OSPF and IS-IS extensions for flowspec

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#IETF 115
Motivation: Why extend IGP for FlowSpec

• Flowspec is used for traffic filtering, DDoS protection. Match-Action.

• Normally BGP is used to disseminate Flowspec rules between PE

• Closer to the source, better the protection: Block the attack traffic as early as possible.

Figure 2: Traffic Analyzer deployed in Provider Network
Motivation Cont’d

• Some network only use IGP. Eg, campus network.
• Traffic analyzer deployed with a router
• IGP is needed to distribute the FlowSpec rules to other routers
Motivation Cont’d

• Traffic analyzer deployed in one of the customer network but the attacker may reside in another customer network
• IGP between CE1 and PE1
• BGP between PE1 and PE2
• IGP between PE2 and CE2
• Traffic can be blocked at CE2
IS-IS FlowSpec TLV

• New FlowSpec Reachability TLV
• Flags contains L flag: controls leaking between levels
• FlowSpec Entry contains FlowSpec Filters Sub-TLV and Action Sub-TLV, Follows the definition of RFC 5575

Figure 2: FlowSpec Reachability TLV
OSPF v2 FlowSpec

- Type 11 or 10 Opaque LSA
- Filters TLV + Action TLV follows RFC 5575
- FlowSpec Capability Advertisement bit

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OSPF v3 FlowSpec

• New LSA Function Code
• Filters TLV + Action TLV follows RFC 5575
• FlowSpec Capability Advertisement bit

Figure 7: LSA Type

Figure 6: OSPFv3 FlowSpec LSA