Refresh-interval Independent RSVP-TE FRR

draft-chandra-mpls-ri-rsvp-frr-00
(was draft-chandra-mpls-enhanced-frr-bypass-01)

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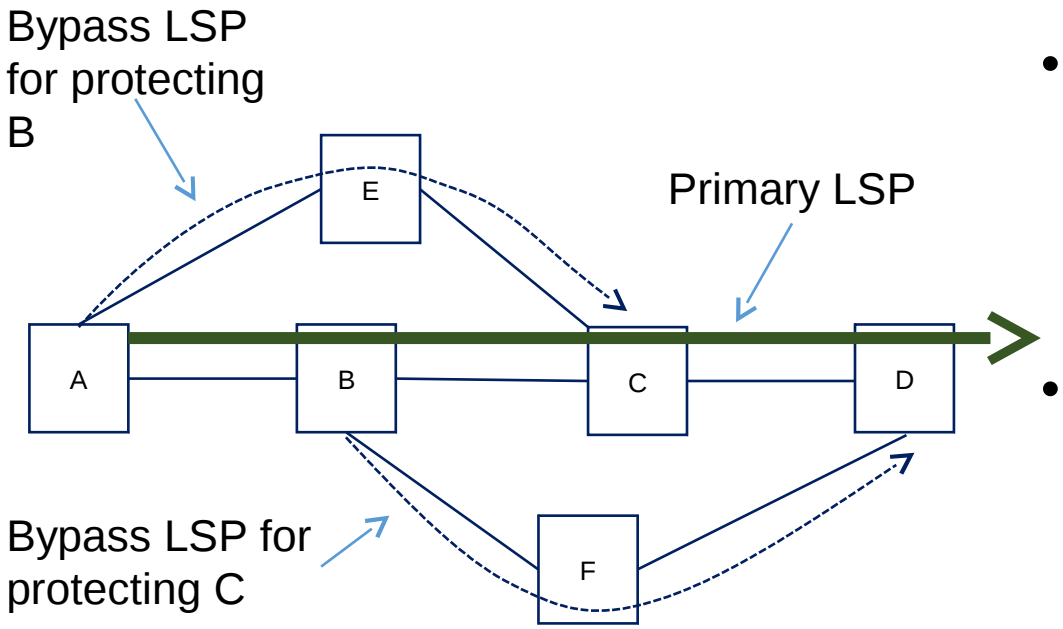
Changes from IETF 92

- Name change – from ~~draft-chandra-mpls-enhanced-frr-bypass~~ to draft-chandra-mpls-ri-rsvp-frr
- Incorporate MP determination mechanism from draft-mtaillon-mpls-summary-frr
  - PLR signals link or node protection availability using SUMMARY_FRR_BYPASS_ASSOCIATION sub-object in RRO carried in Path message
  - draft-enhanced-frr-bypass-01 used the flags in IP address sub-object
- Incorporate “Refresh Independent RSVP” or “RI-RSVP” capability from draft-beeram-teas-rsvp-te-scale-rec
  - Each RSVP-TE speaker sets I-bit (“RI-RSVP”) in capability flags in CAPABILITY object
  - draft-enhanced-frr-bypass-01 used E-bit “Enhanced FRR” – that is now removed

MP Determination Procedure changes

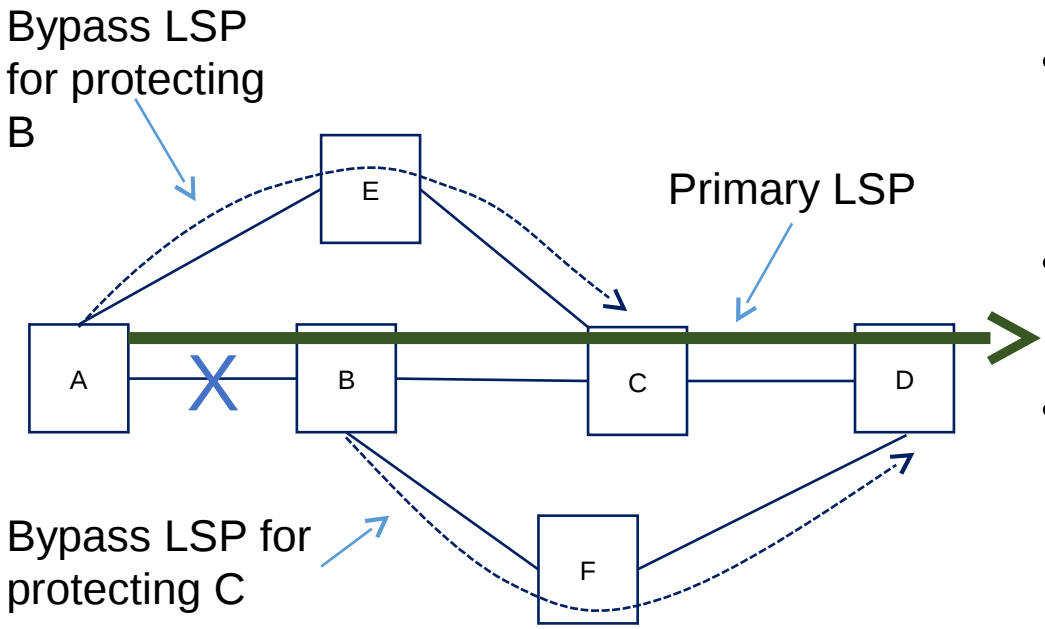


Protecting against B node failure:
A – Point of Local Repair (PLR)
C – Merge Point (MP)

