Practical – Week 5

Objectives:

The aim of this week's practical includes:

- Assess your skills on basic device configuration
- Consolidate your understanding of routing table

Tasks:

Accordingly, you will need to complete the following two tasks in this week's practical class:

1. **Practical Test (timed test in week 5 Practical class)**
2. Lab – Recover network topology and configuration based on routing table

Assessment:

This week's Practical is assessed in class, and it is worth 7% of the total score of the course, including 6% for the practical test and 1% for the lab.

Notes:

- A student must:
  a. attend this week's Practical class and complete the Practical Test within class time as instructed by your practical supervisor to gain marks for the practical test,
  b. submit the .pkt file created for the lab using the "Practical-Week 5-Task2-Submission" link in Week 5 section of Learnonline course site by Sunday 11:59 pm of Week 5, to gain marks for the lab.
- **Information about the practical test**
  a. The test involves end device and switch configuration, to be done using Packet Tracer.
  b. At the start of your practical class in Week 5, your practical supervisor will guide you and provide you with the test question and instructions.
  c. At the end, you will need to upload the completed Packet Tracer (.pka) file BEFORE the timed quiz ends. You will need to use the password given by your practical supervisor in class to upload your answer .pka file.
  d. To prepare for the test, please review the device configuration practical (and computer practical) activities you have done in the past weeks. During the review, you may want to make yourself a list of commands used for switch configuration, and may use Packet Tracer to practice how to configure a switch (via console connection), how to configure a PC and how to do connectivity test etc.
  e. The test is open book, which means you can use any printed or online information, but discussions with others are prohibited.
  f. Please make sure that Packet Tracer is installed on the PC that you are going to use during your Week 5 practical class.
  g. The test is timed, so please make sure that you get into your classroom in time, otherwise you may not have enough time to finish the test.

Practical Test:

Follow the instruction of your practical supervisor to complete the Practical Test in Week 5 practical class.

(Instruction of the 2nd task of week 5 practical is on next page)

Lab – Recover network topology and configuration based on routing table information

Objectives

Learn how to read a router's routing table and practice device configuration skills.

Requirement

The diagram below is the output of the **`show ip route`** command generated on router **R1**, i.e. the routing table of **R1**.

```
R1# show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B -
BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static
route
o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

192.168.0.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.0.0/24 is directly connected, GigabitEthernet0/0
L 192.168.0.1/32 is directly connected, GigabitEthernet0/0
192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.1.0/24 is directly connected, GigabitEthernet0/1
L 192.168.1.1/32 is directly connected, GigabitEthernet0/1
```

In this lab, you are required to:

1. Recover the network topology based on the information in the routing table, in Packet Tracer, i.e. build the network in Packet Tracer.

   The following devices need to be included the recovered network topology and connect them using cables of appropriated types.

   - 2 Catalyst 2960 switches, 1 in each of the two networks connected to R1.
   - 1 Cisco Series 1941 Router (which is R1)
   - 4 PCs, 2 in each of the two networks

2. Configure the devices with the appropriated IP address, subnet mask and default gateway as indicated by the routing information.
3. Achieve connectivity between each pair of devices and R1's G0/0 and G0/1 interfaces.

Hints: From the information given in the routing table, we can see that**:**

- **R1**'s G0/0 and G0/1's IP addresses are 192.168.0.1 and 192.168.1.1, respectively.
- **R1** is directly connected to two networks (one network in which the network portion of all devices/interfaces' IP addresses is 192.168.0, and one network in which the network portion of all devices/interfaces' IP addresses is 192.168.1)
- **R1**'s G0/0 and G0/1 are the default gateways of the two directly connected networks, respectively.

If you have difficulties to understand/read the routing table, review Week 4 slides, especially slides #13 and #14.

After completed, save the network built and configured in Packet Tracer as a .pkt file and submit the file as required.