NAME

scsi_alloc_consistent_buf – allocate an I/O buffer for SCSI DMA

SYNOPSIS

#include <sys/scsi/scsi.h>

struct buf *scsi_alloc_consistent_buf(struct scsi_address **ap,* **struct buf** **bp***,**
int *datalen***, ulong** *bflags***, int (****callback* **)(caddr_t), caddr_t** *arg***);**

INTERFACE LEVEL

Solaris DDI specific (Solaris DDI).

ARGUMENTS

ap	Pointer to the **scsi_address**(9S) structure.
bp	Pointer to the **buf**(9S) structure.
datalen	Number of bytes for the data buffer.
bflags	Flags setting for the allocated buffer header.
callback	A pointer to a callback function, **NULL_FUNC** or **SLEEP_FUNC**.
arg	The callback function argument.

DESCRIPTION

scsi_alloc_consistent_buf( ) allocates a buffer header and the associated data buffer for direct memory access (DMA) transfer. This buffer is allocated from the *iobp* space, which is considered consistent memory. For more details, see **ddi_iopb_alloc**(9F) and **ddi_dma_sync**(9F).

For buffers allocated via **scsi_alloc_consistent_buf( )**, and marked with the **PKT_CONSISTENT** flag via **scsi_init_pkt**(9F), the HBA driver must ensure that the data transfer for the command is correctly synchronized before the target driver's command completion callback is performed.

If *bp* is **NULL**, a new buffer header will be allocated using **getrbuf**(9F). In addition, if *datalen* is non-zero, a new buffer will be allocated using **ddi_iopb_alloc**(9F).

callback indicates what the allocator routines should do when direct memory access (DMA) resources are not available; the valid values are:

NULL_FUNC	Do not wait for resources. Return a **NULL** pointer.
SLEEP_FUNC	Wait indefinitely for resources.
Other Values	*callback* points to a function that is called when resources may become available. *callback* must return either **0** (indicating that it attempted to allocate resources but failed to do so), in which case it is put back on a list to be called again later, or **1** indicating either success in allocating resources or indicating that it no longer cares for a retry. The last argument *arg* is supplied to the *callback* function when it is invoked.

RETURN VALUES

scsi_alloc_consistent_buf( ) returns a pointer to a **buf**(9S) structure on success. It returns **NULL** if resources are not available and *waitfunc* was not **SLEEP_FUNC**.

CONTEXT

If *callback* is **SLEEP_FUNC**, then this routine may be called only from user-level code. Otherwise, it may be called from either user or interrupt level. The *callback* function may not block or call routines that block.

EXAMPLES

Allocate a request sense packet with consistent DMA resources attached.

```
bp = scsi_alloc_consistent_buf(&devp->sd_address, NULL,
    SENSE_LENGTH, B_READ, SLEEP_FUNC, NULL);
rqpkt = scsi_init_pkt(&devp->sd_address,
    NULL, bp, CDB_GROUP0, 1, 0,
    PKT_CONSISTENT, SLEEP_FUNC, NULL);
```

Allocate an inquiry packet with consistent DMA resources attached.

```
bp = scsi_alloc_consistent_buf(&devp->sd_address, NULL,
    SUN_INQSIZE, B_READ, canwait, NULL);
if (bp) {
        pkt = scsi_init_pkt(devp->sd_address, NULL, bp,
        CDB_GROUP0, 1, PP_LEN, PKT_CONSISTENT,
                canwait, NULL);
}
```

SEE ALSO

ddi_dma_sync(9F), **ddi_iopb_alloc**(9F), **getrbuf**(9F), **scsi_destroy_pkt**(9F), **scsi_init_pkt**(9F), **scsi_free_consistent_buf**(9F), **buf**(9S), **scsi_address**(9S)

Writing Device Drivers