Protecting against C node failure:
B – Point of Local Repair (PLR)
D – Merge Point (MP)

- MP determination:
  - Whenever PLR has a backup path available, the PLR includes SUMMARY_FRR_BYPASS_ASSIGNMENT sub-object in Path RRO
    - **Specified in draft-mtaillon-mpls-summary-frr-01**
- Refresh Independent FRR Procedures:
  - Initiate NodeID based hello session between PLR and MP
    - Unchanged from draft-chandra-mpls-enhanced-frr-bypass
  - **A node concludes it is MP for a PLR supporting "refresh-independent FRR" if the PLR has signaled protection in PATH RRO and NodeID signaling adjacency with PLR is up**
    - **How the PLR signals protocol availability has changed**
  - Rest of the procedures remains unchanged

Conditional PathTear processing changes



Protecting against B node failure:
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Protecting against C node failure:
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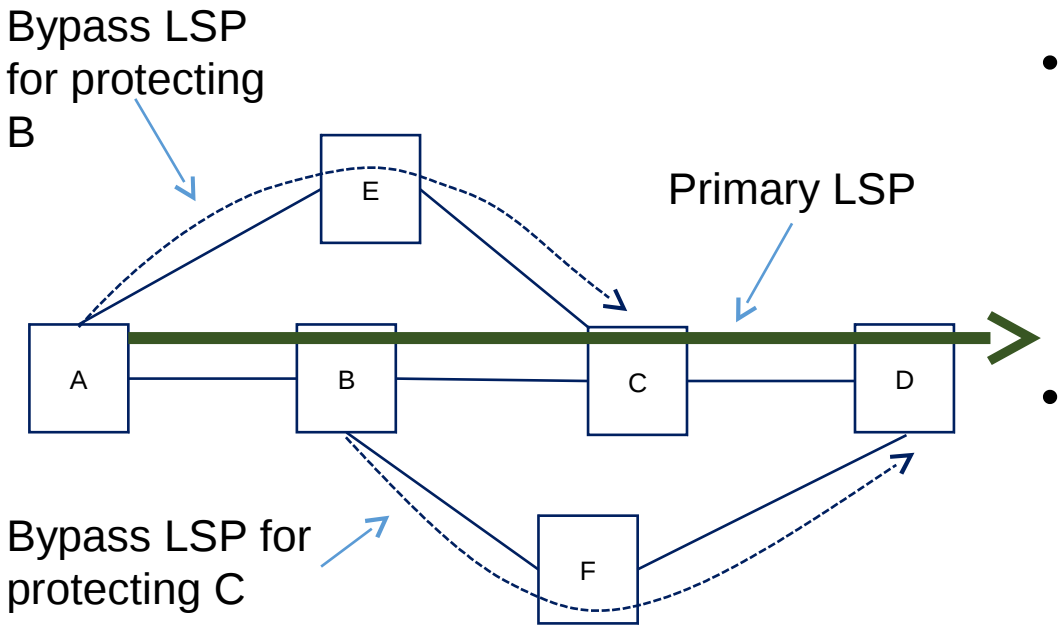
- Router B is not a Merge Point
  - B has included BYPASS_ASSOCIATION sub-object in Path RRO
- When A-B link fails, router B sends Conditional PathTear to router C and deletes LSP state
- As router C is a NP-MP, it retains LSP state
  - **Router C should remove BYPASS_ASSOCIATION sub-object added by router B in Path RRO and trigger Path message**
  - As per draft-chandra-mpls-enhanced-frr-bypass, C reset flags in IP address sub-object added by router B
  - To enable router C to determine BYPASS_ASSOCIATION sub-object corresponding to router B, the sub-object must follow the corresponding Phop router's IP-address or Node-ID sub-object
- Rest of the procedures relating to Conditional PathTear remains unhanged.

Refresh Independent FRR capability



Protecting against B node failure:
A – Point of Local Repair (PLR)
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Protecting against C node failure:
B – Point of Local Repair (PLR)
D – Merge Point (MP)

- **Each router advertises RI-RSVP capability in CAPABILITY object carried in Hello message**
  - **Specified in draft-beeram-teas-rsvp-te-scaling-rec**
  - PLR and MP also advertise RI-RSVP capability on their NodeID hello session
- LSP stale state cleanup – Link Protection
  - If Phop interface fails and Phop (PLR) NodeID hello session also goes down, LSP state is deleted.
  - If Phop did not advertise RI-RSVP capability, then LSP state will be deleted on refresh time out.
- LSP stale state cleanup – Node Protection
  - If Phop interface fails or Phop router has sent Conditional PathTear, and Pphop (PLR) NodeID hello session goes down, LSP state is deleted
  - If Phop router or PLR did not advertise RI-RSVP capability, then LSP state will be deleted on refresh time out.

Next steps

- We request to make this as a working group draft

https://tools.ietf.org/html/draft-chandra-mpls-ri-rsvp-frr-00