

Mininet安装

参考资料是田仁慧同学发的

<https://www.cnblogs.com/JCpeng/p/14993506.html>

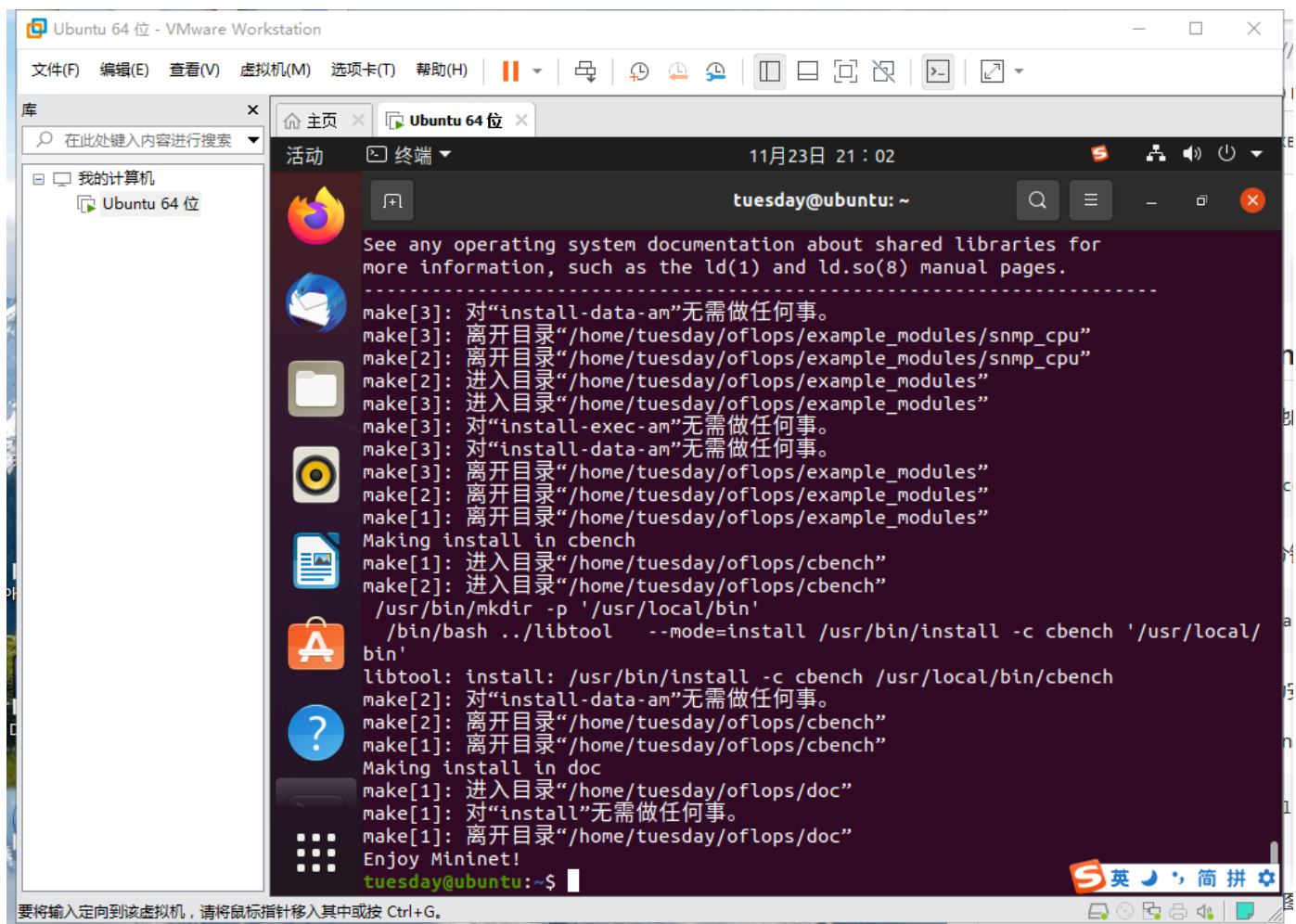
1、安装mininet

1.2获取源代码

```
sudo apt-get update
sudo apt-get install git
sudo git clone git://github.com/mininet/mininet
```

1.2安装mininet

```
sudo ./mininet/util/install.sh -a
```



1.3测试基本功能

```
sudo apt install net-tools
sudo mn --test pingall
```

```
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for switches to connect
s1
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
*** Stopping 1 controllers
c0
*** Stopping 2 links
..
*** Stopping 1 switches
s1
*** Stopping 2 hosts
h1 h2
*** Done
completed in 6.024 seconds
```

2.安装ryu

2.1使用pip命令安装

```
sudo apt install python-pip
pip install ryu
```

这里报错 了

Command "python setup.py egg_info" failed with error code 1 in /tmp/pip-build-A1Th4c/ovs/

修改命令

```
sudo python -m pip install --upgrade --force pip
```

2.2获取Open vSwitch源代码

```
sudo git clone https://github.com/openvswitch/ovs.git
```

3、搭建网络环境

3.1启动ryu控制器

```
ryu-manager --verbose ryu.app.simple_switch_13
```

这里报错了

Command "ryu-manager" not found, but can be installed with: sudo apt install python3-ryu

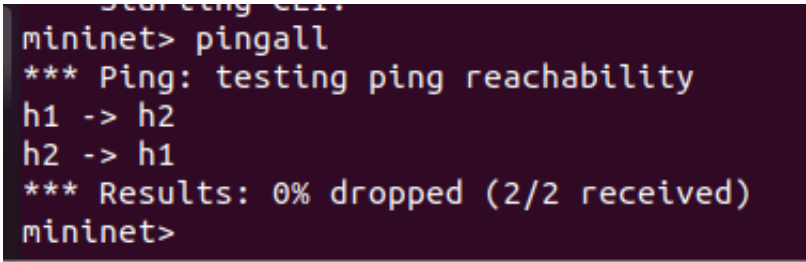
修改命令

```
sudo apt install python3-ryu
```

