

Issue: Optimizing Multicast

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If we do nothing

- Multicasts would be transmitted to all links
- This is “correct” but not optimal
- IP multicast does IGMP
- There are similar layer 2 multicast solutions
 - Not sure how widely deployed they are
 - We don't want to make things “incorrect” if some endnodes do GARP (?) and others don't
 - Will there be high volume non-IP multicasts?

For IP Multicast

- If Rbridges want to localize traffic, have to make sure IGMP suppression doesn't dissuade an endnode on one link from announcing because it has heard an IGMP from another link
- So, can't just forward IGMPs like ordinary multicast
- Instead, do MOSPF-like thing

Handling IGMP

- First Rbridge R1 rcvs “E wants to join G”
- R1 assimilates “G” into its link state database and announces it
- Other Rbridges use this information for filtering of multicasts (so multicasts reach only links with receivers, plus links with IP multicast routers)
- Note: Rbridges also figure out which links have IP multicast routers

Info in link state

- Set of G's on my link
- Whether there are IP multicast routers on the link
- VLAN to which these belong?
- Or should we allow cross-VLAN delivery of IP multicast?

Regenerating IGMP

- Since IP routers need to see the IGMP
- RBridge with IP router on the link needs to regenerate it
- This will suppress IP endnodes on that link from announcing membership
- But that's OK since all IP multicast must be sinked at any link with an IP multicast router

Recommendation

- Announce G's, and IP multicast routers in link state
- Regenerate IGMP on IP Multicast router links
- Do cross-VLAN IP multicast delivery within campus?
- What is the right thing for non-IP multicast?