Update (v0.2.0 release, Dec 2014)

IRTF ICNRG interim meeting, Boston, Jan 13+14, 2015
CCN-lite v0.2.0 – what is in the box

- CCN-lite is a forwarder (ccn-lite-relay):
  - pure C, still light in code size, modular
  - runs in user space and as a Linux kernel module
  - ICN mgmt channel (using the old ccnb methods)

- CCN-lite is a toolset:
  - peek, fetch, mkContent, mkInterest, chunkify
  - the tools work with the ccn-lite relay, but also with the NDN testbed
  - “universal” pktdump, autodetects encoding

- Incomplete at crucial places:
  - signature validation (except for mgmt channel)
  - routing protocol
  - selectors
CCN-lite – unique selling points

- CCN-lite is multi-protocol:
  - ccnb, ndn2013, ccnx2014, iot2014, cisco2015, rpc
  - name space bridging (access NDN content through CCNx)

- includes a fully functional Named-Function-Networking (NFN)
  - proof-of-concept, hard-core Lambda expression reduction
  - NFN-over-ccnb, NFN-over-ndntlv, NFN-over-ccntlv, ...

- BSD-style license

CCN-lite is also used, or studied, by:
- RIOT (HAW Hamburg, FUBerlin, INRIA) (not yet moved to v0.2.0),
- Orange, Ericsson research, Cisco
- in a UCLA collaboration in the mobile health area
CCN-lite – roadmap 2015

- soon: v0.2.1-release (with a “Boston packet format”?)
- Apr/May 2015: Interop (NDN done, CCNx1.0 forthcoming)
- Packet tap and reinjection interfaces, Python binding
- TLV encodings for higher level stuff:
  - Rivest’s S-expressions? (1999, part of SPKI, see RFC 2693)
- Rework the “NFN reduction machine”:
  - data structures, memory leaks, interactions with “routing machine”
  - from untyped Lambda-Calculus to list-aware NFN
  - other query languages, Datalog?
- An IoT gateway?
CCN-lite – What is your wishlist?
CCN-lite – and the multi-protocol demux problem

Given: One channel to ship different packet flavors.
Question: How to reliably detect the encoding scheme?

It's a forwarder problem, but also shared by ccn-lite-pktdump

- So far this demux was possible, “magic bytes”-style
- But the IOT-TLV encoding destroys this: dense code pt space
- Solution in CCN-lite: a “switch encoding code” (SEC)

<0x80> <INT(encodingID)> [pkt1 ...] [pkt2 ...]

A SEC can be inserted into a stream of packets
(it MUST be injected in case of IOT-TLV packets)