

# Optimisation del ancho de banda (Lab Setup)



Christian Benvenuti

[christian.benvenuti@libero.it](mailto:christian.benvenuti@libero.it)

La Paz, Bolivia, 4-9/5/2009

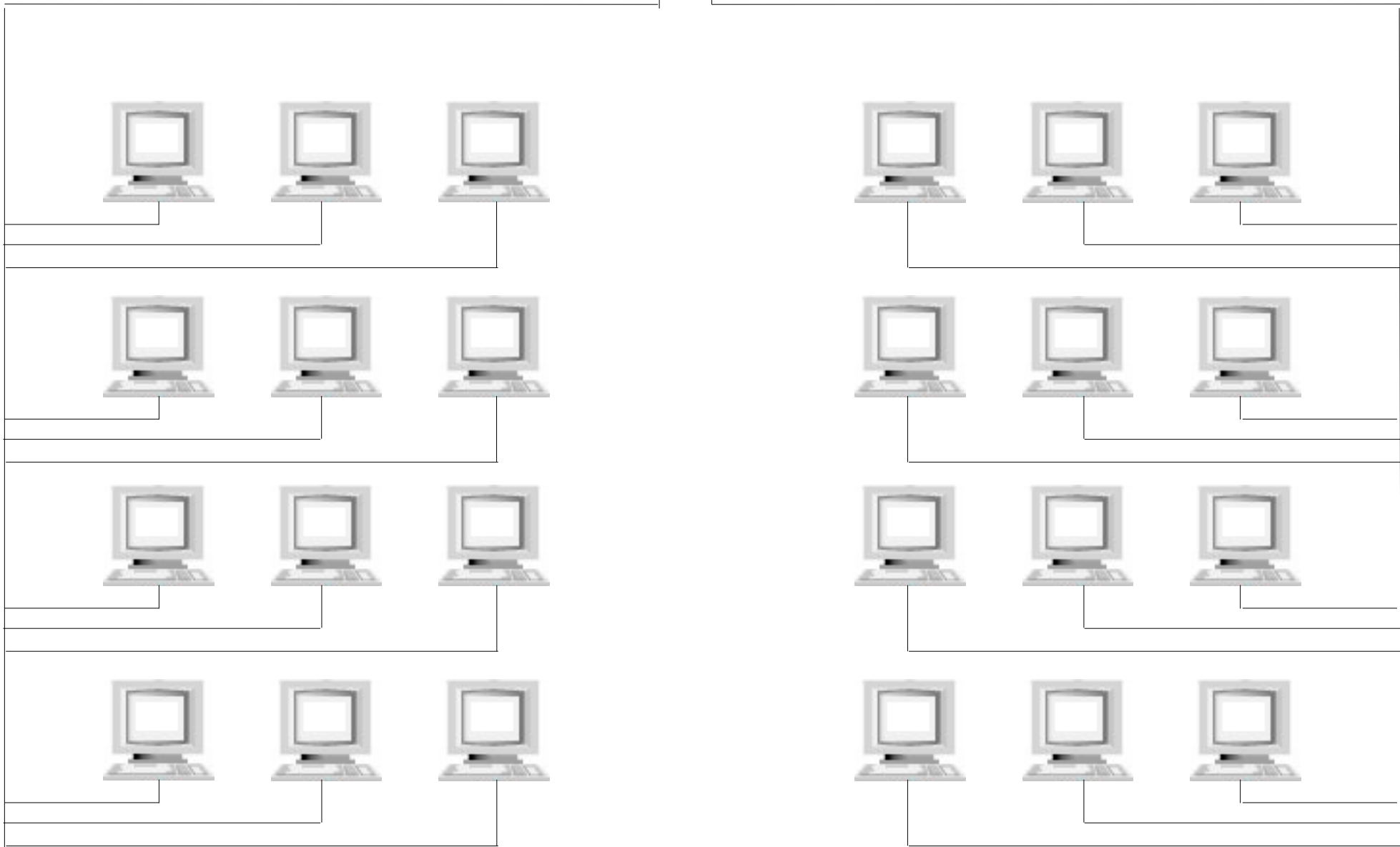
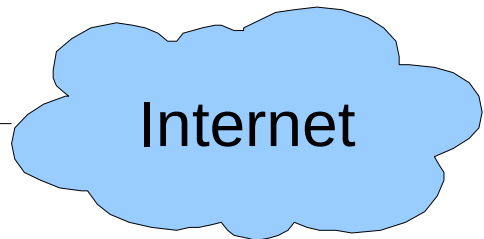


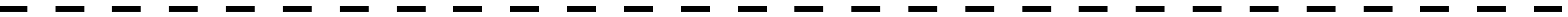
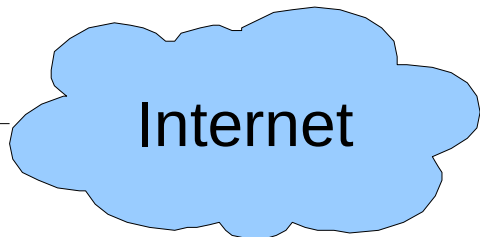
# Before we start ... (3/4)

