HELLO Storm Issue

LSVR 2021.03.09

thanks to

Sue Hares
Multicast HELLO PDU

01-80-C2-00-00-0E: Nearest Bridge = Propagation constrained to a single physical link; stopped by all types of bridges (including MPRs (media converters)). This SHOULD BE used when the link is known to be a simple point to point link.

TBA: When a switch receives a frame with a multicast destination MAC it does not recognize, it forwards to all ports. This destination MAC is to be sent when the interface is known to be connected to a switch. This SHOULD BE used when the link may be a multi-point link.
Furthermore § 11

If the configured destination address is one that is propagated by switches, the HELLO SHOULD be repeated at a configured interval, with a default of 60 seconds. This allows discovery by new devices which come up on the layer-2 mesh. In this multi-link scenario, the operator should be aware of the trade-off between timer tuning and network noise and adjust the inter-HELLO timer accordingly.
Sue Hares Raised a Possible Problem
And I Stole Her Artwork
Only the Routers are L3DL Speakers
Add a Nonce?

<table>
<thead>
<tr>
<th></th>
<th>PDU Type = 0</th>
<th>Payload Length = 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>~</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonce</td>
<td></td>
<td>~</td>
</tr>
<tr>
<td></td>
<td>Sig Type = 0</td>
<td>Signature Length = 0</td>
</tr>
</tbody>
</table>

Nice Try But

The PDU and the nonce would not be recognized by the non-L3DL speakers, and hence the storm would propagate.
But I do not think this is the LSVR/L3DL Model
This Clos is

And they are all L3DL Speakers
The focus for discussion is section 10 paragraph 2, on the Hello.

"To be assigned: When a switch receives a frame with a multicast destination MAC it does not recognize, it forwards it to all port. This destination MAC is to be sent when the interface is known to be connected to a switch. This SHOULD Be used when the link may be multi-point."

Diagram 1: topology (CLOS-like)

Stage 1:

- Starting by sending a Hello from Router A that abides by the multicast text in section 10 paragraph 2. I am assuming the term "forwarding" includes sending the l2 information on all other links except the link the Ethernet frame was received up.
- L2 forwarding causes the switch (say S-1) to forward the Hello toward 2 other switches (S-6 and S-7) and toward Router B.
- Router B receives the first Multicast Hello. Switch 1 (S-1) forward this multicast Hello out all ports except the port it received it upon (sent to S-6 and S-7).
- Routers C, D, E, X and Z have not received a Hello.

No Storm
So,
Do We Have a Problem?