

draft-boutros-bess-evpn-vpws-service-edge-gateway-01

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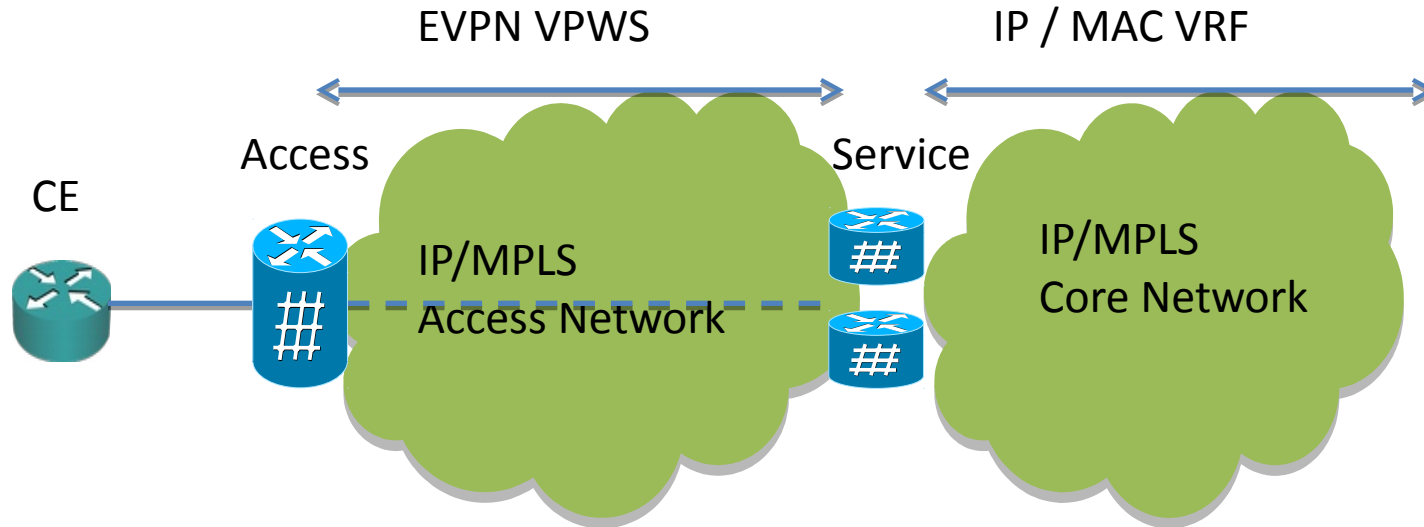
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What is this about?

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.

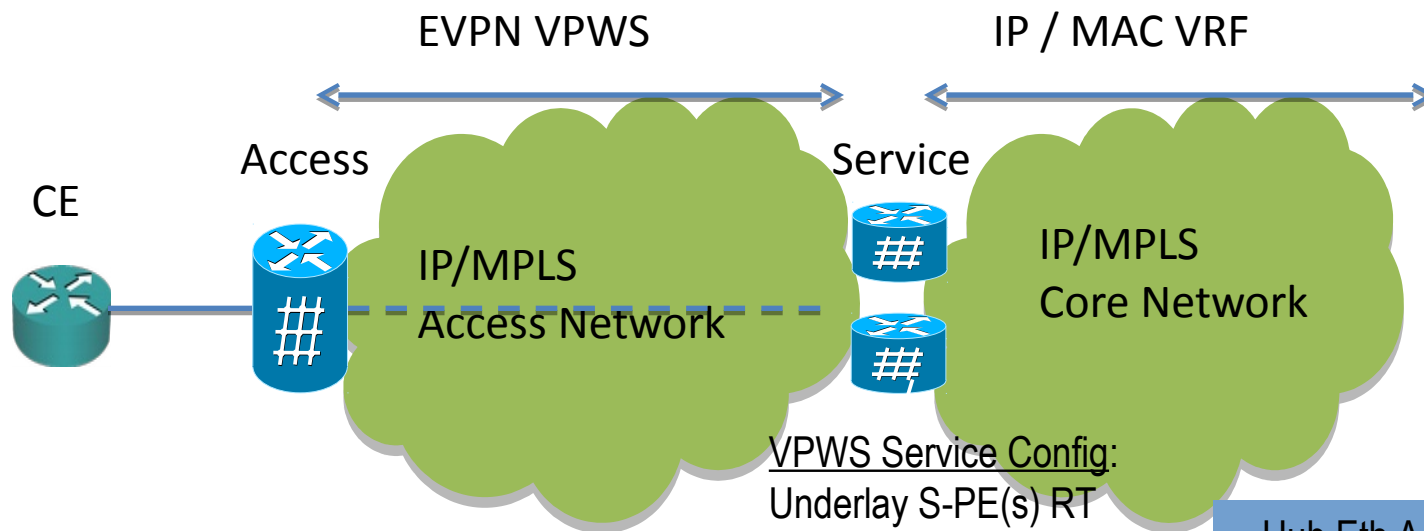
EVPN-VPWS Service Edge Gateway



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)

