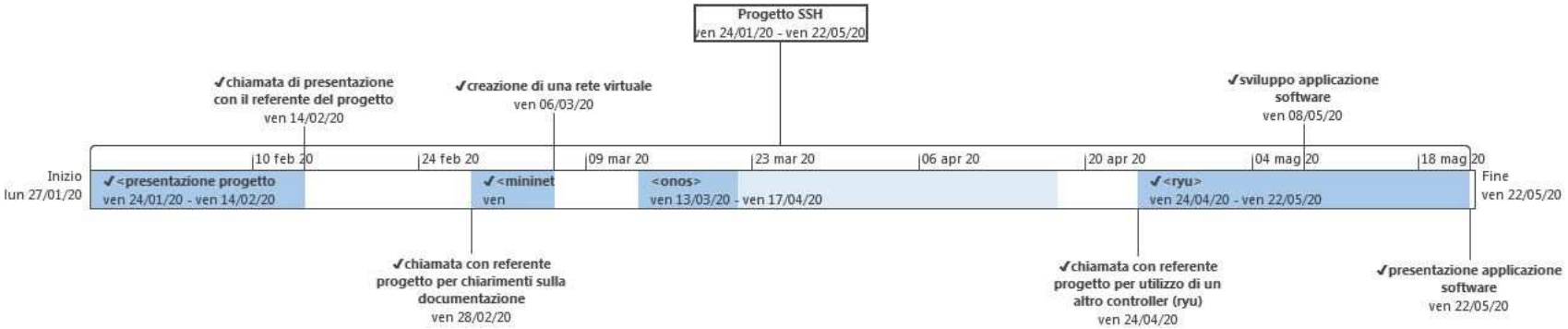
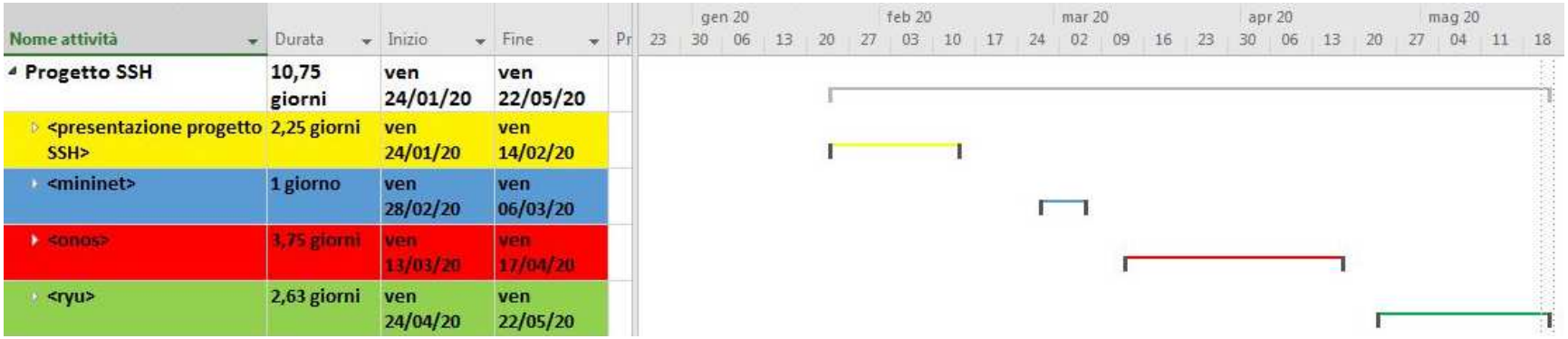
Student Software House (SSH)

