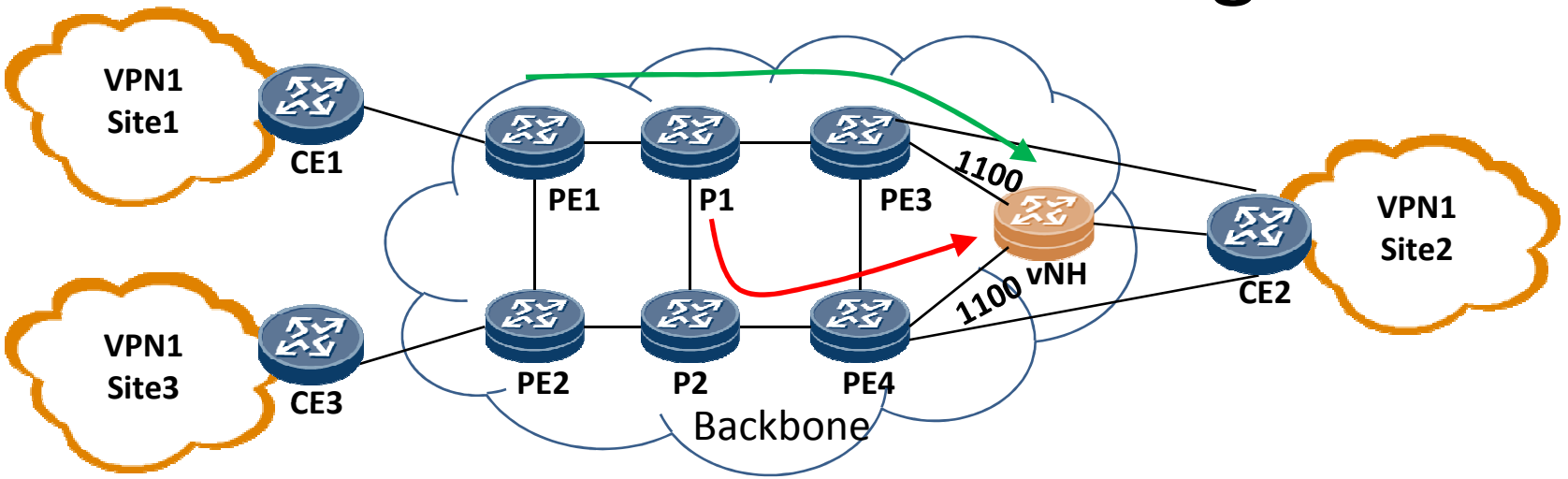
ICCP Application TLVs for VPN Route Label Sharing

