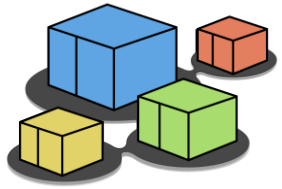

Kathará

kathara lab

Subnetting IPv4

Version	1.0
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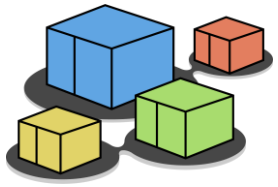
E-mail	contact@kathara.org
Web	http://www.kathara.org/
Description	Exercises on IPv4 subnetting



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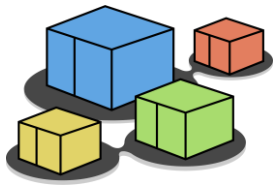
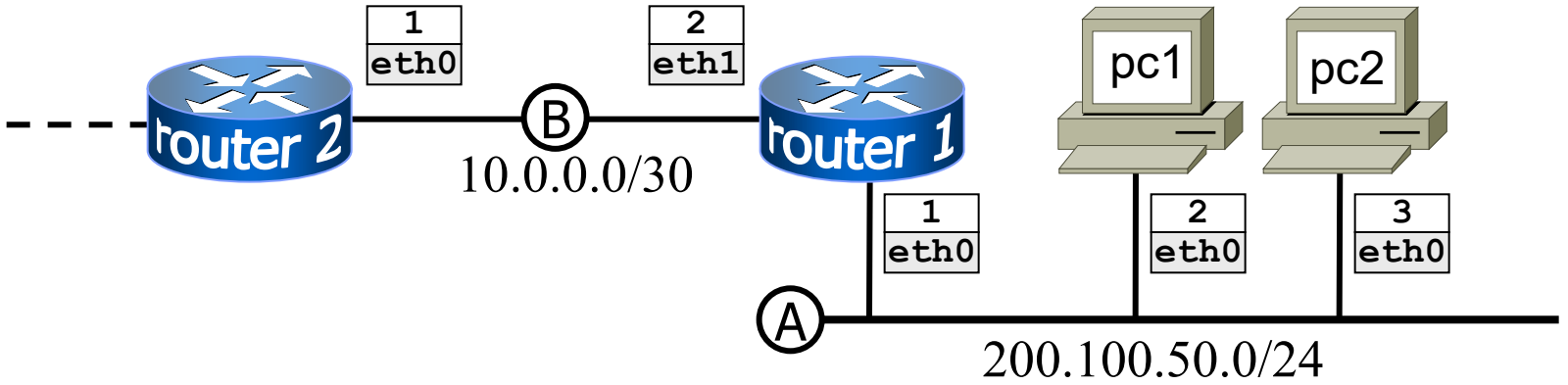
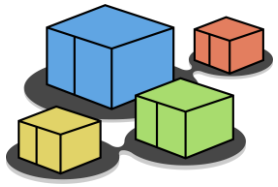


lab-1-lan: analyze the scenario





lab-1-lan: configurations

lab.conf

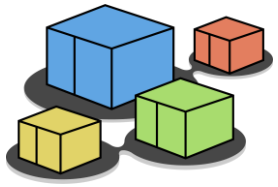
```
router1[0]="A/00:00:00:00:00:a1"
router1[1]="B/00:00:00:00:00:b1"
router1[image]="kathara/base"
router1[ipv6]="false"

router2[0]="B/00:00:00:00:00:b2"
router2[image]="kathara/base"
router2[ipv6]="false"

pc1[0]="A/00:00:00:00:00:01"
pc1[image]="kathara/base"
pc1[ipv6]="false"
```

lab.conf

```
pc2[0]="A/00:00:00:00:00:01"
pc2[image]="kathara/base"
pc2[ipv6]="false"
```



lab-1-lan: configurations

router1.startup

```
ip address add 200.100.50.1/24 dev eth0
ip address add 10.0.0.2/30 dev eth1
ip route add default via 10.0.0.1
```

pc1.startup

```
ip address add 195.11.14.5/24 dev eth0
ip route add default via 195.11.14.1
```

