PCEP extensions for SR-TE

draft-ietf-pce-segment-routing-policy-cp
&
draft-ietf-pce-multipath
Summary

Support **all** the features of SR Policy Architecture [RFC 9256].

Support additional features that are not in RFC 9256:

- Reverse path per Segment-List
- Backup per Segment-List
- Per Flow Policy

Capability negotiation allows to pick which feature(s) to implement.

Deployed/implemented by: Cisco, Juniper, Huawei, Ciena.
Recent Changes

draft-ietf-pce-segment-routing-policy-cp

- Allow SR Policy to do stateful bringup, i.e., can skip the PCReq/PCRep messages. This is a minor update to RFC 8231, scoped to SR Policy only.
- Protocol-Origin registry to be made common for SR, shared by BGP and PCEP. Unfortunately, implementations have diverged and used different code-points. BGP-LS used 1, 2, 3 and PCEP used 10, 20, 30.
- Improve capability negotiation, make it more granular.
- Will be removing “Multiple Optimization Objectives and Constraints” section, after discussion with co-authors. This section does not conform to SR Policy Architecture.

draft-ietf-pce-multipath

- Added Per Flow Policy (PFP) section.
Stateful Bringup

RFC 8231 specifies that the PCC MUST send PCReq before sending PCRpt. This creates some unnecessary overhead. Stateful Bringup is to change the MUST to MAY.

The draft-koldychev-pce-operational originally defined Stateful Bringup, but the scope was PCEP-wide (too broad!).

In this draft, we define Stateful Bringup within the scope of SR Policy LSPs only. Other LSP types, such as RSVP-TE, P2MP, Native IP, etc. are outside of our scope.