

NAME

`ibv_poll_cq` - poll a completion queue (CQ)

SYNOPSIS

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

```
int ibv_poll_cq(struct ibv_cq *cq, int num_entries,
               struct ibv_wc *wc);
```

DESCRIPTION

`ibv_poll_cq()` polls the CQ `cq` for work completions and returns the first `num_entries` (or all available completions if the CQ contains fewer than this number) in the array `wc`. The argument `wc` is a pointer to an array of `ibv_wc` structs, as defined in `<infiniband/verbs.h>`.

```
struct ibv_wc {
    uint64_t      wr_id;      /* ID of the completed Work Request (WR) */
    enum ibv_wc_status status; /* Status of the operation */
    enum ibv_wc_opcode opcode; /* Operation type specified in the completed WR */
    uint32_t      vendor_err; /* Vendor error syndrome */
    uint32_t      byte_len;   /* Number of bytes transferred */
    union {
        __be32      imm_data; /* Immediate data (in network byte order) */
        uint32_t     invalidated_rkey; /* Local RKey that was invalidated */
    };
    uint32_t      qp_num;     /* Local QP number of completed WR */
    uint32_t      src_qp;     /* Source QP number (remote QP number) of completed WR (valid only for UD) */
    int           wc_flags;   /* Flags of the completed WR */
    uint16_t      pkey_index; /* P_Key index (valid only for GSI QPs) */
    uint16_t      slid;      /* Source LID */
    uint8_t       sl;        /* Service Level */
    uint8_t       dlid_path_bits; /* DLID path bits (not applicable for multicast messages) */
};
```

The attribute `wc_flags` describes the properties of the work completion. It is either 0 or the bitwise OR of one or more of the following flags:

IBV_WC_GRH GRH is present (valid only for UD QPs)

IBV_WC_WITH_IMM Immediate data value is valid

IBV_WC_WITH_INV Invalidated RKey data value is valid (cannot be combined with **IBV_WC_WITH_IMM**)

IBV_WC_IP_CSUM_OK TCP/UDP checksum over IPv4 and IPv4 header checksum are verified. Valid only when **device_cap_flags** in **device_attr** indicates current QP is supported by checksum offload.

Not all *wc* attributes are always valid. If the completion status is other than **IBV_WC_SUCCESS**, only the following attributes are valid: **wr_id**, **status**, **qp_num**, and **vendor_err**.

RETURN VALUE

On success, **ibv_poll_cq()** returns a non-negative value equal to the number of completions found. On failure, a negative value is returned.

NOTES

Each polled completion is removed from the CQ and cannot be returned to it.

The user should consume work completions at a rate that prevents CQ overrun from occurrence. In case of a CQ overrun, the async event **IBV_EVENT_CQ_ERR** will be triggered, and the CQ cannot be used.

SEE ALSO

ibv_post_send(3), **ibv_post_recv(3)**

AUTHORS

Dotan Barak <dotanba@gmail.com>