

BGP Extensions for Inter-Domain Flexible Algorithm with Segment Routing over IPv6 (SRv6)

draft-gong-idr-inter-domain-srv6-flex-algo-01

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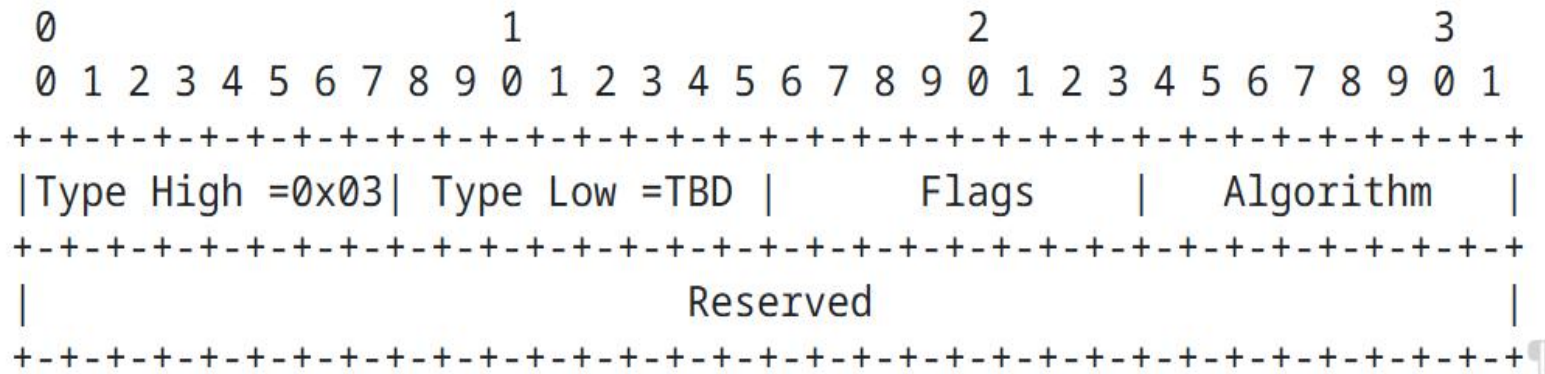
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Background & Scenario

- **IGP Flex-Algo** enables constraint-based path computation (e.g., latency); **SRv6** serves as its data plane.
- **Scenario:** Same operator, multiple ASes. Flex-Algo 128 (low latency) is defined in each domain. End-to-end low-latency paths are required across domains.
- **Problem:** When an SRv6 locator from one AS is advertised via BGP IPv6 Unicast to another AS, the associated algorithm ID is not carried in the BGP Update. The receiving AS only sees a regular IPv6 prefix and computes the default shortest path — cross-domain Flex-Algo path is not achievable.
- **Goal:** Carry the algorithm ID along with the SRv6 Locator in BGP cross-domain advertisements, enabling cross-domain Flex-Algo path computation.

Proposed Solution

- Define a **new Flex-Algo Extended Community** (Transitive Opaque Extended Community) to carry the algorithm ID associated with the IPv6 prefix (SRv6 Locator) in the IPv6 Unicast NLRI.
- **Benefit:** When BGP routes are redistributed into IGP, the algorithm information is automatically available



- Type High: 0x03
- Type Low: TBD
- Flags: for future use
- Algorithm: 1-octet algorithm ID

Updates Since IETF 125

- **Introduction:**

- Adds text to describe the relationship with BGP CPR approach (RFC 9723), and clarifies this draft proposed a simplified approach when consistent Flex-Algo definition can be achieved among multiple domains under the same administration

- **Section 2:**

- Highlights that in the targeted scenarios, the same Flex-Algo is used in multiple domains to represent the same constraints for path computation

- **References:**

- Adds RFC 9723 as a reference document

Next Steps

- Further comments and feedback are appreciated
- Consider WG adoption

Thank You!