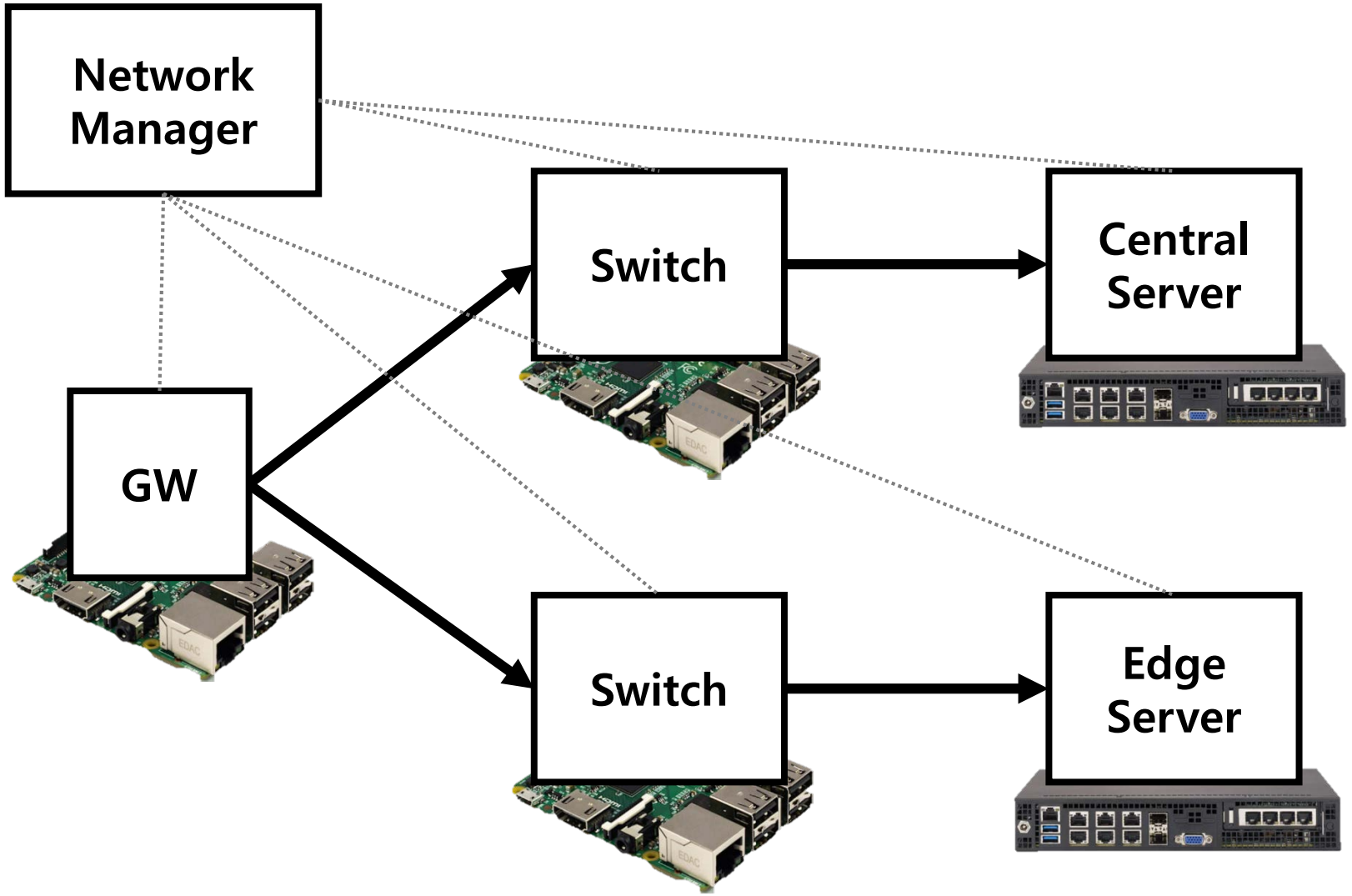
iCPS Simulation - Network

Division 4. – Korea University

Simulation Environment



1. Network Manager

