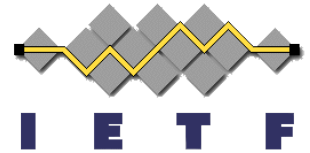


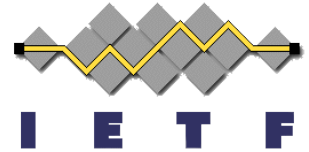
BESS BGP MUP SAFI

IETF-113 Vienna

March, 2022

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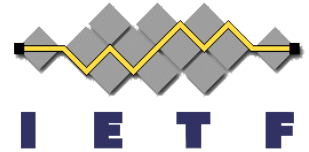
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Motivation

- draft-mhkk-dmm-srv6mup-architecture defines SRv6 Mobile User Plane (MUP) architecture for distributed mobility management
- This architecture integrates mobile user plane into SRv6 data plane
 - It does that by transforming the session information from the mobility management system to the necessary routing information
- As part of the architecture, it defines the following
 - Two new SRv6 Segment types of MUP Segment
 - A PE connects Direct and/or Interwork Segment
 - Two new Session Transformed routes
 - A MUP Controller advertises the session transformed routes

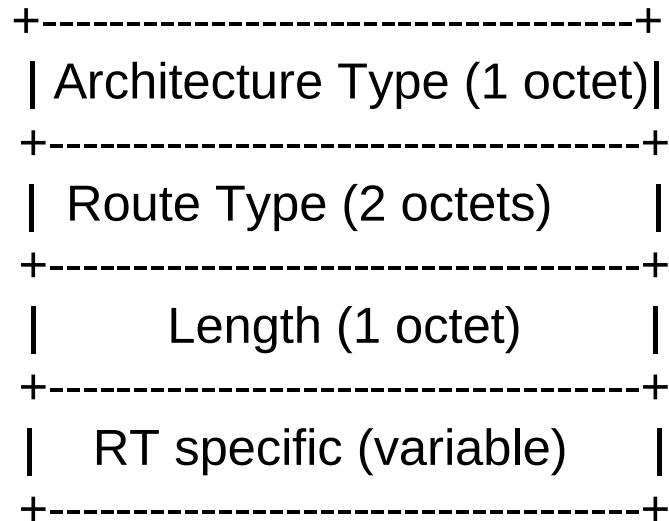
Motivation (Cont'd)

- draft-mhkk-dmm-srv6mup-architecture depicts the MUP segments in 5G specific example case:
 - Interwork Segment for N3RAN
 - N3 Interface between gNodeBs and UPFs on RAN side
 - Direct Segment for N6DN
 - N6 Interface between UPFs and Data Networks (DN) on DN side
- This draft defines a new SAFI known as BGP Mobile User Plane (MUP) SAFI to support the MUP Extensions of the architecture document
 - Also defines a new Extended Community



BGP MUP SAFI

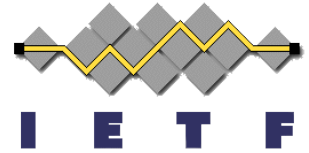
- New SAFI to carry MUP routing information
- NLRI Format



- Architecture type defined: 3gpp-5g

BGP MUP SAFI (Cont'd)

- 4 new Routes Types define for BGP-MUP SAFI 3gpp-5g architecture type:
 - Interwork Segment Discovery Route
 - Direct Segment Discovery Route
 - Type 1 Session Transformed (ST) Route
 - Type 2 Session Transformed (ST) Route
- Route Types can be shared by any new architecture types defined in Future

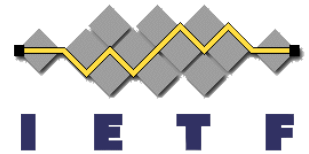


BGP MUP SAFI (Cont'd)

- Two wellknown 5G specific segments of routing instances depicted:
 - N3RAN and N6DN routing instances in a PE
 - Interwork Segment Discovery Route associated with N3RAN routing instances MUP segment
 - Carries N3RAN prefix for gNodeB(es), Prefix SID attribute with the PE locater followed by GTP4/6.E function
 - Direct Segment Discovery Route associated with N6DN routing instances MUP segment
 - Carries Address of MUP Segment, Prefix SID attribute with the PE locater followed by End.DT4/6, DX2/4/6 function, etc., for example

BGP MUP SAFI (Cont'd)

- Type 1 ST Route imported by N6DN routing instances and carries UE reachability information, Tunnel Endpoint address of GTP, TEID and QFI for DL
 - TEID, QFI and Tunnel Endpoint address are carried in the architecture specific part of the NLRI
 - Tunnel Endpoint address should be resolved using Interwork Segment Discovery route – extract locator and prefix SID
 - Forwarding SID for GTP4/6.E is generated based on the procedures mentioned in draft-ietf-dmm-srv6-mobile-uplane.txt



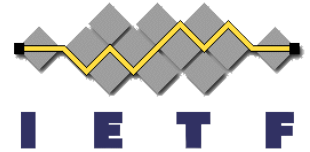
BGP MUP SAFI (Cont'd)

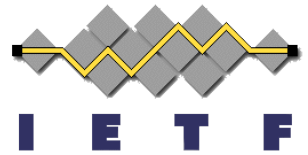
- Type 2 ST Route imported by N3RAN routing instances and carries UPF address and associated GTP Tunnel information for UL
 - TEID is carried in the architecture specific part of the NLRI
 - BGP MUP Extended community carries the MUP segment value present in the Direct Segment Discovery Route – Used to resolve appropriate Direct Segment routing instance and forward it to the address of the MUP Segment
- Route target extended communities are carried to ensure import happens properly

Next Steps

- Draft is in a pretty good shape
 - Version 1 of the draft will be submitted soon

- Consider WG Adoption





Thank you