Basic BGP Data Plane Convergence Benchmarking

draft-papneja-bgp-basic-dp-convergence-01

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Background and Current Status

- Terminology for Benchmarking BGP Device Convergence in the (RFC 4098) / June 2005
- Methodology draft focusing on the BGP Data Plane convergence has been posted
  - http://tools.ietf.org/html/draft-papneja-bgp-basic-dp-convergence-01
- Team
  - Rajiv Papneja, Susan Hares, Bhavani Parise, Mohan Nanduri, Jay Karthik, & Eric Brendel

Scope of the Draft

- BGP Data plane FIB convergence for both IPv4 and IPv6
- Limited to Basic BGP convergence (RFC 4271 functionality with Multi-Protocol BGP (MP-BGP) for IPv6)
- BGP Failure/Convergence Events
- Considers dependencies on factors impacting convergence:
  - Number of peers,
  - Number of routes/peers
  - Policy Processing/Reconfiguration
- Data Traffic characterization – offered load
- Various test cases that covers iBGP, eBGP and failure convergence events
- Topologies – Several 3 node, and 4 node setups

Test Cases

- Basic Convergence Tests
  - RIB-IN Convergence
  - RIB-OUT Convergence
  - eBGP Convergence
  - iBGP Convergence
  - eBGP Multihop Convergence
- BGP Failure/Convergence Events
  - Physical Link Failure on DUT End
  - Physical Link Failure on Remote/Emulator End
  - ECMP Link Failure on DUT End

Test Cases

- BGP Adjacency Failure (Non-Physical Link Failure) on Emulator
- BGP Hard Reset Test cases
  - BGP Non-Recovering Hard Reset Event on DUT
- BGP Soft Reset
- BGP Route Withdrawal Convergence Time
- BGP Path Attribute Change Convergence Time
- BGP Graceful Restart Convergence Time

Next Steps

- Solicit input from the community
- Feedback and comments from the group on the test cases
- Request to accept the document as WG item