BFD in Segment Routing Networks Using MPLS Dataplane

draft-mirsky-spring-bfd-mpls-demand-00

Greg Mirsky

Jeff Tantsura

Mach Chen

Ilya Varlashkin

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Problem statement

- RFC 5884 has defined use of BFD Asynchronous mode over MPLS LSP
- Ingress LER A periodically transmits BFD control messages over MPLS LSP
- Egress LER B periodically transmits BFD control messages over IP network
- Failure in the reverse path of the BFD session may be interpreted as LSP failure
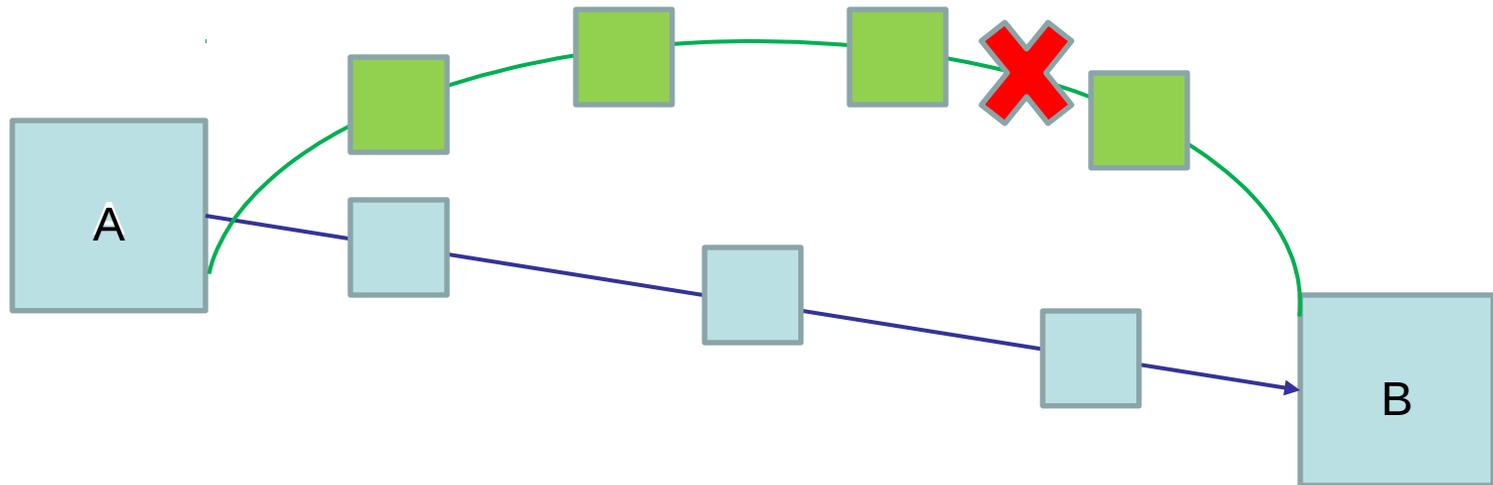
Control BFD Reverse path

