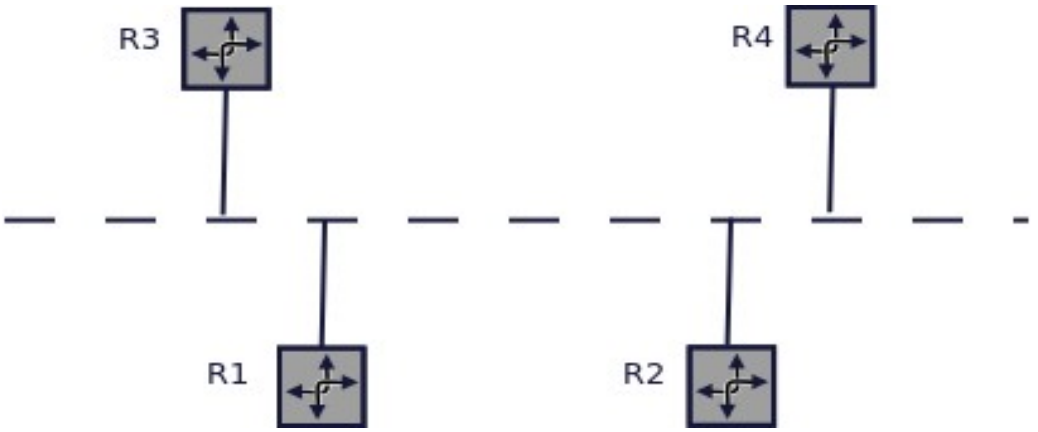
draft-joshi-pim-ecmp-neighbor-select-00
PIM neighbor selection with ECMP routes

Problem statement



- PIM uses local forwarding table to find upstream neighbor towards source/RP
- Lets assume R1 and R2 has ECMP route through R3 and R4 for source 'S'.
- R1 selects R3 as upstream router while R2 selects R4 as upstream router for (S,G)
- Both R3 and R4 forwards multicast traffic to the LAN
- Assert kicks in and one of them is selected as forwarder
- Wastage of network resources can be avoided if both R1 and R2 chose the same upstream router.

Problem statement

- Network resource wastage:
  - Unnecessary Multicast state till source/RP through R4. Worst case, this tree does not intersect the other trees.
  - Unnecessary multicast data forwarding along with the tree.
  - Assert handling to identify the forwarder

Solution

- Standardize the mechanism to select upstream router in case of ECMP. All routers should select the same upstream router.
- Proposal
  - Calculate hash using group address, source address/RP address and neighbor address for each neighbor
  - Select the neighbor with highest hash value
  - If hash for two neighbors come same, select the highest IP address neighbor
- Similar hash function as proposed in RFC 4601.

Next steps

- Are people interested?
- More review in working group?
- Adoption as working group item?