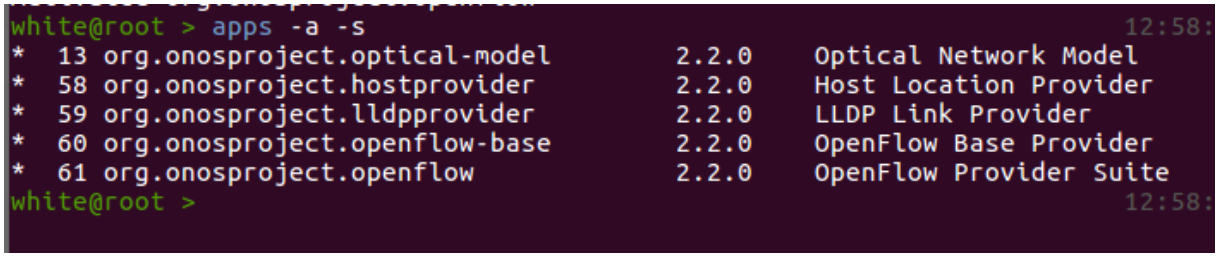
0516094 SDN-NFV Project 1

Part 1

1.

1.



org.onosproject.optical-model
org.onosproject.hostprovider
org.onosproject.lldpprovider
org.onosproject.openflow-base

2.

org.onosproject.fwd

2.

1.

6653

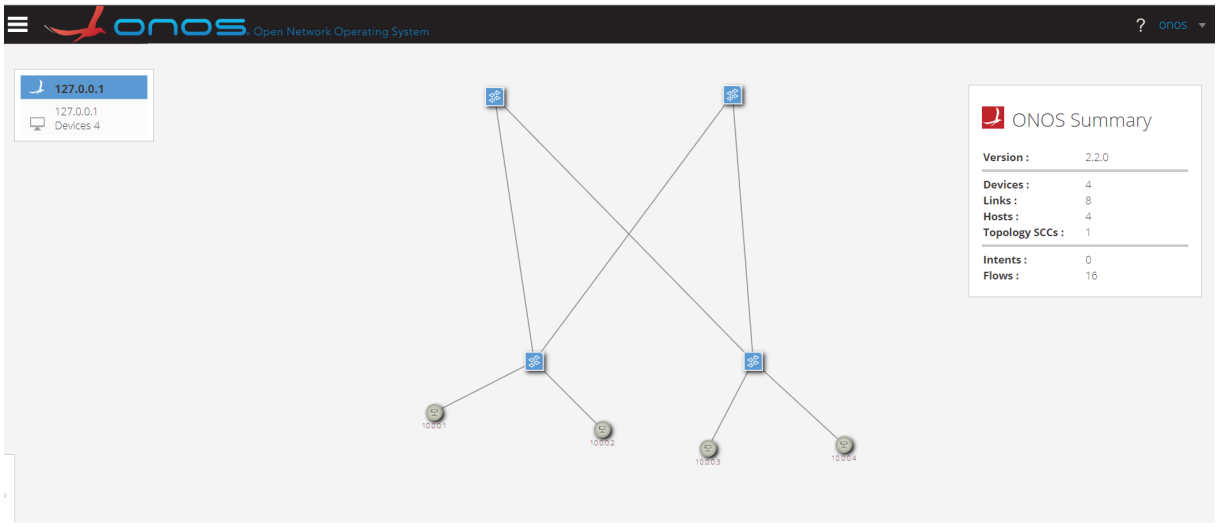
2.

org.onosproject.openflow-base

Part 2

```
white@root > apps -a -s
*  13 org.onosproject.optical-model        2.2.0    Optical Network Model
*  14 org.onosproject.drivers              2.2.0    Default Drivers
*  58 org.onosproject.hostprovider         2.2.0    Host Location Provider
*  59 org.onosproject.lldpprovider         2.2.0    LLDP Link Provider
*  60 org.onosproject.openflow-base        2.2.0    OpenFlow Base Provider
*  61 org.onosproject.openflow             2.2.0    OpenFlow Provider Suite
* 162 org.onosproject.gui2                 2.2.0    ONOS GUI2
white@root > app activate org.onosproject.fwd
Activated org.onosproject.fwd
white@root > apps -a -s
*  13 org.onosproject.optical-model        2.2.0    Optical Network Model
*  14 org.onosproject.drivers              2.2.0    Default Drivers
*  58 org.onosproject.hostprovider         2.2.0    Host Location Provider
*  59 org.onosproject.lldpprovider         2.2.0    LLDP Link Provider
*  60 org.onosproject.openflow-base        2.2.0    OpenFlow Base Provider
*  61 org.onosproject.openflow             2.2.0    OpenFlow Provider Suite
* 108 org.onosproject.fwd                  2.2.0    Reactive Forwarding
* 162 org.onosproject.gui2                 2.2.0    ONOS GUI2
white@root >
```

