

Internet Control Message Protocol (ICMPv6) Loopback

[draft-mcb-6man-icmpv6-loopback](#)

Tal Mizrahi, Tianran Zhou, Shahar Belkar, Reuven Cohen, Justin Iurman

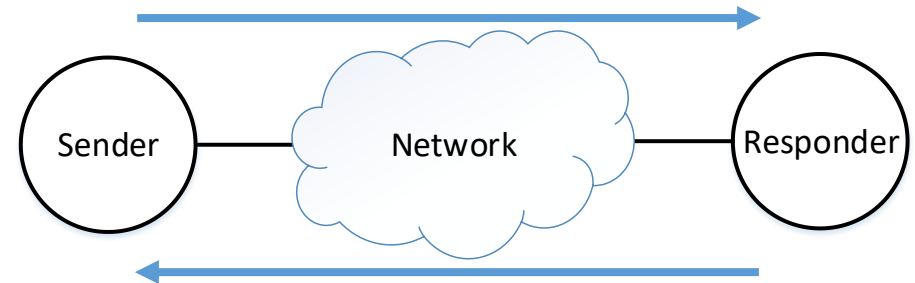
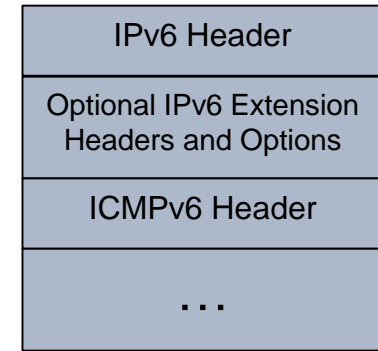
6man
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ICMPv6 Loopback

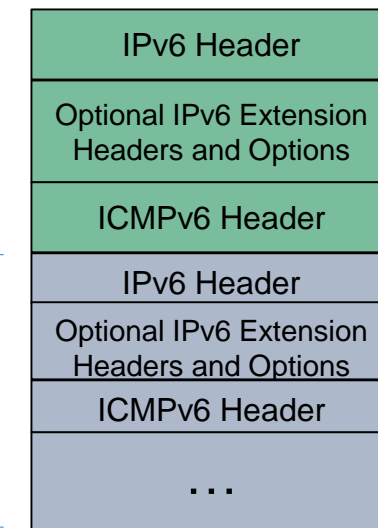
- Two new ICMPv6 types: Loopback Request, Loopback Reply.
- This is how Traceroute works today (ICMPv6 Time Exceeded).

- Use cases in which the Loopback Reply with IPv6 Extensions can be useful to the sender:
 - IOAM [RFC 9197]
 - Path tracing [draft-filsfils-ippm-path-tracing]
 - IFA [draft-kumar-ippm-ifa]
 - “Follow up” of hybrid two-step measurement [draft-ietf-ippm-hybrid-two-step]
 - SRH reflection
 - Minimum MTU reporting (as in [RFC9268])
 - Hop limit reflection
 - ...

ICMPv6 Loopback Request



ICMPv6 Loopback Reply



ICMPv6
Loopback
Request

Status and Next Steps

Status:

- Updated draft based on comments from WG.
- We have prepared a demo utility of Ping that displays per-hop IOAM information.
 - Uses ICMPv6 Loopback.
 - Code is on Github:
<https://github.com/talmi/IOAM-Ping-Demo>

```
user@ubuntu22:~/IOAM-Ping-Demo$ sudo ./ioam-ping.sh
tcpdump: listening on veth0, link-type EN10MB (Ethernet), snapshot length 262144 bytes
PING db01::1 (db01::1) 56 data bytes
152 bytes from db01::1: icmp_seq=1 ttl=64 time=0.124 ms IOAM: NodeID=1,HopLim=64,RcvTime=NA NodeID=2,HopLim=63,RcvTime=1721554104.948
152 bytes from db01::1: icmp_seq=2 ttl=64 time=0.087 ms IOAM: NodeID=1,HopLim=64,RcvTime=NA NodeID=2,HopLim=63,RcvTime=1721554105.983
152 bytes from db01::1: icmp_seq=3 ttl=64 time=0.086 ms IOAM: NodeID=1,HopLim=64,RcvTime=NA NodeID=2,HopLim=63,RcvTime=1721554106.993
152 bytes from db01::1: icmp_seq=4 ttl=64 time=0.099 ms IOAM: NodeID=1,HopLim=64,RcvTime=NA NodeID=2,HopLim=63,RcvTime=1721554108.33
152 bytes from db01::1: icmp_seq=5 ttl=64 time=0.109 ms IOAM: NodeID=1,HopLim=64,RcvTime=NA NodeID=2,HopLim=63,RcvTime=1721554109.45
--- db01::1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4097ms
rtt min/avg/max/mdev = 0.086/0.101/0.124/0.014 ms
12 packets captured
12 packets received by filter
0 packets dropped by kernel
```

Next steps:

- Potentially merge with draft-he-6man-icmpv6-extensions-ipv6-ext-header.
- WG adoption call.