

CCNxCon Hackathon Update

(and Interop)

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2015-05-19

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CCN hands-on day summary

Tutorial

Hackathon

Interop

<http://www.ccnx.org/download/>

CCNx Downloads

Software Downloads

Current

- CCNx 1.0 Binary Release (Absinthe 1.0) (Intel) – 5/16/15
- CCNx 1.0 Binary Release (Absinthe 1.0 Optimized) (Intel) – 5/16/15
- CCNx Tutorial Source code (github) – 5/1/15


CCNx Tutorial

Untar Binary

Installs directly into `/usr/local/parc` and `/usr/local/ccn`

```
[ccn@ccntutorial:/tmp]$ ls -l
total 4444
-rw-rw-r-- 1 ccn ccn 4549285 May  1 16:08 distillery-ccnx-absinthe-1.0-20150501-Linux-x86_64.tgz
[ccn@ccntutorial:/tmp]$ tar tzvf distillery-ccnx-absinthe-1.0-20150501-Linux-x86_64.tgz | head
drwxr-xr-x isolis/root          0 2015-05-01 13:39 usr/local/parc/
drwxrwxr-x isolis/isolis        0 2015-05-01 13:38 usr/local/parc/include/
drwxrwxr-x isolis/isolis        0 2015-05-01 13:37 usr/local/parc/include/LongBow/
-rw-r--r-- isolis/isolis 4559 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_Config.h
-rw-r--r-- isolis/isolis 3740 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_SubProcess.h
-rw-r--r-- isolis/isolis 1807 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_TestFixtureConfig.h
-rw-r--r-- isolis/isolis 4732 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_Event.h
-rw-r--r-- isolis/isolis 2617 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_Location.h
-rw-r--r-- isolis/isolis 5091 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_RuntimeResult.h
-rw-r--r-- isolis/isolis 8618 2015-05-01 13:37 usr/local/parc/include/LongBow/longBow_Compiler.h
[ccn@ccntutorial:/tmp]$ sudo tar -C / -xzvf distillery-ccnx-absinthe-1.0-20150501-Linux-x86_64.tgz
```


https://github.com/PARC/ccnx-tutorial

 **PARC / ccnx-tutorial**

Unwatch 8

Unstar 3

Fork 1

Description

Short description of this repository

Website

Website for this repository (optional)

Save


 or [Cancel](#)

9 commits


1 branch

0 releases


1 contributor

 branch: **master** ▾




ccnx-tutorial / +



Check for libssl in configure

 Nacho authored 2 days ago

latest commit 6187ec70f4

 m4	Check for libssl in configure	2 days ago
 src	Check for libssl in configure	2 days ago
 .gitignore	Add a few more files to ignore	12 days ago

