Shortest Path Bridging Introduction to Draft 0.3

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Introduction to D0.3

Coexistence

Region determination

Tree computation & Loop-free assurance

Equal cost multi-path

Assigning VIDs for shortest path

Issues & Questions

Coexistence

MSTP/multiple tree coexistence

Shortest Path Tree (SPT) computation protocol can run in parallel with MSTP (if needed)

Region determination

Identical or very very close to MST Regions

- Same 'Internal Root Path Cost'

- 'Very very close' – shared media issue

Uses MST Configuration Digest

- Allocatable shortest path VIDs

- Don't have reconfig just to move to shortest path

Tree computation and loop free assurance

Symmetric shortest path trees (or any tree) calculated by tree computation protocol

Tree computation decides (internal) port role and internal root path cost for each tree and port

Tree agreement lost if bridge cost becomes worse than child in tree

BPDU Proposal/Agreement exchange confirms roles and costs (tree direction), restores agreement, and transitions port state to forwarding

Equal cost multi path

Point of attack for routed competition

Shortest path sets, probably one or two

- Method of computation may be tree computation protocol specific, or based on inverted tie breaker rules

Core tree (MSTI) alternative

- Any other tree as a further alternative

Assigning shortest path VIDs (SPVIDs)

Dynamic allocation (need SPT Bridges x VLANs)

Minimum churn when new bridges appear

Allocatable according to algorithm

Requests go up the tree, assignments down

Requests can be for specific SPVIDs for SPT, VLAN tuples

Requests/assignments loop free, but can be done in parallel, not after loop free assurance

Other stuff

Running out of VIDs

- Not enough VIDs, continue to use MST

- Different FIDs for same VLAN on MST and on SPTs

Issues and Questions

Current Shared and Independent learning constraints

- Historic

- Replace with assume independent unless same VLAN or specifically shared

- Underling assumption is that FIDs are 12 bit identifiers