

ILNP – Identifier Locator Network Protocol

FreeBSD 14.0 dynamic host multihoming

<https://ilnp.cs.st-andrews.ac.uk/>

School of Computer Science, University of St Andrews

ILNP – The story so far ...

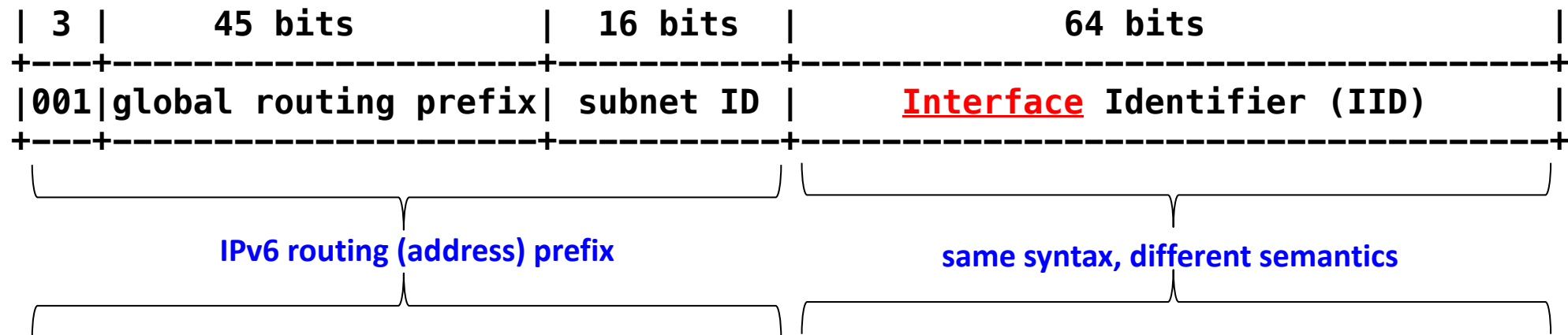
- RFCs 6740 – 6748 (Experimental)
- Ongoing research and development:
 - University of St Andrews
- IETF104/Prague – Linux 4.9 kernel
- **IETF118/Prague & IETF119/Brisbane – FreeBSD 14.0 kernel**

IETF120/Vancouver

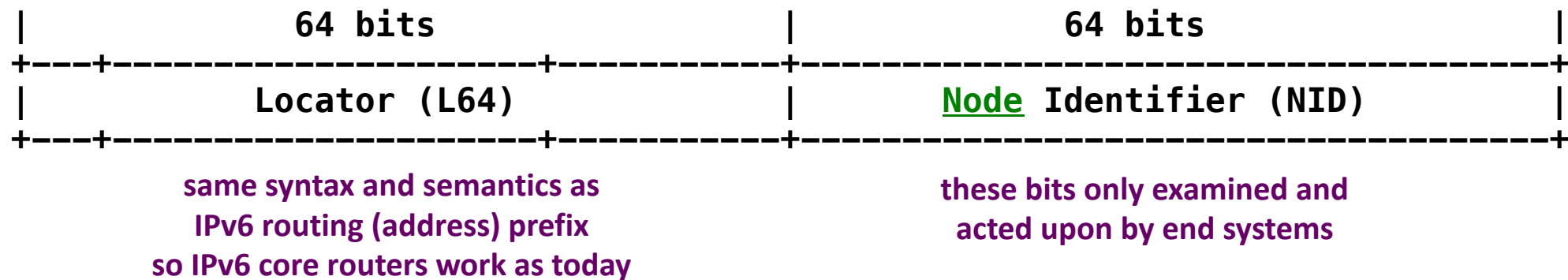
- Team:
 - Saleem Bhatti (Hackathon, project lead)
 - Gregor Haywood (BSD dev, remote)
 - Rod Grimes (BSD dev, Hackathon)
 - Alistair Woodman (Hackathon)
 - Many thanks to NOC Team 😊
- Aim: **test ILNP host multihoming connectivity between Vancouver and Scotland.**

ILNP addressing

IPv6 (RFC8200(S)) – general IPv6 global address format:

