

Packet Structures of OpenFlow 1.0.0

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1 ofp_header

Figure 1

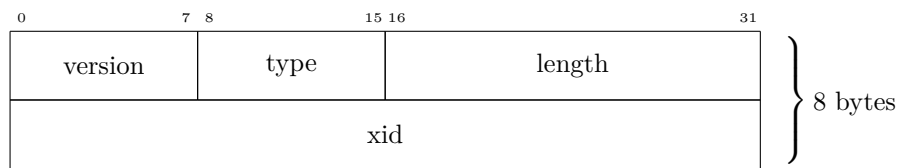
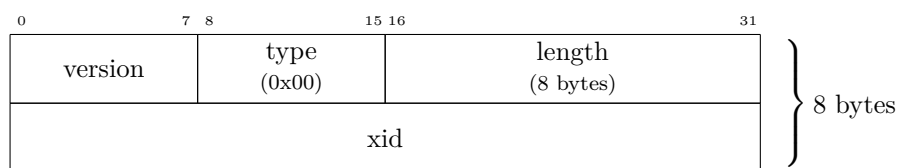


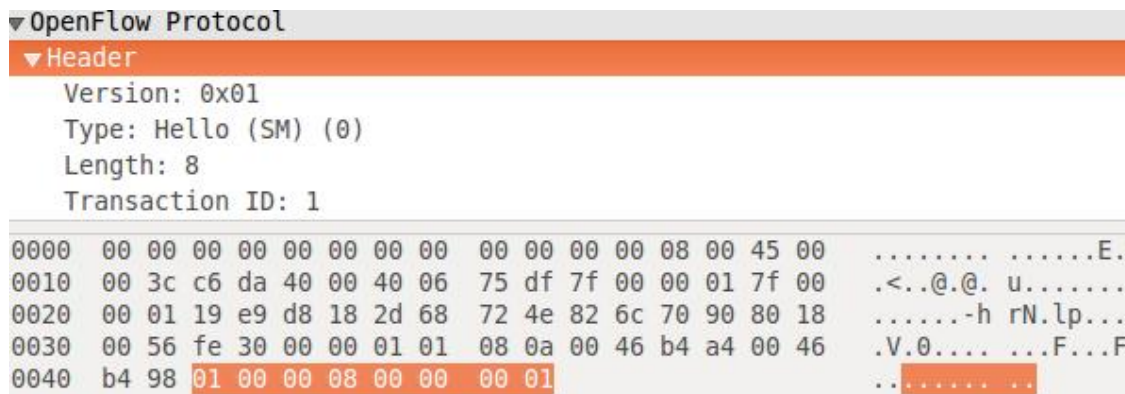
Figure 1 ofp_header

2 ofp_hello

Figure 2



(a)



(b)

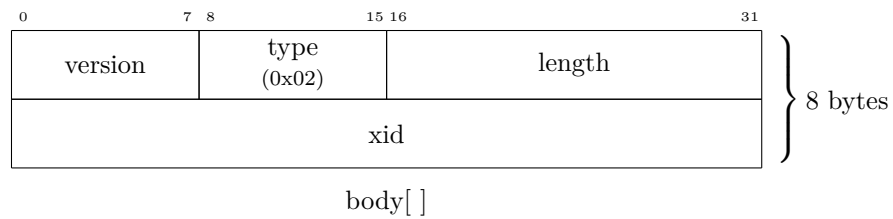
Figure 2 ofp_hello

3 ofp_echo_request

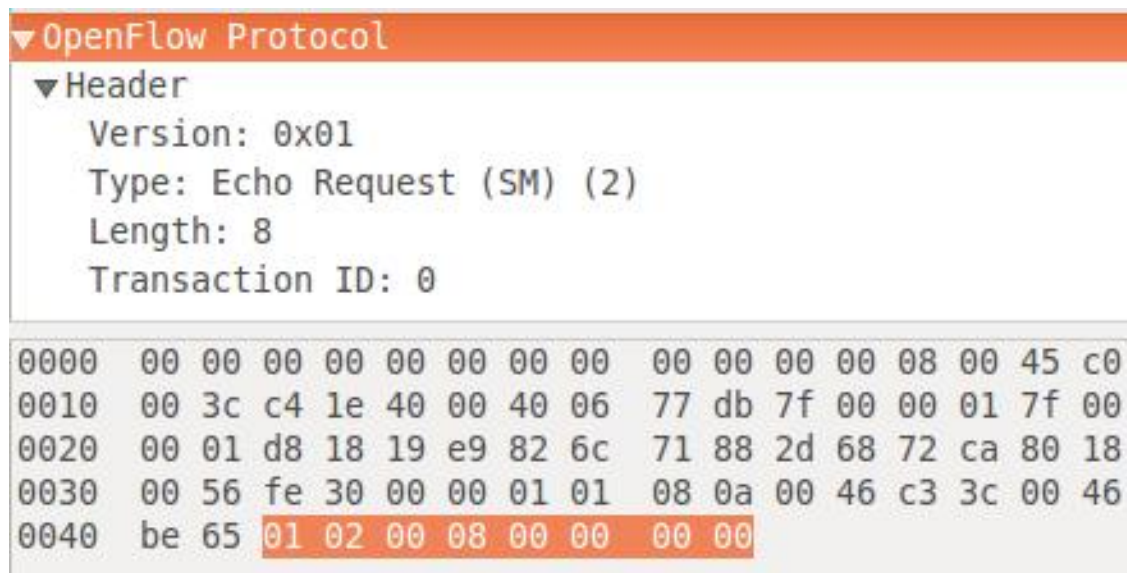
Figure 3

4 ofp_echo_reply

Figure 4

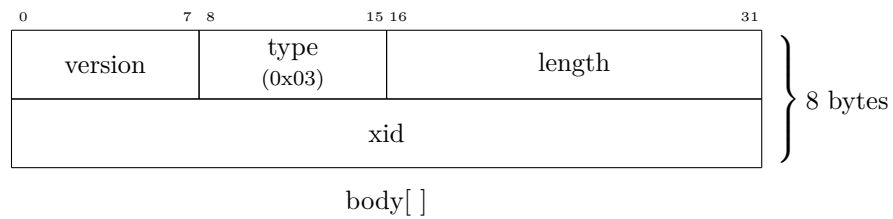


(a)

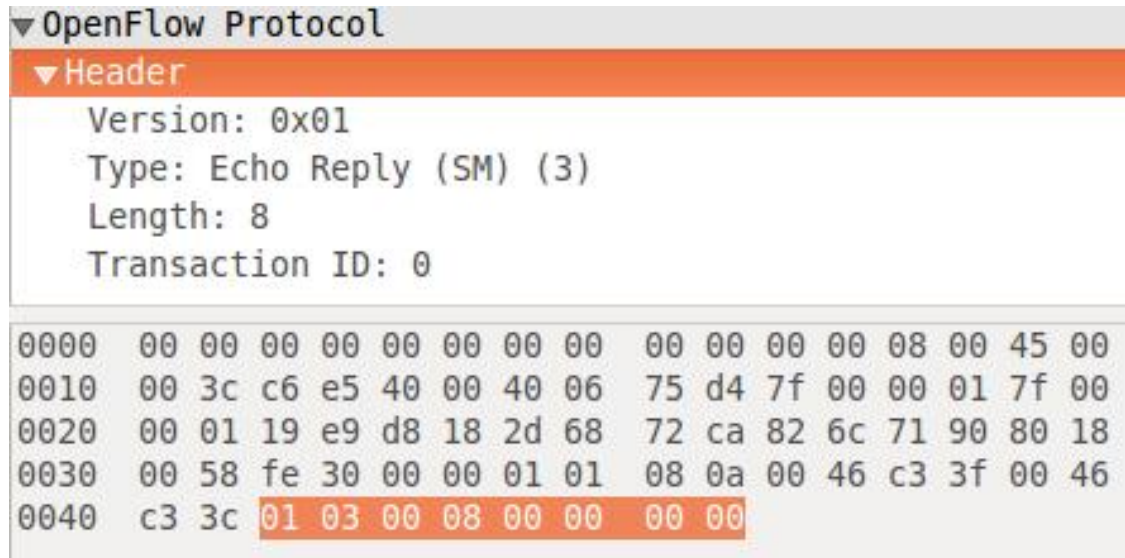


(b)

Figure 3 ofp_echo_request



(a)

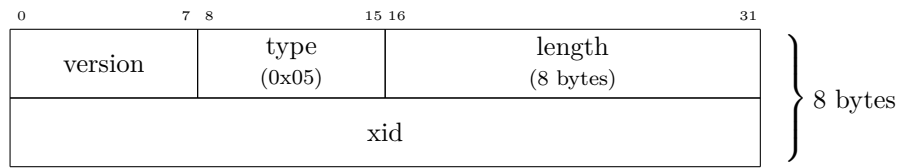


(b)

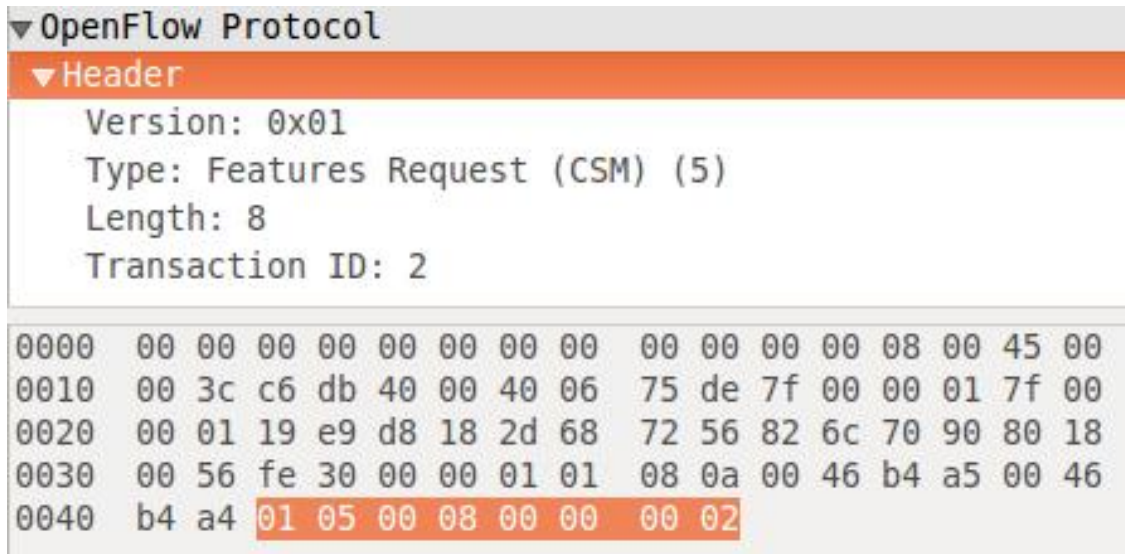
Figure 4 ofp_echo_reply

5 ofp_features_request

Figure 5



(a)