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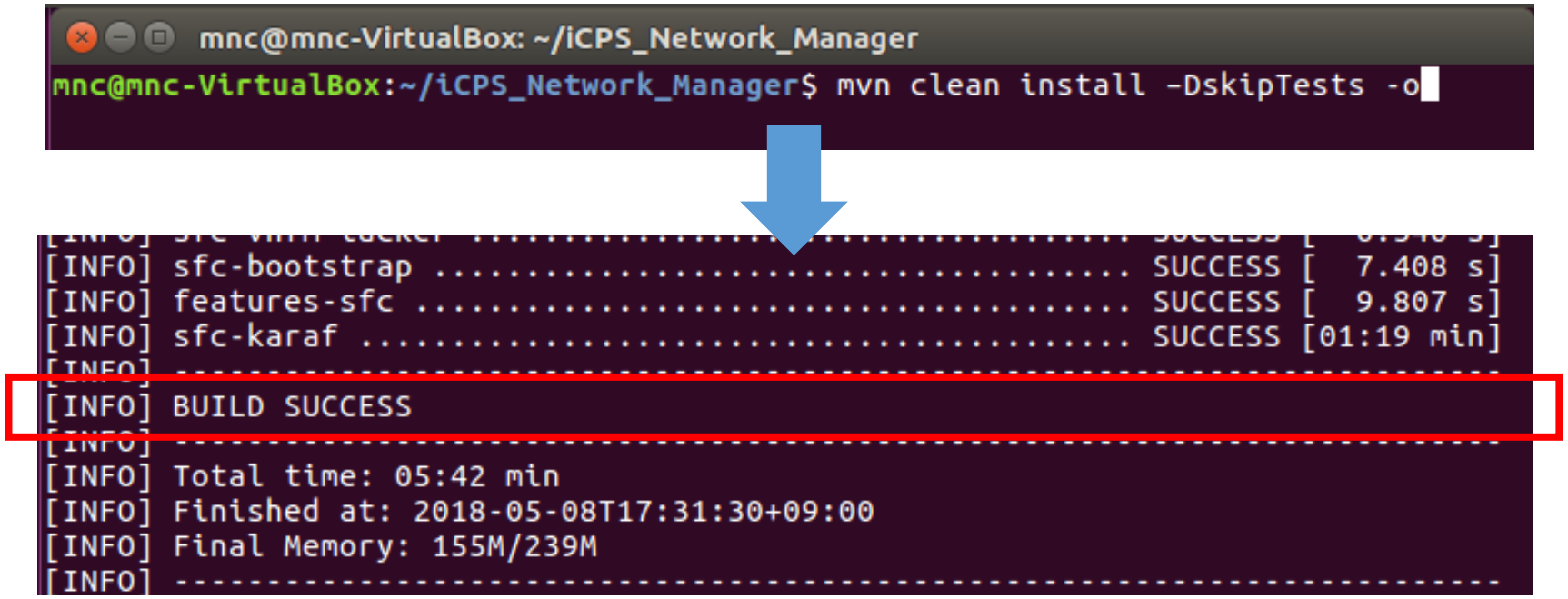
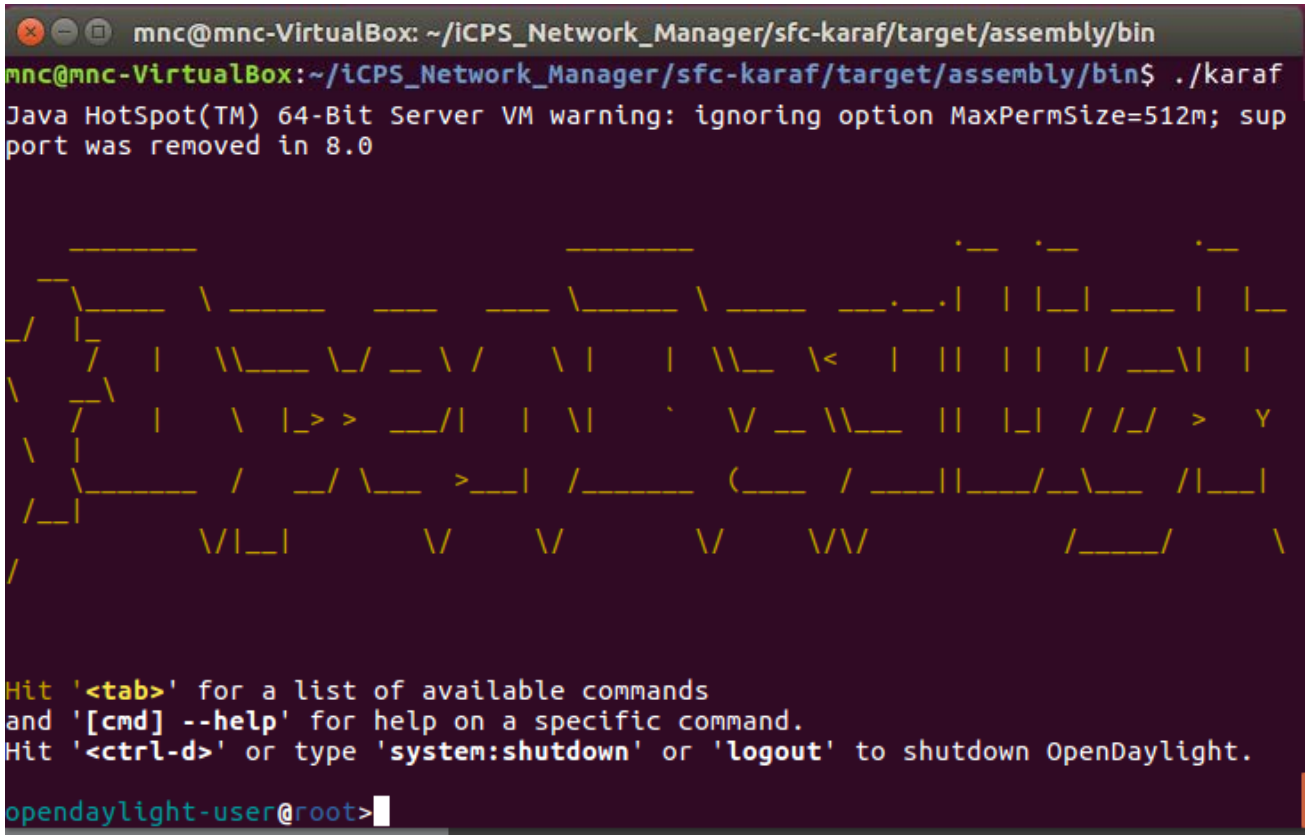
Install SDN Controller (OPENDAYLIGHT)

