BGP Update for 5G Edge Service Metadata

draft-ietf-idr-5g-edge-service-metadata-16

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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
Changes to Address Jeff Haas Suggestion

• Ingress routers use RFC4684 to register for the interested prefixes that are configured to carry the Metadata Path Attribute.
  – The RFC4684 clearly states that Route Target can be an IP address;
  – Should create a new Route Target (group/VPN, in addition to the IP addresses) ?

• The Security Consideration addition to ensure boundary nodes not leaking Metadata on accident
  – RR attach NO-ADVERTISE well-known community to the UPDATE.
More Changes to Address Jeff Haas’ Comments

- Add more clarification for Physical Availability Index Metadata
  - The Site-ID: a group of routes associated with a common physical characteristic, for example a pod, a row of server racks, a floor, or an entire DC.
  - Purpose: one UPDATE message to indicate a group of routes being impacted by a physical event.

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      CapAvailIdx Sub-Type     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|        Site-ID (2 octets)     | Site Availability Percentage |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

- RouteFlag I: =1 -> for associating the routes with the Site-ID. The Site Availability Percentage value is ignored.
- RouteFlag I: =0 -> egress loopback address as NLRI, for receivers to apply the Capacity Availability Index value to all the routes associated with the Site-ID.
Changes to Address Mailing List Comments

- Service Delay caused by Resource Utilization Anomalies.

  - Service Delay Predication Value (when the Flag bit is set to 1): an integer in the range of 0-100, with 0 indicating that the service delay is negligible and 100 indicating that the site has the most significant delay compared to all other sites for the same service.
  - Service Delay Predication Value (when the Flag bit is set to 0): the estimated delay time as defined in RFC5905.
Open Issues in Github

• Discussion on previous versions asked about:
  – Route Selection Considerations
  – Route churn
• By going with the standard bgp route selection process (policy + routes), we believe we have avoided this
• Should we delete Section 5 (Service Metadata Influenced Decision Process) as it is implementation details or put in an Appendix?
Next Step

- Close all the open issues in the Github
- Early Allocation
- WGLC
BACKUP SLIDES
IANA Registry

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

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<th>Value</th>
<th>Description</th>
<th>Reference</th>
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<tr>
<td>TDB</td>
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- Metadata Path Attribute Sub-Types
  - Registration Procedure: Expert Review

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