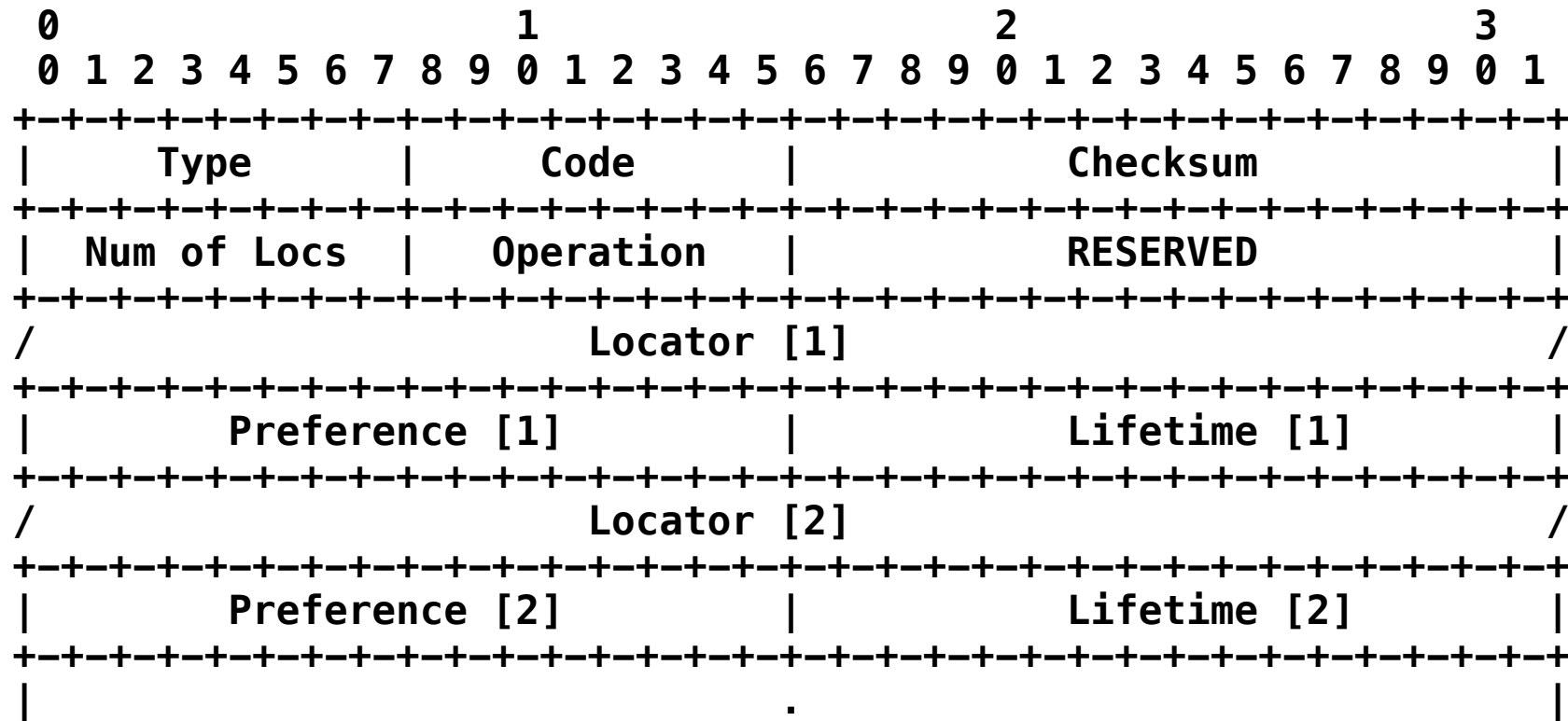


ILNP (RFC6741(E)) – Identifier Locator Vector (I-LV):



ILNP Locator Update (LU)

ICMPv6 Locator Update Message (RFC6743(E)):



Type = 156, Code = 0

Experiment

1. ILNP addressing architecture (RFC6741(E)).
2. ILNP Locator Update (RFC6743(E)).
3. **Dynamic multihoming by host:**
 - add Locators, dynamically, and try “multipath” TCP.
 - (Purely end-to-end control plane.)
 - Locator / interface sequence: 1, 2, 3, 4, 3, 2, 1.
 - *iperf3* (using 1., 2. and 3. above).
 - **IPv6 binaries (not modified for ILNP).**
 - server at University of St Andrews, Scotland.
 - client at IETF120/Vancouver.

Results (Hackathon, 21 July 2024)

