Diameter Congestion And Filter Attributes

IETF 86, Orlando, USA
Lyle Bertz (lyle.t.bertz@sprint.com)
Brent Hirschman (brent.hirschman@sprint.com)
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-Treament 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?