



IETF 120 – Online
PCE Working Group

Carrying SR-Algorithm information in PCE-based Networks

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Motivation

- A PCE can compute SR-TE paths using SIDs with different Algorithms depending on the use case, constraints, etc. While this information is available on the PCE, there is no method for conveying this information to the headend router
- An operator may also want to constrain the path computed by the PCE to a specific SR-Algorithm
- SID Algorithm covers
 - SPF (Algo 0)
 - Strict SPF (Algo 1)
 - Flex-Algo (Algo 128-255)
- Computing path with a fewer SIDs

Changes

- Version change – 05 (presentation on IETF118) -> 11
- Introduced Bandwidth and User-defined metric types for P2P and P2MP paths based on [I-D.ietf-lsr-flex-algo-bw-con]
- Added “Manageability Considerations” and “Security Considerations” sections
- Clarified the encoding of the Path Minimum Delay Metric value
- Added a reference to IGP IANA registry for algorithm types
- Addressed minor comments

Path Bandwidth Metric

- Flex- Algo Path Computation
 - The procedures described in Sections 4.1 and 5 of [I-D.ietf-lsr-flex-algo-bw-con] MUST be followed
 - If a metric is not advertised for a specific link, automatic metric calculation can be performed based on the constraints specified in the Flex Algorithm Definition (FAD), which include:
 - Reference Bandwidth Sub-TLV
 - Bandwidth Thresholds Sub-TLV
- Path-computation for other algorithms
 - PCE MAY have local policy to specify same set of constraints as available in IGP
 - Otherwise, the link MAY be treated as if the metric value is not available for other metric types and for example a default value MAY be used.

User Defined Metric

- Metric types: 128 – 255
- Same range applicable to P2P and P2MP paths
- Specifics are not defined; administrators are free to assign their own semantics
- PCEP Range aligned with the range in 'IGP Metric-Type Registry' to simplify mapping
- For example, the User Defined metric type 130 of the METRIC object in PCEP can represent the sum of the User Defined Metric 130 of all links along a P2P path.

Next steps

- Comments and discussion are welcome
- Update draft with codepoints for new metric types after completing IANA early codepoint allocation process