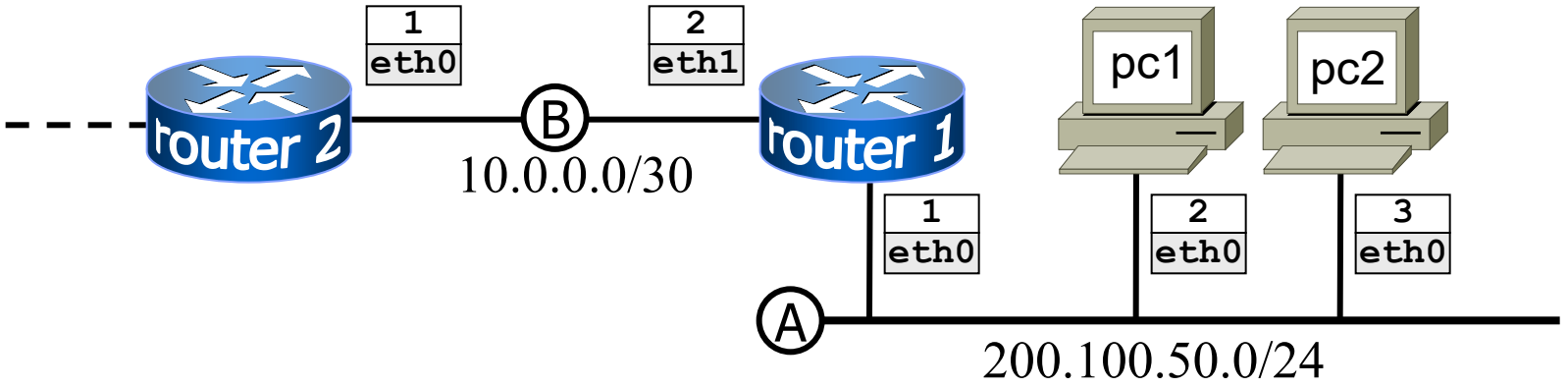
router2.startup

```
ip address add 10.0.0.1/30 dev eth0
```

pc2.startup

```
ip address add 200.1.1.7/24 dev eth0
ip route add default via 200.1.1.1 dev eth0
```

lab-1-lan: questions

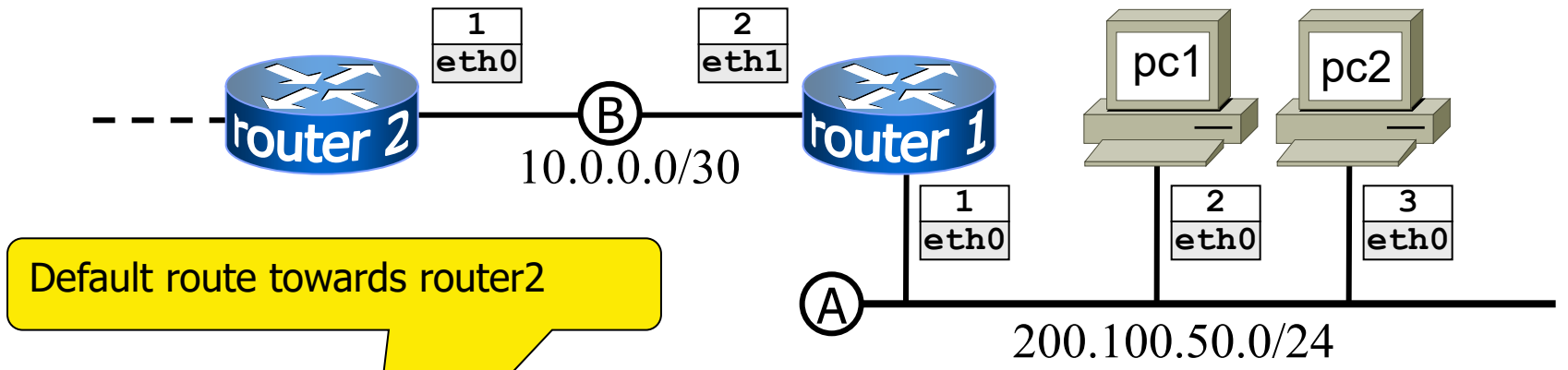


Inspect the routing table of router 1, how many entries are there?

