

***Delay and Loss Traffic Engineering
Framework for MPLS***

draft-fuxh-mpls-delay-loss-te-framework-04

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March 30, 2012

IETF 83, Paris, France

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Thanks Lou Berger for his directional comments and other experts for their useful comments to the document.

Changes from Version 03

- Solved some comments from mailing-list
 - From **Eric Osborne**: ‘Version 03 document is titled services aware framework but all it really does it only talk about loss/jitter/delay.’
 - We changed the title again to ‘Loss and Delay Traffic Engineering Framework for MPLS’ in 04 version.
 - From **Greg Mirsky** : ‘queuing latency is an important especially as link usage gets to BW saturation. And since links even at some PHB can be oversubscribed ignoring queuing latency might make static latency/jitter metric irrelevant.’
 - We agree queuing latencies can be an issue. The idea is to go for simplicity instead of absolute optimization. The node latency is hence ignored

Changes from Version 03

- Solved some open issues
 - **node latency:**
 - ✗ **Option 1**: Define it as a fixed or average/approximate latency (without any queuing) and add half of the fixed node latency to each TE link. So the latency accumulated when looking at the extended IGP TED gives the right total value.
 - ✓ **Option 2**: Assumed that the node latency is a small factor of the total latency in the networks. The node latency is hence ignored for the benefit of simplicity.
 - Many experts prefer option 2 for the benefit of simplicity in the solution. If certain customers (mostly financials) care very deeply about nodal delay, the solution may provide a config knob to the user to let them add some fixed value to the link delay.

Changes from Version 03

- Solved some open issues
 - **Composite Link Performance Advertisement :**
 - ✓ Option 1: Only TLV for Composite Link. The performance may be the range, average or maximum latency/loss of all component links.
 - ✓ Option 2: Latency and packet loss of each component link within one Composite Link could be advertised but having only one IGP adjacency.
 - This document doesn't exclude any of them. It may depend on the solution.

Next Step

- WG document adoption?