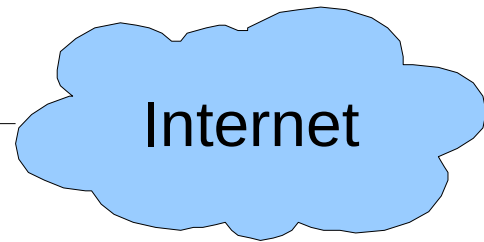
- Does anyone know how to configure a Linux router?
  - Plugging in a new Network Interface Card
  - Configuring Routing and/or Bridging
  - Etc
- Do we all know what ***ping*** and ***traceroute*** are and are used for?
- How about ***ifconfig***, ***route***, ***ip***, ***tc*** ...?
- The role of ***/etc/resolv.conf***?
- ...

# Commercial Hardware/Software versus OpenSource Software

- If you are not using OpenSource SW, what are the main reasons?
  - 
  - 
  -
- What Commercial HW/SW are you using mainly?
  - 
  - 
  -
  - Why did you choose these brands

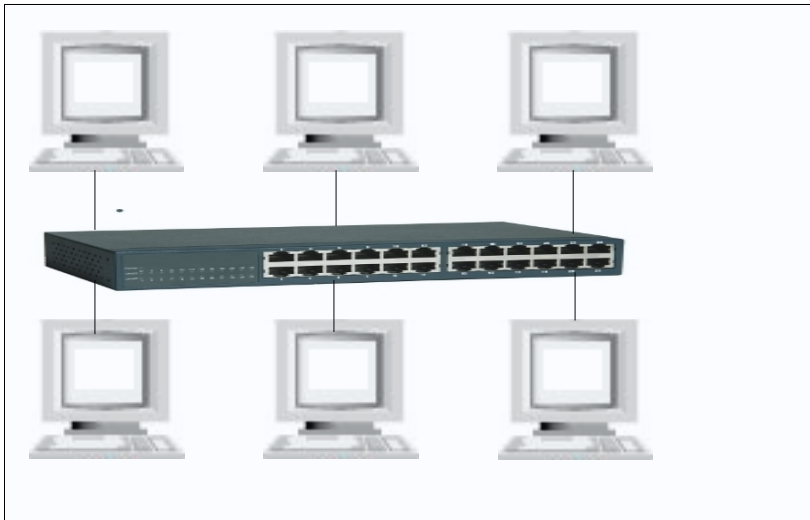
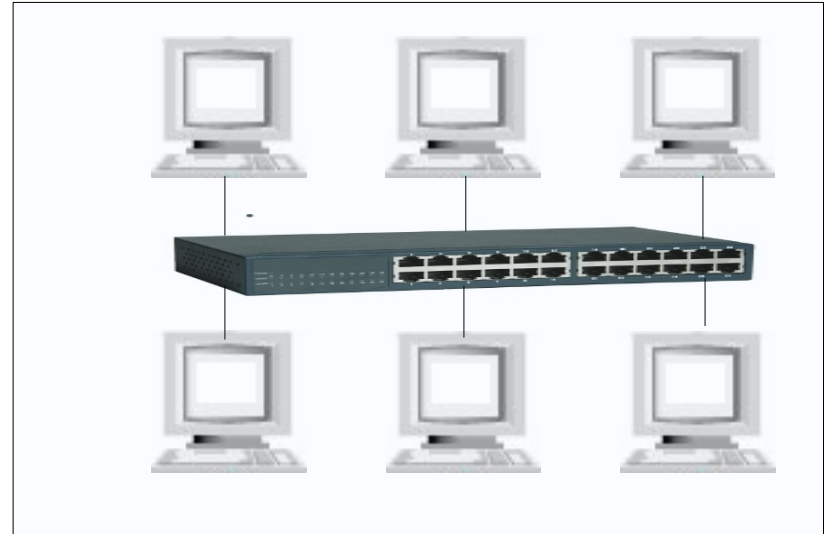
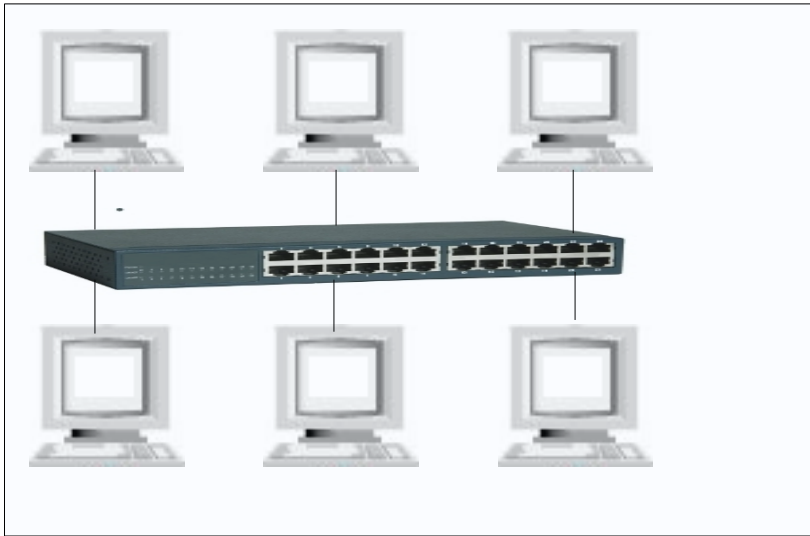
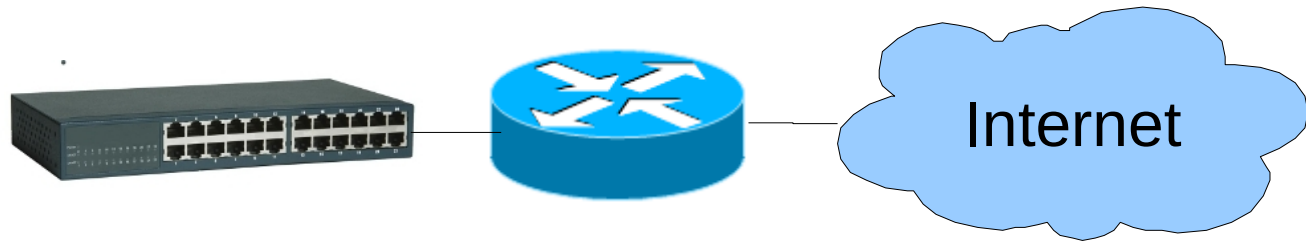


