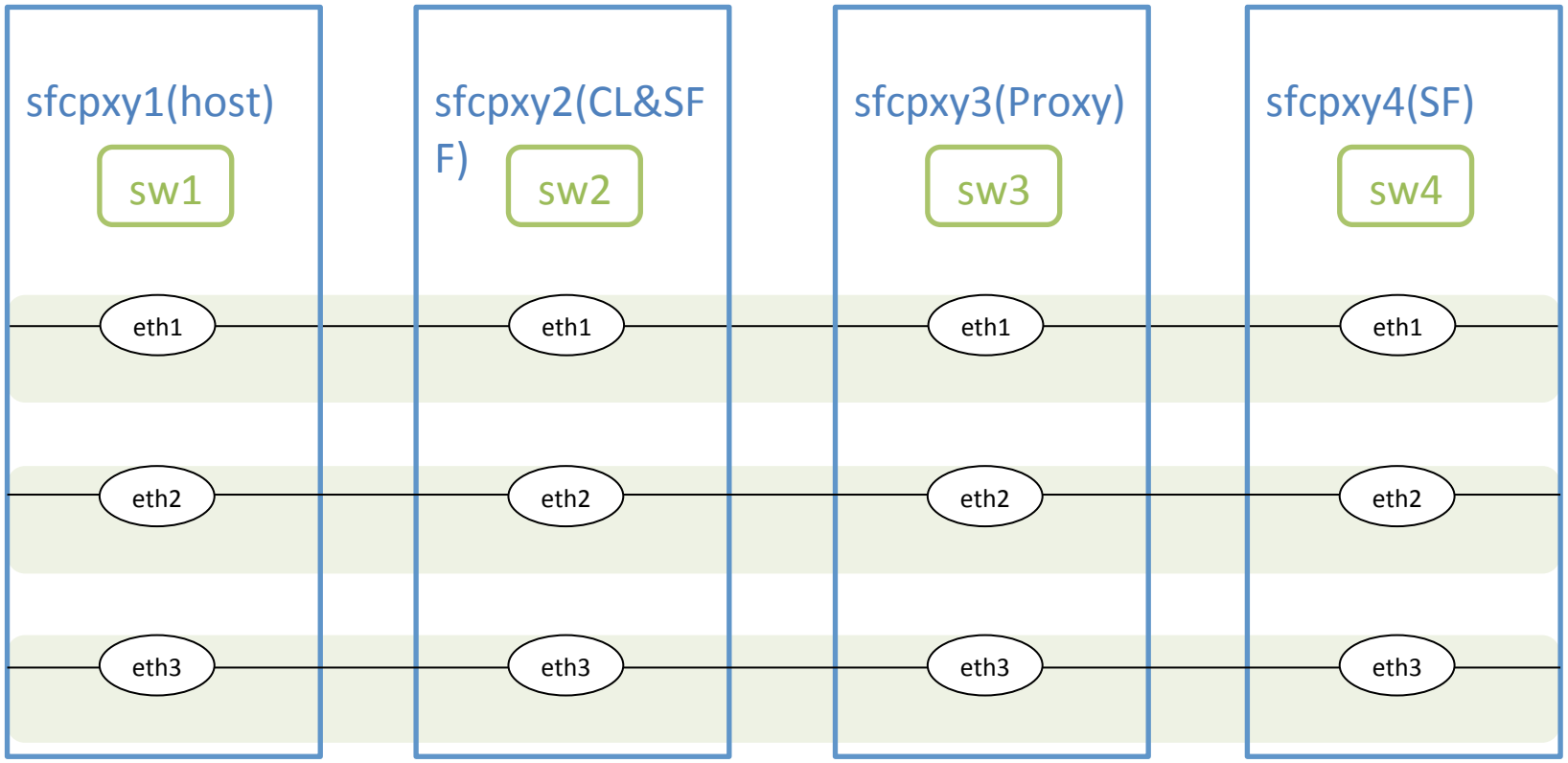
