



IETF 121 – Online
PCE Working Group

Path Computation Element Communication Protocol (PCEP) extensions for Circuit Style Policies

draft-ietf-pce-circuit-style-pcep-extensions

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Motivation

- **Addressing Connection-Oriented Transport Requirements**
 - Introducing Circuit Style Segment-Routing Policy in PCEP to meet the requirements of connection-oriented transport services
 - Detailed specifications and use cases are described in draft-ietf-spring-cs-sr-policy.
- **PCEP Extensions**
 - Enabling PCC to convey critical information such as:
 - Desired path persistency to ensure stable and reliable connections
 - Flexibility in path computation through allowed hop types—supporting both strict and loose hops
 - The extensions introduced in this draft are designed to be reusable and agnostic to the Path Setup Type, ensuring broad applicability

Summary of PCEP Extensions

- **Path Persistency**

- Introduction of the new “PATH-RECOMPUTATION TLV” in the LSPA object
- Flags to control path computation behavior on PCE
 - P-flag - PCE MUST NOT re-compute, even if the current path is invalidated
 - F-flag - All re-computations for the LSP are blocked

- **Strict Path Enforcement**

- Stateless PCEP
 - Clarification of the existing O-flag in the RP object for Segment Routing
- Stateful PCEP
 - Introduction of the new O-flag in the LSP-EXTENDED-FLAG TLV
 - Only strict hops allowed if the flag is set

- **Stateful PCEP Peer Capabilities**

- New flags introduced in the STATEFUL-PCE-CAPABILITY TLV

Changes since IETF 119

- **PATH-RECOMPUTATION TLV**
 - Processing rule changed: TLV **MUST** be processed (previously **SHOULD**)
 - Flag F (Force)
 - Updated flag definition to include exceptions: Usage of empty ERO to tear down LSP
 - Clarified behavior of Binding Label/SID in paths
- Extended the “Security Considerations” section to cover the usage of TLS
- Modified Abstract and Introduction sections for improved clarity
- Expanded PCEP in the draft name
- Refined language and terminology for better clarity and consistency in multiple sections
- Thanks a lot for the valuable comments from Andrew Stone and Christian Schmutzer

Next steps

- Wait for working group last call
- Implementations from other vendors