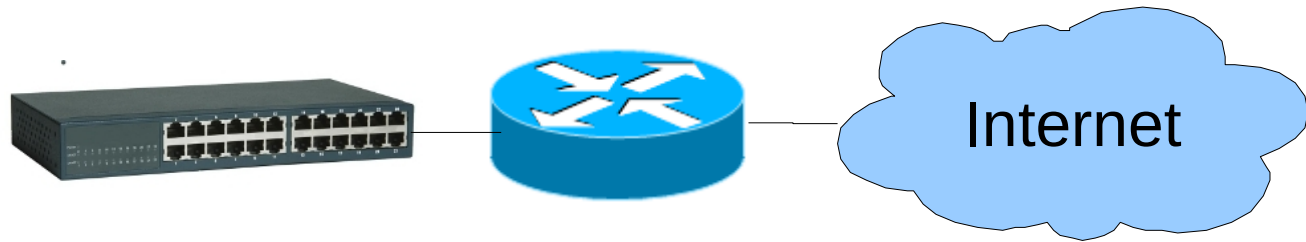




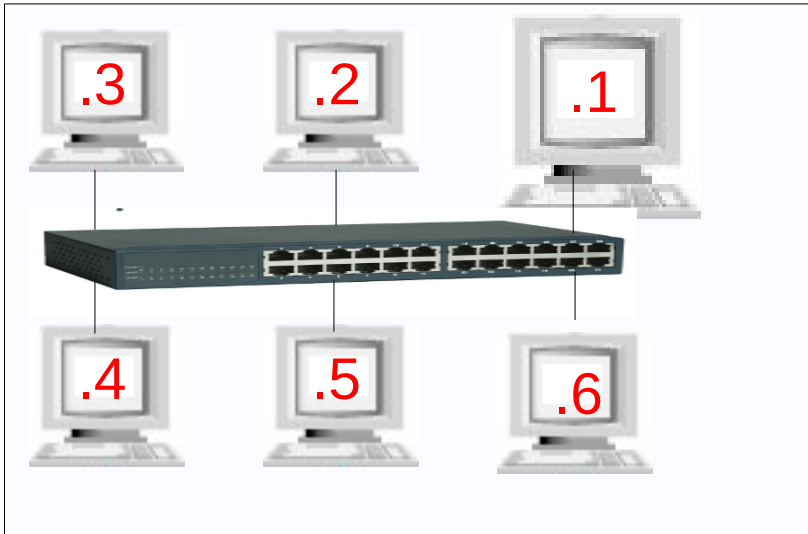
Internet



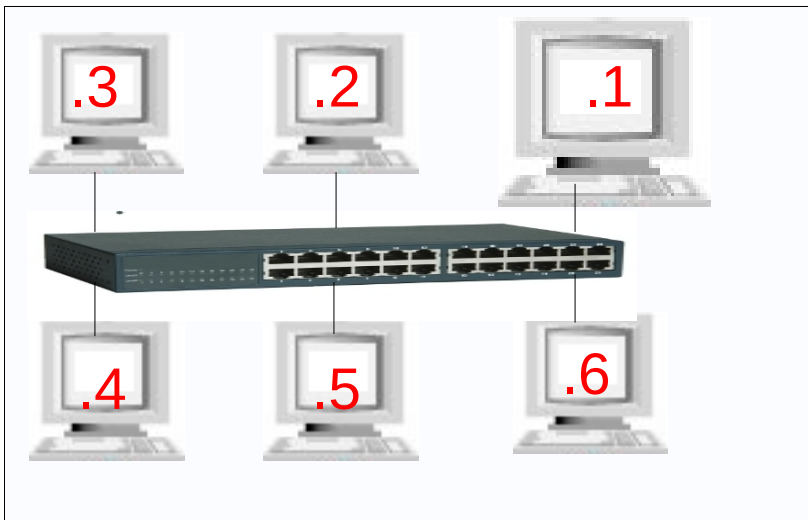
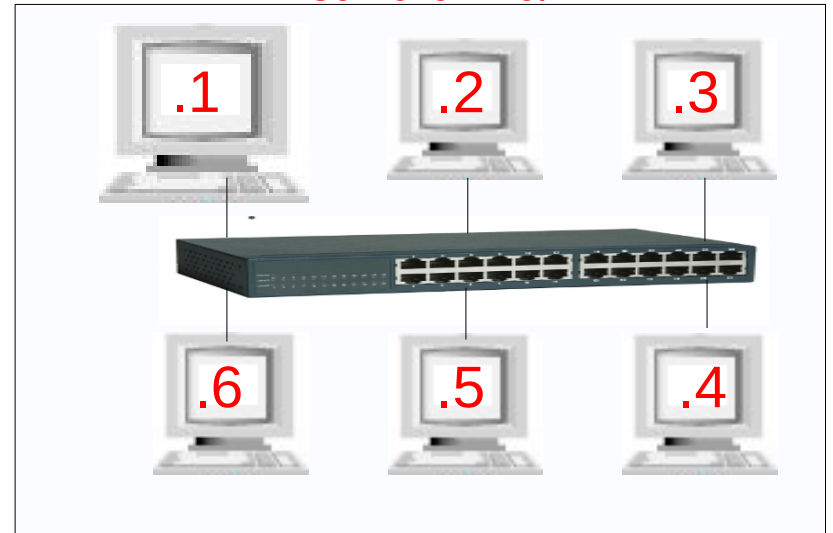




