Scalable Loop Free BGP FRR Using Repair Label

draft-bashandy-idr-bgp-repair-label-02

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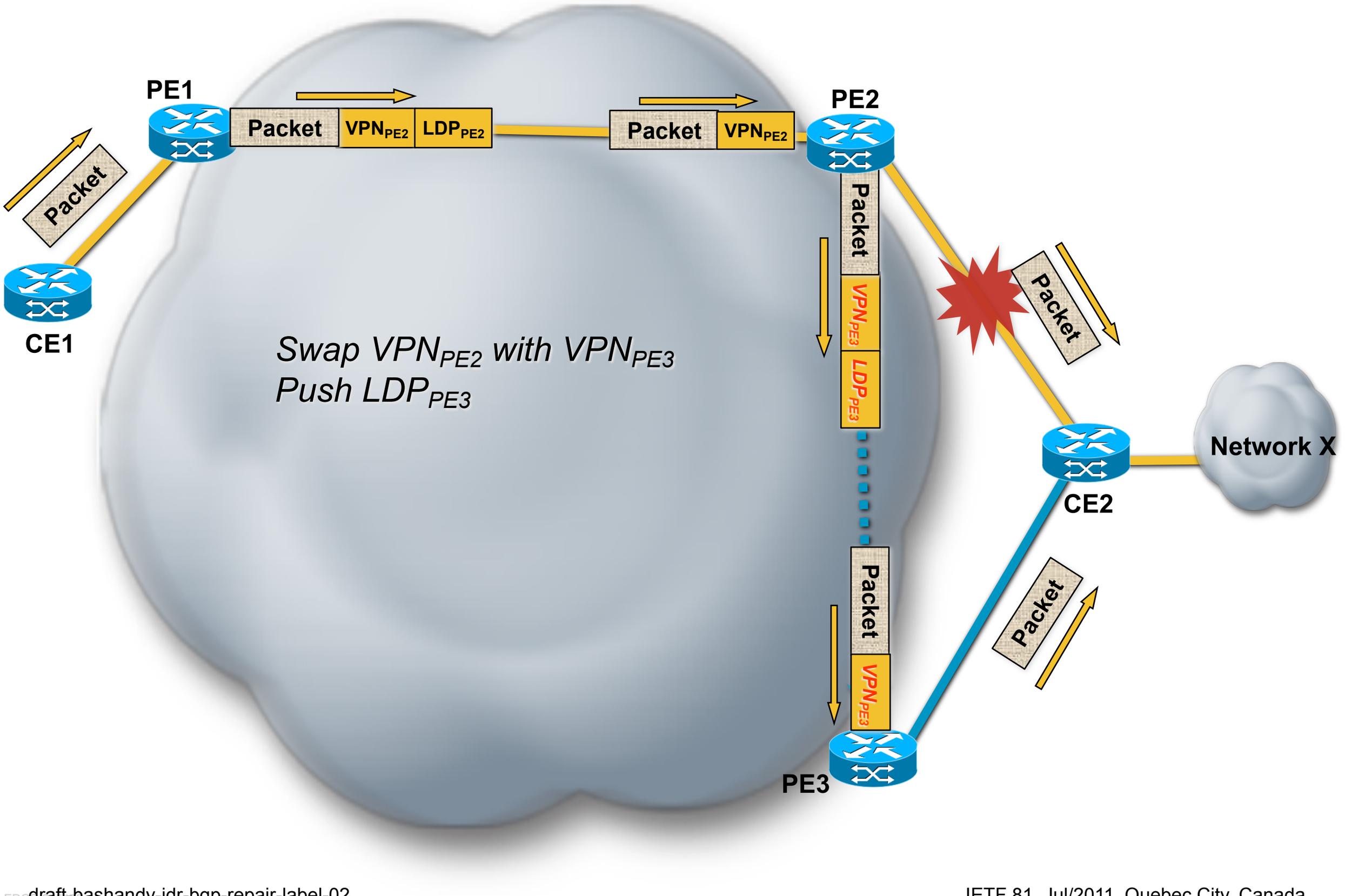
What do we want to do

