

Redes de Comunicação 2023/2024

TP03 DHCP and NAT (SNAT, DNAT)

Jorge Granjal
University of Coimbra

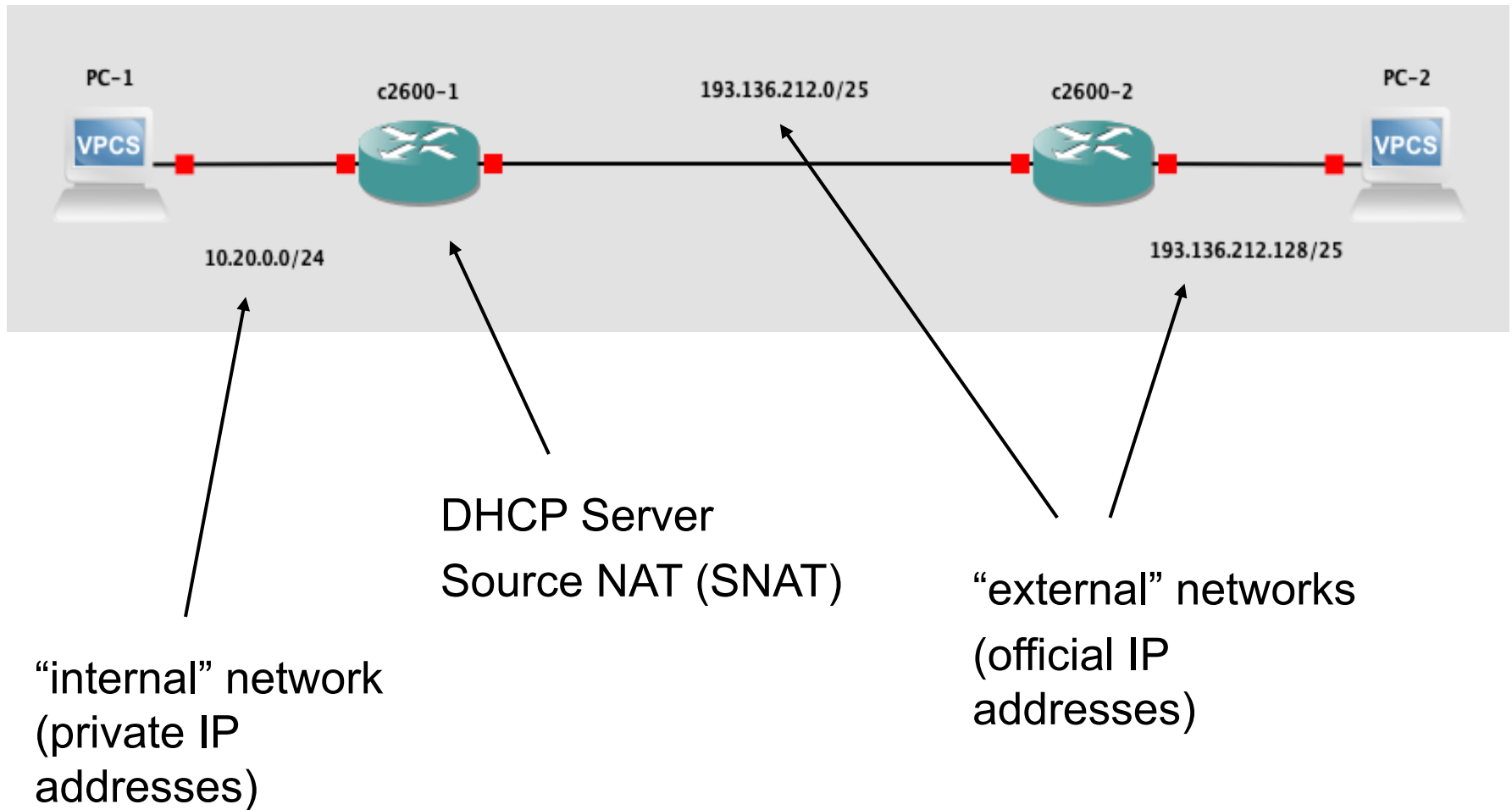


TP03: DHCP and NAT with Cisco routers