What is the broadcast address for LAN A?

What is the broadcast address for LAN B?

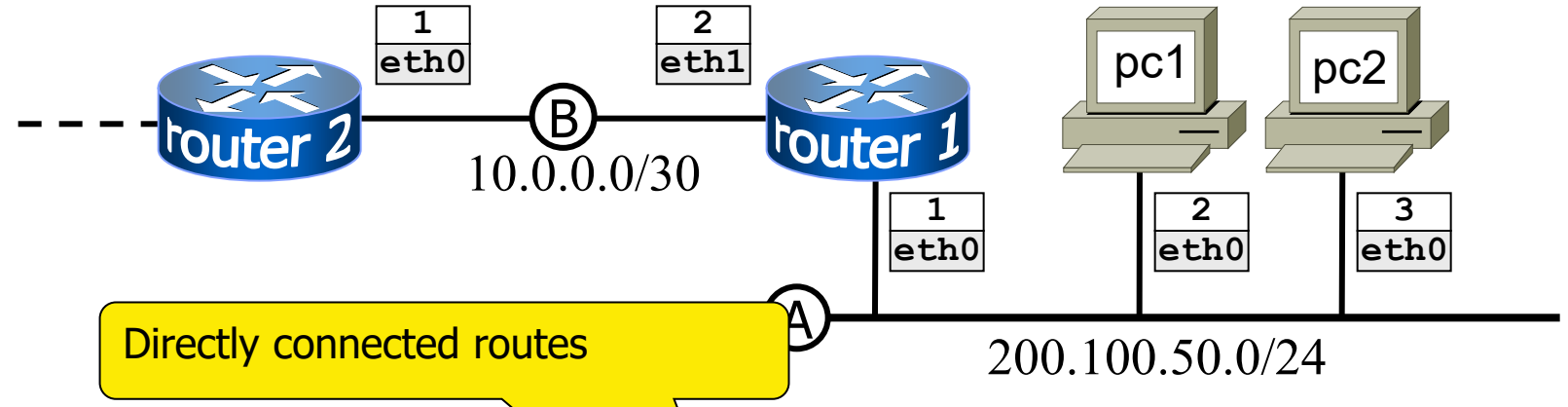
lab-1-lan: inspecting the routing table



router1

```
root@router1:~# ip route
default via 10.0.0.1 dev eth1
10.0.0.0/30 dev eth1 proto kernel scope link src 10.0.0.2
200.100.50.0/24 dev eth0 proto kernel scope link src 200.100.50.1
```

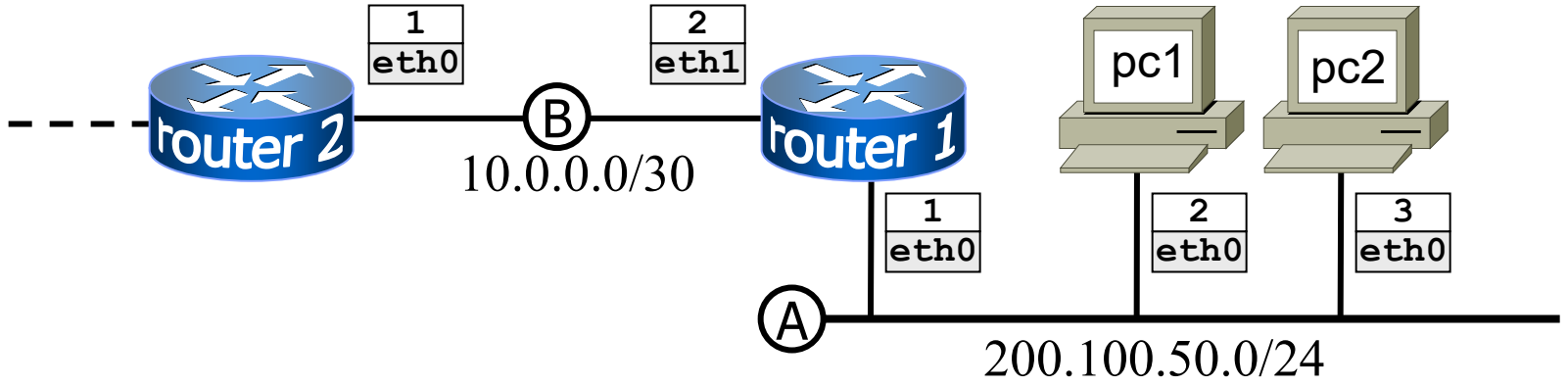
lab-1-lan: inspecting the routing table



router1

```
root@router1:/# ip route
default via 10.0.0.1 dev eth1
10.0.0.0/30 dev eth1 proto kernel scope link src 10.0.0.2
200.100.50.0/24 dev eth0 proto kernel scope link src 200.100.50.1
```

