Multicast Receiver Deployability

IETF 105 Hackathon report, mboned

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Receivers that:
• Automatically use multicast if available, unicast (AMT) else.
• Can be safely deployed
Multicast Receive Library

• [https://github.com/GrumpyOldTroll/libmcrx](https://github.com/GrumpyOldTroll/libmcrx)

• Running:
  • Basic SSM receive
    • cross-platform: mac, linux

• In progress:
  • AMT gateway with DRIAD discovery (plus DNS-SD and racing)
    • draft-ietf-mboned-driad-amt-discovery
    • RFC 7450
  • AMBI/ALTA authentication, loss detection, bandwidth control
    • draft-jholland-mboned-ambi
    • draft-krose-mboned-alta
TAPS Integration

TAPS reference implementation

- https://github.com/fg-inet/python-asycnio-taps

examples/yang_example/test-mcast-receive.json:

```json
{
    "ietf-taps-api:preconnection": {
        "local-endpoints": [ {
            "local-address": "232.1.1.1",
            "local-port": "5001"
        } ],
        "remote-endpoints": [ {
            "remote-host": "23.212.185.5"
        } ],
        "transport-properties": {
            "direction": "unidirection-receive",
            ...
        }
    }
}
```
Chromium Integration

• Prototype implementation
  • https://github.com/GrumpyOldTroll/chromium/tree/multicast

```javascript
<script language="javascript" type="text/javascript">
var source="23.212.185.4";
var group="232.10.10.2";
var port="12000";

m1 = new MulticastReceiver(source, group, port);
m1.onjoin = function(evt) { onJoin(m1, evt) };
m1.onleave = function(evt) { onLeave(m1, evt) };
m1.onmessage = function(evt) { onMessage(m1, evt) };
...
```
To-Do List

• More tests
  • IPv6
    • FRR pimd upgrade or new testbed
  • Negative tests
    • for bad inputs (many)
  • Fuzzing
  • Continuous Integration

• Doxygen

• More OSs
  • Windows (in progress)
  • Android
  • IOS
  • BSDs

• Integrations with more event loops
  • libevent
  • Libuv

• AMT Gateway
  • DRIAD
  • DNS-SD

• AMBI/ALTA support
  • Implementing/updating drafts
    • draft-jholland-mboned-ambi
    • draft-krose-mboned-alta
  • Authentication and integrity
  • Bandwidth controls
  • Loss detection/signaling

• Upstreaming to Chromium
• Build existing apps in webassembly
  • ffmpeg, VLC
Plz send minions...

- Great experience!
- Help the internet!
- Sometimes-friendly mentoring!