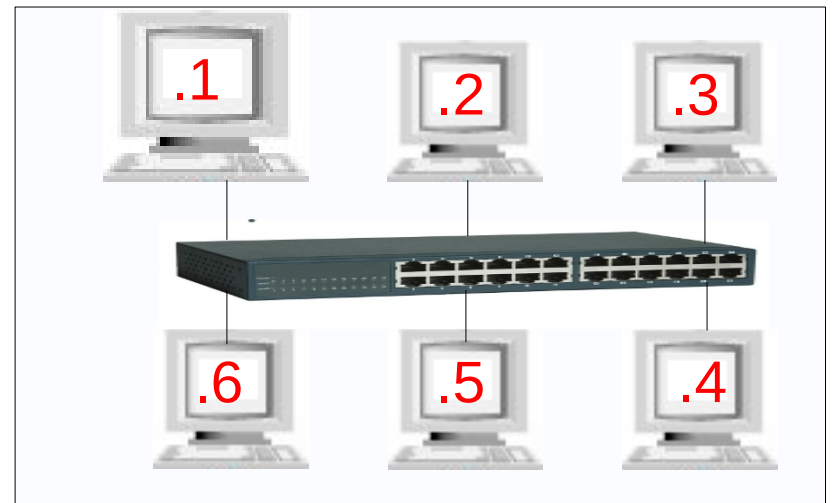
Net 10.0.1.0/24



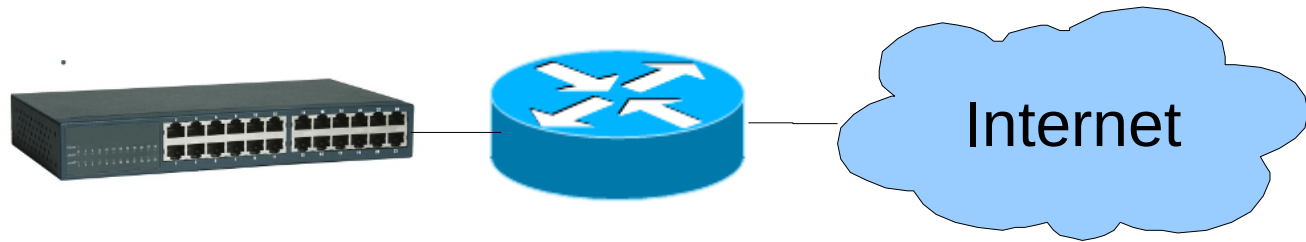
Net 10.0.2.0/24



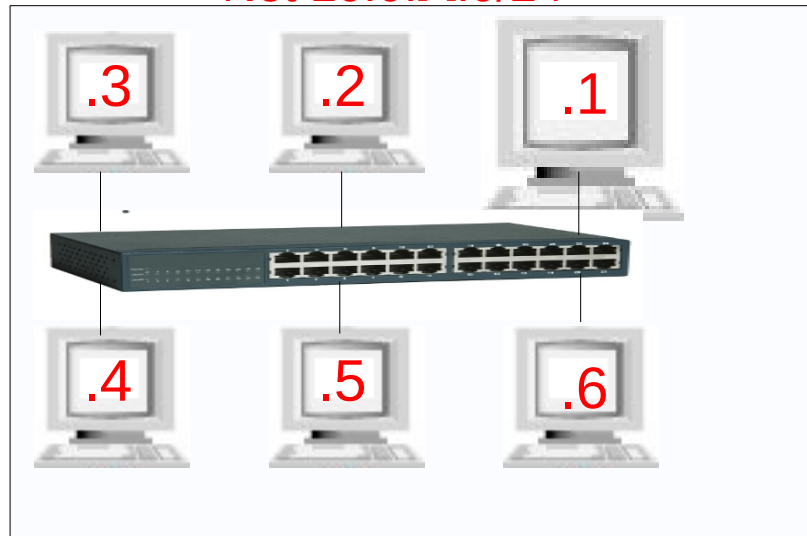
Net 10.0.3.0/24



Net 10.0.4.0/24



Net 10.0.X.0/24



```
ifconfig eth0 10.0.X.Y netmask 255.255.255.0
```

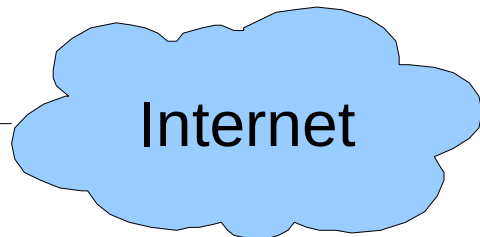