lab-1-lan: checking the broadcast address

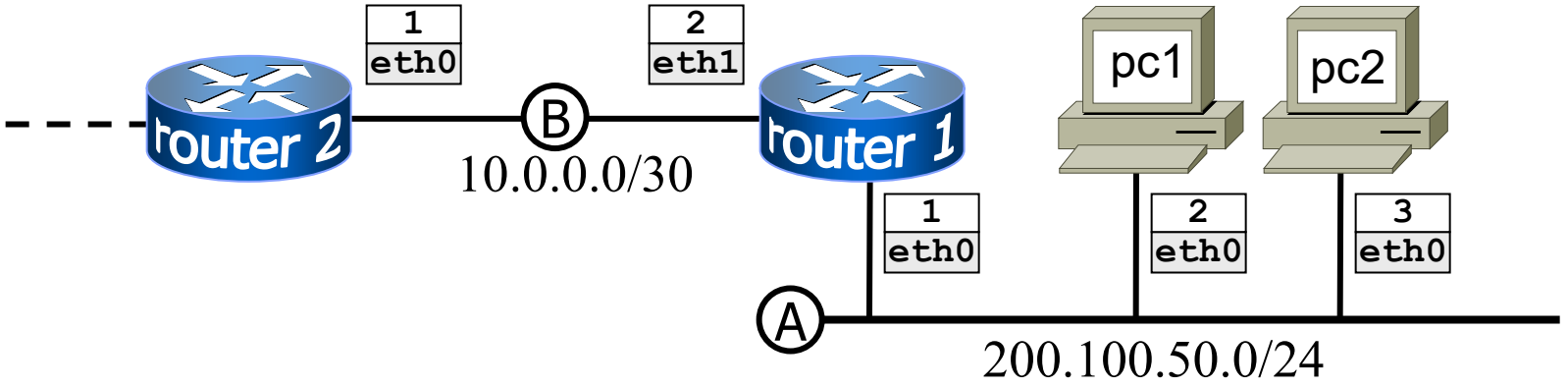


router1

```
root@router1:/# route
Dst             Gateway         Prefsrc         Protocol  Scope   Dev             Table
default         10.0.0.1                                          eth1
10.0.0.0/30                     10.0.0.2        kernel    link    eth1
                                200.100.50.1    kernel    link    eth0
                                10.0.0.2        kernel    host    eth1            local
10.                             10.0.0.2        kernel    link    eth1            local
127.        /8                  127.0.0.1       kernel    host    lo              local
127.0.                          127.0.0.1       kernel    host    lo              local
127.255.    5.255               127.0.0.1       kernel    link    lo              local
200.100.5   .1                  200.100.50.1    kernel    host    eth0            local
200.100.50.255                  200.100.50.1    kernel    link    eth0            local
```