3.2启动mininet搭建网络拓扑

```
mn --topo linear,2 --mac --switch ovsk --controller remote
```

网络环境搭建完成。进行简单测试，在mininet的控制命令行里执行pingall：

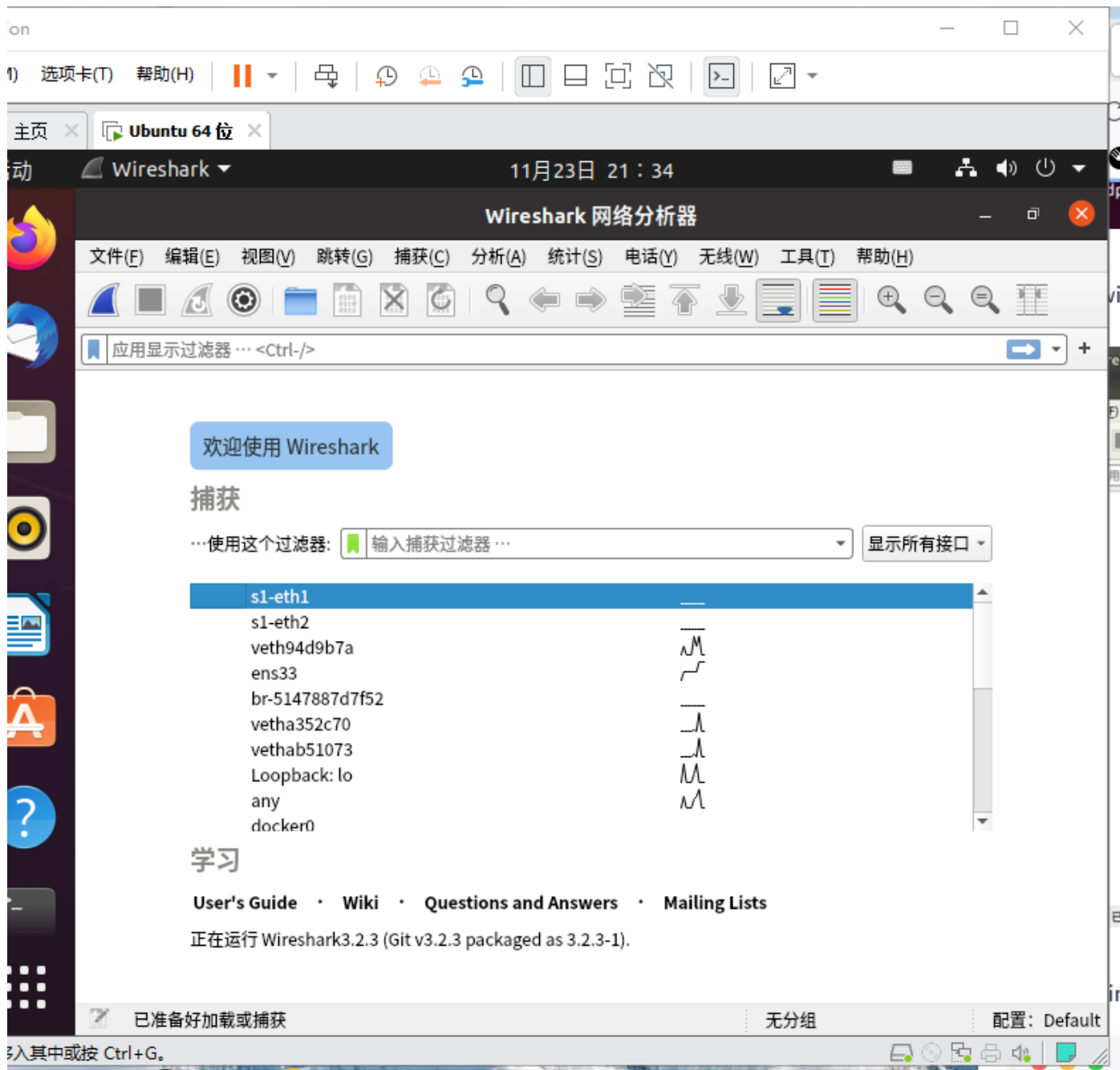
A terminal window with a dark background showing the output of the 'pingall' command in mininet. The text is as follows:

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
mininet>
```

4、使用wireshark抓取OpenFlow消息

4.1启动wireshark

```
sudo wireshark
```



4.2在mininet的控制命令行中执行

```
h1 ping -c 4 h2
```

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
mininet> h1 ping -c 4 h2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 比特, 来自 10.0.0.2: icmp_seq=1 ttl=64 时间=1.82 毫秒
64 比特, 来自 10.0.0.2: icmp_seq=2 ttl=64 时间=11.0 毫秒
64 比特, 来自 10.0.0.2: icmp_seq=3 ttl=64 时间=0.447 毫秒
64 比特, 来自 10.0.0.2: icmp_seq=4 ttl=64 时间=0.060 毫秒

--- 10.0.0.2 ping 统计 ---
已发送 4 个包, 已接收 4 个包, 0% 包丢失, 耗时 3016 毫秒
rtt min/avg/max/mdev = 0.060/3.335/11.010/4.479 ms
mininet>
```

wireshark中选择监听any，过滤器filter中输入openflow_v4即可抓取交换机s1与控制器c0之间的openflow消息。