(b)

Figure 5 ofp_features_request

6 ofp_phy_port

Figure 6

7 ofp_packet_queue

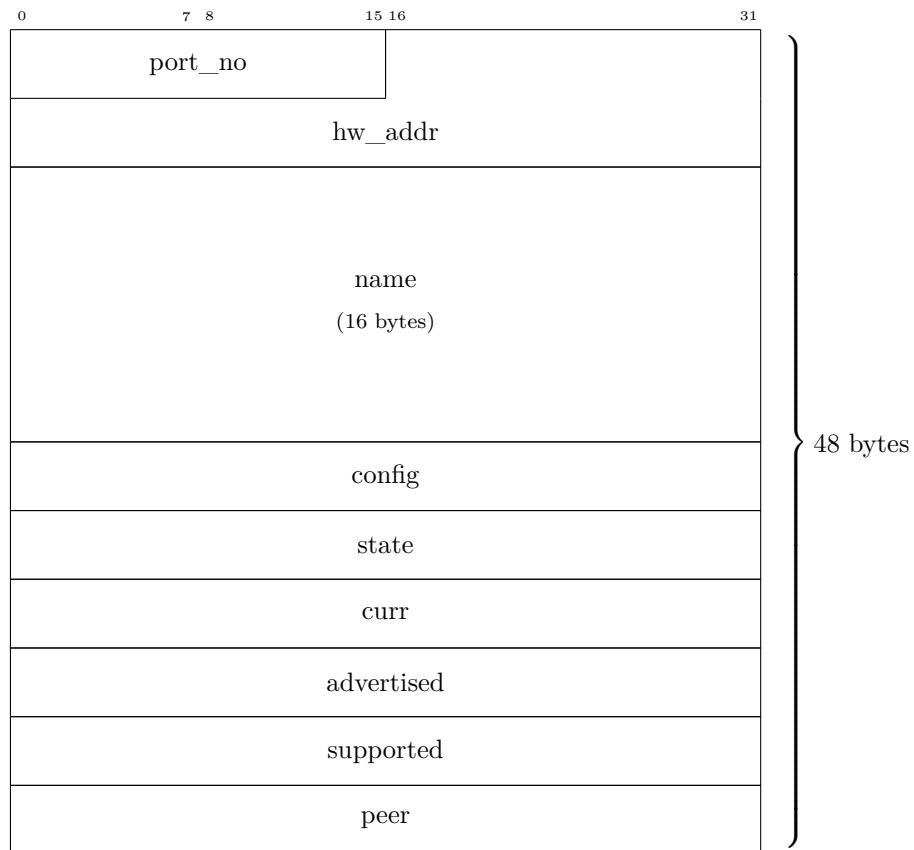
Figure 7

8 ofp_queue_prop_header

Figure 8

9 ofp_queue_prop_min_rate

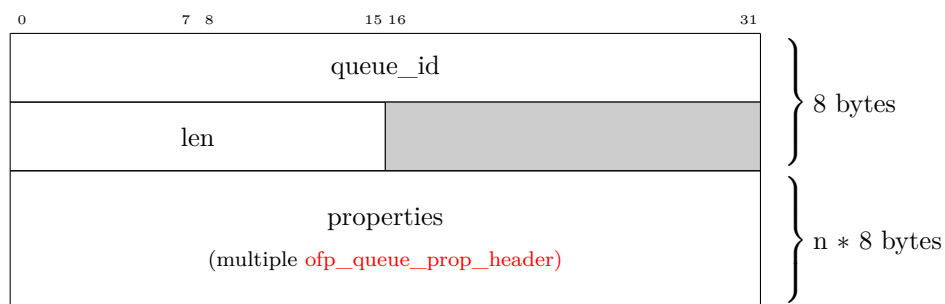
Figure 9



(a)



(b)

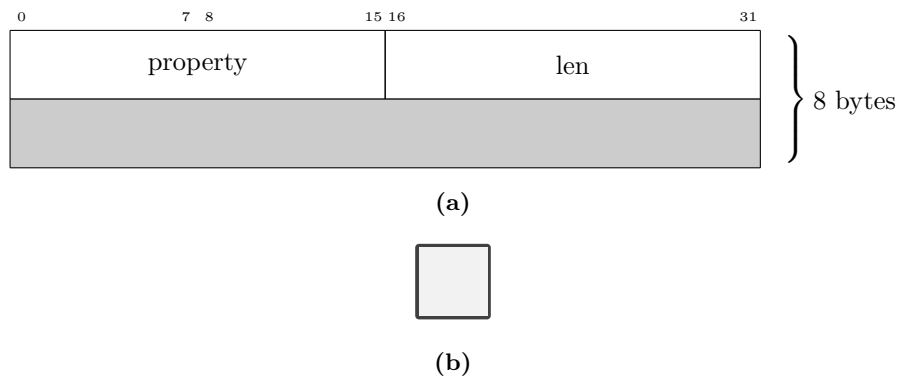
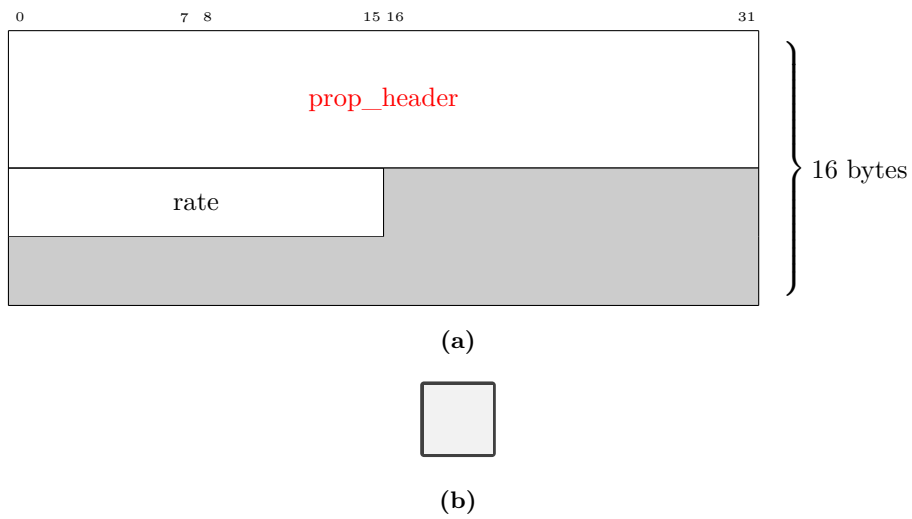
Figure 6 `ofp_phy_port`

(a)



(b)

