

BGP Flowspec for IETF Network Slice Traffic Steering

draft-dong-idr-flowspec-network-slice-ts-01

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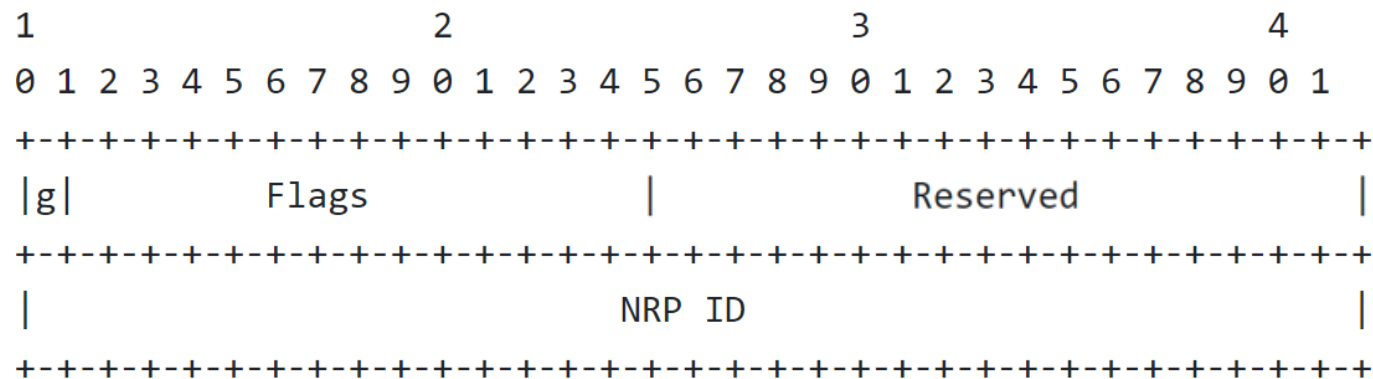
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Background

- BGP Flowspec provides a mechanism to distribute the flow specifications and the forwarding actions to be performed to the matched traffic
- IETF network slice traffic needs to be steered into an NRP to meet the connectivity and performance requirements
 - An NRP is a collection of network resources in the underlay network
 - An NRP can be identified using either resource-aware SR SIDs or dedicated NRP ID in data packet
- This document defines BGP Flowspec extensions for steering IETF network slice traffic into the corresponding NRP

Matching Rules for Network Slice Traffic

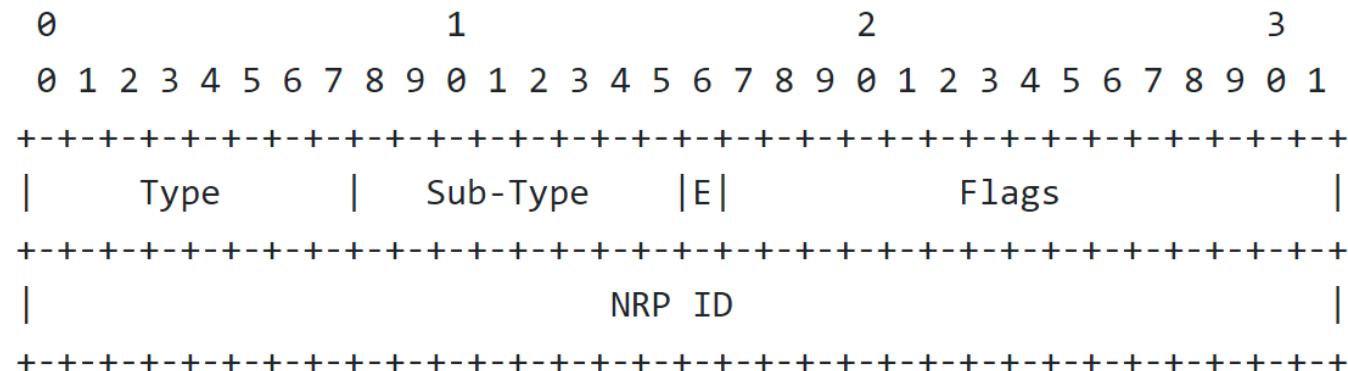
- Existing Flowspec components can be reused to match network slice service traffic
 - The components as defined in RFC 8955 and RFC 8956
- In some scenarios, an NRP-ID is encapsulated in the received data packets, a new Flowspec component is defined to match the NRP-ID



- The component encoding aligns with Flowspec V2
- g flag: indicates the NRP ID is globally unique (when set) or is domain significant (when clear)
- NRP ID: 4-octet identifier of an NRP

Network Slice Traffic Steering Actions

- Network slice traffic steered into an NRP can be forwarded using
 - Either the shortest (BE) path in the NRP
 - Or the traffic engineering (TE) paths associated with the NRP
- Traffic steering to NRP BE path
 - If resource-aware segments are used for NRP-specific forwarding, the redirect-to-ip action can be used to carry the resource-aware SR SID of the egress node
 - If data plane NRP-ID is used for NRP-specific forwarding, a new Encapsulate-NRP-ID action is defined



E Flag: indicates whether the NRP ID should be encapsulated in an outer header

Network Slice Traffic Steering Actions

- Traffic steering to NRP TE path
 - Network slice traffic can be steered to an SR Policy, which is associated with an NRP
 - Two approaches to associate an SR Policy with an NRP
 - Using NRP-specific resource-aware segments to build the SR Policy SID list
 - Associate the SR Policy with an data plane NRP ID
 - In both cases, IETF network slice traffic can be steered into an NRP TE path based the mechanism defined in draft-ietf-idr-ts-flowspec-srv6-policy

Next Steps

- Comments and feedbacks are welcome
- Revise the document accordingly

Thank You