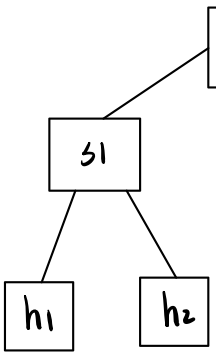
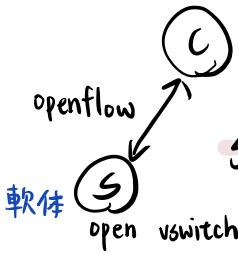
/mininet-wifi/example # python3 miniedit.py



設定 h1 ip = 192.168.1.1/24
h2 ip = 192.168.1.2/24
C0 Type : Remote Controller



概念
SDN

nox(C) ... (openflow)

可以隨意調

/test # gedit test1.py
python test1.py

控制器
pox (python) ryu (python) floodlight (java) onos (java) nox(c) ...

> sh ovs-ofctl dump-flows s1

terminal
cd /home/user/pox
./pox.py forwarding.hub

mininet > sh ovs-ofctl dump-flows s1

> h1 ping h2 ✓

控制器關掉，還是可以互ping，規則已經下放下來給sw

> h1 ping h2 ✓

> h1 arp -n
> h2 arp -n
> sh ovs-ofctl dump-flows s1

> sh ovs-ofctl show s1

dpid: 0000 0001 data path ID

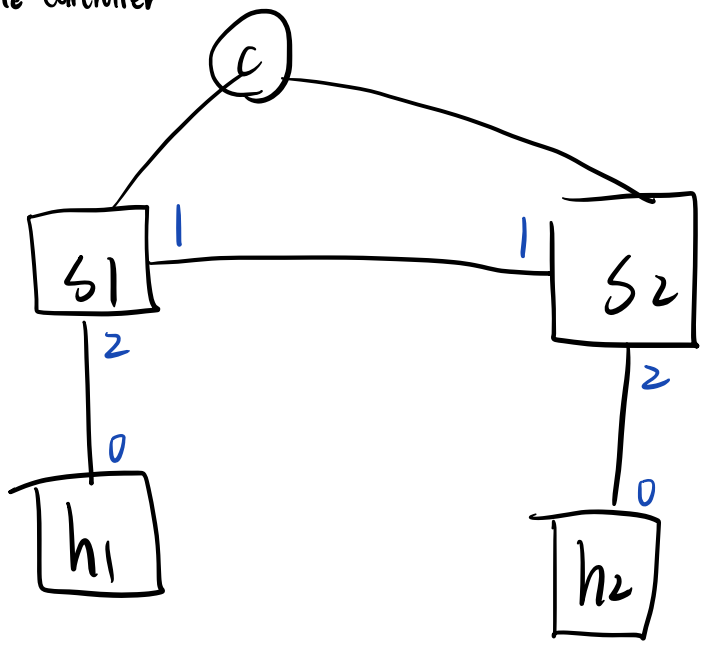
python test1.py

> sh ovs-ofctl dump-flows s1

> sh ovs-ofctl add-flows s1 arp, actions=flood
> sh ovs-ofctl add-flows s1 ip, nw_dst=192.168.1.1, actions=output:1
> sh ovs-ofctl add-flows s1 ip, nw_dst=192.168.1.2, actions=output:2
> h1 ping h2 ✓