Figure 7 `ofp_packet_queue`

**Figure 8** `ofp_queue_prop_header`**Figure 9** `ofp_queue_prop_min_rate`

10 ofp_match

Figure 10

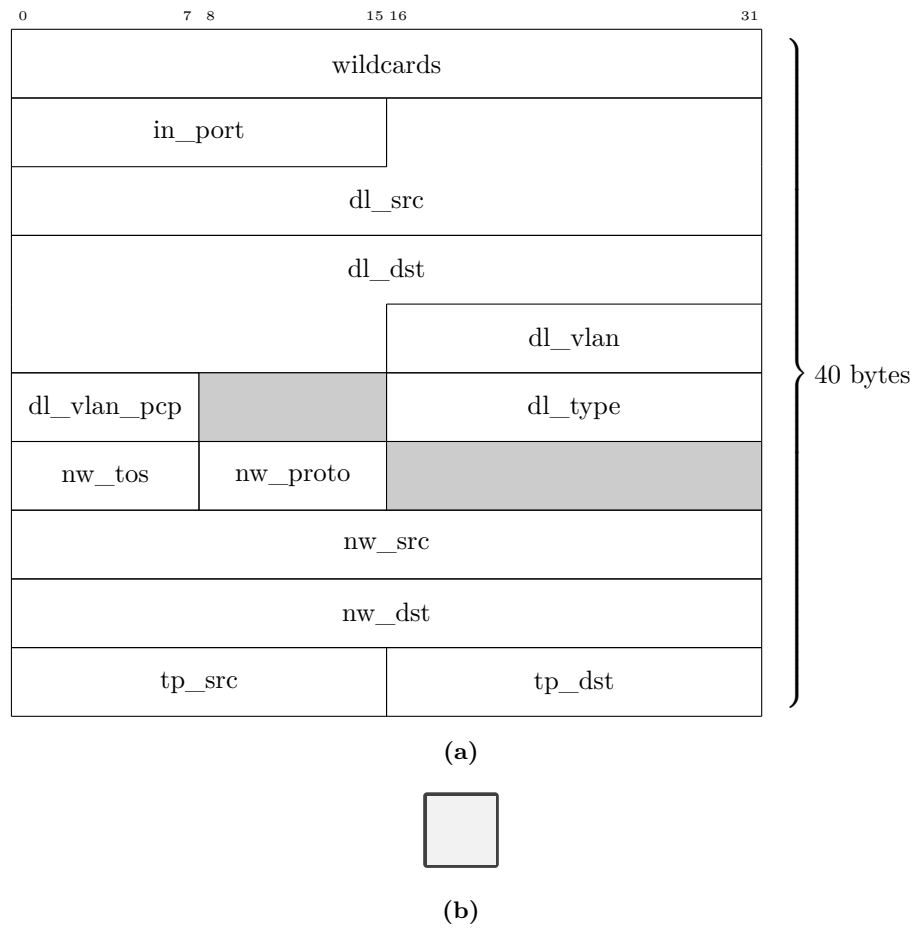


Figure 10 ofp_match

11 ofp_action_header

Figure 11

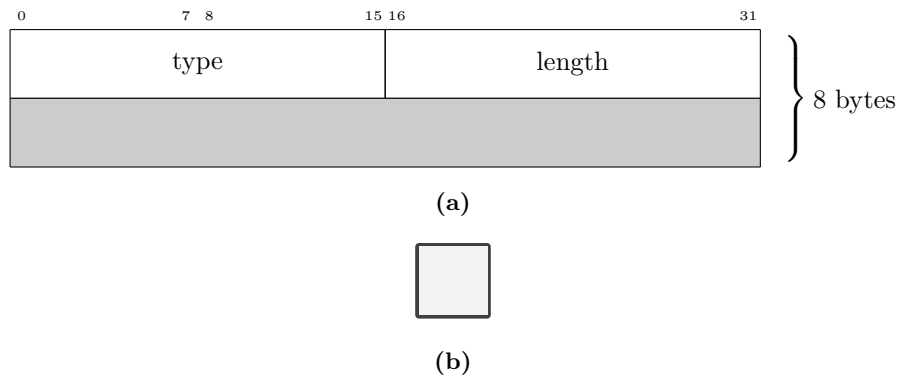


Figure 11 ofp_action_header

12 ofp_action_output

Figure 12

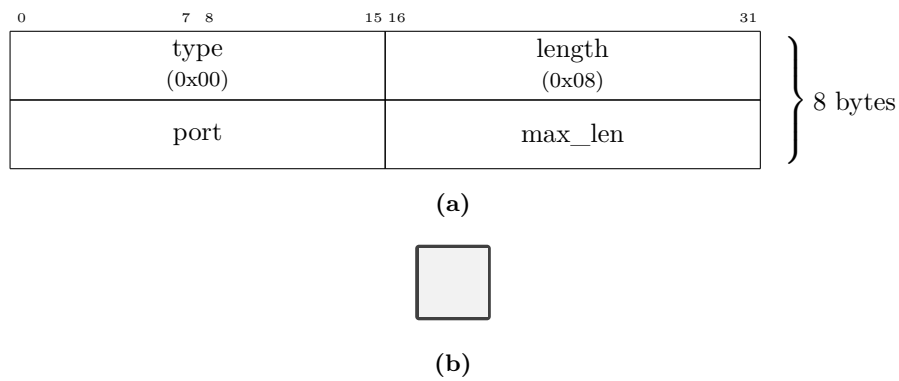


Figure 12 ofp_action_output

13 ofp_action_enqueue

Figure 13

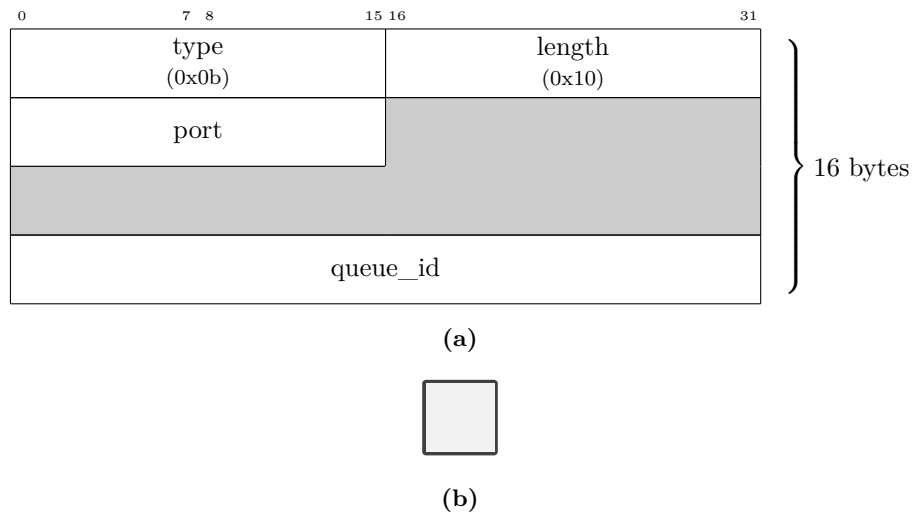


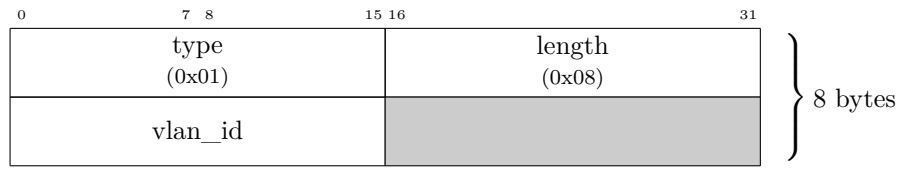
Figure 13 ofp_action_enqueue

14 ofp_action_vlan_vid

Figure 14

15 ofp_action_vlan_pcp

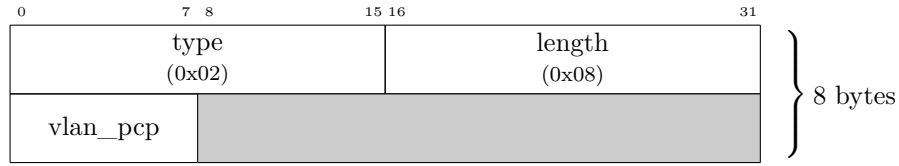
Figure 15



(a)



(b)

Figure 14 `ofp_action_vlan_vid`

(a)

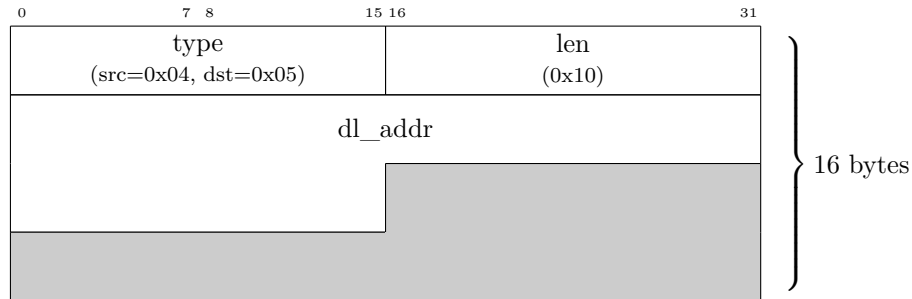


(b)

Figure 15 `ofp_action_vlan_pcp`

16 `ofp_action_dl_addr`

Figure 16



(a)



(b)

Figure 16 `ofp_action_dl_addr`

17 ofp_action_nw_addr

Figure 17

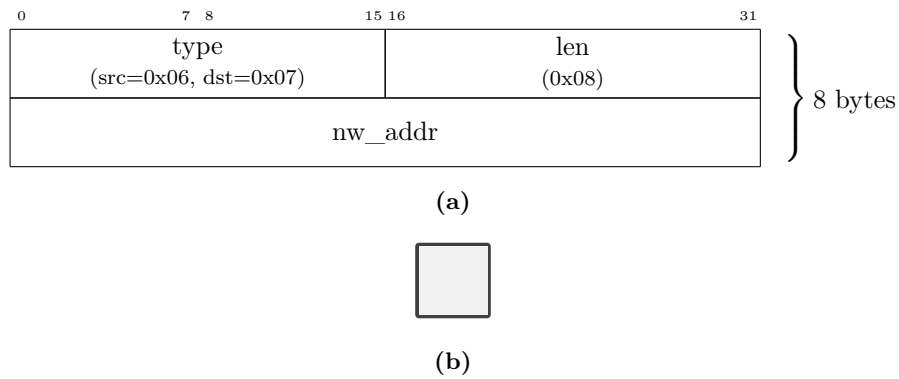


Figure 17 ofp_action_nw_addr

18 ofp_action_nw_tos

Figure 18

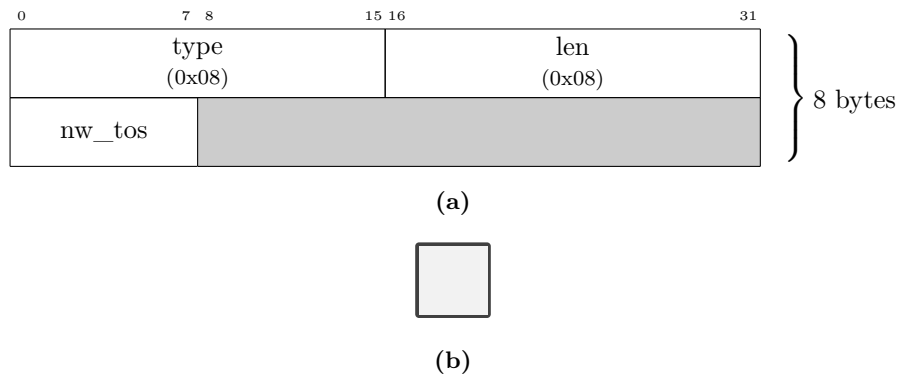


Figure 18 ofp_action_nw_tos

19 ofp_action_tp_port

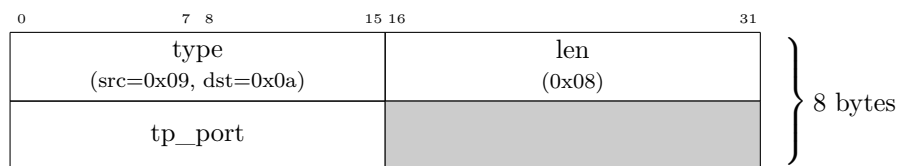
Figure 19

20 ofp_action_vendor_header

Figure 20

21 ofp_features_reply

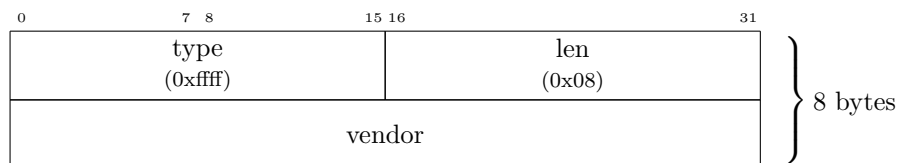
Figure 21



(a)



(b)

Figure 19 ofp_action_tp_port

(a)



(b)

