

## IPFIX, SFLOW and NetFlow

Monday, October 10, 2016 3:45 PM

<https://tools.ietf.org/html/rfc5470> Architecture for IP Flow Information Export

<https://tools.ietf.org/html/rfc5101#ref-IPFIX-ARCH> Specification of the IP Flow Information Export (IPFIX) Protocol for the Exchange of IP Traffic Flow Information

### How to get ipfix working with openvswitch?

<http://networkengineering.stackexchange.com/questions/5848/how-to-get-ipfix-working-with-openvswitch> This is the best forum question to think on the OF action that is required for sampling.

Although, the query does not say taking any explicit action to set the OF action for sampling purpose.

But, there is a lot of code written based on OF ACTION -> OVS\_ACTION\_ATTR\_SAMPLE (datapath/actions.c, flow\_netlink.c)

### Ofproto-dpif-xlate.c Gives hint how the sampling is done.

```
/* Appends a "sample" action for sFlow or IPFIX to 'ctx->odp_actions'. The
 * 'probability' is the number of packets out of UINT32_MAX to sample. The
 * 'cookie' (of length 'cookie_size' bytes) is passed back in the callback for
 * each sampled packet. 'tunnel_out_port', if not ODPP_NONE, is added as the
 * OVS_USERSPACE_ATTR_EGRESS_TUN_PORT attribute. If 'include_actions', an
 * OVS_USERSPACE_ATTR_ACTIONS attribute is added.
 */
static size_t
compose_sample_action(struct xlate_ctx *ctx,
                     const uint32_t probability,
                     const union user_action_cookie *cookie,
                     const size_t cookie_size,
                     const odp_port_t tunnel_out_port,
                     bool include_actions)
```

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*My next hint may be to check how compose\_sample\_action gets invoked. If it is invoked as soon as the IPFIX is created, then OF protocol need not set this action explicitly, perhaps ?!!*

*Further clue lies in actions.c of datapath folder.*

```
static int sample(struct datapath *dp, struct sk_buff *skb,
                 struct sw_flow_key *key, const struct nlattr *attr,
                 const struct nlattr *actions, int actions_len)
```

This function pushes the packet to userspace

```
static int output_userspace(struct datapath *dp, struct sk_buff *skb,
                          struct sw_flow_key *key, const struct nlattr *attr,
                          const struct nlattr *actions, int actions_len).
```

### **compose\_ipfix\_action calls the compose\_sample\_action.**

```
/* If IPFIX is enabled, this appends a "sample" action to implement IPFIX to
 * 'ctx->odp_actions'. */
```

```
static void
compose_ipfix_action(struct xlate_ctx *ctx, odp_port_t output_odp_port)
```