

VPLS Best Site ID

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VPLS Site ID Requirements

- Site IDs configured on each VPLS PE must be unique per VPLS domain.
 - Exception is multi-homing.
- Site-IDs can be either provisioned or dynamically generated.
 - Exception is multi-homing as site-IDs need to be explicitly configured

VPLS Site ID Problem

- VPLS path selection mechanism picks the minimum site-id to determine the 'preferable' local site.
- Whenever the elected site-id is declared down, the traffic to/from all other sites within the same VE is impacted as well.
- Convergence period is impacted during transient intervals.
- CPU cycles are spent in destroying/re-building affected PWs.

VPLS Best Site ID Approach

- When 'best-site' is enabled on PE,
 - It is elected as most preferable site by remote PEs
 - It remains permanently up regardless of access failure events.
- Provides more provisioning flexibility.
- Minimal traffic disruption for non-preferable sites in multi-site VPLS PEs during access-side failures.
- No CPU cycles spent destroying and creating new PWs during failover events.
- Backward compatible
 - Relies on their legacy/default site-election.

Control Flag in Layer 2 Extended Community

With reference to the Control Flags Bit Vector, the following bits in the Control Flags are defined;

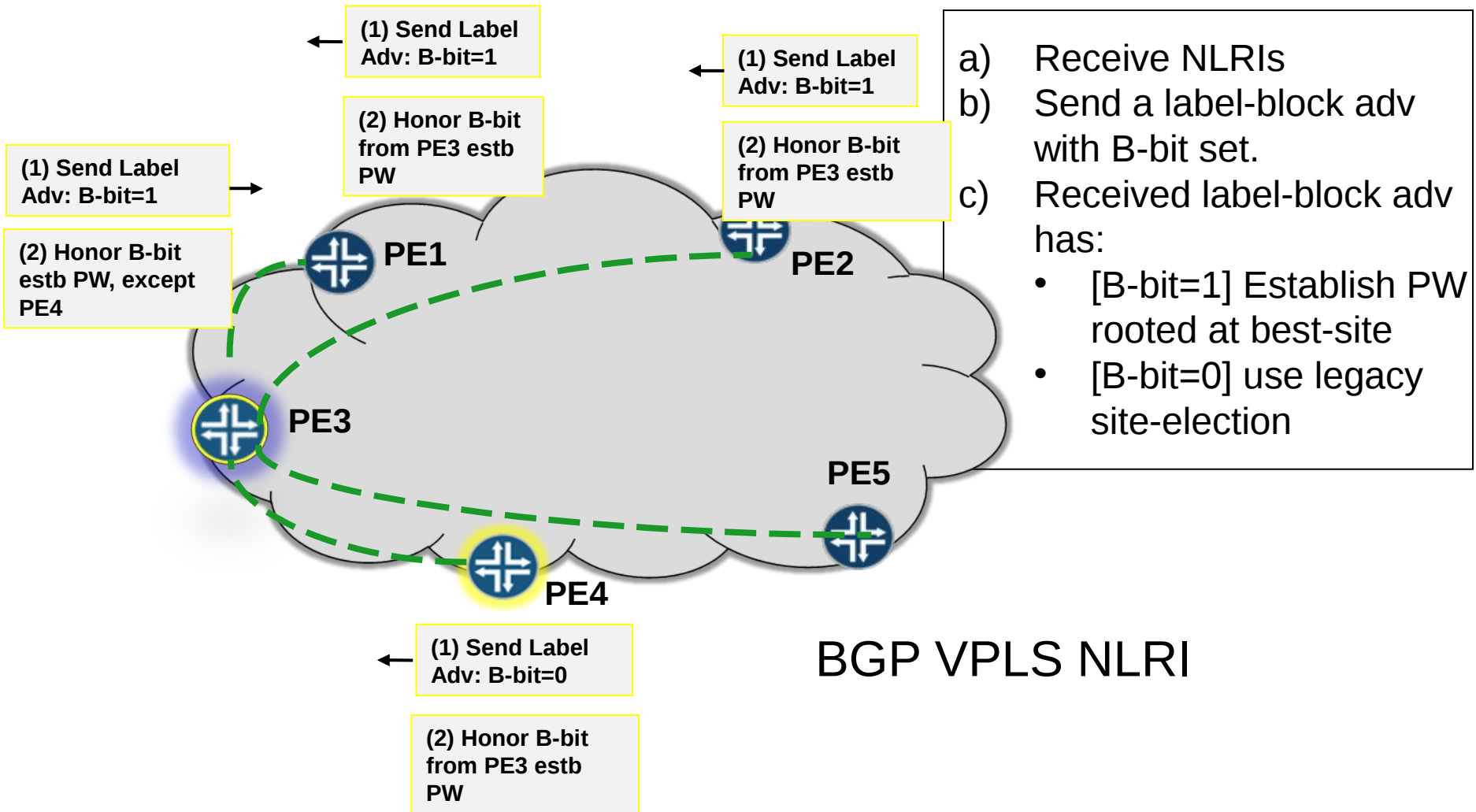
```
0 1 2 3 4 5 6 7
+ - + - + - + - + - + - +
|D|A|F|B|T|R|C|S| (Z = MUST Be Zero)
+ - + - + - + - + - + - +
```

- D Defined in I2vpn-vpls-multihoming draft
- A Defined in I2vpn-auto-site-id draft
- F Defined in I2vpn-vpls-multihoming draft
- B** When the bit value is 1, the PE receiving the label-block will deem the corresponding site as the most preferable site from the remote neighbor.

When the bit value is 0, the PE receiving the label-block will rely on its legacy/default site-election algorithm.

- T/R Defined in I2vpn-fat-pw-bgp draft
- C Defined in [RFC4761]
- S Defined in [RFC4761]

Best Site ID Approach



VPLS Best Site ID Add-Ons

- With 'best-site', no core-facing PW are ever torn down; previously learned MAC entries continue pointing to an invalid PW
 - Requires 'Explicit-mac-flush' mechanism to ensure that MAC-to-PW bindings are cleared during DF transition.
 - PE can request a remote PE to flush mac-entries by setting/unsetting F-bit in Layer2 control flags.

VPLS Best Site ID

- More details:
draft-anshuverma-bess-vpls-best-site-id

Questions?