

PCEP IPv6 Segment Routing Extensions for Inter-Layer Network Programing

draft-many-pce-srv6-inter-layer-network-programing-01

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Introduction

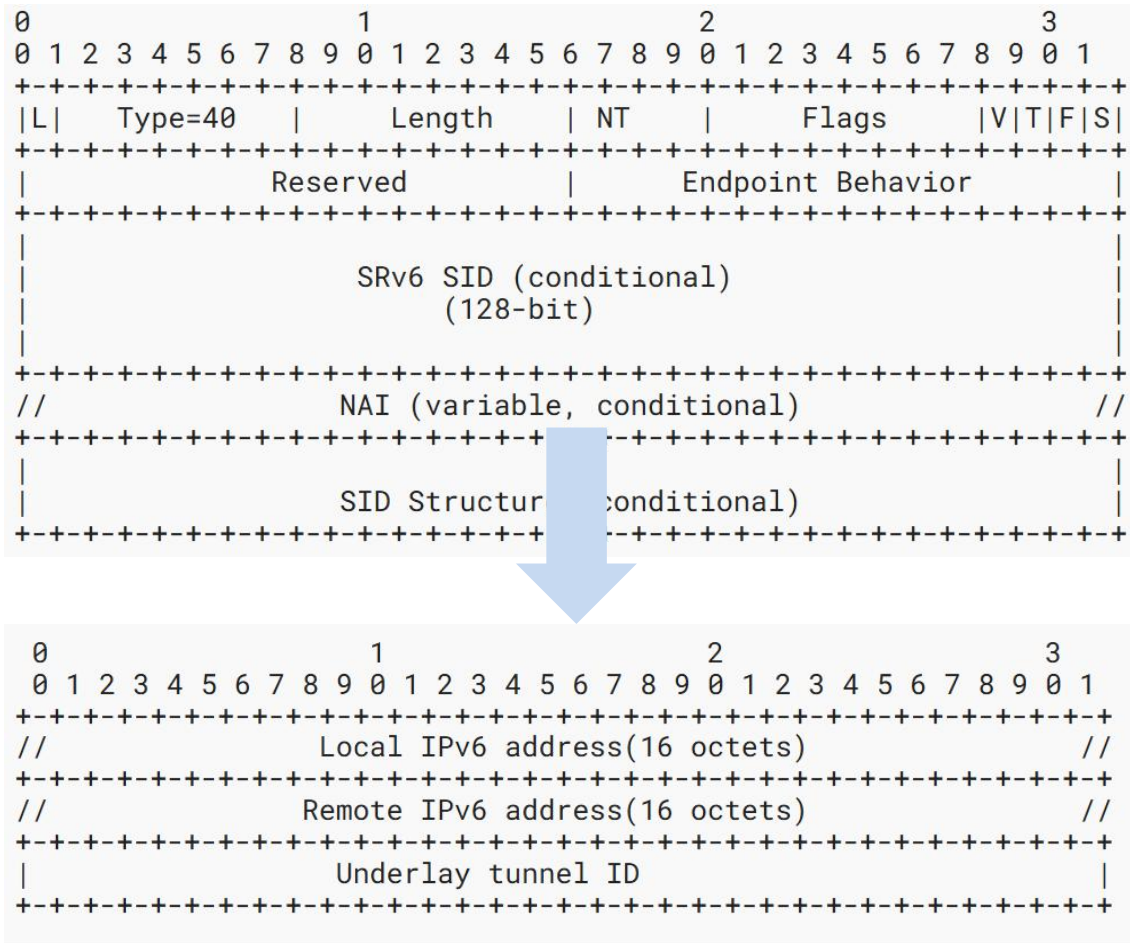
- [RFC8664] specifies PCEP extensions for supporting an SR-TE LSP for the MPLS data plane. [RFC9603] extends [RFC8664] to support SR for the IPv6 data plane.
- Segment Routing over IPv6 (SRv6) [RFC8986] enables a network operator or an application to specify a packet processing program by encoding a sequence of instructions in the IPv6 packet header.
- Based on [RFC8986], [I-D.ietf-spring-srv6-inter-layer-programming] defines a new SRv6 behavior, which can be used for steering packets to underlay network connections, so that the packet network layer can be integrated with the underlying layers efficiently to provide better SLA assurance.
- This document extends the PCEP SRv6 for inter-layer network, which enable the PCE to instantiate candidate paths comprising both the layer-3 network segments and underlay network segments.

Motivation

- As specified in [RFC8664], an SR-TE path consists of one or more SIDs where each SID MAY be associated with the identifier that represents the node or adjacency corresponding to the SID. This identifier is referred to as the NAI. An NAI can be represented in various formats (e.g., IPv4 address, IPv6 address, etc).
- However, when an SRv6-TE path includes the END.IL SID defined in [I-D.ietf-spring-srv6-inter-layer-programming], **the existing layer-3 NAIs are not applicable to the END.IL SID.** Therefore, a new kind of NAI is needed for the END.IL SID.

Extension

- [RFC9603] defines the "SRv6-ERO" subobject in the ERO to carry the SRv6 SID.
- A New NAI Type is introduced for end.IL SID, the new NAI is also applicable to RRO object.



- Used to describe an underlay network tunnel between two nodes identified by global IPv6 address.
- The underlay tunnel ID is configured by the management system and uniquely identifies a underlay network tunnel.

Next Step

- Continue to improve the documents.
- Stay in sync with the work in spring.
- Comments welcome.

Thank you!