Advertising SR policies in BGP (BGP SRTE)
Interoperability Results

MPLS World Congress
April 2019
Why are we here?

- Provide an overview of BGP-signaled Segment Routing Policies interoperability testing conducted at EANTC 2019
- FIRST public interop in the industry!
- But what is BGP SR-TE?
BGP SRTE – What is it?

A new BGP SAFI (73) / NLRI

Used to advertise SR Policy to a router in order to install a SRTE path at the head-end

<table>
<thead>
<tr>
<th></th>
<th>In</th>
<th>Out</th>
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<tbody>
<tr>
<td>4001</td>
<td>&lt;16002, 16004&gt;</td>
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</table>
Per-Destination Automated Steering

Automated Steering steers service routes on their matching (color + endpoint) SR Policy

BGP update:
1/8 via Node4
2/8 via Node4 with color green

Min-delay path
Best-effort path

Min Cost
Min Delay

1/8 → 16004
2/8 → P(green, 4)
Interop Highlights

- What was successfully tested?
  - draft-ietf-idr-segment-routing-te-policy
  - IPv4 sr-policy SAFI and new NLRI
  - Programming and removal of a sr-policy at HE router

- Per-Destination Automated Steering
  - Unlabeled (IP) traffic steering
  - Labeled (Binding-SID) traffic steering
## Participants

<table>
<thead>
<tr>
<th>Controller</th>
<th>Head-End Router</th>
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<tbody>
<tr>
<td><strong>Controller</strong></td>
<td><strong>Head-End Router</strong></td>
</tr>
<tr>
<td>Cisco</td>
<td>Arista</td>
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<td>HUAWEI</td>
<td>7280SR</td>
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<td>ixia</td>
<td>Cisco</td>
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<td>NOKIA</td>
<td>NCS 5500</td>
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<td>HUAWEI</td>
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<td>NOKIA</td>
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<td>7750 SR-7</td>
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</table>
Color: C1
End-point: D
Binding-SID: Label X
preference: 100
sid-list: [200,00C ; 200,00D]
Topology Setup – MPLS WC

Controller

BGP
SR Pol

A

B

C

D

A

B

C

D

TG1

TG2

TG3

TG4

Color: 300
End-point: 100.0.0.168
Binding-SID: Label 400025
preference: 100
sid-list: [200,00Y; 200,00Z]

Color: 300
End-point: 100.0.0.168
Binding-SID: Label 400050
preference: 100
sid-list: [200,00Y; 200,00Z]

Color: 300
End-point: 100.0.0.168
Binding-SID: Label 400098
preference: 100
sid-list: [200,00Y; 200,00Z]
Let’s watch the demo!
THANK YOU