

SRv6 Service Benchmarking Guideline

draft-geng-bmwg-srv6-service-guideline

BMWG, IETF 119, Brisbane

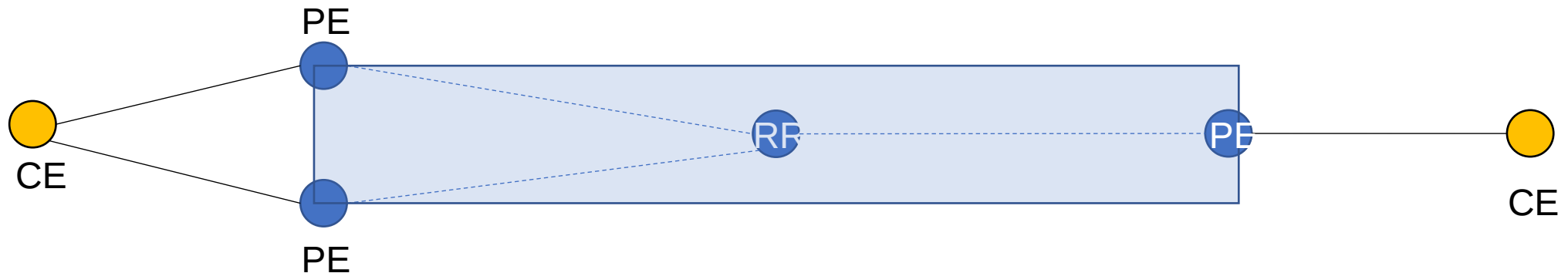
Background: Benchmarking Methodology for Segment Routing

- draft-vfv-bmwg-sr-bench-meth has defined the SRv6 behavior in data plane
- Segment Routing specific report parameters are defined, for example:
 - Number of Segments considered in the SID list.
 - Behavior (H.Encaps, etc.) and Flavor (PSP, USP, USD) used for SRv6 tests (according to [RFC8986]).



Background: Benchmarking Methodology for EVPN

- draft-ietf-bmwg-evpntest has defined EVPN capability benchmarking
- EVPN specific report parameters are defined, for example:
 - Data Plane MAC Learning
 - Control Plane MAC Learning
 - MAC Aging
 - Control and Data Plane MAC Learning
 - High Availability



Motivation: Introducing SRv6 Service Benchmarking

- Based on the existing work, we are trying to propose the benchmarking of SRv6 service capability, which means different types of services could be transported through SRv6 network.

SRv6 Best Effort Service

SRv6 Best Effort Service

Internet Service

- Global IPv4 over SRv6 network
- Global IPv6 over SRv6 network

Layer 3 Service over SRv6

- IPv4 VPN over SRv6 network
- IPv6 VPN over SRv6 network

Ethernet VPN (EVPN) over SRv6

- Layer2/Layer3 VPN over SRv6
- VPWS VPN over SRv6

SRv6 Traffic Engineering Service

SRv6 Policy without

Compression

Internet Service

- Global IPv4 over SRv6 network
- Global IPv6 over SRv6 network

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CE

PE

SRv6 Network

PE

CE

Proposal: Take “SRv6 Best Effort Service” Test Case as An Example

Objective: Test SRv6 Best Effort Service capability

Procedure:

- Build the test network according to the topology with basic IGP/BGP configuration ready.
- Transport global IPv4 over SRv6 network, and there is expected result 1.
- Transport global IPv6 over SRv6 network, and there is expected result 2.
- Deploy IPv4 L3VPN over SRv6-BE path, the tester generates traffic, and there is expected result 3.
- Deploy IPv4 L3VPN over SRv6-BE path, the tester generates traffic, and there is expected result 4.
- Deploy EVPNv4 over SRv6-BE path, the tester generates traffic, and there is expected result 5.
- Deploy EVPNv6 over SRv6-BE path, the tester generates traffic, and there is expected result 6.
- Deploy EVPN VPWS over SRv6-BE path, the tester generates traffic, and there is expected result 7.

Expected Results:

- The device supports global IPv4 over SRv6 network, and the traffic is forwarded normally without packet loss.
- The device supports global IPv6 over SRv6 network, and the traffic is forwarded normally without packet loss.
- The device supports IPv4 L3VPN over SRv6-BE path, and the traffic is forwarded normally without packet loss.
- The device supports IPv6 L3VPN over SRv6-BE path, and the traffic is forwarded normally without packet loss.
- The device supports EVPNv4 over SRv6-BE path, and the traffic is forwarded normally without packet loss.
- The device supports EVPNv6 over SRv6-BE path, and the traffic is forwarded normally without packet loss.
- The device supports EVPN VPWS over SRv6-BE path, and the traffic is forwarded normally without packet loss.

Proposal: Other SRv6 Service related Features are Included

- SRv6 OAM □ SRv6 Reliability □ SRv6 Service Performance are also covered

SRv6 OAM

- SRv6 SID PING
- SRv6 SID Trace

SRv6 Reliability

- SRv6 BE Reliability
 - Link Failure Protection
 - Node Failure Protection
 - Egress Node Failure Protection
- SRv6 TE Reliability
 - Link Failure
 - Node Failure
 - Egress Node Failure Protection

SRv6 Service Performance

- SRv6 SRH Layer Number
- SRv6 Forwarding Performance
- SRv6 Tunnel Number

Next Steps

- We would like to seek feedback and comments from WG
- Comments and collaborations are welcome.

Thanks