



draft-litkowski-pce-state-sync-01

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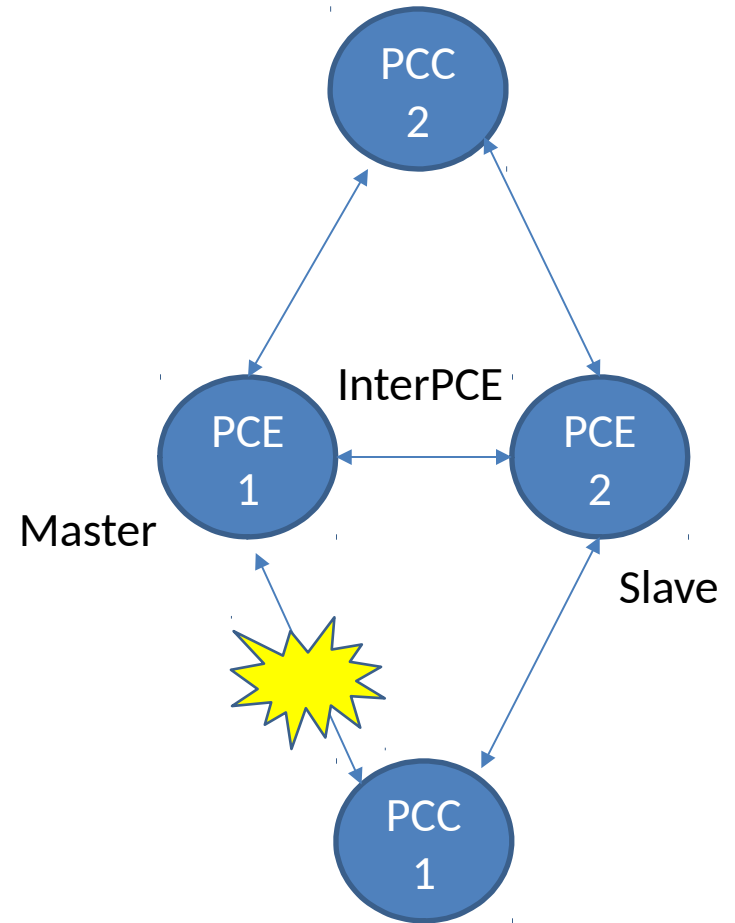
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IETF 98 Chicago

Goals

- Define procedures for inter-PCE stateful communication
- Bring more resiliency in the PCEP design
- Solve computation loop/optimality issues in multiPCE environment

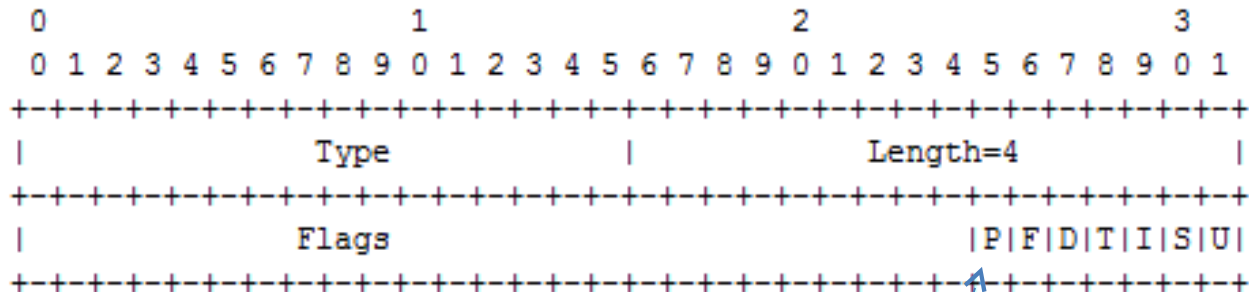


Main changes in V01

- Merge with draft-dhody-pce-stateful-pce-lspdb-realtime-sync
- We define generic procedures for stateful interPCE communication
- Slight changes in procedures have been introduced

