ISIS WG

IS-IS Segment Routing Extensions
draft-ietf-isis-segment-routing-extensions-05

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Version -05

- No substantial changes since IETF92
- More clarification text:
  - R and N flags referred to draft-ietf-isis-prefix-attributes
  - Binding TLV propagation
  - Mapping Server and PHP
  - SR Capability TLV flags
  - SRGB ranges
  - New algorithm value:
    1: Strict Shortest Path First (SPF) algorithm
- In progress:
  - Multiple SR-Cap Sub-TLVs
  - Overlapping SRGB ranges
  - Inconsistent MS entries

Open Questions: Multiple SR-Cap SubTLVs

- Draft-ietf-isis-segment-routing-extensions section 3.1:

  The SR-Capabilities sub-TLV MAY be advertised in an LSP of any number but a router MUST NOT advertise more than one SR-Capabilities sub-TLV. When multiple SR-Capabilities sub-TLVs are received from a given router the behavior of the receiving system is undefined.

- "Undefined behavior" is what always done. E.g.:
  - RFC 6823 section 4.3
  - RFC 4971 Section 3

- Note that the case of moving the SR-Cap subTLV from one LSP fragment to another is handled with two distinct advertisements.

- What does a receiving router do when receiving multiple SR-Cap SubTLVs knowing that the spec mandates only one ?
  - Check content. If different then ignore all of them and consider the originator of these SR-Cap subTLVs a non-SR capable

Open Questions: Overlapping SRGB ranges

- What does a receiving router do when receiving multiple SRGB ranges that do overlap ?
  - Ignore all of them ?
  - Accept the non-impacted by the overlap and ignore the rest ?

- Note that only ONE SR-Cap subTLV can be present so the overlap can only occur within a single SR-Cap SubTLV
  - Which clearly points out a bogus implementation

Open Questions: Conflicting MS Entries

- What does a receiving router do when receiving multiple MS entries (for the same prefix(es)) that are conflicting ?
  - Ignore all inconsistent entries ?
  - Use a breaking tie algo and select one, e.g.: highest MS address ?
- Example (thanks to S.Litkowski):

1) prefix overlap with different indexes, example :

192.0.2.0/32 range 10 index 100

192.0.2.5/32 range 1 index 2000

192.0.2.5/32 range 2 index 3000

In this case 192.0.2.5/32 is associated with three different indexes

2) index overlap, example :

192.0.2.0/32 range 10 index 100

198.15.0.0/32 range 100 index 100

In this case, different prefixes will use the same index.

3) overlap between binding TLV and prefix entry

192.0.2.0/32 range 10 index 100 learned from MS

192.0.2.5/32 index 200 learned from TLV135

In this case 192.0.2.5/32 is associated with two different indexes learned by two different ways

Open Questions: Conflicting MS Entries

- None of the solutions (ignore, braking-tie) will fix the conflict. Any solution is a bet on what COULD work…
- Whatever policy is agreed upon ("ignore" or some preference rule) MUST cover all cases and MUST result in same decision being made on all routers (i.e. preferring local config does not work)