PCE-initiated IP Tunnel

Xia Chen/Hang Shi/Zhenbin Li
draft-chen-pce-pce-initiated-ip-tunnel-02
#IETF 115
Motivation

• SD-WAN use IP Tunnel to traverse WAN
• PCE can be used to initiate IP tunnel
Overview

• Capability advertisement
  • PCE Initiated Tunnel Capability for specific tunnel types.
• Set up, maintain and tear down PCE-initiated IP Tunnels
• Not include tunnel state synchronization, PCC local policy and timeout process, the session failure process, etc.
PCEP Open Object

• To negotiate the PCE Initiated Tunnel Capability for tunnel types according to PCE-INITIATE-TUNNEL-CAPABILITY TLV

• Each bit indicates one kind of tunnel. Each bit from right to left successively represents the value of tunnel type which is 0 to 31
PCEP Messages

• PCTunnelInitiate Message
  • To instantiate or delete a tunnel, a PCE sends a PCTunnelInitiate message to a PCC.

• PCTunnelUpd Message
  • To modify the parameters of a tunnel, a PCE sends a PCTunnelUpd message to a PCC.

• PCTunnelRpt Message
  • To report the state of a tunnel, a PCC sends a PCTunnelRpt message to a PCE.

• Message comprise:
  • SRP Object: used to correlate PCTunnelInitiate and PCTunnelRpt or PCErr message, ‘R’ Flag means instantiation or deletion
  • TUNNEL Object
Tunnel Object

• Tunnel Identifier TLV
  • contains the source address, destination address, tunnel type, tunnel ID.
• Tunnel Name TLV
• Tunnel Parameter TLV
  • specifies information needed to construct the encapsulation header when sending packets through that tunnel.
• Tunnel Attribute TLV
  • specifies some of the information of the tunnel such as metric or TE metric which are carried in sub-TLVs.
Next step

- Which type of tunnel to support
  - FCFS registry, pick the most used
- Tunnel state synchronization?