- cd iCPS_Network_Manager
- mvn clean install –DskipTests -o



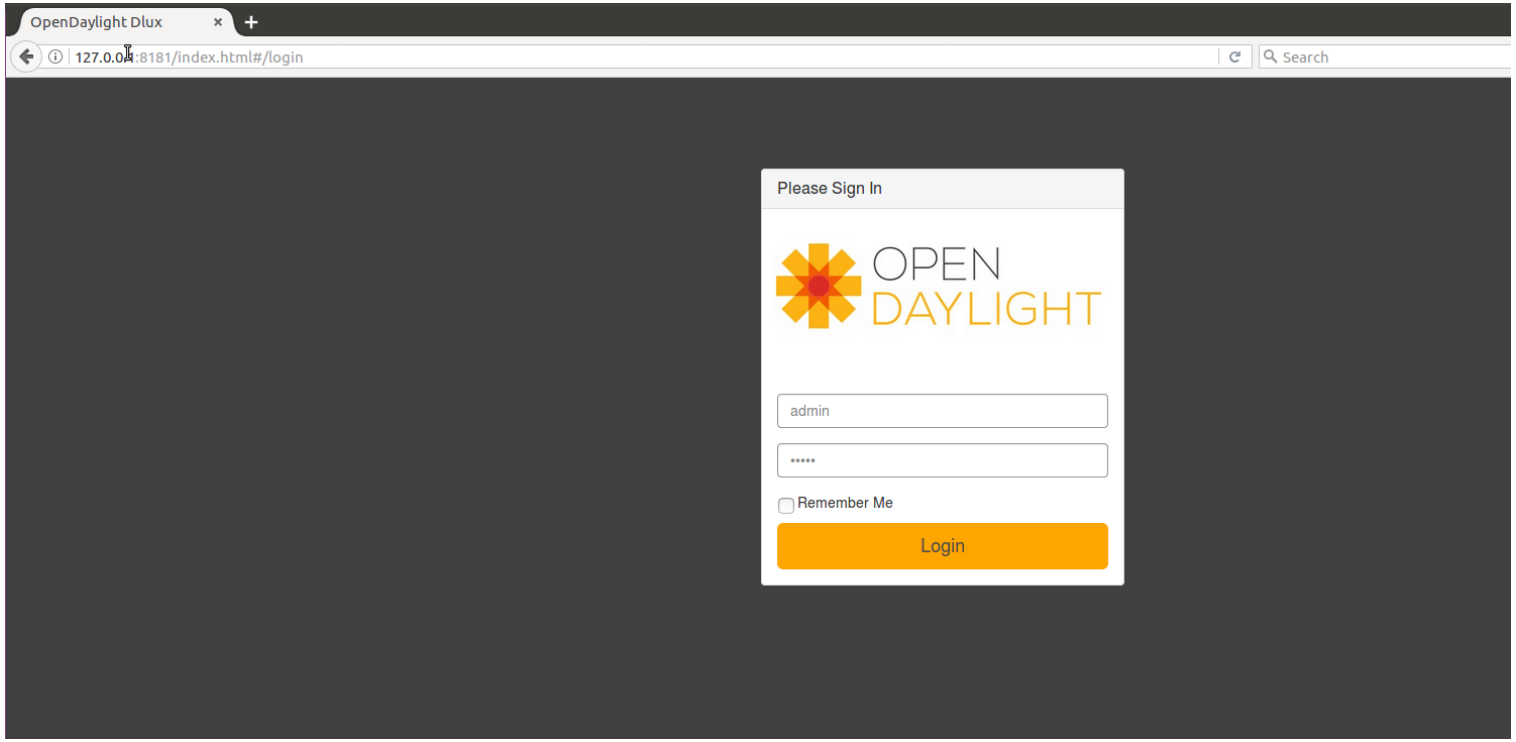
Start SDN Controller (OPENDAYLIGHT)

