

# Constrain Attribute announcement within BGP

*draft-keyupate-idr-bgp-attribute-announcement-01*

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# Motivation

- Currently there is no mechanism to scope the announcements of optional attributes
- The only possible way to filter attributes within BGP are:
  - Unrecognized Optional non-transitive attributes
  - Error handling filters malformed attributes
  - Attribute Specific rules to ensure their scope (Local Pref)
- Need for scoping attributes (atleast) at:
  - Confed boundary
  - AS boundary
  - At Multi-AS administration boundary

# Use Case

- BGP Tunnel Encap attribute
  - Defined in ietf-idr-tunnel-encaps
  - Scope the Tunnel attribute announcements
- BGP Nexthop Capabilities Attribute
  - Defined in draft-decraene-idr-next-hop-capability-01
  - Optional Non Transitive Attribute defines Nexthop's capabilities
- BGP Timestamp Attribute
  - Defined in draft-litkowski-idr-bgp-timestamp-02
  - Carries Timestamps for a given NLRI for each BGP speaker the NLRI traverses
- Any new attributes defined in future.....

# Solution

- No use of Capability
  - Adds complexity to protocol
- Modify the attribute format for all unassigned attributes
  - Reserve first 4 bytes of the attribute data field as Path Attribute flags
- Define 2 new Path Attribute flags:
  - A AS Wide Scope 1<sup>th</sup> bit
  - C Member-AS in Confederation Scope 2<sup>th</sup> bit
  - M Multi-AS Scope 1<sup>th</sup> and 2<sup>th</sup> bit
- In order to preserve the bits Multi-AS scope is enabled when 1<sup>th</sup> and 2<sup>th</sup> bits are both turned on!
- Reserve IANA space for new attributes so that implementations modify the attribute code to reserve first 4 bytes as flags field

# Solution - Rules

- A, C OR M Bits require Optional flag to be set (i.e attribute be of type Optional)
- Filtering based on bits must be enforced when a BGP speaker receives or originates a route
- Requires implementation to enforce Enhance Error handling rules for attributes
  - Malformed attributes having impact on route selection or route installation should enforce “treat-as-withdraw” procedure
  - Other Malformed attributes should enforce “attribute-discard” procedure

# Status

- 00 version presented at IETF 94
- More liberal format adopted after discussion within other vendors
- Added Jeff Haas as a co-author
- Draft in fairly decent shape
- Request WG to provide comments and accept it as a WG document

Questions?