Mingui Zhang, Peng Zhou
Huawei

A brief Intro to the application: VPN route label sharing

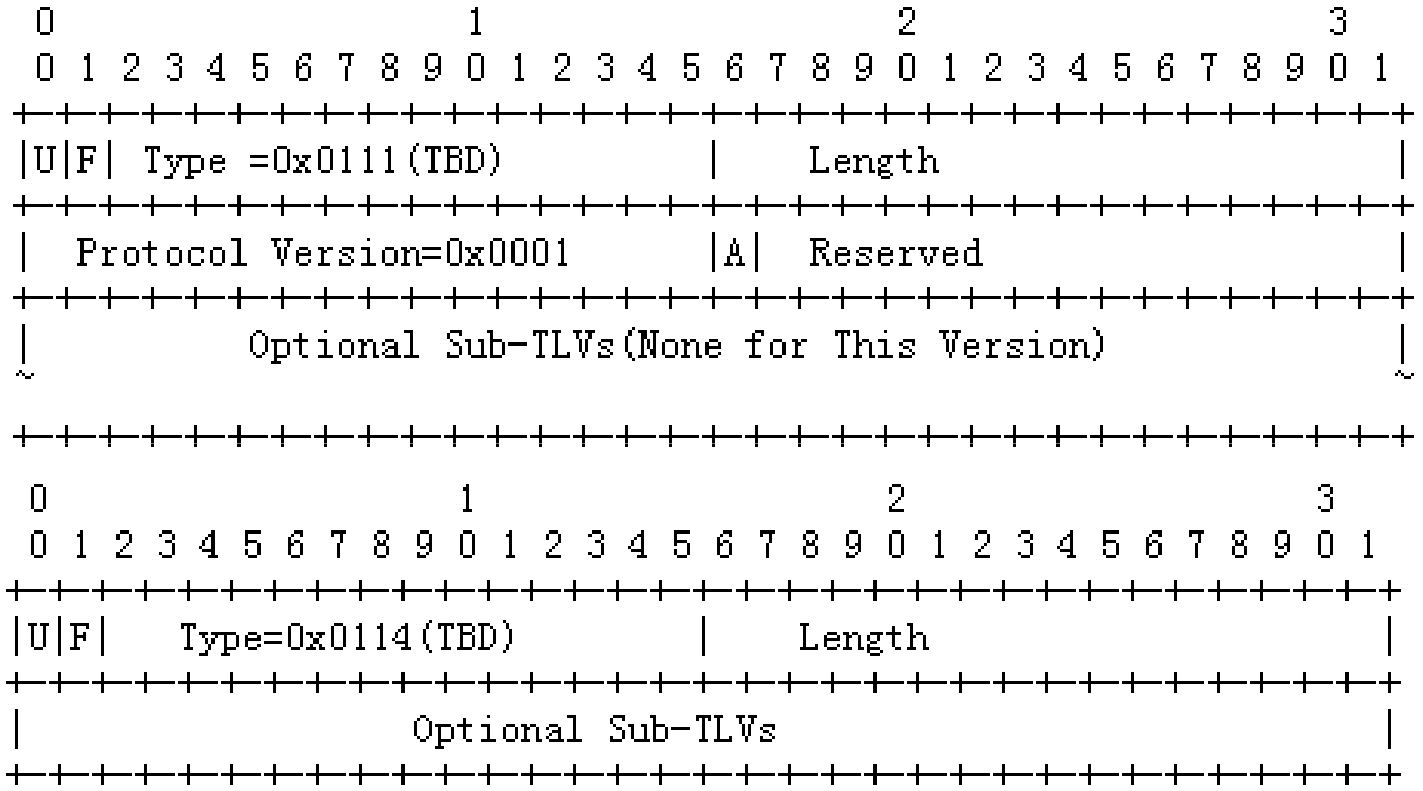


- Ingress PEs: PE1, PE2
- Egress PEs: PE3, PE4, they share the label 1100 for VRFs that CE2 is associated with.
- vNH: the virtual BGP Next Hop
- Primary tunnel: PE1->P1->PE3-vNH
- When PE3 fails, backup tunnel P1->P2->PE4->vNH can be used.

What to sync?

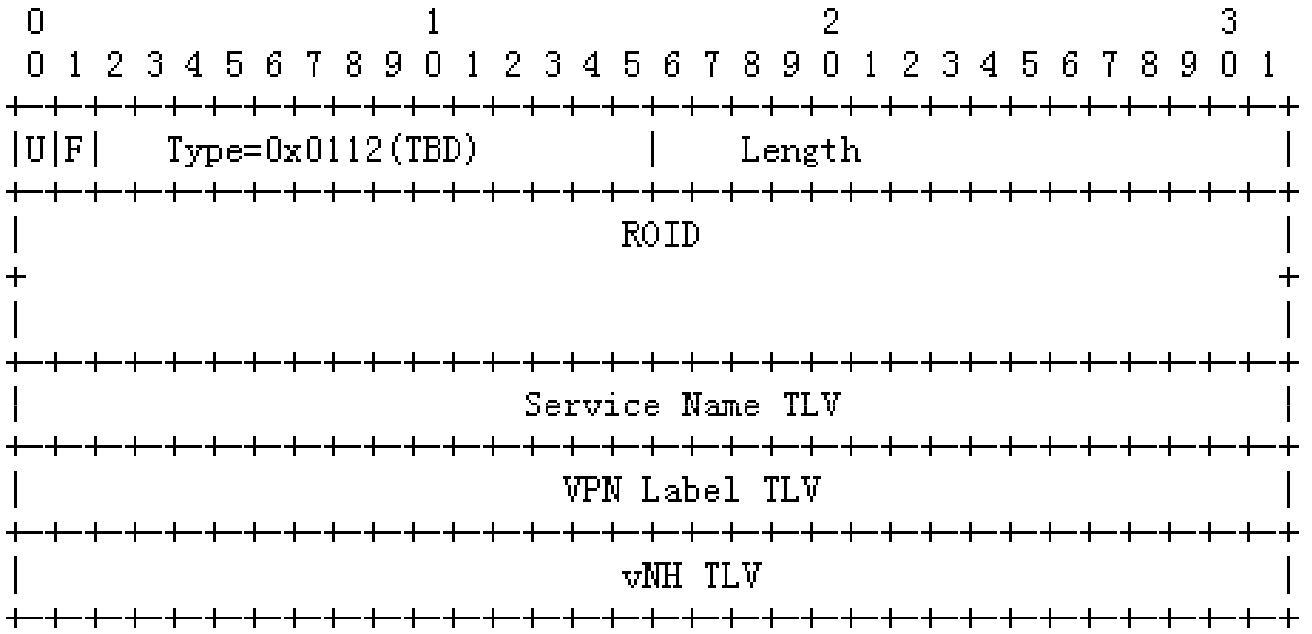
- Egress PEs in the same Redundant Group utilize the ICCP connection to negotiate the "VPN route label" and the "BGP next hop” for each VPN.