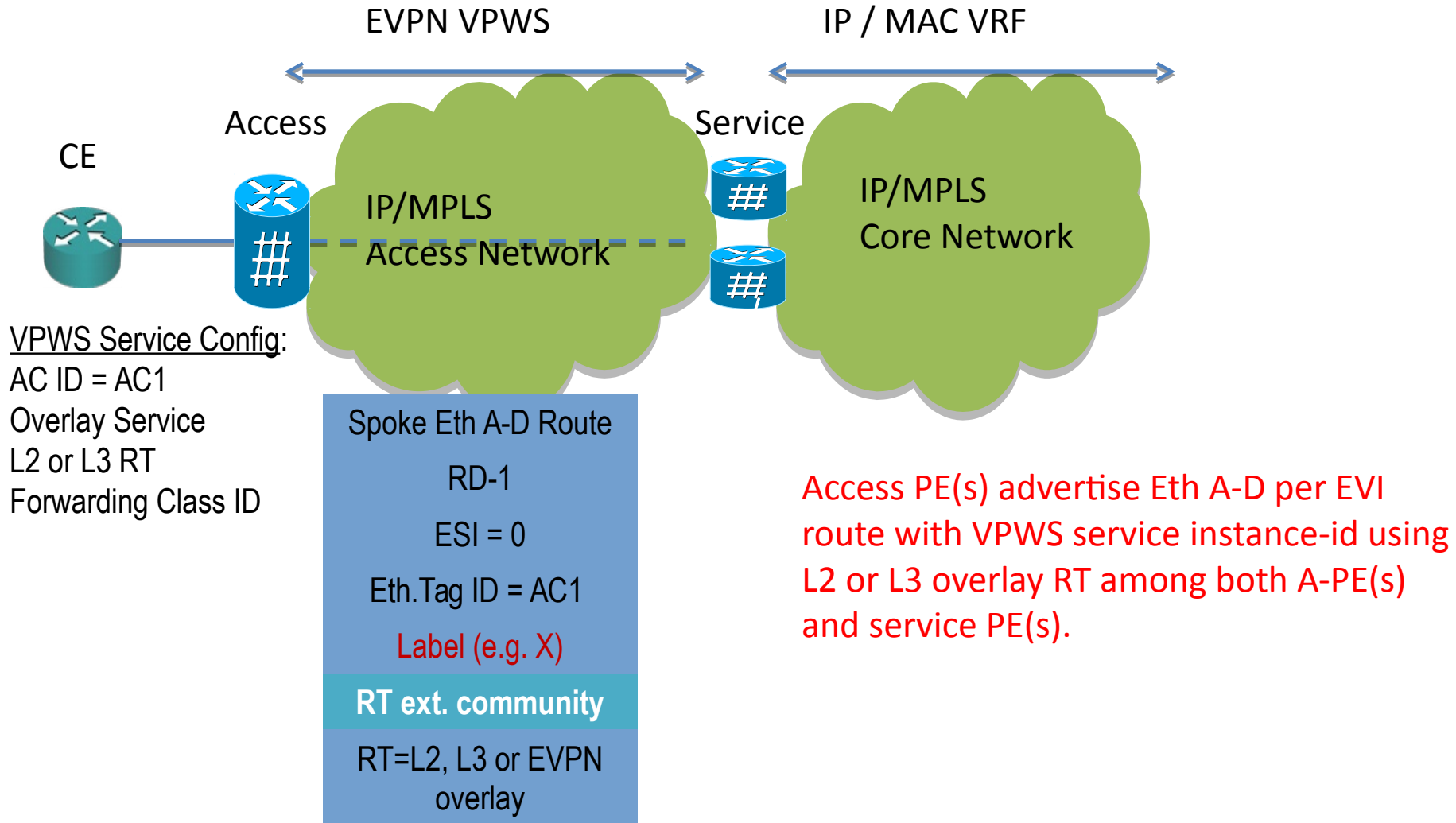
Label (0)

RT ext. community

RT-a = [SPE(s) RT]

