openEuler-24.03 内核KABI白名单删除不必要接口评审

背景：

最近，openEuler-24.03内核回合mlx5相关模块的CVE/LTS补丁时，发现某些补丁因为mlx5_系列接口在KABI白名单中，会引入kabi变更，比如新增mlx5相关的结构体的成员，我们无法直接适配此类CVE/LTS的修改。mlx5相关驱动社区比较活跃，一般1个月会有5+ bugfix，核心数据结构经常会被修改，最近半年有修改结构体成员的补丁有5+个。

CVE-2024-38556 net/mlx5: Add a timeout to acquire the command queue semaphore

Bugfix net/mlx5e: Use the correct lag ports number when creating TISes

Bugfix net/mlx5: Fix MTMP register capability offset in MCAM register

mlx5_开头的一系列接口是mlx5驱动内部接口，非内核提供的接口，只与自己的驱动有关，对兼容性影响较小，因此希望删除此类白名单接口。另外，根据此问题，我们又重新排查了下其他白名单接口，并与兼容性团队一起评估过，此列表的接口不必要加入白名单，加入后会导致后续CVE/LTS补丁引入kabi变更无法修复。

兼容性团队刘彦泽 评估意见：

qede、qed、cnic这些驱动在社区不活跃 这些接口属于驱动自身对外开放接口，不属于基础内核开放接口，影响范围较小，只影响本身驱动，对第三方驱动源码兼容安装不受影响 建议可以删除此部分接口。

mlx5_开头接口属于驱动自身对外开放接口，不属于基础内核开放接口，影响范围较小，只影响本身驱动，对第三方驱动源码兼容安装不受影响 建议可以删除此部分接口。

建议方案：

删除openEuler-2403-LTS的kabi 白名单一系列mlx5的接口以及qede、qed与cnic等不必要接口，如此后续CVE/LTS回合与其他代码适配无KABI变更。

待删除接口：

```
x86白名单接口：
qede_rdma_register_driver    drivers/net/ethernet/qlogic/qede/qede
qede_rdma_unregister_driver drivers/net/ethernet/qlogic/qede/qede
qed_get_fcoe_ops     drivers/net/ethernet/qlogic/qed/qed
qed_get_iscsi_ops    drivers/net/ethernet/qlogic/qed/qed
qed_get_rdma_ops     drivers/net/ethernet/qlogic/qed/qed
qed_put_fcoe_ops     drivers/net/ethernet/qlogic/qed/qed
qed_put_iscsi_ops    drivers/net/ethernet/qlogic/qed/qed
cnic_register_driver     drivers/net/ethernet/broadcom/cnic
cnic_unregister_driver   drivers/net/ethernet/broadcom/cnic

arm64白名单接口：
mlxfw_firmware_flash     drivers/net/ethernet/mellanox/mlxfw/mlxfw
mlx5_add_flow_rules drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_alloc_bfreg     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_blocking_notifier_register
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_blocking_notifier_unregister
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_check   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_cleanup_async_ctx   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_create_vport_lag    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_destroy_vport_lag   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_do drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_exec    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_exec_cb     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_init_async_ctx drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_cmd_out_err     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_comp_eqn_get    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_comp_vectors_max    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_access_reg     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_cq drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_mkey    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_psv     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_rq drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_rqt     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_create_tis     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_destroy_cq     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_destroy_mkey   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_destroy_psv    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_modify_cq drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
```