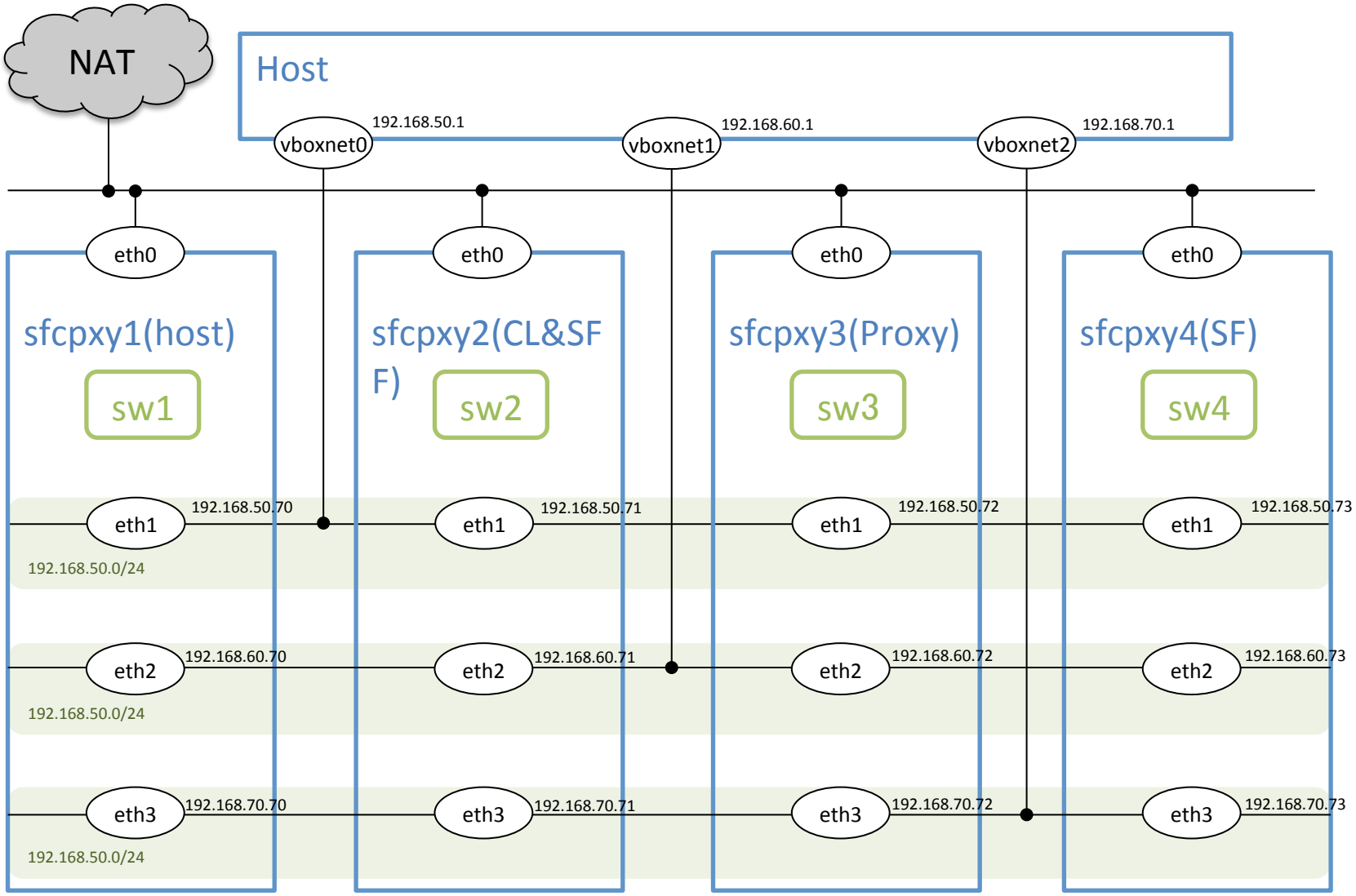
Revision

