Off-Net Sourcing for Multicast Streams

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Why Off-Net Sourcing?

- Native sourcing from MBONE is available today (On-Net)
- ... but most sources will be on unicast-only networks (Off-Net)
- Off-Net receiving available today with AMT: see Multicast Menu @ https://multicastmenu.herokuapp.com
- Off-Net sourcing- users on unicast-only nets can stream to a “translator” on MBONE, which converts stream to multicast
  - Then accessible natively to on-net receivers and via AMT to off-net receivers
  - Demonstrated successful off-net sourcing with Juniper intern team in summer ’21 with Unicast2Multicast Translator
MTTG Architecture: Putting it all together
Unicast2Multicast Translator

- Linux VM with python script deployed on MBONE that translates unicast streams to multicast
  - Rewrites source and destination address (random group address in 232/8)
  - Generates new entry on the Multicast Menu
- Developed by Janus Varmarken
  - In collaboration with Larry Un and Lanmingqi (Maki) Ma
  - Deployed at GWU by Andrew Gallo
Next Steps for Off-Net Sourcing

Requirements

• Get iPhone/Android camera to stream video to Unicast->Multicast Translator in the mCloud

Translator translates destination and source address of stream
  • Indexes stream for search
  • Optionally, records for lookback

• Receiver App on iOS/Android to search, subscribe and watch streams
  • Can use VLC initially
References

• Unicast2Multicast Translator
  • https://github.com/JNPRAutomate/unicast2multicast-translator

• Lauren’s Multicast Menu
  • https://multicastmenu.herokuapp.com
  • Source code @ https://github.com/Laur04/multicast-menu

• Natalie/Wayne’s VLC with AMT GW build (and usage notes)
  • https://github.com/Juniper/amt-vlc

• William’s AMT Relay Deployment docs
  • https://github.com/willzhang05/senior-research

• MTTG Slack group- send email to lenny@juniper.net to join