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

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Context

• Presented previously at IETF 114, IETF 115, IETF 116
• Draft describes how to announce the prefix unreachability in IGPs
• Using mostly existing protocol mechanisms
• Backward compatible solution
Signaling UPA - Summary

• 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 UPA to be deployed incrementally
• Explicit Signaling of UPA origin
  • Used to indicate the “reason” for which the prefix was advertised with unreachable metric
  • Treatment of the U-Flag and UP-Flag on the receiver is optional and outside of the scope of the draft.
• Supported by all prefix reachability advertisements in OSPFv2/OSPFv3 and ISIS
Version 03 changes – Signaling UPA Origin in OSPFv2

• The prefix that is advertised with U or UP flag MUST have the metric set to a value of LSInfinity, otherwise the new flags MUST be ignored.
  • Required for backward compatibility

• The new U/UP flags are advertised in OSPFv2 Extended Prefix TLV carried in OSPFv2 Extended Prefix LSA

• For default algorithm 0 prefixes with U-Flag or UP-Flag, it is REQUIRED to advertise the unreachable prefix in the base OSPFv2 LSA with LSInfinity metric
  • OSPFv2 Summary-LSA, AS-external-LSAs, NSSA AS-external LSA
Version 03 changes - Signaling UPA Origin in OSPFv3

• The prefix that is advertised with U or UP flag MUST have the metric set to a value of LSInfinity and NU-bit set, otherwise the new flags MUST be ignored

• For default algorithm 0 prefixes, the LSInfinity as well as NU-bit MUST be set in the prefix TLV:
  • Inter-Area-Prefix TLV, External-Prefix TLV

• For IP Algorithm Prefix the LSInfinity MUST be set in OSPFv3 IP Algorithm Prefix Reachability sub-TLV.
  • NU-bit and LSInfinity in parent TLV is already mandated by the I-D.ietf-lsr-ip-flexalgo
Next Steps …

• Comments are welcome
• Sufficient interest to address the problem in hand
• Ready for WG adoption
  • Draft is mature
  • Implementation is available
  • Field deployments are available