

# Diameter Congestion And Filter Attributes

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Supplement to

draft-bertz-dime-congestion-flow-attributes-00

# RFC 5777 Foundation

- RFC 5777
- Filter–Rule AVP
  - The basis our work.
  - Condition/Action design

```
Filter-Rule ::= < AVP Header: 509 >
             [ Filter-Rule-Precedence ]
             ; Condition part of a Rule
             ; -----
             [ Classifier ]
             * [ Time-Of-Day-Condition ]
             ; Action and Meta-Data
             ; -----
             [ Treatment-Action ]
             ; Info about QoS related Actions
             ; -----
             [ QoS-Semantics ]
             [ QoS-Profile-Template ]
             [ QoS-Parameters ]
             [ Excess-Treatment ]
             ; Extension Point
             ; -----
             * [ AVP ]
```

# Congestion Management

- Filter-Rule does not support ECN in 2 ways
  1. No AVP to add to condition part to Classify ECN marked traffic
  2. No Congestion-Treatment Action Set (RFC has Excess-Treatment and Treatment-Action AVPs)
- We need to build many filters for Congestion Management
  - How do we know they are working? (Is any traffic captured)
  - What can we observe on existing filters in order to remove unused ones OR ones deprecated by new filters?

# ECN Specific AVPs

- **ECN-IP-Codepoint AVP (Enumerated)**
  - Specifies the Explicit Congestion Notification codepoint values to match in the IP header.
  - Use: Place in Filter-Rule's Classifier
- **Congestion-Treatment AVP (Grouped)**
  - Similar in design/use to Excess-Treatment AVP
  - NOTE: Criteria for Congestion or traffic under congestion is out of scope of the AVP specification
- **Flow-Count AVP (Unsigned64)**
  - Indicates the number of protocol specific flows. The protocol is determined by the filter
- **Packet-Count AVP (Unsigned64)**
  - Indicates the number of protocol specific packets.

# Filter AVPs for maintenance

- Two AVPs
  - Flow-Count AVP (Unsigned64)
    - Indicates the number of protocol specific flows. The protocol is determined by the filter
  - Packet-Count AVP (Unsigned64)
    - Indicates the number of protocol specific packets.
- Uses
  - Use in accounting/reporting to determine if Filter is working as planned
  - Can be combined with other AVPs to provide rudimentary traffic profile (e.g. bytes per flow, bytes per packet, etc.)
  - Can be sent in Filter-Rule as prescriptive

# Questions for Consideration

- Should we add TCP ECE and CWR filters?
- Should we add Classifier support for ECN for RTP over UDP (RFC 6679)?
- What other extensions like RFC 6679 exist and should they be incorporated?