SR P2MP Policy
draft-ietf-pce-sr-p2mp-policy

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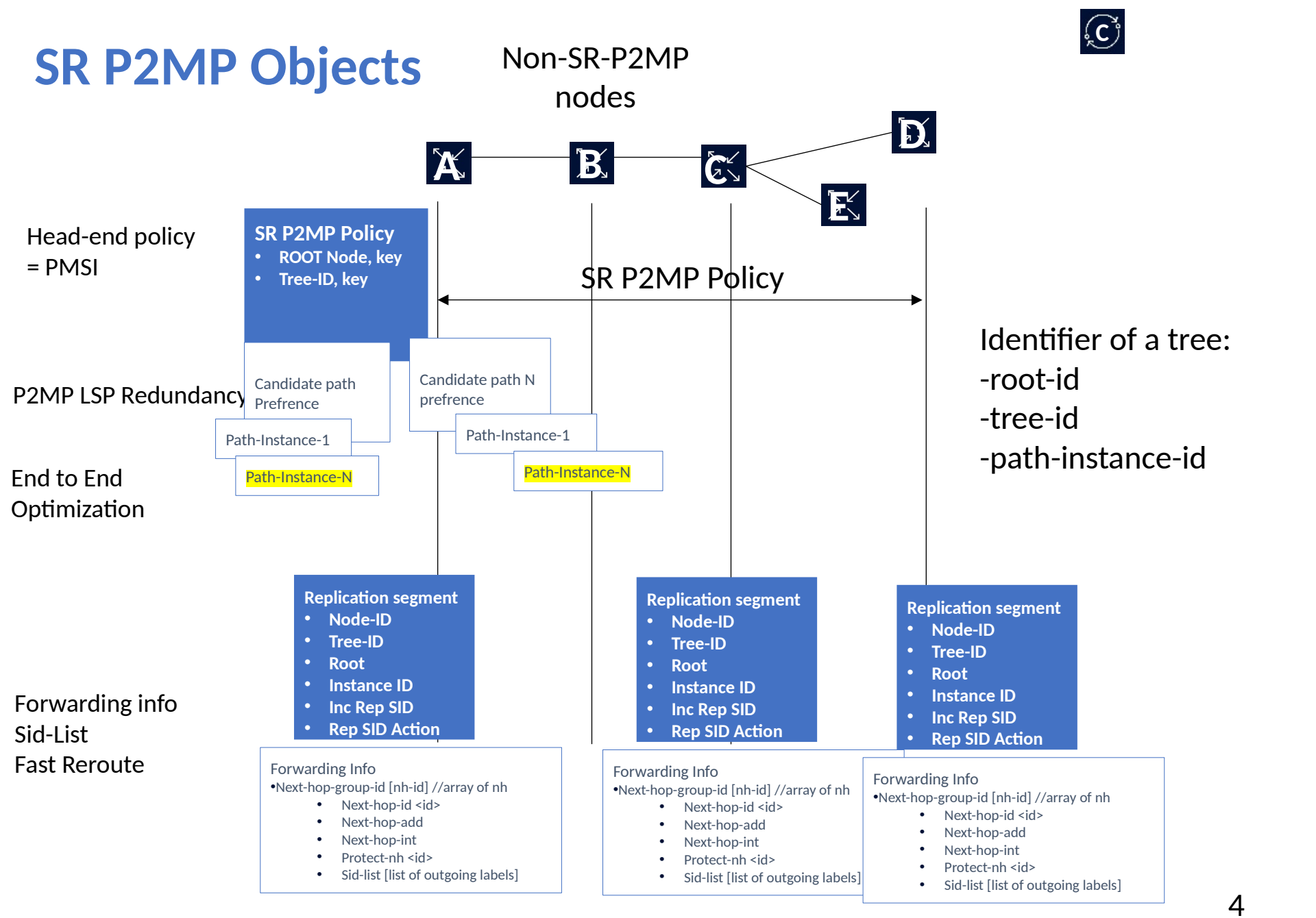
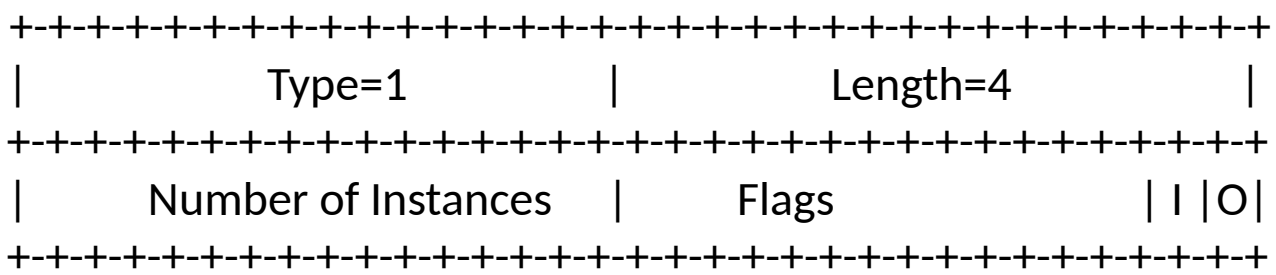
SR P2MP Objects