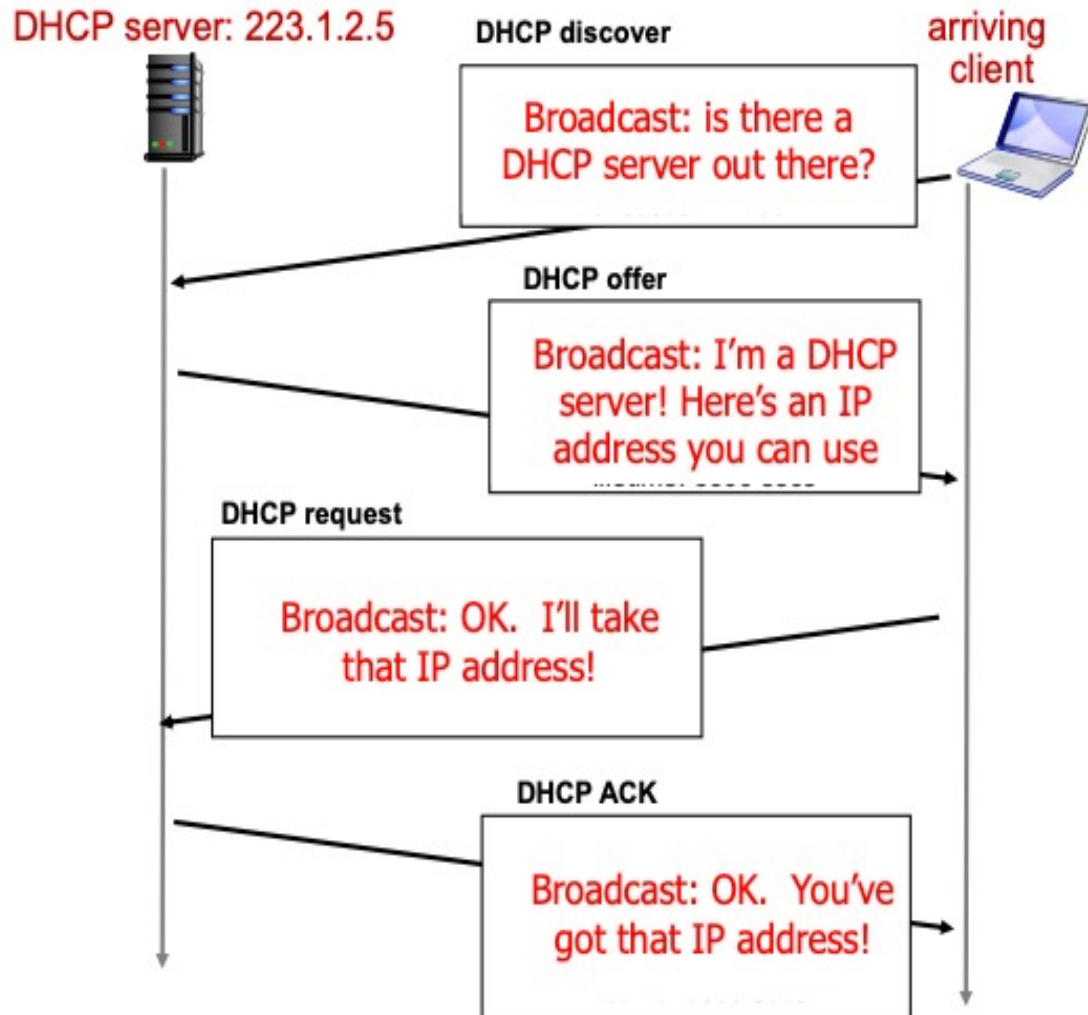
Overview:

- DHCP configuration
- NAT (SNAT) configuration
- NAT (DNAT) configuration

Example scenario (DHCP and SNAT)