- cd iCPS_Network_Manager/sfc-karaf/target/assembly/bin
- ./karaf



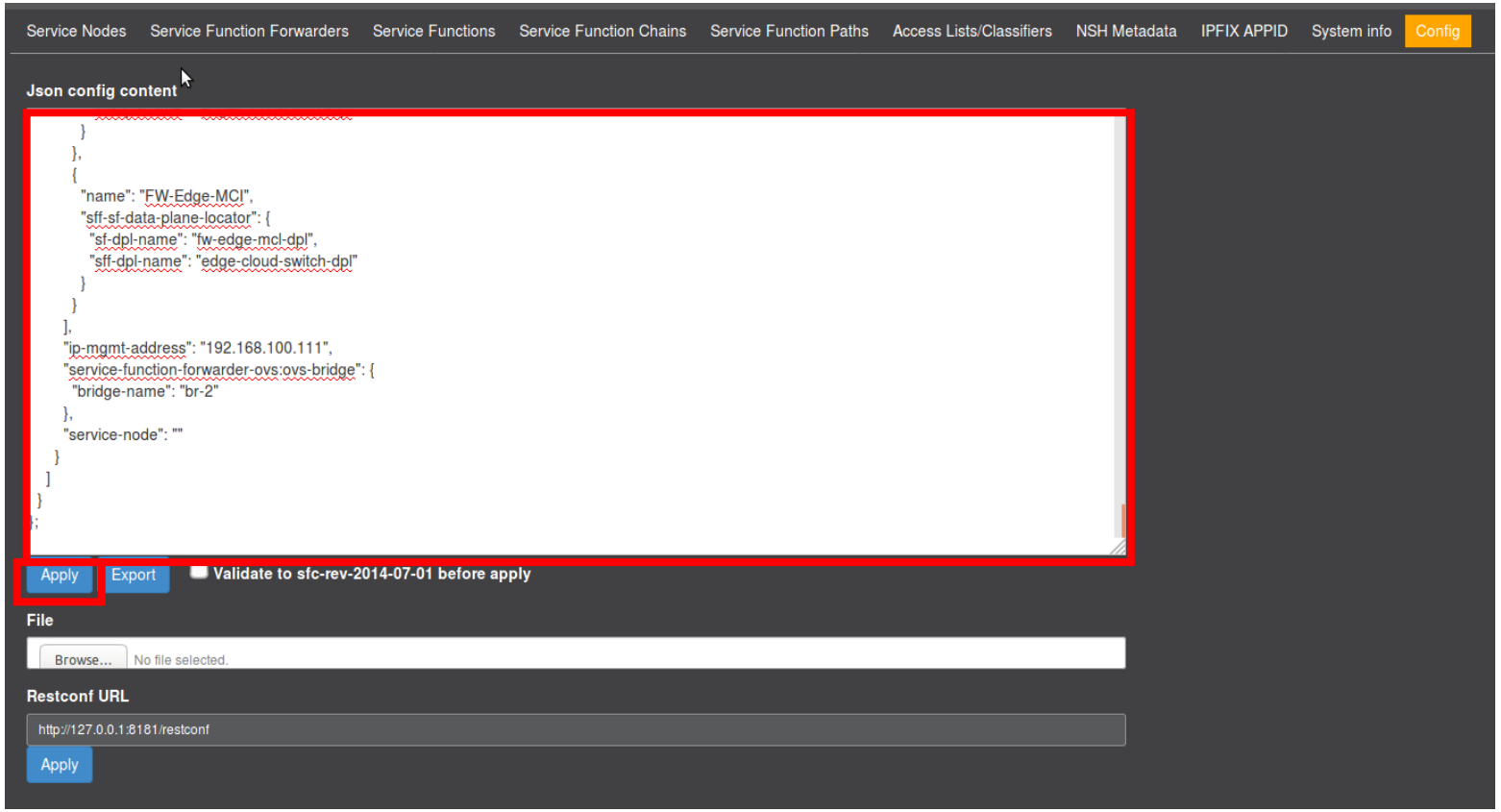
OPENDAYLIGHT UI

- (Browser) 127.0.0.1:8181/index.html
- ID : admin / pass : admin



OPENDAYLIGHT - Config

- Paste script then, Apply



Script is here !

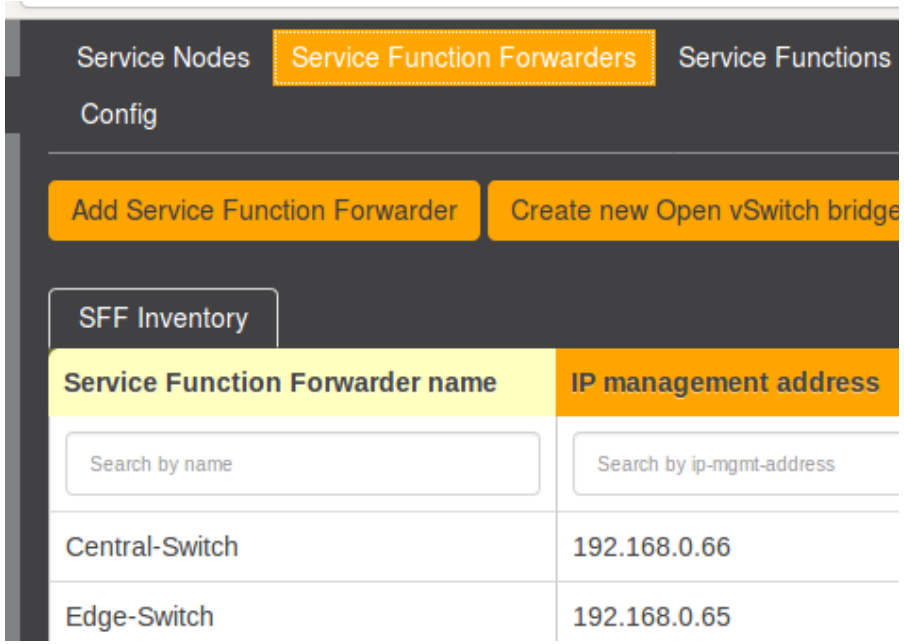
Please double click the script-config.txt icon

