Network to Cloud DC (Net2Cloud) Update
IETF 104

draft-ietf-net2cloud-problem-statement-00
draft-ietf-net2cloud-gap-analysis-01

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Update since IETF 103

Homogeneous SD-WAN:

Non sensitive data that don’t need encryption

SD-WAN over Hybrid Networks

Newly added for End Point Property Distribution

- to advertise the identifiers of ports that support establishing SD-WAN overlay tunnels to other peers,
- to advertise ports private addresses (or dynamically assigned IP addresses),
- to advertise its supported IPsec capability, such as the supported encryption algorithms,
- etc.
Tunnel Encap Gap:
How to advertise Tunnels not Yet associated with Client Routes?

- Using Loopback address as the UPDATE?
- Using the WAN port address in the UPDATE?
- When a route 20.1/16 can be egressed by all WAN ports, include multiple Remote-end-point subTLVs for the 20.1/16?
- If 20.2/16 can also egress A1/A2, the Port-TLV for A1/A2 are repeated in each of the route update?
WAN port property dynamic changes and propagations?

- A1/A2/A3/B1/B2/B3 WAN ports can be from different network providers.
- Each PE advertise its WAN ports to Controller, which then propagate the advertisements to authorized peers.
- PEs Loopback addresses & routes attached are not visible to some ISPs.
Three different Tiers of SD-WAN Control Plane

1. End Node Registration & Initial setup: SD-WAN node’s private address and WAN Ports/Addresses registration to the SD-WAN Controller.

2. Controller facilitated IPsec SA association establishment among WAN Ports

3. Attached routes distribution using BGP RR:
   - EVPN
   - IPVPN
   - Or something else
BGP Does Not Consider Performance

Cannot configure BGP to adapt to performance in real time
Not possible to express with BGP policy terms
Next Step

Please follow up the discussion in BESS, IDR, IPsecme, I2NSF and Opsawg for the related work:

- **Routing Area:**
  - IDR WG:
    - draft-dunbar-idr-sdwan-port-safi-00
  - BESS WG:
    - draft-sajassi-bess-secure-evpn-01
    - draft-rosen-bess-secure-l3vpn-00
    - draft-dunbar-bgp-sdwan-usage-00 (to be uploaded)

- **Security Area**
  - I2NSF WG:
    - SDN controller managed IPsec keys: draft-ietf-i2nsf-sdn-ipsec-flow-protection-03
  - IPsecme WG:
    - draft-carrel-ipsecme-controller-ike-01

- **Ops Area:**
  - Opsawg: