Universitas Pendidikan Ganesha

Computer Science

Computer Network Lab

2nd Module

Layer 2 Switching and Layer 3 Addressing

A. Objective

Students understand how 2nd layer computer network device work.

B. Procedure

Do the following three scenarios, then make an analysis based on the data obtained, and make a conclusion of Your analysis!

1st Scenario:

1. Create network as shown on Image 1. The IP Addresses and Subnet Masks of all PCs are shown on Table 1.
2. Do ping from each PC to all another PCs, and record the ping result, did it succeed or fail. Put ping result data on a matrix table as shown in Table 2.
3. Show ARP table from PC0, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.

4. Show ARP table from PC1, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.

   Note: How to ping and how to show ARP Table will be explained in class/lab.

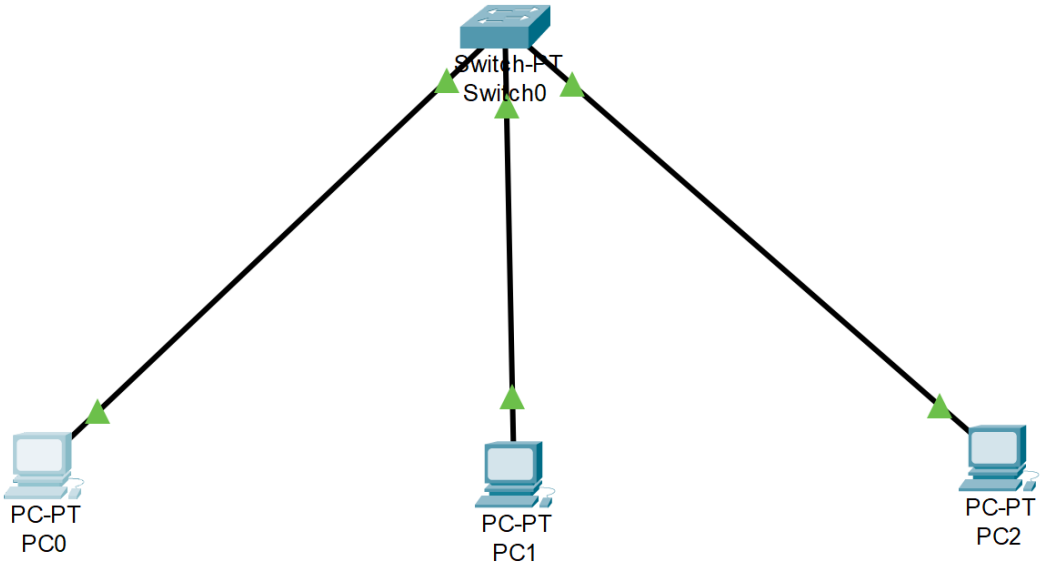

Image 1: First Network.

Table 1: IP Addresses of all PCs on the first network.

PC	IP Address	Subnet Mask
PC0	192.168.1.1	255.255.255.0
PC1	192.168.1.2	255.255.255.0
PC2	192.168.1.3	255.255.255.0

Table 2: Ping result.

	PC0	PC1	PC2
PC0			
PC1			
PC2			

Table 3: Network Address and Physical Address of PCs as shown from PC0

PC	Network Address	Physical Address

2nd Scenario:

1. Create network as shown on Image 2. The IP Addresses and Subnet Masks of all PCs are shown on Table 4.
2. Do ping from each PC to all another PCs, and record the ping result, did it succeed or fail. Put ping results data on a matrix table as shown in Table 2.
3. Show ARP table from PC A1, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.
4. Show ARP table from PC B1, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.