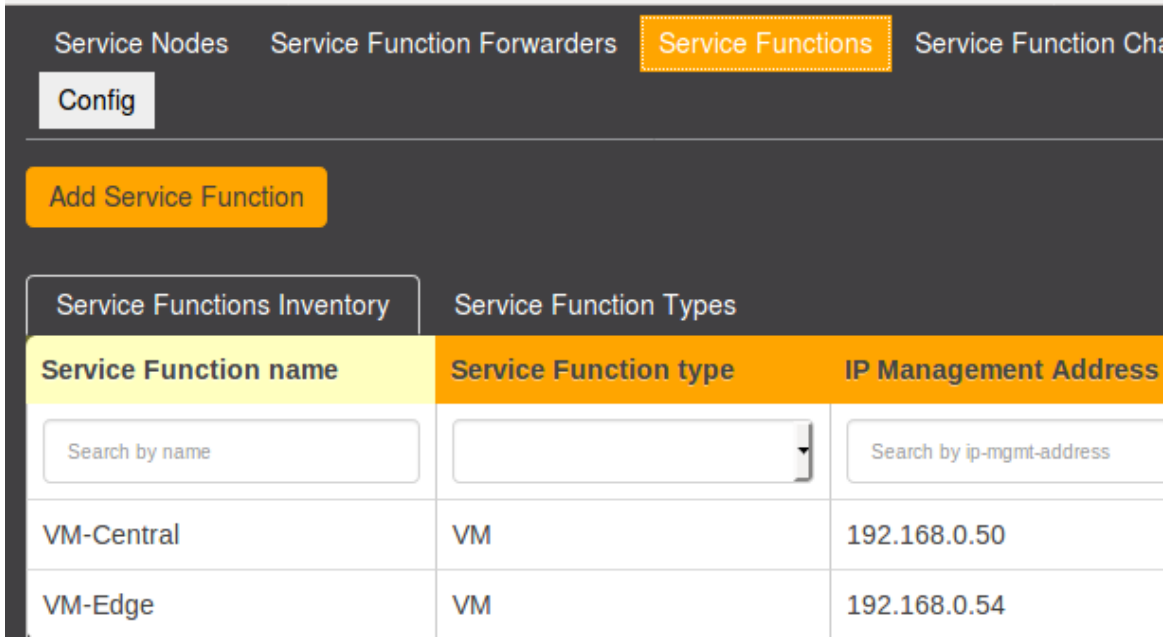
Then, you can find the Script

script-config.txt

OPENDAYLIGHT – Service Function

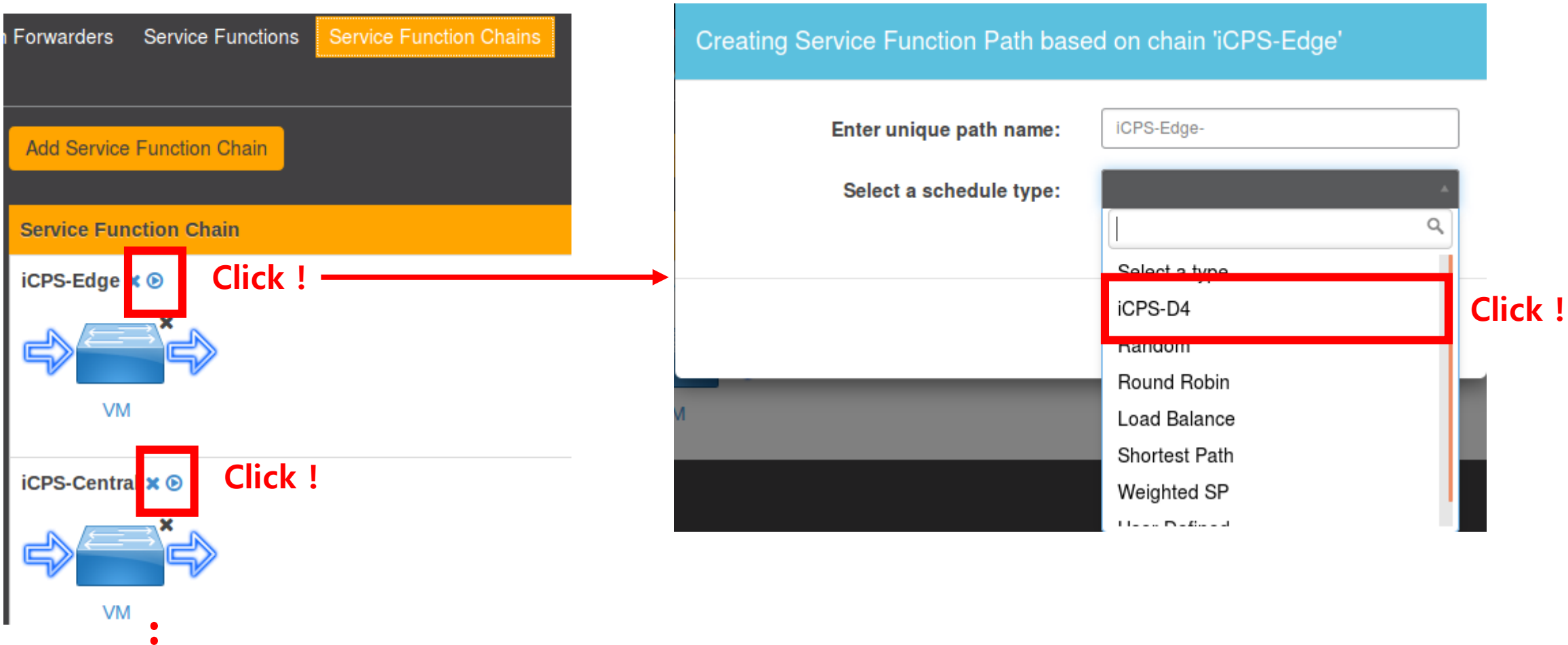
- Checking !
  - Service function forwarders
  - Service functions





