BGP Dissemination of FlowSpec for Transport Aware Mobility

draft-dmc-idr-flowspec-tn-aware-mobility-03

Linda Dunbar (Futurewei)
Kausik Majumdar (Microsoft)
Uma Chunduri (Intel)

IETF 117  July 2023, San Francisco
The existing Transport Network Aware Mobility for 5G defines a framework for mapping the 5G mobile systems Slice and Service Types (SSTs) to corresponding underlying network paths. The focus of that work is limited to the mobility domain eNB<->UPF.

To maintain E2E transport network characteristics, the framework needs to be extended: UPF<->Service instances.

draft-ietf-dmm-tn-aware-mobility-7

draft-mcd-rtgwg-extension-tn-aware-mobility-6
BGP FlowSpec Traffic Redirect

- Redirect to IP tunnel: draft-ietf-idr-flowspec-path-redirect-12
- Redirect IP: draft-ietf-idr-flowspec-redirect-ip-09
- Redirect to SRv6 path: draft-ietf-0-idr-srv6-flowspec-path-redirect-10

Redirect to IPsec tunnels (SD-WAN)

Need IANA to assign a new type:

0x49 FlowSpec Redirect to Indirection-id Non-transitive Extended Community.

The Policy is from Ctrl to the Ingress node (non-transitive)
Extension: redirect to IPsec Tunnel

FlowSpec Redirect to Indirection-ID Extended Community (Non-Transitive):

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Type          |IPSecSA SubType| Flags(1 octet)|IPSecSA ID-Type|
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| IPsec Tunnel ID (4 octets) |                  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Figure 3: Redirect to Ind-ID Ext Community for IPsec Tunnel

Where
Type = (to be assigned by IANA): Non-Transitive FlowSpec Redirect to Indirection-ID Extended Community.

Sub-Type: IPSec SA: its value (To be assigned by IANA):
indicate the ID carried is IPsec SA ID (pre-established).

Flags: Same as that defined in [Flowspec-path-redirect].

IPSec SA ID-Type: needed for IPsec IPv4 tunnel (to be assigned by IANA)
Inner Encap type = IPsec+GRE
Inner Encap type = IPsec+Vxlan
Next Steps

• Ask for WG Adoption