

TRILL Distributed Layer 3 Gateway

draft-hao-trill-irb-04

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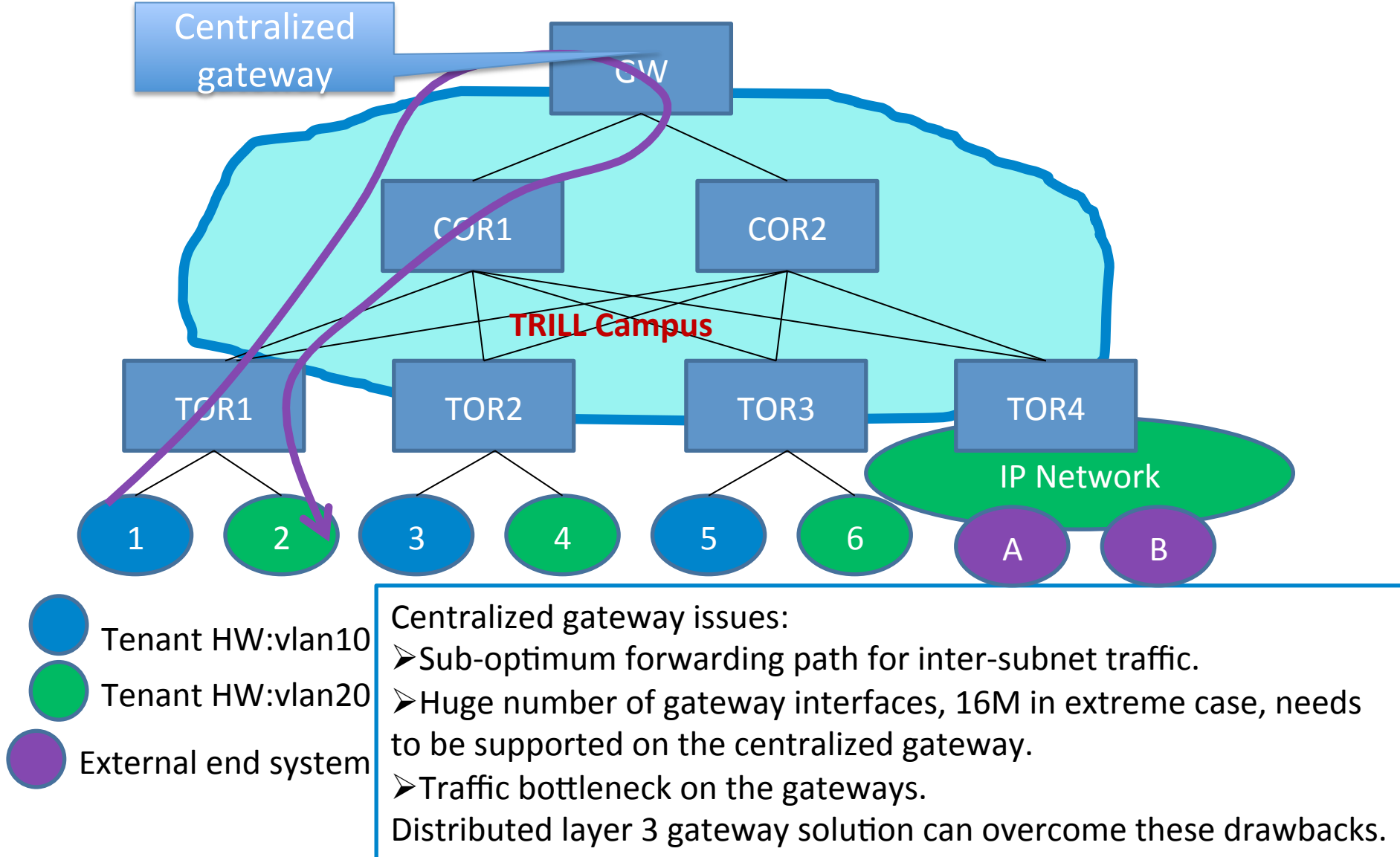
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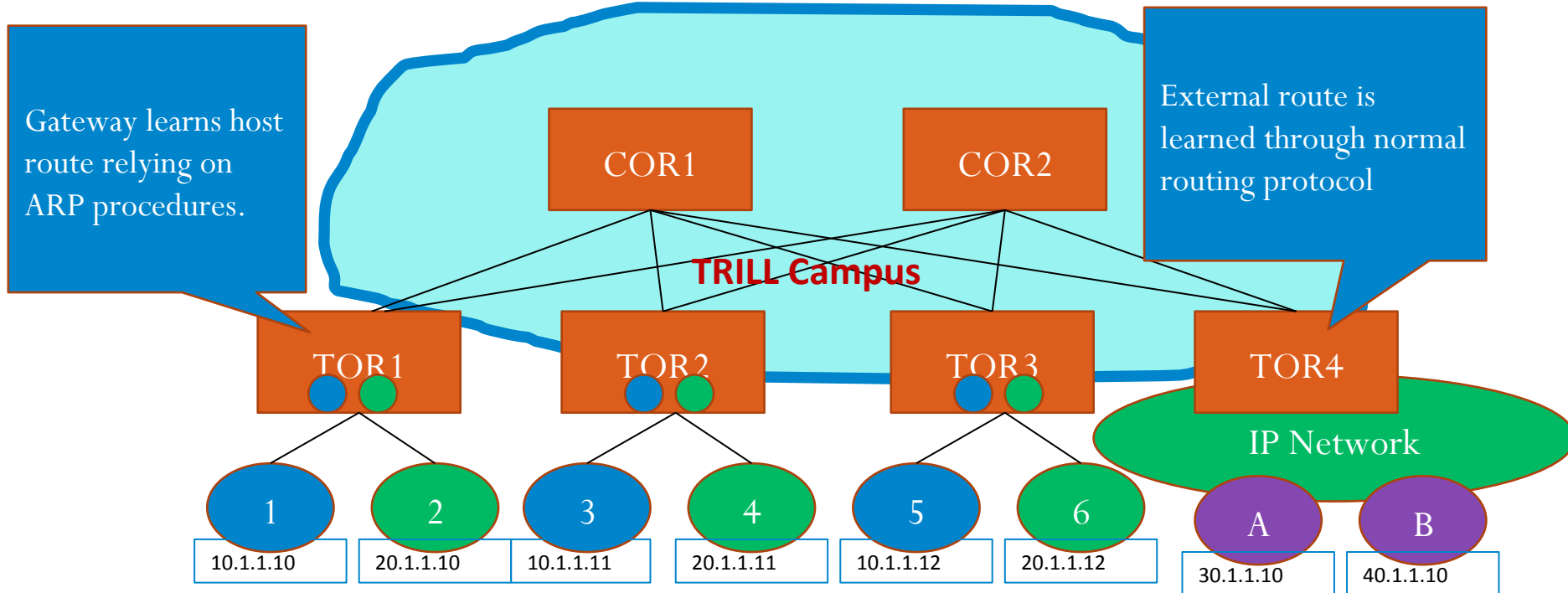
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Motivations

