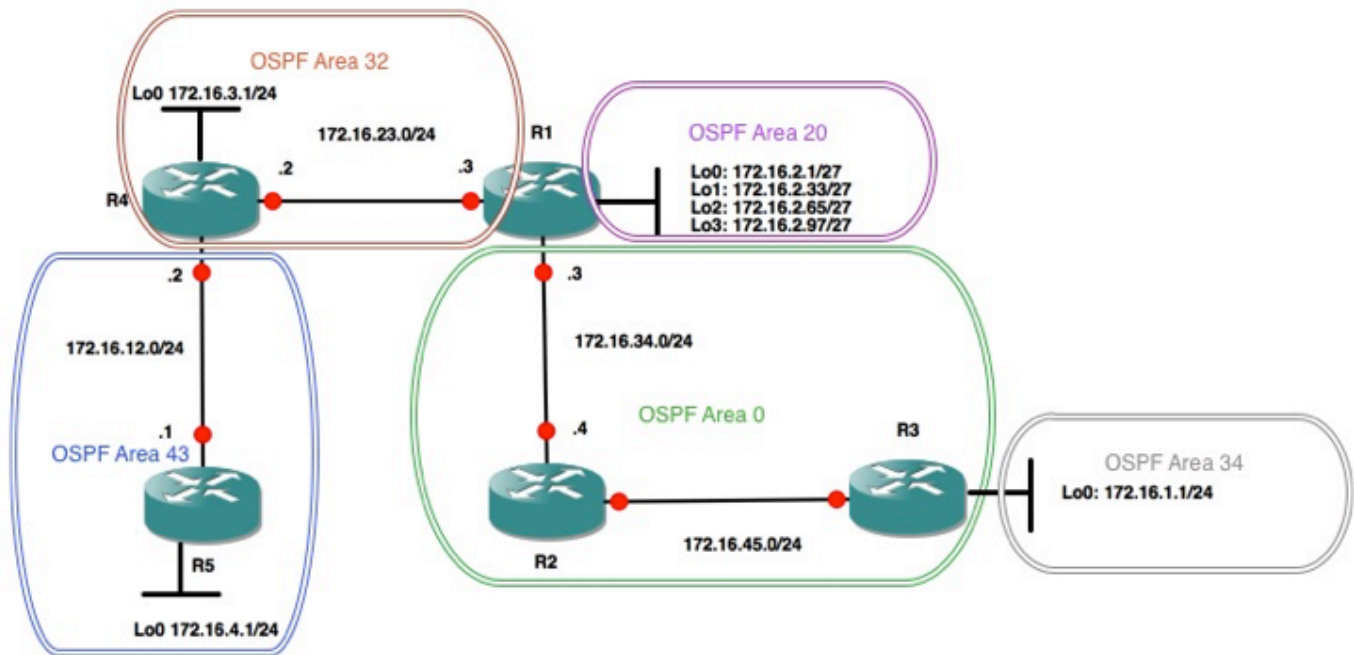


SECOND PART: ROUTING CASE STUDIES :

OSPF

You should configure two routing scenarios one that can represent the routing between branches of an enterprise network using OSPF, and a second scenario that represents the interconnection from a campus network to a provider network. The following figure represents the first scenario.



