

Service Programming with Segment Routing

draft-xuclad-spring-sr-service-programming
(was draft-xuclad-spring-sr-service-chaining)

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Context

draft-ietf-spring-segment-routing:

*Segment Routing (SR) leverages the source routing paradigm. A node steers a packet through an ordered list of instructions, called segments. **A segment can represent any instruction, topological or service-based.** A segment can have a semantic local to an SR node or global within an SR domain. SR allows to enforce a flow through any topological path while maintaining per-flow state only at the ingress nodes to the SR domain.*

draft-ietf-spring-segment-routing-policy:

*The Segment Routing architecture [I-D.ietf-spring-segment-routing] specifies that any instruction can be bound to a segment. **Thus, an SR Policy can be built using any type of Segment Identifier (SID) including those associated with topological or service instructions.***



Service segments in SR architecture

Just another type of segment

- Stateless in the fabric
- Seamless integration with VPN and/or TE
- Service is opaque to the head-end and intermediate nodes



SR-MPLS service segments

- SID allocated on an SR-MPLS aware router connected to the service
 - Send with label stack to MPLS-capable service
 - Use proxy function to remove SR information before sending to MPLS-unaware service
- SID can be allocated from local or global label pool depending on the use-case



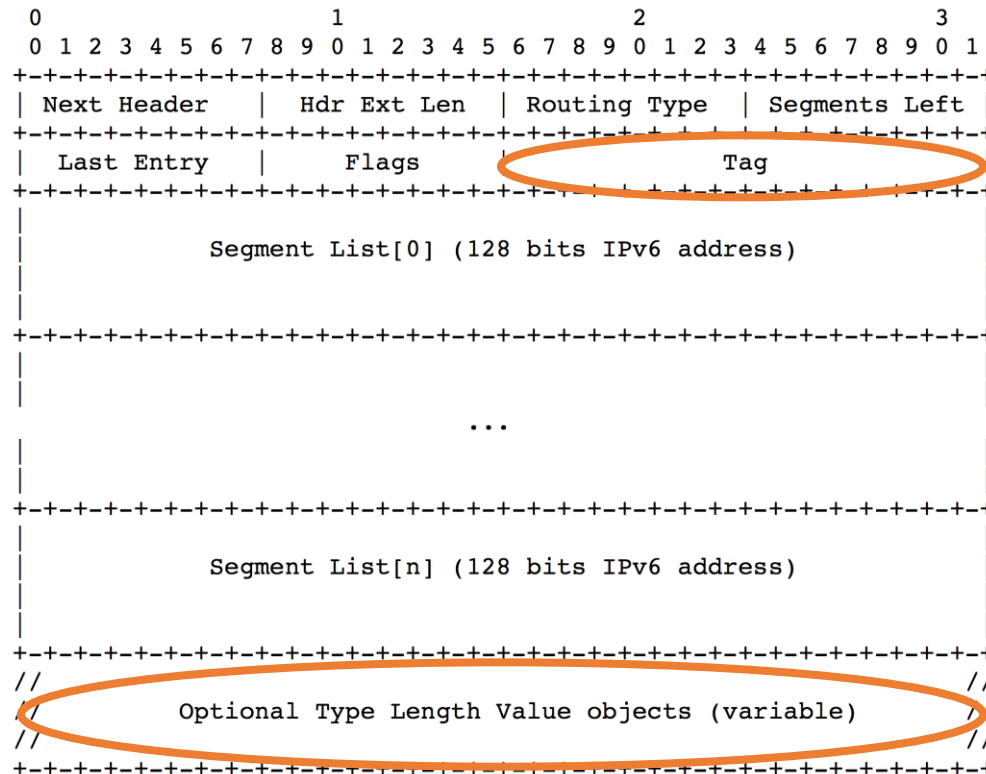
SRv6 service segments

- SID instantiated on an SRv6 router / host connected to the service
 - Send with SRH to SRv6-capable device
 - Use proxy function to remove / hide SRH before sending to SRv6 unaware service
- SID instantiated on an SRv6 aware service
 - Traffic processing depends on the SID



Metadata

- Can be stored in Segment Routing header
draft-ietf-6man-segment-routing-header
- Tag field
- TLVs



Conclusion & next steps

- Draft describes how a service is bound to a SID
 - Not a new architecture for service chaining
 - Not related to RFC 7665

- Seeking WG input and feedback

