

PCEP SR Policy Extensions to Enable IFIT

draft-chen-pce-sr-policy-ifit-02

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Background and Motivation

- ❑ In-situ Flow Information Telemetry (**IFIT**) refers to network OAM applications that apply dataplane on-path telemetry techniques, including In-situ OAM (**IOAM**) (draft-ietf-ippm-ioam-data) and **Alternate Marking** (RFC8321)

- ❑ An SR Policy is identified through the tuple <headend, color, endpoint>
 - A headend may be informed about a candidate path for an SR Policy by various means including:
 - via configuration,
 - PCE (**draft-ietf-pce-segment-routing-policy-cp**),
 - BGP (**draft-ietf-idr-segment-routing-te-policy**).



This document defines **extensions to PCEP to distribute SR policies carrying IFIT information** carrying **In-situ Flow Information Telemetry (IFIT)** information.

So data plane on-path telemetry methods, like IOAM and Alternate Marking, can be enabled automatically when the SR policy is applied

Changes from -00 to -02

We got some feedback on the mailing list and about the companion **draft-qin-idr-sr-policy-ifit**.

The main questions were about the **applicability** and we clarified it:

- This PCEP extension allows to signal the IFIT capabilities together with the SR-policy. In this way IFIT methods are automatically activated and running.
- The flexibility and dynamicity of the IFIT applications are given by the use of additional functions on the controller and on the network nodes, but this is out of scope here.

Another comment was about its possible **generalization** to any data plane:

- Note that the IFIT attributes here described can also be generalized and included as TLVs for other Association Groups.
 - In this regard RFC 8697 defines the generic mechanism to associate sets of LSPs and a set of attributes, for example IFIT.

Reference only to the relevant documents for the **data plane**:

- [draft-ietf-ippm-ioam-ipv6-options](#): IOAM application to IPv6 (and SRv6).
- [draft-ietf-6man-ipv6-alt-mark](#): Alternate Marking application to IPv6 (and SRv6).

Relevant document for the **control plane** are already adopted:

- [draft-ietf-pce-segment-routing-policy-cp](#)

IFIT Attributes in SR Policy

SR Policy Association Group (**SRPAG**) is defined to extend PCEP to support association among candidate paths of a given SR policy.

The following TLVs are introduced to construct the SR policy structure:

- SR Policy Identifiers TLV
- SR Policy Name TLV
- SR Policy Candidate Path Identifiers TLV
- SR Policy Candidate Path Preference TLV

This document is to add **IFIT attribute TLVs** to the SRPAG.

SR Policy for IOAM

When SR policy enables the IOAM, the IOAM header will be inserted into every packet of the traffic that is steered into the SR paths:

- IOAM Pre-allocated Trace Option TLV and IOAM Incremental Trace Option TLV

Type	Length	
Namespace ID	Rsvd1	
IOAM Trace Type	Flags	Rsvd2

- IOAM Directly Export Option TLV

Type	Length
Namespace ID	Flags
IOAM Trace Type	Rsvd
Flow ID	

- IOAM Edge-to-Edge Option TLV

Type	Length
Namespace ID	IOAM E2E Type

SR Policy for Alternate Marking

SR Policy for Enhanced Alternate Marking to apply both RFC 8321 and draft-ietf-ippm-multipoint-alt-mark

- Enhanced Alternate Marking (EAM) TLV

Type	Length
FlowMonID	Period Rsvd

Discussion & Next Steps

- Collect feedbacks
- Evaluate WG adoption considering the anchor adopted work
- Welcome questions, comments

Thank you