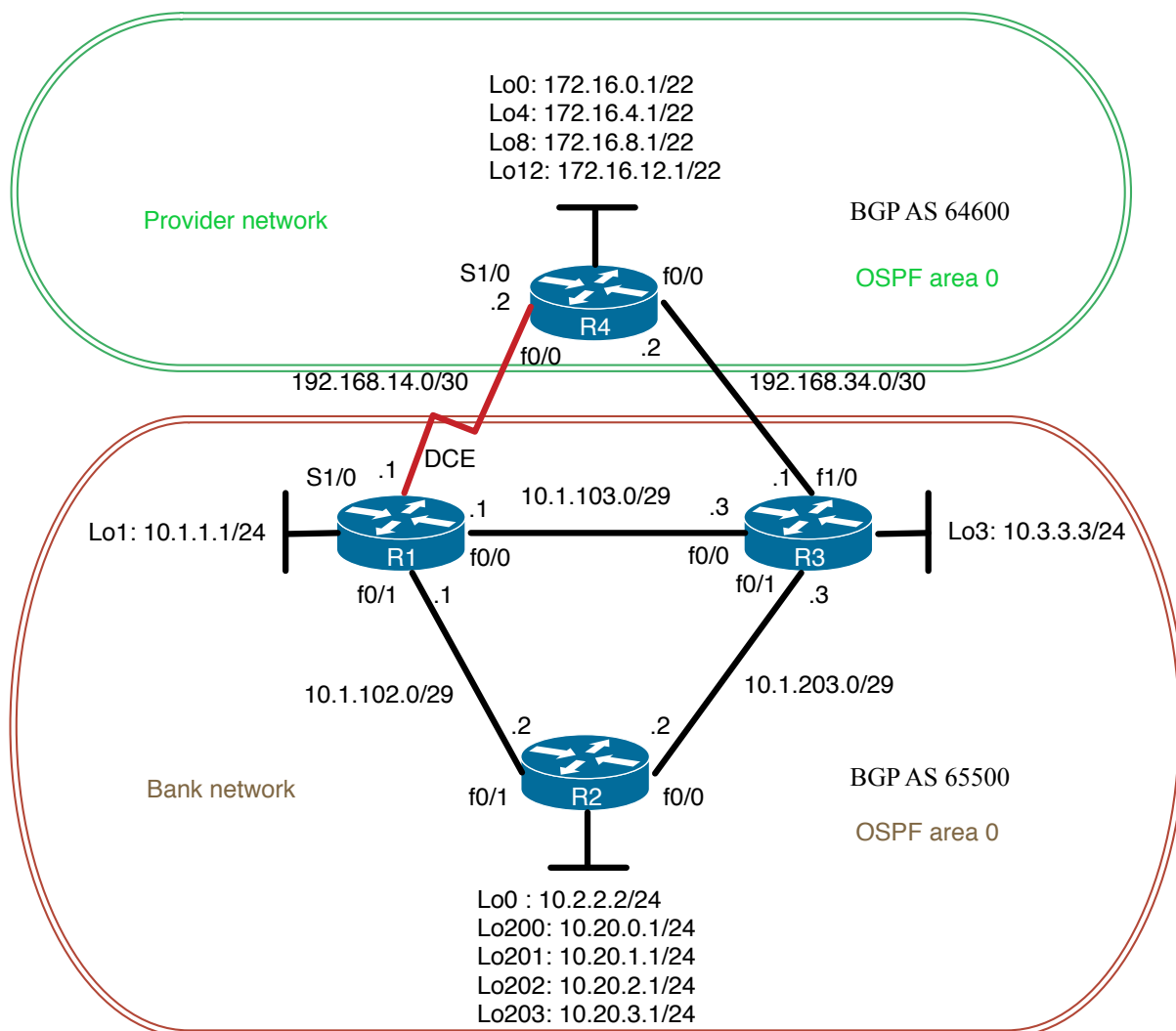
Work Plan and links for examples

You should implement the following configuration requirements such as to provide full connectivity between all addresses in the topology. You can find OSPF configuration examples in the “OSPF scenario 1” in http://tele1.dee.fct.unl.pt/cgr_2016_2017/files/OSPF1.pdf and “OSPF scenario 2” in http://tele1.dee.fct.unl.pt/cgr_2016_2017/files/OSPF2.pdf.

1. Configure the interfaces in the diagram with the IP addresses shown.
2. Configure OSPF with the interfaces in the areas shown in the diagram. Y
3. Configure R1 to summarise area 20 with the most specific mask possible.
4. Make the link between R2 and R1 have the OSPF network type of broadcast, with R1 as the DR.
5. Configure R3 to always originate a default route.
6. Configure area 43 to be a stub area.
7. Figure out the hidden issue in the topology that you need to address to have full connectivity.
8. Verify connectivity between all addresses in the topology.

BGP

The second routing scenario is represented in the following figure:



Work Plan and links for examples

You should implement and verify the following requirements. You can find BGP configuration examples in the “BGP scenario 1” in http://tele1.dee.fct.unl.pt/cgr_2016_2017/files/LabBGP1.pdf and “BGP scenario 2” in the http://tele1.dee.fct.unl.pt/cgr_2016_2017/files/LabBGP2.pdf.

1. Use the addressing scheme shown in the diagram
1. Configure OSPF inside the bank Network with a single area (area 0).
2. Configure OSPF inside the provider network with a single area (area 0).
3. Configure the Bank network to be in BGP AS 65500 and the provider network in BGP AS 64600.
4. Include the 192.168.14.0/30 and the 192.168.34.0/30 networks in the OSPF instances inside the two ASes.
5. Configure the interfaces on the border routers between the two autonomous systems, so they do not send OSPF packets.
6. All routers will be participating in BGP. Configure all routers for a full mesh of IBGP peers in each system.

7. Advertise all loopback interfaces into the BGP process, except on R2 where the only advertised should be loopback 0.
8. In R2 for the rest of the loopback interfaces create a summary route and advertise this static route into BGP.
9. R4 should send a summary route via BGP to the bank network representing all R4 loopback interfaces.
10. R4 should prefer the path to the Bank network via the Ethernet link R4-R3.
11. Routers in the Bank network should prefer the link R1-R4 to reach provider networks.

Deliverables

You should deliver:2

For the first part of the project:

- The project file from packet tracer (be careful to save the working running configurations in the network elements using the command **copy running-config startup-config**).
- Text files including all configuration commands performed in each element (one for each element).
- Description of the addressing plan used (subnets of each of the VLANs and from the point to point links as well as the network prefix used to simulate the Internet cloud).

For the second part of the project:

- Text file containing the issued commands.

The delivery should be made via e-mail to pfa@fct.unl.pt.