<> Code

Issues 0

Pull requests 0

Wiki

Pulse

Graphs

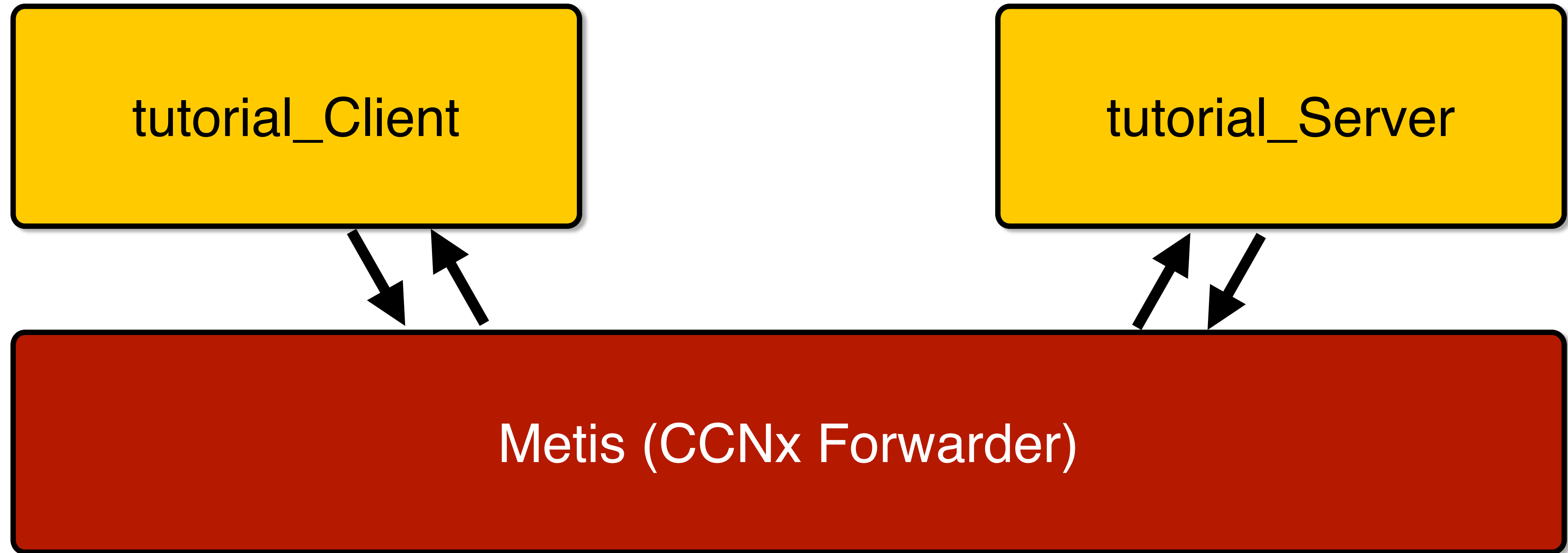
Settings

CCNx Tutorial

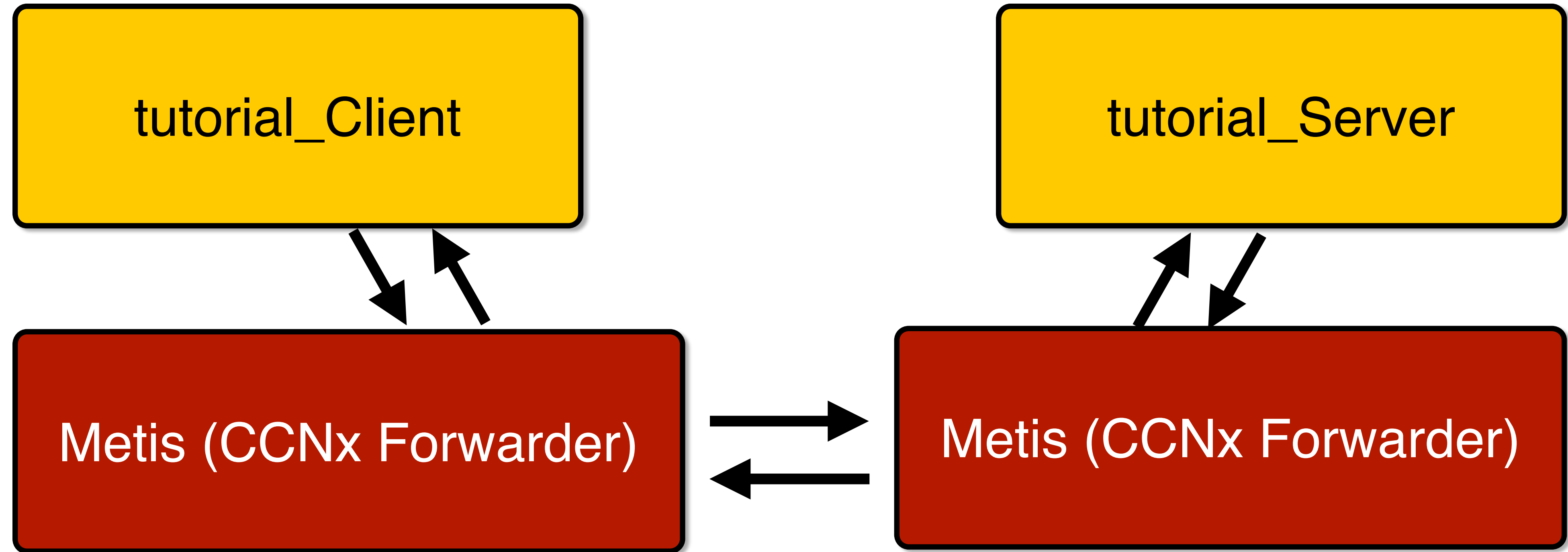
Clone, Configure, and Compile CCN-Tutorial-Demo

```
[ccn@ccntutorial:/tmp]$ git clone https://github.com/PARC/ccnx-tutorial.git
Cloning into 'ccnx-tutorial'...
remote: Counting objects: 54, done.
remote: Total 54 (delta 0), reused 0 (delta 0), pack-reused 54
Unpacking objects: 100% (54/54), done.
Checking connectivity... done.
[ccn@ccntutorial:/tmp]$ cd ccnx-tutorial
[ccn@ccntutorial:/tmp/ccnx-tutorial]$ ./configure ; make
```

