A plethora of flowspec features and an afternoon chat at IETF 94

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The current landscape

• Flowspec has become a very popular feature and is getting a significant number of additional mechanisms proposed for it. These mechanisms fall into two broad categories:
  – Additional traffic redirection behaviors.
  – Additional match criteria.

• Several, but not all, of the authors of various flowspec features met on Sunday of IETF-94 to discuss reconciling some of the potential feature interactions. This is my summary of that discussion.
Redirection (1)

- The original feature for redirection was “redirect to VRF”.
- A “redirect to IP” feature is an adopted I-D in IETF.
  - A significant portion of the complexity in the draft was reconciling behavior when both redirect to VRF is specified along with redirect to IP.
  - Additionally, the behavior when multiple redirect-to-IP extended communities was addressed.
Redirection (2)

• The new redirection functionalities fall into three broad classes with relation to redirect-to-VRF/IP:
  – Complementary: Tunnel
  – Partially complementary: MPLS Label
  – Disjoint: Path-id (?), SID
Match Criteria

• NVO3 – Applicable in the edge scenario, but not likely in transit.
• Time – Clearly specified. My specific concern is “surprises”, partially due to scenarios relating to how flowspec orders rules along with multiple distributors.
• Interface-set. Calls out potential need for add-paths support.
Informational

• The proposal adds a descriptive piece of text to the flowspec rule. Discussion has suggested if we want such a feature, it is probably a general purpose feature.
Future steps

• For features that may impact forwarding:
  – Determine if they are intended to work with each other and what the behaviors are if they do. Our challenge is where we document the full set of combinations
  – When the features are not complementary, how do we tie-break on routers that implement both features?
    • Ignore all?
    • Preference? Where is this preference? In spec, or via configuration? What about tie-breaking?