mLDP Extensions for Multi-Topology Routing

draft-wijnands-mpls-mldp-multi-topology-02

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Background/History

• This draft was first submitted in 2011
  draft-iwijnand-mpls-mldp-multi-topology-00
• Interest was lost and the draft died.
• New interest has been generated for supporting multiple
  IGP algorithms (sub-topologies)
• Draft had been re-named to (IETF 101):
  draft-wijnands-mpls-mldp-multi-topology-00
• Draft died 2\textsuperscript{nd} time \textbullet{}, and now there is interest to deploy it in production network.
Multi-Topology Routing (MTR)

- In order to support MTR a new address families have been created for LDP (RFC 7307) (v4 and v6)
- This AF has created space to insert the 16 bit MT-ID and 16 bit Reserved.
Multi-Topology Routing (MTR)

- This draft extends mLDP to use the same LDP AF’s to support MTR.
- Applies to the following mLDP elements:
  - MP FEC Element
  - Typed Wildcard MP FEC Elements
- Introduces a new Capability called “MT Multipoint Capability”
(Flex) IGP Algorithms

- There is new work being done in IETF to support sub-topologies using (flexible) algorithms. [draft-ietf-lsr-flex-algo](draft-ietf-lsr-flex-algo)
- A more light weight mechanism to define constraint-based topologies.
- Useful for creating live-live (red/blue) redundant topologies.
(Flex) IGP Algorithms

• In order to support IGP Algorithms in mLDP we augment the MT LDP AF.

• We use 8 bits of the Reserved Field to encode the IANA IGP Algorithm registry, we call this field IPA.
mLDP FEC’s

• Each combination of MT-ID and IPA creates a unique MLDP FEC.

• Each mLDP router can lookup the “Root” address in the topology identified by MT-ID and the specific sub-topology (algorithm) identified by the IPA.
Questions?