Why are we here?

- Provide an overview of SR IGP Flexible Algorithm (FA) interop testing conducted at EANTC 2019

- Network operators shared their use cases @ MPLS WC 2018 ... a year later vendors get together - FIRST public interop in the industry !!!

- But what is Flex Algo?
SR Flex Algo – What is it?

IGP Prefix SID
- Follows shortest-path to IGP prefix (min IGP metric)
  - SR ALGO 0

IGP “Flex Algo” Prefix SID
- Allows IGPs to compute constraint based paths
- A custom IGP Prefix-SID
- Follows shortest-path to IGP prefix based on operator-defined algorithm
  - SR FLEX ALGO K
SR Flex Algo – What is it?

IGP Prefix SID
- Algo 0
- Entire topology

IGP Flex Algo Prefix SID
- Example: Algo 128 → min-IGP / exclude RED links
- Defined in a subset of routers

Default IGP link metric: I:10
SR Flex Algo – Use Cases

- Network Slicing
  - High Bandwidth
  - Low Latency
  - Secured (encrypted)
- Multi-Plane networks
Interop Highlights

What was successfully tested?

- Flex Algo definition (FAD) advertisement via ISIS
  - draft-ietf-lsr-flex-algo
- Segment Routing MPLS Forwarding for FA paths
# Participants

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Model</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco</td>
<td>NCS 5500, ASR 9901</td>
<td>PE, P</td>
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<tr>
<td>Juniper Networks</td>
<td>MX-204, MX-480</td>
<td>PE, P</td>
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<tr>
<td>Ospirent</td>
<td>TestCenter</td>
<td>CE</td>
</tr>
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Topology Setup

- **FA instance 128**
  - Metric: IGP

- **FA instance 129**
  - Metric: IGP

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**TG1**

**TG2**

**A**

**B**

**C**

**D**

**ISIS-SR**
Topology Setup

100.0.0.A/32
SID = 200,00A – algo 0
SID = 201,00A – algo 128
SID = 202,00A – algo 129

100.0.0.B/32
SID = 200,00B – algo 0
SID = 201,00B – algo 128

100.0.0.C/32
SID = 200,00C – algo 0
SID = 202,00C – algo 129

100.0.0.D/32
SID = 200,00D – algo 0
SID = 201,00D – algo 128
SID = 202,00D – algo 129
Let’s watch the demo !!!
THANK YOU