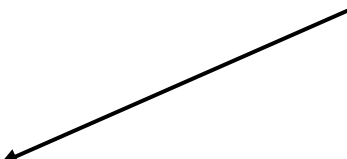
DHCP



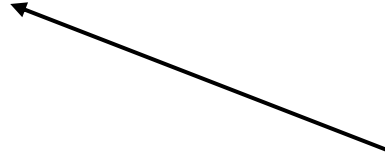
DHCP (configuration example)

```
router# config terminal
router (config)# service dhcp
router (config)# ip dhcp pool IRC
router (dhcp-config)# network 10.16.1.0 255.255.255.0
router (dhcp-config)# default-router 10.16.1.254
router (dhcp-config)# exit
router (config)# ip dhcp excluded-address 10.16.1.1 10.16.1.30
router (config)# ip dhcp excluded-address 10.16.1.220 10.16.1.255
router (config)# end
```

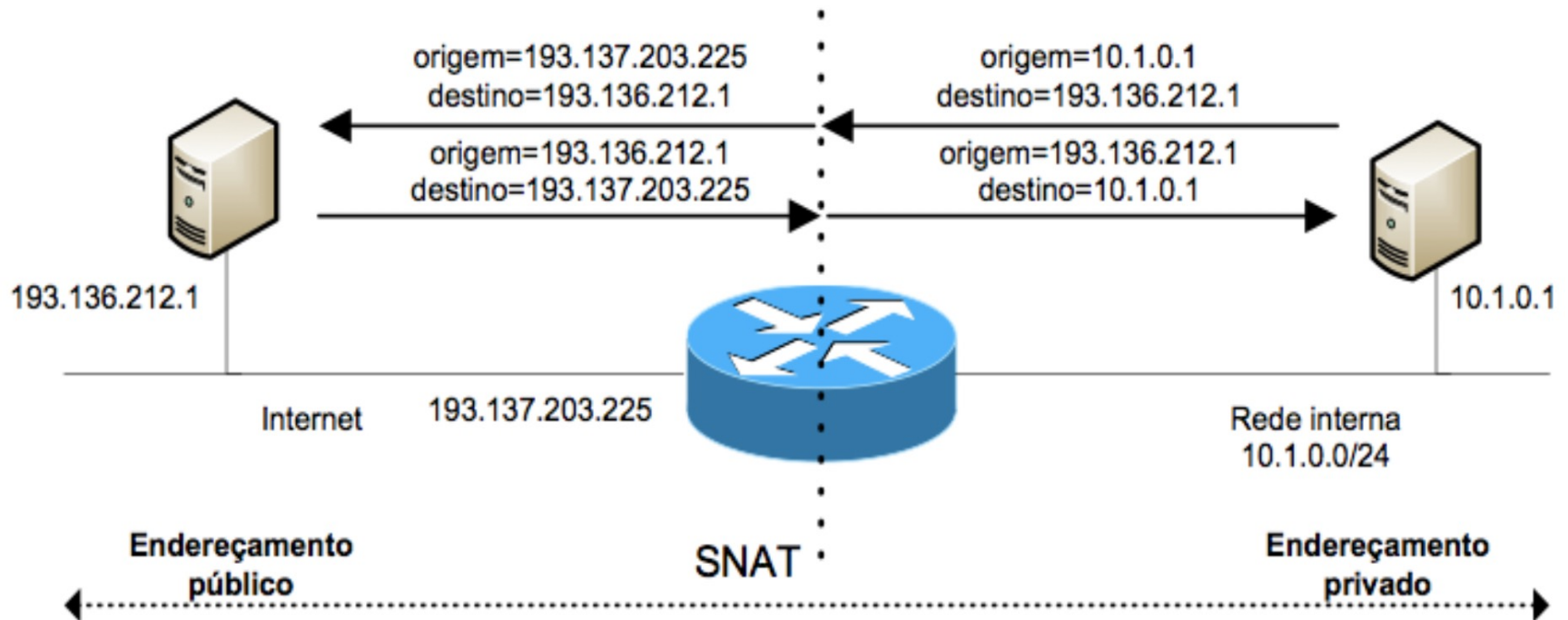
IP address pool to
be used by DHCP
server