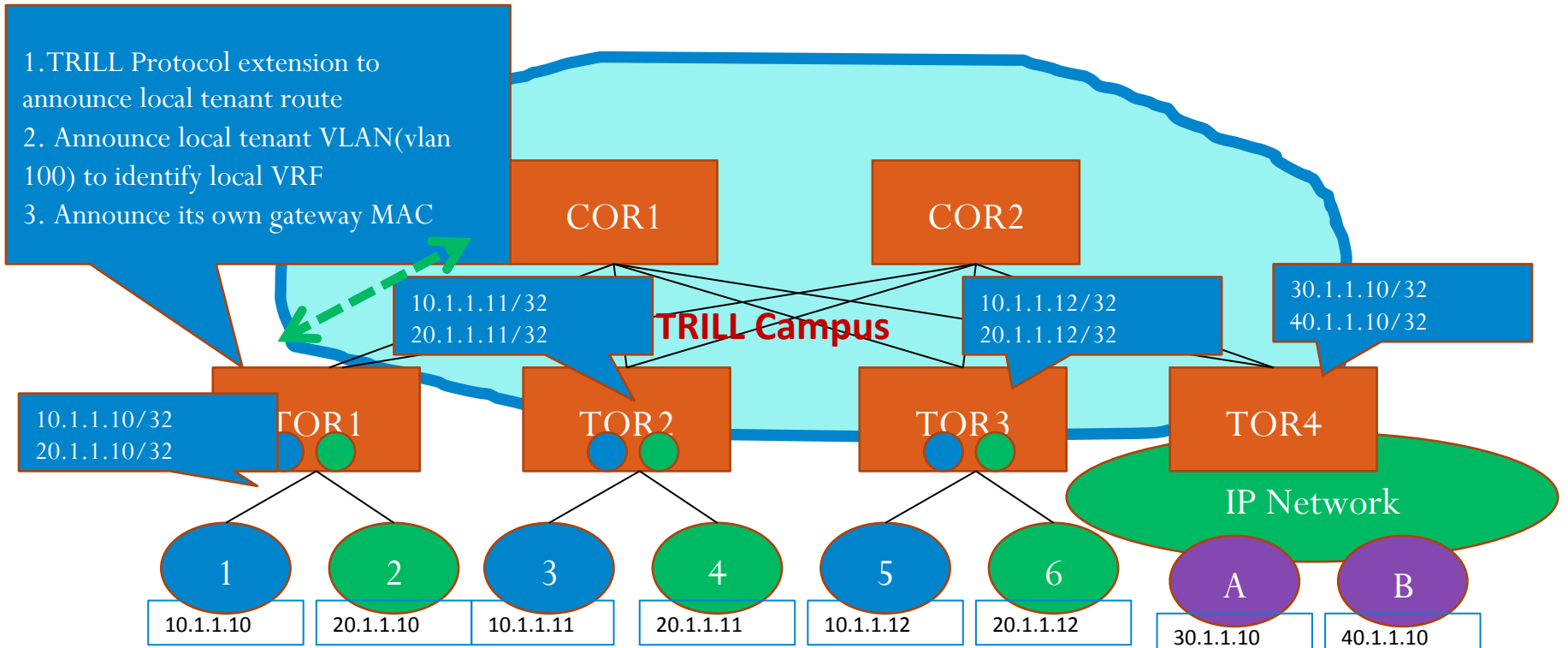


Solution Overview



1. When a VRF is created on a TOR, globally tenant ID, tenant VLAN or FGL should be specified for the VRF.
2. TOR acts as layer 3 gateway for each layer 2 connecting ES.
3. Each TOR detects local ip route and synchronize these routes to all other TORs. Tenant ID is