draft-ppsenak-lsr-igp-ureach-prefix-announce

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Context

• Presented previously at IETF 114, IETF 115
• Draft describes how to announce the prefix unreachability in IGPs
• Using mostly an existing protocol mechanisms
• Backward compatible solution (unlike the alternative proposals)
Signaling UPA Origin

• We still rely on prefix metric larger than 0xFE000000 (ISIS), or equal to LSInfinity (OSPFv2/OSPFv3) to maintain backward compatibility

• Handling of such metrics is clearly specified in the existing RFCs

• Allows “advertisement of a prefix for purposes other than building the normal IP routing table”

• Allows UPA to be deployed incrementally
Signaling UPA Origin (cont.)

• Explicit Signaling of UPA origin was added

• Two origins are defined
  a) Loss of reachability due to unplanned event
  b) Loss of reachability due to planned event

• Used to indicate the “other purpose” for which the prefix was advertised - e.g., unreachability.

• Treatment of the U-Flag and UP-Flag on the receiver is optional and outside of the scope of the draft.
Signaling UPA Origin in ISIS

• Two new bits in the IPv4/IPv6 Extended Reachability Attribute Flags [RFC7794] are defined:
  • U-Flag: - Unreachable Prefix Flag
  • UP-Flag: - Unreachable Planned Prefix Flag

• The prefix that is advertised with U or UP flag MUST have the metric set to a value larger than 0xFE000000.
Signaling UPA Origin in OSPFv2

• Two new bits in Flags field of the OSPFv2Extended Prefix TLV [RFC7684] are defined:
  • U-Flag: - Unreachable Prefix Flag
  • UP-Flag: - Unreachable Planned Prefix Flag

• The prefix that is advertised with U or UP flag MUST have the metric set to a value of LSInfinity.
Signaling UPA Origin in OSPFv3

- A new Prefix Attribute Flags sub-TLV is defined as a sub-TLV of the following OSPFv3 TLVs as defined in [RFC8362]:
  - Intra-Area Prefix TL, Inter-Area Prefix TLV, External Prefix TLV

- Two new bits in OSPFv3 Prefix Attribute Flags are defined:
  - U-Flag: - Unreachable Prefix Flag
  - UP-Flag: - Unreachable Planned Prefix Flag

- The prefix that is advertised with U or UP flag MUST have the metric set to a value of LSInfinity.
UPA and Area Partition

• Text has been added in the “Deployment Considerations” section to clarify that UPA was not meant to address the area partition scenario.

• UPA does not make area partition any worse.

• UPA may help with area partition under certain circumstances.
Intended Status

• Draft was originally published as Informational
• In v2 it has changed to Standard Track
  • Added new signaling
  • Standard logic for propagation needs to be altered for UPA
Next Steps …

• Comments are welcome
• Sufficient interest to address the problem in hand
• Implementation is available
• Ask is for WG to adopt this draft and continue the work