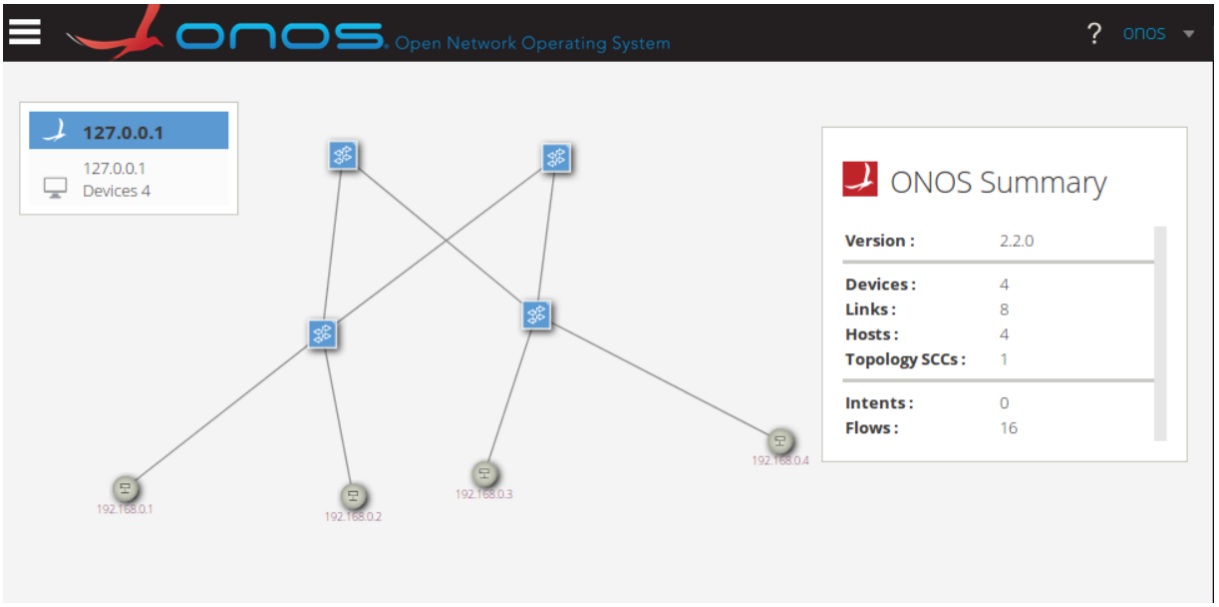
```
white@NCTU-SDN:~/Desktop$ sudo mn --custom=project1_0516094.py --topo=topo_0516094 --controller=remote,ip=12
7.0.0.1:6653
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1 s2 s3 s4
*** Adding links:
(h1, s1) (h2, s1) (h3, s2) (h4, s2) (s1, s3) (s1, s4) (s2, s3) (s2, s4)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller
c0
*** Starting 4 switches
s1 s2 s3 s4 ...
*** Starting CLI:
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 h4
h2 -> h1 h3 h4
h3 -> h1 h2 h4
h4 -> h1 h2 h3
*** Results: 0% dropped (12/12 received)
mininet>
```



先將org.onosproject.fwd開啟，執行 `sudo mn --custom=project1_0516094.py --topo=topo_0516094 --controller=remote,ip=127.0.0.1:6653` ，再mininet中打 `pingall` ，即可得到結果

Bouns

```
mininet> dump
<Host h1: h1-eth0:192.168.0.1 pid=12719>
<Host h2: h2-eth0:192.168.0.2 pid=12721>
<Host h3: h3-eth0:192.168.0.3 pid=12723>
<Host h4: h4-eth0:192.168.0.4 pid=12726>
<OVSSwitch s1: lo:127.0.0.1,s1-eth1:None,s1-eth2:None,s1-eth3:None,s1-eth4:None pid=12731>
<OVSSwitch s2: lo:127.0.0.1,s2-eth1:None,s2-eth2:None,s2-eth3:None,s2-eth4:None pid=12734>
<OVSSwitch s3: lo:127.0.0.1,s3-eth1:None,s3-eth2:None pid=12737>
<OVSSwitch s4: lo:127.0.0.1,s4-eth1:None,s4-eth2:None pid=12740>
<RemoteController{'ip': '127.0.0.1:6653'} c0: 127.0.0.1:6653 pid=12713>
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 h4
h2 -> h1 h3 h4
h3 -> h1 h2 h4
h4 -> h1 h2 h3
*** Results: 0% dropped (12/12 received)
mininet>
```



執行 `sudo mn --custom=bonus_0516094.py --topo=topo_0516094 --controller=remote,ip=127.0.0.1:6653` ，再mininet中打 `pingall` ，即可得到結果

what I have learned or solved

在這次Project中，比較困難的是環境的安裝，裝了幾次才發現原來是虛擬機出現了問題，最後才成功將環境架設起來。也學到了onos以及mininet的基本使用。