Single Source Multicast

Channels (232.*.*.* reserved by IANA)
- Only source can send
- Access control
- Multicast G doesn't have to be globally unique
- All addresses are source specific
- Sub-cast support (only source is aware of sub-cast)
- Best-effort counting service
- Key: really just a secret

Easier to tell who can send
- Add mechanism to let you count
- Easier to think about billing

Goal: define a simpler model
- Need to know number of subscribers
- Need billing mechanism
- Need access control
- ISP acceptance will be higher
- They can then have a viable billing and accounting model

How to manage the bandwidth allocation?
- How can you ensure secure communication?
- Any source multicast
- Need to link who can and who cannot
- IPv4 multicast addresses too limited

Other problems
- Current protocols too complex
- Need to know number of subscribers
- IPS concerned about multicast
- Simplest such scheme
- Single-source per multicast group
- Receivers can still join and leave at will

What we've discussed so far
- Multicast state aggregation
- Access control
- Need billing mechanism
- Current protocols too complex
- Need to know number of subscribers
- IPS concerned about multicast
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 ISPs concerned about multicast
- Simplest such scheme
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http://merlot.usc.edu/cs551-f12

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Single Source Multicast
CS551
But this is already being designed in IGMP v3!

Receiver specifies that it wants to join source S on group G

But PIM-SM already does this!

Routers send source-specific joins towards S

Routers silently drop other traffic if there is no state

Only source S allowed to send traffic to group G

Note that we don't need a special inter-domain multicast.

But PIM-SM already does this!

Routing protocols

SM Details

SSM Details

but this is already being designed in IGMP v3.

SSM Status

currently being standardized and is partially deployed

Smaller indeed

Like IGMP, but also adds

Session relays

Service at source that can relay data to tree (similar to

Voting

Counts used to determine receivers or for other things like

ECMP: Express Count Management Protocol

SSM Details

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