Marco Morini, ITIS E. Fermi

- SEQUENZA TEMPORALE



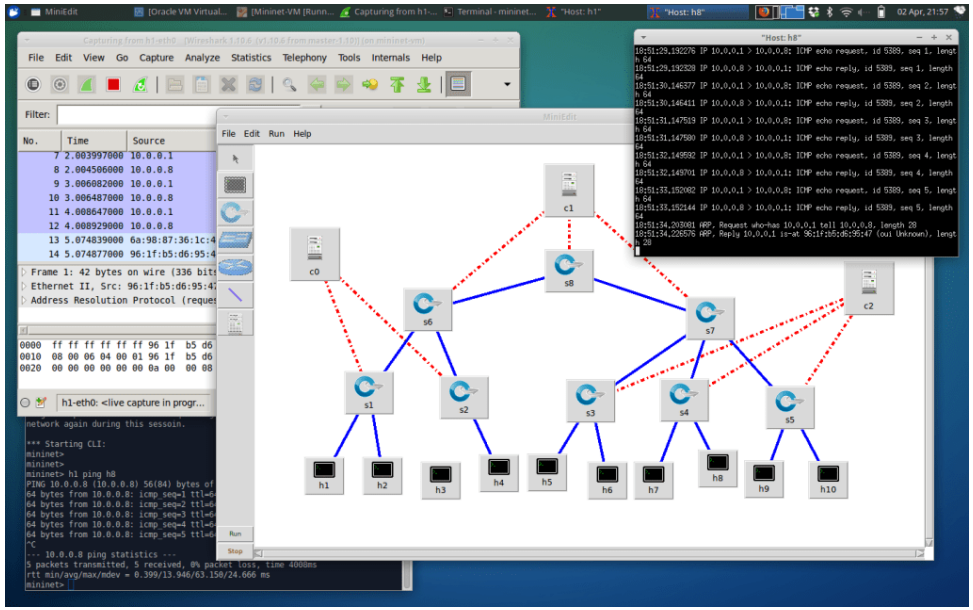
- DIAGRAMMA DI GANTT



MININET

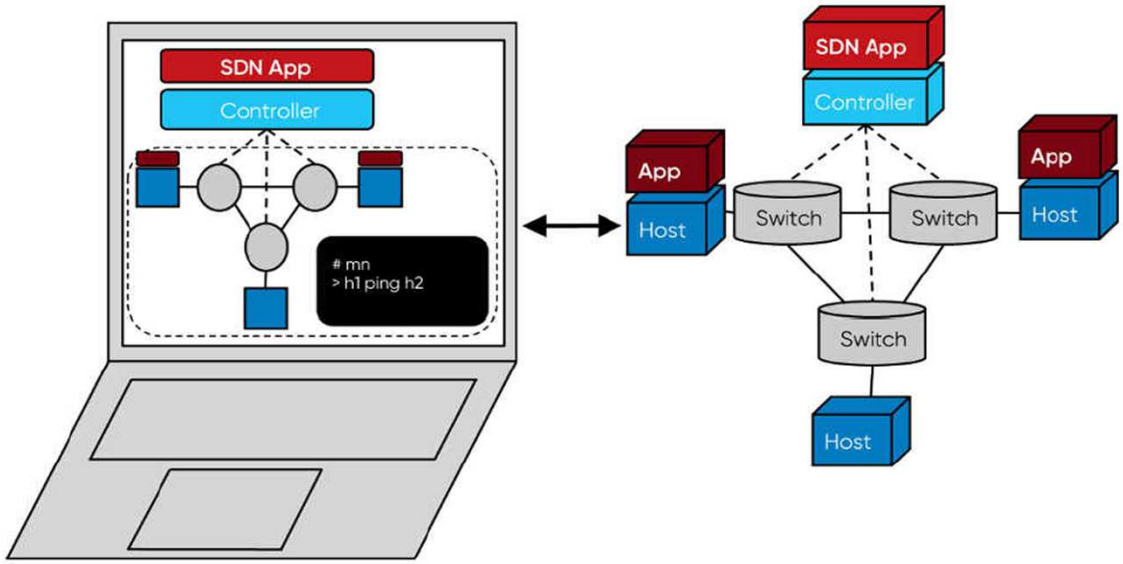
Introduzione

- Emulatore di rete a livello software
- Implementato su kernel Linux



A cosa serve?

