State Synchronization Between Stateful PCE

draft-litkowski-pce-state-sync-02

Stephane Litkowski
Siva Sivabalan
Dhruv Dhody
Introduction

• Procedure for Inter-Stateful PCE communications
  • Making PCE deployments more resilient
  • Solve computation loop/optimality issues for dependent path computations (for e.g. diversity)

• Work for all PCE-PCE relationships
  • Redundant PCEs (backup or load-balance)
  • Inter-domain PCEs
  • Hierarchy of PCEs

• Discussed previously in IETF 98 & 97
Introduction

• **Generic procedures for the stateful inter-PCE communication**
  • A state-sync PCEP session between Stateful PCEs
  • Bi-directional state synchronization between stateful PCEs
  • Master-Slave relationship between PCEs for a group of LSPs
    • PCE election based on priority (how the priority is set/advertised is out of scope)
  • A set of forwarding rules of LSP state
  • Sub-delegation procedures
Updates in -02

• How to make sure the “latest” state is synchronized at PCEs in case of learning LSP state from multiple sources?
  • A single “freshest” state for the LSP should be kept (with a list of all sources)

• Use the LSP-DB version number (similar to RFC8232 - state synchronization optimizations)
  • ORIGINAL-LSP-DB-VERSION TLV – which encodes the PCC’s LSP-DB version number (as received from PCC) on the state-sync PCE sessions
  • LSP-DB-VERSION TLV is still used with local PCE’s Database version to support state optimization techniques
  • A PCE updates the LSP state only if the ORIGINAL-LSP-DB-VERSION present in the PCRpt is greater than the current ORIGINAL-LSP-DB-VERSION of the stored LSP state.
    • This ensures that a PCE never tries to update its stored LSP state with an old information.
Updates in -02: Latest State!
Updates in -02: Latest State!
Updates in -02: Latest State!

PCE1

State Sync Session

PCE2

Latest LSP State (V=101)

V=101, ignored

PCC
Next Steps

• Procedures for the PCE-Initiated LSP need to explicitly stated in the draft.
  • Most of the procedure remains same as a delegated LSP

• Issue WG adoption call for the Document.
  • Problem is worth working on?
  • The document is a good foundation.
THANK YOU