- 5 Nov 2015 14:46 JST
  - Topologies are changed.
- 31 Oct 2015 23:38 JST
  - Topologies are chenged.
- 31 Oct 2015 15:05 JST
  - Add “How to analyze nsh header in Wireshark”.

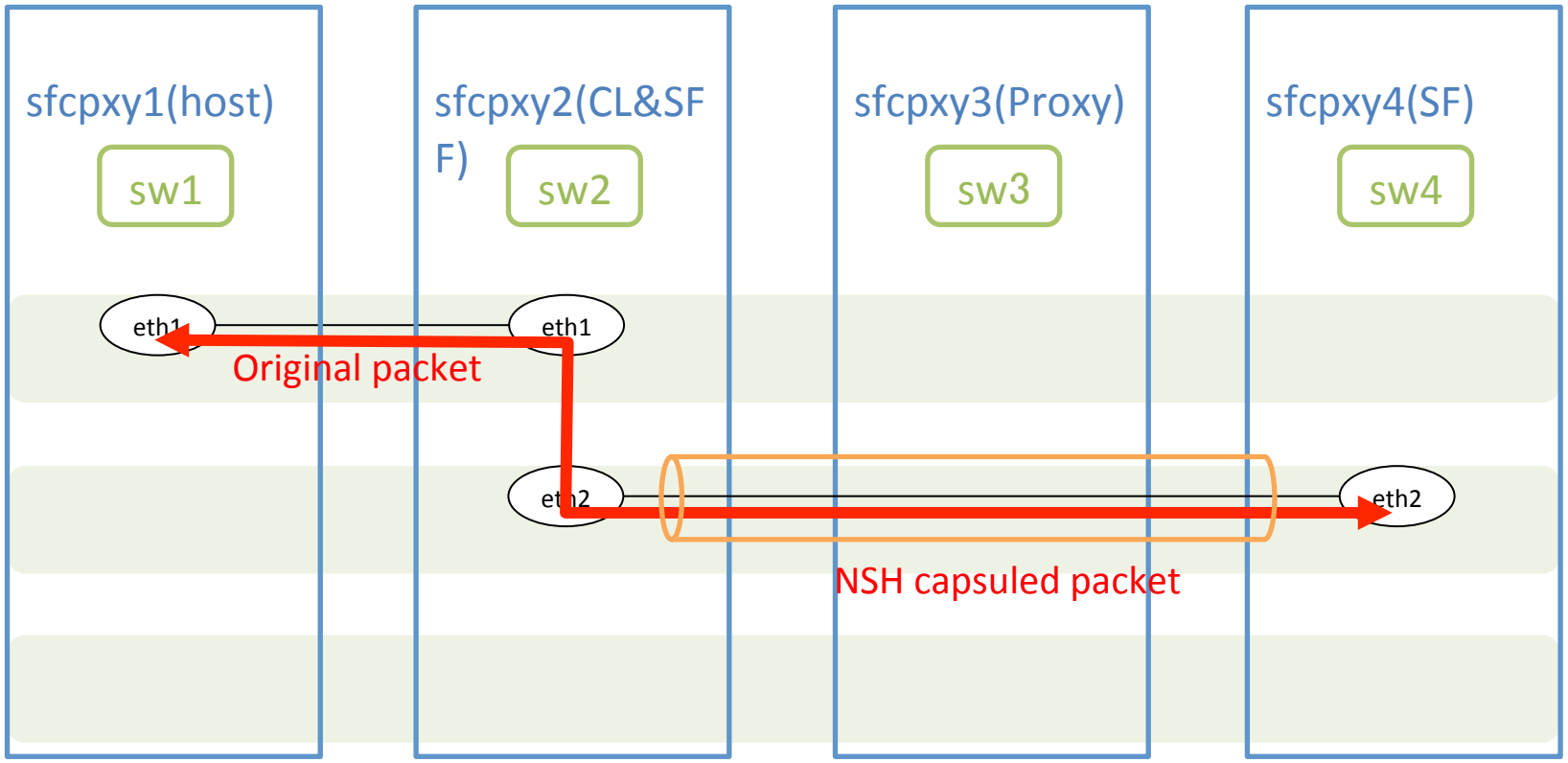
Network Topology(logical)



