BGP Update for 5G Edge Service Metadata

draft-ietf-idr-5g-edge-service-metadata-22

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Metadata Path Attribute

• An optional Non-Transitive BGP Path attribute to carry metrics and metadata about the edge services attached to the egress router
• only a few prefixes BGP advertisement include the metadata path attribute
  – local configuration dictates which prefix has Metadata Path Attribute attached.

GitHub Issue Tracking:
https://github.com/ietf-wg-idr/draft-ietf-idr-5g-edge-service-metadata-14
Add a new AS-Scope Sub-TLV

• To address the potential issue where the NO-ADVERTISE well-known community of the BGP UPDATE message can be dropped by some routers
  – Jeff Haas’s comment: (Github Issue #12)

• AS-Scope Value Checking Procedure:
  – If the AS value matches the local AS or a recognized AS in its configuration, the router will process the update as usual. If the AS value does not match or is not recognized, the router MUST drop the BGP UPDATE message containing the AS-Scope Sub-TLV
Changes to Address Mailing List & GitHub Comments

- Moved Section 5 (Service Metadata Influenced Decision Process) to Appendix as it is implementation details
- Explicitly listed all the SAFI that the Metadata Path Attribute can be packed: SAFI values 1 (Unicast); 2 (Multicast); 4 (MPLS Labels); 65 (VPN); 128 (MPLS labeled VPN); 129 (Multicast VPN); 133 (MPLS-based VPLS); 134 (EVPN); and IPv6 Anycast.
- Added the Route Churn Consideration
- The Security Consideration addition to ensure boundary nodes not leaking Metadata on accident
  - RR attach NO-ADVERTISE well-known community to the UPDATE.
  - Non-Transitive for Metadata Path Attribute. BGP speakers that does not recognize the attribute will not propagate it to other BGP peers to prevent the Metadata Path Attribute from being leaked to peers outside the domain.
Discussion Points: Need WG feedback

- Jeff Haas suggested applying for a new Route Target code point for the purpose of constraining Metadata Path Attribute distribution
- Question to WG: should we get a new SAFI for constraining Metadata Path Attribute distribution? Currently the SAFI =132 is for Route Target Constrains.
  - We assumed to use the same SAFI =132 for Ingress routers to send out the Route Target Membership NLRI Advertisements for the interested service IP prefix.
  - Section 4 of the RFC4684 states that “Route targets can then be expressed as prefixes”.
IANA Registry

- A new path attribute from the "BGP Path Attributes" registry. The symbolic name of the attribute is "Metadata".

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- Metadata Path Attribute Sub-Types

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Next Step

- Need Early Allocation
- WGLC