ILNP – Identifier Locator Network Protocol
DNS integration

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

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NetDEF



People

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- Saleem Bhatti
- With support from the ICANN Grant Program.
- Thanks to the IETF NOC Team for setting up the connectivity needed for testing and experiments. ☺

Identifier Locator Network Protocol (ILNP)

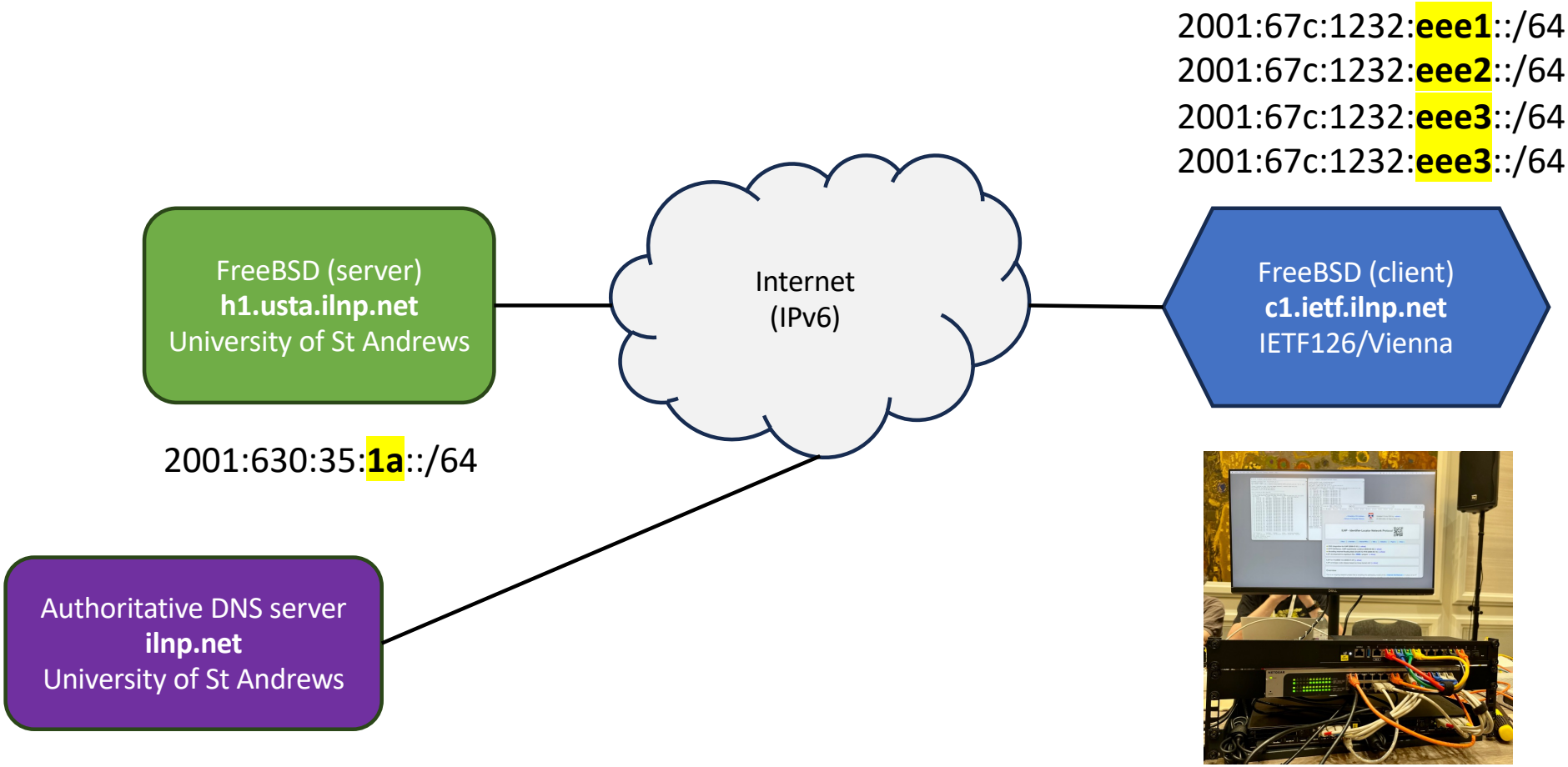
- **New addressing architecture using new data types.**
- RFCs 6740-6748 (Experimental)
- Identifier-Locator based addressing carried in IPv6 packets.
- No tunnels.
- No proxies.
- No NAT.
- No changes to routing or switching.
- No changes to existing IPv6 applications.