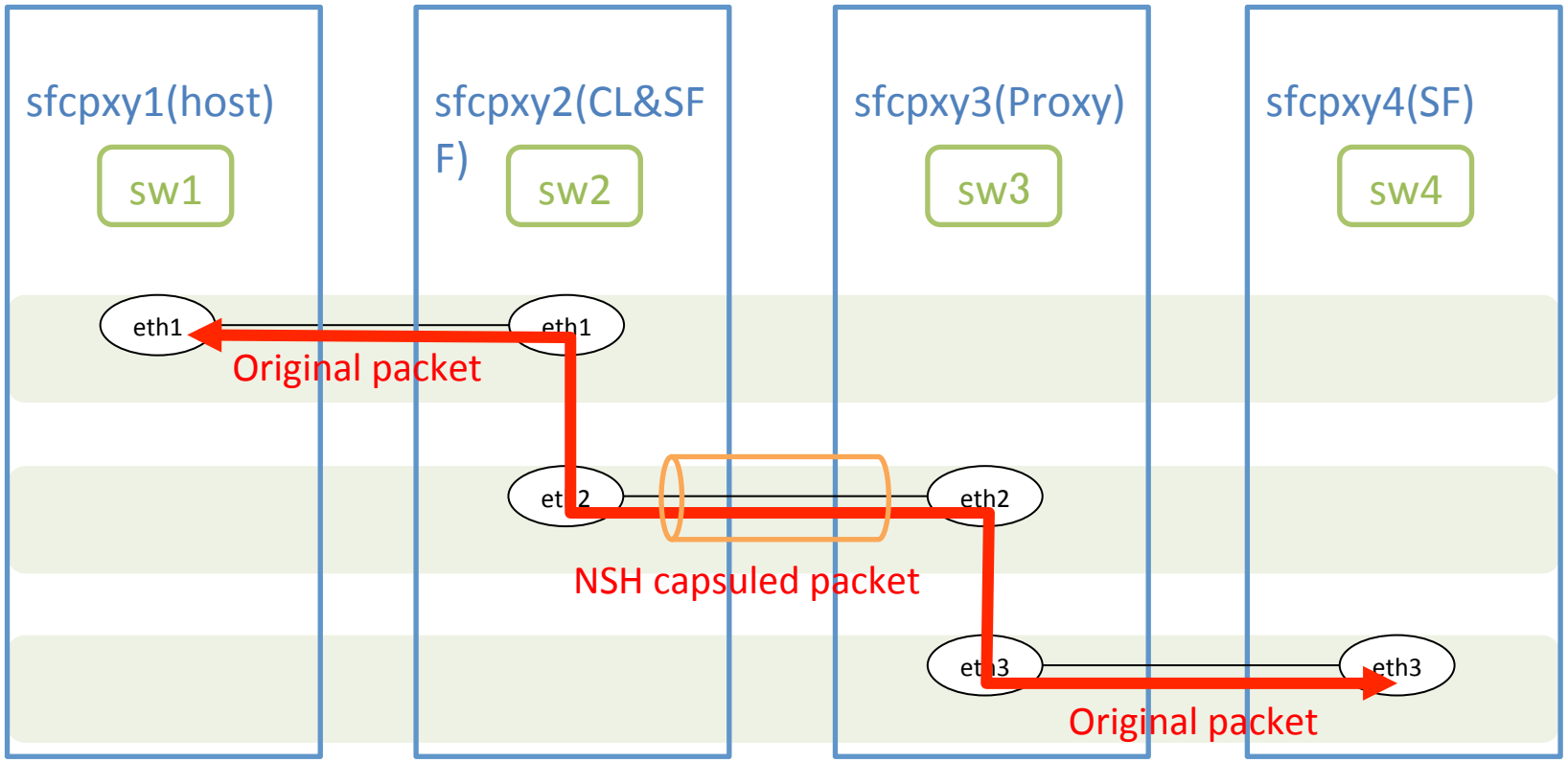
Network Topology(detailed)



Scenario1: NSH-aware SF



Scenario2: non NSH-aware SF



Preparation (Before testing)

- Install the applications below.
  - VirtualBox
    - https://www.virtualbox.org/wiki/Downloads
  - Vagrant
    - https://www.vagrantup.com/downloads.html
- ~~Install the OpenDaylight.~~
  - ~~https://www.opendaylight.org/downloads~~
  - It includes in the VM images.
- Download VM image file.
  - https://atlas.hashicorp.com/toshirin/boxes/sfcpxy_base/versions/**1.1**/providers/virtualbox.box
  - Large file about 1.17GB.

