Multicast Routing, Deering and Cheriton [Deering88b]

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Key ideas three multicast algorithms take (bridged-)LAN routing to LAN multicasting extend DV routing to DV multicast routing extend LS routing to LS multicast routing service interface naming: groups are IP address, and groups don't identify members best effort packet delivery



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Service Model

- · best-effort delivery
- scoping control mechanism (send to subset of group)
 - control TTL
 - TTL thresholding
 - certain addresses are local to certain areas (link, company, continetent)
- many sources share group (anyone can send to it)
- group membership
 - no explicit (network-level) group control
 - members don't know group membership

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- RPF (Reverse Path Forwarding) Check:
 - drop packets that arrive on incorrect interfaces (i.e., not from the unicast direction to the sending host)
 - why? suppress errant packets and avoid loops

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DVMPR Pros and Cons

- Pros:
 - simpleworks well with many receivers. why?
 - flooding... incremental cost of a new receiver
 - is 0
- Cons:
 - works poorly with many groups (why? each group has to flood)
 - works poorly with sparse groups (why? flooding group announcements to many places that don't care)

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Link-state Multicast Routing

- Basic idea: treat group members (receivers) as new links
 - flood info about them to everyone in LSA msg (just like LS rtg)
- Compute next-hop for mcast routes ondemand (lazily)
 - unlike for LSA unicast where all are computed as soon as LSA arrives
- · realized as MOSPF







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 Other questions/observations?

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