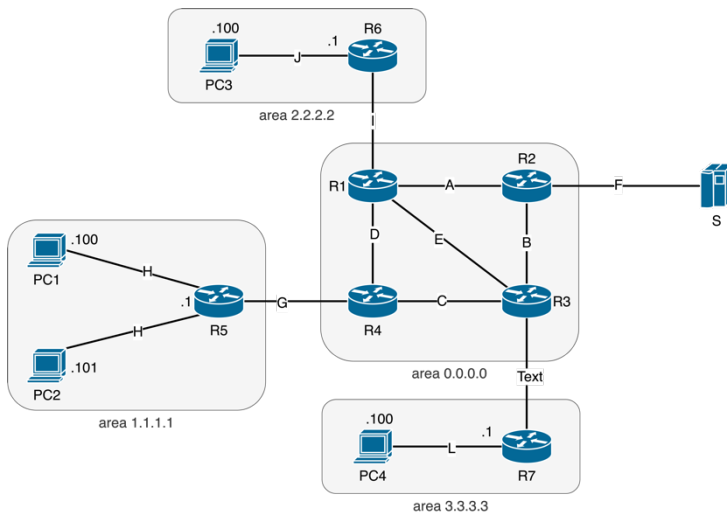


Network Infrastructures Labs 20/21

2nd Homework

Matricola ending w/: 5-6-7



Collision Domain Name	Subnet ID
A	1.0.1.2/31
B	1.0.1.4/31
C	1.0.1.6/31
D	1.0.1.8/31
E	1.0.1.10/31
F	1.0.1.12/31
G	1.0.1.14/31
H	192.168.0.0/24
I	1.0.1.16/31
J	192.168.1.0/25
K	1.0.1.18/31
L	192.168.2.0/24

Given the topology in figure, reproduce it in **Kathara**. You must use the Container names and collision domain names specified in the figure above.

For /31 subnets, the addresses are assigned with the following rule: the lower router number takes the even address, e.g. R1 takes 1.0.1.2 with respect to R2.

The maximum points are **6 + 1** and are assigned as follows:

- **+ 0.5 point:** configure every subnet via static `/etc/network/interfaces`
- **+ 0.5 point:** configure TAP interface on **R2**. Configure default gateways in order to allow the subnets to go to the internet.
- **+ 1 point:** Configure OSPF on (*and only on*) routers in order to have a fully-routable network, except for PC1 and PC2: that is, PC1 and PC2 should not be reachable by any of the router nor the other end hosts, but if PC1 or PC2 pings RX or any other host it should receive a reply*. Respect areas given in figure.
- **+ 1 point:** Create a user called `exam_user` with password `exam` on every router and allow S to access the routers trough SSH via asymmetric authentication. **(This must be done at startup)**
- **+ 1.5 point:** Configure SSH local port forwarding between PC4 and PC5. Redirect local port 9000 of PC4 on remote port 8080 of PC5. Test it with netcat**. **(This must be done at startup)**
- **+ 1.5 point:** Configure VPN between S and R5 as we have seen during lectures, with R5 both as VPN server and CA. Push **H** subnet through the VPN. S should be able to ping the two PCs. **(This must be done at startup)**
- **+ 1 extra point:** Using OSPF costs, force the path from PC4 to PC5 through R7-R3-R4-R1-R6

* Hint: Just think at what happens in your house, use cleverly the masquerade and the OSPF advertising

** apt update && apt install -y netcat on the two containers