/mininet-wifi/example# python3 miniedit.py

設定 c0 Type : Remote Controller



/test # gedit test2.py
python test2.py

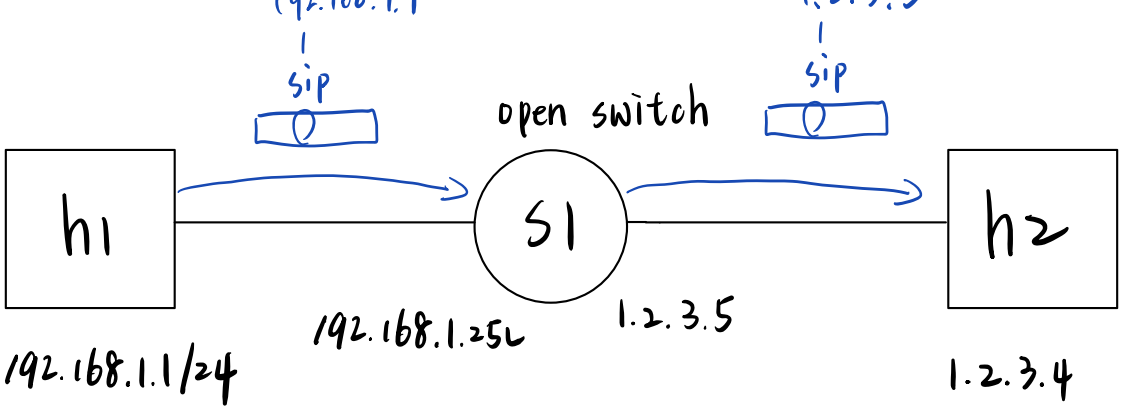
```
> sh ovs-ofctl dump-flows s1
> sh ovs-ofctl dump-flows s2
> h1 ping h2
```
x

```
> sh ovs-ofctl add-flow s1 arp,actions=flood
> sh ovs-ofctl add-flow s2 arp,actions=flood
> sh ovs-ofctl add-flow s1 ip,nw_dst=10.0.0.1,actions=output:2
> sh ovs-ofctl add-flow s1 ip,nw_dst=10.0.0.2,actions=output:1
> sh ovs-ofctl add-flow s2 ip,nw_dst=10.0.0.1,actions=output:1
> sh ovs-ofctl add-flow s2 ip,nw_dst=10.0.0.2,actions=output:2
```

```
> h1 ping h2
```
✓