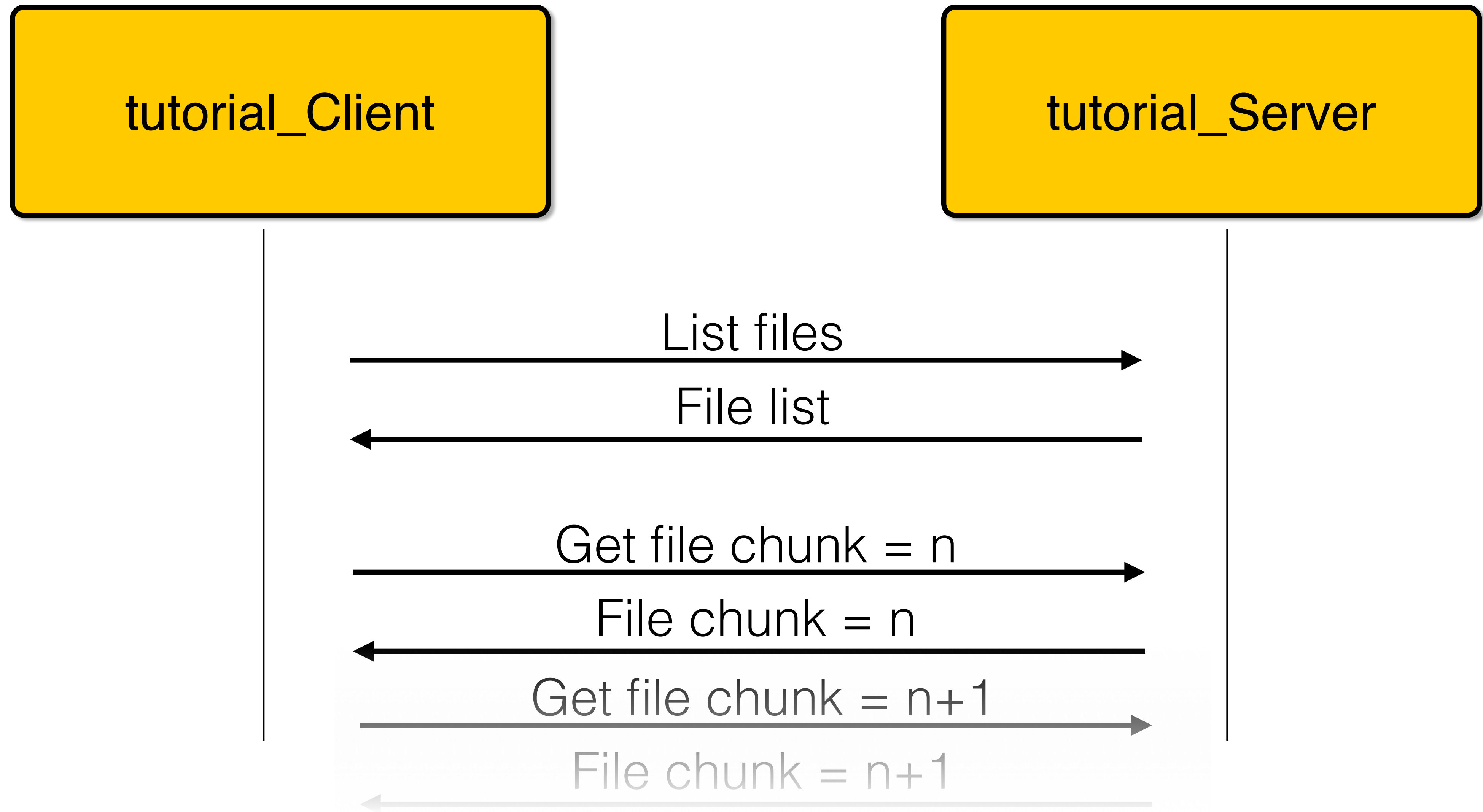
Demo-Tutorial



Demo-Tutorial



Demo-Tutorial



Demo server

```
server
{

    portalFactory = createPortalFactory(credentials);
    portal = portalFactory_CreatePortal(portalFactory);

    ccnxPortal_Listen(portal, "lci:/ccnx/tutorial");

    while (!done) {
        interest = ccnxPortal_Receive(portal);
        command = getCommand(interest);
        if (command == 'list') {
            contentObject = createListResponse(interest)
        } else if (command == 'fetch') {
            contentObject = createFetchResponse(interest);
        }
        portal_Send(portal, contentObject);
    }

}
```


Demo client

```
client
{
    portalFactory = createPortalFactory(credentials);
    portal = portalFactory_CreatePortal(portalFactory); // In Chunked mode
    name = createNameForCommand(argv);                // e.g. "lci:/ccnx/tutorial/fetch/
    interest = createInterest(name);

    ccnxPortal_Send(portal, interest);

    while (!done) {
        contentObject = ccnxPortal_Receive(portal);
        payload = ccnxContentObject_GetPayload(contentObject);
        chunkNumber = getChunkNumberOfContentObject(contentObject);
        finalChunkNumber = getFinalChunkNumberOfContentObject(contentObject);

        assembleThingBeingFetched(payload, chunkNumber);

        if (chunkNumber == finalChunkNumber) {
            done = true;
        }
    }
}
```

https://github.com/PARC/ccnx-hello-world

 **PARC / ccnx-hello-world**

Unwatch ▾8

★ Star0

🍴 Fork1

Description

Short description of this repository

Website

Website for this repository (optional)

Save or Cancel





 4 commits

 1 branch

