

Configuring DOCSIS Actions

You can configure Data over Cable Service Interface Specifications (DOCSIS) actions for *PacketCable Multimedia Specification* (PCMM) policy rules. The type of action that you can create depends on the type of policy rule. See Policy Information Model.

Use the following configuration statements to configure DOCSIS actions. Use the configuration statement for the service flow scheduling type that you want to use for the DOCSIS action. The types are best effort, downstream, non-real-time polling service, real-time polling service, unsolicited grant service, unsolicited grant service with activity detection, or parameter.

```
policies group name list name rule name docsis-best-effort name {
    traffic-priority traffic-priority ;
    request-transmission-policy request-transmission-policy ;
    maximum-sustained-rate maximum-sustained-rate ;
    maximum-traffic-burst maximum-traffic-burst ;
    minimum-reserved-rate minimum-reserved-rate ;
    assumed-minimum-res-packet-size assumed-minimum-res-packet-size ;
    description description ;
}
policies group name list name rule name docsis-down-stream name {
    traffic-priority traffic-priority ;
    maximum-latency maximum-latency ;
    maximum-sustained-rate maximum-sustained-rate ;
    maximum-traffic-burst maximum-traffic-burst ;
    minimum-reserved-rate minimum-reserved-rate ;
    assumed-minimum-res-packet-size assumed-minimum-res-packet-size ;
    description description ;
}
policies group name list name rule name docsis-non-real-time name {
    traffic-priority traffic-priority ;
    request-transmission-policy request-transmission-policy ;
    maximum-sustained-rate maximum-sustained-rate ;
    maximum-traffic-burst maximum-traffic-burst ;
    minimum-reserved-rate minimum-reserved-rate ;
    assumed-minimum-res-packet-size assumed-minimum-res-packet-size ;
    nominal-polling-interval nominal-polling-interval ;
    description description ;
}
policies group name list name rule name docsis-real-time name {
    request-transmission-policy request-transmission-policy ;
    maximum-sustained-rate maximum-sustained-rate ;
    maximum-traffic-burst maximum-traffic-burst ;
    minimum-reserved-rate minimum-reserved-rate ;
    assumed-minimum-res-packet-size assumed-minimum-res-packet-size ;
    nominal-polling-interval nominal-polling-interval ;
    tolerated-poll-jitter tolerated-poll-jitter ;
    description description ;
}
policies group name list name rule name docsis-unsolicited-grant name {
    request-transmission-policy request-transmission-policy ;
    grant-size grant-size ;
    grants-per-interval grants-per-interval ;
    tolerated-grant-jitter tolerated-grant-jitter ;
}
```

```

        nominal-grant-interval nominal-grant-interval ;
        description description ;
    }
    policies group name list name rule name docsis-unsolicited-grant-ad name {
        request-transmission-policy request-transmission-policy ;
        nominal-polling-interval nominal-polling-interval ;
        grant-size grant-size ;
        grants-per-interval grants-per-interval ;
        tolerated-grant-jitter tolerated-grant-jitter ;
        nominal-grant-interval nominal-grant-interval ;
        description description ;
    }
    policies group name list name rule name docsis-param name {
        service-flow-type service-flow-type ;
        traffic-priority traffic-priority ;
        request-transmission-policy request-transmission-policy ;
        maximum-sustained-rate maximum-sustained-rate ;
        maximum-traffic-burst maximum-traffic-burst ;
        minimum-reserved-rate minimum-reserved-rate ;
        assumed-minimum-res-packet-size assumed-minimum-res-packet-size ;
        maximum-latency maximum-latency ;
        nominal-polling-interval nominal-polling-interval ;
        tolerated-poll-jitter tolerated-poll-jitter ;
        grant-size grant-size ;
        grants-per-interval grants-per-interval ;
        tolerated-grant-jitter tolerated-grant-jitter ;
        nominal-grant-interval nominal-grant-interval ;
        description description ;
    }
}

```

To configure a DOCSIS action:

1. From configuration mode, enter the DOCSIS action configuration. For example, in this procedure, DOCSISParameter is the name of the DOCSIS action.

```

user@host# edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter

```

2. Assign a parameter as the service flow scheduling type.

Before you assign a parameter, you must create a parameter of type trafficProfileType and commit the parameter configuration.

```

[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set service-flow-type service-flow-type

```

3. (Optional) Configure a priority for the service flow. If two traffic flows are identical in all QoS parameters except priority, the higher-priority service flow is given preference.

```

[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set traffic-priority traffic-priority

```

4. (Optional) Configure the request transmission policy, which is the interval usage code that the cable modem uses for upstream transmission requests and packet transmissions for this service flow. It also specifies whether requests can be piggybacked with data.
 - For data packets transmitted on this service flow, this option also specifies whether packets can be concatenated, fragmented, or have their payload headers suppressed.
 - For UGS service flows, this option also specifies how to treat packets that do not fit into the UGS grant.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set request-transmission-policy request-transmission-policy
```

5. (Optional) Configure the maximum sustained rate at which traffic can operate over the service flow.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set maximum-sustained-rate maximum-sustained-rate
```

6. (Optional) Configure the maximum burst size for the service flow. This option has no effect unless you configure a nonzero value for the maximum sustained rate.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set maximum-traffic-burst maximum-traffic-burst
```

7. (Optional) Configure the guaranteed minimum rate that is reserved for the service flow.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set minimum-reserved-rate minimum-reserved-rate
```

8. (Optional) Configure the assumed minimum packet size for which the minimum reserved traffic rate is provided. If a packet is smaller than the assumed minimum packet size, the software treats the packet as if its size is equal to the value specified in this option.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# set assumed-minimum-res-packet-size
assumed-minimum-res-packet-size
```

9. (Optional) Configure the maximum latency for downstream service flows. It is the maximum latency for a packet that passes through the CMTS device, from the time that the CMTS device's network side interface receives the packet until the CMTS device forwards the packet on its radio frequency (RF) interface.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set maximum-latency maximum-latency
```

10. (Optional) Configure the nominal interval between successive unicast request opportunities for this service flow.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set nominal-polling-interval nominal-polling-interval
```

11. (Optional) Configure the maximum amount of time that unicast request intervals can be delayed beyond the nominal polling interval.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set tolerated-poll-jitter tolerated-poll-jitter
```

12. (Optional) Configure the size of the individual data grants provided to the service flow.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set grant-size grant-size
```

13. (Optional) Configure the actual number of data grants given to the service flow during each nominal grant interval.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set grants-per-interval grants-per-interval
```

14. (Optional) Configure the maximum amount of time that the transmission opportunities can be delayed beyond the nominal grant interval.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set tolerated-grant-jitter tolerated-grant-jitter
```

15. (Optional) Configure the nominal interval between successive unsolicited data grant opportunities for this service flow.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set nominal-grant-interval nominal-grant-interval
```

16. (Optional) Enter a description for the filter action.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
```

```
user@host# set description description
```

17. (Optional) Verify the DOCSIS action configuration.

```
[edit policies group pcmm list DocsisParameter rule in docsis-param
DOCSISParameter]
user@host# show
service-flow-type action;
traffic-priority 1;
request-transmission-policy 1;
maximum-sustained-rate 1500;
maximum-traffic-burst 3044;
minimum-reserved-rate 1240;
assumed-minimum-res-packet-size 124;
description "DOCSIS parameter action with a parameter service flow
scheduling type";
```