實做 NAT

SNAT = 改來源ip



python test-nat.py

> h1 arp -n
> h2 arp -n
> sh ovs-ofctl dump-flows s1

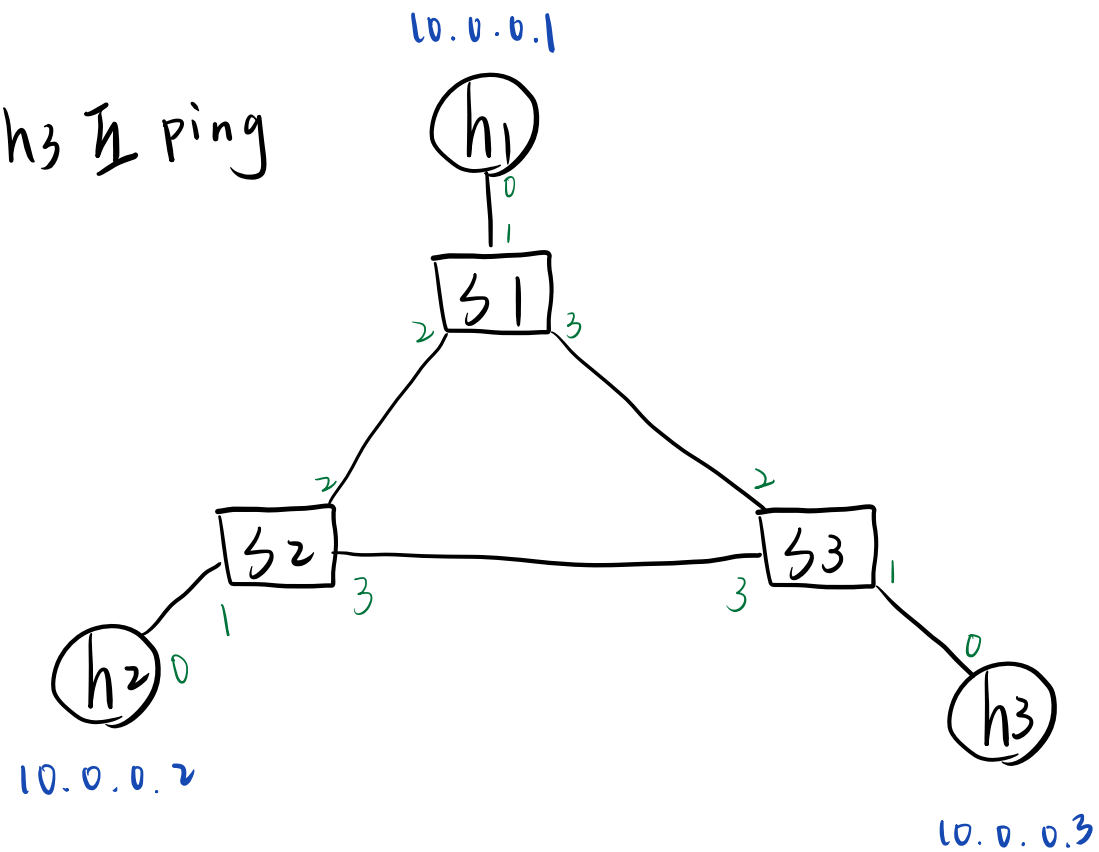
> h1 ping h2
X

> sh ovs-ofctl add-flow s1 ip,nw_src=192.168.1.1, nw_dst=1.2.3.4,
actions=mod_nw_src=1.2.3.5, mod_dl_dst=00:00:00:00:00:02, output=2
> sh ovs-ofctl add-flow s1 ip,nw_src= 1.2.3.4, nw_dst=1.2.3.5,
actions=mod_nw_dst=192.168.1.1, mod_dl_dst=00:00:00:00:00:01, output=1

> sh ovs-ofctl dump-flows s1

> h1 ping h2 -c 3

h1, h2, h3 互 ping



sh ovs-ofctl add-flow s1 arp, actions=flood

s2

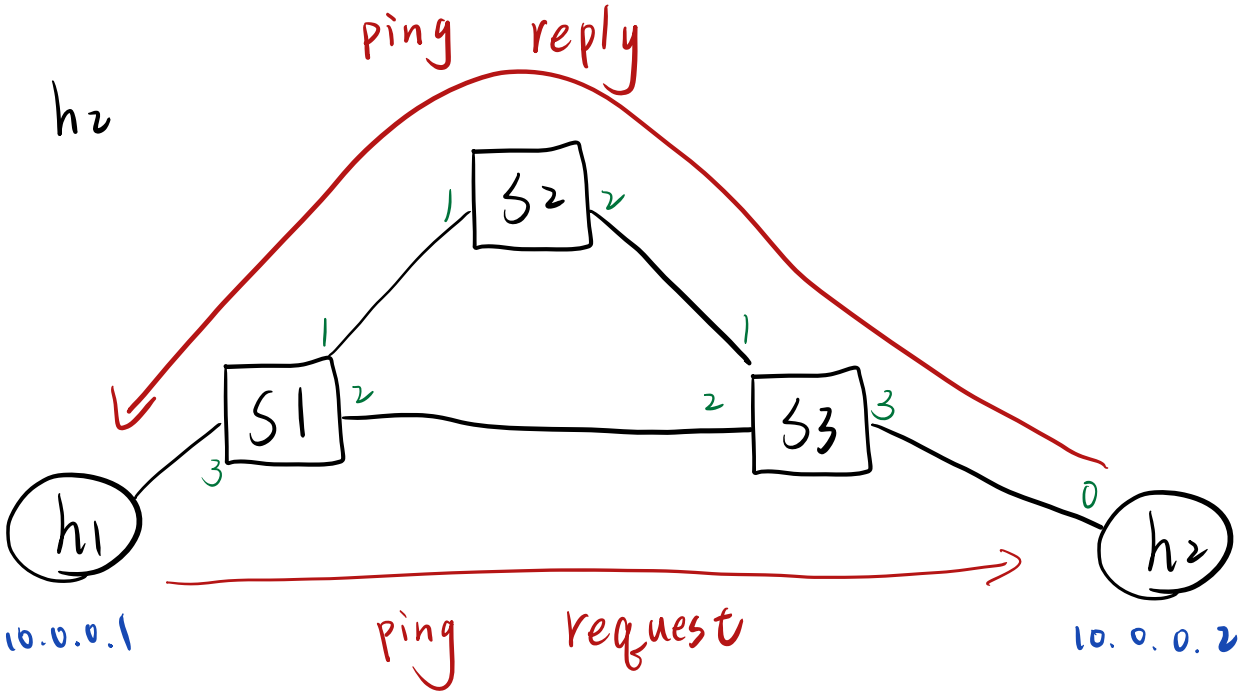
s3

sh ovs-ofctl add-flow s1 ip, nw_dst=10.0.0.1 actions=output:1
sh ovs-ofctl add-flow s1 ip, nw_dst=10.0.0.2 actions=output:2
sh ovs-ofctl add-flow s1 ip, nw_dst=10.0.0.3 actions=output:3

sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.1 actions=output:2
sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.2 actions=output:1
sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.3 actions=output:3

sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.1 actions=output:2
sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.2 actions=output:3
sh ovs-ofctl add-flow s2 ip, nw_dst=10.0.0.3 actions=output:1

h1 ping h2



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