IETF86
Framework for Point-to-Multipoint MPLS-TP

draft-hmk-mpls-tp-p2mp-oam-framework-02.txt

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Background

- P2MP becomes increasingly important in terms of energy efficiency and efficient network resource usage.
- draft-fbb-mpls-tp-p2mp-framework will be summary of all features of MPLS-TP P2MP transport path

Motivation

- Develop this document to see and study if additional detailed requirements and framework in parallel with draft-fbb-mpls-tp-p2mp-framework
- This draft covers OAM related framework including management of MPLS-TP P2MP transport paths.

Main updates from -01 to -02

1) Clarified requested scenario of M-leaves monitoring

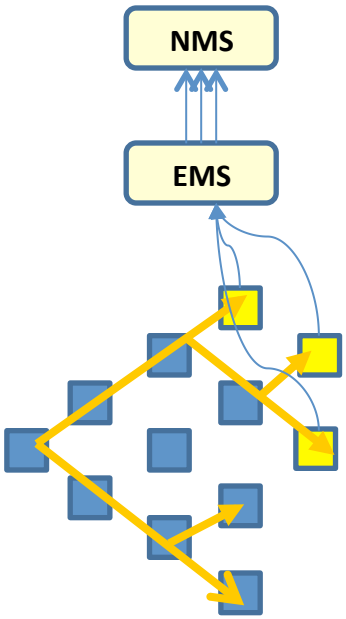
2) Described MPLS-TP P2MP requirements and frameworks that need to be modified in RFC5860 and RFC6371

3) Added a requirement that needs to be considered when one or more leaves are added to an existing p2mp transport path.

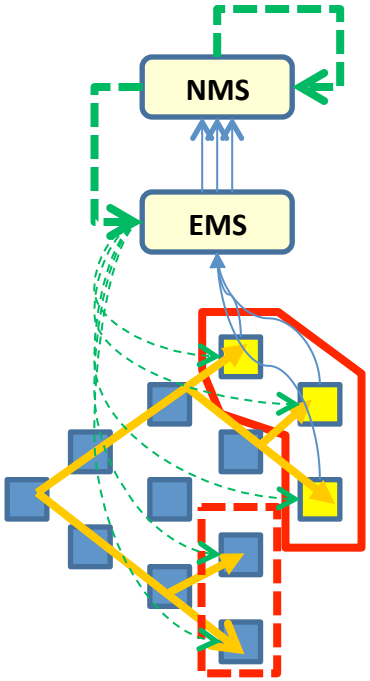
1) M-leaves monitoring scenario

Scenario 2 is the most efficient and reasonable approach in terms of bandwidth consumption and transport experiences.

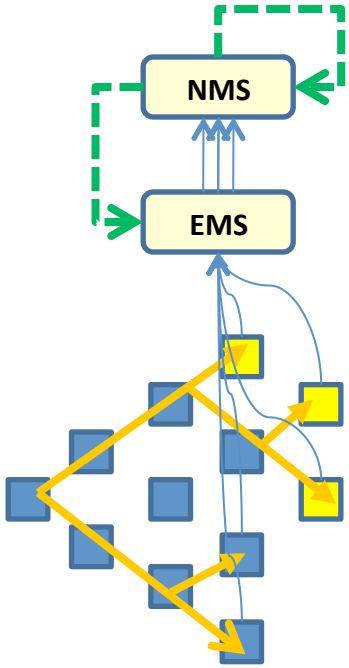
Scenario 1:
OAM protocol based
(not supported in RFC6371)



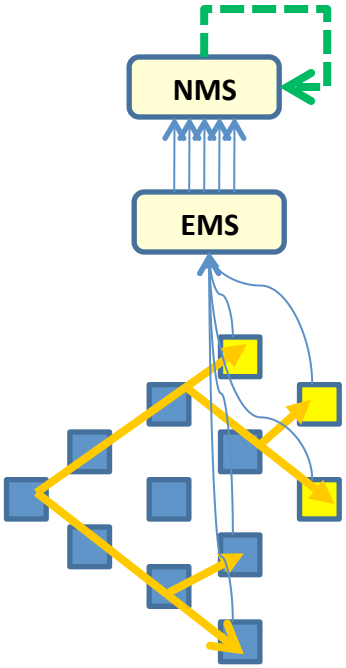
Scenario 2:
Sink MEP based

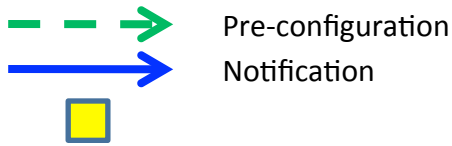


Scenario 3:
EMS based



Scenario 4:
NMS based





1) M-leaves monitoring scenario (Contd.)

Characteristics of M-leaves monitoring scenario in case of extension from a current function for sending an OAM packet to all leaves

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
OAM protocol extension	YES	NO	NO	NO
NE configuration	NO	YES	NO	NO
EMS configuration	NO	YES	YES	NO
NMS configuration	NO	YES	YES	YES
Remarks	Not supported in RFC6371			

2) Refinement of P2MP requirements

(RFC5860)

Current text: *The MPLS-TP OAM toolset MUST provide a function to enable an End Point to determine whether or not it is connected to specific End Point(s) by means of the expected PW, LSP, or Section.*

Proposed text: *The MPLS-TP OAM toolset MUST provide a function to enable a sink End Point to determine whether or not it is connected to a specific source End Point by means of the expected PW or LSP.*

(RFC6371)

Current text: *Proactive Continuity Check functions, as required in Section 2.2.2 of RFC 5860 [11], are used to detect a loss of continuity (LOC) defect between two MEPs in an MEG. Proactive Connectivity Verification functions, as required in Section 2.2.3 of RFC 5860 [11], are used to detect an unexpected connectivity defect between two MEGs (e.g., mismerging or misconnection), as well as unexpected connectivity within the MEG with an unexpected MEP.*

Proposed text: *Proactive Continuity Check functions, as required in Section 2.2.2 of RFC5860, are used to detect a loss of continuity (LOC) defect from the source MEP to sink MEP(s). Proactive Connectivity Verification functions, as required in Section 2.2.3 of RFC5860, are used to detect an unexpected connectivity defect from the source MEP to sink MEP(s) (e.g., mismerging or misconnection), as well as unexpected connectivity within MEG with an unexpected source MEP.*

3) Additional requirement

9. OAM functions of a newly added/deleted branch transport path from any point of an existing transport path must be able to be configured and enabled/ disabled on a newly integrated/combined P2MP transport path without affecting client traffic to existing end points of the P2MP transport path other than the added/removed branch transport path.

Next steps

- Solicit comments on general aspects of OAM requirements in P2MP transport path
- Study and develop requirements related to addition/removal of a branch leaf/tree
- Describe each OAM function in P2MP transport path respectively