

BGP-LCU

[draft-szarecki-idr-bgp-lcu-traffic-steering-00](#)

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Presented by Jeffrey Haas for IETF 105

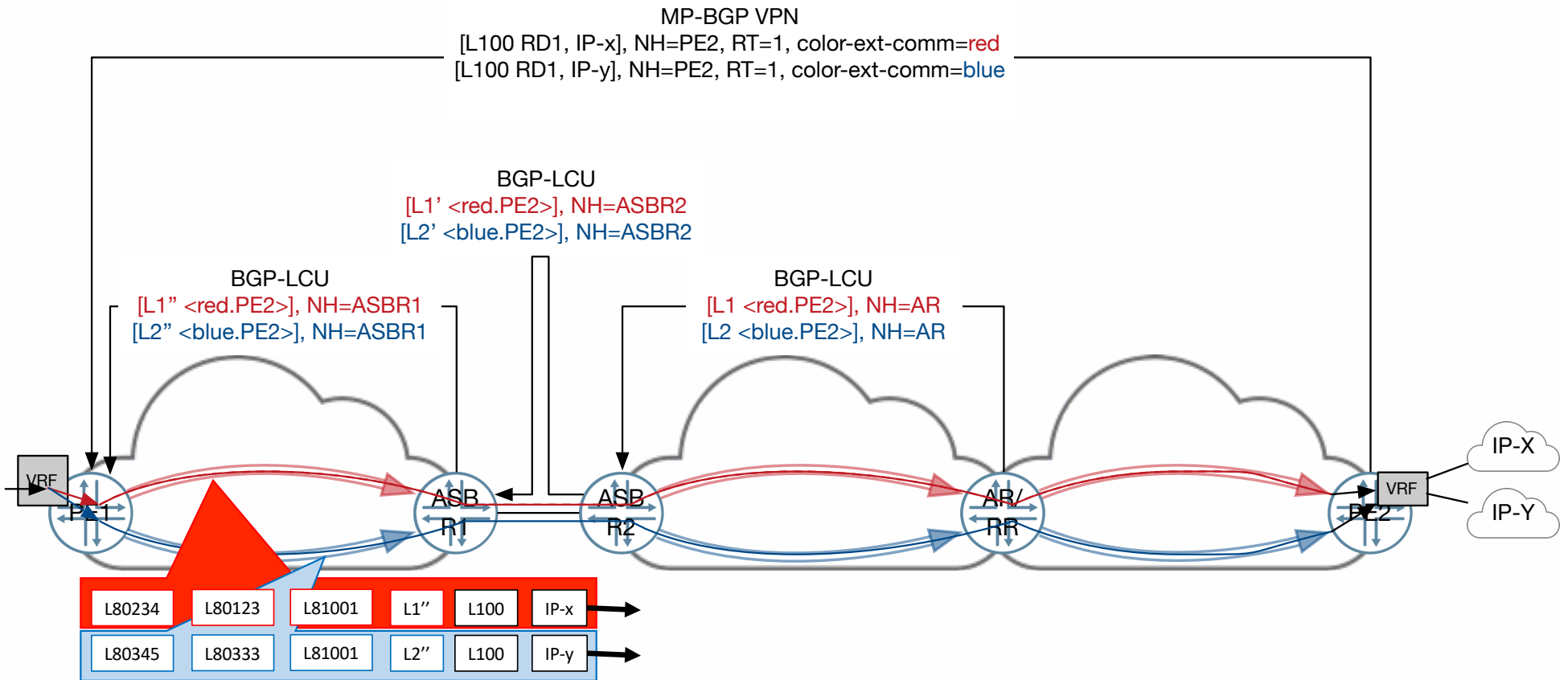
Problem Statement

Service traffic requires desired transport treatment
– End to End -
across Network Domains (Metros, AS Boundaries)

