

# Updates to Anycast Property advertisement for OSPF

## draft-chen-lsr-anycast-flag-01

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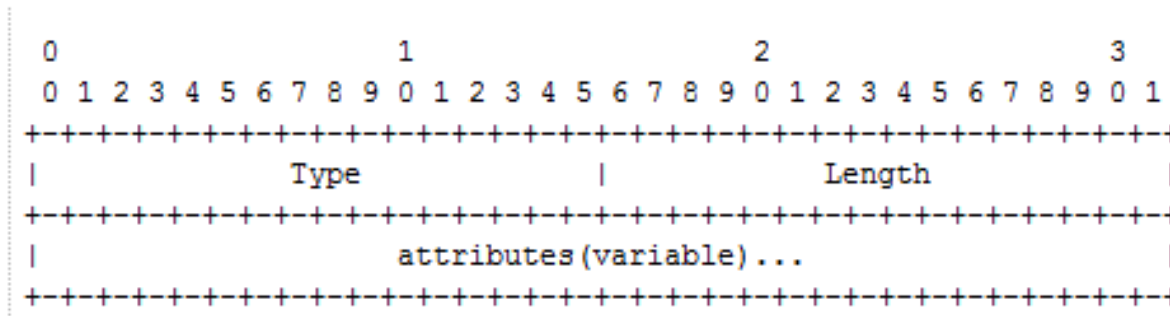
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# Motivation

- Both SR-MPLS prefixes-SID and IPv4/IPv6 prefix may be configured as anycast and as such the same value can be advertised by multiple routers. It is useful for other routers to know that the advertisement is for an anycast identifier.
- Each prefix is advertised along with an 8-bit field of capabilities, by using the Prefix Options[RFC8362] and the flag field in the OSPFv2 Extended Prefix TLV [RFC7684], but the definition of anycast flag to identify the prefix as anycast has not yet been defined. However, Almost all bits of the Flag field has been assigned already. Thus, it is also required to extend the flag field for future use.
- This document updates [RFC7684] and [RFC8362], by defining a new variable length Prefix attributes Sub-TLVs for OSPFv2 and OSPFv3 and a new flag in the Prefix attributes Sub-TLV to advertise the anycast property.

# Variable length Prefix attributes Sub-TLV

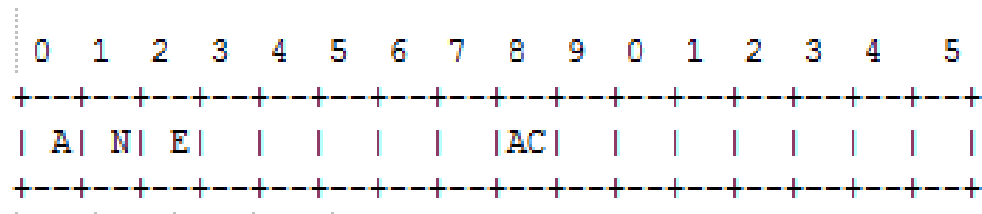
- A new variable length Prefix attributes Sub-TLV for OSPFv2 and OSPFv3.



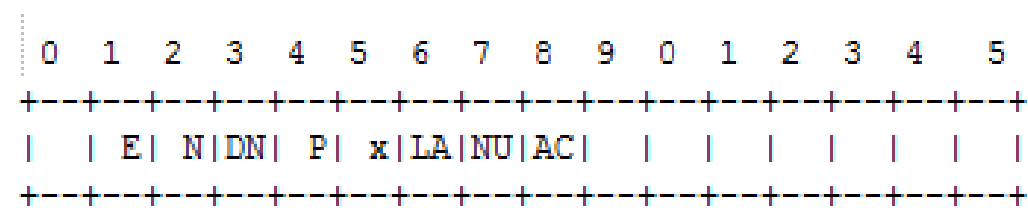
- In the case of OSPFv2, the Prefix attributes Sub-TLVs is a sub-TLV of the OSPFv2 Extended Prefix TLV as defined in [RFC7684].
- In the case of OSPFv3, the Prefix attributes Sub-TLVs is a sub-TLV of the following OSPFv3 TLVs as defined in [RFC8362]:
  - Intra-Area Prefix TLV
  - Inter-Area Prefix TLV
  - External Prefix TLV

# The definition of attribute field.

- In the case of OSPFv2, The following flags are defined and the first 8 bits are reserved for the previously defined in OSPFv2 Extended Prefix TLV:



- In the case of OSPFv3, The following flags are defined and the first 8 bits are reserved for the previously defined in OSPFv3 Prefix Options:



- AC-flag: A new flag is used to advertise the anycast property. When the prefix is configured as anycast, the AC-flag SHOULD be set. Otherwise, this flag MUST be clear. If both N-flag and AC-flag are set, the receiving routers MUST ignore the N-flag.
- AC-flag MUST be preserved when the prefix is propagated between areas.
- The same prefix can be advertised by multiple routers, and that if at least one of them sets the AC-Flag in its advertisement, the prefix SHOULD be considered as anycast.

# Processing

- If there is an device in the network that does not support the Extension of the Prefix attributes Sub-TLV, then the device that support the Prefix attributes Sub-TLV should advertise the field of capabilities of the Prefix by using prefix-options[RFC8362] or prefix-flags[RFC7684], and Prefix attributes Sub-TLV. Otherwise, only use the Prefix attributes Sub-TLV to advertise the field of capabilities of the Prefix.
- If prefix is advertised along with the field of capabilities, by using the Prefix attributes Sub-TLV, then the field of capabilities of the Prefix in the Prefix attributes Sub-TLV shall prevail.
- As long as the Prefix attributes Sub-TLV is used to advertise the field of capabilities and the device support the Prefix attributes Sub-TLV, then the field of capabilities in the Prefix attributes Sub-TLV shall prevail.
- If prefix is advertised along with the field of capabilities, by using only the prefix-options[RFC8362]or prefix-flags[RFC7684], then the field of capabilities in the prefix-options[RFC8362]or prefix-flags[RFC7684] shall prevail.

# Next Step

- Request review and feedback from WG

**Thanks!**