Label sharing connect & disconnect



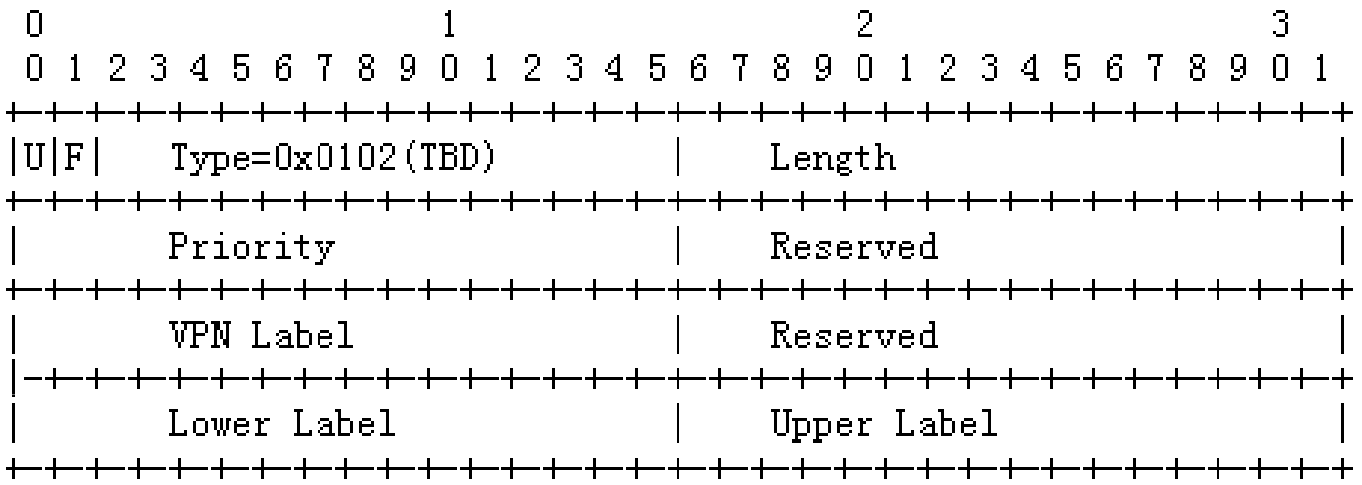
- The connection for the application is set-up/destroyed using these TLVs.