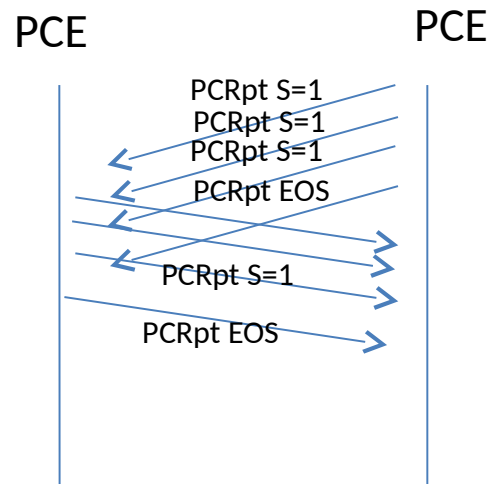
Capability advertisement

- A new P-bit set to advertise the INTER-PCE-CAPABILITY



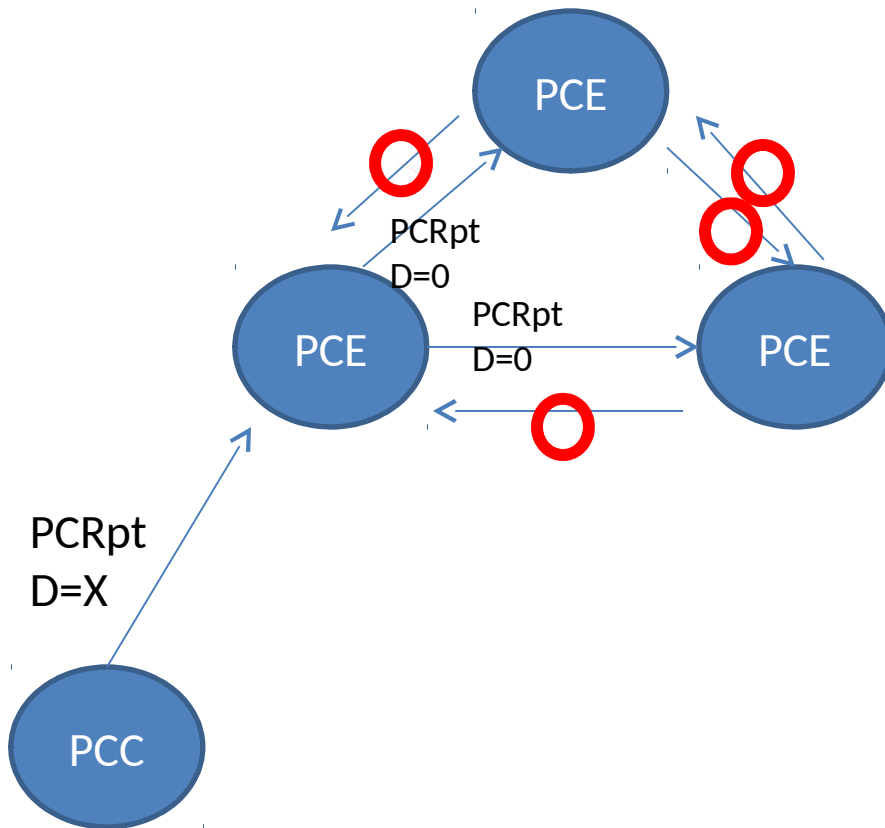
Bidirectional synchronization

- Both PCE trigger the initial LSP state synchronization to each other



- To identify the original PCC to which a LSP belongs to:
 - We use the SPEAKER-IDENTITY-TLV in the PCRpt messages between PCEs

Forwarding rules of LSP states



A PCE MUST forward a PCRpt received from a PCC to its PCE peers.

