

# IETF 111

## 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<sup>nd</sup> time ☹ , 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.

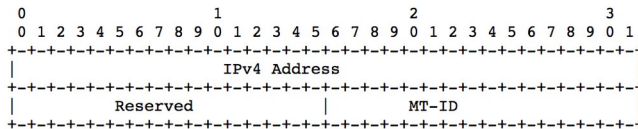


Figure 1: MT IP Address Family Format

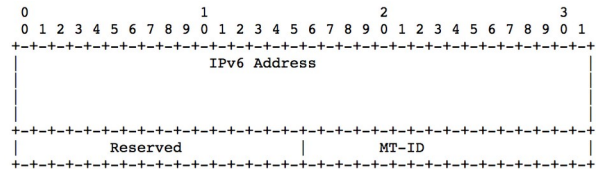


Figure 2: MT IPv6 Address Family Format

## 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

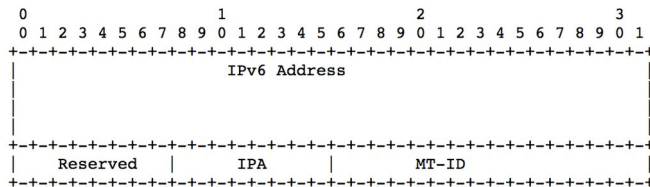
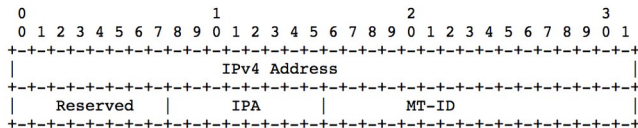
- There is new work being done in IETF to support sub-topologies using (flexible) algorithms.

[draft-ietf-lsr-flex-algo](#)

- 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?