Benchmarking of EVPN Multicast
draft-vikjac-bmwg-evpnmultest-01

By
Sudhin Jacob(sjacob@juniper.net)
Vikram Nagarajan (vikramna@juniper.net)

draft-vikjac-bmwg-evpnmultest-01,
IETF 104 Prague, Czech Republic
EVPN

- EVPN is defined in RFC 7432.
- Active-Active Multi-homing with Ethernet Segments. Control Plane Mac learning.
- Better Load Balancing and Convergence

IGMP Snooping

- IGMP snooping is used to constrain L2-multicast traffic to be forwarded only onto those L2-interfaces that have listener interest.

EVPN and IGMP snooping

- Optimized L2-multicast forwarding in EVPN
- Proxy IGMP listener interest in EVPN using EVPN Type-6 route
- Multi-homing considerations related to IGMP Join/Leave sync with EVPN Type-7/8 routes

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EVPN with IGMP Snooping

EVPN

Leaf-1

Leaf-2

Leaf-3

Leaf-4

SPINE-1

SPINE-2

Mcast traffic

RT

RT

RT

RT

DF

Type-6

Type-6

Type-6

Type-7/8

IGMP join

IGMP join

IGMP join

CE

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Benchmarking Parameters for EVPN Multicast in a singly-homed EVPN PE

- **IGMP Join Learning**: Time taken to learn reports and create state
- **IGMP Join Timeout**: Time taken to clear state when listeners do not refresh reports
- **IGMP Leave Learning**: Time taken to learn leave and clear state
- **IGMP Leave Latency**: Time taken to stop forwarding traffic on hearing Leave

- **Remote IGMP-Proxy Type-6 Learning**: Time taken to learn rmt Type-6 and create state
- **Remote IGMP-Proxy Type-6 Withdraw**: Time taken to learn rmt Type-6 withdraw and clear state

- Measuring the above with multiple VLANs
- Measuring the above with scaled number of groups
- Measuring the above for stability with soak test

- Sections in the draft: Section 3.1 to 3.6. Section 3.11

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Benchmarking Parameters for EVPN Multicast in multi-homed EVPN Active/Active PEs

• IGMP Join Sync: Time taken to learn reports, sync and create state on all relevant MH peers (Type-7)
• IGMP Join Timeout: Time taken to clear state on all MH PEs when listeners do not refresh reports
• IGMP Leave Sync: Time taken to learn leave, sync leave and clear state on all MH PEs (Type-8)
• IGMP Leave Latency: Time taken for traffic to stop on hearing Leave

• Measuring the above with multiple VLANs
• Measuring the above with scaled number of groups
• Measuring the above for stability with soak test

• Sections in the draft: 3.7 to 3.10
Disruptive Tests in Multi-homed EVPN PEs and convergence measurement thereof

- **Access Link on DF going down:** Time taken for new DF to resume forwarding
- **Core link on DF going down:** Time taken for new DF to resume forwarding
- **Routing Failure on DF:** Time taken for new DF to resume forwarding
- **DF Node Failure:** Time taken for new DF to resume forwarding

- Measuring the above with multiple VLANs
- Measuring the above with scaled number of groups
- Measuring the above for stability with soak test

- Sections in the draft: 4.1 to 4.3.
Thank you