Restart Signalling for IS-IS

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Existing Functionality

Allows a restarting router which maintains forwarding plane across a restart to hitlessly reacquire the LSPDB

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
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| +--+--+--+--+--+--+--+--+
| | Reserved |SA|RA|RR|
| +--+--+--+--+--+--+--+--+
RR - Restart Request
RA - Restart Acknowledgement
SA - Suppress adjacency advertisement

Remaining holding time (in seconds)
Restarting Neighbor System ID (for sending RA on LANs)

Sent in Hellos
Neighbor initiates LSPDB sync when receiving RR
What is Lacking…

Current support works well when the control plane restart takes a very short amount of time (less than adjacency holdtime)

Useful for process restarts, redundant control planes lacking local checkpoint capability

Does not support non-redundant control planes which take a significant amount of time to reload (minutes)

Simply extending the holdtime prior to reload leaves neighbor unaware of the impending restart

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New Functionality

0 1 2 3 4 5 6 7
+-------------------+
|Reserved|PA|PR|SA|RA|RR|
+-------------------+

RR - Restart Request
RA - Restart Acknowledgement
SA - Suppress adjacency advertisement
PR - Restart is planned
PA - Planned restart acknowledgement

Remaining holding time (in seconds)
Restarting Neighbor System ID (for LANs)

Allows neighbor to be aware that a restart is imminent (PR) and to acknowledge (PA).
Neighbor Behavior on Receipt of PR

- Adjacency remains UP – marked in Planned Restart State
- Holdtime is updated (once only)
- PA is sent

Clearing Planned Restart State
- Receipt of RR IIH
- Receipt of IIH w/o Restart TLV or w/o RR or PR
- Holdtime expires

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Neighbor Behavior In Planned Restart State

• If topology changes occur, neighbor MAY bring down adjacency (stale forwarding plane)
• If restarting system is DIS, adjacency SHOULD be brought down if topology changes occur
• On P2P circuits flooding of LSPs, xSNPs MAY be suppressed
• If BFD session fails and Control Plane Independent bit is NOT set, BFD failure can be ignored
Next Step

Comments…
WG adoption