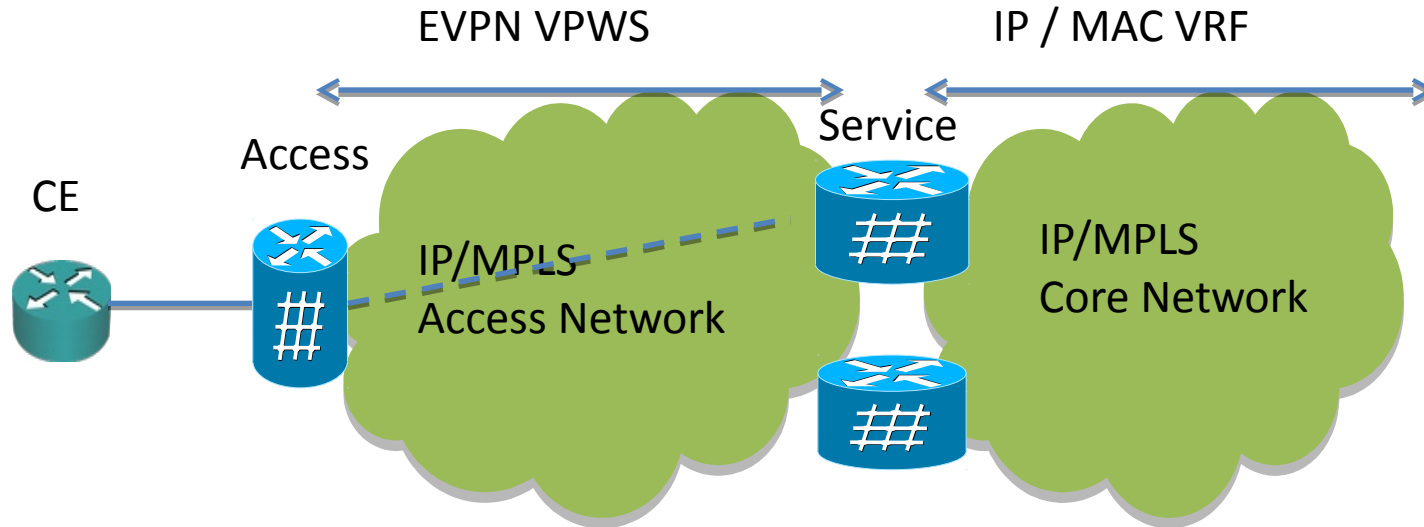
RT=L2, L3 or EVPN
overlay

(2) Provisioning the Access PE with the underlay and overlay service



(3) Service-PE DF Election

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



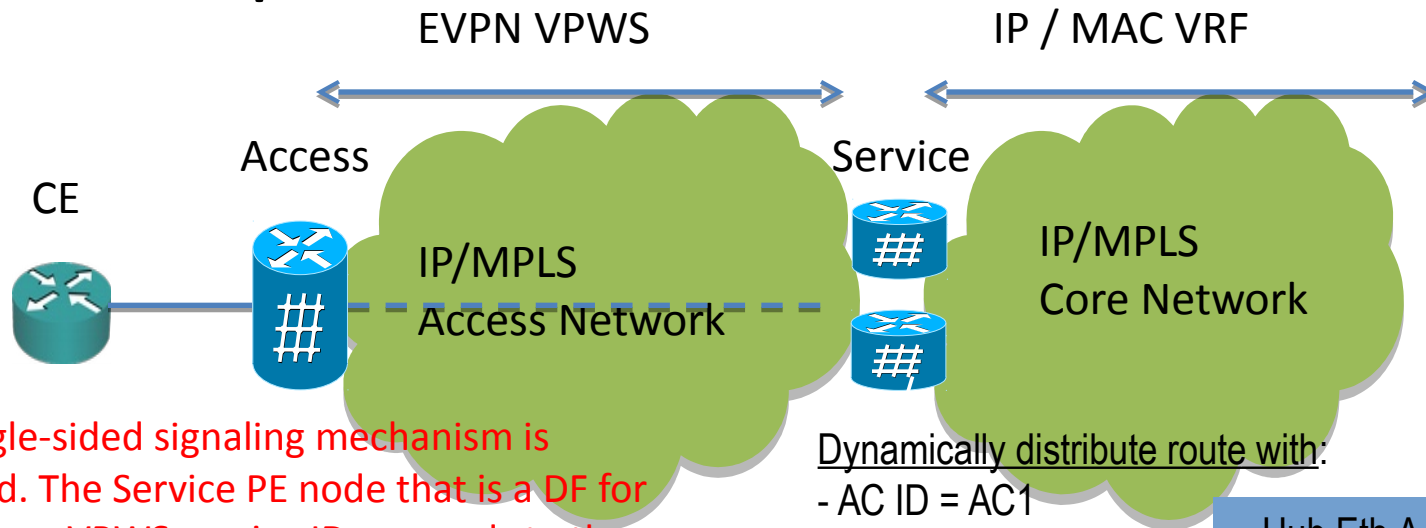
Service nodes on that underlay EVI are performing DF election to determine the service node terminating the EVPN VPWS service and offer L2, L3 or EVPN overlay service

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. The Service PE node that is a DF for a given VPWS service ID responds to the Eth A-D route per EVI from the Access PE by sending its own Eth A-D per EVI route by setting the same VPWS service instance ID and downstream assigned MPLS label to be used by Access PE.

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

Dynamically distribute route with:

- AC ID = AC1
- Overlay Service L2 or L3 RT
- Forwarding Class ID
- Active/Standby flag

Core Service Offering:
L2, L3 or EVPN Overlay

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