

draft-boutros-bess-evpn-vpws-service-edge-gateway-02

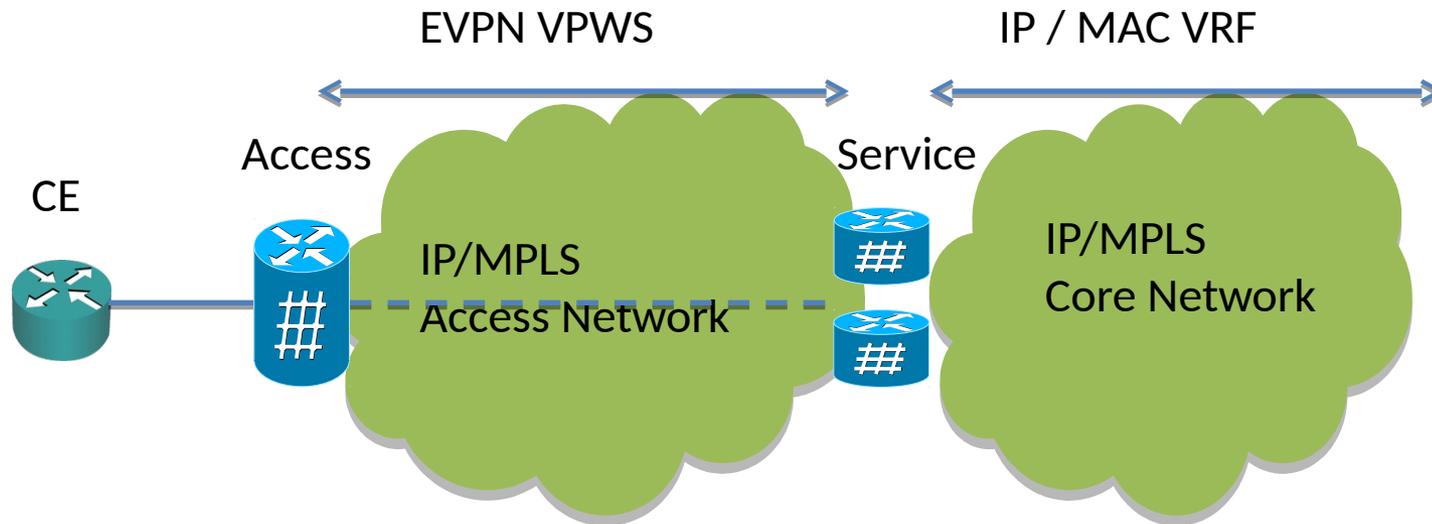
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What is this about?

Describes how a **service node** can **dynamically** terminate EVPN virtual private wire transport service (VPWS) from access nodes and offer **Layer 2, Layer 3 and Ethernet VPN overlay services** to Customer edge devices connected to the access nodes.

