

Support for Path MTU (PMTU) in the Path Computation Element (PCE) communication Protocol (PCEP)

draft-li-pce-pcep-pmtu-05

Luc-Fabrice Ndifor Luc-Fabrice.Ndifor@mtn.com

Shuping Peng Huawei

Cheng Li Huawei

Liuyan Han China Mobile

Luc-Fabrice Ndifor MTN Cameroon

Motivation

- In traditional MPLS, the Path MTU can be signaled via signaling protocols like RSVP-TE[3209] and LDP[RFC3988].
- However, there is no additional signaling to establish Segment Routing (SR) paths, so the SR tunnel cannot currently support the negotiation mechanism of the Path MTU.
 - SR information is reported by BGP-LS, and the PCE can calculate the SR Paths based on this info.
- When SIDs (Label or IPv6 address) are pushed in a packet, the packet will be dropped (in IPv6) or fragmented in forwarding since the packet size may exceed the Path MTU.
- From Operator:
 - When using leased line over multi-domains, MTU should be learned to avoid dropping packets.
- This draft is to specify the **extensions to PCEP** to carry **Path MTU** in PCEP messages.

History of this draft

- Presented the version 02 @ IETF108 and received comments and suggestions
- We have updated the draft and addressed all the comments in the version 03
 - ✓ A Terminology session has been added to clarify the often confusing terms including MTU, Link MTU, Path MTU.
 - ✓ A Path MTU Adjustment session has been added to include the case of protection such as TI-LFA.
 - ✓ Some editorial changes.
- Presented the version 03 @ IETF109 and asked for adoption, comments were further addressed in this v05.
 - Text were added to clarify the relationship to MSD
 - Text were added to clarify the support on Multi-path [draft-ietf-pce-multipath]

Next Step

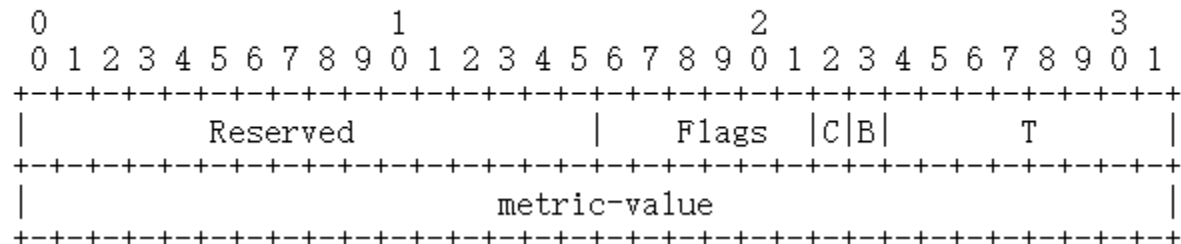
- PMTU is a very important feature to have for Network Operators.
- We would like to again ask for the WG adoption of this draft.

Thank you for your attention!

METRIC Object for Path MTU

- This document defines a new type for the existing METRIC object for Path MTU.
 - T = TBD by IANA
 - B (Bound - 1 bit): Bound
 - metric-value = PMTU
- The Path MTU metric type of the METRIC object in PCEP represents the minimum of the Link MTU of all the links along the path.

The format of the METRIC object body is as follows:



PMTU for Segment Routing

- PCE can be used for computing one or more SR-TE paths taking into account various constraints and objective functions.
 - Path MTU could be another metric for PCE to consider
- Once a path is chosen, the PCE can inform an SR-TE path on a PCC using PCEP extensions specified in [RFC8664].
 - PCE could also inform the Path MTU to the PCC
- [I-D.ietf-pce-segment-routing-ipv6] adds the support for IPv6 data plane in SR.
- **The new metric type for path MTU is applicable for the SR-TE path and does not require any additional extensions.**

