MPLS ECMP Issues

draft-bryant-pals-ethernet-cw-00

Stewart Bryant, Andy Malis & Ignas Bagdonas
RFC6790

• RFC6790 is soft on how ECMP is carried out when the ELI is present:
  If a transit LSR recognizes the ELI, it MAY choose to load balance solely on the following label (the EL);
• The implication is that an LSR that recognises the EL cannot be assumed to base its ECMP decision solely on the EL.
• This impacts
  • draft-ietf-pals-ethernet-cw-00
  • Synonymous Labels.
• Propose to bring a small draft to IETF 101 tightening up the RFC6790 text.
DPI based ECMP

• Lots of vendors do ECMP based pkt inspection of MPLS IP Payload
• Some implementations detect 0x0 after an MPLS label stack and assume that the MPLS payload is PW CW + Ethernet carrying MPLS, and do PI based ECMP.
• They do not always get it right, misorder PW packets and cause trouble and expense to operators trying to figure this out.
• Problem surfaced in PW, but the wider issues arising from this type of ECMP and any recommendation needs to be documented in MPLS WG as it is a P-router problem.
• Propose to bring a draft to next IETF.