Broadcast address for LAN A

lab-1-lan: checking the broadcast addresses

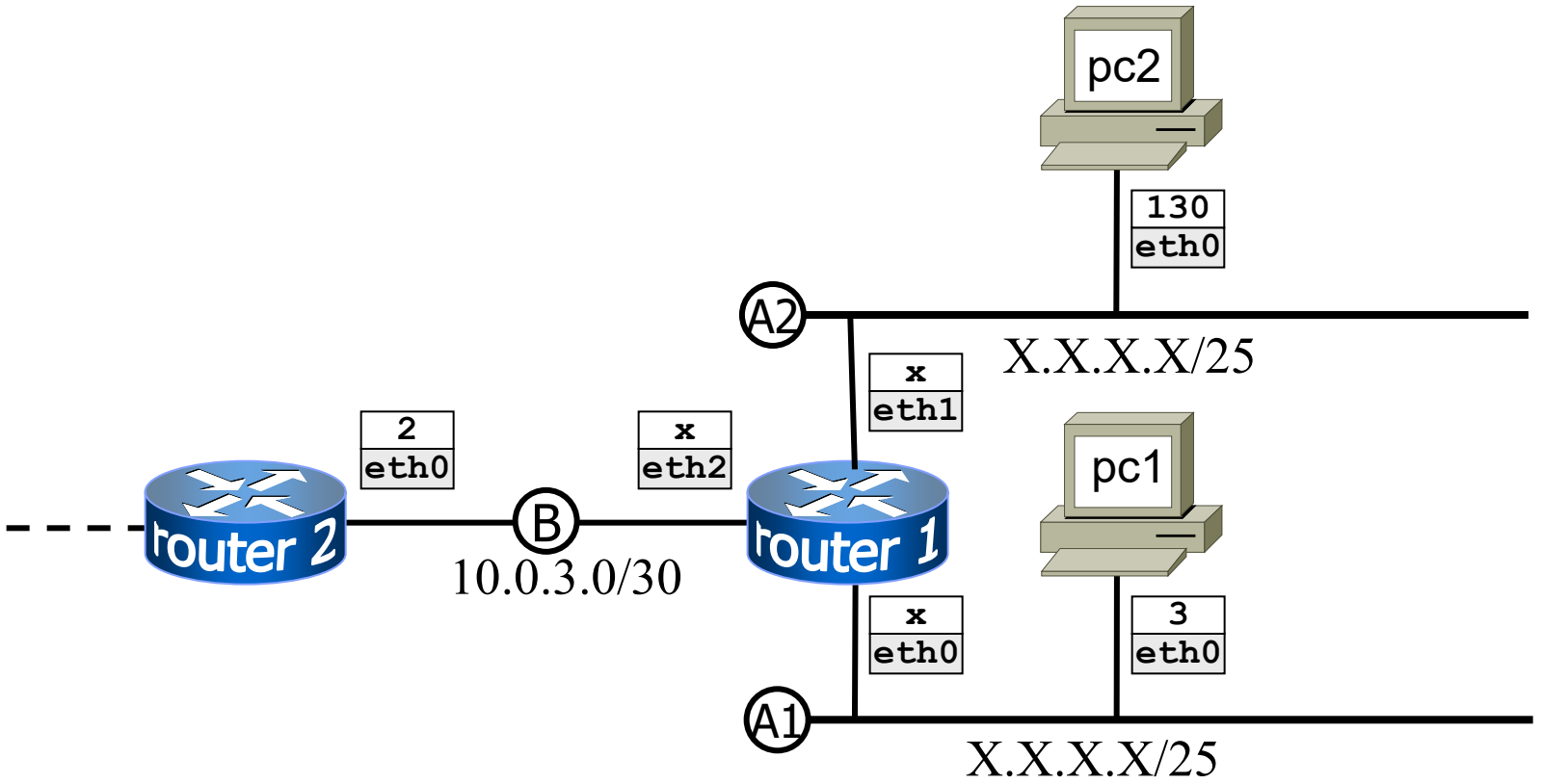


Broadcast address for LAN B

router1

	Gateway	Prefsrc	Protocol	Scope	Dev	Table
ult	10.0.0.1				eth1	
.0.0/30		10.0.0.2	kernel	link	eth1	
100.50.0/24		200.100.50.1	kernel	link	eth0	
.0.2		10.0.0.2	kernel	host	eth1	local
10.0.0.3		10.0.0.2	kernel	link	eth1	local
127.0.0.0/8		127.0.0.1	kernel	host	lo	local
127.0.0.1		127.0.0.1	kernel	host	lo	local
127.255.255.255		127.0.0.1	kernel	link	lo	local
200.100.50.1		200.100.50.1	kernel	host	eth0	local
200.100.50.255		200.100.50.1	kernel	link	eth0	local