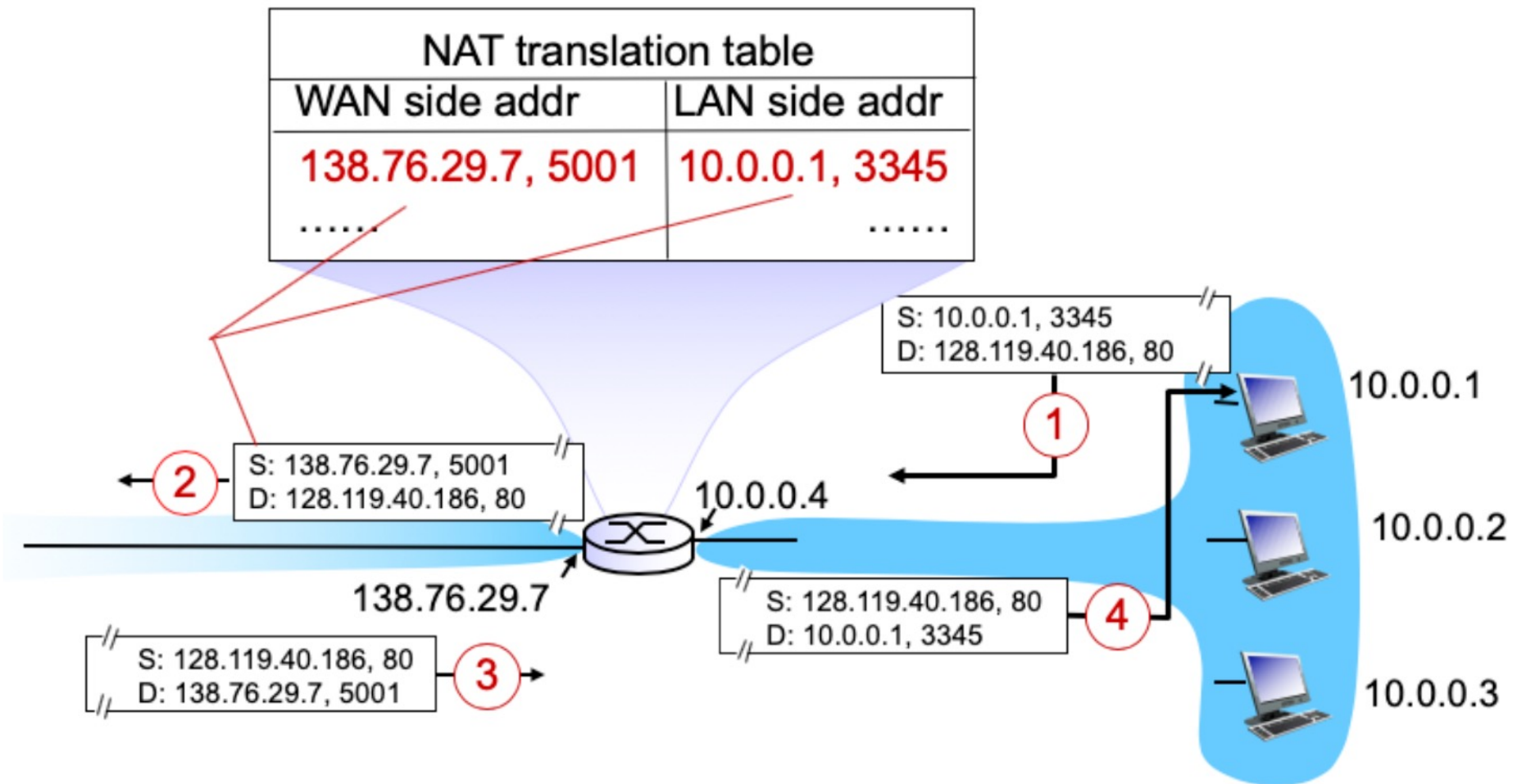
IP address ranges
excluded from pool



NAT (SNAT)



NAT (SNAT)



