

NAME

`ibv_reg_mr`, `ibv_dereg_mr` – register or deregister a memory region (MR)

SYNOPSIS

```
#include <infiniband/verbs.h>
```

```
struct ibv_mr *ibv_reg_mr(struct ibv_pd *pd, void *addr,
                          size_t length, int access);
```

```
int ibv_dereg_mr(struct ibv_mr *mr);
```

DESCRIPTION

ibv_reg_mr() registers a memory region (MR) associated with the protection domain *pd*. The MR's starting address is *addr* and its size is *length*. The argument *access* describes the desired memory protection attributes; it is either 0 or the bitwise OR of one or more of the following flags:

IBV_ACCESS_LOCAL_WRITE Enable Local Write Access

IBV_ACCESS_REMOTE_WRITE Enable Remote Write Access

IBV_ACCESS_REMOTE_READ Enable Remote Read Access

IBV_ACCESS_REMOTE_ATOMIC Enable Remote Atomic Operation Access (if supported)

IBV_ACCESS_MW_BIND Enable Memory Window Binding

IBV_ACCESS_ZERO_BASED Use byte offset from beginning of MR to access this MR, instead of a pointer address

IBV_ACCESS_ON_DEMAND Create an on-demand paging MR

If **IBV_ACCESS_REMOTE_WRITE** or **IBV_ACCESS_REMOTE_ATOMIC** is set, then **IBV_ACCESS_LOCAL_WRITE** must be set too.

Local read access is always enabled for the MR.

To create an implicit ODP MR, **IBV_ACCESS_ON_DEMAND** should be set, *addr* should be 0 and *length* should be **SIZE_MAX**.

ibv_dereg_mr() deregisters the MR *mr*.

RETURN VALUE

ibv_reg_mr() returns a pointer to the registered MR, or NULL if the request fails. The local key (**L_Key**) field *lkey* is used as the *lkey* field of struct `ibv_sge` when posting buffers with `ibv_post_*` verbs, and the remote key (**R_Key**) field *rkey* is used by remote processes to perform Atomic and RDMA operations. The remote process places this *rkey* as the *rkey* field of struct `ibv_send_wr` passed to the `ibv_post_send` function.

ibv_dereg_mr() returns 0 on success, or the value of `errno` on failure (which indicates the failure reason).

NOTES

ibv_dereg_mr() fails if any memory window is still bound to this MR.

SEE ALSO

`ibv_alloc_pd(3)`, `ibv_post_send(3)`, `ibv_post_recv(3)`, `ibv_post_srq_recv(3)`

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