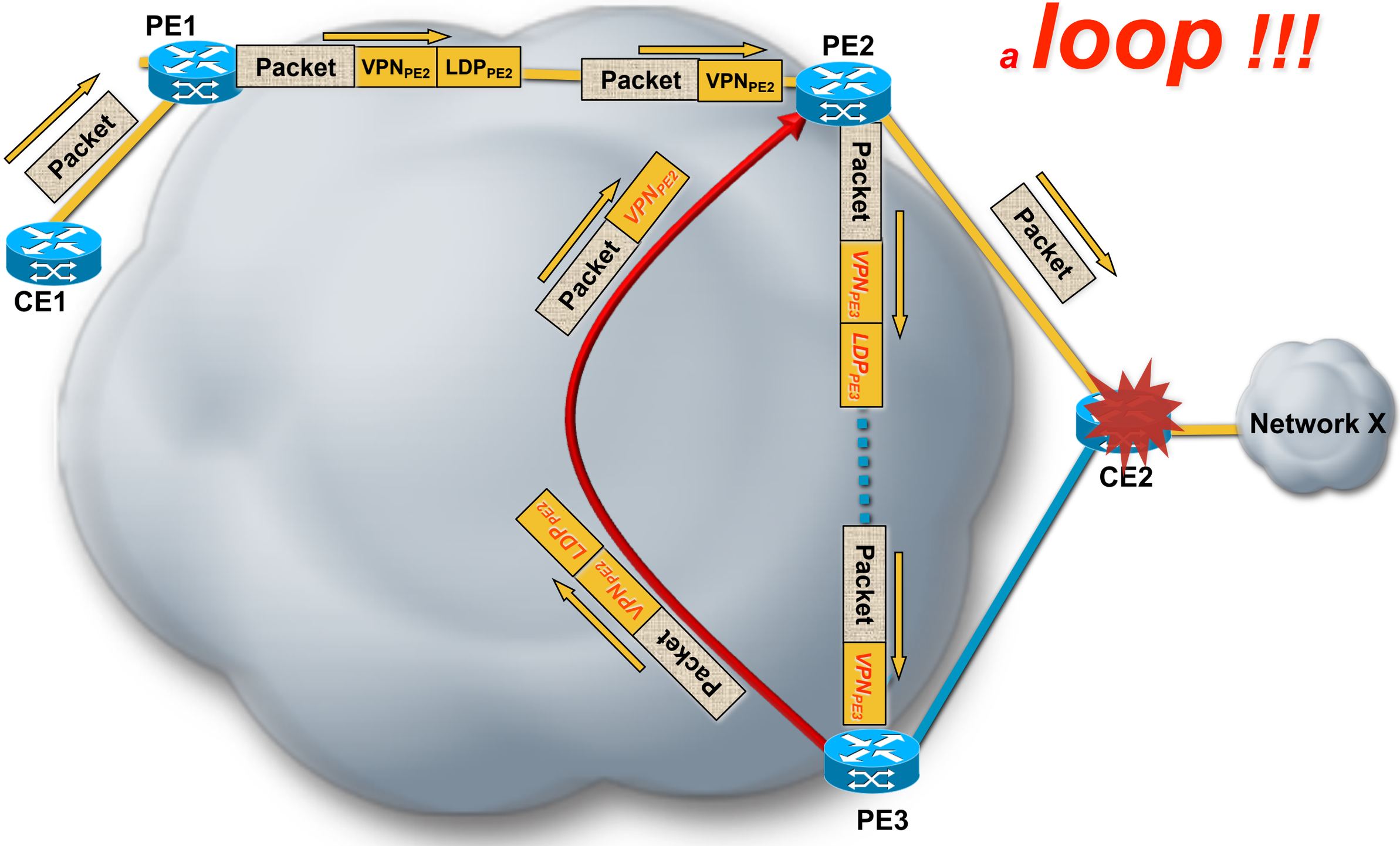
- BGP free core
  - Packets are ***tunneled*** between edge routers
- On loss of primary path, we want to
  - Restore traffic through a pre-calculated repair path
    - without waiting for control plane convergence, and
    - avoid loops when restoring traffic

Possible Solution



Problem: If CE fails

If the CE fails, we have a loop !!!



