Pseudowire Redundancy on S-PE

draft-dong-pwe3-redundancy-spe-03

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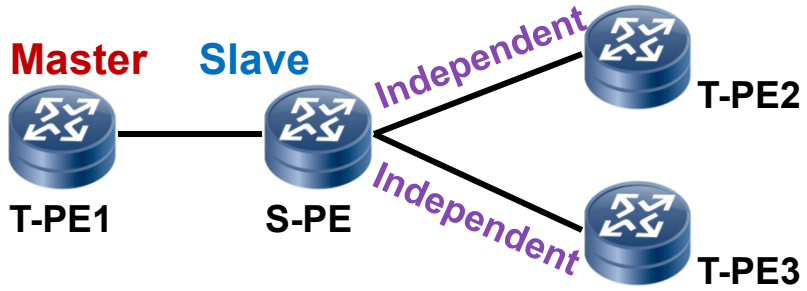
Background

- PW redundancy on PE/T-PE has been specified
  - draft-ietf-pwe3-redundancy-bit leaves PW redundancy on S-PE *for further study*
- PW redundancy on S-PE is beneficial in some MS-PW cases
  - Access node may not support PW redundancy
  - Less PW segments required on access node
  - Faster protection switching compared with redundancy on T-PE (local protection vs. end-to-end protection)
- This draft specifies operation and typical scenarios of PW redundancy on S-PE

Changes in v-03

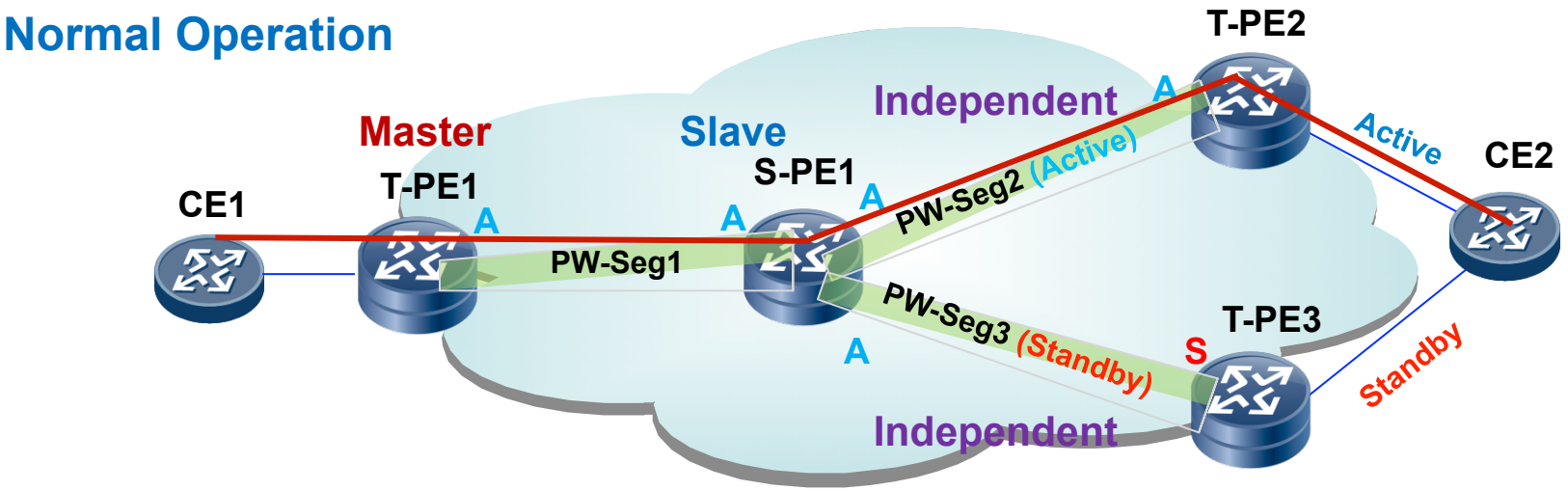
- Specifies the operation of S-PEs which provide PW redundancy
  - The S-PE behaves as Slave node for single-connected side, and in Independent mode for multi-connected side



  - The S-PE advertises proper Preferential Forwarding status to both sides
  - The S-PE makes decisions for PW segment protection switching