OR

```
ip addr add dev eth0 10.0.X.Y
```

Y = [1,2,3,4,5,6]

**Exercise:**

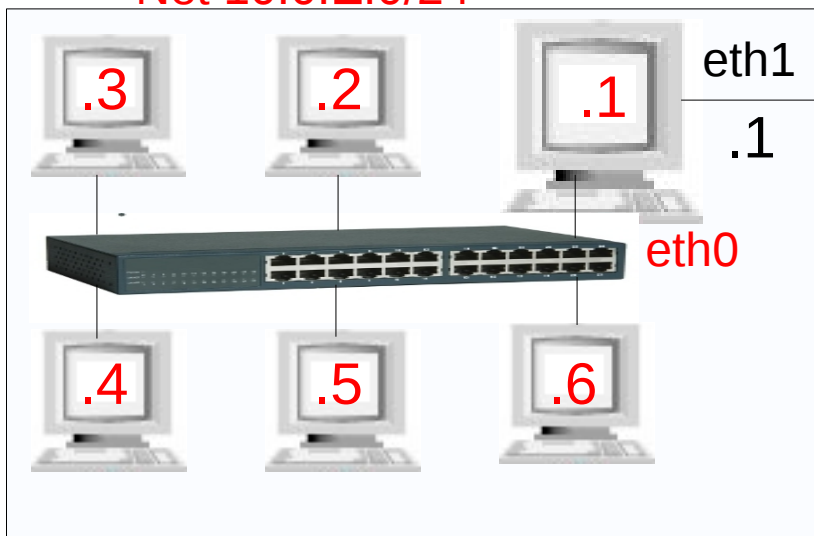
- Verify that all hosts within a group can see each other (with ping)



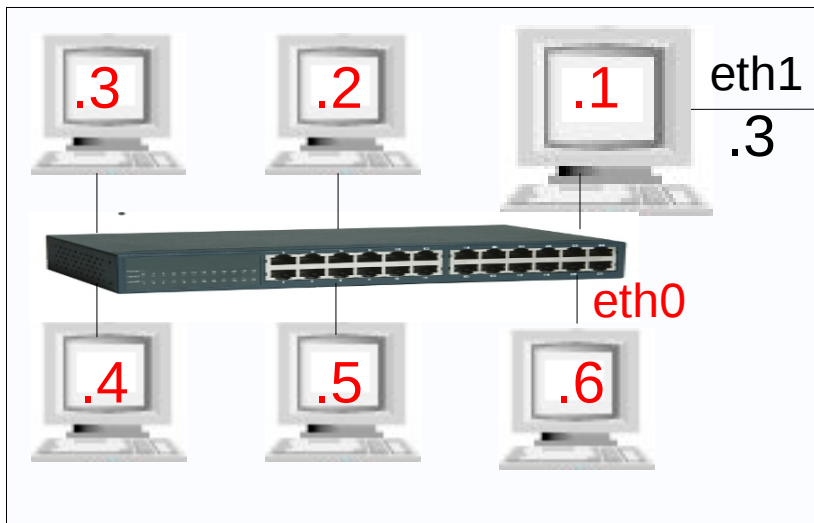
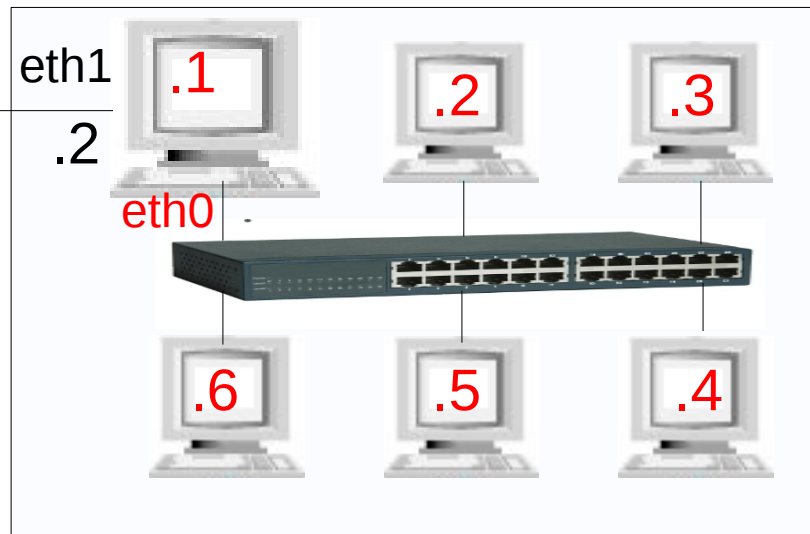
Net 10.0.5.0/24



