IETF Hackathon: IOAM HBH Option

- IETF 105
- 20-21 July 2019
- Montreal

Hackathon Plan

- Implementation, interoperability testing the IPv6 IOAM HBH options
- draft-ioametal-ippm-6man-ioam-ipv6-options-02
- https://tools.ietf.org/html/draft-ietf-ippm-ioam-data-05

What got done

- udp_ping that set EH with IOAM option
  router in path sees option, peer server reflects option back to client that prints info
- Code: https://github.com/IurmanJ/kernel_ipv6_ioam

What got done

```
$QDIR/bin/udp_ping -vI 1 -T cff000 2::2
24 bytes from udp 2::2:24862 udp_seq=1 time=1.593 ms
PArse cmsg
IOAM
    Opt type: 32
    Opt len: 62
    rsvd1: 00
    IOAM type: 00
    Namespace ID: 1
    Node len: 13
    Flags 04 02
    Remaining length 0
    Trace type: cff000
    rsvd2: 00
    Trace size: 52
    Node block size: 52
    Number nodes: 1
```

What got done

Node

- Node ID: 000001
- Hop limit: 63
- Ingress iface ID: 11
- Egress iface ID: 12
- Transit delay (ns): 65535
- Namespace data: 00000000
- Queue depth: 0000ffff
- Opaque data: 00003f00
- Node ID: 00000100000000
- Hop limit: 63
- Ingress iface ID: 0
- Egress iface ID: 0
- Namespace data: 00000000
- Buffer occupancy: 4294967295

What we learned

- Getting lengths right and interoperable is hard (bit fields esp.)
- Will make a few suggestions to IPPM in data format (e.g. opaque data format)

Wrap Up

Team members:

- Jamal Hadi Salim
- Shwetha Bhandari
- Tianran Zhou
- Tom Herbert
- Alex Aring
- Barak Gafni

First timers @ IETF/Hackathon:

- Justin Iurman
- Min Liu