 0 releases

 1 contributor

 branch: master ▾ **ccnx-hello-world** / + 

Make license clear in README		
	Nacho authored a day ago	latest commit f4fa5d8813
 ChangeLog	Add a ChangeLog, in case we decide to develop this further	a day ago
 LICENSE	Simple helloWorld CCNx application	a day ago
 Makefile	Simple helloWorld CCNx application	a day ago

<> Code

 [Issues](#) 0

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Makefile

```
EXECUTABLES = helloWorld_Consumer helloWorld_ConsumerForever helloWorld_Producer

all: ${EXECUTABLES}

CCNX_HOME=/usr/local/ccnx
PARC_HOME=/usr/local/parc

INCLUDE_DIR_FLAGS=-I. -I${CCNX_HOME}/include -I${PARC_HOME}/include
LINK_DIR_FLAGS=-L${CCNX_HOME}/lib -L${PARC_HOME}/lib
CCNX_LIB_FLAGS=-lccnx_api_portal -lccnx_api_notify -lrta -lccnx_api_control -lccnx_common
PARC_LIB_FLAGS=-lparc -llongbow -llongbow-ansiterm
DEP_LIB_FLAGS=-lcrypto -lm -levent

CFLAGS=${INCLUDE_DIR_FLAGS} ${LINK_DIR_FLAGS} ${CCNX_LIB_FLAGS} ${PARC_LIB_FLAGS} ${DEP_LIB_FLAGS}

CC=gcc -O2 -std=c99

helloWorld_Consumer: helloWorld_Consumer.c config.h
    ${CC} helloWorld_Consumer.c ${CFLAGS} -o helloWorld_Consumer

helloWorld_ConsumerForever: helloWorld_ConsumerForever.c config.h
    ${CC} helloWorld_ConsumerForever.c ${CFLAGS} -o helloWorld_ConsumerForever

helloWorld_Producer: helloWorld_Producer.c config.h
    ${CC} helloWorld_Producer.c ${CFLAGS} -o helloWorld_Producer

clean:
    rm -rf ${EXECUTABLES}
```

https://github.com/isolis/ccnx-ping



isolis / ccnx-ping

forked from PARC/ccnx-hello-world

Unwatch

1

Star

0

Fork

1

Description

Short description of this repository

Website

Website for this repository (optional)