Start Network & VMs(1)

1) Clone the “sfcpxy” git repogitory.
   - git clone https://github.com/toshirin/sfcpxy.git
2) In the repogitory, modify the “Vagrantfile”.
   - Find “###Your Directory Here###”, and replace to your VM image file path which you have downloaded before.
3) Read the configuration, then start VMs.
   - **source ./env.sh**
   - vagrant up
     - This may take several minutes.

Start Network & VMs(2)

4) Run the OpenDaylight.
   1) Login to sfcpxy1: vagrant ssh sfcpxy1
   2) Extract the OpenDaylight: tar -xvzf distribution-karaf-0.3.2-Lithium-SR2.tar.gz
   3) Run the OpenDaylight: cd distribution-karaf-0.3.2-Lithium-SR2; bin/karaf
   4) Install the features: feature:install odl-sfc-core odl-sfc-ui odl-sfc-ui odl-sfcofl2
5) Run the setting scripts.
   - ./startdemo.sh nsh-aware
     - The argument phrase is for selection of test scenarios.
     - As a first step, select “nsh-aware” or “non-nsh-aware”.
6) If you want to login to the VMs, use “vagrant ssh sfcpxyN”.
   - N is a host number.

Test procedure

- Generate traffic from sfcpxy1
  - vagrant ssh sfcpxy1
  - ping 192.168.80.80
- Analyze the packet
  - vagrant ssh sfcpxyN
  - sudo tcpdump –i ethN -evvx

Stop Networks & VMs

- Stop networks:
  - ./cleandemo.sh
- Stop VMs temporarily:
  - vagrant halt
    - If you want to re-run, you also execute “vagrant up”.
- Remove VMs:
  - vagrant destroy

Some tips

- Directory share
  - Host:<vagrant execution dir> = sfcpxyN:/vagrant
    - It’s useful for sharing the packet capture file.

Trouble shooting

- If you don't go well by the environment, check below.

1. Don't you forget **"source ./env.sh"**?
2. What is your vagrant version?
   - The older version doesn't work. We recomment **over 1.7**.
3. Are your VMs running longer?
   - Longer operation may cause dirty status.
   - Clean the current VMs by "vagrant destroy; vagrant up".
4. Did you update the vagrant image file?
   - Vagrant may cache the old image file.
   - Delete cache file in "~/.vagrant.d/boxes"(as MacOS).

How to re-build the OVS

1) Login to the “sfcpxy3”.
   - vagrant ssh sfcpxy3
2) Checkout the ovs-nsh repository and build script.
   - mkdir ovs_work
   - cd ovs_work # cd=<start dir>/ovs_work
   - git clone https://github.com/pritesh/ovs.git
   - curl https://raw.githubusercontent.com/pritesh/ovs/nsh-v8/third-party/start-ovs-deb.sh > start-ovs-deb.sh
   - chmod +x start-ovs-deb.sh
   - cd ovs # cd=<start dir>/ovs_work/ovs
   - git checkout nsh-v8
   - git branch -v
3) Work in the ovs directory. # cd=<start dir>/ovs_work/ovs
4) Re-build the ovs.
   - cd .. # cd=<start dir>/ovs_work
   - ./start-ovs-deb.sh -n

How to analyze nsh header in Wireshark

1) Checkout the ovs-nsh repository.
   - mkdir ovs_work
   - cd ovs_work # cd=<start dir>/ovs_work
   - git clone https://github.com/pritesh/ovs.git
   - cd ovs # cd=<start dir>/ovs_work/ovs
   - git checkout nsh-v8
   - git branch –v
2) Copy the “vxlan-nsh-draft-7.lua” to the wireshark plugin directory.
   - mkdir ~/.wireshark/plugins
   - cp third-party/vxlan-nsh-draft-7.lua ~/.wireshark/plugins/ (as MacOS)
3) The default outer UDP port is 6633. If you use another port, add the command below to the lua file.
   - udp_encap_table:add(<port number>, protocol_nsh)