Operation of S-PE

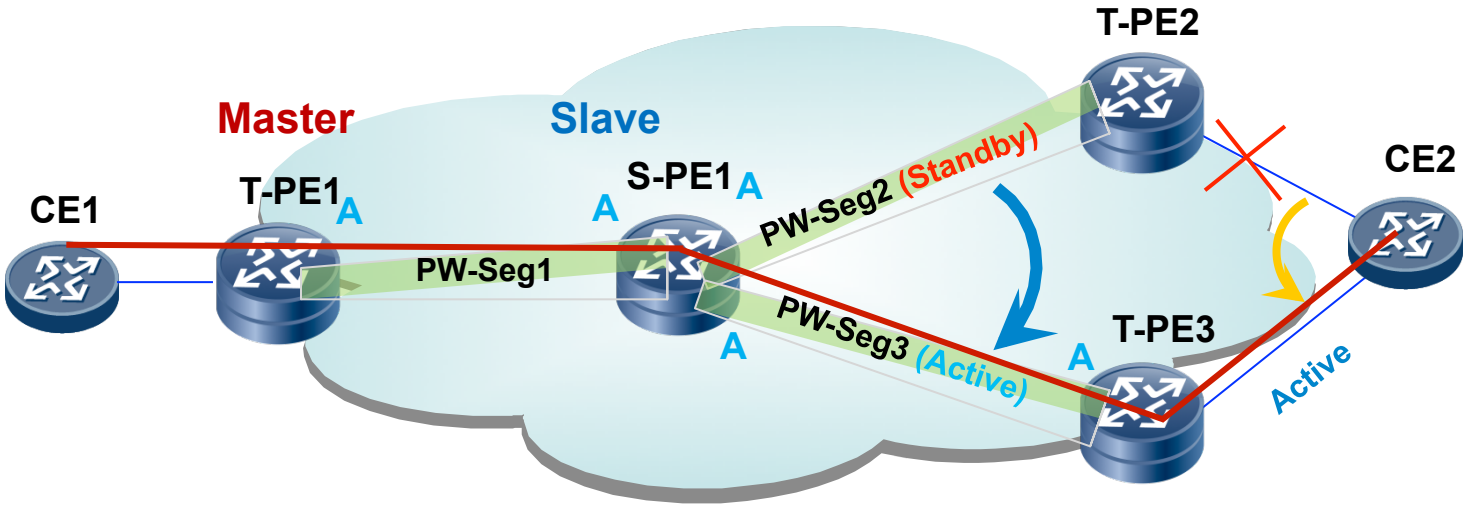
- PW redundancy on S-PE



- S-PE1 advertises Active to the right side since T-PE1 advertises Active
- T-PE2 advertises Active, T-PE3 advertises Standby
- PW-Seg2 is selected for traffic forwarding
- S-PE1 advertises Active to the left side if ANY PW segment on the right side is Up and Active

Operation of S-PE (2)

