AMT / Multicast
(RFC 7450, Automatic Multicast Tunneling)

Extending AMT’s reference implementation toward deployment

https://github.com/GrumpyOldTroll/amt
Jake Holland, Akamai
Source Pool 1:
1 ipv4 and 1 ipv6 multicast source
multicast source addresses:
- x.y.z.1
- 2600:a:b:c::1

AMT relay: embedded in senders (geographically distributed)

AMT discovery (anycast)
- distribute relay tunnels intelligently
- Source pool chosen by Discovery IP

Source Pool 2:
1 ipv4 and 1 ipv6 multicast source
multicast source addresses:
- x.y.z.2
- 2600:a:b:c::2

AMT relay: embedded in senders (geographically distributed)

AMT gateway
ISP1
ISP2
ISP3

AMT gateway
Options:
1. CSR1000v
2. Open-source VM

AMT relay
Cisco
Juniper
Open-source VM
Wifi vendors?

Native multicast

Clients
SSM join to (S,G): x.y.z.1=> 232.k.j.l
Lab setup
(different options for different scenarios)

Senders
(optional relay)

GigE 1: 192.168.122.6/24
GigE 2: 10.6.6.1/24
CSR1000v (on kvm/qemu)

CSR1000v
(on kvm/qemu)

GigE 1: 192.168.122.7/24 (default)
GigE 2: 10.6.6.2/24
CSR1000v (on kvm/qemu)

provideredge (optional gateway)

Virbr0

GigE 3: 10.5.5.1/24
GigE 2: 10.6.6.1/24

CSR1000v
(on kvm/qemu)

GigE 1: 192.168.122.6/24

Receivers
(optional gateway)

Virbr1

GigE 2: 10.6.6.2/24
GigE 3: 10.7.7.1/24

CSR1000v
(on kvm/qemu)

GigE 1: 192.168.122.7/24 (default)

Receivers
(optional relay)

Wifi router
(AMT relay)

<– en1 (dhcp to internet) – NAT – 192.168.122.1/24
At the hackathon this weekend:

- Ported amtrelayd to OpenWRT
- Bugfixes, cleanup
- Testbed setup documented
- Experiments running video
  - native multicast
  - AMT-encapsulated
Acknowledgements

This weekend:
• Lucas Pardue, BBC
  • working on multicast video
• Codarren Velvindron, Orange (remotely contributing)
  • installing AMT on his home OpenWRT

Prior work:
• MBONED working group members
  • Previous work on initial AMT project
• Bill Atwood, Concordia University
  • Previous work on VLC integration, testing