Directory Assisted RBridge Edge

draft-dunbar-trill-directory-assisted-edge-05

Update

Linda Dunbar: ldunbar@huawei.com
Donald Eastlake:d3e3e3@gmail.com
Radia Perlmen: radiaperlman@gmail.com
Igor Gashinsky: igor@yahoo-inc.com
Major changes since
draft-dunbar-trill-directory-assisted-edge-04 (IETF82)

• Addressed comments from mailing list and discussions from 82\textsuperscript{nd} IETF
• Make the draft focusing on the benefits and generic operation of directory services
  • Minimum attributes in directory servers
  • Pull model
  • Push model
• Removed technical details like how RBridge intercept ARP/ND requests and forward them to directory servers
  • Push model: Need separate draft(s) on detailed mechanism for directory to push down initial full mapping and subsequent updates
  • Pull model: Need separate draft(s) on detailed messaging exchange between Directory Servers and RBridge.
• Goal: WG adopt the Directory Assisted TRILL edge concept
TRILL in Data Center

Server can be loaded with applications under any subnets

Minimal IP re-config needed

Why different?
• Rapid work load shifting
  • Reduce or increase the number of racks when demand changes.
  • Allow servers to be re-loaded with different applications under different subnets without any physical moving or IP re-configuration.

VMs can be moved to any rack without IP re-configuration on any switches.
Benefit of using directory in Data Center

• Avoid flooding unknown DA across RBridge domain.
• Avoid designating one port as AF port:
  – directory assisted RBridge edge doesn’t need to flood unknown DA data frames across RBridge domain
• Reduce flooding decapsulated Ethernet frames with unknown MAC-DA to a bridged LAN connected to RBridge edge ports.
• Reduce the amount of MAC&VLAN <-> RBridgeEdge mapping maintained by RBridge edge.
  – No need for an RBridge edge to keep the MAC entries for hosts which don’t communicate with hosts attached to the RBridge edge.
# Push vs. Pull models

- **Push Model**

<table>
<thead>
<tr>
<th>Nickname</th>
<th>MAC1/IP, MAC2/IP, MAC/IP ...MACn/IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>VID-1</td>
<td>MAC1/IP, MAC2/IP, MAC/IP ...MACn/IP</td>
</tr>
<tr>
<td>VID-2</td>
<td>MAC1/IP, MAC2/IP, MAC/IP ...MACn/IP</td>
</tr>
<tr>
<td>.......</td>
<td>MAC1/IP, MAC2/IP, MAC/IP ...MACn/IP</td>
</tr>
</tbody>
</table>

  - Pros: less processing
  - Cons: more entries than they really need

- **Pull Model**

  - pulls the MAC&VLAN<->RBridgeEdge mapping entry from the directory server when needed.
  - Pros: smaller set because entries age out after awhile
  - Cons: more processing
Next Step

• Move to WG draft