ethtool NIC settings and stats

CONCEPTS

Lowercase letters show settings, uppercase letters change them: -k shows offloads, -K sets them.

Kernel stack TCP/IP, offloads
↓ rings
Driver ethtool -i
↓ DMA
NIC ethtool -S
↓ PHY
Cable / module ethtool, -m

Settings changed with ethtool live in the driver and are lost on reboot or driver reload; persist them via NetworkManager, udev or systemd-networkd.

LINK

`ethtool <iface>`
Show link, speed, duplex

`ethtool -s <iface> speed <mbps> duplex full autoneg off`
Force speed and duplex

`ethtool -s <iface> autoneg on`
Enable autonegotiation

`ethtool -s <iface> advertise <hexmask>`
Limit advertised modes

`ethtool -r <iface>`
Restart autonegotiation

`ethtool -P <iface>`
Show permanent MAC address

`ethtool -a <iface>`
Show pause (flow control)

DRIVER & STATS

`ethtool -i <iface>`
Driver, version, bus address

`ethtool -S <iface>`
Per-NIC statistics

`ethtool -t <iface> online`
Run a self-test

OFFLOADS

`ethtool -k <iface>`
Show offload features

`ethtool -K <iface> gro off`
Toggle GRO

`ethtool -K <iface> tso off gso off`
Toggle TSO and GSO

`ethtool -K <iface> rx on tx on`
Toggle checksum offload

`ethtool -K <iface> lro off`
Toggle LRO

QUEUES & RINGS

`ethtool -g <iface>`
Show ring buffer sizes

`ethtool -G <iface> rx 4096 tx 4096`
Set ring buffer sizes

`ethtool -l <iface>`
Show channel (queue) counts

`ethtool -L <iface> combined <n>`
Set channel count

IDENTIFY & WAKE

`ethtool -p <iface> <secs>`
Blink the port LED

`ethtool <iface> | grep Wake-on`
Show Wake-on-LAN state

`sudo ethtool -s <iface> wol g`
Enable Wake-on-LAN

`sudo ethtool -s <iface> wol d`
Disable Wake-on-LAN

Wake-on-LAN letters

Letter	Wakes on
`g`	magic packet
`u`	unicast
`m`	multicast
`b`	broadcast
`a`	ARP
`d`	disable all

MODULES & FLASH

`ethtool -m <iface>`
Show SFP/QSFP module info

`ethtool --version`
Print ethtool version