



FSv2 –

Individual Drafts

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Agenda for Design Team 2 (DT2)

FSv2 – More Filters

1) Introduction [Sue Hares]

2) Filter additions

1) Uses UDP Filter + Action to redirect to Isec Tunnel [5 minutes]

draft-dmc-idr-flowspec-tn-aware-mobility [Linda Dunbar, Kausik Majumdar]

2) Payload – Packet content Filter for BGP Flow Spec [5 minutes]

draft-cui-idr-content-filter-flowspec-00: Payload filter [Yong Cui and Yujia Gao]

Agenda for Design Team 2 (DT2)

FSv2 – More Filters

3) Filters + Other Information (Combined slide set)

- draft-ietf-idr-flowspec-interfaceset- filters + interface group + AS [Hares + Haas]
- **draft-geng-idr-flowspec-sav-03** - filter + interface group [Nan Geng and Dan Li]
- draft-ietf-idr-ts-flowspec-srv6-policy- filters + Color + tunnel Interface [TBD]
- draft-wang-idr-flowspec-dip-origin-as-filter – filters + origin-AS [TBD]
- draft-lin-idr-cats-flowspec-ts – Filter + CATs-ID [TBD]
- draft-peng-idr-apn-bgp-flowspec – Filter plus Group + subgroup ID
- draft-zzd-idr-flowspec-path-scheduling – Filters Plus time

Introduction on Filters: IP Components as Firewall Rules

L3 Filters – L3 Packet field

- header IPv4 or IPv6
- Payload

Linked data

- smaller area in Firewalls
- Search packet + linked data

L3 packet
Field

Linked
Data

IPv4 Header
IPv6 Header
Payload

Interface
Group of Interfaces
Color(s)
Time(s)
AS or Group of Ases
Logical Group/Subgroup

FSv1 IP Component Numbers

- 1 - IP Destination prefix
- 2 - IP Source prefix
- 3 - IPv4 Protocol / IPv6 Upper Layer Protocol
- 4 - Port
- 5 - Destination Port
- 6 - Source Port
- 7 - ICMPv4 type / ICMPv6 type
- 8 - ICMPv4 code / ICPv6 code
- 9 - TCP Flags
- 10 - Packet length
- 11 - DSCP
- 12 - Fragment
- 13 - Flow Label

L2 Component Numbers [1-15 or 81-98]

- 1 - Ethernet type
- 2 - Source MAC
- 3 - Destination MAC
- 4 - DSAP in LLC
- 5 - SSAP in LLC
- 6 - control field in LLC
- 7 - SNAP
- 8 - VPAN ID
- 9 - VLAN PCP
- 10 - Inner VLAN ID
- 11 - Inner VLAN PCP
- 12 - VLAN DEI
- 13 - Inner VLAN DEI
- 14 - Src Mac Special bits
- 15 - Dst Mac Special bits
- 16 - RSN Mac Data unit
- 17 - Det. Latency Info

L3 Components (default order)

- 14 - TTL
- 15 - SID in IPv6 Routing header
- 16 - NRP in Hop-by-Hop IPv6 header
- 17 - CAT ID (IPv6 header (?))
- 30 - Payload

Linked data (151- 180)

- 151 interface or interface group
- 152 Color
- 153 Time (or times)
- 154 AS or Set of Ases
- 155 Group and Sub-group

MPLS Component Numbers [1-2 or 64-65]

- 01 (64) MPLS Label Match-1 (label)
- 02 (65) MPLS Label Match-2 (Exp bits)

Tunnel Component Numbers [1-11 or 131-142]

- 01 - VN ID
- 04 - Cookie
- 05 - Tunnel header flags
- 06 - L2TP control version
- 07 - L2TPv3 Control Connection ID
- 08 - L2TPv3 Ns
- 09 - L2TPv3 Nr
- 10 - Protocol type
- 11 - GRE Sequence

Summary of actions:

Draft	redirect	Seq	copy	mark	Pkt
draft-ietf-idr-flowspec-redirect-ip	IPv4/v6		X		
draft-ietf-idr-flowspec-path-redirect	V4 to GID	X	X		
draft-ietf0-idr-srv6-flowspec-path-redirect	V6 to GID	X	X		
draft-ietf-idr-ts-flowspec-srv6-policy	SID Tunnel				
draft-ietf-idr-flowspec-network-slice-ts				nrp-id	Encap
draft-dmc-idr-flowspec-tn-aware-mobility	IPSec tunnel			nrp-id	
draft-lin-idr-cats-flowspec-ts				cat-id	
draft-shen-idr-flowspec-traffic-compression					Compress
draft-peng-idr-apn-bgp-flowspec				apn-id	Sitch inherit

