Routing in Fat Trees (RIFT) Update
draft-przygienda-rift-02

Tony Przygienda, Juniper
Alankar Sharma, ComCast
Alia Atlas, Juniper
John Drake, Juniper

RIFT-02 Update, IETF ’99, Prague
Progress since -01

• New Co-Author
• Good Amount of Industry Input and Real ;-) Experience Gained
• Significant Clarifications/Extensions on the Specification
  • Requirements Extended
  • Optional E-W Link Procedures Added
  • Internal Node Reachability Considerations Added
  • More Explicit Description of Flooding Scopes Added
  • Description of Default Origination Procedures Added
  • BFD Interactions Added
  • Encoding Improved for More Efficient Implementations
Requirements Extension

• RIFT Distinguishes Parallel, Non-Uniquely Addressed and Unnumbered Links. LIEs Are Exchanges over All Links, i.e. Native IP “LAG” is Possible
  • Flooding Optimization over Parallel Links is Left Unspecified
• MC-LAG Considered Non-Requirement = IP Multi-Homing
• No Special Support for Forwarding Adjacencies and so on is Necessary
• An Optional Mode Allowing Basically a Near Zero Touch Configuration of a Whole DC is Desired
Optional E-W Procedures

• E-W Flooding Rules Same as Flooding Scope Towards South Peers

• During SPF a Node Uses E-W Adjacencies IIF
  • It Has No Northbound Itself AND
  • Neighbor Has Northbound Adjacencies

• One-Hop Split-Horizon Black-Hole Healing

• E-W NOT Used Unless Failures Occur
Internal Fabric Node Reachability
Considerations

• New Section Added

• Nodes Can Inject Loopback Into N-Prefix TIEs for Reachability “From the North” or “From Everywhere under Normal Conditions”

• Nodes Can Inject Loopbacks Always or on North Connectivity Failures Into S-PGP TIEs for Reachability “From the South”
Precise S-Prefix Default Origination Procedures
(Spoiler Warning: Not Entirely Trivial)

Node X That Is

• NOT Overloaded AND
• Has East-West OR South Adjacencies

Originates S-Prefix TIE Default IIF

• All Other Nodes @ Same Level Are Overloaded OR Have No N-Adjacencies OR
• X Has Computed Default Reachability in N-SPF
BFD Interactions

• 3-way Hello MAY bring up BFD Sessions
• BFD After Being Up Can Drive the 3-way Hello Down
• RIFT Link IDs Are Aligned Size-Wise with BFD Discriminators so They MAY be Same
• BFD MAY Run on Any Subset of RIFT Links
Encoding Improvements

• LIE Matches Up LinkIDs on Both Sides

• Several Encoding Elements Became `<maps>` Instead of `<sets>` for Fast Searches
THANK YOU FOR YOUR ATTENTION