



RSS Support

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The device supports using XOR as the RSS distribution function, in addition to the default Toeplitz function.

The XOR function provides better distribution across the driver's receive queues for a small number of streams, ensuring each TCP/UDP stream is assigned to a different queue.

To switch between the Toeplitz and XOR RSS hash functions, use the `sysfs` interface at: `/sys/class/net/eth*/settings/hfunc`.

To query the operational and supported hash functions:

```
cat /sys/class/net/eth*/settings/hfunc
```

Example:

```
cat /sys/class/net/eth2/settings/hfunc
Operational hfunc: toeplitz
Supported hfuncs: xor toeplitz
```

To change the operational hash function:

```
echo xor > /sys/class/net/eth*/settings/hfunc
```

RSS Verbs Support

Receive Side Scaling (RSS) technology allows spreading incoming traffic between different receive descriptor queues. Assigning each queue to different CPU cores allows better load balancing of the incoming traffic and improves performance.

This technology was extended to user space by the verbs layer and can be used for RAW ETH QP.

RSS Flow Steering

Steering rules classify incoming packets and deliver a specific traffic type (e.g. TCP/UDP, IP only) or a specific flow to "RX Hash" QP. "RX Hash" QP is responsible for spreading the traffic it handles between the Receive Work Queues using RX hash and Indirection Table. The Receive Work Queue can point to different CQs that can be associated with different CPU cores.

Verbs

The following verbs should be used to achieve this task in both control and data path. Details per verb should be referenced from its man page.

- `ibv_create_wq`, `ibv_modify_wq`, `ibv_destory_wq`
- `ibv_create_rwq_ind_table`, `ibv_destroy_rwq_ind_table`
- `ibv_create_qp_ex` with specific RX configuration to create the "RX hash" QP

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