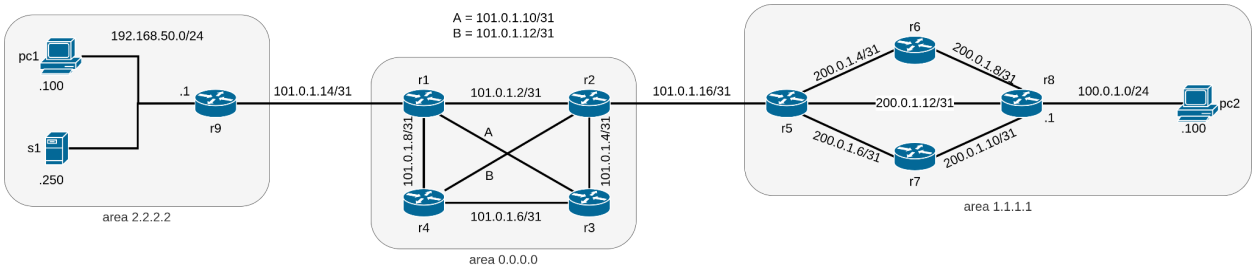
Kathara – Third Midterm



Given the topology in figure, reproduce it in Kathara. You must use container names and addresses specified in the figure above. Container names should be all in lowercase.

For /31 subnets, the addresses are assigned with the following rule: the lower router number takes the even address.

The maximum points are **7** and are assigned as follows:

1. +0.25 points: Lab created with correct lab.conf and folders created correctly. Assign to all routers, PC and servers static IP addresses via /etc/network/interfaces.
2. +0.25 points: Configure OSPF on routers. Respect areas given in figure.
3. +0.5 points: Set up private addresses in subnet 192.168.50.0/24 with a NAT on r9 and in subnet 100.0.1.0/24 on r8
4. +1 points: Set Up firewall un r9 and r8 blocking all traffic unless is instantiated by the respective subnets
5. +1 points: Add a firewall rule on r9 redirecting incoming SSH traffic to s1. Set Up a SSH server on s1 having a user named “myuser” accessible via pubkey authentication by pc2. If done correctly, on pc2 you should be able to connect via SSH to s1 by specifying r9’s address.
6. +0.5 points: Add a firewall rule on s1 such that s1 drops every packet which is not SSH
7. +0.5 points: Add a firewall rule on r5 blocking all SSH traffic. Now you can no longer connect directly via SSH from pc2 to s1.
8. +1 points: Set Up a new CA and generate one certificate for a server with CN “myserver” and one for a client with CN “myclient”

9. +1 points: Set Up a VPN server on r9 and VPN a client on pc2. Use the certificates you generated at the previous point. The subnet of the VPN is 10.10.10.0/24. The ip address of the server inside the VPN should be the default one. The ip address of pc2 inside the VPN should be 10.10.10.50.
10. +1 points: Push 192.168.50.0/24 subnet inside the VPN. Now on pc2 you should be able to connect via SSH to s1 by specifying s1's private address. Why is r5 not blocking the SSH traffic? Capture SSH traffic on r5 and save it in "shared/capture.pcap"

Restart of all the daemons is required.