PCEP extensions for BIER-TE

draft-chen-pce-bier-10

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PCE WG IETF-116 Meeting, March 2023
Introduction

• This document specifies extensions to the Path Computation Element Protocol (PCEP) that allow a stateful PCE to compute and initiate the path for the BIER-TE.
Extensions

• BIER Capability Advertisement.
  – Defines a new Path Setup Type (PST) for BIER-TE.
  – Defines the BIER-TE-PCE-CAPABILITY sub-TLV to exchange BIER-TE capability.
• The LSP Object
  – Defines the BIER-TE-IDENTIFIERS TLVs to identify the path.
• The SRP Object
  – Defines a new Path Setup Type (PST=TBD2) for BIER-TE.
• The END-POINTS Object
  – Reuses the P2MP END-POINTS object body for IPv4 and END-POINTS object body for IPv6 (Object-Type 4) which is defined in [RFC8306].
• Objective Functions
  – Defines a new Objective Function for path calculation.
• ERO Object
  – Defines an BIER-TE-ERO subobjects to carry a adjacencies BitStrings, BSL,subdomain and SI.
• RRO Object
  – Defines an BIER-TE-RRO subobjects to reports an BIER-TE to PCE.
Update

• Update the draft based on the comments from the IETF meeting:
  – Add the reference to RFC8623.
  – Add the use-case of objective function
  – Add the LSP Object
The relationship with other PCE BIER Drafts

• draft-chen-pce-bier
  – Specifies extensions to the Path Computation Element Protocol (PCEP) that allow a PCE to compute and initiate the path for the BIER-TE. This draft mainly focuses on the path calculation of BIER-TE and The controller distributes a BIER-TE path to the BFIR.

• draft-chen-pce-pcep-extension-pce-controller-bier
  – Focus on the central controller scenario, it specifies a new mechanism where PCE allocates the BIER information centrally and uses PCEP to distribute them to all nodes (include BFR, BFIR and BFER).

• draft-chen-pce-controller-bier-te
  – Focus on the central controller scenario, it specifies a new mechanism where PCE allocates the BIER-TE information centrally and uses PCEP to distribute them to all nodes (include BFR, BFIR and BFER).

• draft-li-pce-based-pce
  – It contains the extension of the PCE BIER.
BGP extensions for BIER-TE

draft-chen-bier-idr-bier-te-bgp-00

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BIER WG IETF-116 Meeting, March 2023
Introduction

- This document describes BGP extensions for advertising the BIER-TE specific information.
- BGP Extensions for BIER-TE
  - Reuse the Bier Path attribute defined in [I-D.ietf-bier-idr-extensions], and the content of the BIER Path attribute see below:
    - BIER-TE TLV is defined for distributing BIER information.
    - BIER MPLS Encapsulation Sub-TLV is defined for advertising MPLS specific information used for BIER.
Extensions to BGP

• A new TLV of Bier Path attribute
  – The BIER TLV.

• A new Sub-TLV of BIER-TLV
  – The BIER MPLS Encapsulation Sub-TLV

• A new Sub-TLV of BIER-TLV
  – The BIER non-MPLS Encapsulation Sub-TLV
Extensions to BGP

- A new Sub-TLV of BIER-TLV
  - The BIER non-MPLS Encapsulation Sub-TLV
    - BitPosition, Adjacency address: A 2-octet field encoding the BitPosition associated with a adjacency address
Next Step

• Comments welcome.

Thanks!