SR Replication Segment for Multi-point Service Delivery

draft-voyer-spring-sr-replication-segment

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Brief History

• Work started in Jun 2018 with draft-voyer-sr-p2mp-policy-00
• Presented in Prague IETF
• Last revision was draft-voyer-sr-p2mp-policy-03
• Addressed comments on draft-voyer-sr-p2mp-policy-03:
  • Split draft in two docs:
    • Replication segment in SPRING
    • Use of replication segment in PIM WG
• Addressed comments received on the mailing list.
Scope of the draft

• Spring Chartered item:
  • “New types of segments mapping to forwarding behavior (e.g., local ingress replication)

• Replication Segments deliver packets to multiple nodes in SR domain
  • Direct replication from replication node to a set of downstream nodes
    • A copy of the packet is unicast to each downstream nodes.
    • A simple replication segment doing local replication over N (unicast) SR policies.
Replication SID

• Identifies Replication Segment in data plane
• SR-MPLS label or SRv6 SID

Packet steering at Replication node:
  • Via local policy – PUSH operation, or
  • Active segment is Replication SID – “CONTINUE” operation

• Downstream Node that is Leaf of service executes “NEXT”
Replication Segment

• The Replication Segment is a local segment, instantiated on a single node.
• It performs the local replication over a set of SR Policies.
• Replication State
  • List of Replication branches to Downstream nodes
  • Each replication can be:
    • Best Effort (unicast) using the prefix SID of the downstream Node, or
    • SR Policy (unicast) path to the Downstream node.
• Identified by <Replication-ID, Node-ID>
  • Replication-ID: Unique identifier per Replication node
  • Node-ID: Address of node where Replication segment is instantiated
Implementation and Deployment Status

• Authors are aware of implementations
• At least one deployment planned:
  • Bell Canada in lab trials
Next Steps

• Asking for WG adoption