for control plane IP prefix separation, tenant VLAN or FGL is for local VRF identification on egress RB.

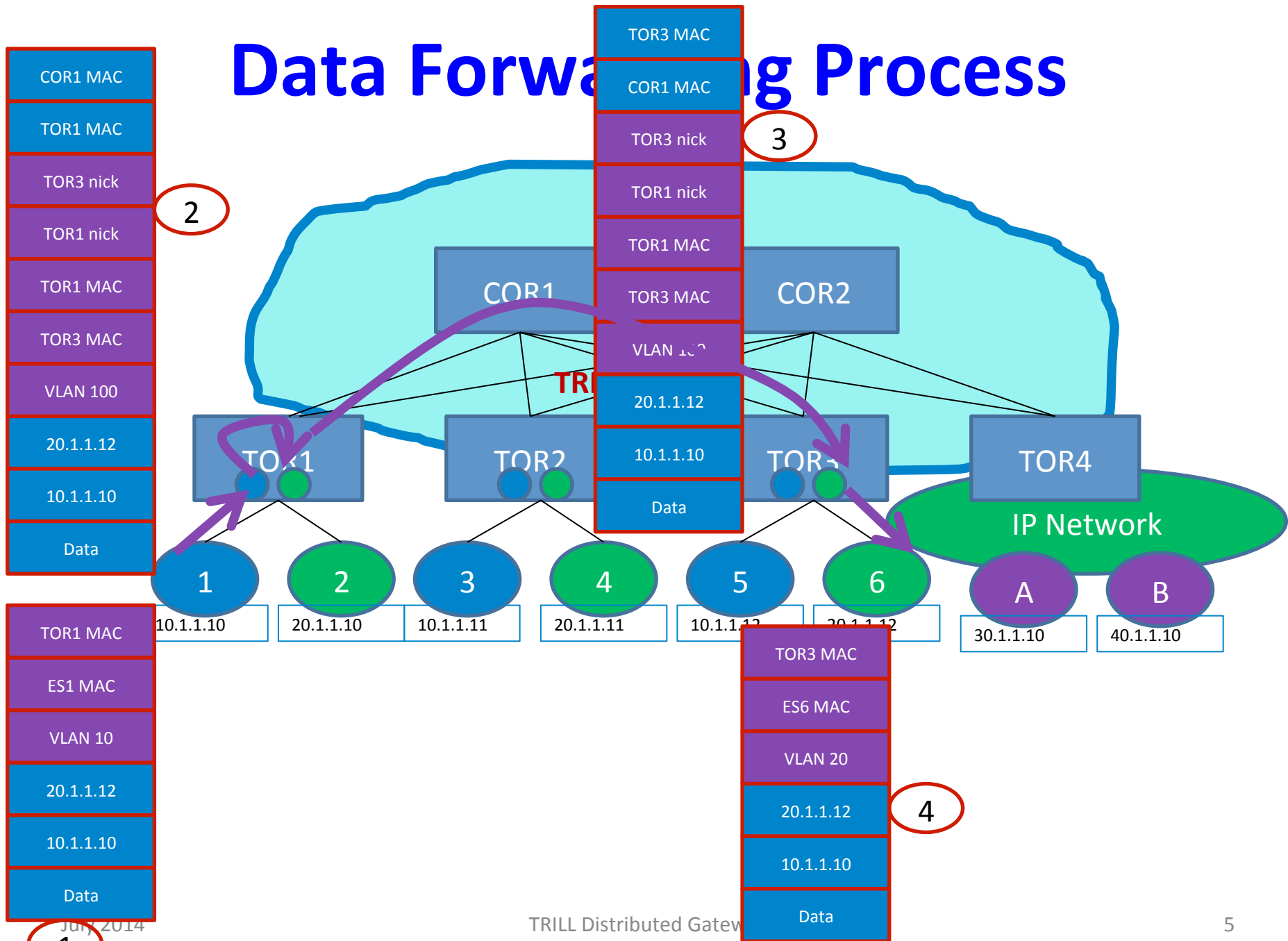
Route propagation process



1. TRILL Protocol extension to announce local tenant route
2. Announce local tenant VLAN(vlan 100) to identify local VRF
3. Announce its own gateway MAC