Extend PCEP Open object

- P2MP Capability during discover via a new optional TLV
- Path Computation Capabilities
- Leaf type as per RFC 8306
  - P2MP only will support leaf type 1 (new leaves to add), 2 (old leaves to remove) and 5 (the entire leaf list is overwritten and replaced with new leaf list.



Number of Instances 16 bits - Number of instances the advertising PCEP speaker supports. This is meaningful for PCEs. PCEs can determine the least number of instances that could be created for a SR P2MP policy.
Flags 16 bits

I-bit indicates the support for Leaf type 1 and 2.
O-bit indicates the support for Leaf Type type 5.

New Procedures

- Local Optimization
  - When pcc lacks the support of multiple instances global MBB is not possible.
  - However, with knowledge of the PCCs' advertised capabilities, the PCE can detect this limitation and instead opt for local re-optimization of the candidate path.
  - In such cases, the PCE can compute the optimized LSP by send the PCUpd message using the existing Instance for candidate path, specifically targeting the PCCs where the optimized LSP triggers a change in forwarding state.

Active/Standby instances

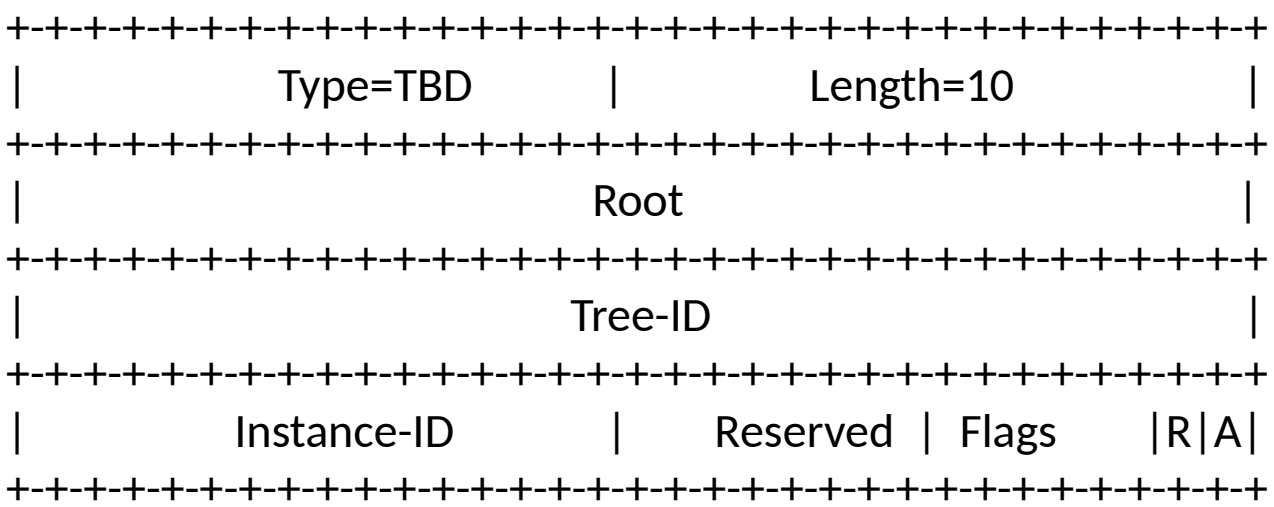
- A P2MP LSP is identified via:
  - Root-id
  - Tree-id
  - Instance-id (16 bits)