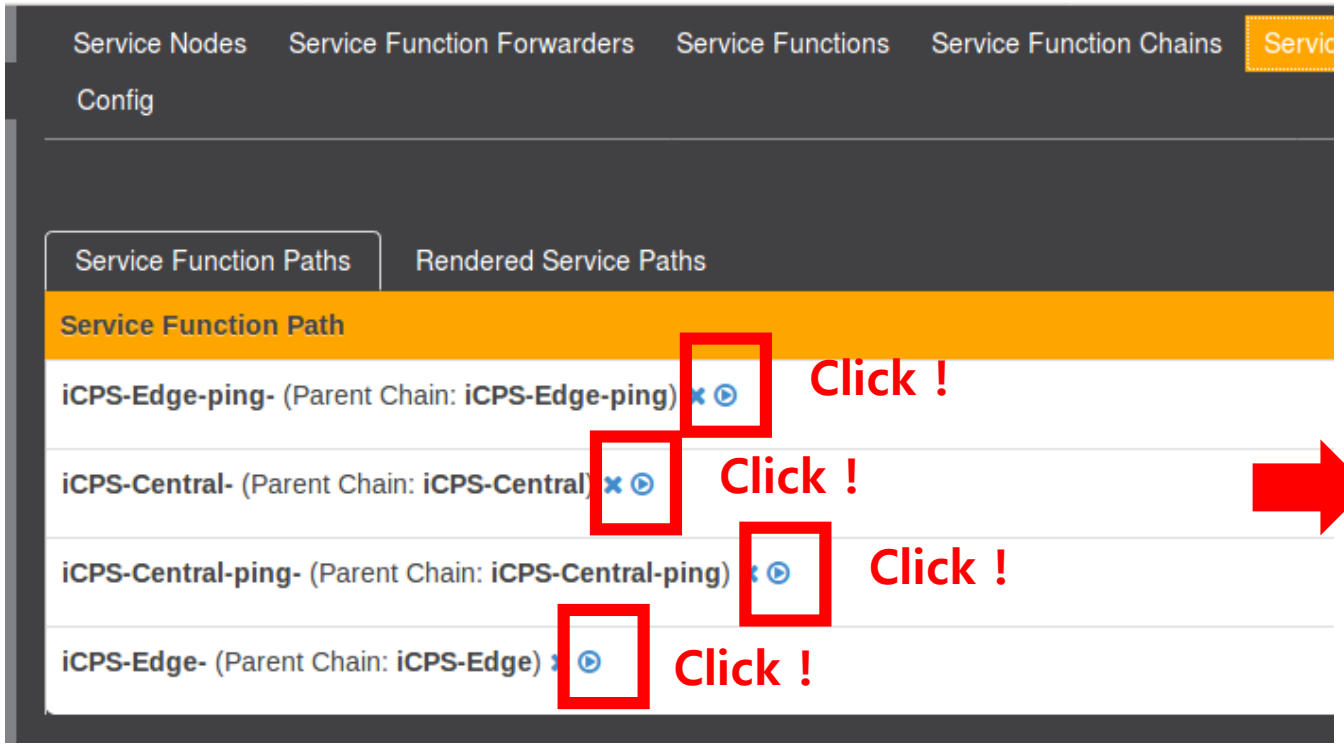
OPENDAYLIGHT – Service Function Chain

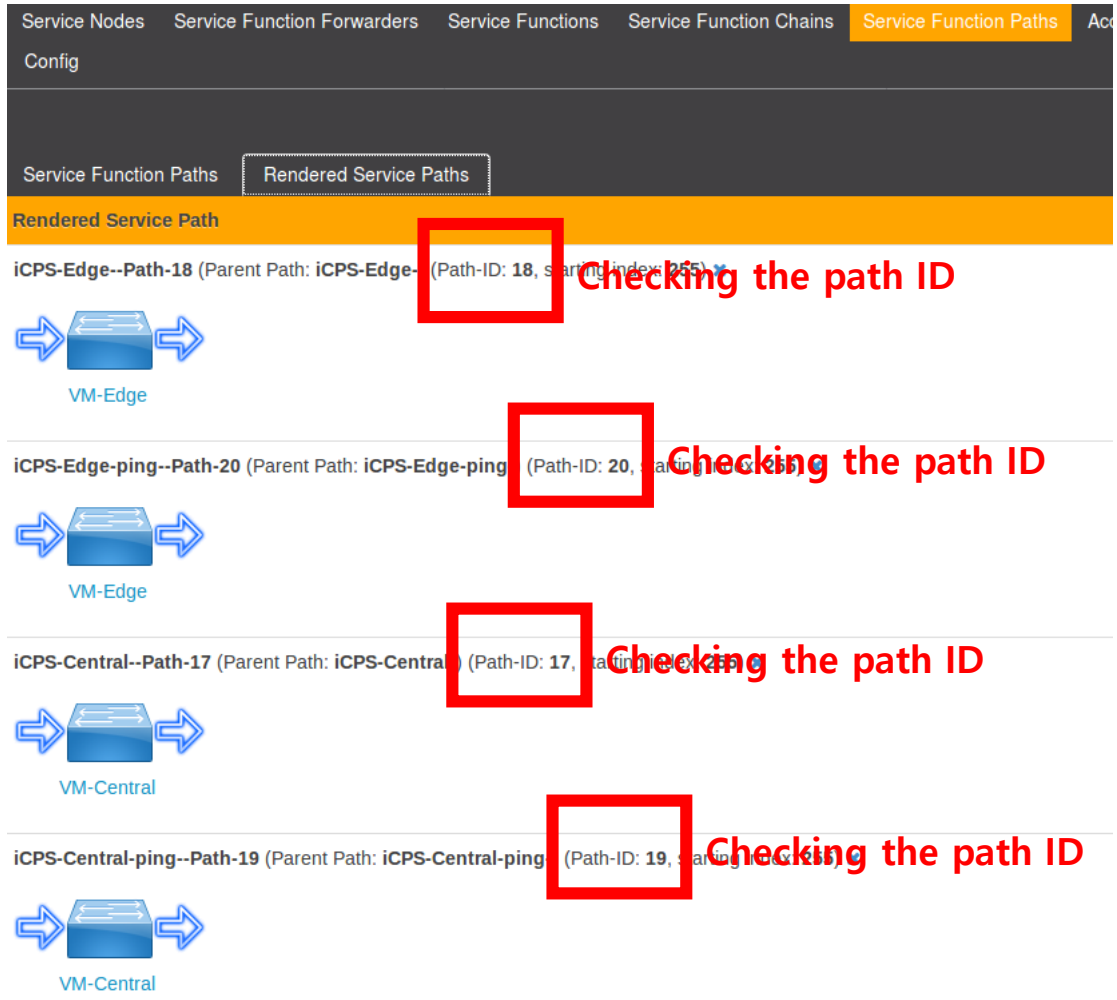
- Deploy all service function chains



OPENDAYLIGHT – Service Function Paths

- Deploy all service function paths





2. Switch

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Install OVS

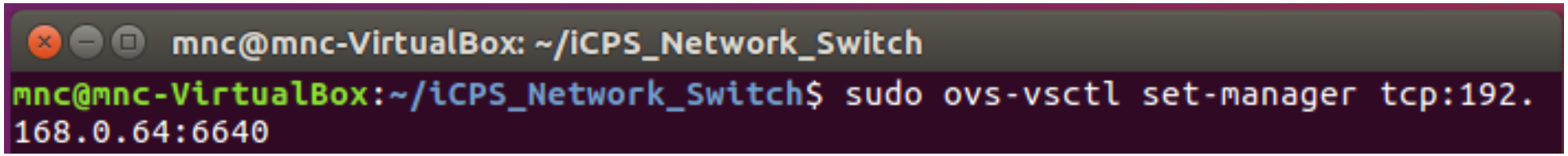
- cd iCPS_Network_Switch
- (Remove the previous OVS related files)
- sudo ./setup_iCPS_network_switch.sh

```
mnc@mnc-VirtualBox:~/iCPS_Network_Switch$ ./setup_iCPS_network_switch.sh
Hit http://kr.archive.ubuntu.com precise Release.gpg
Hit http://kr.archive.ubuntu.com precise-updates Release.gpg
Hit http://kr.archive.ubuntu.com precise-backports Release.gpg
Hit http://kr.archive.ubuntu.com precise Release
Hit http://kr.archive.ubuntu.com precise-updates Release
```