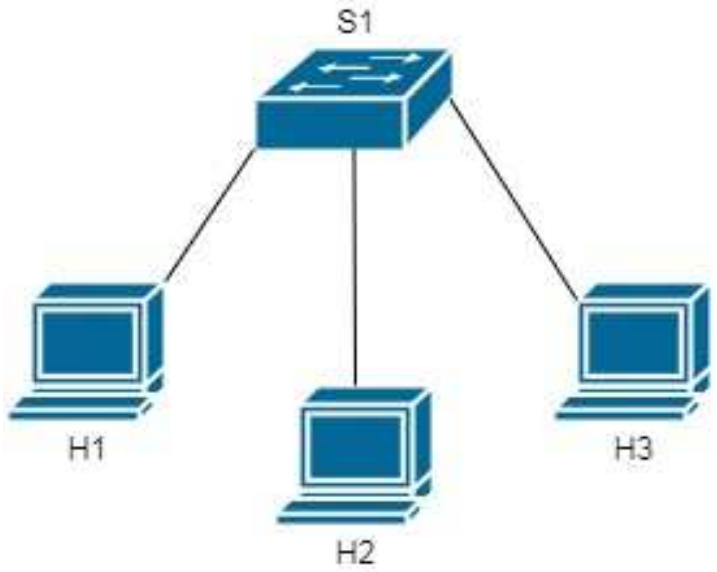
Studiare, testare, sviluppare apparati di rete a livello software



Creazione di una rete virtuale

Dispositivi:

- 3 host
- 1 switch



Creazione di una rete virtuale

1. Riga di comando

```
osboxes@osboxes:~/Desktop$ sudo mn --topo single,3
```

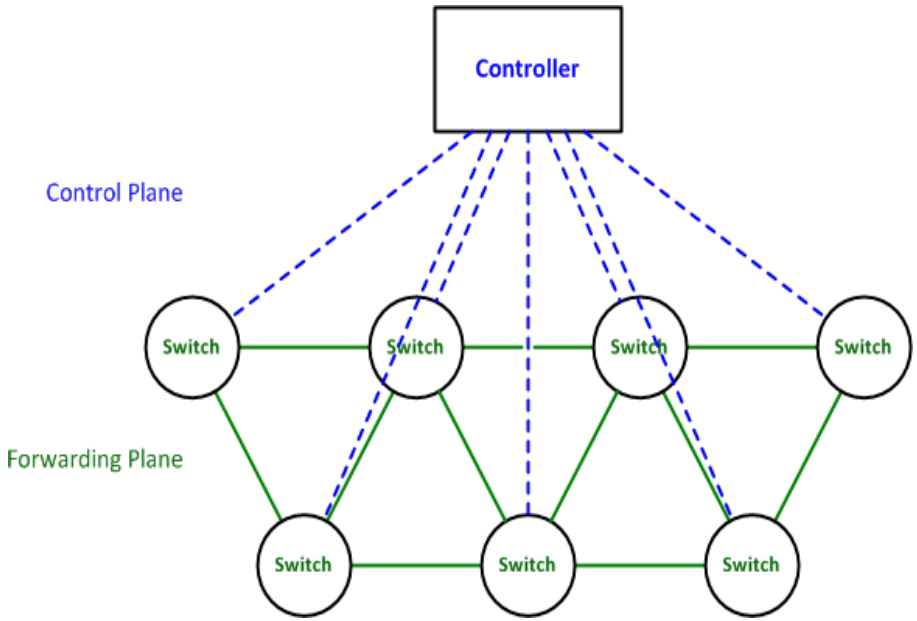
2. Script Python

```
osboxes@osboxes: ~/Desktop
File  Edit  View  Search  Terminal  Help
  GNU nano 2.9.3                    newtopo.py

from mininet.topo import Topo

class MyTopo( Topo ):
    "Simple topology example."
    def __init__( self ):
        "Create custom topo."

        # Initialize topology
        Topo.__init__( self )

        # Add hosts and switches
        Host1 = self.addHost( 'h1' )
        Host2 = self.addHost( 'h2' )
        Host3 = self.addHost( 'h3' )

        Switch1 = self.addSwitch('s1')

        # Add links
        self.addLink( Host1, Switch1 )
        self.addLink( Host2, Switch1 )
        self.addLink( Host3, Switch1 )

topos = { 'mytopo': ( lambda: MyTopo() ) }
```

RYU

Introduzione

- Termine giapponese che significa «traffico»
- Dispositivo di rete che controlla il traffico in modo ‘intelligente’

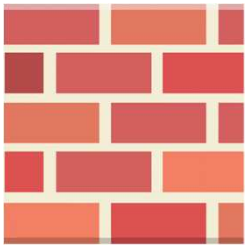


A cosa serve?