Flags: 8 bits

A – Activate the Instance-ID

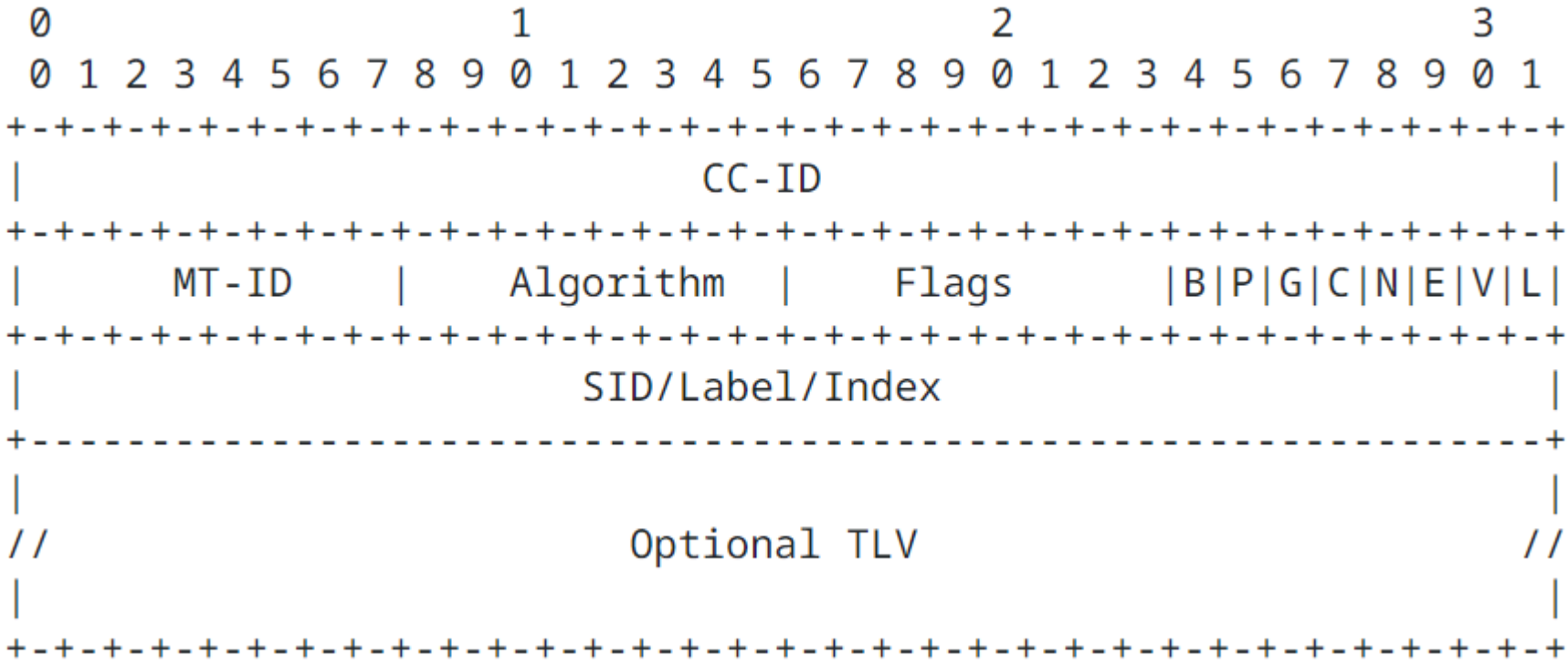
R – Remove the Instance-ID

SR-IPV4-P2MP-POLICY-ID TLV:



Slicing for P2MP replication

- For setting up P2MP Policy and its replication segments over different slices, Segment Routing CCI object is used in draft: https://datatracker.ietf.org/doc/html/draft-ietf-pce-pcep-extension-pce-controller-sr-07#name-cci-object is used



Next Steps

- Comments, suggestions are welcome
- The authors are working on this implementation and updating the draft.

Thank You!