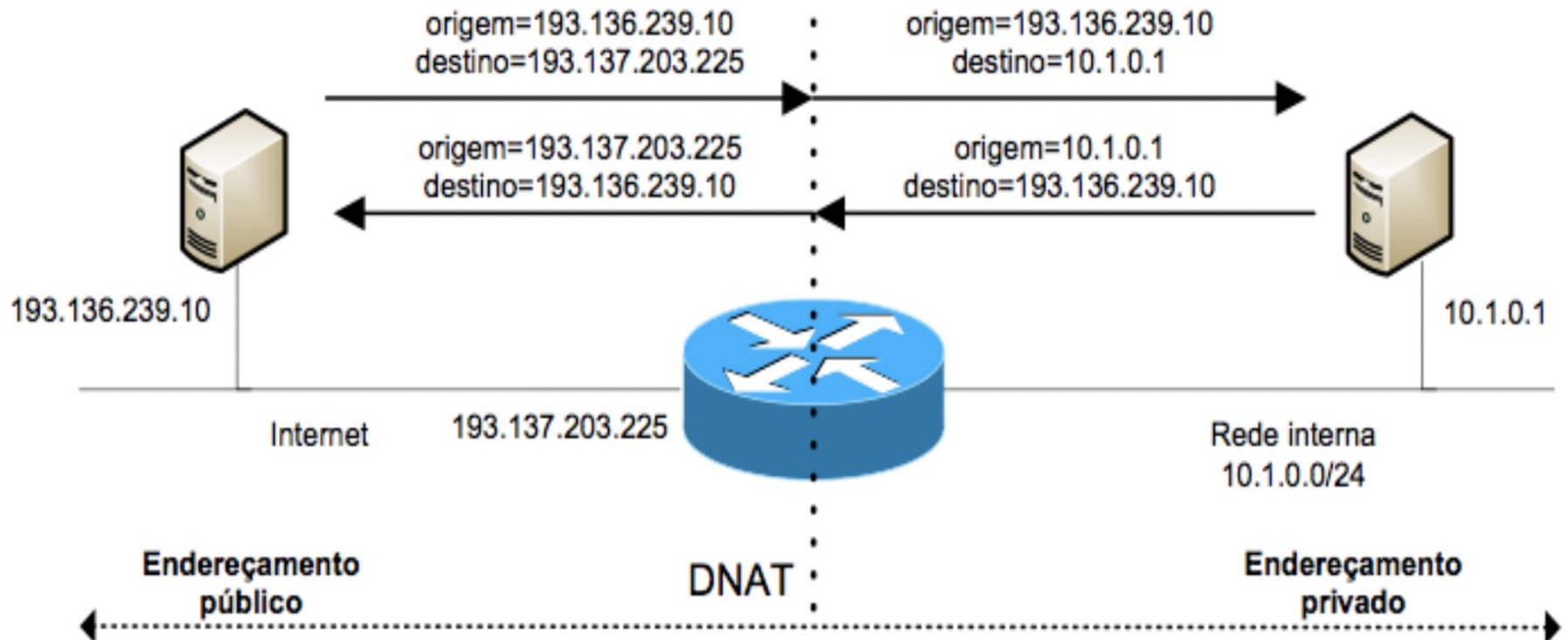
SNAT (configuration example)

Uses IP address of interface for SNAT

```
router# config terminal
router(config)# access-list 30 permit 10.5.0.0 0.0.0.255
router(config)# ip nat inside source list 30 interface Ethernet0 overload
router(config)# interface FastEthernet0
router(config-if)# ip address 10.5.0.1 255.255.255.0
router(config-if)# ip nat inside
router(config-if)# exit
router(config)# interface Ethernet0
router(config-if)# ip address 193.137.203.1 255.255.255.0
router(config-if)# ip nat outside
router(config-if)# end
```

Interfaces declared internal or external for NAT operations

NAT (DNAT)



DNAT (configuration example)

External connection
redirected to internal
server

```
router# config terminal
router(config)# ip nat inside source static tcp 10.5.0.200 80 193.137.203.1 80
router(config)# interface FastEthernet0
router(config-if)# ip address 10.5.0.1 255.255.255.0
router(config-if)# ip nat inside
router(config-if)# exit
router(config)# interface Ethernet0
router(config-if)# ip address 193.137.203.1 255.255.255.0
router(config-if)# ip nat outside
router(config-if)# end
```

Interfaces declared
internal or external
for NAT operations

TP03: Summary

What have we covered here?

- DHCP configuration (Cisco routers)
- NAT (SNAT and DNAT) configuration (Cisco routers)