Testing and Experiment

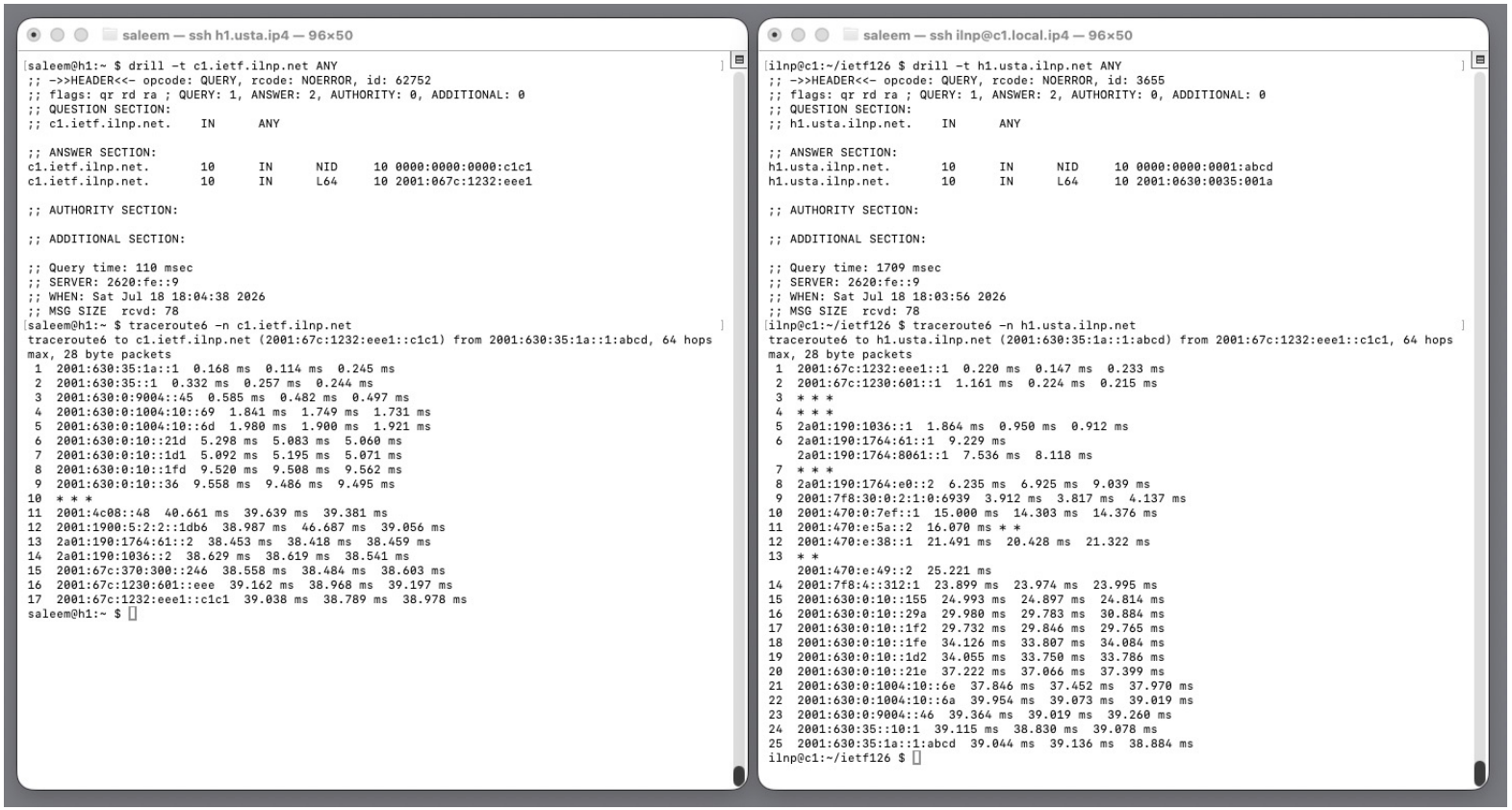
DNS integration

- ☺ FreeBSD implementation.
- ☺ DNS RRs for L64 and NID as defined in RFC6742(E).
- ☺ ilnp.net : authoritative DNS server at St Andrews.
- ☺ Modified libc / getaddrinfo(3):
  (a) Fetch L64 & NID RRs;
  (b) combine L64 & NID values into 128-bit I-LV values;
  (c) present I-LVs as IPv6 addresses in `struct addrinfo` (`AF_INET6`).
- ☺ Allow ILNP socket to be initiated by IPv6 applications.