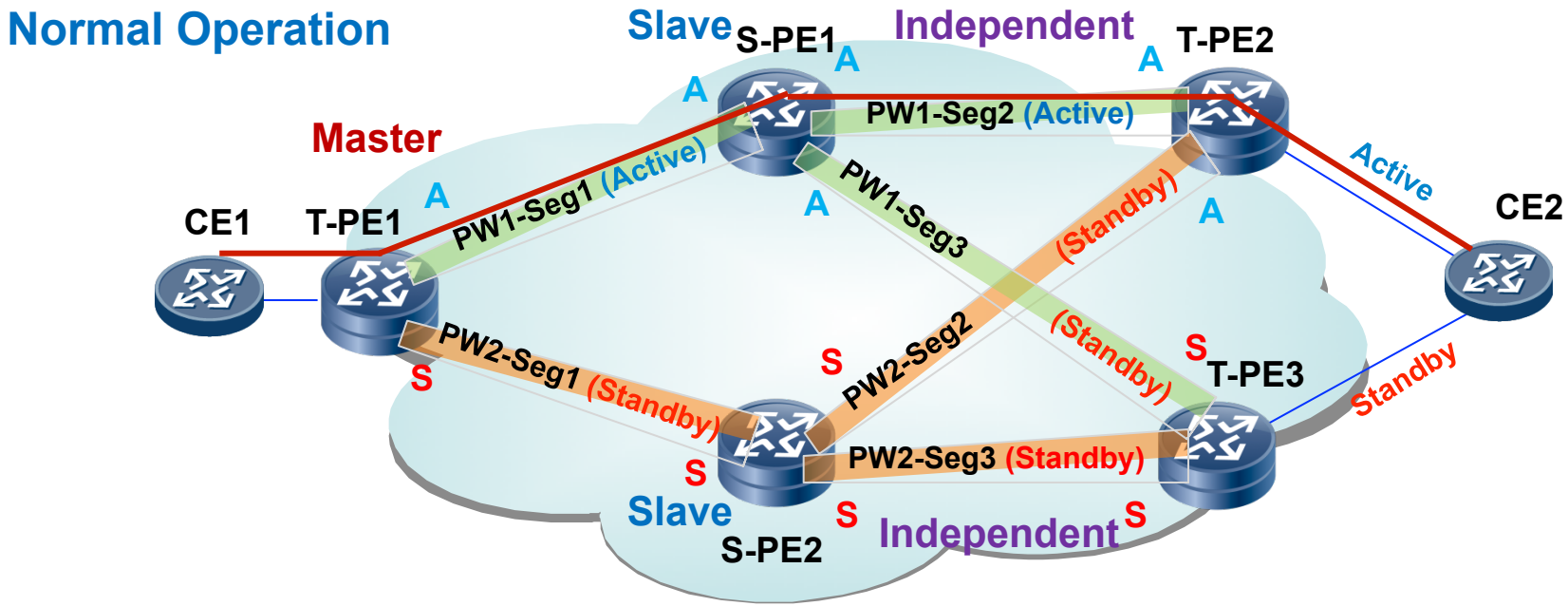
On failure of AC between T-PE2 and CE2



- AC between T-PE3 and CE2 becomes Active
- T-PE2 advertises AC fault status to S-PE1, T-PE3 advertises Active
- PW-Seg3 is selected for traffic forwarding

Operation of S-PEs

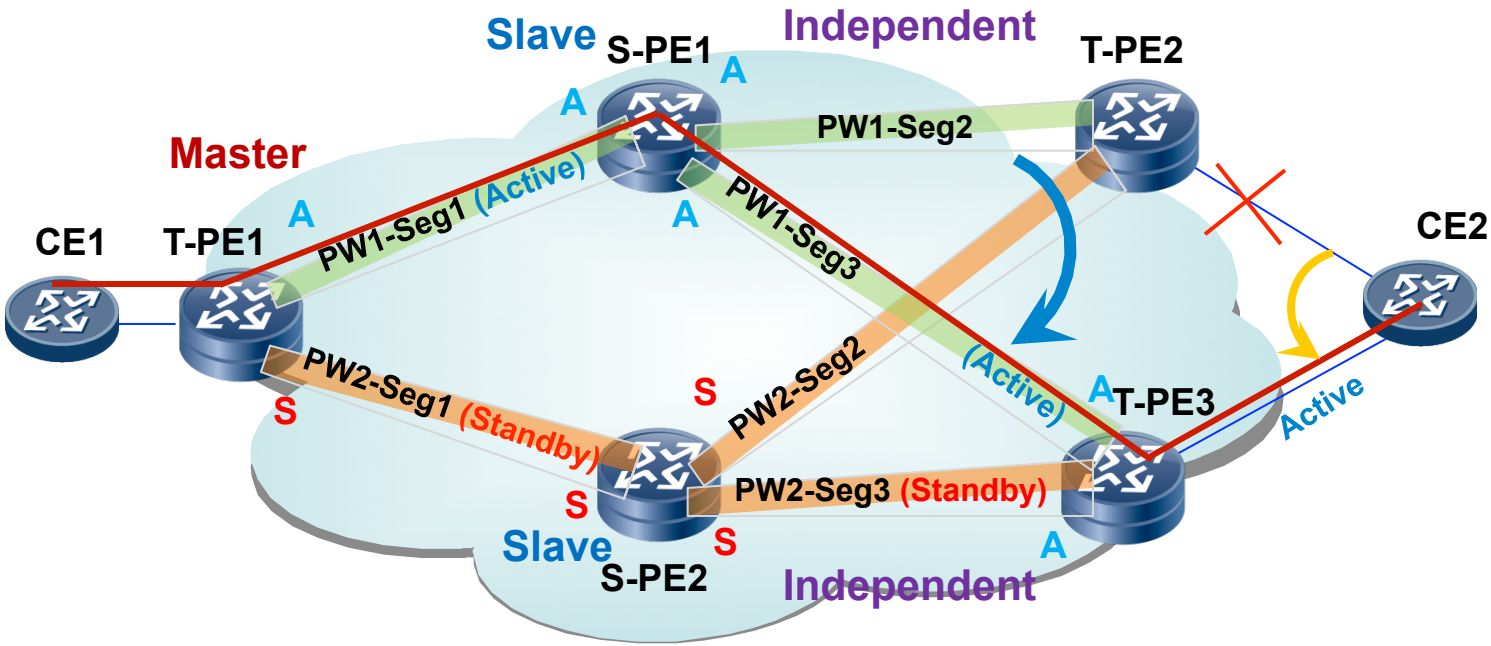
- PW redundancy on S-PE, with S-PE protection