Figure 20 ofp_action_vendor_header

22 ofp_switch_config

Figure 22

23 ofp_flow_mod

Figure 23

24 ofp_port_mod

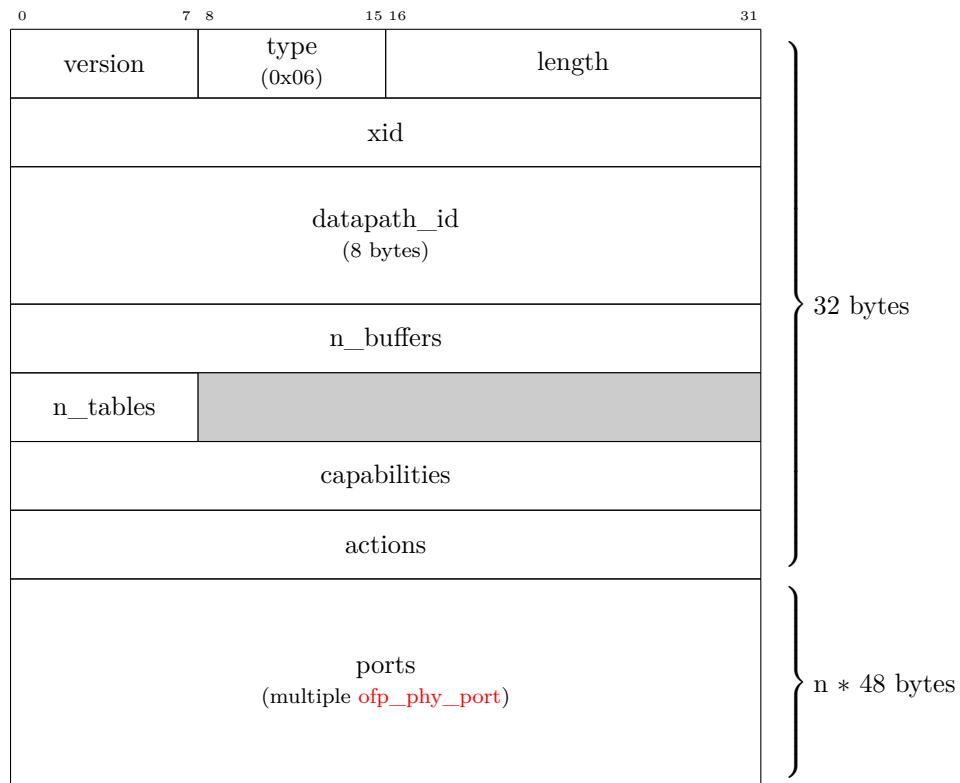
Figure 24

25 ofp_queue_get_config_request

Figure 25

26 ofp_queue_get_config_reply

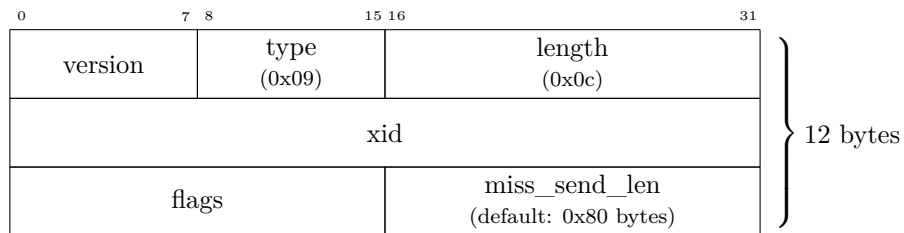
Figure 26



(a)



(b)

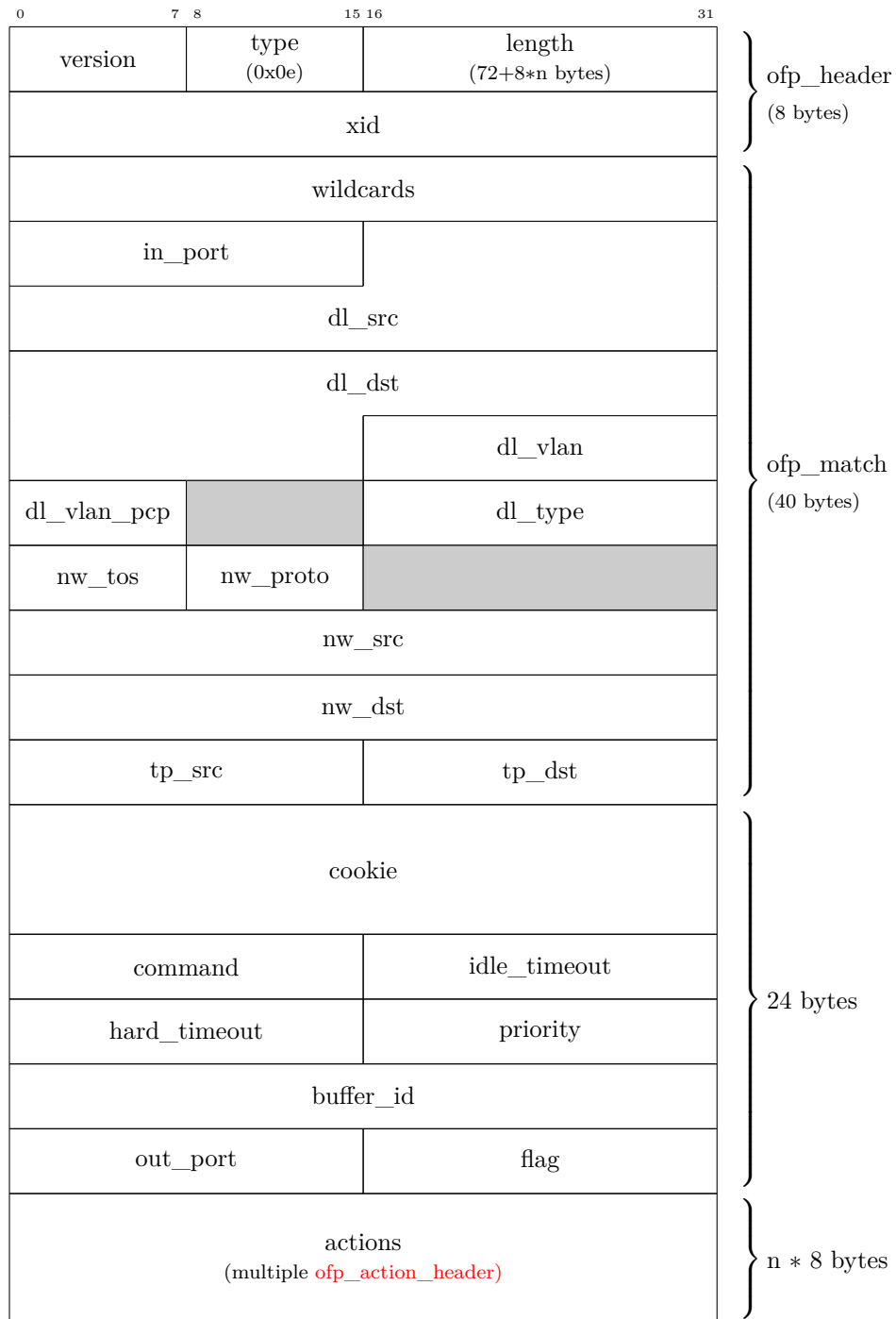
Figure 21 ofp_features_reply

(a)



(b)

Figure 22 ofp_switch_config

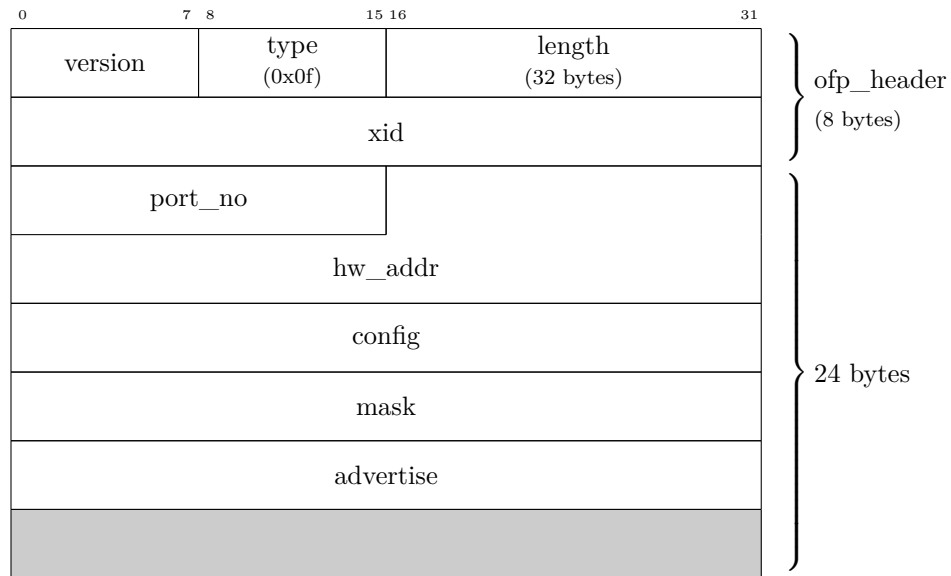


(a)



(b)

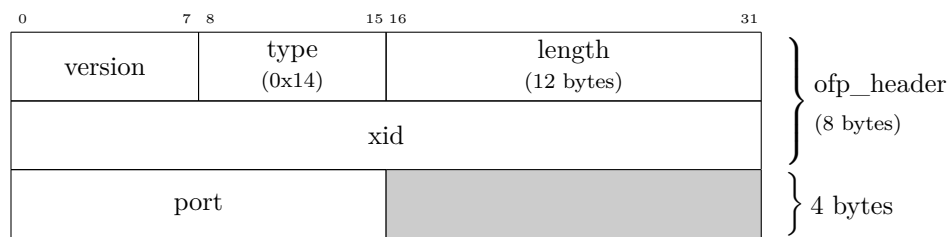
Figure 23 ofp_flow_mod



(a)



(b)

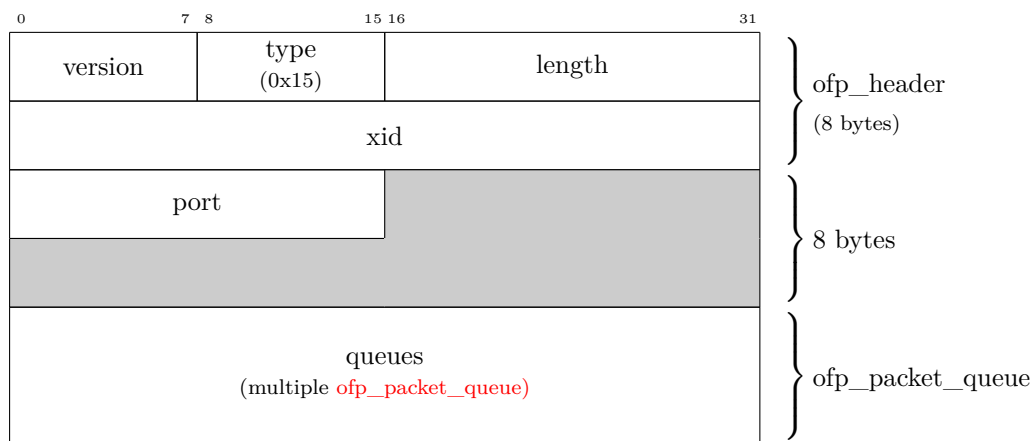
Figure 24 ofp_port_mod

(a)