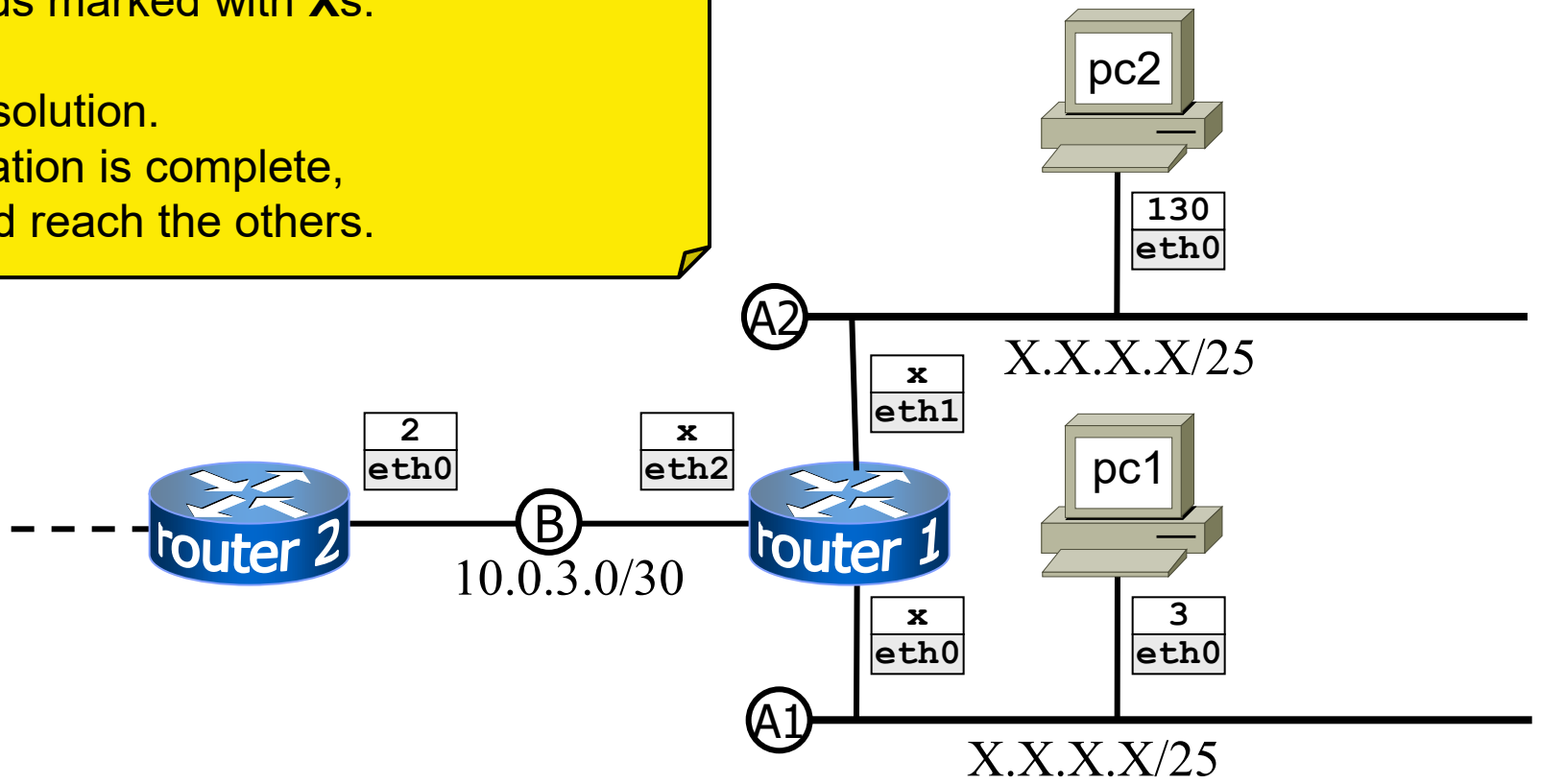
lab-2-lan: complete the configurations



lab-2-lan: complete the configurations

Open the lab folder and complete the configuration by filling in the fields marked with **X**s.

There is only one solution.
Once the configuration is complete, each device should reach the others.

