Practical 2 – Network Configuration and Testing Part 2

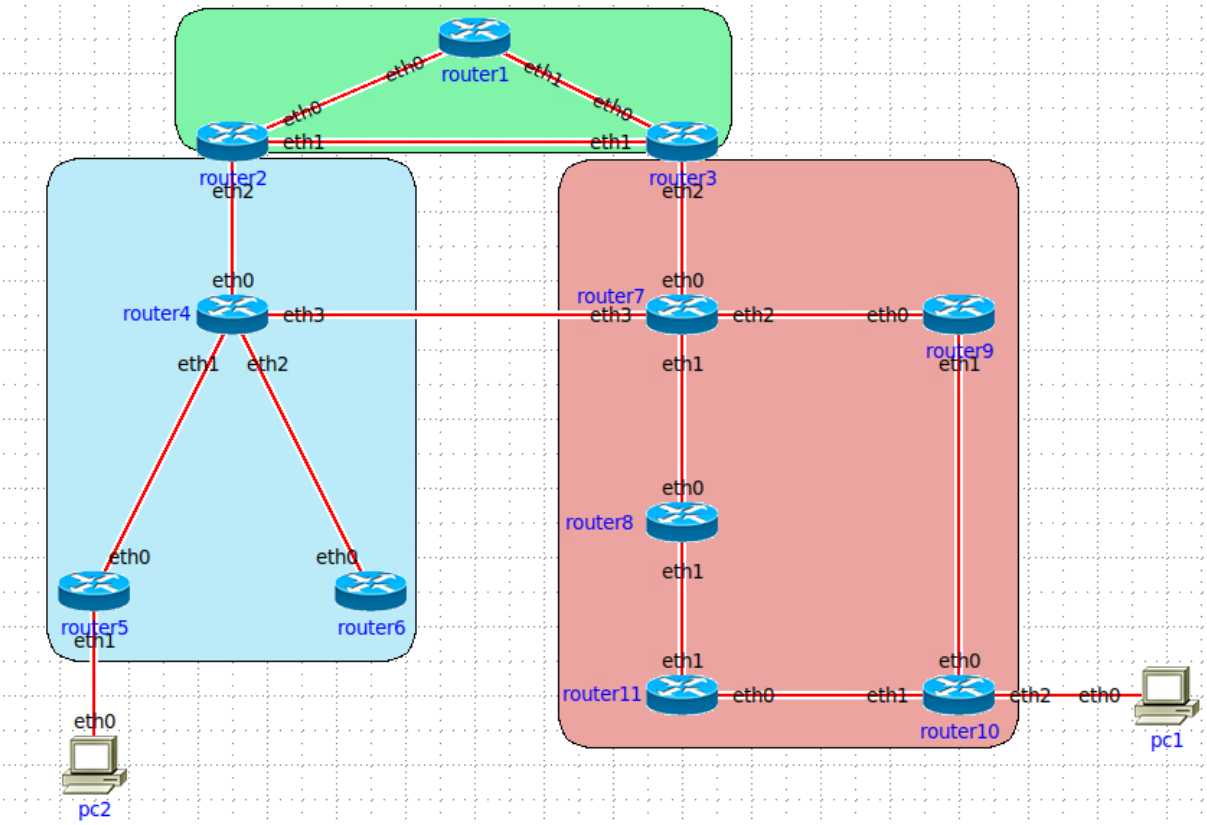

Figure 1: OSPF topology divided in three different area

Task 5

Answer the following questions about the topology you created in Task 4:

a. Which area is the backbone area of the topology? [5 marks]

b. Query again the OSPF routing table of router10. Compare the next hop, and path cost with the values you found for Task 2.b and Task 2.c. Did any of the two values change and why? (you can also compare the IP-level paths to back your answer) [5 marks]

c. Measure the following IP-level paths:
   i. router4 to router7
   ii. From router7 to router9
   iii. From router4 to router9

   Is path (iii) the same as the concatenation of path (i) and path (ii)? Explain your answer. [5 marks]

[15 marks]

Task 6

Answer the following questions. If you have not completed Task 4, you can answer these questions for the topology of Task 1.

a. Change the configuration of router10 so that it routes its traffic using router11 as its next hop. Save and submit the topology file with name “task6a_topology.imn” [6 marks]

b. Find the sequence of router hops for the following two paths
   i. From router10 to router 5
   ii. From router5 to router10

   Are these two paths symmetric? Specifically, do they traverse the same routers? Explain why. [6 marks]

c. Undo the configuration change you did for Task 6.a in router10. Can you change the configuration of router8 and router11 so that router10 still uses router11 as its next hop? Submit the topology file with name “task6c_topology.imn” [6 marks]

[18 marks]

Task 7

Download the topology file from:
https://modules.lancaster.ac.uk/mod/resource/view.php?id=2065903
Some configuration errors in this topology prevent router3 from reaching router7. Fix these configuration errors and confirm that the two routers are reachable using the command of your choice. Submit the fixed topology file with name “task7_topology_fixed.imn”

[16 marks]