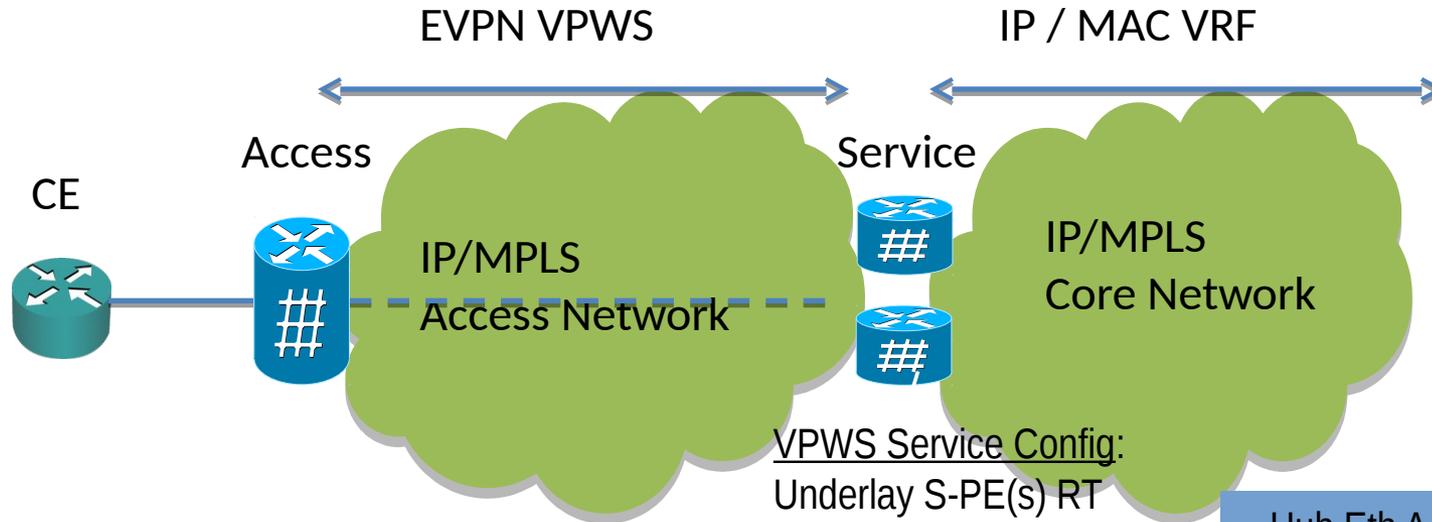
EVPN-VPWS Service Edge Gateway



On an **access node**, an **operator** specifies the **L2, L3 or Ethernet VPN overlay service** needed by the customer edge device connected to the access node that will be transported over the EVPN- VPWS service.

Service nodes using EVPN advertise to other service nodes the **L2, L3 and Ethernet VPN overlay services** it can offer for the terminated EVPN VPWS transport service.

(1) Auto-Discovery of Service PEs



Each S-PE advertises Eth A-D per EVI route with wildcard Eth-tag but with a L2VPN RT that is configured only among the service PE nodes.

VPWS Service Config:
 Underlay S-PE(s) RT
 AC ID = Wildcard
 Overlay Services
 L2 or L3 RT

Dynamically distribute
 A route per overlay service
 To other service Nodes.

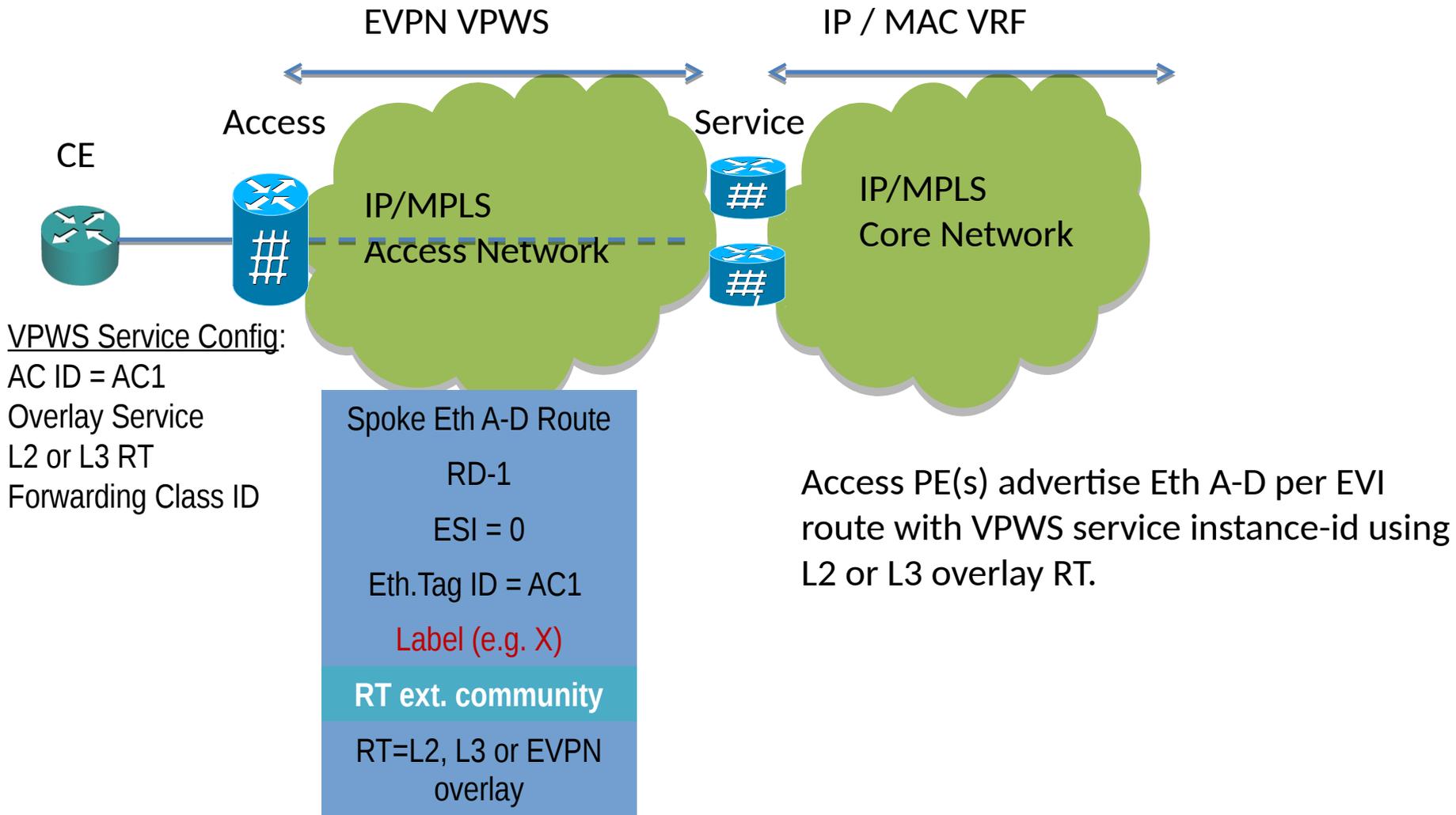
Core Service Offering:
 L2, L3 or EVPN Overlay