Agire sui vari switch per intervenire sul traffico di rete:

- Router

- Firewall

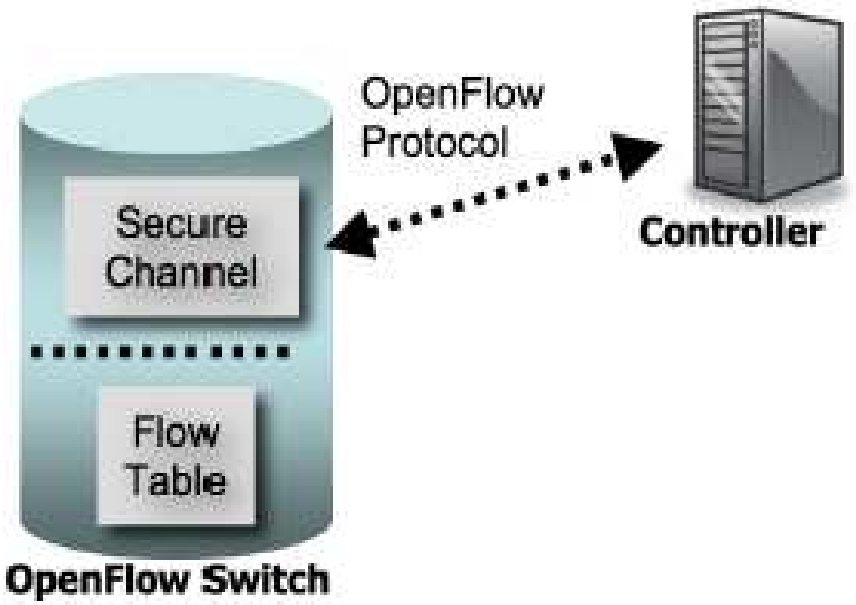


OPENFLOW

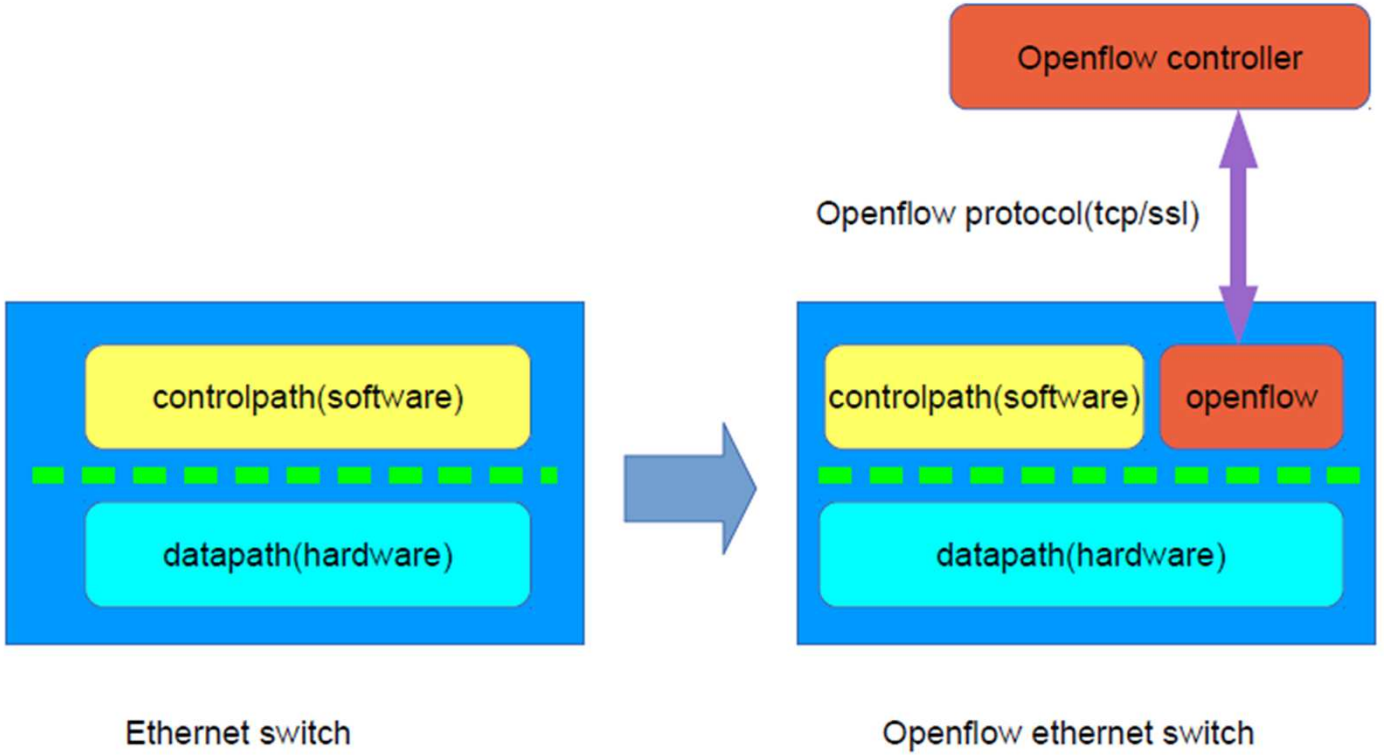
OPENFLOW

- Protocollo di comunicazione tra gli switch e il controller

- Handshake

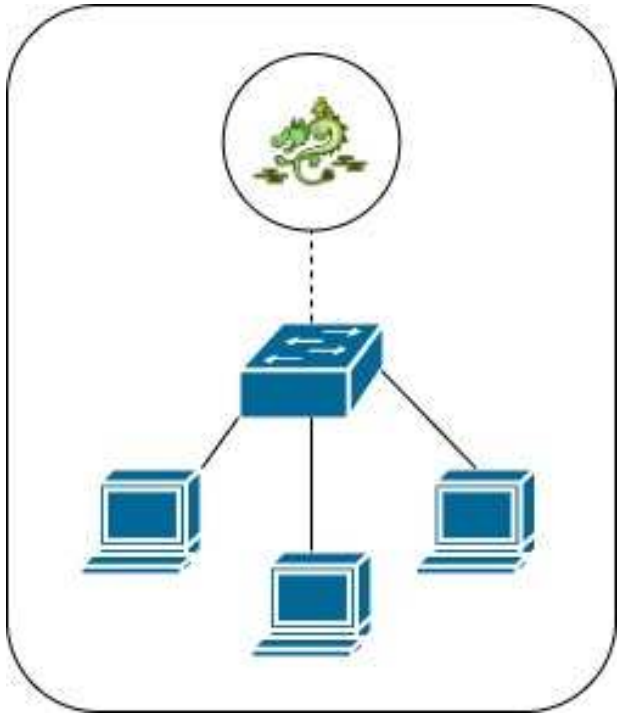


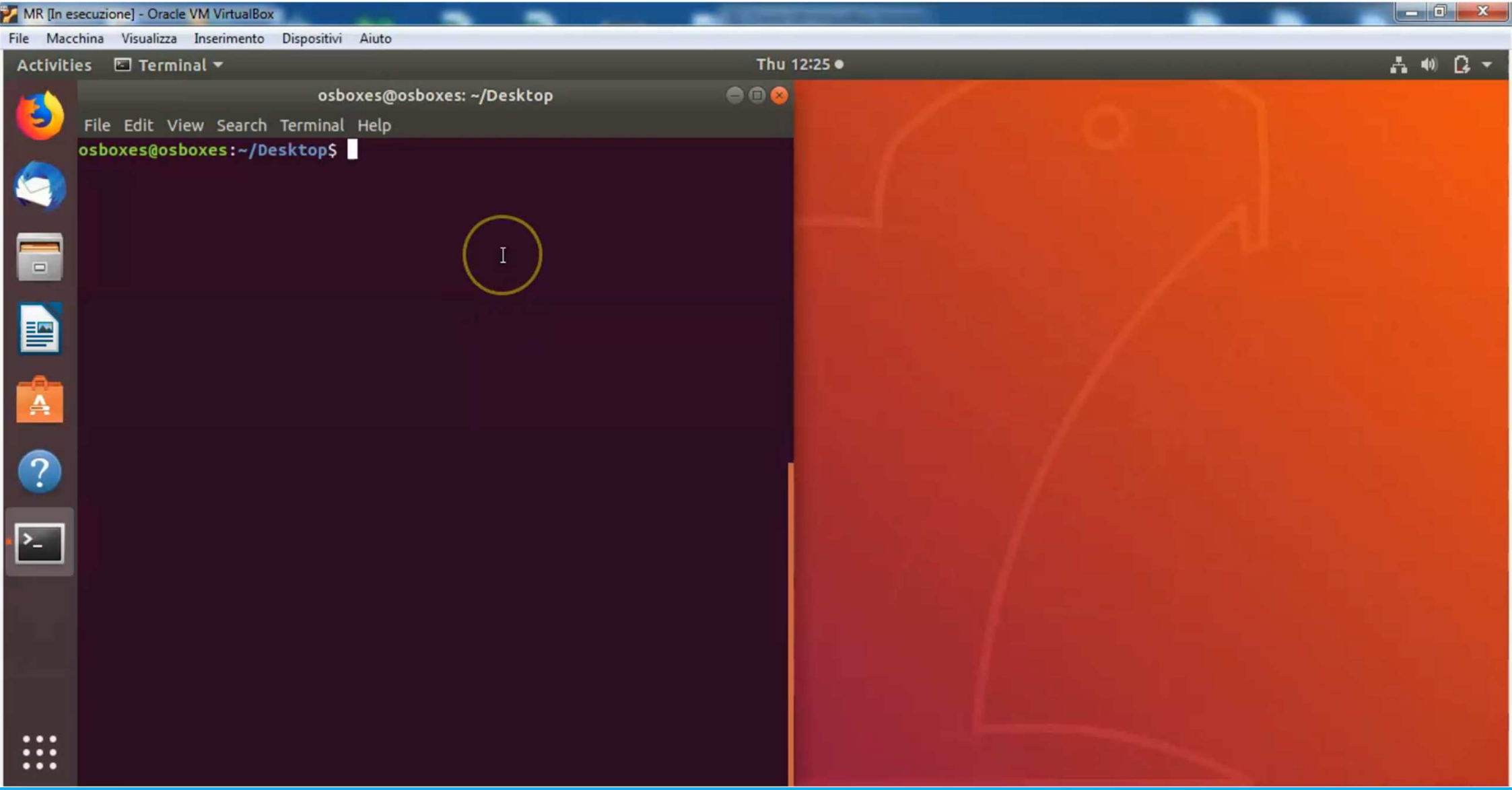
OPENFLOW


Openflow controller
Openflow protocol(tcp/ssl)
controlpath(software)
datapath(hardware)
controlpath(software)
openflow
datapath(hardware)
Ethernet switch
Openflow ethernet switch

RETE SDN

- MININET
- RYU
- OPENFLOW




MR [In esecuzione] - Oracle VM VirtualBox
File Macchina Visualizza Inserimento Dispositivi Aiuto
Activities
Terminal
Thu 12:25
osboxes@osboxes: ~/Desktop
File Edit View Search Terminal Help
osboxes@osboxes:~/Desktop$

links

MININET

- https://www.slideshare.net/e2m/mininet-basics
- https://www.slideshare.net/MominaMasood1/mininet-demo
- https://slideplayer.com/slide/5252436/
- http://mininet.org/

RYU

- https://readthedocs.org/projects/ryu/downloads/pdf/latest/
- https://nsrc.org/workshops/2014/nznog-sdn/raw-attachment/wiki/WikiStart/Ryu.pdf
- https://ryu.readthedocs.io/en/latest/getting_started.html

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