OSPF and IS-IS extenstions for flowspec

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draft-liang-lsr-isis-flowspec-extensions

draft-liang-lsr-ospf-flowspec-extensions

#IETF 115

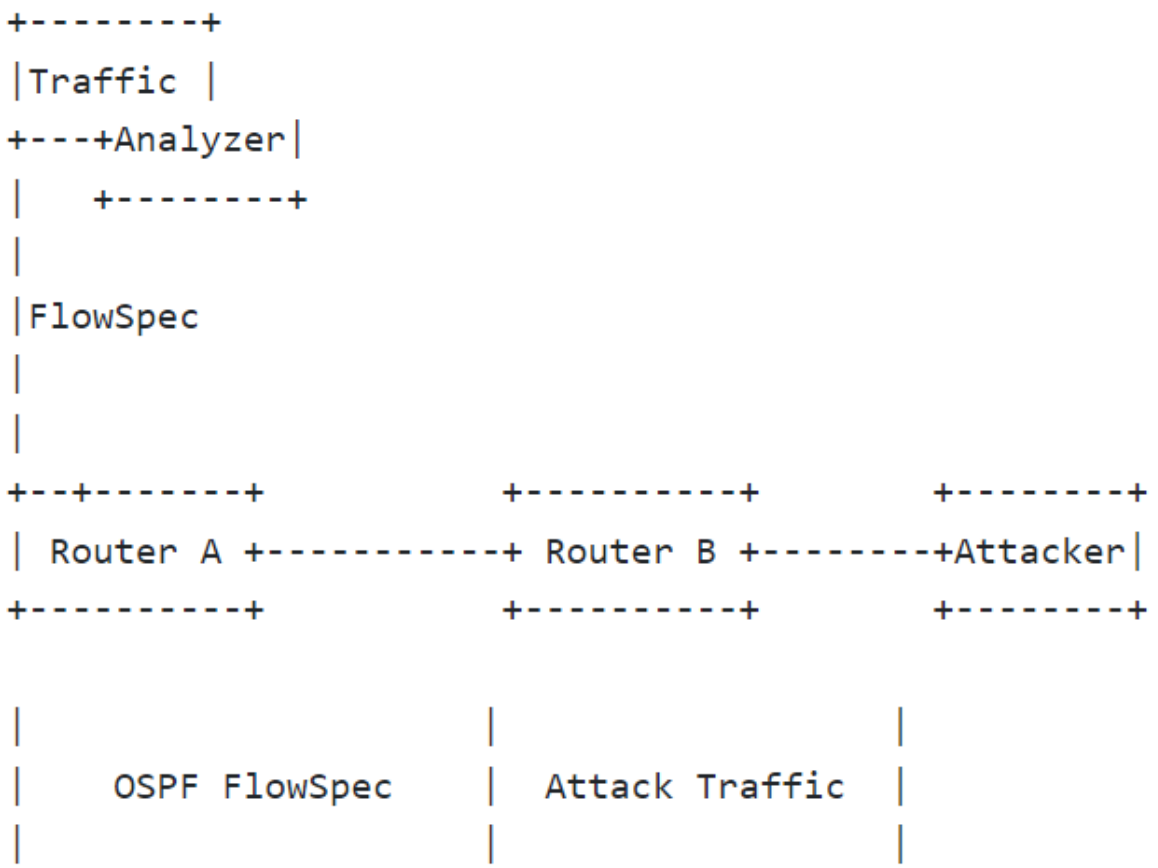
Motivation: Why extend IGP for FlowSpec

- 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



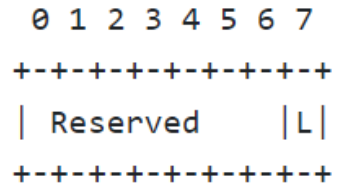
Motivation Cont'd

- 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

Figure 3: Traffic Analyzer deployed in Customer Network