- T-PE1 advertises Active to S-PE1, and Standby to S-PE2
- T-PE2 advertises Active to both S-PEs, T-PE3 advertises Standby
- S-PE1 advertises Active to T-PE2 and T-PE3, and selects PW1-Seg2 for traffic forwarding
- S-PE2 advertises Standby to both T-PE2 and T-PE3

Operation of S-PEs (2)

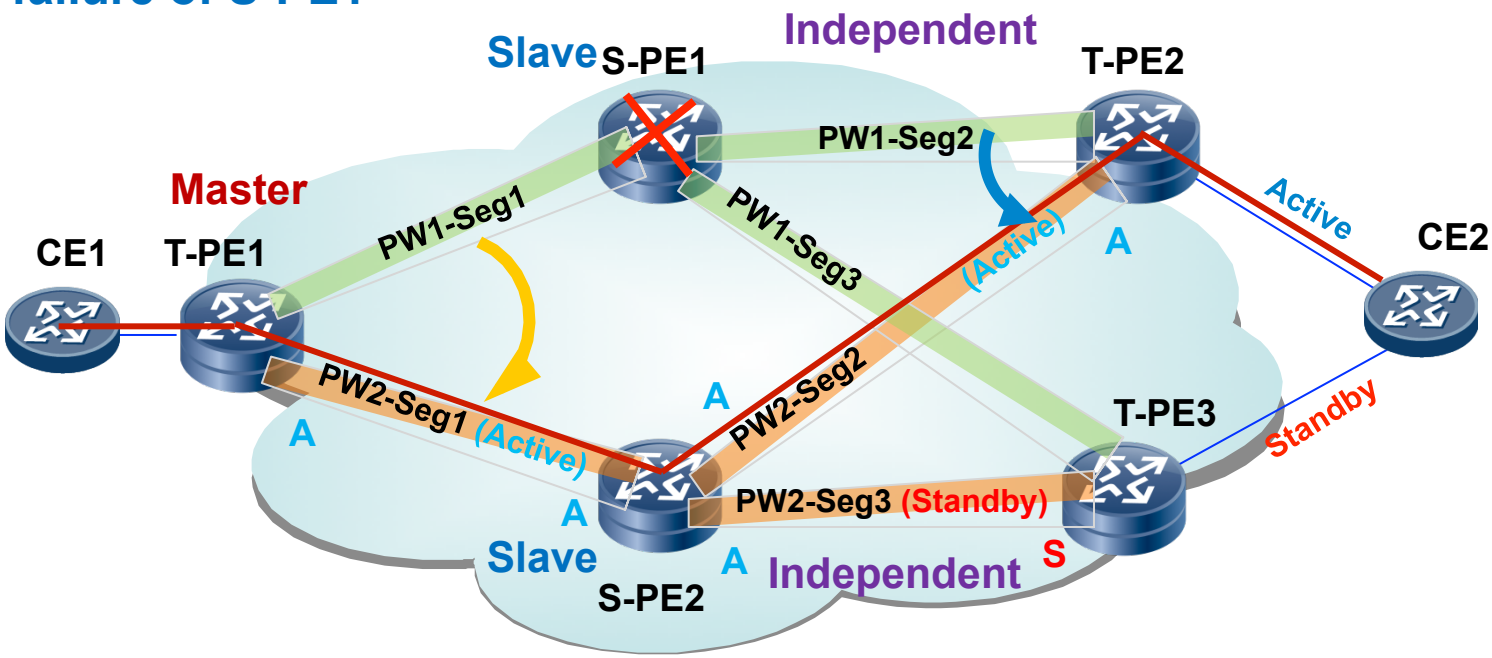
On failure of AC between T-PE2 and CE2



- T-PE2 advertises AC fault status to both S-PEs
- T-PE3 advertises Active to both S-PEs
- PW1-Seg3 has Active on both ends and is selected for traffic forwarding

Operation of S-PEs (5)

On failure of S-PE1



- T-PEs would detect the failure of S-PE1
- T-PE1 advertises Active to S-PE2
- S-PE2 advertises Active to T-PE2 and T-PE3
- PW2-Seg2 has Active on both ends and is selected for traffic forwarding

Next Steps

- Comments are welcome
- Need WG's opinion:
  - Is PW redundancy on S-PE useful?
  - Is the proposed mechanism on the right direction?
- WG adoption?