Label sharing Application Data TLVs



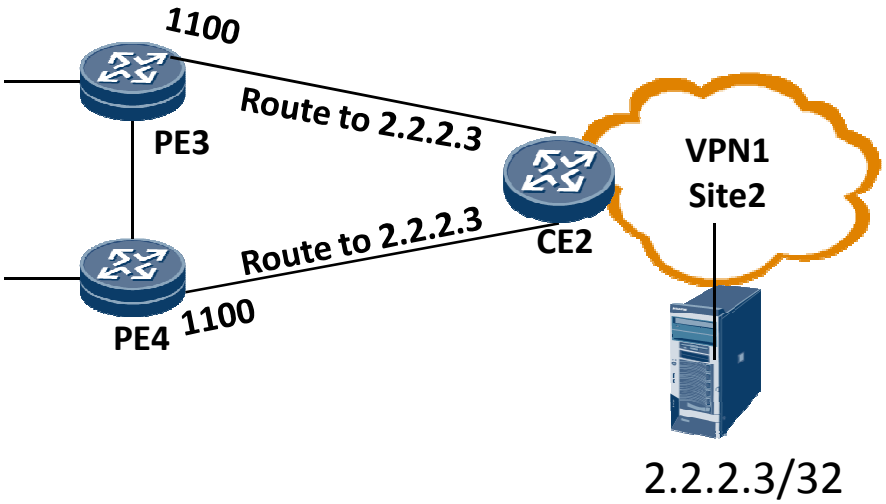
- There are three TLVs to be included in the Application Data TLVs

Sharing the label



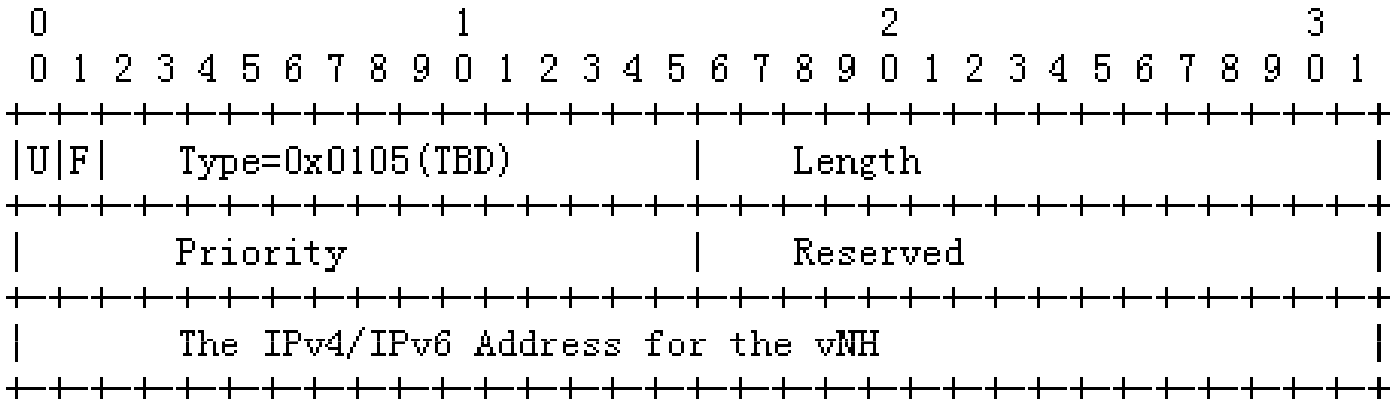
- The “VPN Label TLV” is utilized to deliver the VPN route label to be shared among the egress PEs.
- The VPN Label announced by the PE with the highest priority will be used by all PEs in the RG.

Share the label for routes from VPN1



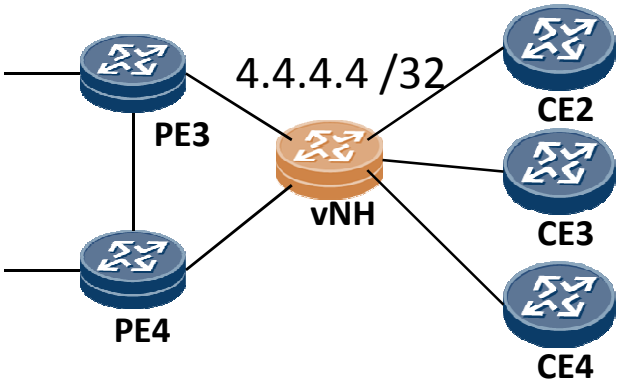
- PEs in an RG use the same VPN route label for the routes of one VPN.

Sharing the vNH IP address



- The IP Address for the vNH is also shared by the egress PEs.
- The PE with the highest priority determines the IP address to be used.
- All egress PEs use this IP address as the BGP next hop when they propagate VPN routes.

One vNH for a set of CEs



- Egress PEs in an RG create a vNH for the set of CEs connected to them.

Next steps

- Get direction from the WG.
- Comments are welcome.

Thanks!