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



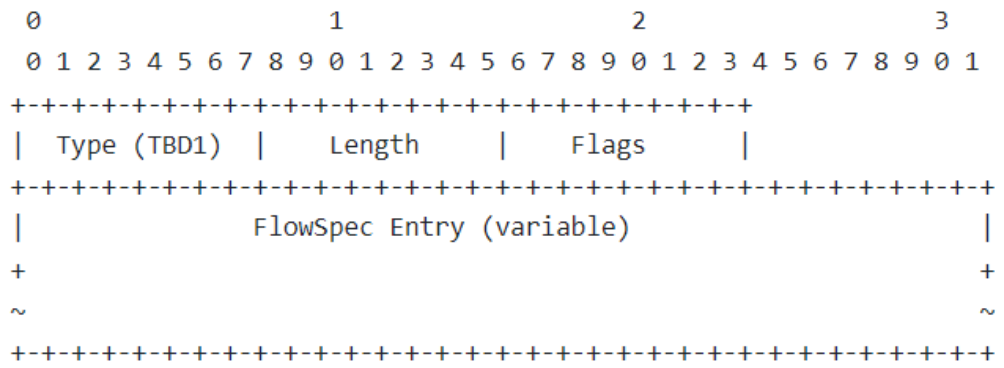
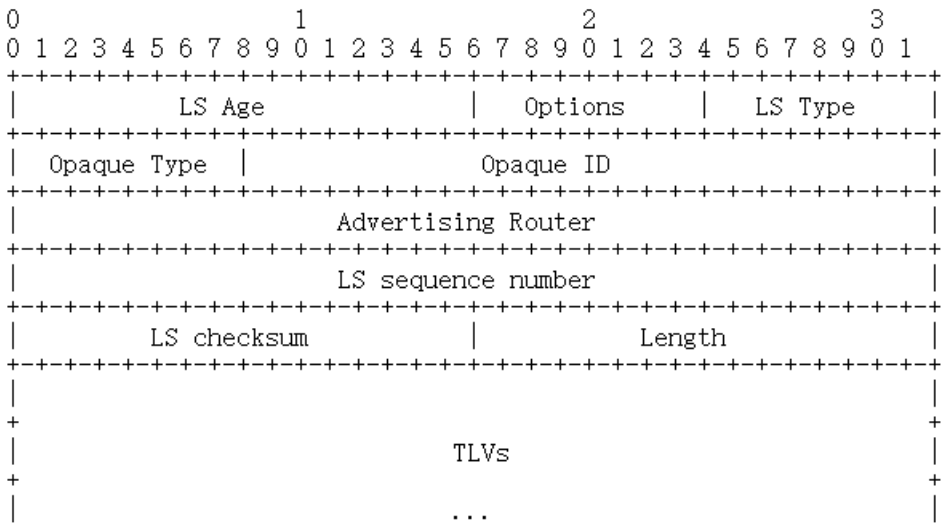


Figure 2: FlowSpec Reachability TLV

OSPF v2 FlowSpec

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



OSPF v3 FlowSpec

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

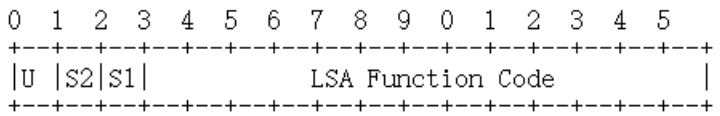


Figure 7: LSA Type

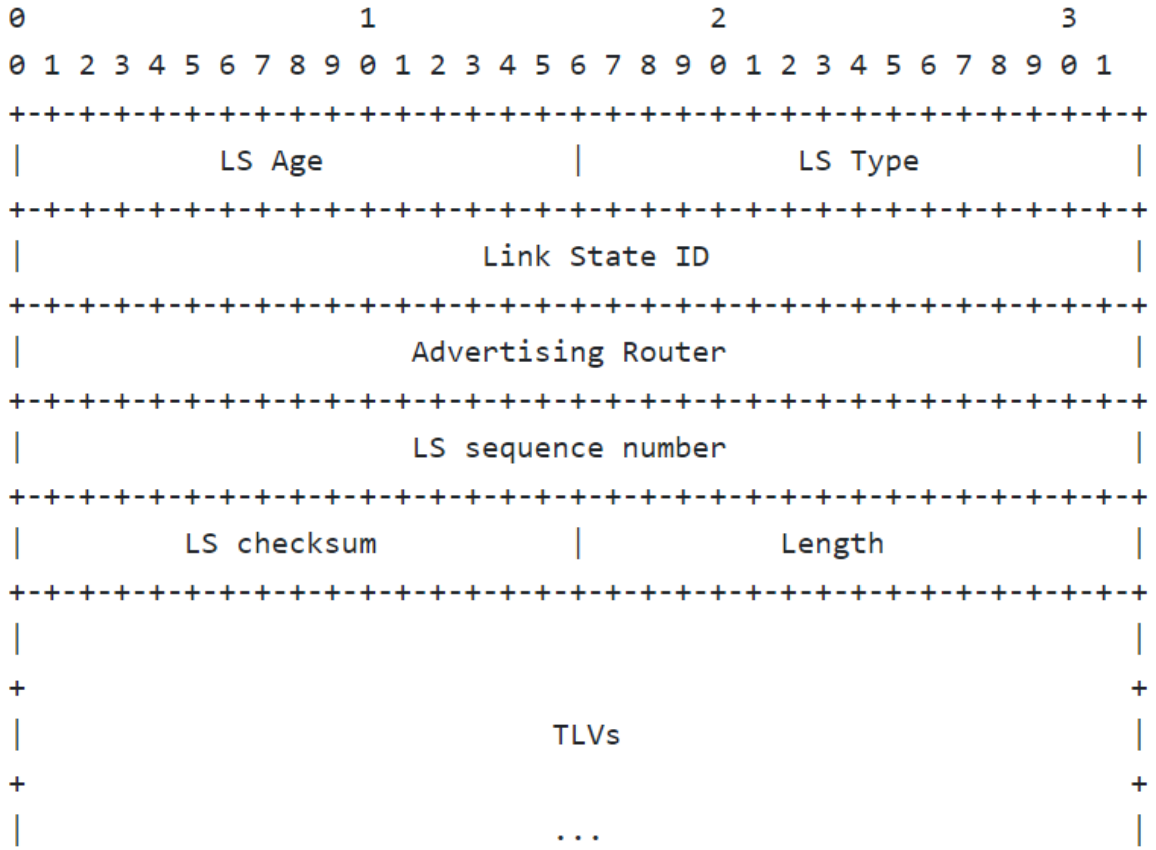


Figure 6: OSPFv3 FlowSpec LSA