

# Flowspec Indirection-id Redirect

(draft-vandevelde-idr-flowspec-path-redirect-02)

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# A logical next step for DDoS

- **First there was: Indirection to VRF**
  - Recursive look-up inside a VRF to find alternate Next-hop destination
  - RFC5575
- **Next there was: Indirection to IP**
  - Recursive look-up in Routing Table to alternate next-hop
  - draft-ietf-idr-flowspec-redirect-ip
- **Now there is: Indirection to Service-plane**
  - Recursive lookup to find alternate chain of next-hops
  - Send DDoS traffic over those links facilitated to transport DDoS
  - draft-vandeveldede-idr-flowspec-path-redirect

# Technology Summary

- New BGP Flowspec Action -> redirection using “Indirection-ID”
- “Indirection-ID” is a new proposed extended community
- “Indirection-id” is used for a recursive lookup on receiving router
- The flowspec receiving router will use “Indirection-ID” to find out through recursion
  - Tunnel encap information to Next-hop destination
  - Tunnel encap information to Next-Next-hop destination (EPE)
  - Segment Routing Binding SID
- A single Flowspec update from the flowspec controller results in network wide optimized security, application and traffic steering i.e. :
  - Steer to closest IDS or FW or security appliance
  - Steer to engineered path for DDoS mitigation
  - Steer to special regional EPE exit (i.e. for Cloud DDoS handling)
  - Steer to closest Video rendering
  - Steer to path with lowest latency out of the region
  - Steer to None-shared-resource-path (live-live or resilient flow steering)
- Tunnel setup is done out-of-band from flowspec

# Changes between -00 and -02

- Added use-case scenario's:
  - Steer to shortest Path tunnel. Examples could be
    - To regional closest IDS or FW service
    - To best Egress router for the region for flowspec identified traffic
    - To best video rendering device for the region for a particular customer
    - Or simply to a central device in the network
  - Steer to TE-tunnels
    - Steer to RSVP-TE or SR-TE tunnel (to a service)
    - Steer to Segment Routing binding SID
      - i.e. CLI, PCE or BGP based mapping
  - Steer to Next-Next-Hop tunnels
    - Cascaded tunnel tunnel constructs (using "Tunnel ID")
    - Egress Peer Engineering tunnel constructs
    - Engineered path to egress router and exact egress interface

# Changes between -00 and -02

- New co-author: Arjun Sreekantiah
- Revised Community name: “Indirection-id” (to remove purpose confusion)
- Added section to explain “Indirection-id” and “Indirection-id Table”
- Added Validation Procedure
  1. RFC5575 procedures SHOULD be applied
  2. If multiple redirect actions applied, then “Indirection-ID” MUST take priority
  3. When no valid “Indirection-ID” exists, then process as if community was not attached and MUST provide invalid redirection indication
- Added Segment Routing Binding SID context into “Indirection-ID” (using a ‘bit’ in the community local administrator field)

# Next steps

- Adopt as a WG document