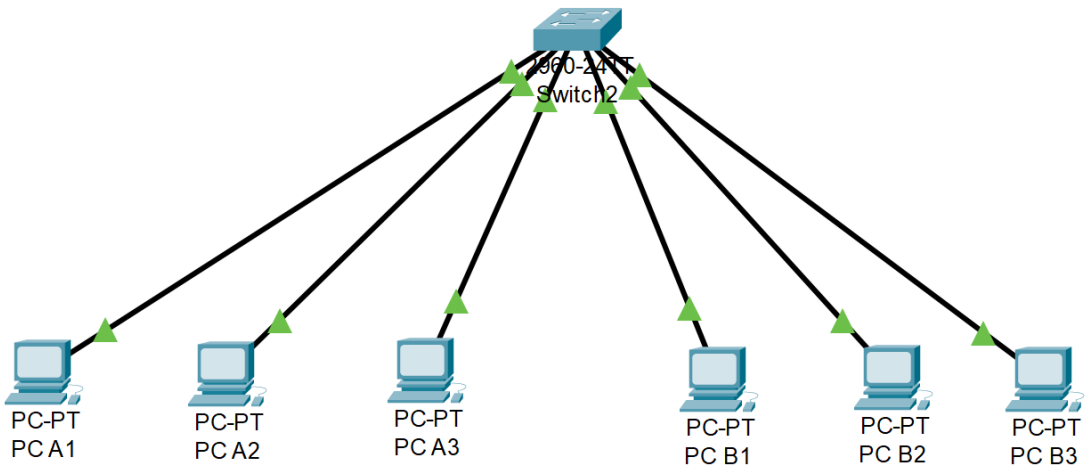

Image 2: Second Network.

Table 4: IP Addresses of all PCs on the second network.

PC	IP Address	Subnet Mask
PC A1	192.168.1.1	255.255.255.0
PC A2	192.168.1.2	255.255.255.0
PC A3	192.168.1.3	255.255.255.0
PC B1	192.168.2.1	255.255.255.0
PC B2	192.168.2.2	255.255.255.0
PC B3	192.168.2.3	255.255.255.0

3rd Scenario:

1. Create network as shown on Image 3. The IP Addresses and Subnet Masks of all PCs are shown on Table 5.
2. Do ping from each PC to all another PCs, and record the ping result, did it succeed or fail. Put ping results data on a matrix table as shown in Table 2.
3. Show ARP table from PC A1, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.
4. Show ARP table from PC B1, and record Network Addresses and Physical Addresses of all PCs that has been shown. Put Network Addresses and Physical Addresses data of all PCs that has been shown on a table as shown in Table 3.

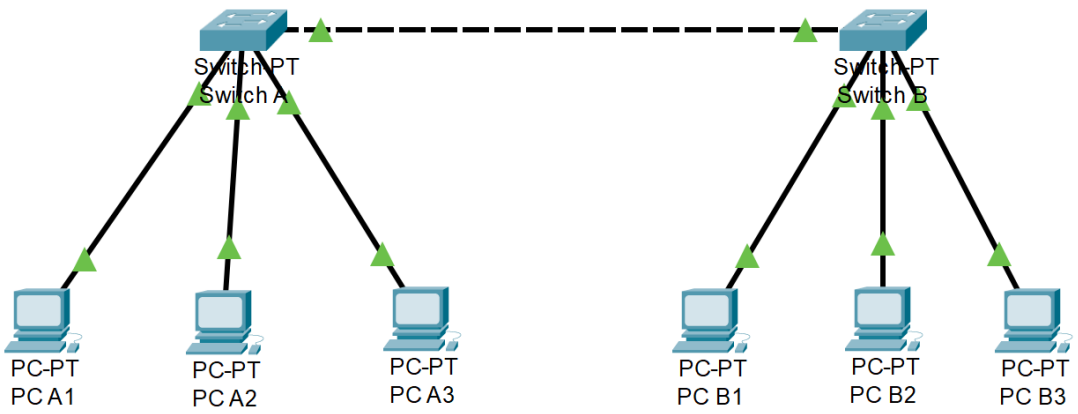

Image 3: Third Network.

Table 5: IP Addresses of all PCs on the third network.

PC	IP Address	Subnet Mask
PC A1	192.168.1.1	255.255.255.0
PC A2	192.168.1.2	255.255.255.0
PC A3	192.168.1.3	255.255.255.0
PC B1	192.168.1.4	255.255.255.0
PC B2	192.168.1.5	255.255.255.0
PC B3	192.168.1.6	255.255.255.0

C. Report

The report must contain:

1. Theoretical review on the topic.
2. Method/Procedure of practicum.
3. The data obtained.
4. Analysis.
5. Conclusion.