Use of the Egress Tree in SPT

Bob Sultan  bsultan@futurewei.com
Yang Yang  HealthingHearts@ieee.org
Faming Yang  robey@huawei.com

November 2005
In September, Norm Finn described the problem of asymmetric spanning trees.

Two solutions

• Adjust the trees to make paths symmetrical (described by Norm).
  – 64 Bridge limitation
  – Some complexity

• Don’t use learning.
Second alternative (don’t learn)

Same assumptions
  – Spanning Tree Per Bridge
  – MAC-in-MAC
What Bridges Know

1. A bridge participates in all trees.
2. Each bridge knows all root bridge-IDs (MACs).
3. Trees easily numbered (1, 2,…. 9).
4. Tree number encoded in VID.
5. Bridge knows root_port for each tree.

Tree with root A is tree 1. P1 is root_port of tree 1 in bridge D.

Tree with root E is tree 2. P2 is root_port of tree 2 in bridge D.
Forwarding Table Construction

1. Sufficient information to construct forwarding table
2. Table modified with tree changes
3. Learning not needed for forwarding

<table>
<thead>
<tr>
<th>VID</th>
<th>Port Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P1</td>
</tr>
<tr>
<td>2</td>
<td>P1</td>
</tr>
<tr>
<td>3</td>
<td>P1</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>P2</td>
</tr>
<tr>
<td>6</td>
<td>P1</td>
</tr>
<tr>
<td>7</td>
<td>P2</td>
</tr>
<tr>
<td>8</td>
<td>P1</td>
</tr>
<tr>
<td>9</td>
<td>P1</td>
</tr>
</tbody>
</table>
MAC-in-MAC / SPT Environment

- If learning not needed.
  - then asymmetric trees can be used.
- No need for Path Vector method.

- Suggested that this be described as ‘open issue’ in initial draft.