Compact Alternate Marking

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Alternate Marking - Background

Monitor data traffic from MP 1 to MP 2

- Loss
- Delay
- Delay variation

MP = Measurement Point
Every data packet includes a color bit.

Traffic Flow: AAAAA BBBBB AAAAA BBBBB

Marking Bit:

Time: 00000 11111 00000 11111
Double Marking

MP 1  /  MP 2

Traffic Flow: AAAAA BBBBB AAAAA BBBBB

Color Bit: C =

Timestamp Bit: T =

00000 11111 00000 11111
00100 00100 00100 00100

- Color indication.
- Timestamp indication.
Scope of the Current Draft

• New alternate marking methods with low overhead.
  – Single bit per packet.
  – Zero bits per packet.

• Summary of alternate marking methods.
Summary and Tradeoff of Marking Methods

<table>
<thead>
<tr>
<th>Method</th>
<th># of bits</th>
<th># of counters</th>
<th>Resilience to Reordering</th>
<th>Resilience to Packet drops</th>
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<td>Hashed</td>
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<td>(2)</td>
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<td>Hashed</td>
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<tr>
<td>Single marking</td>
<td>1</td>
<td>2</td>
<td>Step</td>
<td>Step</td>
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<tr>
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<td>2</td>
<td>Step</td>
<td>Pulse</td>
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</table>

+ Accurate measurement.
= Invalidate only if a measured packet is lost (detectable)
- No measurement in case of disturbance (detectable).
-- False measurement in case of disturbance (not detectable).
Related Drafts

- draft-ietf-mpls-rfc6374-sfl-02
- draft-ietf-bier-pmmm-oam-04
- draft-fmm-nvo3-pm-alt-mark-03
- draft-mirsky-sfc-pmamm-02
- draft-fioccola-ippm-multipoint-alt-mark-04
- fioccola-v6ops-ipv6-alt-mark
- fear-ippm-mpdm-02
- draft-ietf-quic-spin-exp-01
- draft-trammell-quic-spin-03

Most of these drafts may benefit from the methods and analysis of the current draft.
Next Steps

• Comments will be welcome!