Prefix/Mask	Remote RB	Tenant VLAN(Inner VLAN)	Inner Dest MAC (gateway MAC)
10.1.1.11/32	Nickname2 (TOR2)	100	MAC2(TOR2)
10.1.1.12/32	Nickname3 (TOR3)	100	MAC3(TOR3)
...

Data Forwarding Process



IS-IS Protocol extension

- The tenant gateway MAC sub-TLV
- The tenant VLAN sub-TLV
- The IPv4 Prefix sub-TLV

The tenant gateway MAC sub-TLV

```
+--+--+--+--+--+--+--+--+
|  Type          | (1 byte)
+--+--+--+--+--+--+--+--+
|  Length        | (1 byte)
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Tenant gateway MAC                               | (6 bytes)
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
```

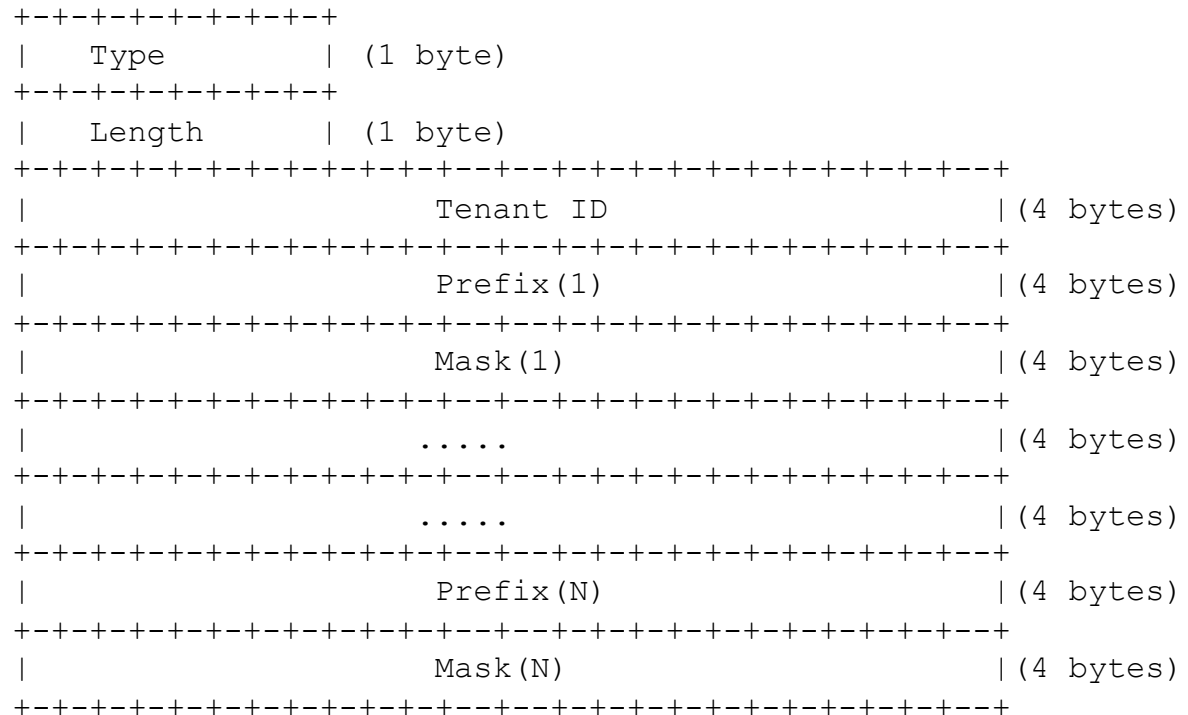
The sub-TLV is to advertise local tenant gateway MAC for inter-subnet traffic forwarding.

The tenant VLAN sub-TLV

```
+---+---+---+---+---+---+
|   Type           | (1 byte)
+---+---+---+---+---+---+
|   Length         | (1 byte)
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                                     Tenant ID                               | (4 bytes)
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|L|Resv|          Label1           | (2 bytes)
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| Resv2|          Label2           | (2 bytes)
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
```

The sub-TLV is to advertise local tenant VLAN for each tenant.

The IPv4 Prefix sub-TLV



This sub-TLV is to advertise local IPv4 prefix for each tenant.

Next Steps

- Solicit other comments and suggestions.
- Request WG adoption?