

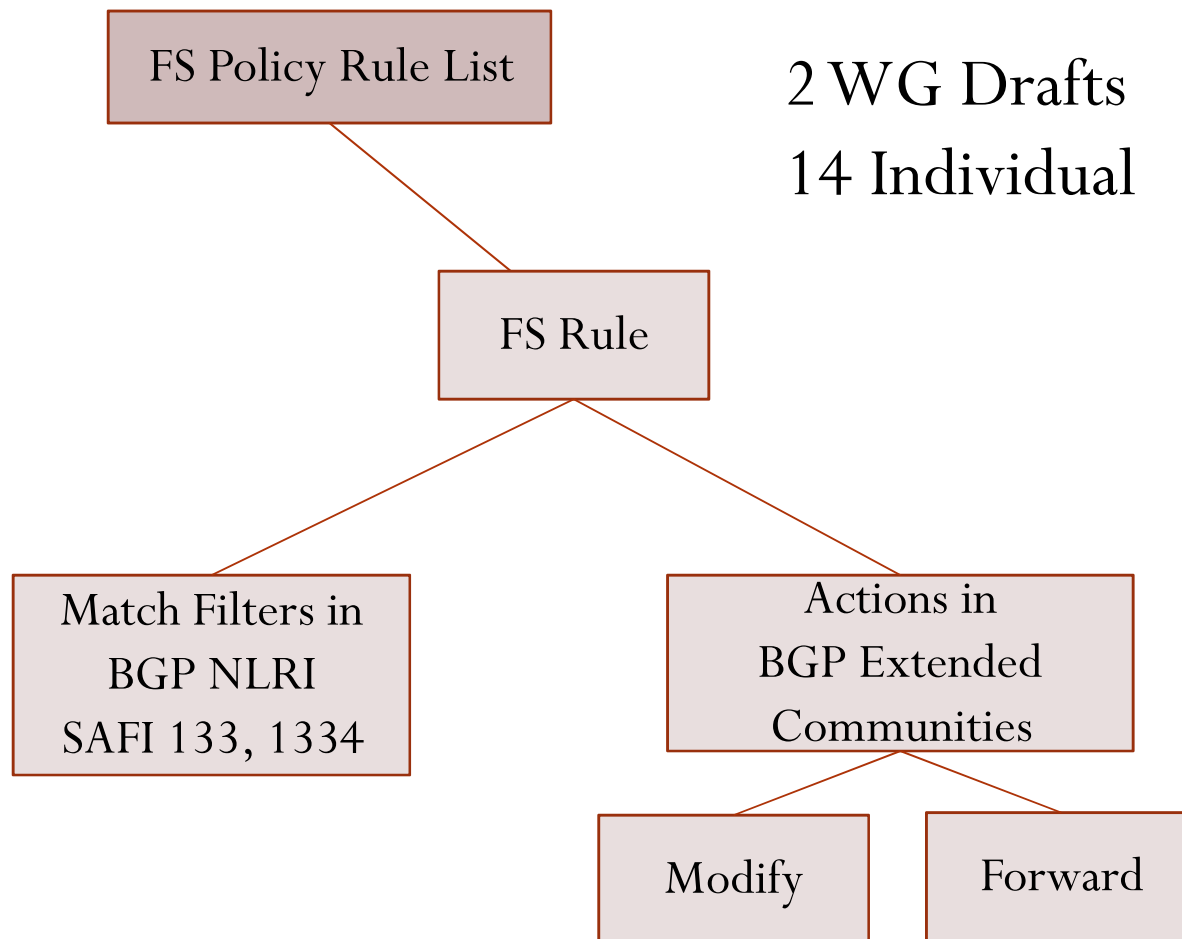
BGP Flow Specification Revisions

draft-hares-idr-flow-spec-combo-00.txt

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IETF 95

BGP Flow Specification RFC5575++



Use Case for

- Option 1: Minimal Flow Specification
 - Use Case: Prevent DDoS
 - How: Expands Filters + Actions with Defined order
- Option 2:
 - Use Case: SDN/NFV central controller for paths or segments
 - Why BGP: Peer distribution of some filters from a certain .
 - How: New NLRI + Wide Community
 - Chair: Call for input from providers
- Not I2RS vs. BGP – 2 tools