Save

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6 commits

1 branch

0 releases

1 contributor

 branch: master


ccnx-ping / +



This branch is 2 commits ahead of PARC:master

[Pull Request](#) [Compare](#)

Add some data to the README

 Nacho authored 21 hours ago


latest commit d96321e96d

[ChangeLog](#)


Add a ChangeLog, in case we decide to develop this further


a day ago


[Code](#)


 [Pull requests](#)

0

 [Wiki](#)

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ccnx-ping

```
[isolis@Distillery-dev:~/Distillery/Apps/ccnx-ping]$ ./ccnx-ping
```

```
447 us ( 447 us avg)
```

```
492 us ( 469 us avg)
```

```
314 us ( 417 us avg)
```

```
440 us ( 423 us avg)
```

```
384 us ( 415 us avg)
```

Other projects...

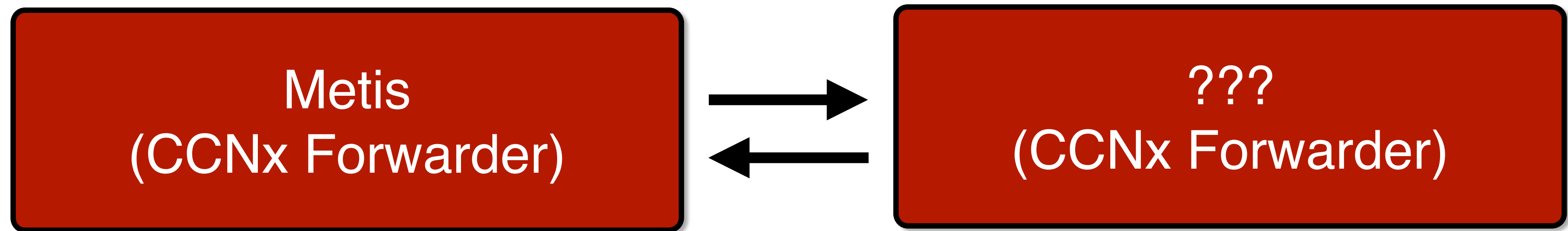
Containers

IoT

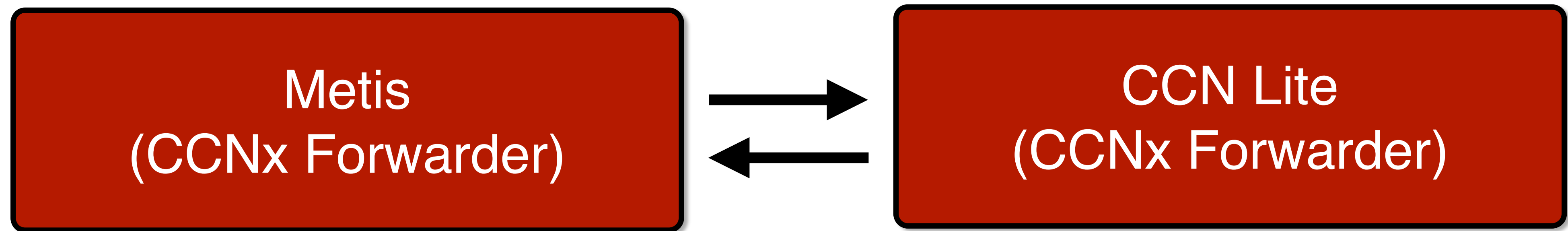
UDP app-to-forwarder

...

