Rocky Enterprise Linux 9.2 Manual Pages on command 'tc-mpls.8'

$ man tc-mpls.8

NAME

    mpls - mpls manipulation module

SYNOPSIS

    tc ... action mpls { POP | PUSH | MODIFY | dec_ttl } [CONTROL]

    POP := pop protocol MPLS_PROTO

    PUSH := { push | mac_push } [protocol MPLS_PROTO] [tc MPLS_TC] [ttl MPLS_TTL] [
        bos MPLS_BOS] label MPLS_LABEL

    MODIFY := modify [label MPLS_LABEL] [tc MPLS_TC] [ttl MPLS_TTL]

    CONTROL := { reclassify | pipe | drop | continue | pass | goto chain CHAIN_INDEX }

DESCRIPTION

    The mpls action performs mpls encapsulation or decapsulation on a packet, reflected by the

    operation modes POP, PUSH, MODIFY and DEC_TTL. The POP mode requires the ethertype of the

    header that follows the MPLS header (e.g. IPv4 or another MPLS). It will remove the outer

    MPLS header and replace the ethertype in the MAC header with that passed. The PUSH and

    MODIFY modes update the current MPLS header information or add a new header.   PUSH re?

    quires at least an MPLS_LABEL. DEC_TTL requires no arguments and simply subtracts 1 from

    the MPLS header TTL field.

OPTIONS

    pop   Decapsulation mode. Requires the protocol of the next header.

    push   Encapsulation mode. Adds the MPLS header between the MAC and the network headers.
        Requires at least the label option.

    mac_push

Encapsulation mode. Adds the MPLS header before the MAC header. Requires at least the label option.

modify Replace mode. Existing MPLS tag is replaced. label, tc, and ttl are all optional.

dec_ttl

Decrement the TTL field on the outer most MPLS header.

label MPLS_LABEL

Specify the MPLS LABEL for the outer MPLS header. MPLS_LABEL is an unsigned 20bit integer, the format is detected automatically (e.g. prefix with '0x' for hexadeci? mal interpretation, etc.).

protocol MPLS_PROTO

Choose the protocol to use. For push actions this must be mpls_uc or mpls_mc (mpls_uc is the default). For pop actions it should be the protocol of the next header. This option cannot be used with modify.

tc MPLS_TC

Choose the TC value for the outer MPLS header. Decimal number in range of 0-7. De? faults to 0.

ttl MPLS_TTL

Choose the TTL value for the outer MPLS header. Number in range of 0-255. A non- zero default value will be selected if this is not explicitly set.

bos MPLS_BOS

Manually configure the bottom of stack bit for an MPLS header push. The default is for TC to automatically set (or unset) the bit based on the next header of the packet.

CONTROL

How to continue after executing this action.

reclassify

Restarts classification by jumping back to the first filter attached to this action's parent.

pipe   Continue with the next action, this is the default.

drop   Packet will be dropped without running further actions.

continue

Continue classification with next filter in line.

pass   Return to calling qdisc for packet processing. This ends the classification

process.

EXAMPLES

The following example encapsulates incoming IP packets on eth0 into MPLS with a label 123
and sends them out eth1:

```
#tc qdisc add dev eth0 handle ffff: ingress

#tc filter add dev eth0 protocol ip parent ffff: flower \
    action mpls push protocol mpls_uc label 123  \
    action mirred egress redirect dev eth1
```

In this example, incoming MPLS unicast packets on eth0 are decapsulated and redirected to
eth1:

```
#tc qdisc add dev eth0 handle ffff: ingress

#tc filter add dev eth0 protocol mpls_uc parent ffff: flower \
    action mpls pop protocol ipv4  \
    action mirred egress redirect dev eth1
```

Here is another example, where incoming Ethernet frames are encapsulated into MPLS with
label 123 and TTL 64. Then, an outer Ethernet header is added and the resulting frame is
finally sent on eth1:

```
#tc qdisc add dev eth0 ingress

#tc filter add dev eth0 ingress matchall \
    action mpls mac_push label 123 ttl 64 \
    action vlan push_eth \
        dst_mac 02:00:00:00:00:02 \
        src_mac 02:00:00:00:00:01 \
    action mirred egress redirect dev eth1
```

The following example assumes that incoming MPLS packets with label 123 transport Ethernet
frames. The outer Ethernet and the MPLS headers are stripped, then the inner Ethernet
frame is sent on eth1:

```
#tc qdisc add dev eth0 ingress

#tc filter add dev eth0 ingress protocol mpls_uc \
    flower mpls_label 123 mpls_bos 1 \
    action vlan pop_eth \
    action mpls pop protocol teb \
    action mirred egress redirect dev eth1
```

SEE ALSO

tc(8), tc-mirred(8), tc-vlan(8)