

- A. Install the operating system for a virtual machine
  - a. Install Ubuntu 14.04 (64-bit and 32-bit) from the internet

Create a new folder name it NFDServer, put a copy of Ubuntu in it >>>a copy not the file itself because we will make many copies.

- b. Create a new virtual machine with it using vmware workstation

To install vmware program, <http://www.4shared.com/file/HJiEYOI5ce/VMware-workstation-full-901-89.html>

To install it keygen ,

[http://www.4shared.com/rar/OMARu9ybba/VMware Workstation 90 Keygen -.html](http://www.4shared.com/rar/OMARu9ybba/VMware_Workstation_90_Keygen_.html)

Crack the program by running the keygen then copy the key and add it to the VMware program

In vmware program--> create new virtual machine→next→ browse to the ISO file of Ubuntu that you put in the new folder.--> fill the data nfd,nfd,123,123→virtual machine name:nfdserver , location: place of the folder nfd that you created.--> store as a single file→ finish

- B. Install NFD Using the NDN PPA Repository on Ubuntu Linux, Using the terminal run the following

Press ctrl+alt+T → a terminal will be opened. Copy and paste each command

If ask for a password it is 123

```
sudo apt-get install software-properties-common
```

```
sudo apt-get install git libssl-dev libsqlite3-dev libcrypto++-dev libpcap-dev libboost-all-dev doxygen graphviz python-sphinx python-pip
```

```
sudo apt-get install build-essential libprotobuf-dev liblog4cxx10-dev pkg-config automake libtool doxygen
```

```
sudo pip install sphinxcontrib-doxylink sphinxcontrib-googleanalytics
```

```
git clone https://github.com/named-data/ndn-cxx
```

```
git clone --recursive https://github.com/named-data/NFD
```

```
cd ndn-cxx
```

```
./waf configure
```

```
./waf
```

```
        sudo ./waf install
        cd ..
cd NFD
        ./waf configure
        ./waf
        sudo ./waf install
        cd ..
sudo cp /usr/local/etc/ndn/nfd.conf.sample /usr/local/etc/ndn/nfd.conf
```

### C. Configure NFD

Close any terminal, ctrl +alt + t to open new terminal

```
ndnd-tlv-stop
ndndstop
nfd-start
```

E.run the examples

Close any terminal, ctrl +alt + t to open new terminal

```
cd ndn-cxx
./waf configure --with-examples
./waf
sudo ./waf install
sudo ldconfig
```

f. To run examples:

```
#trivial producer app
./build/examples/producer
```

```
#trivial consumer app
./build/examples/consumer
```

```
#trivial consumer app with timers
./build/examples/consumer-with-timer
```

## G.New examples

if you want to test out a sample application, just create a `.cpp` file in `examples/` folder and it will be compiled on the next run on `./waf`. For example:

```
cp examples/my-new-consumer-app.cpp
```

```
./waf
```

```
sudo ./waf install
```

```
./build/examples/my-new-consumer-app
```

Create a second vm with ubuntu

repeat all above