RSVP-TE Based MPLS-TP LI & LB

draft-dong-ccamp-rsvp-te-mpls-tp-li-lb-02

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IETF83 Mar. 2012 Paris
Background

• In-band/NMS based LI & LB is defined in RFC 6435
• Unlike other OAM functions (CC, CV, LM, DM), LI and LB would affect the data plane of the LSP/PW
  – More like an enabler for some other OAM functions
• When dynamic control plane is used, it is reasonable to change data plane through control plane signaling
  – Otherwise control plane can be inconsistent with data plane
• Control plane based LI & LB is needed
  – Ensure control plane & data plane consistency
  – Control plane signaling does not rely on TTL expiration
RSVP-TE Based LI & LB

- Two new flags in ADMIN_STATUS Object
  - K: LocK
  - B: LoopBack

- Lock Instruct is signaled using Path/Resv message
  - MEP to MEP
  - Intermediate nodes can update status of the LSP accordingly

- Loopback is signaled using Notify message
  - MEP to MIP or MEP to MEP
Operations – Lock Instruct

• Lock
  – Sending MEP: Path message with R (Reflect) and K (Lock) bit set
  – Receiving MEP:
    • Success: Resv message with K bit set
    • Failure: PathErr message with new OAM Error Value “Lock Failure”

• Unlock
  – Sending MEP: Path message with R bit set and K bit cleared
  – Receiving MEP:
    • Success: Resv message with K bit cleared
    • Failure: PathErr message with new OAM Error Value “Unlock Failure”
Operations – Loopback

• Enter Loopback
  – Sending MEP: Notify message with R, K and B bit set
  – Receiving MIP/MEP:
    • Success: Notify message with K and B bit set and Error Code “0”
    • Failure: Notify message with new OAM Error Value “Loopback Failure”

• Exit Loopback
  – Sending MEP: Notify message with R, K bit set and B bit cleared
  – Receiving MIP/MEP:
    • Success: Notify message with K bit set and B bit cleared and Error Code “0”
    • Failure: Notify message with new OAM Error Value “Exit Loopback Failure”
Next Steps

- Solicit comments & feedbacks