

PCEP Extension for Native IP

[\[draft-wang-pce-pcep-extension-native-ip\]](#)

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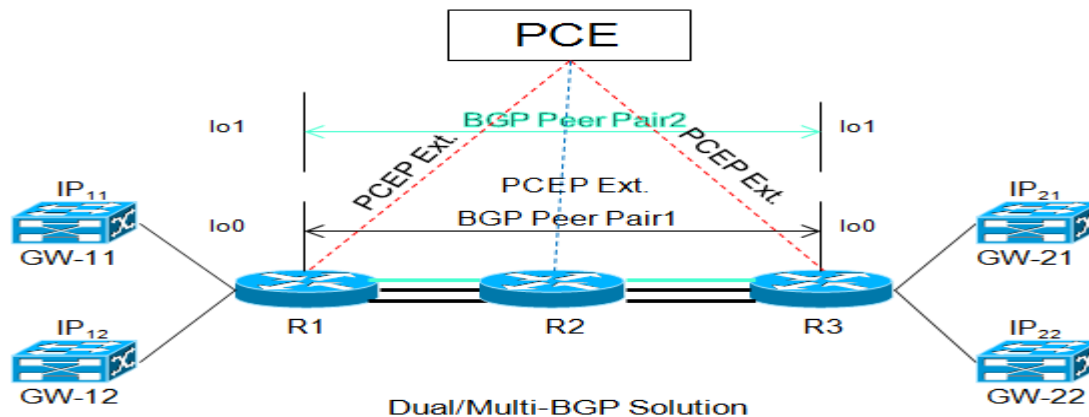
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Background for PCEP extensions

1. [Scenarios](#) and [Solutions](#) for TE in native IP network adopt as TEAS WG documents.
2. Without the help of PCE/SDN controller, it is not easy to meet the goal of E2E QoS.
3. We propose the following solutions:
 - ✓ Deploy PCE/SDN Controller in the native IP network
 - ✓ PCE/SDN Controller is responsible for the complex algorithm
 - Populate traffic prefixes via different BGP sessions between peers
 - Manipulate the path to BGP nexhop of these prefixes via PCEP



What The Proposal for PCEP extensions?

- Using PCEP to:
 - Build BGP peer dynamically and rapidly.
 - Populate differentiate prefixes between them.
 - Manipulate the path to BGP nexthop on demand based on real network conditions.
- Only key parameters needs to be transferred
 - compared contents bundle of NETCONF/YANG

New PCEP Objects	Key Parameters	Usage
Peer Address List (PAL)	List of Peer Addresses	PCC uses this information to build BGP connection with the appointed peer
Peer Prefix Association (PPA)	Relation between Different Prefixes and their associated peer	PCC advertises different prefixes via different BGP peer.
Explicit Peer Route (EPR)	Explicit Routes to Peer Address	PCC builds the explicit routes to the peer address

Two different approaches to transfer new Obj.

	Approach One	Approach Two
Message that carry newly defined Obj	Piggybacked within "LSP Initiate Request" message	Carried within new defined "CCDR TE Request" message
PCE-PCC communication procedures	Same as that in RFC8281	Same as that in RFC8281
Capabilities Negotiation	Reuse the "I" Flags	Define New Flag "N"
Implementation	Consider mainly the newly defined Objects	Concept/Procedures are more distinguished.

4.1. Stateful PCE Capability TLV

The format of the STATEFUL-PCE-CAPABILITY TLV is shown in the following figure:

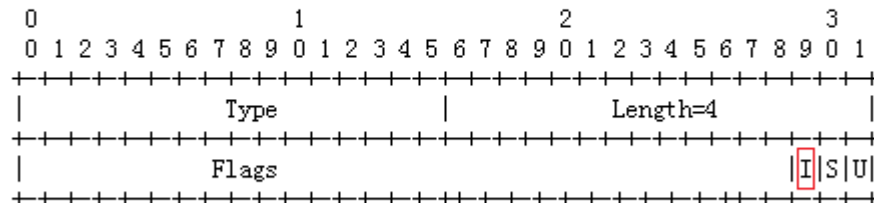


Figure 1: STATEFUL-PCE-CAPABILITY TLV format

Further Action

- Adopt as WG draft?
- Which approach to transfer newly defined Obj is better?
- Comments?

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