NAME

drbr, **drbr_free**, **drbr_enqueue**, **drbr_dequeue**, **drbr_dequeue_cond**, **drbr_flush**, **drbr_empty**, **drbr_inuse** - network driver interface to buf_ring

SYNOPSIS

#include <sys/param.h>
#include <net/if.h>
#include <net/if_var.h>

void
drbr_free(*struct buf_ring *br, struct malloc_type *type*);

int
drbr_enqueue(*struct ifnet *ifp, struct buf_ring *br, struct mbuf *m*);

*struct mbuf **
drbr_dequeue(*struct ifnet *ifp, struct buf_ring *br*);

*struct mbuf **
drbr_dequeue_cond(*struct ifnet *ifp, struct buf_ring *br, int (*func) (struct mbuf *, void *), void *arg*);

void
drbr_flush(*struct ifnet *ifp, struct buf_ring *br*);

int
drbr_empty(*struct ifnet *ifp, struct buf_ring *br*);

int
drbr_inuse(*struct ifnet *ifp, struct buf_ring *br*);

DESCRIPTION

The **drbr** functions provide an API to network drivers for using buf_ring(9) for enqueueing and dequeueing packets. This is meant as a replacement for the IFQ interface for packet queuing. It allows a packet to be enqueued with a single atomic and packet dequeue to be done without any per-packet atomics as it is protected by the driver's tx queue lock. If INVARIANTS is enabled, **drbr_dequeue**() will assert that the tx queue lock is held when it is called.

The **drbr_free**() function frees all the enqueued mbufs and then frees the buf_ring.

The **drbr_enqueue**() function is used to enqueue an mbuf to a buf_ring, falling back to the ifnet's IFQ if

ALTQ(4) is enabled.

The **drbr_dequeue**() function is used to dequeue an mbuf from a buf_ring or, if ALTQ(4) is enabled, from the ifnet's IFQ.

The **drbr_dequeue_cond**() function is used to conditionally dequeue an mbuf from a buf_ring based on whether *func* returns TRUE or FALSE.

The **drbr_flush**() function frees all mbufs enqueued in the buf_ring and the ifnet's IFQ.

The **drbr_empty**() function returns TRUE if there are no mbufs enqueued, FALSE otherwise.

The **drbr_inuse**() function returns the number of mbufs enqueued. Note to users that this is intrinsically racy as there is no guarantee that there will not be more mbufs when **drbr_dequeue**() is actually called. Provided the tx queue lock is held there will not be less.

RETURN VALUES

The **drbr_enqueue**() function returns ENOBUFS if there are no slots available in the buf_ring and 0 on success.

The **drbr_dequeue**() and **drbr_dequeue_cond**() functions return an mbuf on success and NULL if the buf_ring is empty.

HISTORY

These functions were introduced in FreeBSD 8.0.