

Extension for Stateful PCE to allow Optional Processing of PCE Communication Protocol (PCEP) Objects

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Brief Introduction

- This document introduces a mechanism to mark PCEP objects as optional in stateful PCEP messages.
 - Something that is allowed for PCReq and PCRep but was ignored for stateful messages.
 - This document introduces this relaxation to stateful PCE and updates RFC 8231.
- This document clarifies how the existing P (Processing-rule) and I (Ignore) flag in PCEP common object header are used in
 - PCRpt
 - PCUpd
 - PCInitiate
- The extension includes
 - A new R-flag (Relax) in the Stateful PCE capability TLV
 - Updated handling of P flag
 - PCRpt
 - PCUpd/PCInitiate
 - Updated handling of I flag
 - PCUpd
 - PCRpt
 - Unknown Object handling

Current Status of the I-D

- The draft was in WGLC that ended recently
- Thanks for all the comments received
- This is a quick update for all changes done during WGLC
- Also an opportunity to discuss comments that did not lead to any text change

Changes

- Moved the delegation section inside the section dealing with Handling of P flag in the PCRpt message
 - Changed MUST to SHOULD to make it consistent with delegation!

3.2. Handling of P flag

3.2.1. The PCRpt Message

The P flag in the PCRpt message [RFC8231] allows a PCC to specify to a PCE whether the object must be taken into account by the PCE (during path computation, **re-optimization**, or **state maintenance**) or is optional **o** process. When the P flag is set in the PCRpt message received on a PCEP session on which R bit was set by both peers, the object **MUST** be taken into account by the PCE. Conversely, when the P flag is cleared, the object is optional and the PCE is free to ignore it. The P flag for the mandatory objects such as the LSP and the ERO (Explicit Route Object) object (intended path) **MUST** be set in the PCRpt message. If a mandatory object is received with the P flag set incorrectly according to the rules stated above, the receiving peer **MUST** send a PCErr message with Error-Type=10 (Reception of an invalid object) and Error-value=1 (reception of an object with P flag not set). On a PCEP session on which R bit was set by both peers, the PCC **SHOULD** set the P flag by default, unless a local configuration or local policy indicates that some constraints (corresponding PCEP objects) can be marked as optional and could be ignored by the PCE.

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3.2.1.1. Delegation

Delegation is an operation to grant a PCE temporary rights to modify a subset of parameters on one or more LSPs by a PCC as described in [RFC8051]. Note that for the delegated LSPs, the PCE can update and mark some objects as ignored even when the PCC had set the P flag during delegation. Similarly, the PCE can update and mark some object as a must to process even when the PCC had not set the P flag during delegation.

The PCC **MUST** acknowledge this by sending the PCRpt message with the P flag set as per the PCE expectation for the corresponding object. In case PCC cannot accept this, it would react as per the processing rules of unacceptable update in [RFC8231].

Changes

- Removed disjoint association example as it already has a mechanism to relax disjoint constraint
- Changed to SHOULD for the configuration of this capability
- Default Behavior updated

(Reception of an invalid object) and Error-value=1 (reception of an object with P flag not set). By default, the PCE SHOULD set the P flag, unless a local configuration or local policy indicates that some constraints (corresponding PCEP objects) can be marked as optional and could be ignored by the PCC.

(Reception of an invalid object) and Error-value=1 (reception of an object with P flag not set). On a PCEP session on which R bit was set by both peers, the PCE SHOULD set the P flag by default, unless a local configuration/policy indicates that some constraints (corresponding PCEP objects) can be marked as optional and could be ignored by the PCE or the object itself conveys informational parameters that can be safely ignored.

Changes & Next Step

- Some editorial changes and text suggestions were incorporated
 - Used “specify” instead of “clarify”
- PSF also suggested to add duplicate text for clarity but the authors believe that is not needed and in alignment to RFC 5440
- Do we need a backward compatibility text? Or is this enough -

process. If the PCEP speaker did not set the R flag but receives PCEP objects with P or I bit set, it MUST behave as per the processing rule in [RFC8231] i.e., the bits are simply ignored.

process. If the PCEP speaker did not set the R flag but receives PCEP objects with P or I bit set, it MUST behave as per the processing rule in [RFC8231]. Note that while [RFC8231] stated that P and I flags of the PCEP objects defined in [RFC8231] are set to 0 on and ignored on receipt, it did not say anything about already existing PCEP objects and thus the behaviour remained undefined. To safely use this future, both peers need to set the R flag.

- Draft is ready for the next step and shipping to the IESG...
- Thanks!