Hub Eth A-D Route
 RD-0
 ESI = 0
 Eth.Tag ID = All'1s
 (wildcard)
Label (0)

RT ext. community

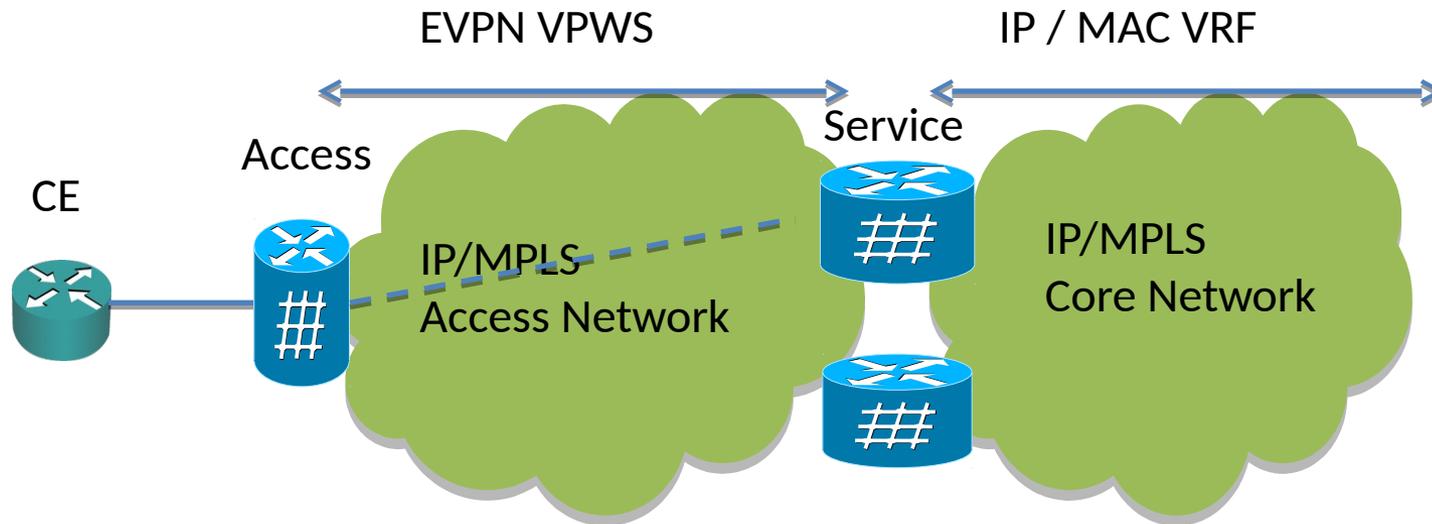
RT-a = [SPE(s) RT]
 RT=L2, L3 or EVPN
 overlay