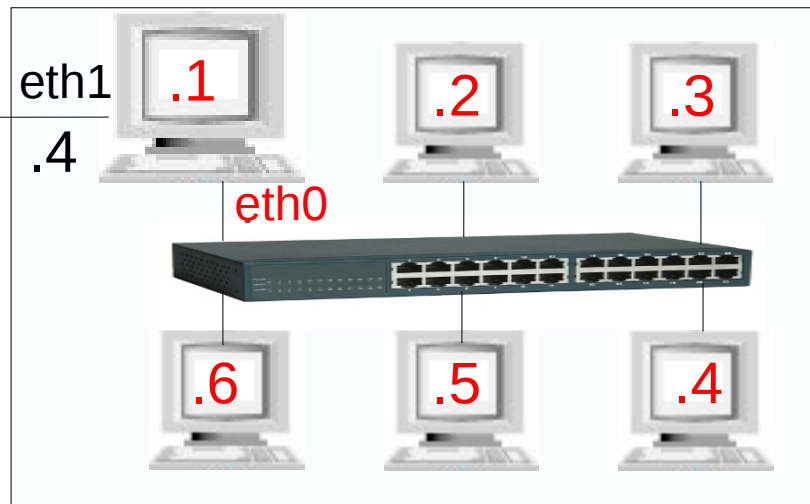
Net 10.0.1.0/24



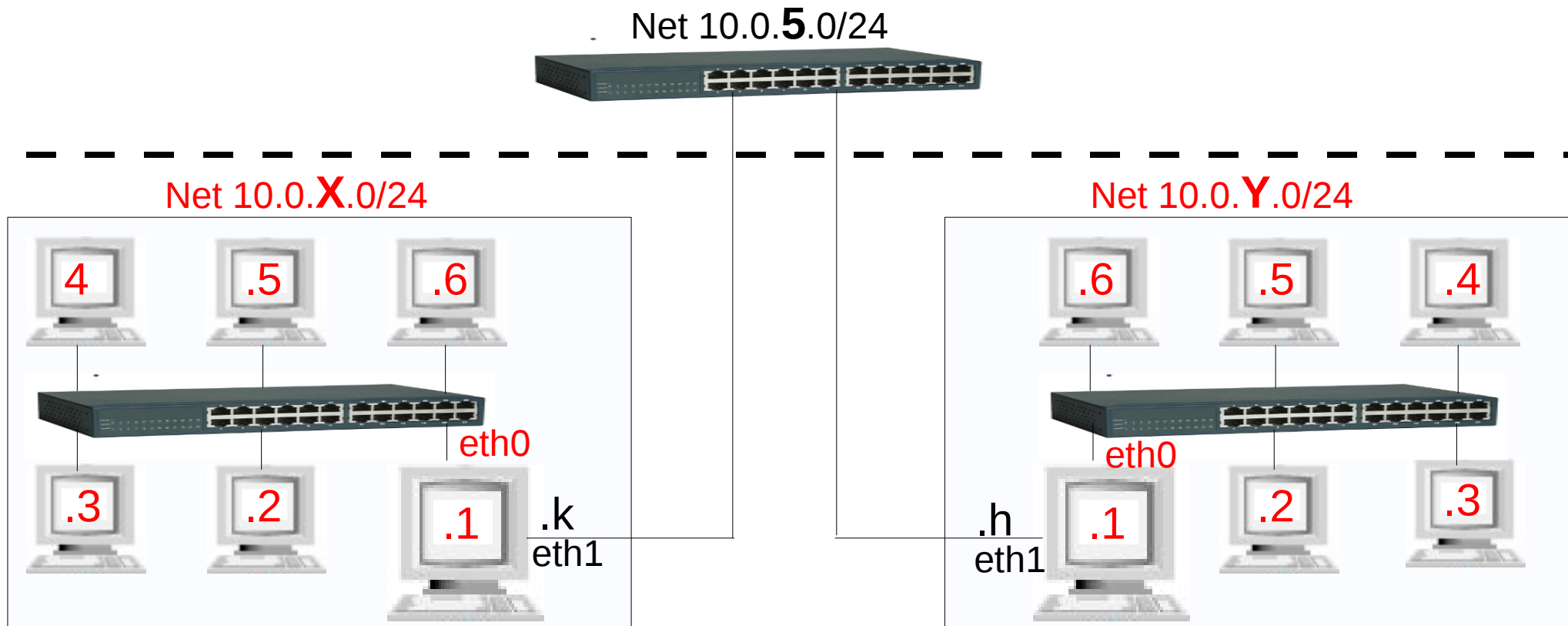
Net 10.0.2.0/24



Net 10.0.3.0/24



Net 10.0.4.0/24



On the router only:

```
ifconfig eth1 10.0.X.K netmask 255.255.255.0
(OR: ip addr add dev eth0 10.0.X.K)
