

MPLS-TP Use Cases and Design Considerations

draft-fang-mpls-tp-use-cases-and-design

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Objectives

- Objectives:
 - Provide MPLS-TP use case studies
 - Discuss design considerations and options
 - Serve as best practice guide
- Intended category: Informational
- Status:
 - 00 and 01 draft issued before IETF 78
 - Discussed 02 draft IETF 79 MPLS WG
 - Discussed planned major changes in IETF 80

Restructure Planned in the Next Revision

- Use cases
 - Metro Agg/Acc, Mobile backhaul, Core transport
 - Bring in next level details with real world deployment/plans
- Focus on design considerations
 - Technologies selections
 - What MPLS-TP does and does not do
 - Operational experience
 - Cost efficiency
 - Operational Model selections
 - NMS provisioned
 - GMPLS control plane
 - LSP related design options
 - Bidirectional co-routed vs. associated
 - Bidirectional vs. Unidirectional
 - BW reservation, QoS, nested LSPs


More on Design Considerations

- Protection and OAM

- Protection
 - 1:1 vs 1:N vs 1+1
 - Over subscription
 - Shared mesh protection
 - Recovery coordination among layers
 - PW protection and LSP protection
 - Delay variation between working and protect LSPs
- OAM
 - Distance impact to AIS/RDI/LDI
 - Tuning BFD hello interval and hold off timer
 - Clocking and loss/delay measurement
 - Use of loopback and lock Instruct for test and maintenance
 - OAM and control plane relations

More on Design Considerations

- Inter-connections

| Agg./Access | Inter-connect | Core |
|--|--|-----------------------|
|  | | |
| MPLS-TP | <ul style="list-style-type: none"> - PW over LSP - VLAN | MPLS PW |
| MPLS-TP | <ul style="list-style-type: none"> - PW over LSP - MPLS-TE --VLAN | MPLS-TE |
| IP/MPLS | <ul style="list-style-type: none"> - GMPLS-UNI - PW over LSP - VLAN | MPLS-TP (w/ GMPLS CP) |
| Metro Ethernet (VPLS or native E) | <ul style="list-style-type: none"> - VLAN - H-VPLS - GMPLS-UNI | MPLS-TP |

- Interconnection models:
 - Overlay vs. Peering
 - LSP stitching vs. termination
 - PW switching vs. PW mesh

Next Steps

- Issue 03 draft with major revision
- Input/comments from WGs appreciated
- Asking for WG document adoption after restructure