(2) Provisioning the Access PE with the overlay service



(3) Service-PE DF Election

To pick both the active/backup service PE(s)



Service nodes on that underlay EVI are performing DF election to determine the service node terminating the EVPN VPWS service and offer L2, L3 or EVPN overlay service

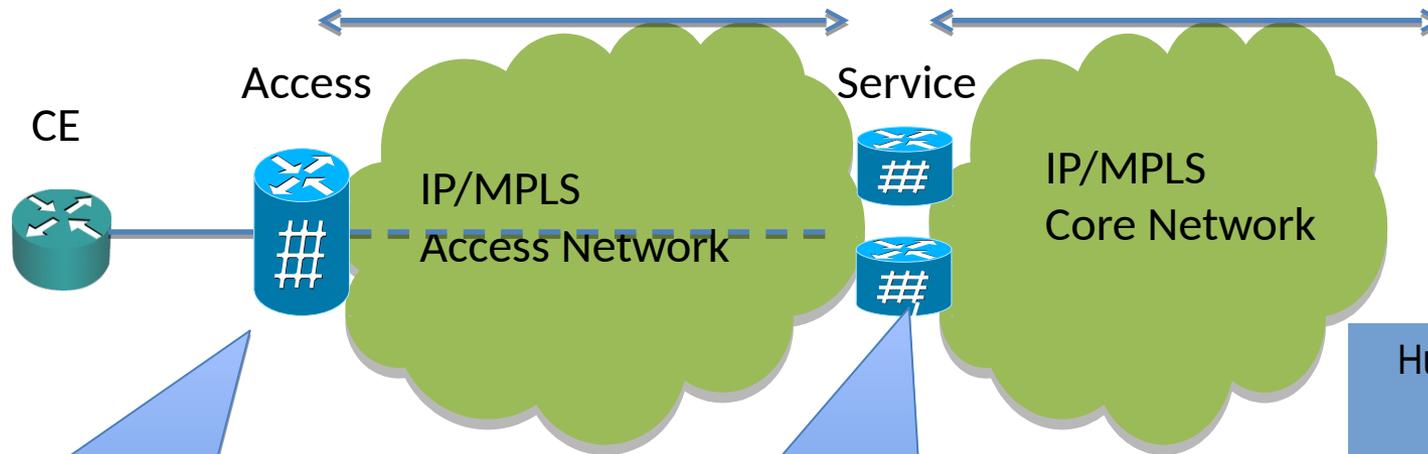
HWR Algorithm as described in [[draft-mohanty-l2vpn-evpn-df-election](#)]:

Function of weight
[Service Node IP address, AC-ID]

Based on list of
Service Node IP addresses

(4) Service PE active/backup advertising the specific VPWS Service to the A-PE

Single-sided signaling mechanism is used.



When Access PE receives this Eth A-D route per EVI from the Service node, it binds the two side of EVCs together and it now knows what primary/backup service nodes to forward the traffic to

The Service PE node that is a DF for a given VPWS service ID responds with an Eth A-D per EVI route, setting the VPWS service instance ID = the A-PE service instance ID and downstream assigned MPLS label to be used by Access PE.

Hub Eth A-D Route

RD-2

ESI = 0

Eth.Tag ID = AC1

Label (e.g. Y)

RT ext. community

RT=L2, L3 or EVPN overlay

Benefits

- An easy and **scalable mechanism** for **tunneling** (head-end) customer traffic **into** a common **IP/MPLS network** infrastructure
- **Reduces CAPEX** in the access or aggregation network and service PE by **removing configuration operation** on **service nodes**.
- **Auto-discovery** of access nodes by service nodes
- **Auto-provision** of head-end functionality and features such as QOS access lists (ACL), tunnel preference, bandwidth, L3VPN on a per head-end interface basis

Comments?

Next steps

- Seeking more comments.

Thank you