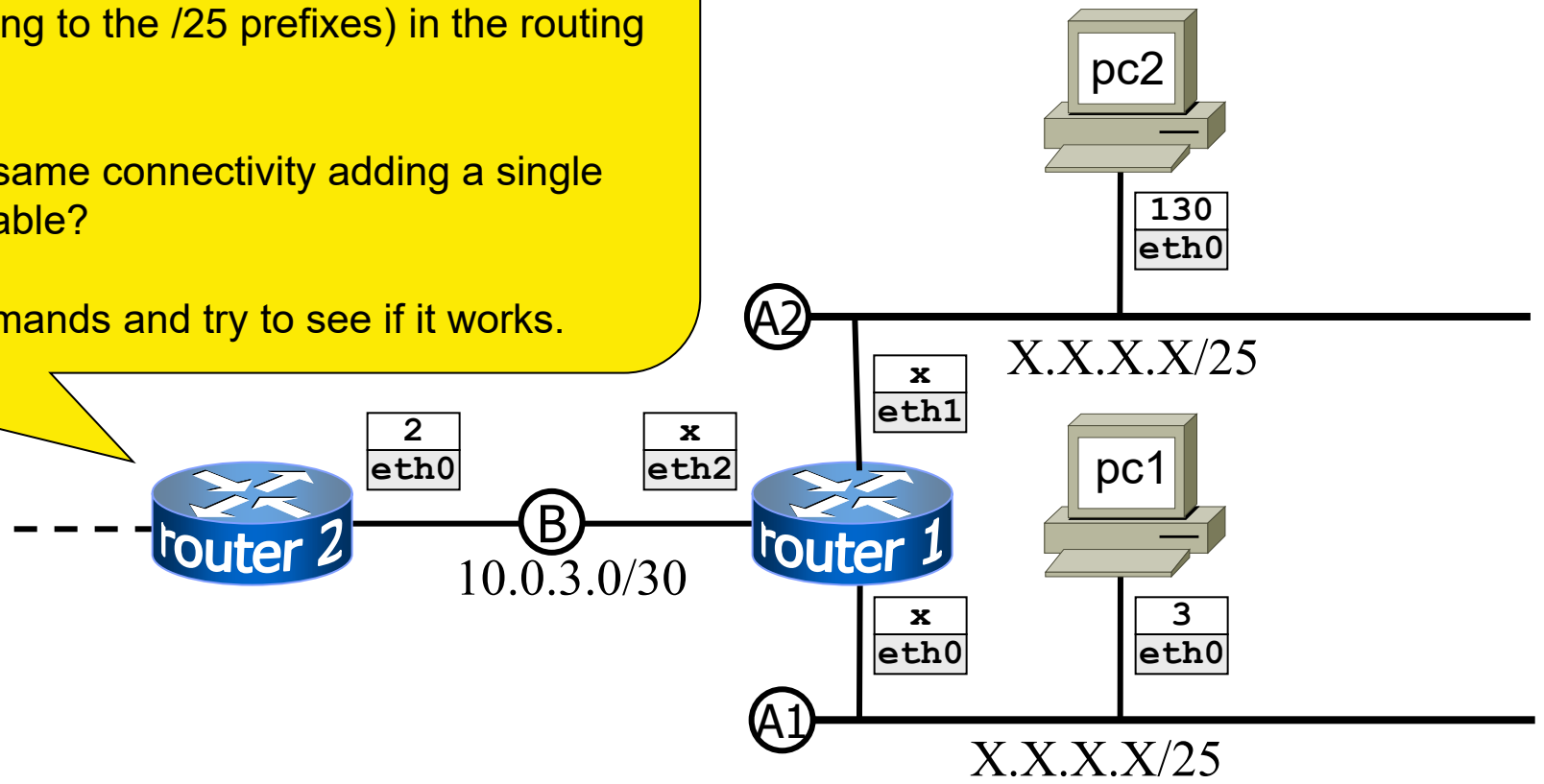


lab-2-lan: modify router2 commands

In the provided configuration router2 has **two different entries** (corresponding to the /25 prefixes) in the routing table.

Can we provide the same connectivity adding a single entry in the routing table?

Modify router 2 commands and try to see if it works.



lab-4-lan: complete the configurations

The configuration of router2 is not complete.

Complete the configuration by filling in the fields marked with **X**s.

Verify your work by pinging the PCs from router2.