- New optional BFD Reverse Path TLV
- Used with BFD Discriminator TLV
- Instructs egress BFD to transmit BFD control packets over the specified MPLS LSP
- Re-use sub-TLVs defined in draft-ietf-mpls-spring-lsp-ping
- BFD Reverse Path TLV may contain none, one or more sub-TLVs
- If none sub-TLV has been found in the BFD Reverse Path TLV, then the egress BFD MUST transmit BFD control packets over IP network
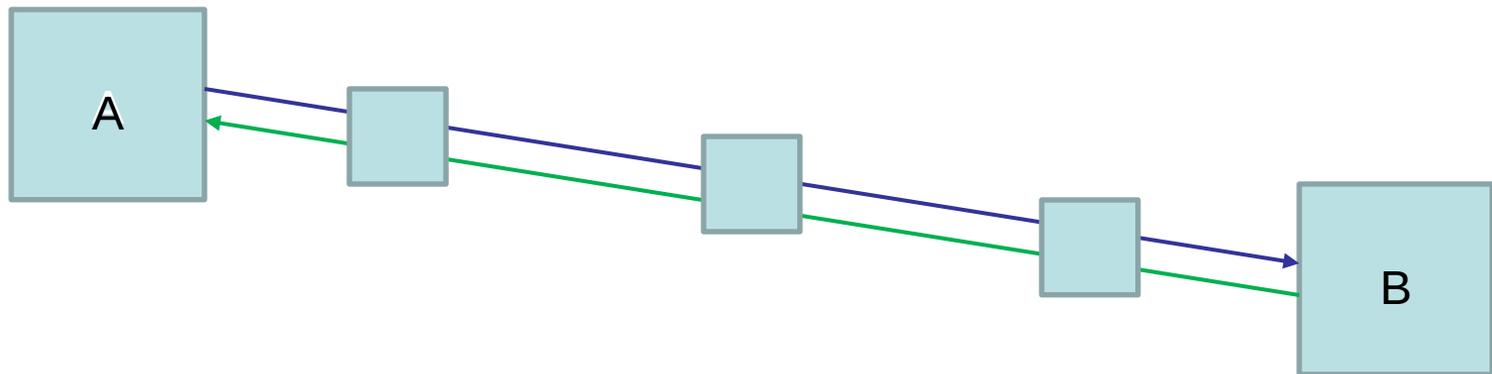
New Segment Routing Static MPLS Tunnel sub-TLV

- Ordered list of Label Stack Elements with the top of the stack label as Label Entry 1 and the bottom of the stack label – Label Entry N
- BFD Reverse TLV MAY include zero or one SR Static MPLS Tunnel sub-TLV
- If no sub-TLVs present in the BFD Reverse Path TLV – the egress MUST switch the reverse BFD session to be transmitted over IP network
- If more then one SR Static MPLS Tunnel sub-TLVs present in the BFD Reverse Path TLV, the remote peer MUST send MPLS LSP Echo Reply with Return Code value set to "Too Many TLVs Detected" (new code)

SegRouting MPLS sub-TLV Type	Length
Label Entry 1	
Label Entry N	
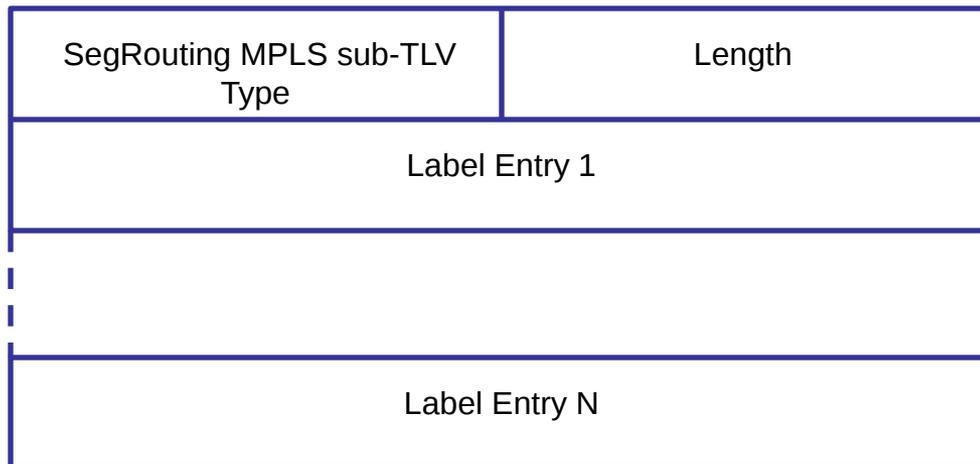
Next steps

- Your comments, suggestions, questions always welcome and greatly appreciated
- Which WG to anchor – MPLS or SPRING?