Extension For Stateful PCE to allow Optional Processing of PCEP Objects

PCE WG, IETF105, Montreal, Canada

draft-dhody-pce-stateful-pce-optional-04

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Background

- RFC 5440 has specified P and I flags
  - P flag for: must Processing or optional
  - I flag for: whether to Ignore for optional;
- RFC 8231 has specified the Stateful PCE
  - The P and I flags of the PCEP objects defined in the current document MUST be set to 0 on transmission and SHOULD be ignored on receipt since they are exclusively related to path computation requests.
  - The behavior for P and I flag in OTHER objects was not specified.

Figure 8: PCEP Common Object Header
Draft Summary

• Clarifies how the P and I flag are used:
  – Identify the optional objects;
  – Applicable to PCRpt/PCUpd/PCInitiate message;

• Updates the handling of unknown objects based on these flags!
Capability

• A new flag introduced in STATEFUL-PCE-CAPABILITY TLV
  – R (Relax) Flag;

• If R (Relax) bit is set, then the PCE has the capability to process P/I flag in the way indicated by this draft;
  – Need to be set from both peers;
P/I Flag Usage

• **P Flag**
  – Indicate whether the object is mandatory (1) or just optional (0);
  – Indicated by PCE in PCUdp/PCInitiate, and by PCC in PCRpt;
  – P=1, means the object MUST be taken into account;
  – P=0, means object can be ignored;

• **I Flag**
  – PCUdp, whether (1) or not (0) an optional object was processed, indicated by PCE;
  – PCRpt, whether (1) or not (0) an optional object was processed, indicated by PCC;
  – Meaningless in PCInitiate;
Processing of Unknown Objects

- Checking P flag and process as follow:

  - P flag set?
    - N: PCEP Speaker is free to ignore the objects (for both known or unknown object)
    - Y: Unknown Objects?
      - N: Normal Processing
      - Y: PCEP must be rejected with PCErr message;

- LSP Error Code TLV defined in RFC8231 is used here.
Status & Next Step

• Updated with adding the delegation scenario;
• Problem statement confirmed on the list;
  – It is quite useful;
• Request WG adoption.
THANK YOU!