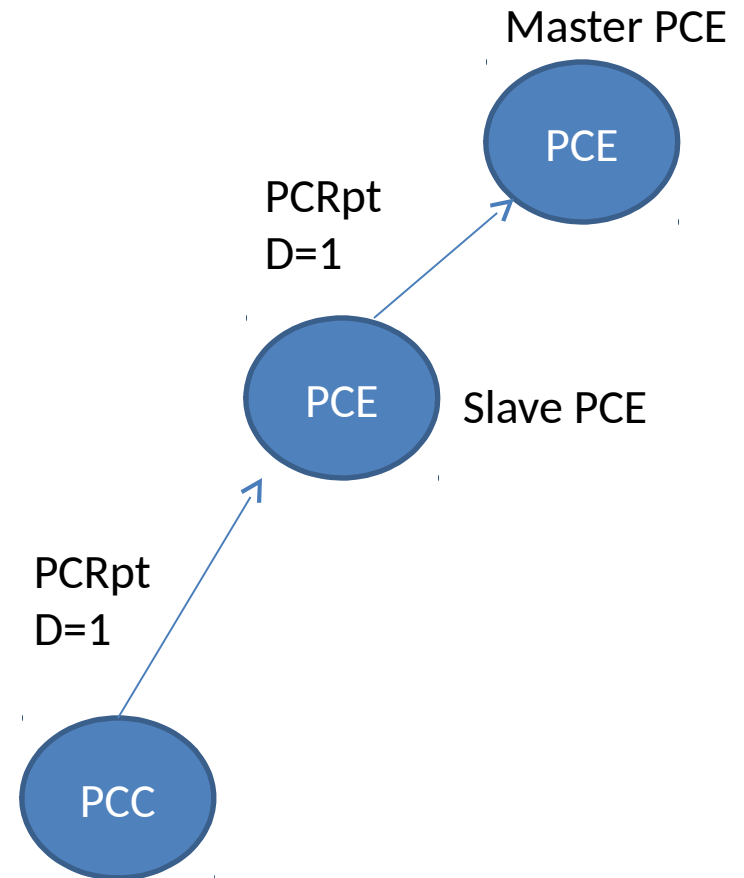
A PCE MUST NOT forward a PCRpt received from another PCE

Keeping track of LSP states

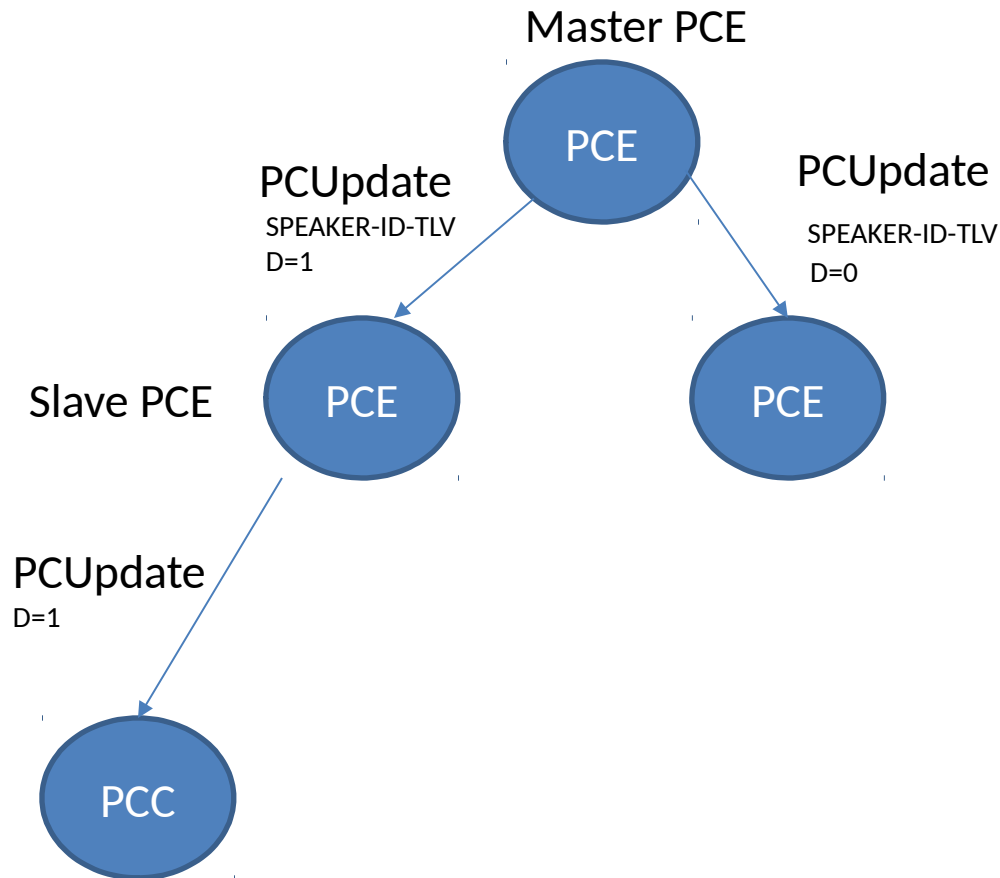
- A state can be learned from multiple sources (PCC or a PCE)
- We keep a single state (the last one learned) but we keep track of the source list
- An LSP state is removed when the source list is empty