(b)

Figure 25 ofp_queue_get_config_request



(a)

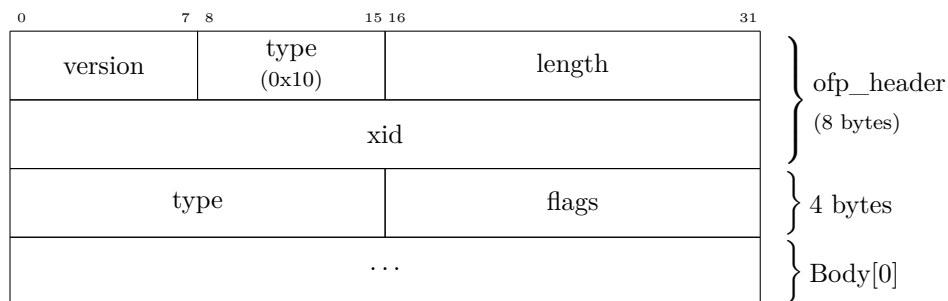


(b)

Figure 26 `ofp_queue_get_config_repy`

27 `ofp_stats_request`

Figure 37



(a)



(b)

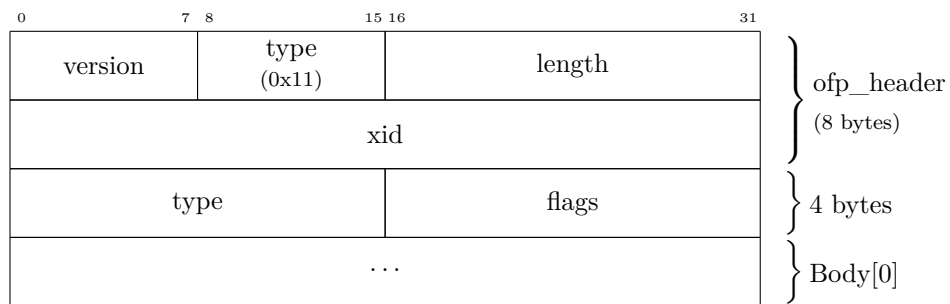
Figure 27 `ofp_stats_request`

28 `ofp_stats_reply`

Figure 28

29 `ofp_desc_stats`

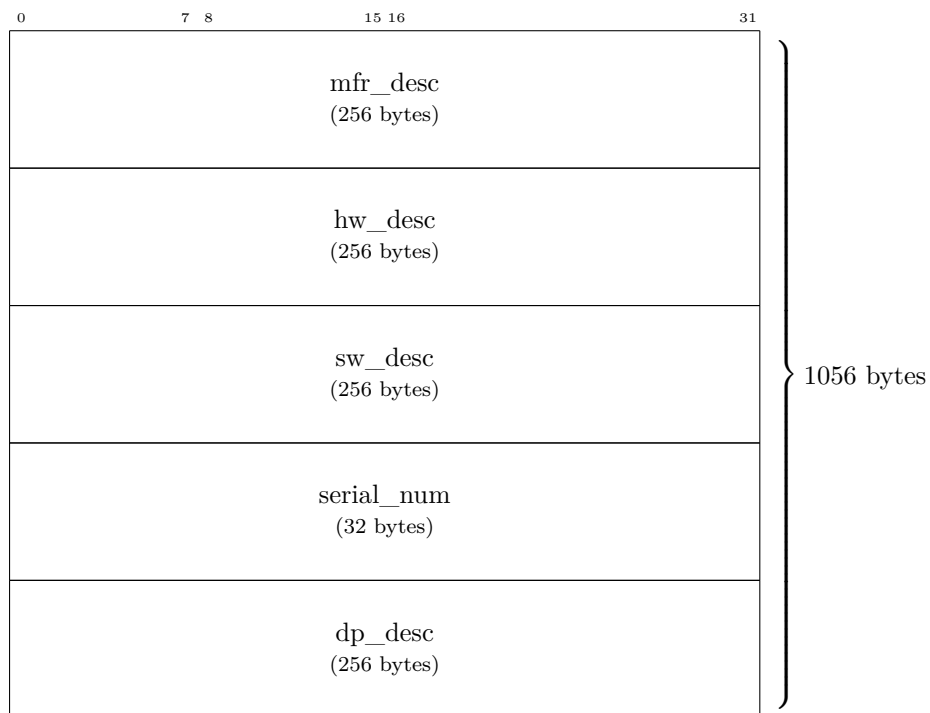
Figure 29



(a)



(b)

Figure 28 ofp_stats_reply

(a)



(b)

