Benchmarking for CoPP
draft-shishio-bmwg-copp-00

Shishio Tsuchiya
shtsuchi@cisco.com
RFC6192 CoPP

- Control Plane Protection
- Protect router's control plane from undesired or malicious traffic.

Figure 1: Router Control Plane Protection
- Business: Router less service
- Consumer: FTTH/DDoS
- Data center: Large Scale ARP/NDP, DDOS
- Test by themselves, no standard
2. Test setup
2.1. Topology

- DUT connect to Router/Attack
  Emulator/Traffic Generator
2.2. Network

- Configure IGP/OSPS between DUT and Router
- DUT configure CoPP if needed
3. Test procedure
3.1. Attack Packet

- Attack Emulator: send packets to DUT to confirm influence of CoPP
- Test duration time should be greater than hold time between UUT and Router
## Attack Packet

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
<th>Expect Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical</td>
<td>fragment/ip option/ICMP ttl exceed</td>
<td>drop/rate-limit</td>
</tr>
<tr>
<td>Routing Protocol from trust network</td>
<td>BGP/OSPF</td>
<td>accept but rate-limit would be preferred</td>
</tr>
<tr>
<td>Routing Protocol from untrust network</td>
<td>BGP/OSPF</td>
<td>drop</td>
</tr>
<tr>
<td>Control Packet from trust network</td>
<td>ARP/NDP/ICMP/ICMPv6</td>
<td>accept but rate-limit would be preferred</td>
</tr>
<tr>
<td>Control Packet from untrust network</td>
<td>ARP/NDP/ICMP/ICMPv6</td>
<td>drop/rate-limit</td>
</tr>
<tr>
<td>Management Packet from trust network</td>
<td>NTP/SSH/Telnet/Radius/Nameserver/DHCP</td>
<td>accept/rate-limit</td>
</tr>
<tr>
<td>Management Packet from un-trust network</td>
<td>NTP/SSH/Telnet/Radius/Nameserver/DHCP</td>
<td>drop</td>
</tr>
<tr>
<td>undefined packets</td>
<td>IPX/Appletalk</td>
<td>drop</td>
</tr>
</tbody>
</table>

Will update in detail in future version
Test result

<table>
<thead>
<tr>
<th>Attack</th>
<th>Attack rate [pps/bps]</th>
<th>Attack duration time</th>
<th>Loss of packets on traffic generator</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Ask to WG

• Is the draft useful for the WG?
• Any idea of the scenario
  – test procedure
  – confirmation of stability