BGP Route Policy and Attribute Trace Using BMP

draft-xu-grow-bmp-route-policy-attr-trace-05

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Outline

• Recap with an hackathon example
• Change history
• Next steps
BMP route trace data glance

<table>
<thead>
<tr>
<th>Vrf Name, Policy Class, Policy Name</th>
<th>Number of Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>24</td>
</tr>
<tr>
<td>C20</td>
<td>24</td>
</tr>
<tr>
<td>Inbound policy</td>
<td>2</td>
</tr>
<tr>
<td>RP-C20-IP-IN</td>
<td>2</td>
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<tr>
<td>VRF export</td>
<td>2</td>
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<tr>
<td>RP-C20-VPN-EXPORT</td>
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<tr>
<td>Route Withdraw</td>
<td>6</td>
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<tr>
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<td>6</td>
</tr>
<tr>
<td>Outbound policy</td>
<td>14</td>
</tr>
<tr>
<td>null</td>
<td>2</td>
</tr>
<tr>
<td>RP-C20-IP-OUT</td>
<td>12</td>
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</table>
BMP route trace data zoom in

<table>
<thead>
<tr>
<th>Time</th>
<th>Afi</th>
<th>Bgp Id</th>
<th>Bmp Msg Type</th>
<th>Bmp Router</th>
<th>Bmp Router Port</th>
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</thead>
<tbody>
<tr>
<td>2020-11-12 12:26:35</td>
<td>1</td>
<td>192.0.32.151</td>
<td>rpat</td>
<td>192.0.2.71</td>
<td>54948</td>
</tr>
<tr>
<td>2020-11-12 12:26:35</td>
<td>1</td>
<td>192.0.32.151</td>
<td>rpat</td>
<td>192.0.2.71</td>
<td>54948</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Prefix Len</th>
<th>Rd</th>
<th>Safi</th>
<th>Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>203.0.113.10</td>
<td>32</td>
<td>0:64499:81</td>
<td>1</td>
<td>50206897</td>
</tr>
<tr>
<td>203.0.113.252</td>
<td>31</td>
<td>0:64499:81</td>
<td>1</td>
<td>50206904</td>
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<table>
<thead>
<tr>
<th>Bmp Rpat Info Post Policy Attr</th>
<th>Bmp Rpat Info Pre Policy Attr</th>
<th>Bmp Rpat Info String</th>
<th>Peer Asn</th>
<th>Peer Bgp Id</th>
<th>Peer Ip</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-01-01-00-40-02-16-02-05-...</td>
<td>40-01-01-00-40-02-16-02-05-...</td>
<td>xmlns:rtp=&quot;urn:huawei:yang:...</td>
<td>65000</td>
<td>203.0.113.12</td>
<td>192.0.32.151</td>
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<tr>
<td>40-01-01-00-40-02-16-02-05-...</td>
<td>40-01-01-00-40-02-16-02-05-...</td>
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<td>203.0.113.12</td>
<td>192.0.32.151</td>
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<table>
<thead>
<tr>
<th>Policy Class</th>
<th>Policy Id</th>
<th>Policy Is Diff</th>
<th>Policy Is Match</th>
<th>Policy Is Permit</th>
<th>Policy Name</th>
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<tbody>
<tr>
<td>Inbound policy</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>RP-C20-IP-IN</td>
</tr>
<tr>
<td>Inbound policy</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>RP-C20-IP-IN</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Nf</th>
<th>Timestamp Arrival</th>
<th>Vrf Id</th>
<th>Vrf Name</th>
<th>Writer Id</th>
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</thead>
<tbody>
<tr>
<td>null</td>
<td>2020-11-12T13:27:14.994480...</td>
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<td>C20</td>
<td>ietfint_nfacctd-bmp01_c/318...</td>
</tr>
<tr>
<td>null</td>
<td>2020-11-12T13:27:14.999083...</td>
<td>3</td>
<td>C20</td>
<td>ietfint_nfacctd-bmp01_c/318...</td>
</tr>
</tbody>
</table>
BMP route trace data format
Change history

• Changes from version 05
  • Add “V flag” to distinguish V4 and V6 peer address
  • Make “Prefix” fixed length (16 bytes)
  • Add “Peer Address” in the Policy TLV
  • Make “Policy Item ID” variable (previously 4-byte fixed length)
Next steps

• Implementation status (draft-xu-grow-bmp-route-policy-attr-trace-05)
  • BMP client: Huawei VRP V8.20.1
  • BMP server: PMACCT
  • Parser: Wireshark

• Deployment status and future plans
  • Current: Swisscom test lab
  • Future: Tencent, China IXP in Hangzhou, Huawei Cloud and so on

• Call for WG adoption
• IANA code point early allocation
  • BMP new message type:
    • Type = TBD: Route Policy and Attribute Trace Message.
  • TLV type for BMP Route Policy and Attribute Trace Message
    • Type = TBD1 (2 Byte): VRF/Table ID TLV.
    • Type = TBD2 (2 Byte): Policy TLV.
    • Type = TBD3 (2 Byte): Pre Policy Attribute TLV.
    • Type = TBD4 (2 Byte): Post Policy Attribute TLV.
    • Type = TBD5 (2 Byte): String TLV.
Thank you!