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mlx5_core_modify_cq_moderation
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_modify_hca_vport_context
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_modify_rq  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_modify_sq  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_modify_tis     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_query_mkey     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_query_rq   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_query_sq_state     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_query_vendor_id    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_query_vport_counter
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_reserved_gids_count
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_roce_gid_set   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_core_uplink_netdev_event_replay
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_create_auto_grouped_flow_table
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_create_cq   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_create_flow_group   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_create_flow_table   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_create_lag_demux_flow_table
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_db_alloc_node   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_db_free     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_debugfs_get_dev_root    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_debugfs_root    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_debug_qp_add    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_debug_qp_remove     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_del_flow_rules drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_destroy_flow_group drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_destroy_flow_table drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_dm_sw_icm_alloc     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_dm_sw_icm_dealloc  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_create_generic  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_destroy_generic drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_disable drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_enable   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_get_eqe drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_notifier_register    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_notifier_unregister drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eq_update_ci    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_add_send_to_vport_rule
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_get_core_dev    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_get_encap_mode drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_get_proto_dev  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_get_total_vports
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_get_vport_metadata_for_match
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_mode    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_register_vport_reps
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_unregister_vport_reps
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
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mlx5_eswitch_uplink_get_proto_dev
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_eswitch_vport_match_metadata_enabled
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_fc_create   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_fc_destroy drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_fc_id   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_fc_query    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_fill_page_frag_array    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_flow_table_id   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_frag_buf_alloc_node     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_frag_buf_free   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_free_bfreg drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_get_flow_namespace drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_get_uars_page   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_is_roce_on drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_get_next_peer_mdev drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_get_num_ports   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_get_roce_netdev     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_get_slave_port drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_is_active   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_is_master   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_is_mpesw    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_is_shared_fdb  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_mode_is_hash    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_lag_query_cong_counters
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_modify_header_alloc     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_modify_header_dealloc  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_nic_vport_affiliate_multiport
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_nic_vport_disable_roce drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_nic_vport_enable_roce   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_nic_vport_unaffiliate_multiport
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_nic_vport_update_local_lb
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_notifier_register  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_notifier_unregister    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_packet_reformat_alloc  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_packet_reformat_dealloc
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_put_uars_page   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_qp_debugfs_cleanup drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_qp_debugfs_init    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_hca_vport_context
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_hca_vport_gid     drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_hca_vport_node_guid
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_hca_vport_pkey    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_hca_vport_system_image_guid
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_ib_port_oper drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_min_inline   drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_nic_vport_node_guid
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
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mlx5_query_nic_vport_qkey_viol_cntr
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_nic_vport_system_image_guid
drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_port_max_mtu drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_port_oper_mtu    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_port_ptys    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_query_port_vl_hw_cap    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rdma_rn_get_params drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rl_add_rate    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rl_add_rate_raw    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rl_are_equal    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rl_remove_rate drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rl_remove_rate_raw drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rsc_dump_cmd_create    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rsc_dump_cmd_destroy    drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_rsc_dump_next  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
mlx5_set_port_caps  drivers/net/ethernet/mellanox/mlx5/core/mlx5_core
```

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commit 485d65e1357123a697c591a5aeb773994b247ad7
Author: Akiva Goldberger <agoldberger@nvidia.com>
Date:   Thu May 9 14:29:50 2024 +0300

    net/mlx5: Add a timeout to acquire the command queue semaphore

    Prevent forced completion handling on an entry that has not yet been
    assigned an index, causing an out of bounds access on idx = -22.
    Instead of waiting indefinitely for the sem, blocking flow now waits for
    index to be allocated or a sem acquisition timeout before beginning the
    timer for FW completion.

    Kernel log example:
    mlx5_core 0000:06:00.0: wait_func_handle_exec_timeout:1128:(pid 185911):
cmd[-22]: CREATE_UCTX(0xa04) No done completion

    Fixes: 8e715cd613a1 ("net/mlx5: Set command entry semaphore up once got
index free")
    Signed-off-by: Akiva Goldberger <agoldberger@nvidia.com>
    Reviewed-by: Moshe Shemesh <moshe@nvidia.com>
    Signed-off-by: Tariq Toukan <tariqt@nvidia.com>
    Link: https://lore.kernel.org/r/20240509112951.590184-5-tariqt@nvidia.com
    Signed-off-by: Jakub Kicinski <kuba@kernel.org>

diff --git a/drivers/net/ethernet/mellanox/mlx5/core/cmd.c
b/drivers/net/ethernet/mellanox/mlx5/core/cmd.c
index 4957412ff1f6..511e7fee39ac 100644
--- a/drivers/net/ethernet/mellanox/mlx5/core/cmd.c
+++ b/drivers/net/ethernet/mellanox/mlx5/core/cmd.c
@@ -969,19 +969,32 @@ static void cmd_work_handler(struct work_struct *work)
        bool poll_cmd = ent->polling;
        struct mlx5_cmd_layout *lay;
        struct mlx5_core_dev *dev;
-       unsigned long cb_timeout;
```

```
-         struct semaphore *sem;
+         unsigned long timeout;
          unsigned long flags;
          int alloc_ret;
          int cmd_mode;

+         complete(&ent->handling);
+
          dev = container_of(cmd, struct mlx5_core_dev, cmd);
-         cb_timeout = msecs_to_jiffies(mlx5_tout_ms(dev, CMD));
+         timeout = msecs_to_jiffies(mlx5_tout_ms(dev, CMD));

-         complete(&ent->handling);
-         sem = ent->page_queue ? &cmd->vars.pages_sem : &cmd->vars.sem;
-         down(sem);
          if (!ent->page_queue) {
+                 if (down_timeout(&cmd->vars.sem, timeout)) {
+                         mlx5_core_warn(dev, "%s(0x%x) timed out while waiting
for a slot.\n",
+                                        mlx5_command_str(ent->op), ent->op);
+                         if (ent->callback) {
+                                 ent->callback(-EBUSY, ent->context);
+                                 mlx5_free_cmd_msg(dev, ent->out);
+                                 free_msg(dev, ent->in);
+                                 cmd_ent_put(ent);
+                         } else {
+                                 ent->ret = -EBUSY;
+                                 complete(&ent->done);
+                         }
+                         complete(&ent->slotted);
+                         return;
+                 }
                  alloc_ret = cmd_alloc_index(cmd, ent);
                  if (alloc_ret < 0) {
                          mlx5_core_err_rl(dev, "failed to allocate command
entry\n");
@@ -994,10 +1007,11 @@ static void cmd_work_handler(struct work_struct *work)
                          ent->ret = -EAGAIN;
                          complete(&ent->done);
                  }
-                 up(sem);
+                 up(&cmd->vars.sem);
                  return;
                  }
          } else {
+                 down(&cmd->vars.pages_sem);
                  ent->idx = cmd->vars.max_reg_cmds;
                  spin_lock_irqsave(&cmd->alloc_lock, flags);
                  clear_bit(ent->idx, &cmd->vars.bitmask);
@@ -1005,6 +1019,8 @@ static void cmd_work_handler(struct work_struct *work)
                  spin_unlock_irqrestore(&cmd->alloc_lock, flags);
          }

+         complete(&ent->slotted);
+
          lay = get_inst(cmd, ent->idx);
          ent->lay = lay;
          memset(lay, 0, sizeof(*lay));
```

```
@@ -1023,7 +1039,7 @@ static void cmd_work_handler(struct work_struct *work)
        ent->ts1 = ktime_get_ns();
        cmd_mode = cmd->mode;

-       if (ent->callback && schedule_delayed_work(&ent->cb_timeout_work,
cb_timeout))
+       if (ent->callback && schedule_delayed_work(&ent->cb_timeout_work,
timeout))
                cmd_ent_get(ent);
        set_bit(MLX5_CMD_ENT_STATE_PENDING_COMP, &ent->state);

@@ -1143,6 +1159,9 @@ static int wait_func(struct mlx5_core_dev *dev, struct
mlx5_cmd_work_ent *ent)
                ent->ret = -ECANCELED;
                goto out_err;
        }
+
+       wait_for_completion(&ent->slotted);
+
        if (cmd->mode == CMD_MODE_POLLING || ent->polling)
                wait_for_completion(&ent->done);
        else if (!wait_for_completion_timeout(&ent->done, timeout))
@@ -1157,6 +1176,9 @@ static int wait_func(struct mlx5_core_dev *dev, struct
mlx5_cmd_work_ent *ent)
        } else if (err == -ECANCELED) {
                mlx5_core_warn(dev, "%s(0x%x) canceled on out of queue
timeout.\n",
                               mlx5_command_str(ent->op), ent->op);
+       } else if (err == -EBUSY) {
+               mlx5_core_warn(dev, "%s(0x%x) timeout while waiting for command
semaphore.\n",
+                              mlx5_command_str(ent->op), ent->op);
        }
        mlx5_core_dbg(dev, "err %d, delivery status %s(%d)\n",
                      err, deliv_status_to_str(ent->status), ent->status);
@@ -1208,6 +1230,7 @@ static int mlx5_cmd_invoke(struct mlx5_core_dev *dev,
struct mlx5_cmd_msg *in,
        ent->polling = force_polling;

        init_completion(&ent->handling);
+       init_completion(&ent->slotted);
        if (!callback)
                init_completion(&ent->done);

@@ -1225,7 +1248,7 @@ static int mlx5_cmd_invoke(struct mlx5_core_dev *dev,
struct mlx5_cmd_msg *in,
                return 0; /* mlx5_cmd_comp_handler() will put(ent) */

        err = wait_func(dev, ent);
-       if (err == -ETIMEDOUT || err == -ECANCELED)
+       if (err == -ETIMEDOUT || err == -ECANCELED || err == -EBUSY)
                goto out_free;

        ds = ent->ts2 - ent->ts1;
diff --git a/include/linux/mlx5/driver.h b/include/linux/mlx5/driver.h
index bf9324a31ae9..80452bd98253 100644
--- a/include/linux/mlx5/driver.h
+++ b/include/linux/mlx5/driver.h
```

```
@@ -862,6 +862,7 @@ struct mlx5_cmd_work_ent {
        void                    *context;
        int                      idx;
        struct completion        handling;
+       struct completion        slotted;
        struct completion        done;
        struct mlx5_cmd         *cmd;
        struct work_struct       work;
```