Figure 29 ofp_desc_stats

30 ofp_flow_stats_request

Figure 30

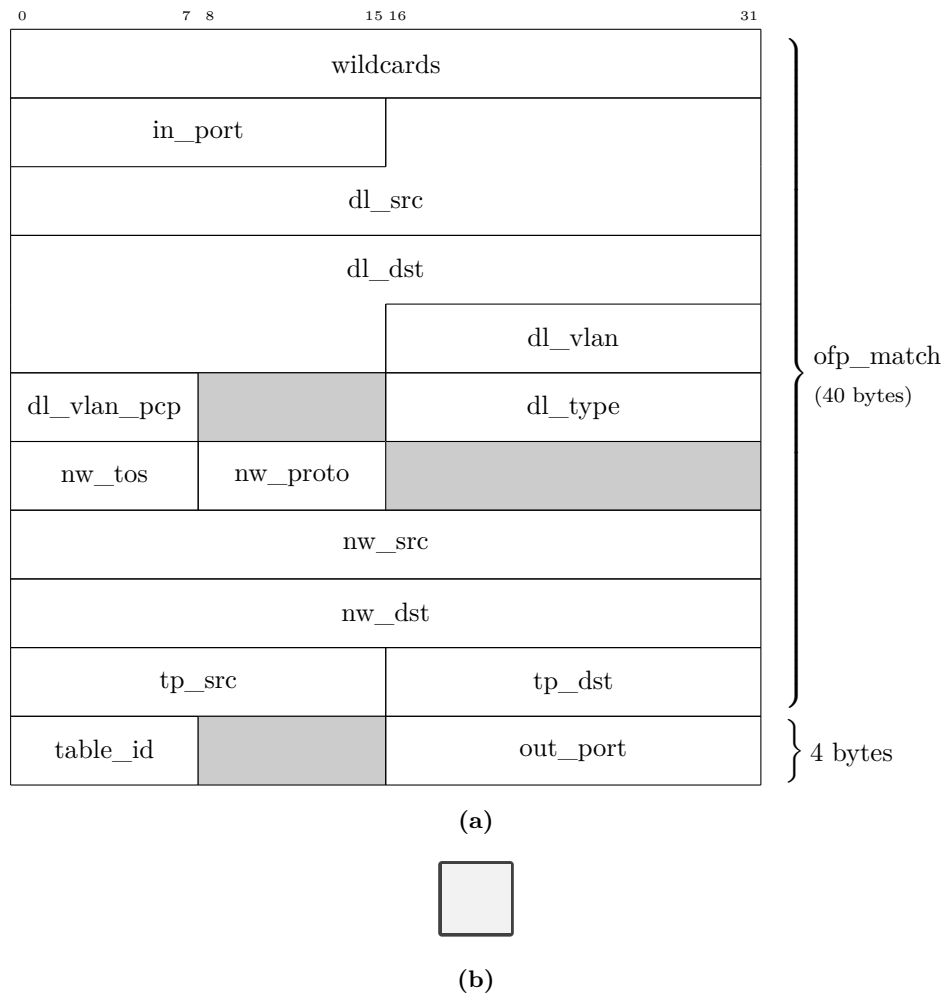


Figure 30 ofp_flow_stats_request

31 ofp_flow_stats

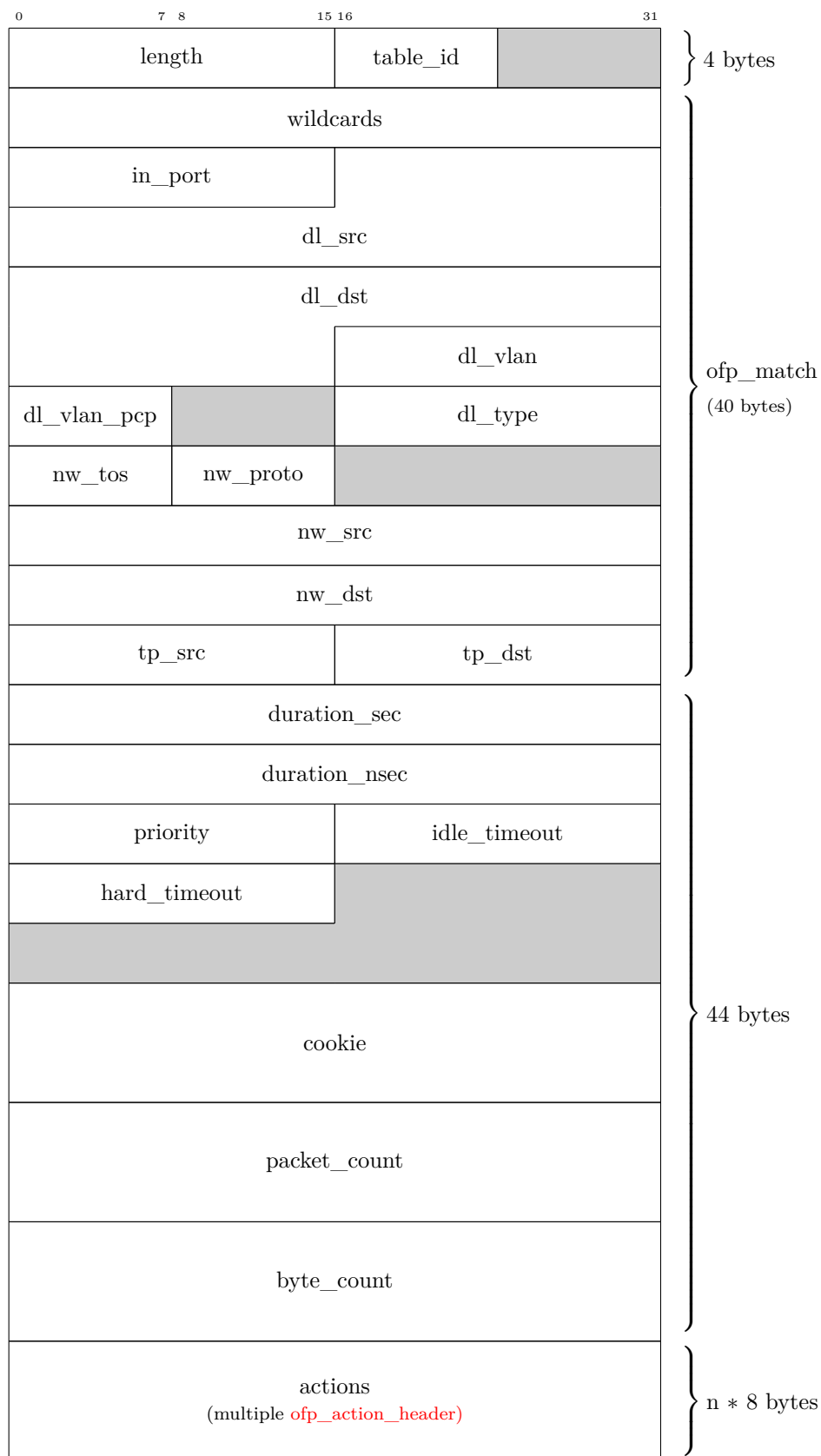
Figure 31

32 ofp_aggregate_stats_request

Figure 32

33 ofp_aggregate_stats_reply

Figure 33

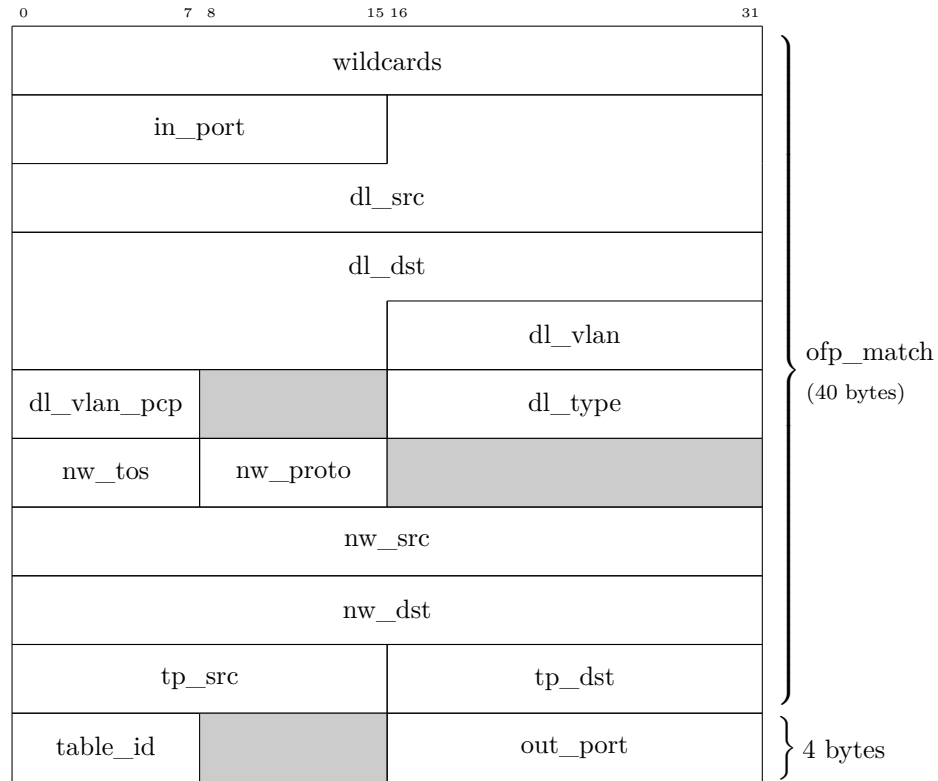


(a)



(b)

<http://csukuangfj.github.io>
Figure 31 ofp_flow_stats



(a)



(b)

Figure 32 ofp_aggregate_stats_request

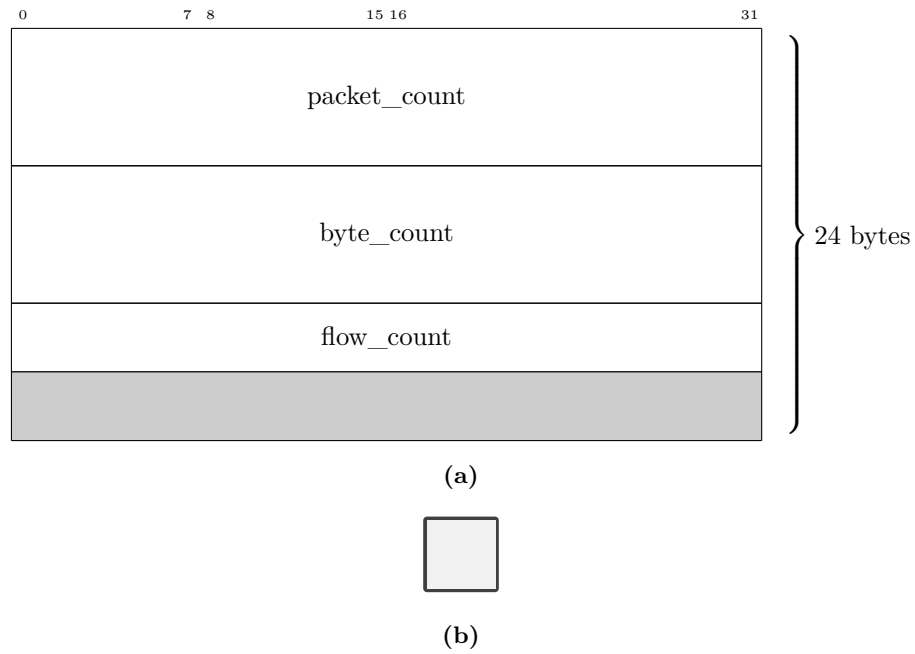


Figure 33 `ofp_aggregate_stats_reply`

34 `ofp_table_stats`

Figure 34

35 `ofp_port_stats_request`

Figure 35

36 `ofp_port_stats`

Figure 36

37 `ofp_queue_stats_request`

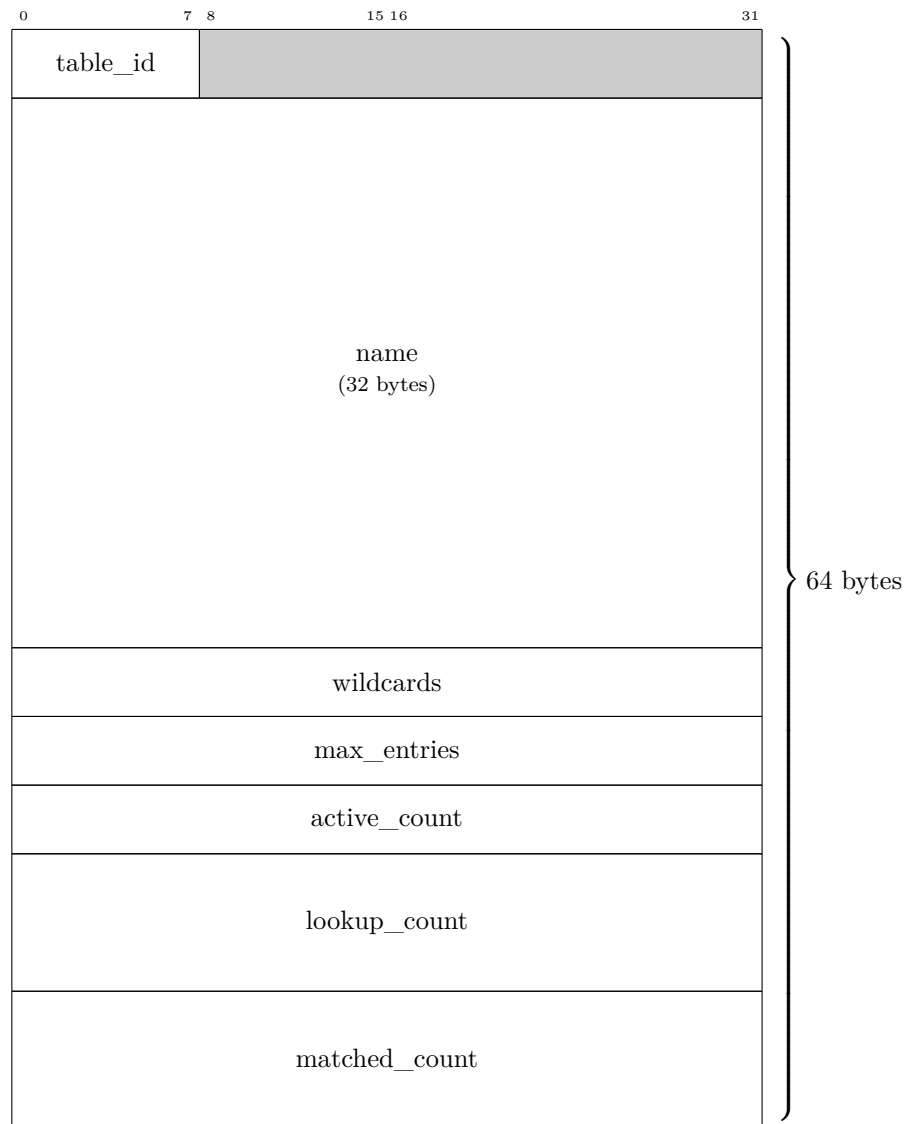
Figure 37

38 `ofp_queue_stats`

Figure 38

39 `ofp_packet_out`

Figure 39

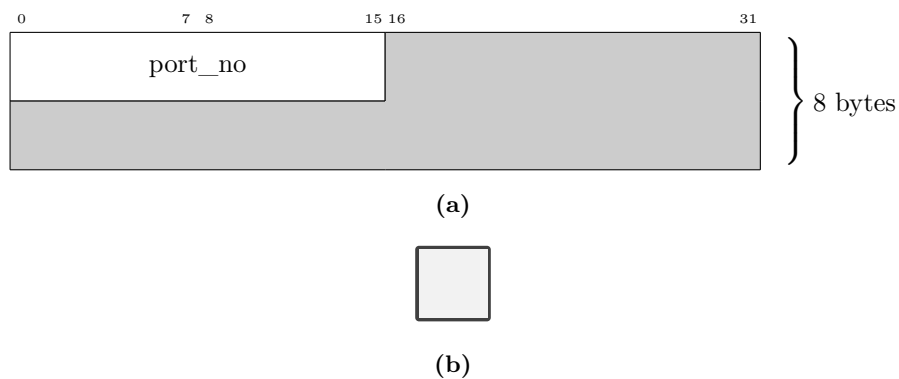


(a)



(b)

Figure 34 ofp_table_stats

Figure 35 `ofp_port_stats_request`

40 `ofp_barrier_reply`

Figure 40

41 `ofp_barrier_request`

Figure 41

42 `ofp_packet_in`

Figure 42

Note that two bytes are padded automatically at the end of the structure.