```

```
+
route add -net 10.0.Y.0 netmask 255.255.255.0 gw 10.0.5.h
(OR: ip route add 10.0.Y.0/32 via 10.0.5.h)
```

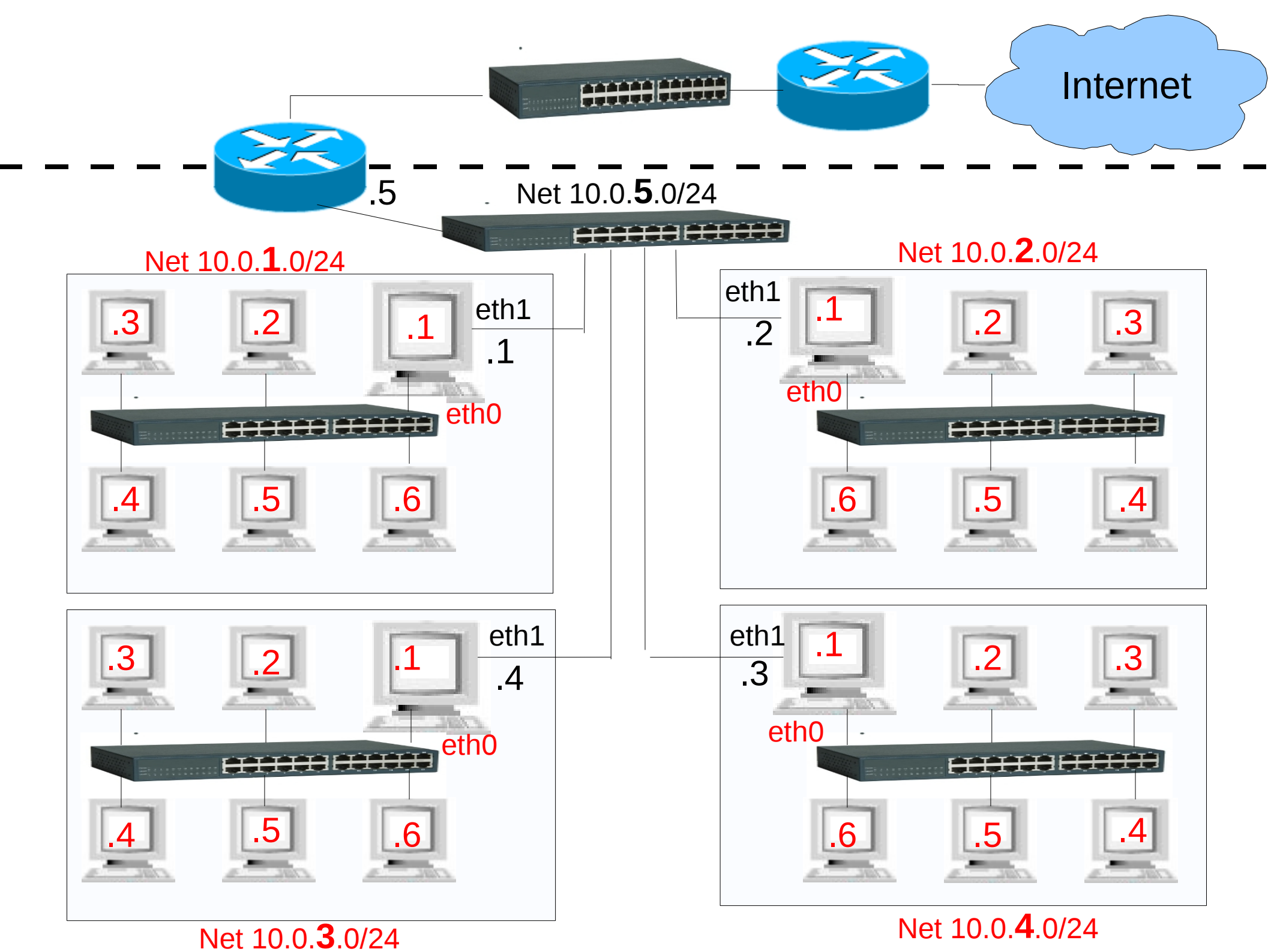
On the hosts only:

```
route add default gw 10.0.X.1
(OR: ip route add 0.0.0.0 via 10.0.X.1)
```