Subdelegation

- A Master/slave relationship between PCEs may exist, this allows:
 - To prevent computation loops between PCEs
 - To have an optimal path computation
- A slave PCE can subdelegate an LSP it has control on to a master PCE
- Slave PCE loses control on the LSP
- Subsub delegation is not allowed
- Master/slave election is out of scope



Subdelegation



The PCE that owns the delegation can update the LSP

It should update all the PCEs

This provides a faster state synchronization

And the PCC (if it has a session with the PCC)

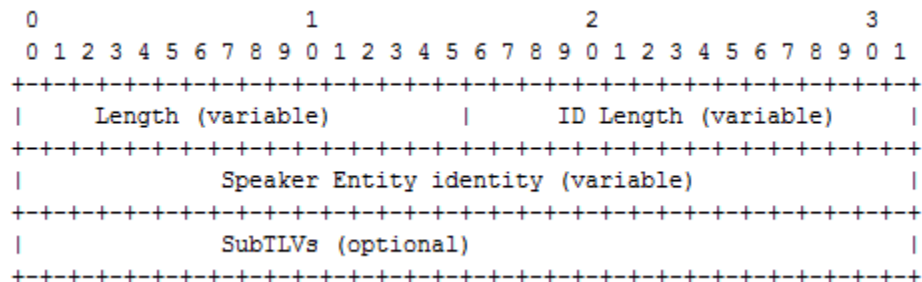
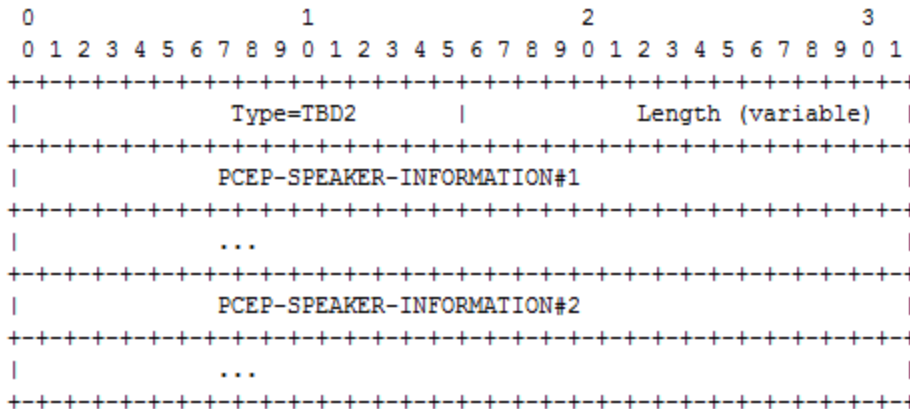
A slave PCE will propagate the PCUpdate to the PCC

Stateful hierarchical PCE

- When stateful hierarchical PCE should be enabled, `INTER_PCE_CAPABILITY` must be advertised in addition to the H-PCE capability
- This is part of another document:
`draft-dhodylee-pce-stateful-hpce`

Recording informations

- LSP informations (state or update) may cross multiple PCEP Speakers
- We propose to introduce an optional TLV to record informations from each PCEP Speaker that has processed the LSP information



Summary

- There are multiple use case behind interPCE communication in stateful mode
 - Inter PCE procedures are required
- The new approach of the document is more generic (used also by the HPCE use case)
- We would like to request the WG adoption