`sizeof(struct ofp_packet_in) == 20`, while `offsetof(struct ofp_packet_in, data) == 18`

43 `ofp_flow_removed`

Figure 43

44 `ofp_port_status`

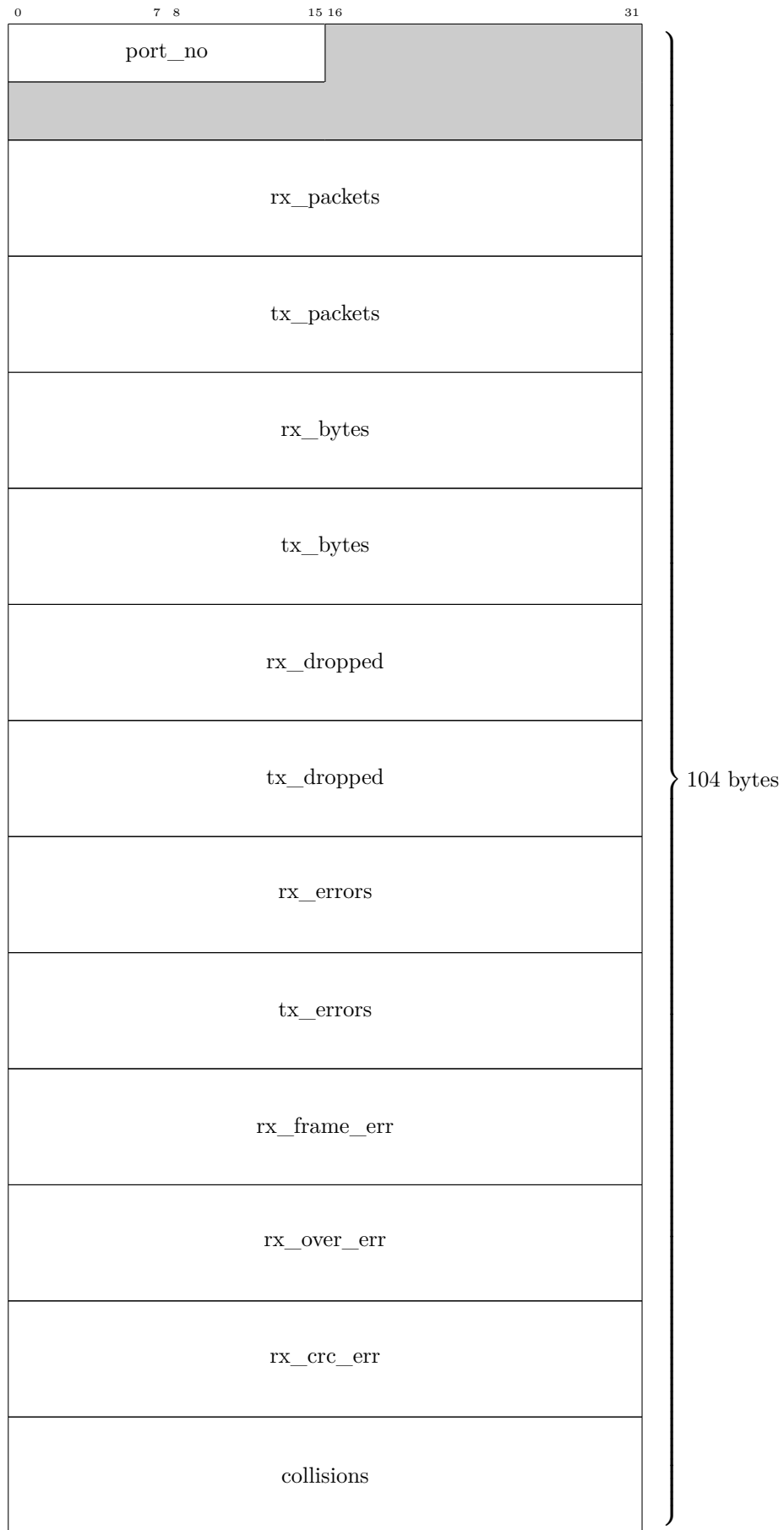
Figure 44

45 `ofp_error`

Figure 45

46 `ofp_vendor_header`

Figure 46

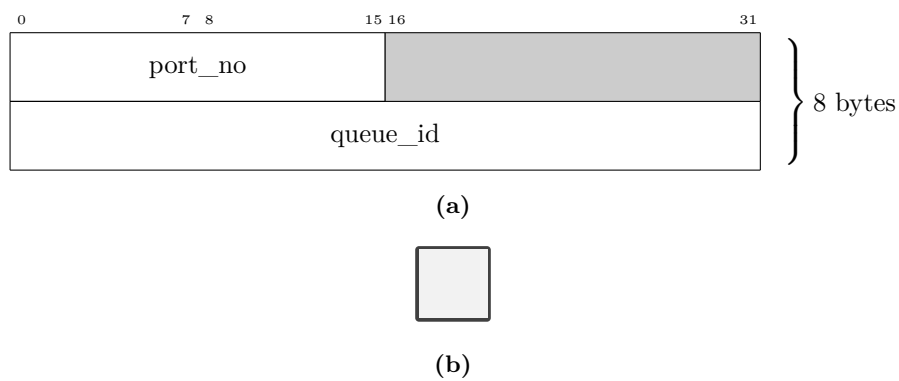
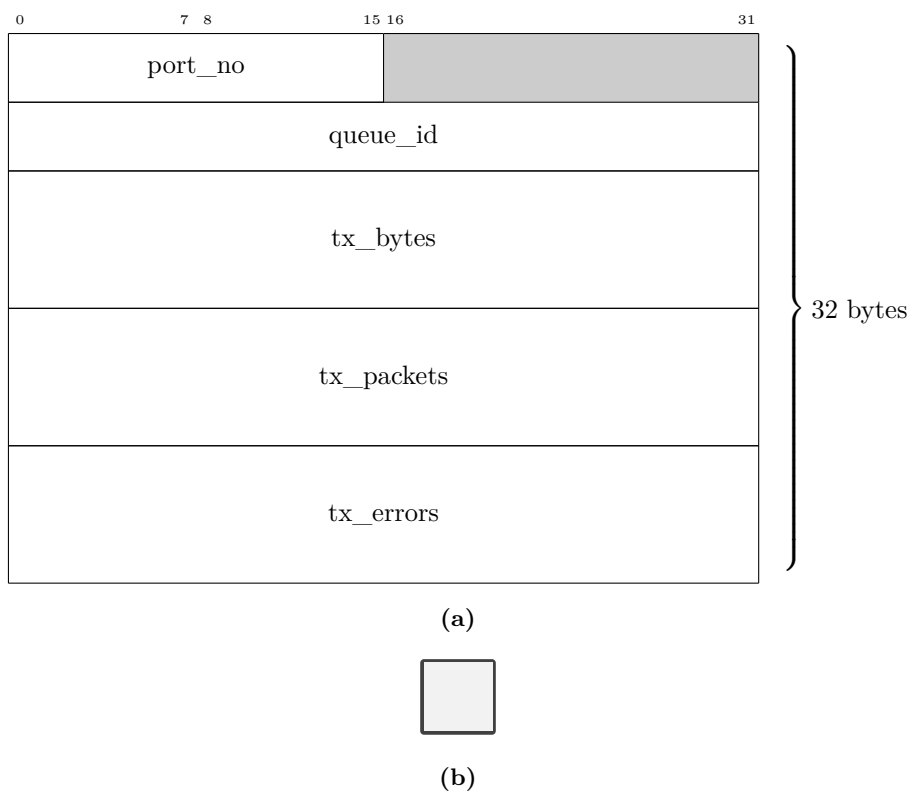


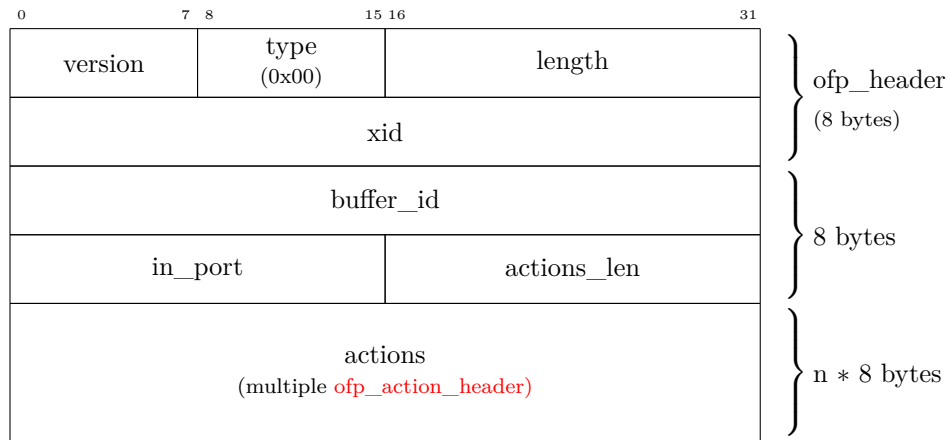
(a)

<http://csukuangfj.github.io>



(b)

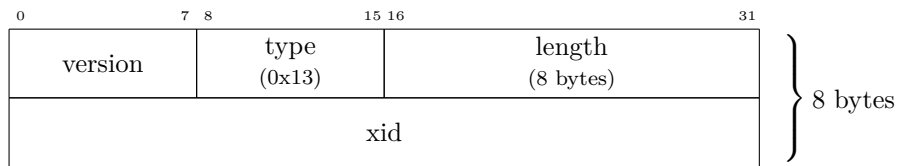
**Figure 37** `ofp_queue_stats_request`**Figure 38** `ofp_queue_stats`