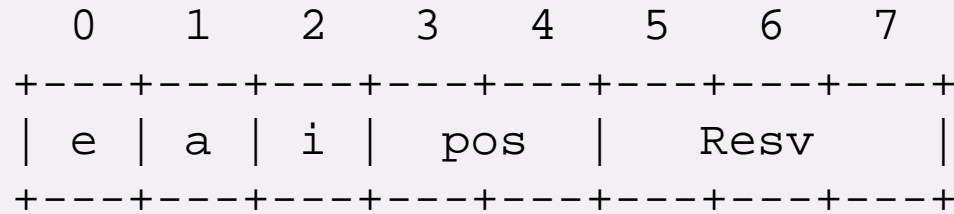
Filters + Actions for Non-IP

Draft	Filter	mark	Actions
draft-ietf-idr-flowspec-v2	MPLS label EXP bits		Push/pop/ swap labels
RFC9015	IP		SFC classifier (SPI, SI, SPT)
draft-ietf-idr-flowspec-l2vpn	L2 header (15 items)	Rewrite VLAN ID (inner or outer)	Push/pop/ swap VLAN
			Ma TPID action
draft-ietf-idr-ts-flowspec-srv6-policy	SID Tunnel		SFC classifier (SPI, SI, SPT)
draft-ietf-idr-flowspec-nv03	VLAN, GRE, L2TP	DSCP (outer)	None
draft-xiong-idr-detnet-flow-mapping	MAC + TSN info	Set latency TSN / Profile	Map flow to TSN stream (L2)

MPLS label filter – label

type(1 octet), length(1 octet), [operator,value]+

It contains a set of {operator, value} pairs that are used for the matching filter.



Where:

e = last value pair

a = and (set) or (not set)

i = before/after MPLS action

pos = label position (any, top, bottom)

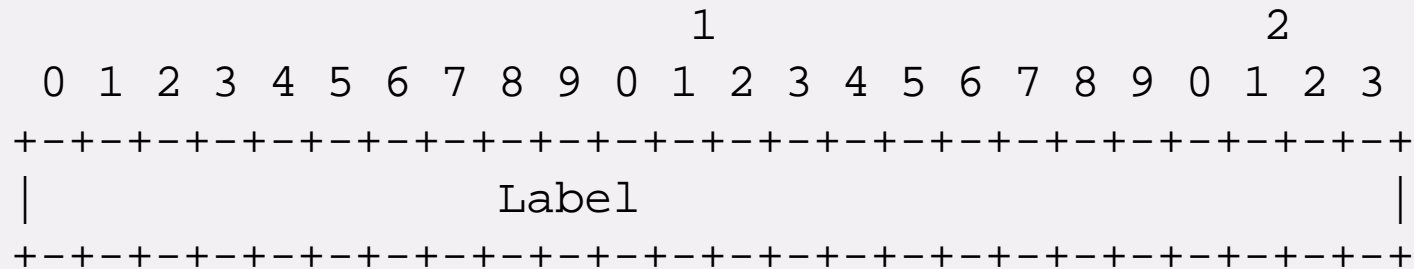


Figure 3-8

MPLS label Filter – Experimental Bits

`type(1 octet), length(1 octet), [operator,value]+`

`[operator, value]`

- Defines a list of {operation, value} pairs used to match 3-bit exp field on the top label of packets (RFC3032)
- Values are encoded using a single byte, where the five most significant bits are zero and the three least significant bits contain the exp value.

Action TLVs for Community Path Attribute

Table 5-5 All Actions Proposed for FSV2 Community Path Attribute

act-id	Name	Description	Document
TBD	MatchSet	Match and Set attribute	[IDR-rpd] (type = 03)
TBD	MatchNoA	Match and No Advertise	[IDR-rpd] (type = 04)
TBD	DetLat (L2)	Deterministic Latency action	[PD-detnet-flowmap] (type = 37)
TBD	TSNMap (L2)	Map flow to TSN stream	[PD-detnet-flowmap] (type = 38)



5G Filters – UDP Filters + Action

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



Payload Filter for DDOS

draft-cui-idr-content-filter-flowspec-01:



Savnet filters

draft-geng-idr-flowspec-sav-03



Questions

Backup slides

Drafts on IP Filters

Filters in Packet

- draft-ietf-idr-flowspec-srv6 (SID in IPv6 SRH)
- draft-ietf-idr-flowspec-network-slice-ts (NRP-ID in IPv6 Hop by Hop)
- draft-lin-idr-cats-flowspec-ts- – CAT-ID in IPv6 header (TBD)
- draft-peng-idr-apn-bgp-flowspec – APN ID in IPv6 header (TBD)
- **draft-dmc-idr-flowspec-tn-aware-mobility-** UDP filters in 5G
- **draft-cui-idr-content-filter-flowspec** – Flexible IP Header + IP Payload

Packet filters + Associated Information

- **draft-ietf-idr-flowspec-interfaceset-** – filters + interface group + AS
- draft-wang-idr-flowspec-dip-origin-as-filter – filters + origin-AS
- **draft-ietf-idr-ts-flowspec-srv6-policy-** filters + Color + tunnel Interface
- **draft-geng-idr-flowspec-sav** – filters + interface group
- draft-peng-idr-apn-bgp-flowspec – filters + group + subgroup
- draft-zzd-idr-flowspec-path-scheduling – filters + time