

New features/Extension to tc : HW offload

1. New HW offload mode in mqprio and traffic shaping (min and max) per traffic class:

```
tc qdisc add dev eth0 root mqprio num_tc 4 map 0 0 0 0 1 2 2 3 queues 2@0 2@2 1@4 1@5 \
    min_rate per_tc_val max_rate per_tc_val (e.g. 100 200) hw 2
```

TBD: mqprio hw offload similar to HTB config (rate limiting)
per_tc_val (in kbps)

2. Mirred redirect to specified traffic class:

```
tc qdisc add dev eth0 ingress
```

```
ethtool -K eth0 hw-tc-offload on
```

```
tc filter add dev eth0 protocol ip parent ffff: prio 3 flower dst_ip 192.168.3.5/32 ip_proto \
    udp dst_port 22 indev eth0 action mirred egress redirect dev eth0 tc 1
```

NOTE: Applicable only in HW offload only mode.

tc-flower extension for HW ACL

- Similar to u32, table creation/linking via flower
- Mechanism to offload following
 - IP address range based action (ALLOW/DROP/COUNT/MARK and combination of those actions)
 - Likewise L4 port range based action (ALLOW/DROP/COUNT/MARK and combination of those actions)
 - HW LAG (Open)
 - Port/Broadcast domain group action

```
tc filter add dev swdev_0 protocol ip parent ffff: prio 3 flower dst_ip 192.168.3.5/32 ip_proto \
    udp dst_port 22 indev eth0 action mirrored egress redirect dev eth0
```

Backup

HW offload: egress traffic shaping

- Ability to offload egress traffic shaping (HTB)

qdisc: `tc qdisc add dev eth0 root handle 1: htb`

class: `tc class add dev eth0 parent 1: classid 1:[Flow ID] htb [rate]`

filter: `tc filter add dev eth0 protocol ip parent 1: prio 1 flower match ip dst [IP Address][/[Netmask] flowid 1:[Flow ID]`

TBD: Ability to associate class with filter added in previous slide where action is “mirred egress redirect dev eth0 **tc 1**”