Foundation

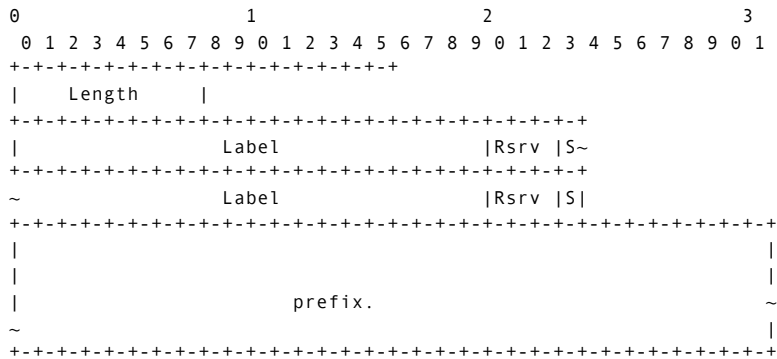
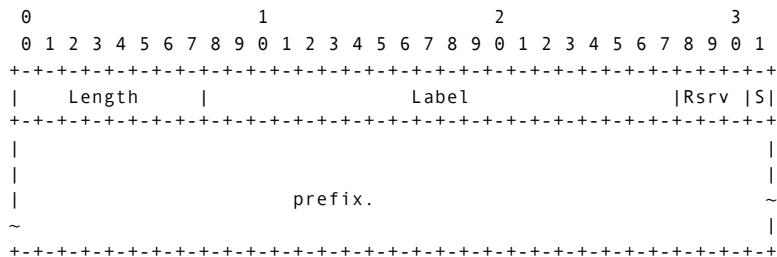
- Traffic treatment encoded as 32b integer – COLOR
 - Agreed among all domains
- Intra-domain tunnels marked w/ COLOR is satisfies desired treatment

Network slicing with BGP-LCU

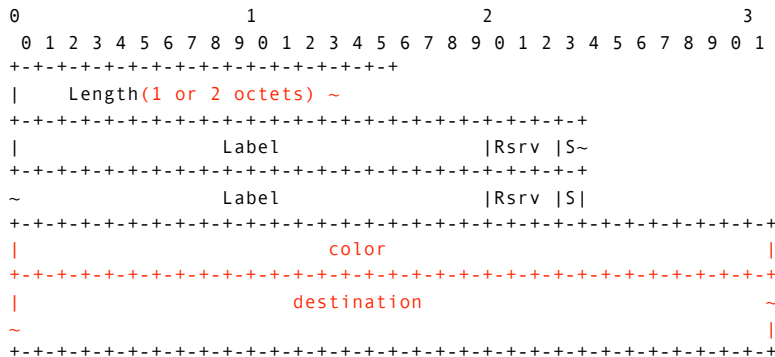


LCU NLRI

- Follows RFC8277



LCU NLRI



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- Prefix := <COLOR,DESTINATION>

- COLOR:= integer (32b)
 - DESTINATION:= IPv4/IPv6 subnet address

- Length 1 or 2 octets (511B)

- COLOR, IPv6/128 DESTINATION w/ a lot of labels (160+)

BGP-LCU attributes considerations

- Remote Next-Hop
 - resolved by tunnel of matching color
- color-extended-community
 - may be useful for some deployment
 - Recommended to carry only one
- Tunnel-encapsulation
 - SHOULD NOT be carried
- Prefix SID
 - allowed

Why not tunnel encaps encoding?

- Tunnel encaps can carry endpoint, color, and a stack!
- But the NLRI key would be one instance of an end-point without allowing for path diversity for color.
- Could use add-paths to get the diversity:
 - But add-paths is per BGP neighbor and not interdomain.

BGP-LCU characteristic

- Domain independent technology;
 - Domain can use any tunnel technology.
 - E.g. SR-TE, RSVP, SR w/ IGP FlexAlgo, MRT LDP, PIGEONS, SDN/PCE/OpenFlow, ...
 - As long as tunnels meets T-intent and can carry MPLS over
- Domain Operator in full control of it's domain.

TBD

- Non-identical and/or conflicting color codes intra- vs. inter-domain
- #COLORS x #DESTINATIONS scale
 - MPLS states on ASBRs (convergence)
 - Label space exhaustion (H/W limits)

We ask for

- Contribution