Application Example

NDN Tutorial – ACM ICN 2015
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Goals

A modern-looking, running web-based application to demonstrate intermediate NDN concepts such as sync and verification.

Use NDN-JS so anyone with a browser and text editor can follow along.
Another Chat Application?

Chat is an intuitive problem

Natural abstraction layers: dive into or hide details as desired

Showcases a wide range of NDN concepts:
  Naming
  Synchronization
  Trust & Verification
  Data persistence

http://named-data.net/apps/live/chat/

https://github.com/named-data/ChronoChat-js
Application Model: Slack

http://slack.com/

Org-oriented chat

Persistent chat log
  • users can join at any time and see entire history

Rich media support
  • share files, multimedia, etc.
NDN App Differences

P2P NDN network, overlaid on Websockets.

Chat log persisted by users maintaining replicas.
   Only store verified messages
   Visually distinguish verified & unverified messages

Demonstrate ease of building this type of app in a true P2P fashion using sync and verification.

For this demo:
   Open access for easy participation
   No encryption
   Limit to 1 channel
   All participants connect to a single hub.
Organization Oriented

Slack:
Users join org’s chat by invitation or having a whitelisted email domain

Demo:
Users request a certificate from demo CA
Associated key is authorized to publish Data under demo chat namespace
Simple analogy to key hierarchies for tutorial trust model
Persistent Chat Log

Slack:
Slack-owned servers maintain chat history, files, etc.

Demo:
Data persistence via user user replication

Content is signed: able to retrieve verifiable copy from any participant
Rich Media

Slack:
  Many supported service integrations in addition to homegrown ones

Demo:
  Focus on text and simple file/picture sharing

  All messages exchanged will be HTML
    Use NDN names for image links (viewable via our Firefox addon)
Chat Protocol

Sync notification of new messages

Application data carries new messages as HTML
  Text inline
  Images are NDN links that are optionally retrieved

Browser renders accordingly with CSS
Application Demo

Requires Firefox version > 40
http://memoria.ndn.ucla.edu/icn-tutorial/icn-tutorial-app/

OR

Run locally with Chrome

git clone https://github.com/zhehaowang/icn-tutorial-app
Running the App Yourself

Requires Firefox version > 40

OR

Run locally with Chrome:
   git clone https://github.com/zhehaowang/icn-tutorial-app