMPLE

This is a driver write **srv**(9E) (service) routine for a device that does not support scatter/gather DMA. For all **M_DATA** messages, the data will be transferred to the device with DMA.

First, try to pull up the message into one message block with the **pullupmsg( )** function (line 12). If successful, the transfer can be accomplished in one DMA job. Otherwise, it must be done one message block at a time (lines 19–22). After the data has been transferred to the device, free the message and continue processing messages on the queue.

```
1 xxxwsrv(q)
2     queue_t *q;
3 {
4         mblk_t *mp;
5         mblk_t *tmp;
6         caddr_t dma_addr;
7         int dma_len;
8
9         while ((mp = getq(q)) != NULL) {
10                switch (mp->b_datap->db_type) {
11                case M_DATA:
12                        if (pullupmsg(mp, -1)) {
13                                dma_addr = vtop(mp->b_rptr);
14                                dma_len = mp->b_wptr - mp->b_rptr;
15                                xxx_do_dma(dma_addr, dma_len);
16                                freemsg(mp);
```

```
                                break;
                        }
                        for (tmp = mp; tmp; tmp = tmp->b_cont) {
                                dma_addr = vtop(tmp->b_rptr);
                                dma_len = tmp->b_wptr - tmp->b_rptr;
                                xxx_do_dma(dma_addr, dma_len);
                        }
                        freemsg(mp);
                        break;
        . . .
                }
        }
}
```

## SEE ALSO

**srv**(9E), **allocb**(9F), **msgpullup**(9F), **msgb**(9S)

*Writing Device Drivers*
*STREAMS Programming Guide*

## NOTES

**pullupmsg( )** is not included in the DKI and will be removed from the system in a future release. Device driver writers are strongly encouraged to use **msgpullup**(9F) instead of **pullupmsg( )**.