# RADIUS Accounting Extensions for Traffic Statistics

draft-yeh-radext-ext-traffic-statistics-02

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# Network Scenario & Requirements

```
+----------+                    +----------+                    +----------+
|  Host /  |        PPPoE        |          |        RADIUS       |   AAA    |
| Customer | ------------        |   NAS    | ------------        |  Server  |
|  Router  |        IPoE         |          |     Accounting      |          |
+----------+                    +----------+                    +----------+
  Dual-Stack              Separated queues and counter
                            for IPv4 and IPv6 traffic
```
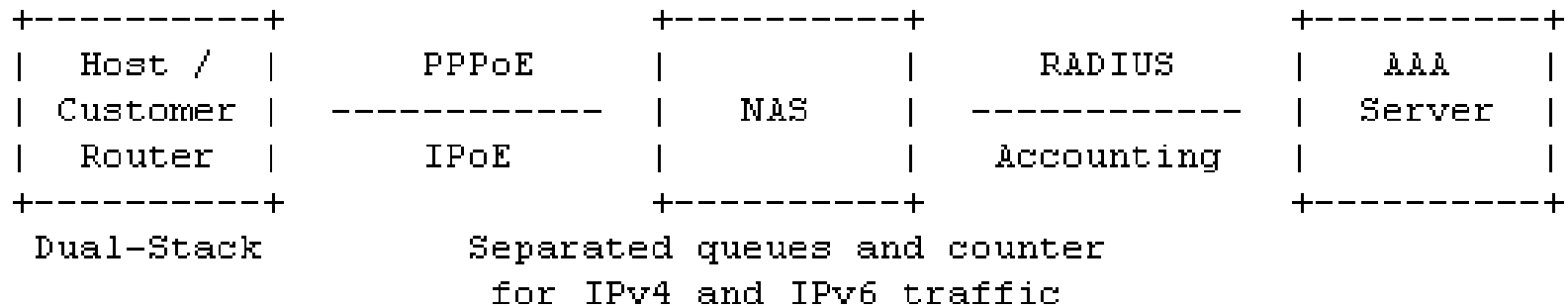
Figure 1: Traffic Statistics of Dual-Stack Users for RADIUS
Accounting

- R - NAS must be able to report the common or separated IPv4 & IPv6
  traffic statistics for the differential accounting and traffic recording  in
  dual-stack or other IPv6 transition scenario.

  - Text in the BBF TR-187 Section 9.4 has been reviewed in Taipei, IETF82.
  - Note that traffic statistics reporting is also needed in the IPv6  transition cases,
    such as DS-Lite, 6rd or the potential MAP, where  AFTR (Address Family
    Transition Router) or BR (Border Router) acts as the broadband NAS.

# Consideration on the Attribute Design

- Judgment  (or consideration) on the quickly-exhausted standard type space {1-191}
  - {1-160} has been assigned till today
  - Some WG-drafts are waiting for the assignment of the type code

- 4+ design has been reviewed at IETF82, Taipei
  - Standard-type (2*4) in flat mode or Extended-type (2*4) in flat mode or Extended-type (1) in group mode?
  - Design-3 (Nesting-TLV in grouping mode) sounds the final selection.

# Final Attribute Design per the discussion in the ML- Roughly Completed

- Adopt nesting-TLV as the data type for the new attribute in the extended type space per draft-ietf-radext-radius-extensions;
  - Container Attribute: (might be the 1$^{st}$ attribute who employs TLV as the its data type)
    - Acct-Traffic-Statistics / 241.x
  - Contained Attribute:
    - Acct-Traffic-Statistics. Traffic-Type / 6-Octet / 241.x.1 / Enumerated Data Type
      - 0 for the combined traffic of IPv4 and IPv6 / 1 for the separated traffic of IPv4 / 2 for the separated traffic of IPv6
    - Acct-Traffic-Statistics. Input-Octets / 10-Octet / 241.x.2 / Integer64 Data Type
    - Acct-Traffic-Statistics. Output-Octets / 10-Octet / 241.x.3 / Integer64
    - Acct-Traffic-Statistics. Input-Packets / 10-Octet / 241.x.4 / Integer64
    - Acct-Traffic-Statistics. Output-Packets / 10-Octet / 241.x.5 / Integer64
  - Grouping traffic statistics (sub-)attributes (Input/Output-Octect/Packet) into one container attribute.
  - The contained attribute of Traffic-Type might provide the extensibility for future use.

# Discussion

- New Requirements
  - Traffic of DSCP (6-bit)?
    - Design Question：
      - 1. New sub-attribute?
      - 2. New code for traffic-type in the sub-attribute of Acct-Traffic-Statistics.Traffic-Type?

  - Some 'fancy' mentioned in draft-winter before such as: 'Traffic on TCP/80 to example.com' ?
    - Design Question
      - New sub-attribute to specify the 'traffic name'?

# Proposal for Next Step

- A new WG item?

  - Reasons:
    - Clear requirements from the industry
    - Roughly consensus on the attribute design
      - Thanks for the discussion on the ML
  - Co-authorship for the WG item?

# Q&A?!

No IPR is aware in this draft.

# Extensive Discussion on WG Re-charter 'RADIUS Extensions for Dual Stack Access'

- Indication the default configuration on the NAS for the users
  - 1. Attribute of 'Stack-Type'
    - IPv4-Only / IPv6-Only / Dual-Stack
  - 2. Attributr of 'Access-Type'
    - PPPoE /IPoE
      - Host / CE
      - Numbered by SLAAC / DHCPv6 – Host / CE
      - Numbered / Unnumbered – CE