NAME

actions – independently defined actions in tc

SYNOPSIS

tc [*TC_OPTIONS*] **actions add** | **change** | **replace** *ACTSPEC*

tc [*TC_OPTIONS*] **actions get** | **delete** *ACTISPEC*

tc [*TC_OPTIONS*] **actions flush** *ACTNAMESPEC*

tc [*TC_OPTIONS*] **actions ls** | **list** *ACTNAMESPEC* [*ACTFILTER*]

ACTSPEC := **action** *ACTDETAIL* [*INDEXSPEC*] [*COOKIESPEC*] [*CONTROL*]

ACTISPEC := *ACTNAMESPEC INDEXSPEC*

ACTNAMESPEC := **action** ACTNAME

INDEXSPEC := **index** *INDEX*

ACTFILTER := **since** *MSTIME*

COOKIESPEC := **cookie** *COOKIE*

ACTDETAIL := *ACTNAME ACTPARAMS*

ACTNAME may be any valid action type: gact, mirred, bpf, connmark, csum, police, etc.

MSTIME Time since last update.

CONTROL := { *reclassify* | *pipe* | *drop* | *continue* | *ok* }

TC_OPTIONS These are the options that are specific to **tc** and not only the options. Refer to **tc(8)** for more information.

DESCRIPTION

The **actions** object in **tc** allows a user to define actions independently of a classifier (filter). These actions can then be assigned to one or more filters, with any packets matching the classifier's criteria having that action performed on them.

Each action type (mirred, police, etc.) will have its own table to store all created actions.

OPERATIONS

add Create a new action in that action's table.

change
replace Make modifications to an existing action.

get Display the action with the specified index value. When combined with the **-s** option for **tc**, display the statistics for that action.

delete Delete the action with the specified index value. If the action is already associated with a classifier, it does not delete the classifier.

ls

list List all the actions in the specified table. When combined with the **-s** option for **tc**, display the statistics for all actions in the specified table. When combined with the option **since** allows doing a millisecond time-filter since the last time an action was used in the datapath.

flush Delete all actions stored in the specified table.

ACTION OPTIONS

Note that these options are available to all action types.

index *INDEX*

Specify the table index value of an action. *INDEX* is a 32-bit value that is unique to the specific type of action referenced.

For **add**, **change**, and **replace** operations, the index is **optional.** When adding a new action, specifying an index value will assign the action to that index unless that index value has already been assigned. Omitting the index value for an add operation will cause the kernel to assign a value to the new action.

For **get** and **delete** operations, the index is **required** to identify the specific action to be displayed or deleted.

cookie *COOKIE*

In addition to the specific action, mark the matching packet with the value specified by *COOKIE*. The *COOKIE* is a 128-bit value that will not be interpreted by the kernel whatsoever. As such, it can be used as a correlating value for maintaining user state. The value to be stored is completely arbitrary and does not require a specific format. It is stored inside the action structure itself.

since *MSTIME*

When dumping large number of actions, a millisecond time-filter can be specified *MSTIME*. The *MSTIME* is a millisecond count since last time a packet hit the action. As an example specifying "since 20000" implies to dump all actions that have seen packets in the last 20 seconds. This option is useful when the kernel has a large number of actions and you are only interested in recently used actions.

CONTROL

The *CONTROL* indicates how **tc** should proceed after executing the action. Any of the following are valid:

reclassify
Restart the classifiction by jumping back to the first filter attached to the action's parent.

pipe Continue with the next action. This is the default control.

drop Drop the packed without running any further actions.

continue
Continue the classification with the next filter.

pass Return to the calling qdisc for packet processing, and end classification of this packet.

SEE ALSO

tc(8), **tc-bpf**(8), **tc-connmark**(8), **tc-csum**(8), **tc-ife**(8), **tc-mirred**(8), **tc-nat**(8), **tc-pedit**(8), **tc-police**(8), **tc-simple**(8), **tc-skbedit**(8), **tc-skbmod**(8), **tc-tunnel_key**(8), **tc-vlan**(8), **tc-xt**(8)