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

$ man tc-mpls.8

MPLS manipulation action in tc(8) Linux MPLS manipulation action in tc(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 requires at least an MPLS_LABEL. DEC_TTL re?
quires 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 hexadecimal 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. Defaults 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 fil?

ter 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 encapsu? lated 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)

iproute2 22 May 2019MPLS manipulation action in tc(8)