

Huawei eNSP Multi-Site Company Topology .

1. Topology Overview

The network consists of:

- Headquarters (HQ)
- Branch 1 (BR1)
- Branch 2 (BR2)
- Data Center (DC)
- Provider core with PE (Provider Edge) and P (Provider Core) routers
- Internet cloud for IPsec backup tunnels

Primary connectivity is provided via MPLS L3VPN across the provider core. Backup connectivity is established via IPsec tunnels over the Internet, terminating at HQ.

2. Devices Used

- Provider side:
 - 2 × P (Core) routers
 - 3 × PE (Provider Edge) routers
- Customer side:
 - 4 × AR routers (CE-HQ, CE-BR1, CE-BR2, CE-DC)
- Switches at each site for LAN connectivity (optional)
- Internet cloud (or simulated AR router) for IPsec backup

3. Addressing Plan

- Site LANs:
 - HQ: 10.10.0.0/16
 - BR1: 10.11.0.0/16
 - BR2: 10.12.0.0/16
 - DC: 10.20.0.0/16
- CE-PE links: 10.100.X.Y/30
- Provider loopbacks: 10.255.P.ID/32
- VRF: CUST_A
- CE-PE Routing: eBGP per VRF or OSPF

4. Building the Topology in eNSP

Step 1. Drag this Devices into ensp :

- P1, P2 (Core), PE1/PE2/PE3 (Edges)
- CE-HQ, CE-BR1, CE-BR2, CE-DC
- Internet cloud node

Step 2. Connect Devices:

- **PE1 to P1**

PE3 to P1

PE2 to P2

PE3 to P2

P1 to P2

CE-HQ to PE1

CE-BR1 to PE3

, CE-BR2 to PE2

CE-DC to PE3

(CE-HQ, CE-BR1, CE-BR2, CE-DC) to Internet node

star shape method

Step 3. Provider Core Configuration:

- Configure loopbacks
- Run IS-IS or OSPF between P and PE
- Enable MPLS on core links
- Configure MP-BGP between PEs
- Create VRF CUST_A on PE1, PE2, PE3

Step 4. Customer Edge Configuration:

- Configure CE-PE eBGP per VRF (or OSPF)
- Advertise site LANs into VRF

Step 5. Backup IPsec Configuration:

- Configure site-to-site IPsec tunnels from BR1, BR2, DC to HQ
- Use floating static routes or IP SLA tracking for failover

5. Notes and Variants

This design uses MPLS L3VPN with IPsec backup. It can be simplified to use IPsec-only for site interconnection, or extended to emulate an SD-WAN solution by leveraging overlays with policy-based routing.