Interop



Interop



ccn-lite

[\[refresh\]](#) ccn-lite-relay Status Page node **cs-ndn-testbed1.cs.unibas.ch (31932)**
Tue May 19 23:45:05 2015 (started Tue May 19 20:40:58 2015)

Forwarding Table

- via 'echoserver': /ccnx/ch/unibas/ccnxcon2015/echo

Faces

Interfaces

- **i0** addr=0.0.0.0/9695 qlen=0/64 rx=41 tx=41
- **i1** addr=/tmp/.ccnl.sock qlen=0/64 rx=0 tx=0

Misc stats

- Nonces: 0
- Pending interests: 0
- Content chunks: 43 (max=-1)

Config

content.timeout:	30
face.timeout:	15
interest.maxretransmit:	2
interest.timeout:	4
nonces.max:	256
compile.featureset:	CCNxDIGEST, DEBUG, DEBUG_MALLOC, ECHO, ETHERNET, HMAC256, HTTP_STATUS, LOGGING, MGMT, NFN_NSTRANS, SUITE_CCNB, SUITE_CCNTLV, SUITE_CISTLV, SUITE_IOTTLV, SUITE_LOCALRPC, SUITE_NDN TLV, UNIXSOCKET,
compile.time:	May 19 2015 16:08:20
compile.ccnl_core_version:	2015-05-07

Eureka!

now it works, I can fetch a chunk

I was not expecting all content to be chunked. But surprise: the chunking code for interests (written several months ago by Basil Kohler) still works.

No - our content was not chunked to far - I will produce some, hang on.
Or can you fetch without a chunk0 component? Yes, I saw your requests.

c

Packet dump

```
# ccn-lite-pktdump, parsing 469 bytes
#   auto-detected CCNx TLV format (as of Mar 2015)
#
0000  hdr.ver=1
0001  hdr.pkttyp=0x01 (Content\toplevelCtx)
0002  hdr.pktlen=469
0007  hdr.hdrlen=8
0008  hdr.end
0008  00 02 01 31 -- <Object\toplevelCtx, len=305>
000c    00 00 00 2f -- <Name\globalCtx, len=47>
0010      00 01 00 04 -- <NameSegment\nameCtx, len=4>
0014        63 63 6e 78                                |ccnx|
0018      00 01 00 08 -- <NameSegment\nameCtx, len=8>
001c        74 75 74 6f 72 69 61 6c                    |tutorial|
0024      00 01 00 05 -- <NameSegment\nameCtx, len=5>
0028        66 65 74 63 68                                |fetch|
002d      00 01 00 09 -- <NameSegment\nameCtx, len=9>
0031        69 6e 64 65 78 2e 74 78                    |index.tx|
0039        74                                            |t|
003a      00 10 00 01 -- <Chunk\nameCtx, len=1>
003e        00                                            |.|
003f      00 19 00 01 -- <type=0x0019\msgCtx, len=1>
0043        00                                            |.|
0044      00 01 00 f5 -- <Payload\msgCtx, len=245>
0048        74 6f 74 61 6c 20 31 31                    |total 11|
0050        34 34 0a 2d 72 77 2d 72                    |44.-rw-r|
0058        77 2d 72 2d 2d 20 31 20                    |w-r-- 1 |
0060        6d 6d 6f 73 6b 6f 20 6d                    |mmosko m|
```


Alas!

When I try to read `lci:/ccnx/ch/unibas/ccnxcon2015/draft-mosko-icnrg-ccnxsemantics-01.txt`, I get an error parsing the frame.

```
<Warning> 1 2015-05-19T16:33:45.656580Z ccnx IO metis 67014699  
[ read 4096 bytes from fd 14, expected 4154 ]
```

It looks like the UDP reassembly is 4096 bytes but the fixed header says it should be 4154 bytes. Also, wireshark is not showing fragments past 0 arriving, so it might be some sort of UDP fragmentation issue between our sites.

Next steps...

Code testing and feedback

Deployment feedback

Continue on mailing list

Get the code

<https://www.ccnx.org/download/>

<https://github.com/PARC/ccnx-tutorial>

<https://github.com/PARC/ccnx-hello-world>