DHCPv6 Hackathon

IETF'93, Prague

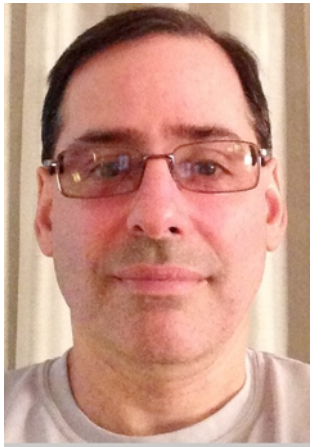
2015-07-18,19

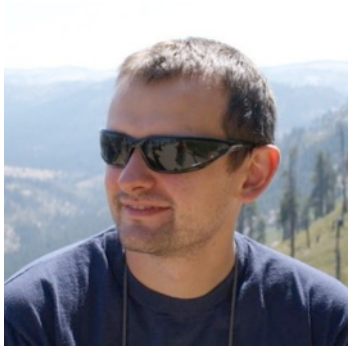
DHCPv6 Hackathon Overview

- Topics people expressed interest in:
  - Stateful issues
  - Secure DHCPv6
  - Privacy profile for DHCPv4 and DHCPv6
  - YANG DHCPv6 (?)
- People
  - We don't have badges yet. If you need to find folks involved, some photos are included.
- Setup
  - Isolated network (the addresses our servers offer are awesome, but…)
  - Wireshark running*
- Code
  - Cisco Prime Network Registrar (http://www.cisco.com/c/en/us/...)
  - Windows 10 prototype (https://www.microsoft.com/en-US/windows/...)
  - Kea (http://kea.isc.org, http://kea.isc.org/wiki/ietf93hackathon)
  - ISC DHCP (https://www.isc.org/downloads/dhcp/)
  - WIDE DHCPv6 (http://sourceforge.net/projects/wide-dhcpv6)
  - … (?)

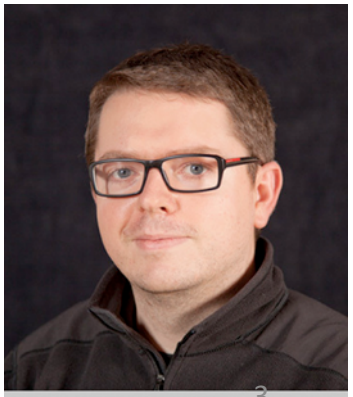
DHCPv6: Stateful issues

- Stateful issues – RFC3315 and RFC3633 defined IA_NA (addresses) and IA_PD (prefixes) processing; there was a number of issues and recently published RFC7550 (May 2015) seeks to solve most of them
- Essential part of the DHCPv6bis effort
- Prototype implementations:
  - Cisco Prime Network Registrar server
  - Kea server (http://kea.isc.org)
  - … ?
- Prototype DHCP conformance validation suite:
  - ISC Forge (http://github.com/isc-projects/forge)
- RFC7550
- Goal: test compliance, locate gaps, implement missing features


Bernie Volz

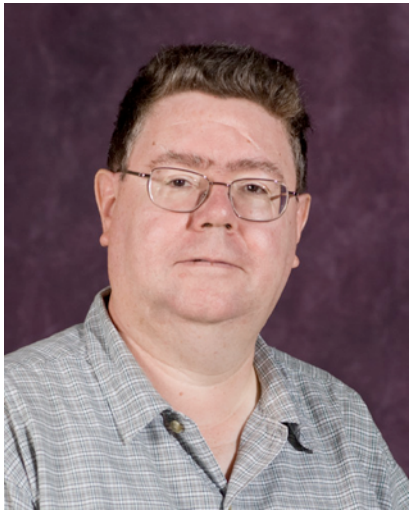

Marcin Siodelski


Włodek Wencel


Tomek Mrugalski

Secure DHCPv6

- Secure DHCPv6 – DHCPv6 lacks modern cryptographic protection. draft-ietf-dhc-sedhcpv6 defines strong authentication mechanism between DHCPv6 clients and servers, based on public/ private key pairs or certificates with associated private keys.
- Prototype implementations:
  - Kea server (http://kea.isc.org/wiki/GitGuidelines, branch sedhcpv6a)
  - ISC DHCP client (skeleton support WIP)
  - WIDE DHCPv6 client (http://*wide-dhcpv6.sourceforge.net*, *support in progress)*
  - … ?
- Goal: interop! Cover as many scenarios as possible.



Francis Dupont

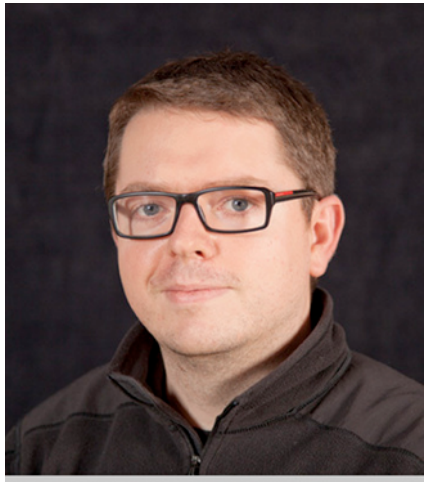
Jinmei Tatuya

DHCPv6 Privacy

DHCPv4 and DHCPv6 clients disclose many identifiers that can be used to track clients. This work seeks to eliminate that information leak by defining an anonymity profile, a set of DHCP behaviors. That includes:

- Randomizing MAC address + client-id/DUID
- Not disclosing client hostname
- Changing identity
- Limiting information disclosure when changing networks
- Prototype implementation:
  - Windows 10 (http://microsoft.com)
  - … ?
- I-D: draft-ietf-dhc-anonymity-profile
- Goal: test windows 10 prototype.

Christian Huitema



Tomek Mrugalski

DHCPv6 YANG module

There's ongoing effort in DHC to standardize YANG modules for DHCPv4 and DHCPv6. This effort of a team lead by prof. Yong Cui is working on implementation of the DHCPv6 YANG model based on libnetconf and netopeer.

- I-D: draft-cui-dhc-dhcpv6-yang
- Details: TBD

Tianxiang Li

Linhui Sun