PCEP extension to support Segment Routing Policy Candidate Paths

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

Several “tunnel” mechanisms were standardized as part of SR Policy [draft-ietf-spring-segment-routing-policy]:

• Computation Priority
• Explicit Null Label Policy (ENLP)
• Drop-upon-invalid
• Specified-BSID-only

Even though these were originally standardized for SR Policy, they are applicable to other tunnel types. In this draft, we keep them generic, so that they are automatically applicable to RSVP-TE tunnels.
New INVALIDATION TLV is optional in the LSP object. Specifies traffic behavior when the path is invalid (down).

For example, when the LSP’s path is invalid, we can either redirect LSP traffic via IGP (default), or we can drop the traffic.

* 0: (default) bring down the LSP and forward traffic somewhere else (i.e., IGP, etc.).
* 1: drop traffic when the LSP is invalid.
* 2-255: Reserved.
Specified-BSID-only

When specified-BSID-only is enabled for a particular binding SID, it means that the given binding SID is required to be allocated and programmed for the LSP to be operationally up.

We request a bit in the TE-PATH-BINDING TLV Flags field to signal this behavior.

Note that each LSP can have multiple BSIDs (MPLS, SRv6, etc.) and the value of this flag is per BSID.
Should SRPOLICY-CPATH-ID TLV be optional?

If PCE cannot fill all the values in the SRPOLICY-CPATH-ID TLV in the PCInit message, can it omit the TLV and have PCC fill the values?

Figure 3: The SRPOLICY-CPATH-ID TLV format
Implementation Status

Cisco IOS-XR and Juniper has proof-of-concept with IANA code-points.
Successful interop testing between Cisco IOS-XR and Juniper has recently been done at EANTC.

Next steps

Get feedback from WG.
Request IANA code points for the additional TLVs.