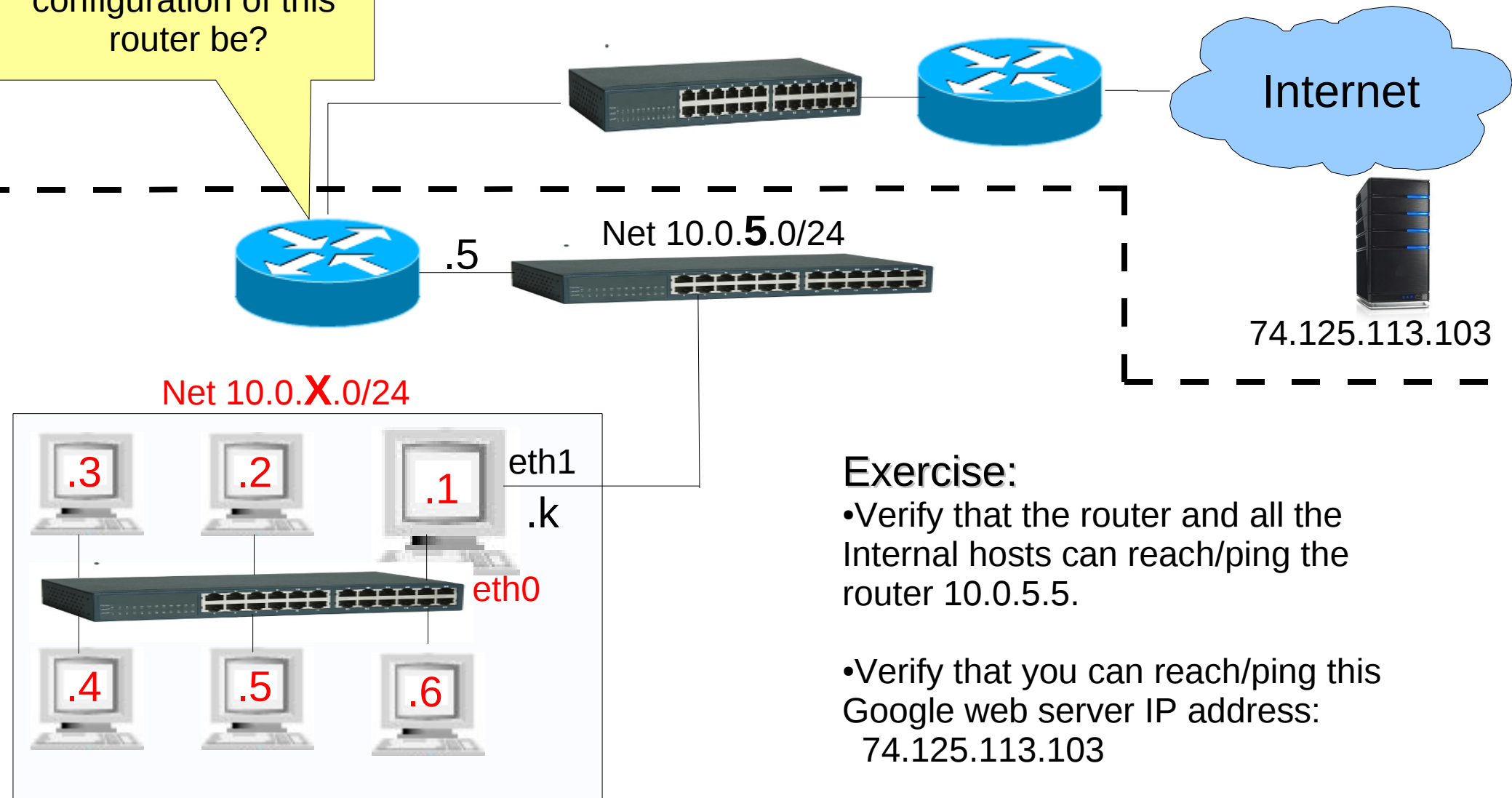
+ ip\_forward + firewall

**Exercise:**

- Verify that all routers can reach/ping both IP addresses of all other routers:  
10.0.Y.1  
10.0.5.h
- Verify that the internal hosts can reach/ping the hosts in the other networks:  
10.0.Y.Z con Z=[1,2,3,4,5,6]



What would the configuration of this router be?



### Exercise:

- Verify that the router and all the Internal hosts can reach/ping the router 10.0.5.5.
- Verify that you can reach/ping this Google web server IP address: 74.125.113.103
- Verify that you can reach/ping the Yahoo web server <http://www.yahoo.com> and browse the internet with Firefox.

On the router only:

```
route add default gw 10.0.5.1  
(OR: ip route add 0.0.0.0 via 10.0.5.5)
```

# Copyright



- This presentation is released under the Creative Common License:
  - Attribution, Noncommercial, Share Alike 2.5
  - (<http://creativecommons.org/licenses/by-nc-sa/2.5/>)
- Attribution
  - You must attribute the work in the manner specified by the author or licensor.
- Noncommercial.
  - You may not use this work for commercial purposes.
- Share Alike.
  - If you alter, transform, or build upon this work, you may distribute the resulting work only under a license identical to this one.