Multicast Transport API Considerations

Jake Holland
Akamai
Hackathon 103+104

3. AMT
Join:
S=23.212.185.5
G=232.1.1.1

2. DNS-DRIAD
Query:
5.185.212.23.in-addr.arpa
RRType=AMTRELAY?
Response:
AMTRELAY=198.51.100.4

1. wired
IGMP
Home Router
mcproxy, OpenWRT
AMT relay

0. WiFi
DNS-SD discovery (mDNS)
VLC + AMT gateway

draft-ietf-mboned-driad-amt-discovery
Why TAPS

• Multiple path probe/discovery (including tunnels)
• Interface property filters
  • wired/WiFi relevance: draft-ietf-mboned-ieee802-mcast-problems
• Preconnection has both Local and Remote
  • (S,G) is sane already
• Sockets got ugly
  • Specifically bind(sock, group_addr)
Multicast API

• MUST have SSM / ASM selection for receive
  • (SSM=Source-Specific Multicast, ASM=Any-Source Multicast)

• Tunnel discovery like ice/stun/turn
  • With default ordering for discovery:
    draft-ietf-mboned-driad-amt-discovery
  • Configurable options

• Otherwise low-impact?
Next Steps

• Github issue #150 assigned:
  • Unidirectional Stream Support for Multicast

• Implementation sanity check
  • Where’s good?
Backup Slides
Routing SSM (Source-Specific Multicast)

Host 1
11.11.1.1
Joins (S,G):
11.11.1.1 -> 232.2.2.2

Host 2

Host 3
Joins (S,G):
11.11.1.1 -> 232.2.2.2

SSM Groups:
232.0.0.0/8
ff3e::/32 (global)

PIM Join

Multiple possible paths
Best next-hop (to source)
PIM-SSM = simplified PIM
RPF: Reverse Path Forwarding “Tree-Building”
Routing ASM (Any-Source Multicast)

If someone asks about:
- MSDP
- DVMRP
- PIM Registers
- RP (Rendezvous Point)

-> Just say:
  “that’s why we use SSM”

To learn more (1.5 hrs):
https://www.youtube.com/watch?v=m9H__zz1X4E
(and draft-ietf-mboned-deprecate-interdomain-asm)