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RADIUS attributes

FastPCRF passes the following attributes within the Accounting-Request:

`VasExperts-L2-SubsId` – L2-subscriber ID.

`Framed-IP-Address` – (for the IPv4 only) is the subscriber IPv4 address; in case of NAT 1:1, this attribute value can be configured.

`Framed-IPv6-Prefix` - (for the IPv6 only) IPv6 subscriber subnet prefix.

`Framed-IPv6-Address` - (for the IPv6 only) IPv6 subscriber address. Only high bits of the IP address are most significant, as specified by the IPv6 prefix. For example, for the prefix 2001:1::/64, the value of this attribute is 2001:1::.

`Acct-Session-Id` – RADIUS accounting session identifier.

`Acct-Status-Type` – the request type:

- [1] start – beginning of the accounting session. Statistics are not transmitted within this request, the only session id is transferred;
- [2] stop – termination of the accounting session. This request contains the final session statistics;
- [3] interim-update – interim statistics.

`Acct-Delay-Time` - is the timeout in seconds between receiving the last billing netflow statistics from the fastdpi and sending this Accounting-Request. In fact, this is a measure of data "obsolescence".

`Class` - if during authorization the Access-Accept/Access-Reject contains the Class attribute, then it will be transferred in all the accounting requests.

`NAS-Port-Type`, `NAS-Port`, `NAS-IP-Address`, `NAS-Identifier` – are formed similarly to the Access-Request.

Statistics (accounting data) are defined in the RFC-2866 and are passed only for Acct-Status-Type= 2 or 3:

- `Acct-Input-Packets` - the number of packets sent to the subscriber (inet → subs direction)
- `Acct-Output-Packets` - number of packets from the subscriber (subs → inet direction)
- `Acct-Input-Octets` - number of bytes sent to the subscriber (inet → subs direction)
- `Acct-Output-Octets` - number of bytes from the subscriber (subs → inet direction)
- `Acct-Input-Gigawords` (RFC-2869)
- `Acct-Output-Gigawords` (RFC-2869)

in addition, statistics on the cs0-cs7 traffic classes are transmitted in vendor-specific-attributes (VSA). The following VSAs are defined for the vendor-id=43823:

```
ATTRIBUTE VasExperts-Acct-Traffic-Class-Name            16 string
ATTRIBUTE VasExperts-Acct-Traffic-Class-Input-Octets    17 integer64
ATTRIBUTE VasExperts-Acct-Traffic-Class-Output-Octets   18 integer64
```

```
ATTRIBUTE VasExperts-Acct-Traffic-Class-Input-Packets   19 integer64
ATTRIBUTE VasExperts-Acct-Traffic-Class-Output-Packets  20 integer64
```

here the `VasExperts-Acct-Traffic-Class-Name` is the traffic class name, "cs0", "cs1", ..., "cs7", the rest attributes contain statistics for this traffic class. Below is the example pf the packet (only the first two traffic statistics are unfolded):

```
Frame 211: 576 bytes on wire (4608 bits), 576 bytes captured (4608 bits)
Ethernet II, ...
Internet Protocol Version 4, ...
User Datagram Protocol, Src Port: 41754, Dst Port: 1815
RADIUS Protocol
    Code: Accounting-Request (4)
    Packet identifier: 0xfc (252)
    Length: 534
    Authenticator: 02495762cbcef01d257fa82eb8f320b3
    [The response to this request is in frame 233]
    Attribute Value Pairs
        AVP: l=6 t=NAS-Port-Type(61): Virtual(5)
        AVP: l=6 t=NAS-Port(5): 0
        AVP: l=10 t=NAS-Identifier(32): FastPCRF
        AVP: l=6 t=Framed-IP-Address(8): 192.168.0.52
        AVP: l=6 t=Service-Type(6): Framed(2)
        AVP: l=18 t=Acct-Session-Id(44): 3400a8c0311fae6b
        AVP: l=6 t=Acct-Authentic(45): RADIUS(1)
        AVP: l=6 t=Acct-Status-Type(40): Interim-Update(3)
        AVP: l=6 t=Acct-Delay-Time(41): 6
        AVP: l=6 t=Acct-Input-Packets(47): 0
        AVP: l=6 t=Acct-Output-Packets(48): 1956
        AVP: l=6 t=Acct-Input-Octets(42): 0
        AVP: l=6 t=Acct-Input-Gigawords(52): 0
        AVP: l=6 t=Acct-Output-Octets(43): 2173116
        AVP: l=6 t=Acct-Output-Gigawords(53): 0
        AVP: l=51 t=Vendor-Specific(26) v=VAS Experts(43823)
            AVP Type: 26
            AVP Length: 51
            VSA: l=5 t=VasExperts-Acct-Traffic-Class-Name(16): cs0
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Input-Octets(17):
0000000000000000
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Output-Octets(18):
00000000002128bc
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Input-Packets(19):
0000000000000000
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Output-Packets(20):
00000000000007a4
        AVP: l=51 t=Vendor-Specific(26) v=VAS Experts(43823)
            AVP Type: 26
            AVP Length: 51
            VSA: l=5 t=VasExperts-Acct-Traffic-Class-Name(16): cs1
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Input-Octets(17):
0000000000000000
```

```
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Output-Octets(18):
0000000000000000
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Input-Packets(19):
0000000000000000
            VSA: l=10 t=VasExperts-Acct-Traffic-Class-Output-Packets(20):
0000000000000000
        AVP: l=51 t=Vendor-Specific(26) v=VAS Experts(43823)
        AVP: l=51 t=Vendor-Specific(26) v=VAS Experts(43823)
        AVP: l=51 t=Vendor-Specific(26) v=VAS Experts(43823)
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```