Multi-Vendor Interoperability Testing
Results Update to MPLS WG

IETF 101, London, March 22, 2018
Carsten Rossenhövel
Multi-Vendor Interoperability Test Areas

- Data Center Interconnection
- Software Defined Networking (SDN)
- Core Network Simplification
- Clock Synchronization
- Microwave
Hot Staging

March 5-16: Hot Staging at EANTC, Berlin with 21 vendors, 75 engineers

March 2018 → April 2018

MPLS+SDN + NFVWORLD @ PARIS2018
Segment Routing – LSP Ping/Trace Test Coverage

Introduction

- IETF standard: RFC 8287
- LSP Ping and Traceroute for SR IGP-prefixes with MPLS data plane
- IS-IS with SR extensions configured in all test runs
- Eight vendors initially participated in the test but only three of them achieved successful results
We setup two ring topologies

In the first one we verified LSP Ping and traceroute mechanisms

- Additionally, we introduced a network failure between Node 1 and Node 2 to verify the ping/traceroute function

On the second setup, we only verified the Ping mechanism
Segment Routing – LSP Ping/Trace
Findings

- One vendor claimed to support “single-hop” ping/traceroute only
  - Effectively supporting one-hop ping probes only
- We found different interpretations of the sub-TLV type/Length in Fec Stack TLV for SR LSPs
  - Some vendors claimed that the standard does not say clearly whether to consider the reserved octets to be part of the length or not

<table>
<thead>
<tr>
<th>Vendor Name</th>
<th>Sub-TLV Type Encoded</th>
<th>Sub-TLV Length Encode</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor A</td>
<td>34</td>
<td>6</td>
<td>0 (Any)</td>
</tr>
<tr>
<td>Vendor B</td>
<td>34</td>
<td>8</td>
<td>2 (ISIS)</td>
</tr>
<tr>
<td>Vendor C</td>
<td>34</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Vendor D</td>
<td>34</td>
<td>8</td>
<td>1(OSPF) // Vendor Fix pending</td>
</tr>
<tr>
<td>Vendor E</td>
<td>31744</td>
<td>8</td>
<td>6 //Vendor claim not having full support for it.</td>
</tr>
<tr>
<td>Vendor F</td>
<td>31744</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>
Detailed white paper with all results will be published on April 10th
www.eantc.de/en/showcases/mpls_sdn_2018

In addition to mplswg, drafts of other IETF WGs were covered:
- 6man (for SRv6)
- rtg (for segment routing)
- spring (for PCE)