IS-IS Spine-Leaf Extension

draft-shen-isis-spine-leaf-ext-01

IETF 96, Berlin
Spine-Leaf

• Popular in Data Center and Campus
• Normally leaf-to-leaf traffic goes through one of the spine nodes, for east-west
• North-South bound traffic is between leaf and spine nodes, for the topology north bound is attached with the spine nodes
• Basically some ECMP load sharing from leaf to spine nodes
• Rich mesh of spine-leaf topology generates LSP flooding issues
TLV in Hello

- SL Flag, with L, R and B bits
- Default Route Metric pushes from Spine to Leaf node
IS-IS Spine-Leaf Extension

Normal ISIS Operation

Full IS-IS Database

Only default routes to Spines
Extension Operation

• Point-to-point IS-IS link
• Spine nodes have interconnections, include the ‘Core’ layer on top of ‘Aggregation’ layer
• CSNP is not needed over the SL link
• Allow Leaf-to-leaf local exchange
• Leaf set ‘OL’ bit in its LSP
• Spine may pass ‘Hostname’ in IIH
• Spine may set different ‘Default Route Metric’ to influence the leaf’s ECMP