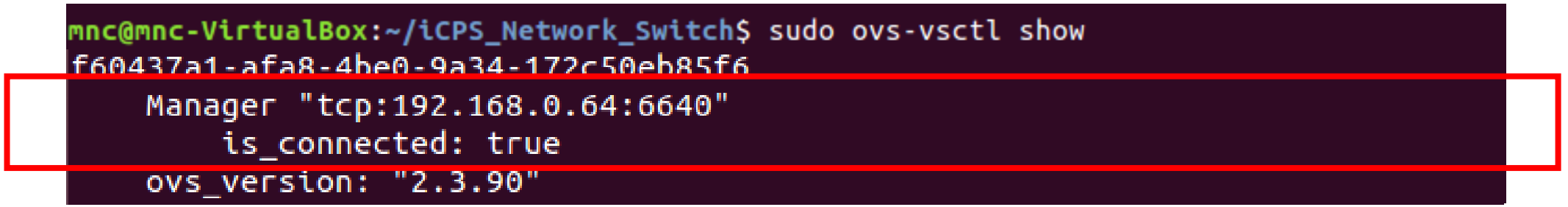
```
* nsh-v8 e38f9ea nsh: fix install script to add ovs to boot startup
Removing old ovs configuration.
Checking Build Dependencies.
Creating Debian Packages.
Installing kernel module using dkms.
Installing openvswitch userland packages.
f60437a1-afa8-4be0-9a34-172c50eb85f6
    ovs_version: "2.3.90"
Install Complete!
```

Connecting the SDN Controller

- sudo ovs-vsctl set-manager tcp:(controller IP):6640



- sudo ovs-vsctl show



3. Central / Edge Cloud

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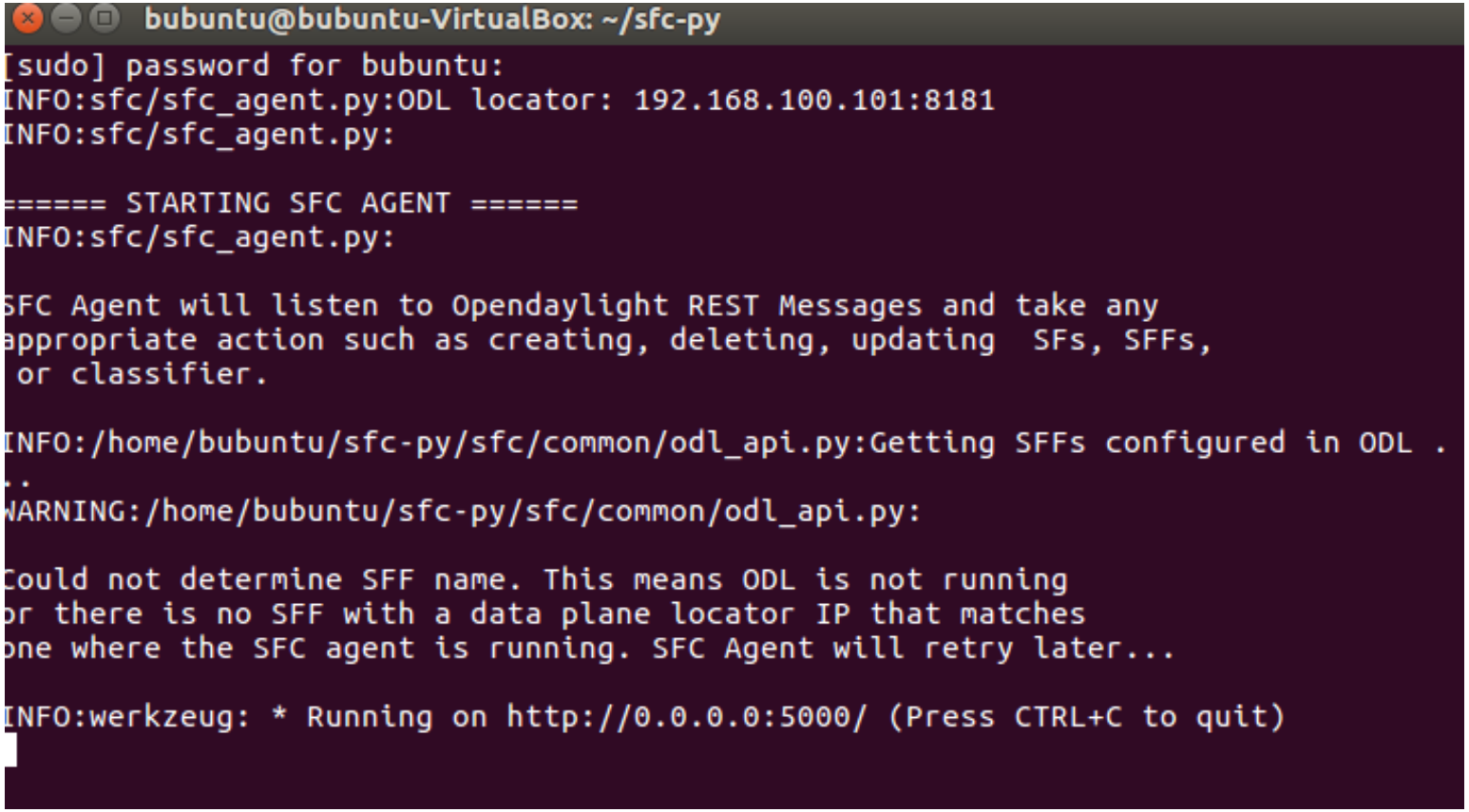
Start Service Function

