

Bitmask Route Target & Route Target Constrains Extension

draft-zhang-idr-bitmask-route-target
draft-zhang-idr-bgp-rt-constrains-extension

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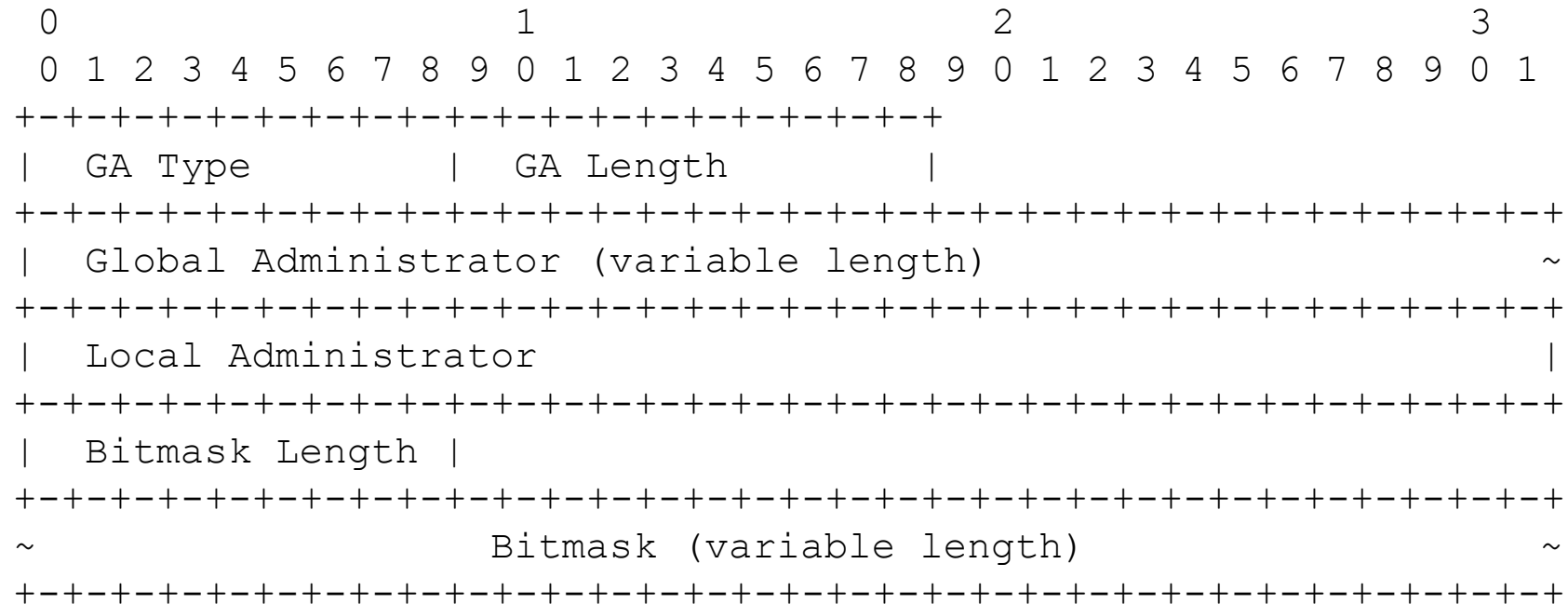
Presented by Z. Zhang for IDR in IETF108

Bitmask RT Idea

- Two Bitmask RTs match if the result of logical AND operation of the bitmasks is not zero
 - Used to control route importation and propagation (using RTC)
- Use case: targeted distribution of Flexible Algorithm information
 - Controllers provisioned with Administrative Groups (colors) information for links and advertise BGP-LS southbound Link NLRIs, carrying a Bitmask RT
 - Bitmask encodes the link's Administrative Groups
 - Link AGs previously encoded as a bitmask in Administrative Groups TLV in BGP-LS Attribute
 - If a router cares about a link with a particular AG, it sets the corresponding bit in locally configured Bitmask RT to pull (using RTC) and import the link NLRI

