Extensions to the Path Computation Element Communication Protocol for Enhanced Errors and Notifications

draft-pouyllau-pce-enhanced-errors-03

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Outline

Motivation and proposal

Changes in -03

Conclusion

PCErr and PCNtf

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Some error and notification types/values are standardized

No common rules

codes and specify associated behaviors is a need for:

- Enhancing PCE functionalities
- Improving the coordination among PCE systems

- Notifications can be used for particular PCE tasks (PCE policing, discovery, etc.)
- Improving the coordination among PCE systems
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Examples

Anticipating future evolutions of the standard

Example: the propagation of errors or notifications to PCEs involved in a path

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Proposal

Standardize error and notification attributes

- **Standardize error and notification attributes**
  - Allows specifying the criticality of errors and the type of notifications (request-specific or not)
  - Allow specifying the propagation behavior
- Restriction mechanisms:
  - A object: to limit the number of PCEP peers that will recursively receive the message
  - Domain List Object (DLO): to indicate the PCEP peer addresses or domains of PCEP peers the message must be propagate to and to exclude some domains or PCEs; if a PCEP peer keeps track of the messages it has relayed, it could avoid propagating several times the same error/ notification to the same peers.

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Points raised on the mailing-list

- 1) Error type is more related to a family of errors, in the draft it indicates a kind of processing indication. Use means of TLVs rather than types for each possible option (propagation, shutdown, etc.)

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- 3 new TLVs defined

- 2) A warning can be raised either as an error or as a notification
- Allows all possible combinations with restrictions

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- 3)DLO
  - Example: a PCE wants to advertize to all the PCEs of the AS it belongs to that it is congested. The DLO object (in the manner of the IRO) can be used for that

AS it belongs to that it is congested. The DLO object (in

- Propagation TLV:
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1: the message MUST be propagated

- Error-criticality TLV:
- 0: low-level, further messages can be expected for this request
  1: medium-level, identifiers appear MUST be cancelled , no further messag

can be expected for these requests

- Notification type TLV:
- 0: request-specific

Changes in -03

Conclusion

- Extending PCEP to generalize error and notification behaviors
  - Existing and future path computation framework
  - Existing and future path computation algorithms
- Impacts on existing RFCs have been listed

WG approval as a WG document

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