Order is needed

Precedence needed within BGP Flow Specification

- For filtering – Currently all
 - For ordering policies: use NLRI preference and administrative distance
 - For ordering filters – by Flow Specification type and precedence
- For action
 - No order currently, need to add order

Common work

- Common
 - Decided if need ROA or [draft-ietf-idr-bgp-flowspec-oid-03](#)
 - Define default precedence ordering for filters + Actions
 - Define precedence between BGP-FS and other packet filters (E.g. I2RS FB-RIB)
 - Define conflict resolution between actions
- Choose drafts per Option

New filter match with order

```
+-----+
|length (2 octets)      |
+-----+
| sub-TLVs (variable)  |
| +=====+           |
| | order (2 octets)   | |
| +-----+           | |
| | type (2 octets)    | |
| +-----+           | |
| | length (2 octets)  | |
| +-----+           | |
| | value (variable)   | |
| |[multiples of      | |
| | 2 octets]          | |
| +=====+           |
+-----+
```

Figure 16 - NRLI revision

New Action atom for BGP Wide Communities

```
+-----+
| order (2 octets)      |
+-----+
| Action type (2 octets) |
+-----+
| Action length (2 octets) |
+-----+
| Action Values (variable) |
| (multiples of 2 octets) |
+-----+
```

Wide Community Atom

figure 17

BGP FS Filters types for RFC/WG documents

- RFC 5575 types/v6-draft
 1. Destination prefix
 2. Source prefix
 3. IPv4 protocol / IPv6 Next header
 4. Port (source or destination)
 5. Source port
 6. Destination port
 7. ICMP Type
 8. ICMP Code
 9. TCP Flags
 10. Packet length
 11. Traffic Class
 12. IPv4 Fragment
 13. IPv6 Flow ID
- L2VPN types
 14. Ethernet type
 15. Source MAC
 16. Destination MAC
 17. DSAP in LLC
 18. SSAP in LLC
 19. Control fields in LLC
 20. SNAP
 21. VLAN ID
 22. VLAN COS
 23. Inner VLAN ID
 24. Inner VLAN COS

Flow Specification Actions

Approved Actions

(RFC 5575 & RFC 7674)

- Traffic rate in bytes (0x8006)
- Traffic Action (0x8007) with S(sample) T (terminal) flags
- Redirect to IP VPN via Route Target
 - RD 2 octet AS, 4 byte value (0x8008)
 - RD 4 octet IP, 2 byte value (0x8108),
 - RD 4 octet AS, 2 byte value (0x8208)

Proposed Actions

- (FA1) Traffic Rate in packets
- (FA2) Traffic Action with “R” for refer to more policy in BGP Attribute
- (FA3) Redirect to Tunnel
- (FA4) VLAN Action
- (FA5) TPID action
- (FA6) MPLS label action (push, pop, swap)
- (FA7) change validation to ROA or bgpsec-protocol
- (FA8a) interface set
- (FA8b) ACL+BGP FS

Possible Conflicts

Possible conflicts											
Action	Traffic rate Bytes	Traffic Rate Pkts	Traffic Action	Ext. Traffic Action	Redirect To IP VPN	Redirect to IP Tunnel	VLAN	TPID	Label	Intf Set	BGP valid
Redirect IP VPN						X	X	X	X	X	
Redirect Tunnel					X		X	X	X	X	
VLAN					X	X		X	X	X	
TPID					X	X	X		X	X	
Label					X	X	X	X		X	
Intf. Set					X	X	X	X	X		