The Format

- BGP Community Container
 - New type for BitMask RT
 - GA & LA also need to match

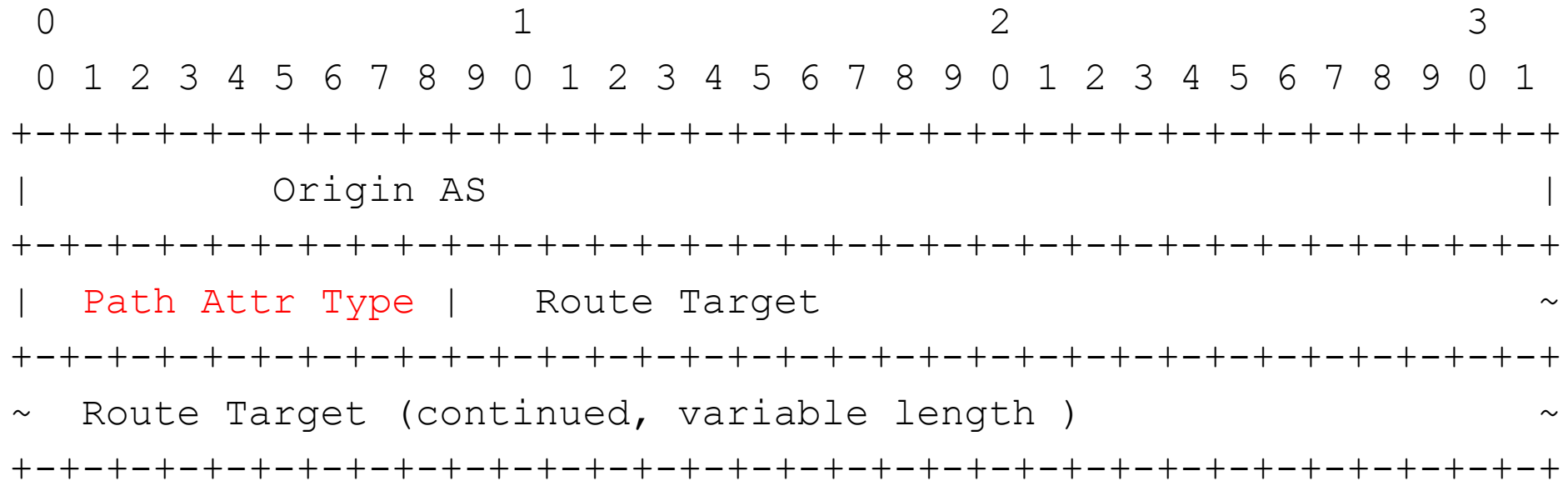


Route Target Constrains Extension

- RTC originally designed for Extended Community based RTs
 - Would not work for IPv6 Address Specific RTs
- Draft-ietf-idr-bgp-ipv6-rt-constrain extends RTC to support IPv6 Address Specific RTs
 - When the prefix is not more than 12 octets, can't tell if the RT part is a partial IPv6 Address Specific RT or a full/partial AS/IPv4 Address Specific RT
 - Could have used AFI 2 to address this problem
 - Would not work for more types of RTs, e.g. Bitmask RT
- Proposed Solution
 - Define a new SAFI for general RTC membership

"Extended Route Target constrains" SAFI NLRI

- "Path Attr Type" in NLRI identifies the type of Route Target
 - 16 (Extended Community) for EC-based RTs
 - 25 (IPv6 Address Specific Extended Community) for IPv6 Address Specific RTs
 - 34 (BGP Community Container Attribute) for any RT defined as a BGP Community Container (e.g. BitMask RT).



The Asks

- Seek comments
- While the new SAFI also works for IPv6 Address Specific RTC, no intention to replace draft-ietf-idr-bgp-ipv6-rt-constrain
 - Given its current status and possible implementation/deployment
 - A side question – what if draft-ietf-idr-bgp-ipv6-rt-constrain use AFI 2?