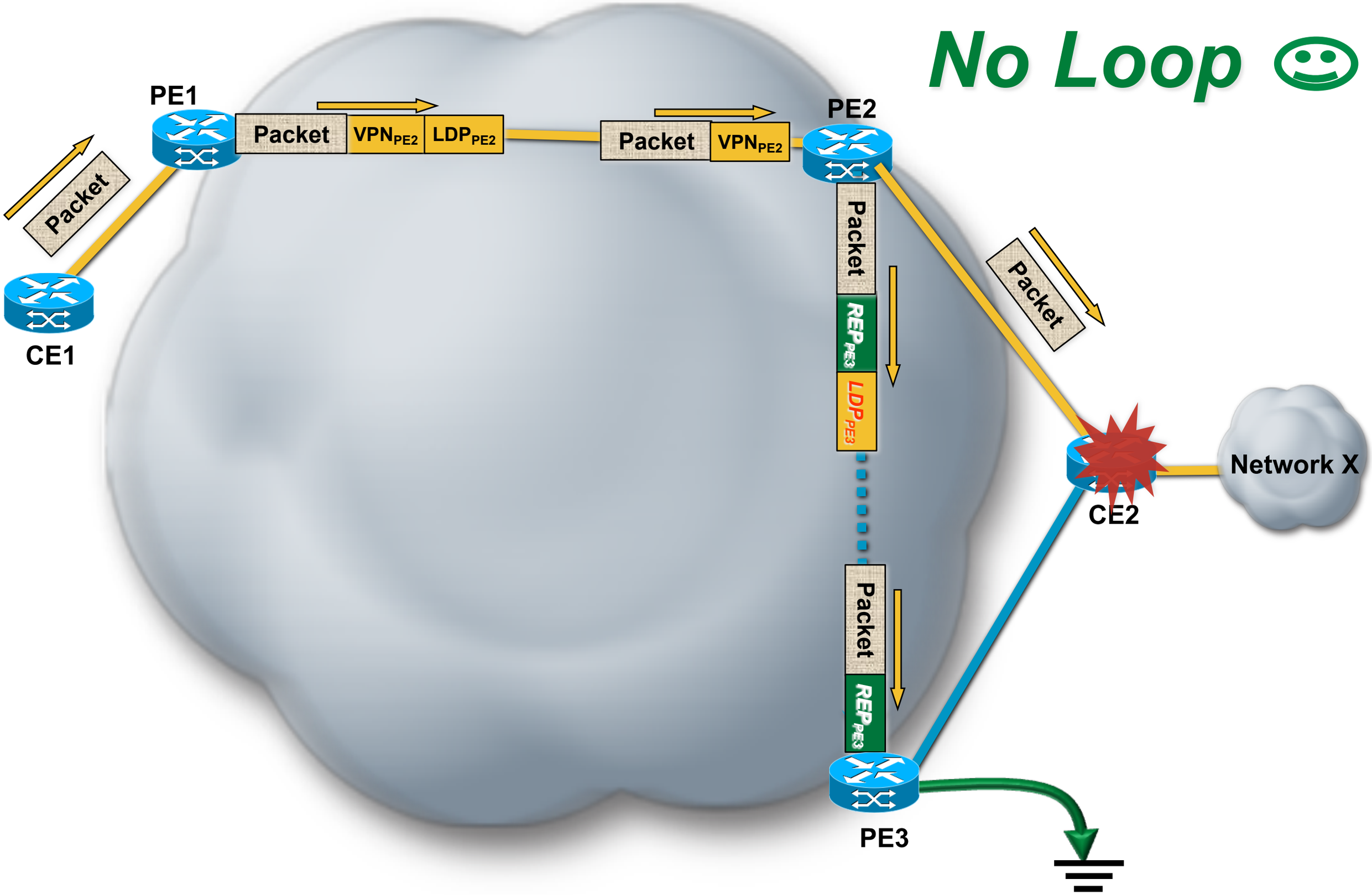
Proposed Solution

1. A PE having an external path advertises a "***repair***" label
   - Optional non-transitive attribute

2. When repairing a failed NH, the repairing router uses the ***repair label*** instead of the primary label advertised by the repair PE

3. The repair PE ***never*** repairs repaired traffic:
   Deliver the packet to the external next hop
   OR
   Drop it

Proposed Solution



Changes from Previous Version

- Specify forwarding behavior for edge node
- A packet arrives from the core
  - If there is an external path
    - Deliver to external path
  - If there is no external path
    - If there is a repair PE, forward to repair PE
    - Else
      - Drop
- A packet arrives NOT from the core
  - Forward with the regular label

Q & A