

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 enqueueued 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 enqueueued 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.