CCNx Technical Working Group

Meeting Minutes

4/13/16

Overview

Attendees: Kevin Fox, Cesar Ghali, Jim Gibson, Ilya Moiseenko, Börje Ohlman, Ravi Ravindran, Greg Rutz, Glenn Scott, Nacho Solis, Mark Stapp, Greg White, Christopher Wood

Scribe: Christopher Wood

Agenda

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1. Summarize IETF and ICNRG topics
    a. Updated documents and move towards publication
    b. Privacy and security [1,2,3]
    c. Other: compression, confidentiality and authorization, architecture goals/principles
2. Community action items (for Berlin)
    a. Plan for an interop -- what can we do?
    b. Collect papers on routing for the ICNRG wiki.
    c. Start documenting application design experience.
3. CCNx status update
    a. Ping [4]
    b. Manifest file transfer [5]
    c. In-progress tasks (DTLS links, manifest prefetching, etc.)
4. Open discussion on transport protocols

Related Material

[1] ICN Privacy Principles - https://github.com/chris-wood/icn-privacy-principles

[2] CCNx Key Exchange Protocol Version 1.0 - https://github.com/PARC/ccnx-keyexchange-rfc

[3] Secure Replica Service in CCN - https://github.com/PARC/ccnx-securereplica-rfc

[4] ccnxPing - https://github.com/PARC/ccnxPing

[5] ccnxFileRepo - https://github.com/PARC/ccnxFileRepo

Notes

- IETF overview.
- What will the WG be formed to do? What is the current activity to make this happen? Will it be the ICN WG?
    - There's no current activity.
    - We need to sketch a charter and circulate it.
    - It won't be about general ICN -- it will focus on transport and related issues.
        - Routing and security things will fall out of scope.
        - Flow and congestion control, e.g. are in scope.
- Will it be experimental or standards track?
    - Standards track.
- Current plan: create the charter, have a BOF in Berlin, and start the WG under the transport area in IETF 96 or 97.
- Comment: Transport might not be the best fit.
    - What area would be better?
        - Not sure if there's a perfect IETF area, but maybe the Internet area?
        - That covers more of the network related issues.
        - Transport is more geared towards IP transport and modifications to TCP, QUIC, etc.
            - Assumes host-based model running on top of IP
    - We are following in the footsteps of DTN.
    - The service of "moving things around" counts as transport and we can also run over IP.
    - There's no commitment that we will run under the transport area; that's only the current plan.
    - More likely: a transport area director will sponsor the BOF and we might move to a different group.
- DTN solves a particular problem, but ICN does not. How will we adapt to that?
    - Generating an architecture document may or may not limit what we can do.
- Maybe form a new area in the IETF?
- Why do we think this is ready for standardization?
    - For starters, there's a need for interoperability.
- Is NDN on board?
    - We have not consulted with them yet.
    - We will circulate the proposal to the mailing list for wider feedback.
    - The scope of the working group would include NDN.
- What should we target for the interop in Berlin?
    - It might be interesting to get applications running on two different sites.
    - ccn-lite and CCNx had some interop issues with larger files being transferred.
    - We could possibly run with multiple file servers.
- Would the interop test be held during the hackathon?
    - If it is held, perhaps.
- Would the interop prescribe some fixed topology?
    - We will try to find something interesting.
- We need to start filling out the routing page wiki.
    - Chris will talk with the chairs to set up the page, collect papers, and try to solicit talks.
- We should start documenting application experience.
    - There seems to be a differing view of what applications appear.
    - This would be a document that describes application conventions.

    - E.g., describing how names are used to convey certain semantics.
- What is the right process? Do we need a shepherd?
    - Maybe we can start a wikia?
    - Maybe hold a new meeting to give lightning discussions about application design experience.
        - There must be some dialogue.
    - Chris will query the mailing list to gather interested parties.
- There's a need for some transport protocol.
    - Cisco has one better than stop-and-wait, but we need something more.
    - Not clear about where signals come from to drive the protocol.
- We might have problems if every consumer has their own scheme or flow controller implementation.
    - Nacho: we can create a consumer-driven transport protocol.
    - Forwarder signals in ICN might be more useful than in IP.
- Maybe we should be looking beyond TCP Cubic, e.g., and towards datacenter-friendly TCP implementations (that are not so friendly).
- Claim: intermediate nodes need to be TCP friendly, not the client.
    - No one has realized this type of protocol at line rate yet.
- We should have some sort of ICN congestion avoidance discussion or call.
    - Chris will circulate another query to identify interested parties.

Action Items

- Follow up on the routing wiki page. [Chris and Börje]
- Send the application design experience inquiry to the mailing list. [Chris]
- Circulate an interop proposal with planned features. [Chris]
- Broadcast a proposal to start a call or meeting to discuss transport protocols. [Chris]

Next Meeting

Date & Time: 4/27/16 at 11am PST

Tentative agenda:

- Review the interop plan and identify next steps.
- Discuss the application design experience wiki page.
- Discuss the compress, encapsulate, and encrypt pipeline.
- Open discussion about the encapsulation API.
- CCNx status update (DTLS links, manifest prefetching, etc.)