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BRAS tracing

[Stingray Service Gateway 7.5] L2 BRAS implementing is often challenging, since it requires not only the SSG BRAS, but also the environment. Also SSG operating in the L2 BRAS mode modifies packets, drops some of them, so there are situations in which you need to know how the L2 BRAS operates at the packet level.

The following fastdpi.conf options designed to do this:

`bras_trace` - BRAS tracing. Tracing modes bitmask:

- 0x0001 - ARP request tracing (bras_arp_proxy mode has to be enabled)
- 0x0002 - IP source guard tracing (bras_ip_source_guard mode has to be enabled)
- 0x0004 - tracing of the local traffic termination (bras_terminate_local mode has to be enabled)
- 0x0008 - tracing of the VLAN traffic termination/origination (bras_vlan_terminate mode has to be enabled)
- 0x0010 - tracing of the DHCP callback within slave flow
- 0x0020 - PPPoE packets tracing
- 0x0040 - PPP FSA transition tracing
- 0x0080 - to capture PPPoE packets using pcap; if the `bras_pppoe_trace_mac` option is not specified all the PPPoE traffic is written
- 0x0100 - ICMP echo tracing
- 0x20000 - LAG tracing

Note that the tracing modes are **highly** resource-consuming since the BRAS operating in such modes actively writes to the fastdpi_slave_x.log files. It is not recommended to apply tracing modes to the SSG at peak times.

`bras_save_drop` - if this parameter equals to 1 then the SSG writes to pcap all the packets including those it has decided to drop (do not forward to any destination). For the dropped IP packets ttl = 0, so the IP header checksum is recalculated. If the ajb_save_ip parameter is specified, only packets for this address are recorded. If `ajb_save_ip` is not specified, all dropped packets are recorded.

`bras_save_term` - a value of 1 means that the SSG records all the output packets in pcap after the termination. This option works only in conjunction with the ajb_save_ip option: the output packets would be written to pcap only for the IP addresses (or CIDR) specified within this option. Thus after the termination, you would see two packages in pcap - the input and output ones.

`bras_pppoe_trace_mac` [the SSG 8.1] - the option specifies the MAC address of the PPPoE subscriber whose packets should be stored in pcap. This parameter is valid only with the 0x0080 flag within the `bras_trace` option, i.e. to capture the PPPoE subscriber packets you should specify the 0x0080 flag within the `bras_trace` option and set the subscriber MAC address using the 'xx:xx:xx:xx:xx:xx' format, for example:

```
bras_trace=0x0080
bras_pppoe_trace_mac=20:28:18:a0:a9:b6
```