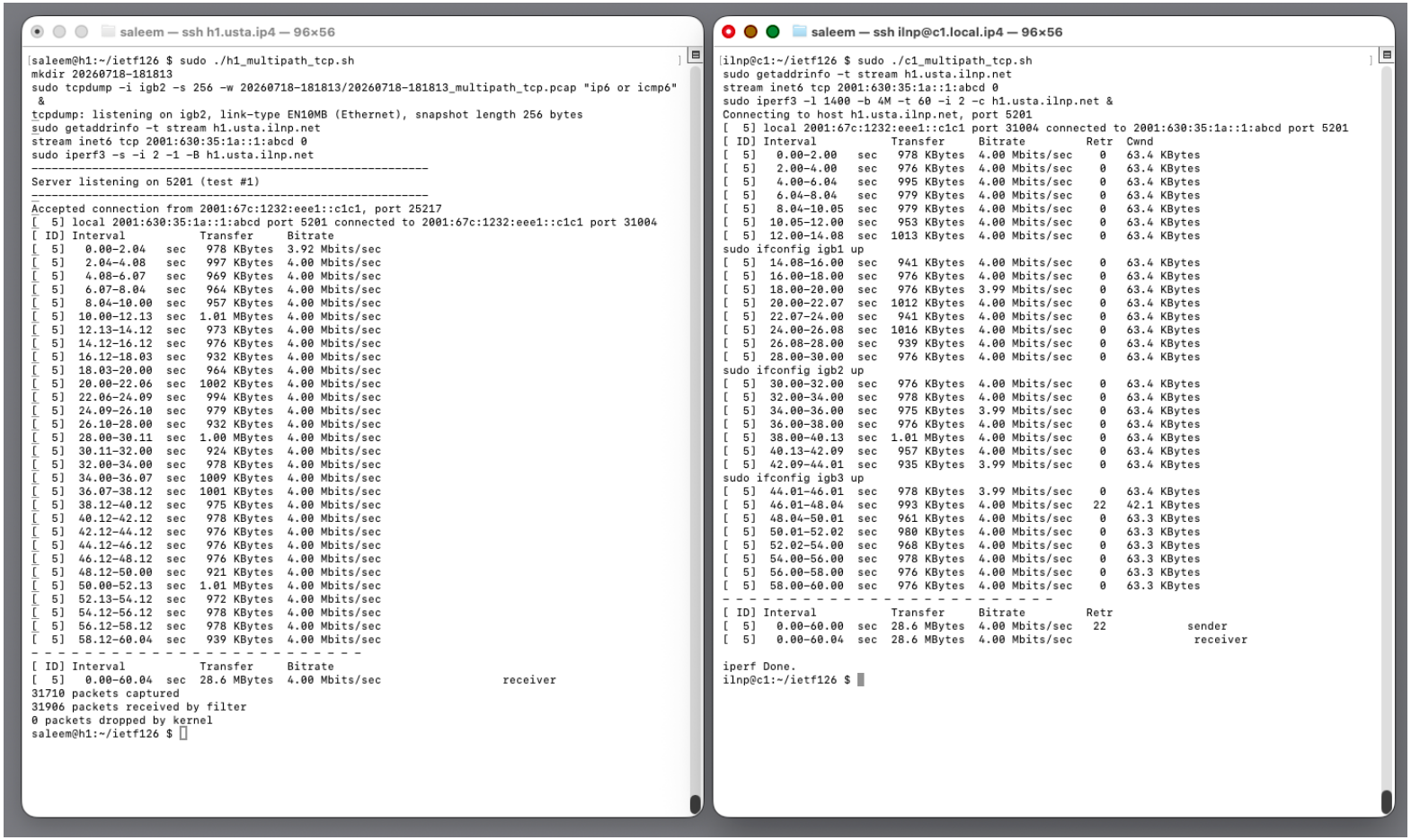
Network configuration



DNS with ILNP for IPv6 applications (1)



DNS with ILNP for IPv6 applications (2)



Internet Drafts : updates to ILNP RFCs

- Based on implementation experience, plus testing in labs and at IETF Hackathons over many years (Hackathon sites ⇔ St Andrews).
- draft-bhatti-ilnp-preference:
  - How to use Preference values with (multiple) L64 and NID values.
- draft-bhatti-ilnp-textual-representations:
  - Format for text/written values of L64, NID, I-LV.
- draft-bhatti-ilnp-nonce:
  - Clarification on use of nonce header: it should appear in every ILNP packet.
- draft-bhatti-ilnp-ip6-apps:
  - Allow IPv6 apps to gain some ILNP benefits via DNS and getaddrinfo().