- cd ICP_EDGE (or ICPS_Central)
- sudo ./start_agent.sh



4. Gateway

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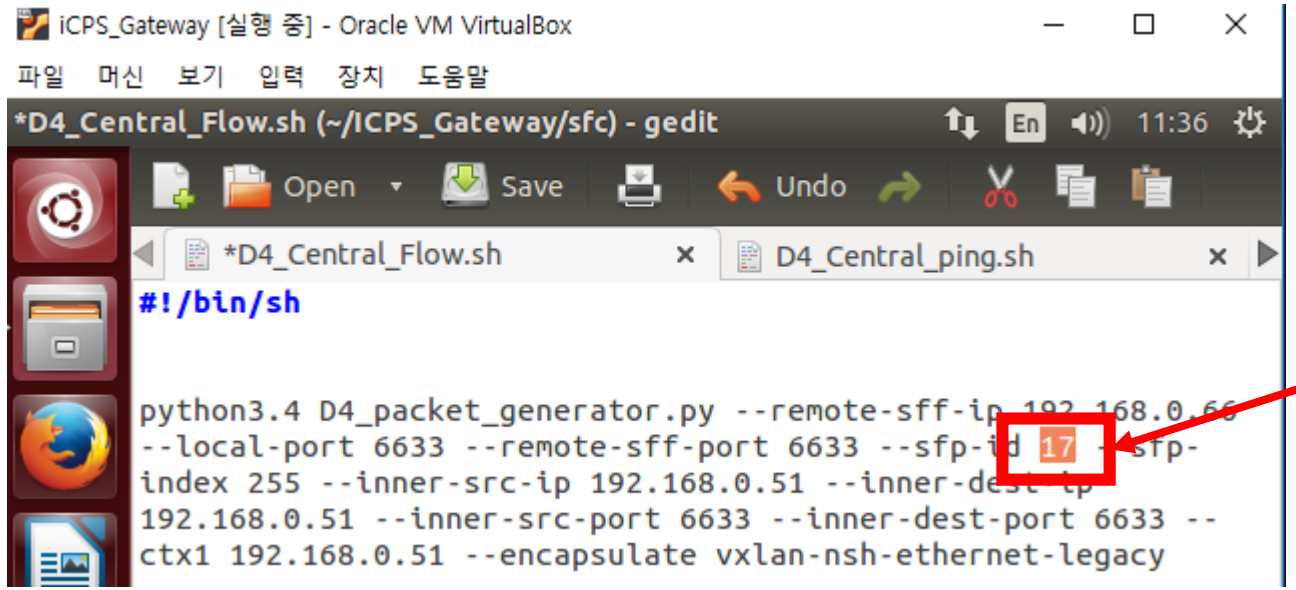
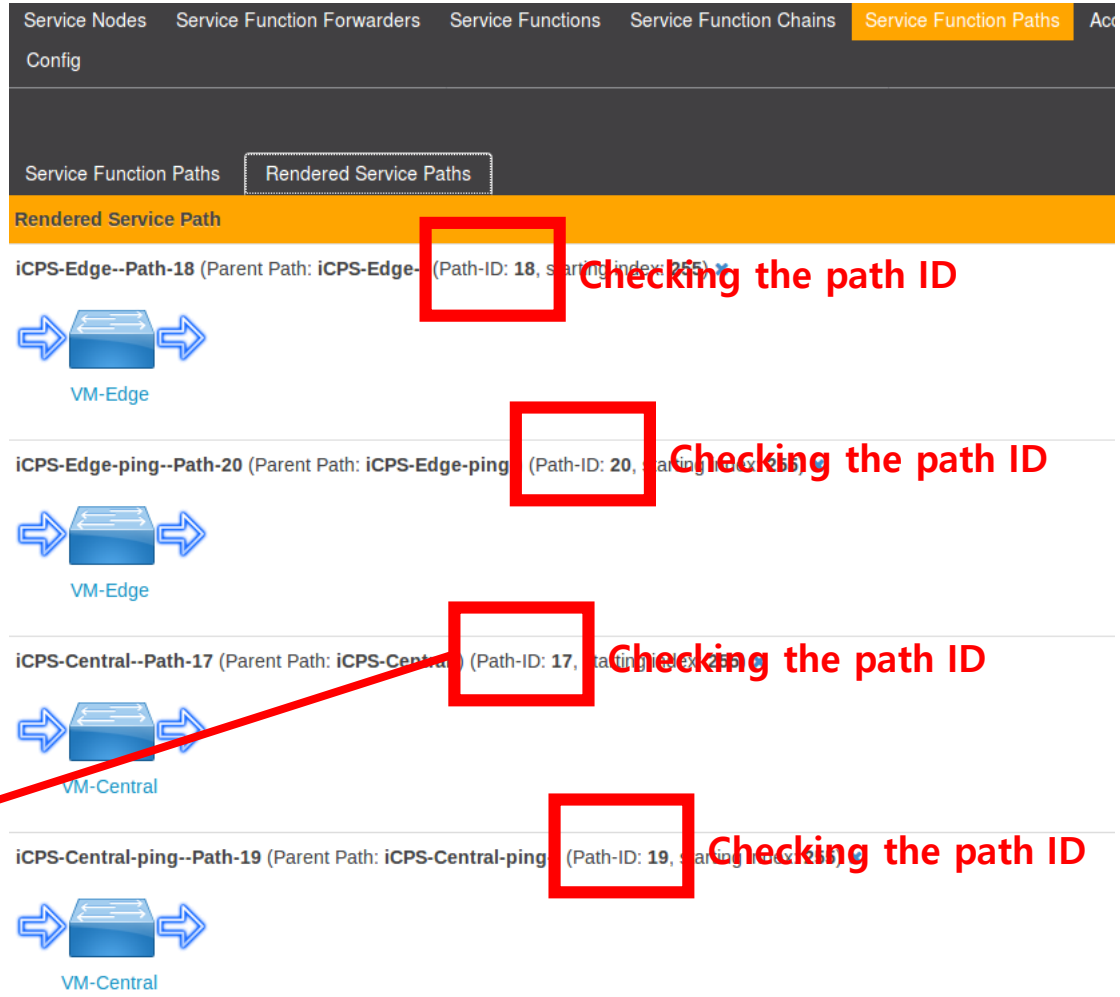
Change sfd id

- Change sfd id at files as follows
  - D4_Central_Flow.sh
  - D4_ Cental_ping.sh
  - D4_Edge_Flow.sh
  - D4_Edge_ping.sh



Checking the page 10

< OPENDAYLIGHT – Service Function Paths >



Checking the path ID

Checking the path ID

Checking the path ID

Checking the path ID

Send Packets

- cd ICPS_Gateway
- python3.4 D4_Central.py