draft-ietf-mpls-entropy-label

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Entropy Labels

- Generalize what's been done in the fat PW draft
  - Define general characteristics of entropy labels
  - Define the Entropy Label Indicator label: what, why, how used, etc.
  - Define signaling and forwarding behavior for RSVP-TE and LDP tunnels and for labeled BGP
  - Define signaling for other applications: IP VPNs, VPLS, IP over MPLS, etc.

Draft Changes 00 to 01

- Removed wording that entropy label MUST be at bottom of stack (see later) (cf RFC 4182)
  - For completeness, added verbiage for CoS bits
- Changed requirement of TTL value on ELI from 1 to TTL of label above in the stack
- Tightened up EL processing on ingress, transit and egress LSRs

Draft Status

- Stable
  - So, let's mess with it :-)
- So, here are some things to think about:
  1. Does the entropy label *have* to be at the bottom of stack? (remember the explicit IPv4 label)
  2. Can there be more than one entropy label in the label stack?
  3. Should ELIs be reserved labels? Why or why not?
  4. Should entropy labels be associated with tunnels or with MPLS applications?

Carriers' Carrier VPNs

CsC VPN signaling: should this include
entropy label signaling or not?

End VPN signaling: transparent to CsC VPN PEs
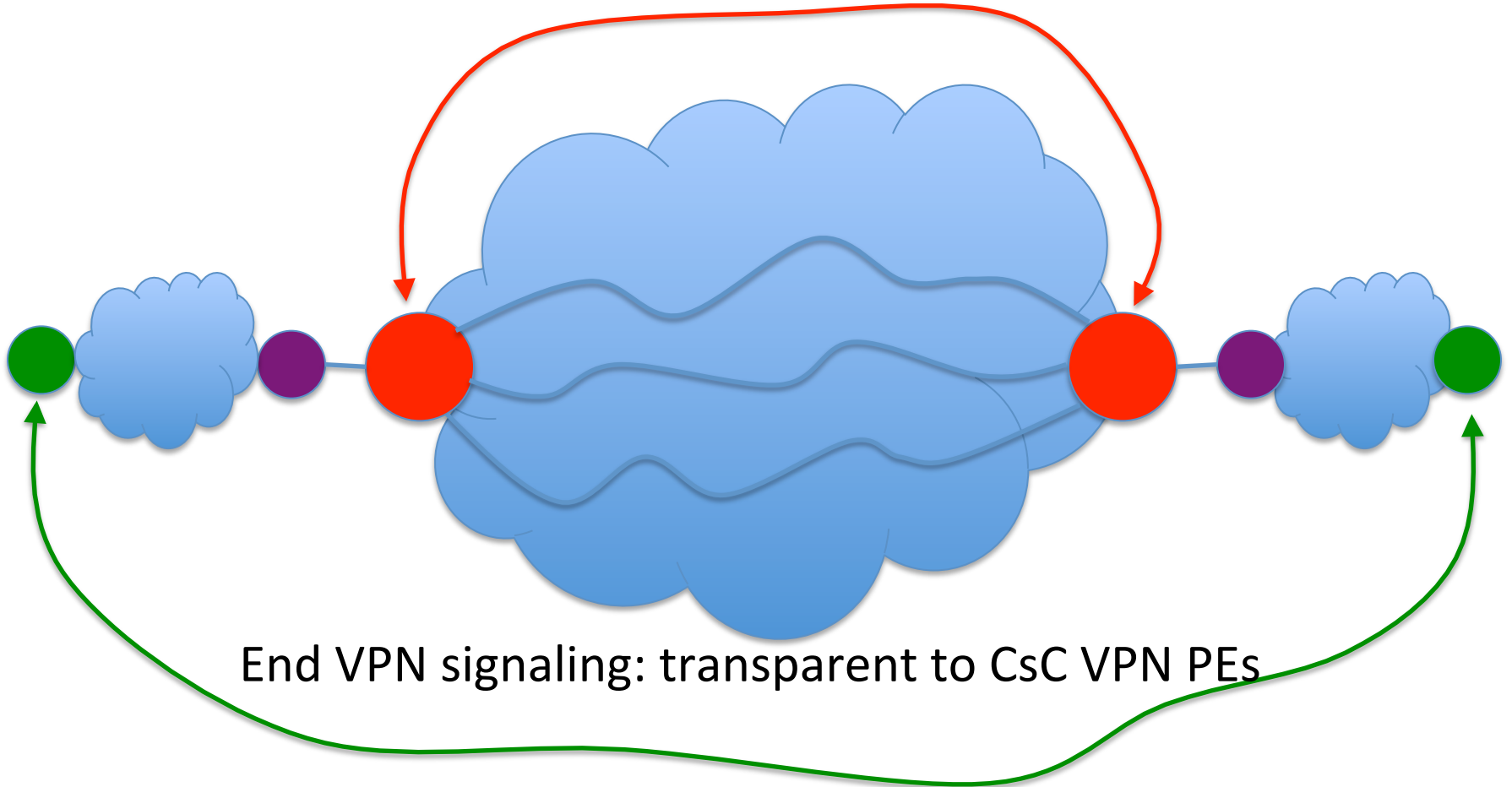
Autonomy of Carrier's Carrier

- Should the Carrier's Carrier delegate the insertion of entropy labels to its customer?
  - If customer carrier isn't interested in entropy (they don't have much ECMP), the Carrier's Carrier pays the price (in bandwidth, management, etc.)
- Should the Carrier's Carrier be aware of its customer's signaling?
- Or should the Carrier's Carrier be free to insert entropy labels if it wishes to?
  Operators: take note!

Autonomy

- If the answer is to give the Carrier's Carrier the freedom to insert entropy labels, then:
  - There may be many entropy labels in a label stack
  - This in turn means that entropy labels do not have to be at the bottom of stack
- Note that applications today that assume that entropy labels are at the bottom of stack (like fat PWs or "regular" IP VPNs) are not affected

Reserved ELI

- Having the ELI be reserved simplifies signaling, forwarding, microcode, …

- Doesn't seem to have a downside

- Should we take this to the list? To the WG chairs? To the UN?

Tunnels or Apps?

- ECMP is not usually associated with MPLS *apps* (e.g., PWs, VPNs, VPLS, ...)
    - ECMP is associated with MPLS *tunnels*
- Thus, associating entropy labels with a tunnel rather than with an app seems "more right"
    - It also means that we won't need new entropy label signaling for each new app
- The price, however, is to always carry an ELI ...
    - ... unless someone has a better idea