(a)



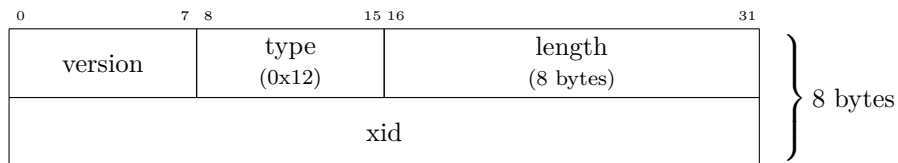
(b)

Figure 39 ofp_packet_out

(a)



(b)

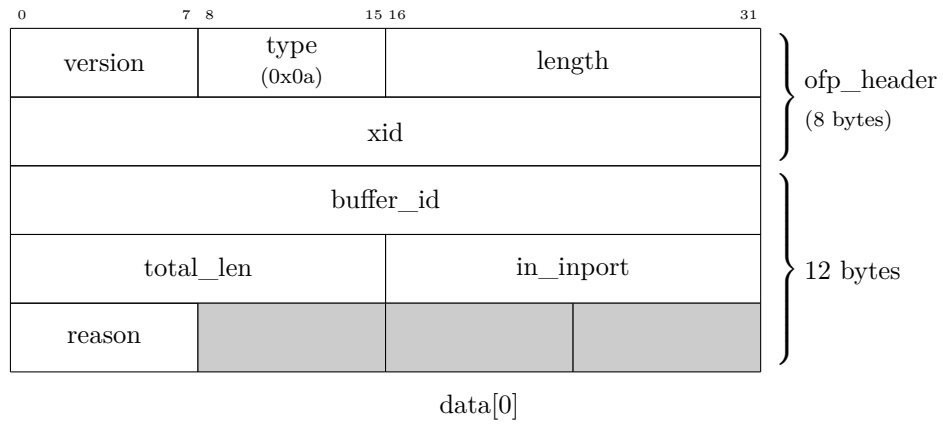
Figure 40 ofp_barrier_reply

(a)



(b)

Figure 41 ofp_barrier_request



(a)

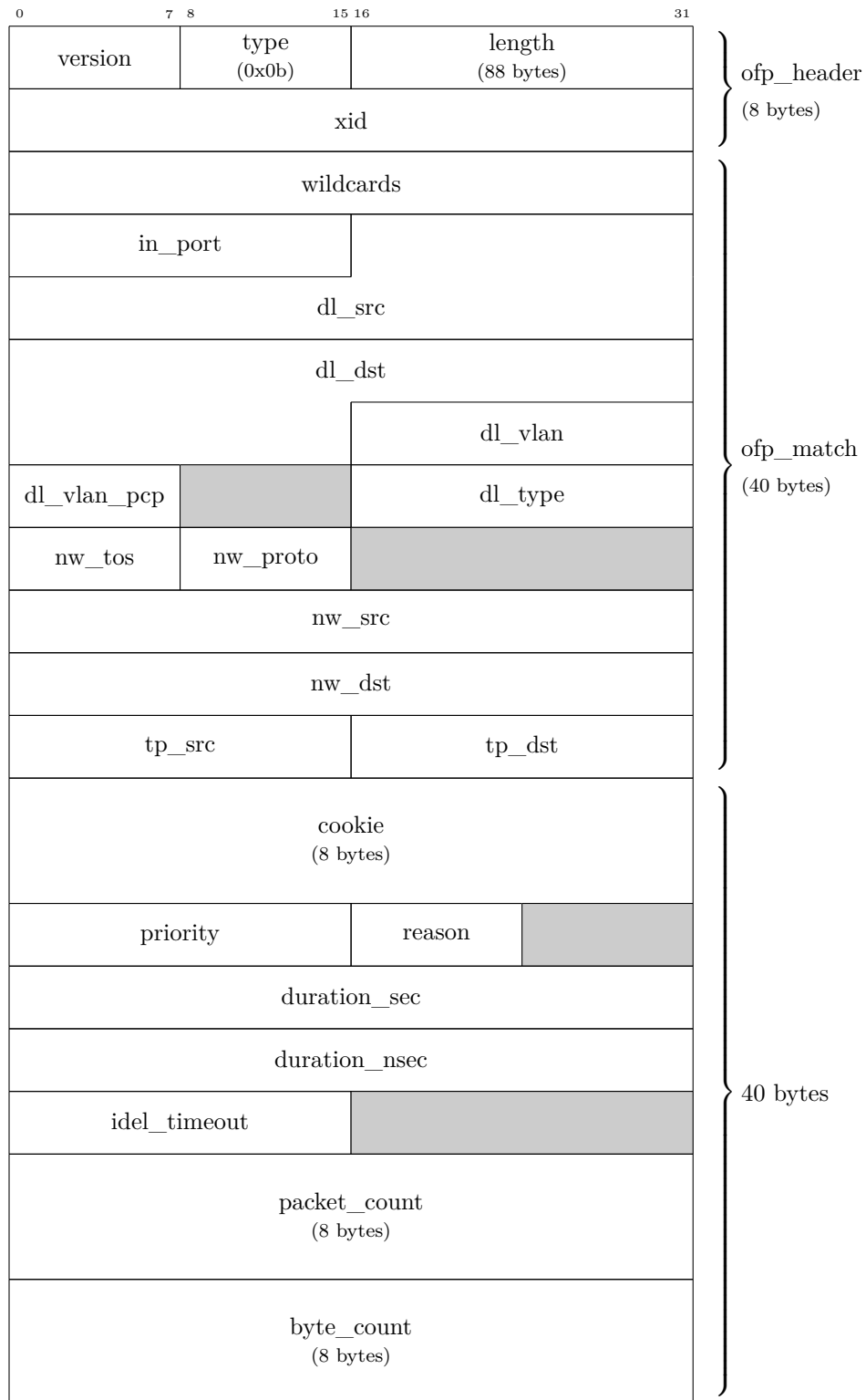


(b)

Figure 42 `ofp_packet_in`

47 ofp_vendor

Figure 47

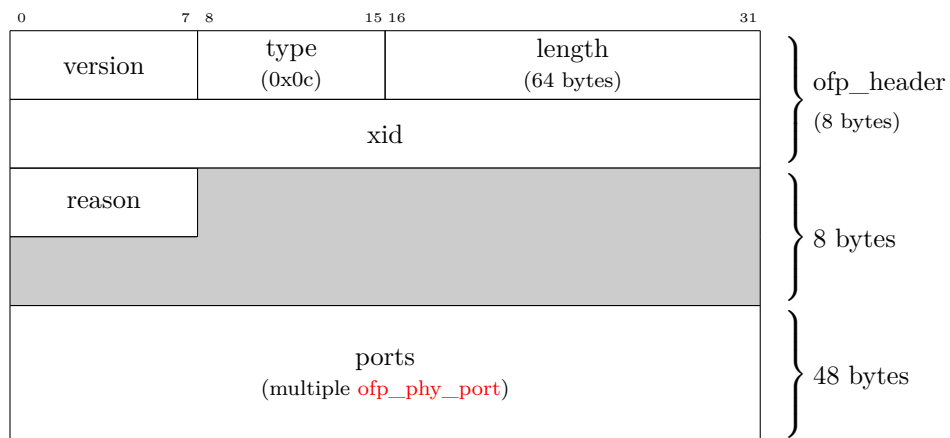


(a)



(b)

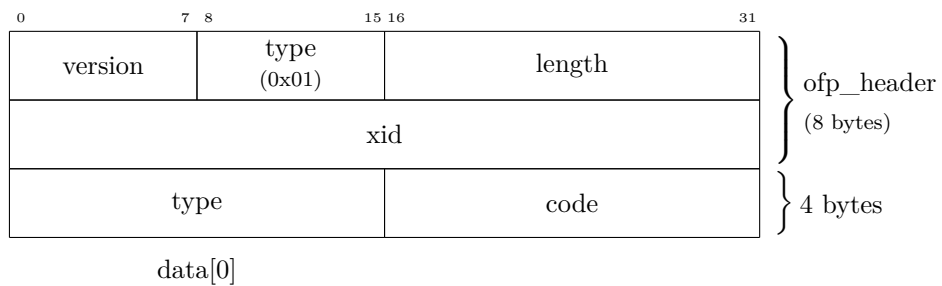
Figure 43 ofp_flow_removed



(a)



(b)

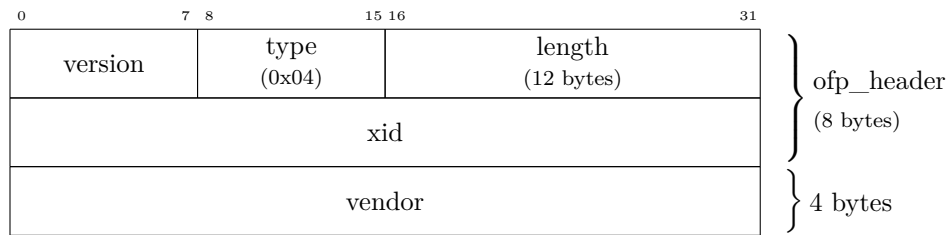
Figure 44 ofp_port_status

(a)



(b)

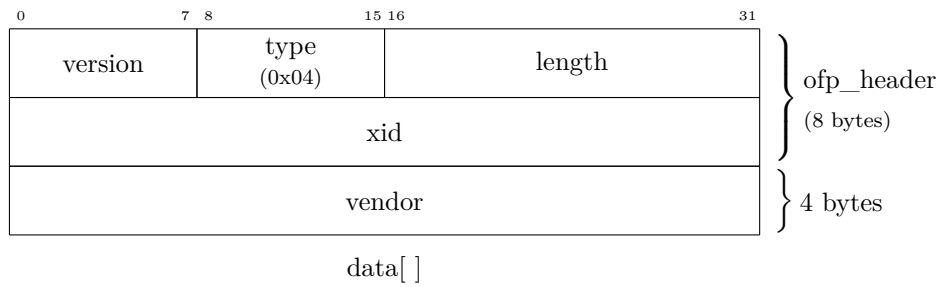
Figure 45 ofp_error



(a)



(b)

Figure 46 ofp_vendor_header

(a)



(b)

Figure 47 ofp_vendor